Initial Study/Mitigated Negative Declaration
San Bernardino County Flood Control District

West Fontana Channel Flood Control Improvement Project (Banana to Hickory)
San Bernardino County

Lead Agency

San Bernardino County Flood Control District

825 E. Third Street
San Bernardino, CA 92415

Technical assistance provided by:

Aspen Environmental Group
5020 Chesebro Road, Suite 200
Agoura Hills, CA 91301

February 2020

[This page intentionally left blank]

TABLE OF CONTENTS

SECTION 1 – INTRODUCTION 5
SECTION 2 – REGULATORY FRAMEWORK 6
SECTION 3 – DETAILED PROJECT DESCRIPTION 7
SECTION 4 – ENVIRONMENTAL CHECKLIST FORM 12
ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED 15
1. AESTHETICS 16
2. AGRICULTURE AND FORESTRY RESOURCES 19
3. AIR QUALITY 22
4. BIOLOGICAL RESOURCES 29
5. CULTURAL RESOURCES 34
6. ENERGY 38
7. GEOLOGY AND SOILS 40
8. GREENHOUSE GAS EMISSIONS 45
9. HAZARDS AND HAZARDOUS MATERIALS 50
10. HYDROLOGY AND WATER QUALITY 54
11. LAND USE AND PLANNING 58
12. MINERAL RESOURCES 60
13. NOISE 62
14. POPULATION AND HOUSING 65
15. PUBLIC SERVICES 66
16. RECREATION 69
17. TRANSPORTATION 70
18. TRIBAL CULTURAL RESOURCES 73
19. UTILITIES AND SERVICE SYSTEMS 76
20. WILDFIRE 79
21. MANDATORY FINDINGS OF SIGNIFICANCE 81
SECTION 5 – SUMMARY OF MITIGATION MEASURES 93
SECTION 6 - REFERENCES 98

TABLES

Table 3-1 Maximum Daily Unmitigated Construction Emissions

Table 3-2 Maximum Localized Daily Unmitigated Construction Emissions

Table 7-1 Fault Distances to Project Site

Table 8-1 Greenhouse Gas Emissions

Table 8-2 State and Local GHG Emissions Reduction Strategy Conformance

FIGURES

Figure 1 Regional Location Map

Figure 2 Project Location Map

Figure 3 Site Plan

APPENDICES

Appendix A – Air Pollutant Emission Calculations

Appendix B – Biological Resources Technical Report

Appendix C – Preliminary Jurisdictional Waters and Wetlands Delineation Report

SECTION 1 – INTRODUCTION

The San Bernardino County Flood Control District (District) proposes to construct and maintain flood control improvements to the West Fontana Channel within an unincorporated area of San Bernardino County (Figure 1). The upstream end of the West Fontana Channel Improvement Project (Banana to Hickory) [proposed Project or Project] is located at the outlet of Banana Basin which is southwest of the intersection of Banana Avenue and Whittram Avenue. The downstream end of the Project is located at the entrance to Hickory Basin, southwest of the intersection of Mulberry Avenue and Whittram Avenue.

The Project consists of modifying an existing undersized earthen flood control channel. The proposed modifications include construction of non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Two (2) of the culverts would replace existing culverts at the adjacent railway bridges near Hickory Basin and the third triple cell culvert would replace the pipe culverts under Calabash Ave. The overall Project length is approximately 0.6 miles. The rectangular concrete channel portion is approximately 200 feet long, not including transition lengths to the proposed culvert sections. The proposed concrete box culverts together are approximately 350 feet in total length. The channel and culverts vary in width and depth to meet the requirements to convey the Master Plan Q100 runoff. It is estimated that the maximum excavation depth at any point would be 25 feet, and the maximum width of the channel at any point of would be approximately 110 feet. The work would also include construction of junction structures to accommodate future connections as described in the Master Plan of Drainage and may include replacement of an existing concrete weir in the outflow of Banana Basin as well as construction of two (2) access ramps/service roads and replace one (1) existing access ramp. The Project also includes necessary utility potholing and geotechnical testing components, ancillary activities such as maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. All activities would be conducted within the proposed Project disturbance area (see Figure 3), with improvements occurring entirely within flood control right-of-way except at the railway crossing. The Project may be constructed in two phases, with intermittent construction activities expected to occur over a twelve (12) month period beginning in mid-2021.See Section 3 for details of the proposed Project.

1.1 Background

In July of 1995, a hydrology study was prepared by Boyle Engineering for the San Sevaine Channel system. Included within that study is hydrology and hydraulic analyses on the entire watershed including areas tributary to West Fontana Channel. That study also indicated that the existing capacity of West Fontana Channel in the reach between Banana Basin and Hickory Basin was insufficient in areas to convey (Q100 storm) flows. The City of Fontana and the District are in the process of completing ultimate improvements to the channel upstream of Banana Basin. Once improvements upstream of Banana Basin are in place, the flows that enter/exit Banana Basin will increase and cause a greater chance for flooding events to occur in areas immediately downstream of Banana Basin along this section of the channel.

1.2 Purpose and Need

The project's ultimate purpose is the protection of life and property. Improvements to the West Fontana Channel system are necessary to convey a 100-year storm event within the reach between Banana Basin and Hickory Basin and eliminate potential downstream flooding.

SECTION 2 – REGULATORY FRAMEWORK

The San Bernardino County Flood Control District has identified that the West Fontana Channel Flood Control Improvement Project (Banana to Hickory) meets the California Environmental Quality Act (CEQA) Guidelines Section 15378 definition of a Project. CEQA Guidelines Section 15378 defines a Project as the following:

"Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000-21177), this Initial Study has been prepared to determine potentially significant impacts upon the environment resulting from the construction, operation and maintenance of the West Fontana Channel Flood Control Improvement Project (Banana to Hickory) [hereinafter referred to as the "Project" or “proposed Project”]. In accordance with Section 15063 of the State *CEQA Guidelines*, this Initial Study is a preliminary analysis prepared by the San Bernardino County Flood Control District as Lead Agency to inform the Lead Agency decision makers, other affected agencies, and the public of potential environmental impacts associated with the implementation of the proposed Project.

Initial Study Organization

This Initial Study is organized as follows:

Introduction: Provides the regulatory context for the review along a brief summary of the CEQA process.

Project Information: Provides fundamental Project information, such as the Project description, Project location and figures.

Lead Agency Determination: Identifies environmental factors potentially affected by the Project and identifies the Lead Agency's determination based on the initial evaluation.

Mitigated Negative Declaration: Prepared when a determination can be made that no significant environmental effects will occur because revisions to the Project have been made or mitigation measures will be implemented which will reduce all potentially significant impacts to less than significant levels.

Evaluating Environmental Impacts: Provides the parameters the District uses when determining level of impact.

CEQA Checklist: Provides an environmental checklist and accompanying analysis for responding to checklist questions.

References: Include a list of references and various resources utilized in preparing the analysis.

SECTION 3 – DETAILED PROJECT DESCRIPTION

The San Bernardino County Flood Control District (District) proposes to construct and maintain flood control improvements to the West Fontana Channel within an unincorporated area of San Bernardino County (Figure 1). The upstream end of the West Fontana Channel Improvement Project (Banana to Hickory) [proposed Project or Project] is located at the outlet of Banana Basin which is southwest of the intersection of Banana Avenue and Whittram Avenue. The downstream end of the Project is located at the entrance to Hickory Basin, southwest of the intersection of Mulberry Avenue and Whittram Avenue.

The entire Project site has a land use and zoning designation of Regional Industrial (IR) (San Bernardino County, 2009). The site is generally located within an area characterized as industrial, and is bordered on the north by commercial and industrial land uses, with a scattering of residences less than 300 feet from the project along Calabash Avenue and Mulberry Avenue. The Metrolink San Bernardino Line is located immediately south of the Project site, and crosses through the western end of the Project site on two bridges. The channel flows under the railway bridges and just south of the bridges are pipe culverts through which the channel discharges into Hickory Basin. Further south, the Project is bordered by the 568-acre Auto Club Speedway facility. Additional commercial and industrial land uses border the site to the east and west (Google Earth, 2018).

The Project consists of modifying an existing undersized earthen flood control channel. The proposed modifications include construction of non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Two (2) of these culverts would replace existing culverts at the adjacent railway bridges near Hickory Basin and the third triple cell culvert would replace the pipe culverts under Calabash Avenue. The overall Project length is approximately 0.6 miles. The rectangular concrete channel portion is approximately 200 feet long, not including transition lengths to the proposed culvert sections. The proposed concrete box culverts together are approximately 350 feet in total length. The channel and culverts vary in width and depth to meet the requirements to convey the Master Plan Q100 runoff. It is estimated that the maximum excavation depth at any point would be 25 feet, and the maximum width of the channel at any point of would be approximately 110 feet. The work would also include construction of junction structures to accommodate future connections as described in the Master Plan of Drainage and may include replacement of an existing concrete weir in the outflow of Banana Basin as well as construction of two (2) access ramps/service roads and replace one (1) existing access ramp. The Project also includes necessary utility potholing and geotechnical testing components, ancillary activities such as maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. All activities would be conducted within the proposed Project disturbance area, with improvements occurring entirely within flood control right-of-way except at the railway crossing. The Project may be constructed in two phases, with construction expected to occur intermittently over twelve (12) months beginning in mid-2021.See Figure 3 for details of the proposed Project.

Construction

Construction of the proposed Project is anticipated to occur starting in mid-2021 and continue into mid-2022 (about 12 months), although this schedule could start later or extend later due to unforeseen circumstances or other work requirements. Construction would be completed intermittently over the 12-month period, and requiring a total of approximately 165 work days. Consistent with the County Development Code noise regulations, where possible construction would occur between 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays. However, due to safety issues during the daytime Metrolink rail schedule period, nighttime construction would occur when working in proximity to the Metrolink railway bridges. The nighttime construction would be between the hours of 10:00 p.m. and 7:00 a.m. and would be required when working under, and within approximately 100 feet of, the two adjacent railway bridges. This nighttime construction would occur intermittently for a total of approximately 90 work days over a six-month period. Daytime and nighttime construction would not overlap on the same days. Equipment types anticipated to be used during construction include: wheeled loader, dozer,

excavator, grader, sheep-foot roller/compactor, steel roller, paving machine, concrete truck, concrete pump or pump truck, water truck, and dump truck. No impact pile driving equipment would be utilized; however, reduced-noise vibratory pile driving will occur near the railway bridges during the nighttime construction. The construction schedule, off-road equipment, and on-road vehicle trip assumptions are provided in Appendix A (Air Quality Assumptions). The exact construction task strategy and equipment needs would be determined by the contractor during the bidding process for the proposed Project. Access to the project site will be made through easements on the north and south of the channel that can be accessed from Whittram Avenue on the north and from Calabash Avenue on the south.

Construction equipment staging and temporary stockpile locations would occur in disturbed locations within the project footprint located south of the channel and north of the rail lines south of the intersection of Whittram Avenue and Mulberry Avenue.

Exported materials would be transported off-site within a 10-mile radius. The District would utilize the closest neighborhood fire hydrant(s) for water to support the proposed Project, such as for dust suppression.

Operation and Maintenance

The existing channel lacks the capacity to convey the ultimate condition 100-year storm flow from Banana Basin to Hickory Basin. Proposed improvements should reduce required maintenance activities on the side slopes only. It is anticipated that the channel invert maintenance would continue at roughly the current levels, including activities that would primarily consist of removal of large debris (i.e. shopping carts and tires), large diameter vegetation such as trees, silt / sediment and mowing of native plants and grasses. Removal of non-native, invasive species may also be required. The growth of vegetation that occurs now is non-native species. The channel would also be inspected from time to time to determine if erosion of the invert has occurred. If erosion has occurred, replacement of the soil to the invert may be required. The District has permitted Inland Empire Utilities Agency (IEUA) to use the channel to transport reclaimed water for Banana Basin to Hickory Basin, which would continue after construction of the ultimate channel. Scarification of the channel invert in addition to the silt and sediment removal may be required bi-annually.

Project Design Features

The improved channel would feature a wider natural bottom invert and bottom control stabilizers as required to minimize potential long-term scour. The design would also include three reinforced concrete box culverts. The first two are double approximately 20-foot span by 10-foot high placed downstream and upstream of the existing railway crossing. These boxes are being placed to allow for maintenance of the channel and Hickory basin. The third culvert is a triple cell culvert approximately 20-foot span by 9-foot high box culvert at the channel crossing of Calabash Avenue. This culvert is designed to the ultimate condition 100-year storm flow pass under the street and would minimize the potential of overtopping the existing roadway. Project improvements also include two major junction structures which would be used for future connections as called for in the Master Plan of Drainage. These junctions would be plugged at the District right-of-way line at this time. The project would also include 6-foot high chain link fencing so that the entirety of the channel can be secured.



Figure 1
Regional Location Map



Figure 2
Project Location Map



Figure 3. Site Plan

SECTION 4 – ENVIRONMENTAL CHECKLIST FORM

1. Project Title: West Fontana Channel Improvement Project (Banana to Hickory)

2. Lead Agency Name: San Bernardino County Flood Control District

Address: 825 East Third Street
San Bernardino, California 92415-0835

3. Contact Person: Nancy J. Sansonetti, AICP, Senior Planner
Nancy.Sansonetti@dpw.sbcounty.gov
909-387-8109

4. Project Location: West Fontana Channel within an unincorporated area of San Bernardino County. The upstream end is located at the outlet of Banana Basin which is southwest of the intersection of Banana Avenue and Whittram Avenue. The downstream end is located at the entrance to Hickory Basin, southwest of the intersection of Mulberry Avenue and Whittram Avenue.

Topographic Quad (USGS 7.5"): GUASTI & FONTANA

Topographic Quad Coordinates: S09, T10S, R60W
S10, T10S, R60W

Latitude/Longitude 34.094/-117.502 (WGS 84)

Site Access: Calabash Avenue off Whittram Avenue

5. Project Sponsor: Department of Public Works, Environmental Management Division

Name and Address: Nancy J. Sansonetti, AICP, Senior Planner
825 East Third Street, Room 123
San Bernardino, California 92415-0835

6. General Plan/Zoning Designation: The entire project site has a land use and zoning designation of Regional Industrial (IR).

7. Project Description Summary:

The San Bernardino County Flood Control District (District) proposes to construct and maintain flood control improvements to the West Fontana Channel within unincorporated San Bernardino County. The upstream end of the West Fontana Channel Improvement Project (Banana to Hickory) [proposed Project or Project] is located at the outlet of Banana Basin which is southwest of the intersection of Banana Avenue and Whittram Avenue. The downstream end of the Project is located at the entrance to Hickory Basin, southwest of the intersection of Mulberry Avenue and Whittram Avenue.

The Project consists of modifying an existing undersized earthen flood control channel. The proposed modifications include construction of non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Two (2) of the culverts would replace existing culverts at the adjacent railway bridges near Hickory Basin and the third triple cell culvert would replace the pipe culverts under Calabash Ave. The overall Project length is approximately 0.6 miles. The rectangular concrete channel portion is approximately 200 feet long, not including transition lengths to the proposed culvert sections. The proposed concrete box culverts together are approximately 350 feet in total length. The channel and culverts vary in width and depth to meet the requirements to convey the Master Plan Q100 runoff. It is estimated that the maximum excavation depth at any point would be 25 feet, and the maximum width of the channel at any point of would be approximately 110 feet. The work would also include construction of junction structures to accommodate future connections as described in the Master Plan of Drainage and may include replacement of an existing concrete weir in the outflow of Banana Basin as well as construction of two (2) access ramps/service roads and replace one (1) existing access ramp. The Project also includes necessary utility potholing and geotechnical testing components, ancillary activities such as maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. All activities would be conducted within the proposed Project disturbance area, with improvements occurring entirely within flood control right-of-way except at the railway crossing. The Project may be constructed in two phases, with construction expected to occur intermittently over twelve (12) months beginning in mid-2021.

Details of the Project are further discussed in Section 3.

8. Environmental/Existing Site Conditions:

The existing flood control channel that connects Banana Basin to Hickory Basin includes an earthen bottomed trapezoidal channel with slopes that are protected with un-grouted riprap. The existing site condition includes a heavily disturbed flood control channel within a highly urbanized setting. Much of the project site in unvegetated because of on-going maintenance, pedestrian traffic, and vehicle traffic. Native vegetation is sparse within the project site and is limited ruderal herbaceous plants, primarily in the wettest portions of the channel. Plants that are present include species such as dog fennel (*Anthemis cotula*), summer mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), red brome (*Bromus madritensis* ssp. *rubens*), and hairy leaved sunflower (*Helianthus annuus*).

The project site provides limited habitat for wildlife species. Common species such as coyote (*Canis latrans*), raccoon (*Procyon lotor*), common raven (*Corvus corax*), and common side-blotched lizard (*Uta stansburiana*) are present because of their ability to easily move through urban settings and between intact open space or because they are able to persist in small patches of open space. Special-status wildlife species have a limited potential to be present within the project site because of the lack of natural habitat. Species such as burrowing owl (*Athene cunicularia*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and others have a potential to be present and are addressed below. Lastly, the project site is not located within designated critical habitat for any listed species and is also not within an adopted Habitat Conservation Plan or any other environmental sensitive area.

9. Surrounding land uses and setting:

The site is generally located within an area characterized as industrial. The site is bordered on the north by commercial and industrial land uses, with a scattering of residences less than 300 feet from the project along Calabash Avenue and Mulberry Avenue. The Metrolink San Bernardino Line is located immediately south of the Project site, and crosses through the western end of the Project site on two railway bridges. The channel flows under the bridges and just south of the bridges are pipe culverts through which the channel discharges into Hickory Basin. Further south, the project is bordered by the 568-acre Auto Club Speedway facility. Additional commercial and industrial land uses border the site to the east and west (Google Earth, 2018).

10. Other public agencies whose approval is required:

Federal:

- United States Army Corps of Engineers – Clean Water Act Section 404, Individual

State Agencies:

- California Department of Fish and Wildlife – Streambed Alteration Agreement/California Fish and Game Code Section 1600.
- Santa Ana Regional Water Quality Control Board, Region 8 – Clean Water Act Section 401, Water Quality Certification
- Santa Ana Regional Water Quality Control Board, Region 8 – Clean Water Act Section 402, National Pollutant Discharge Elimination System (NPDES) Construction General Permit

Financing Approval or Participation Agreements:

- The Project is funded by a FEMA Hazard Mitigation Grant for $3 million, with the balance of funding provided by the District.

11. Have California Native American tribes traditionally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation?

Yes, Tribal consultation was completed pursuant to PRC section 21080.3.1.

12. Lead Agency Discretionary Actions:

San Bernardino County Board of Supervisors; Adopt Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact requiring mitigation to be reduced to a level that is less than significant as indicated in the checklist on the following pages.

☐	Aesthetics	☐	Agricultural / Forest Resources	☐	Air Quality
x	Biological Resources	x	Cultural Resources	☐	Energy
x	Geology / Soils	☐	Greenhouse Gas Emissions	x	Hazards / Hazardous Materials
x	Hydrology / Water Quality	☐	Land Use / Planning	☐	Mineral Resources
☐	Noise	☐	Population / Housing	☐	Public Services
☐	Recreation	☐	Transportation	x	Tribal Cultural Resources
☐	Utilities / Service Systems	☐	Wildfire	x	Mandatory Findings of Significance

LEAD AGENCY DETERMINATION

On the basis of this initial evaluation, the following finding is made:

	The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
x	Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Harold Zamora 2/26/2020

Signature [Harold Zamora, P.E., Chief] Date

1. AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade an existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

(Check ☐ if project is located within a view-shed of any Scenic Route listed in the General Plan):

Environmental Setting

The West Fontana Channel is located within unincorporated San Bernardino County (Figure 2). The upstream end of the proposed Project is located at the outlet of Banana Basin which is southwest of the intersection of Banana Avenue and Whittram Avenue. The downstream end of the Project is located at the entrance to Hickory Basin, southwest of the intersection of Mulberry Avenue and Whittram Avenue.

The entire Project site has a land use and zoning designation of Regional Industrial (IR). The site is generally located within an area characterized as industrial. The site is bordered on the north by commercial and industrial land uses, with a scattering of residences less than 300 feet from the Project along Calabash Avenue and Mulberry Avenue. The Metrolink San Bernardino Line is located immediately south of the Project site, and crosses through the western end of the Project site on two railway bridges. The channel flows under the bridges and just south of the bridges are pipe culverts through which the channel discharges into Hickory Basin. Further south, the Project is bordered by the 568-acre Auto Club Speedway facility. Additional commercial and industrial land uses border the site to the east and west.

The nearest designated scenic highway to the Project site is a portion of State Route (SR) 38 located 21 miles northeast (Caltrans, 2019). The nearest eligible scenic highway to the Project site is SR-142 (Carbon Canyon Road) located approximately 15 miles southwest (Caltrans, 2019).

Impact Analysis

a) Have a substantial adverse effect on a scenic vista?

No Impact. The San Bernardino County General Plan states that a feature or vista can be considered scenic if it provides a vista of undisturbed natural areas, includes a unique or unusual feature that comprises an important or dominant portion of the viewshed, or offers a distant vista that provides relief from less attractive views of

nearby features (such as views of mountain backdrops from urban areas) (San Bernardino County General Plan [San Bernardino County, Open Space Element, Policy OS 5.1]). From the Project site, immediate views are industrial. However, there could be distant views of the San Bernardino Mountains to the north. Because the Project would improve an existing below-grade flood control channel, it would not obstruct any viewsheds of adjacent open space or mountains. Therefore, the Project would have no impacts to scenic vistas.

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

No Impact. Based on the distances to the nearest designated and eligible scenic highways, the Project site would not be visible from those locations. The Project site does not contain, nor would it impact, rock outcroppings or historic buildings. The Project would also not require the removal or thinning of any trees. No impacts would occur.

c) Substantially degrade an existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant. Construction of the proposed Project would temporarily have an adverse effect on the scenic quality of the Project site due to construction activity and vehicles. However, these impacts would be temporary, only occurring during the construction period. Therefore, construction would not result in any permanent adverse effects on visual character or quality of public views of the site and its surroundings.

Once completed, the proposed modifications include construction of non-grouted rock slope protection, sections of concrete rectangular channel, and transition lengths and three (3) concrete box culverts. These improvements may slightly expand and deepen the existing flood control channel. The existing flood channel is earthen, with the Project resulting in new rock and concrete surface. Adjacent industrial/commercial development and streets along the proposed Project corridor have views of the affected segment of the West Fontana Channel system. While the proposed improvements would result in a more visually prominent channel due to rock and concrete features, these changes are not expected to result in significant new visual contrast compared to existing views of the flood channel from adjacent uses and streets. Because the improvements would occur to an existing flood channel with similar surface color and visual appearance, the improvements would avoid substantial degradation of visual character of the site. Additionally, future maintenance of the flood control channel would consist of debris, trash, and graffiti removal, vegetation management, and fence/structure repairs. This would reduce visual degradation of the channel and immediately surrounding area. Therefore, visual impacts associated with the proposed Project 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?

No Impact. Construction would mostly occur during weekday daylight hours; however, nighttime construction for several weeks at the proposed channel crossing under the rail line. The nearest sensitive receptors are a pocket of five residences located on the northwest corner of Whittram Avenue and Mulberry Avenue, with the nearest of those homes located 700-feet from the proposed channel crossing under the rail line (where the proposed Project's nighttime work would occur). The next nearest residences from this location are approximately 1,800 feet away from that location. Nighttime lighting would be temporary and directed only on the work area. Such lighting is not considered a source of substantial light that could affect nighttime views in the area. Given the distances of the nearest residences to the location of nighttime work, it is not expected the temporary use of lights during nighttime construction would result in substantial light or glare at these residences.

The proposed Project would not introduce permanent lighting sources and would not include metallic or other surfaces that could introduce a new permanent source of glare. Operation of the proposed Project would include regular inspections and maintenance activities. None of these activities would occur during the nighttime. Therefore, there would be no impacts from lighting or glare sources.

Aesthetics Impact Conclusions:

No potentially significant adverse impacts are identified or anticipated, and no mitigation measures are required.

2. AGRICULTURE AND FORESTRY RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				X
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?				X
c) 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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

(Check ☐ if project is located in the Important Farmlands Overlay):

Environmental Setting

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program (FMMP), which incorporates soil rating data and current land use information to classify categories of Important Farmland. Important Farmland is defined as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. The FMMP also identifies Farmland of Local Importance, as determined by the county, as well as

Grazing Land. In addition to the FMMP, the DOC regulates the Land Conservation Act that enables local governments (counties and cities) to enter into contracts (e.g. Williamson Act contracts) with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use.

According to the DOC's Important Farmland maps, the entire Project site is designated as Urban and Built-Up Land (DOC, 2017). None of the lands within the Project site or the surrounding area are currently under a Williamson Act contract (DOC, 2016).

Regarding local land use designations, the Project site is zoned as Regional Industrial (IR) (San Bernardino County, 2009). None of the Project activities would be located on land that is zoned specifically for agricultural use.

Impact Analysis

a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. According to the DOC, none of the proposed flood control improvements would occur on designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the proposed Project would not convert Farmland to a non-agricultural use and no impact would occur.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact. The proposed Project would not be located on land that is under a Williamson Act contract. Furthermore, the Project site is zoned by the County as Regional Industrial. None of the proposed activities would conflict with existing zoning for agriculture or with a Williamson Act contract. No impact would occur.

c) 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))?

No Impact. The Project site is not located on land that is zoned for forest land or timberland. There would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project site is not located on or adjacent to forest land, and none of the proposed flood control improvements would result in the loss or conversion of forest land. There would be no impact.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed Project activities would occur within an existing flood control system. There are no agricultural uses, designated Farmland, or forest land within or adjacent to the Project site. None of the proposed improvements would involve changes to the environment that could result in conversions to non-agricultural or non-forest uses. There would be no impact.

Agriculture and Forestry Services Impact Conclusions:

No potentially significant impacts are anticipated for agriculture and forestry resources, and no mitigation measures are required.

3. AIR QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

(Discuss conformity with the South Coast Air Quality Management Plan, if applicable):

Environmental Setting

The Project site is located in an unincorporated area of San Bernardino County adjacent to the City of Fontana in southwestern San Bernardino County within the South Coast Air Basin (SCAB) and the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The project area is located within the SCAQMD designated Source Receptor Area 34 (Central San Bernardino County) and the closest ambient air monitoring locations are located in San Bernardino, Redlands, and Fontana. The Project area has a climate that is characterized by hot, dry summers and cool winters with a moderate amount of seasonal precipitation that occurs primarily during the winter months. The average summer (June to September) high and low temperatures in the Fontana area range from 95ºF to 57ºF. Average winter (December to March) high and low temperatures range from 71ºF to 44ºF. The average annual precipitation is approximately 15 inches with over 80 percent of the precipitation occurring between December and March (The Weather Channel, 2019). This inland area is less moderated by the Pacific Ocean, being warmer in the summer and cooler in the winter, than coastal areas of the SCAB. Additionally, air pollutant concentrations are typically higher in this inland area of the SCAB, in comparison with more coastal areas, due to the surrounding mountains blocking downwind pollutant transport from onshore winds and trapping pollutants in this part of the air basin.

Regulatory Setting

Air quality is regulated at the federal (United States Environmental Protection Agency [USEPA]), state (California Air Resources Board [ARB]) and local level (SCAQMD). The SCAQMD is primarily responsible for planning, implementing, and enforcing federal and State ambient air quality standards within the SCAB. The USEPA, ARB, and the local air districts classify an area as attainment, unclassified, or nonattainment of the ambient air quality standards depending on whether the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with these standards; the National and California Ambient Air Quality Standards (NAAQS and CAAQS). The SCAB is currently designated as nonattainment for the State and federal ozone and fine particulate matter (PM2.5) standards, and the State respirable particulate matter (PM10) standard. The SCAB is designated as attainment, attainment/maintenance, or unclassified for all other State and federal standards (USEPA, 2019; ARB, 2019).

As part of its planning responsibilities, SCAQMD prepares Air Quality Management Plans and Attainment Plans as necessary based on the attainment status of the air basins within its jurisdiction. The SCAQMD is also responsible for permitting and controlling stationary source criteria and air toxic pollutants as delegated by the USEPA. The Project, as a construction project with no stationary sources, is not directly subject to many regulations, but the ARB and SCAQMD rules that would apply are:

ARB Statewide Portable Equipment Registration Program (PERP) Regulation (ARB, 2011)

This regulation applies to any portable stationary equipment, such as generators, that may be used during construction. The PERP establishes a uniform program to regulate portable engines and portable engine-driven equipment units. Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts, as long as the equipment is located at a single location for no more than 12 months.

SCAQMD Rules and Regulations (SCAQMD, 2019)

Regulation 2 – Permits. This regulation would apply to any portable stationary equipment not registered under the PERP program that might be used during construction, such as concrete pumps. These stationary and portable equipment would need to obtain permits to construct and operate.

Rule 401 – Visible Emissions. This rule prohibits discharge of air contaminants or other materials that are as dark or darker in shade as designated No. 1 on the Ringelmann Chart, or at an equivalent opacity, for a period or periods greater than three minutes in one hour.

Rule 402 – Nuisance. This rule prohibits discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 403 – Fugitive Dust. The purpose of this rule is to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. The rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area to be visible beyond the emission source's property line. During Project construction, fugitive dust control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth moving, temporary storage pile(s), and unpaved vehicle travel activities. These measures would include watering as necessary to maintain sufficient soil moisture content, vehicle/equipment speed limits when on unpaved areas, bulk material haul truck freeboard or cover dust controls, and sediment track-out controls.

County of San Bernardino Countywide Plan.

In addition, the County of San Bernardino has eight air quality policies in the Natural Resources Element of the General Plan (County of San Bernardino, 2019). None of these policies would require any direct action for completion of the Project, beyond compliance with existing air quality regulations, but two of these policies do relate to Project emissions sources:

Policy NR-1.6: Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.

Policy NR-1.8: Construction and operations. We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.

Impact Analysis

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant. SCAQMD and Southern California Association of Governments (SCAG) have developed air quality management plans (AQMPs) to meet the requirements of the Federal Clean Air Act. AQMPs were developed in 2003, 2007, 2012, and 2016 to address various federal non-attainment and attainment/maintenance planning requirements. These plans are incorporated into the State Implementation Plan by ARB and are then reviewed and approved or disapproved by USEPA. USEPA is currently reviewing the 2016 AQMP.

There are no applicable emissions reduction measures in these plans, that are not already part of approved regulations that apply to the Project. The Project does not include major stationary emissions sources, so very few SCAQMD regulations apply to the Project, and the Project would comply with those applicable SCAQMD rules and regulations. Additionally, the proposed Project would not cause new growth during construction or operation. Therefore, the proposed Project would not conflict with or obstruct the applicable air quality plans.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant. Pollutant emission calculations related to the proposed Project construction activities include the emissions from on-road vehicles and off-road equipment utilized during construction; and include the fugitive dust emissions resulting from earthmoving activities, wind erosion, and vehicle travel. During operations project-direct emissions would come from the vehicles accessing the project site area for inspection and vehicles and equipment used during periodic maintenance events.

The County provided information used to estimate the proposed construction activities. There is no anticipated increase in operation activities, which are comprised of occasional inspection and maintenance events; therefore, no emissions estimate has been completed for operations. Air pollutant emissions from the proposed Project construction and operation were estimated using the SCAQMD approved CalEEMod program that uses ARB on-road vehicle and off-road equipment emissions factor models (EMFAC2014 and OFFROAD), and USEPA AP-42 fugitive dust calculation methods. The specific assumptions regarding the construction task schedule, equipment needs, and vehicle trips are provided in Appendix A (Air Quality Assumptions). The emissions results, which are unmitigated emissions for the purposes of CEQA, only include applicable SCAQMD Rule 403 fugitive dust control requirements, which are assumed to be watering and speed control (15 mph) on unpaved areas. No other mitigation measures such as off-road equipment or on-road vehicle tailpipe emissions mitigation are assumed.

Project Construction

Table 3-1 compares the maximum daily unmitigated construction emissions of the proposed Project with the SCAQMD regional emissions significance thresholds.

Table 3-1. Maximum Daily Unmitigated Construction Emissions

	VOC	CO	NO_X	SO_X	PM10	PM2.5
Vehicle and Equipment Emissions	3.88	27.64	82.43	0.22	0.96	0.82
Fugitive Dust Emissions	--	--	--	--	32.71	3.67

Table 3-1. Maximum Daily Unmitigated Construction Emissions						
	VOC	CO	NO_X	SO_X	PM10	PM2.5
Total Maximum Daily Emissions (lbs/day)	3.88	27.64	82.43	0.22	33.67	4.49
SCAQMD Regional Significance Thresholds (lbs/day)	75	550	100	150	150	55
Exceeds Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

Source: Appendix A; SCAQMD, 2015

Note: Gaseous pollutant (VOC, CO, NOx, and SOx) maximums occur during the overlapping Rock Slope Protection Excavation and Rock Slope Protection Hauling Phases; and particulate pollutant (PM10 and PM2.5) maximums occur during the Fill, Backfill, and Recompaction and Fill, Backfill, Recompaction Internal Trips phases listed in Appendix A.

With the assumed project schedule and activity (See Appendix A), the maximum daily Project construction emissions have been determined to be well below all SCAQMD regional significance thresholds, therefore Project construction regional emissions impacts are less than significant.

Project Operation

There is no anticipated increase in operation activities, which are comprised of occasional inspection and maintenance events; therefore, there would be no emissions increase, and impacts would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant. There are three specific impact issues that have been analyzed in regards to the proposed Project's potential to expose sensitive receptors to substantial pollutant concentrations, as follows:

- Localized short-term criteria pollutant concentration impacts
- Health-risk impacts from toxic air contaminant (TAC) emissions
- Risk for causing incidence of Valley Fever infection

Localized Pollutant Concentration Impacts

SCAQMD Localized Significance Thresholds (LSTs) are used to determine if a project could exceed ambient air quality thresholds for nearby sensitive receptors. The LSTs were established by SCAQMD for each source receptor area (SRA) within their jurisdiction, and represent on-site emission levels that could cause ambient air quality standard exceedances or substantial contributions to existing exceedances at given distances from the site to nearby receptor locations for four pollutants (CO, NO_2, PM10 and PM2.5). There are separate construction and operations thresholds for PM10 and PM2.5. The Project is located in SRA 34 (Central San Bernardino Valley), and the nearest sensitive receptor are two residences located approximately 40 meters from the project's linear work area footprint, both being on the north side of Whittram Avenue. There are no schools, hospitals or other sensitive receptors located within 1,000 meters of the Project area.

Project Construction

Table 3-2 compares the maximum daily unmitigated on-site construction emissions of the Project with the SCAQMD most conservative applicable LSTs. The LSTs were determined using the SCAQMD look up table (SCAQMD, 2009) for SRA 34 with the assumptions of the nearest receptors being located 50 meters from construction areas, where the active construction area at the time of the peak daily on-site emissions, with two construction phases overlapping, is assumed to be five acres in size. Appendix A (Air Quality Assumptions) includes detailed the assumptions for the construction phases, including equipment and fugitive dust emissions assumptions that were used to generate the maximum daily localized (on-site) emissions.

Table 3-2. Maximum Localized Daily Unmitigated Construction Emissions

	CO	NO_X	PM10	PM2.5
Exhaust Emissions	17.06	34.93	0.90	0.83
Fugitive Dust Emissions	--	--	32.71	3.53
Maximum On-site Unmitigated Construction Emissions (lbs/day)	17.06	34.93	33.61	4.36
SCAQMD Localized Significance Thresholds (lbs/day)	2,396	302	44	10
Exceeds Thresholds?	*No*	*No*	*No*	*No*

Source: Appendix A; SCAQMD, 2009
Note: Maximum daily localized emissions for CO and NOx occurs during the Concrete Structures 4 (installing piles) phase and the maximum for PM10 and PM2.5 occurs during the Fill, Backfill and Recompaction and Fill, Backfill, Recompaction Internal Trips phases with all vehicle fugitive dust emissions assumed to occur within the 5-acre active construction area

The maximum unmitigated daily on-site localized Project construction emissions were determined to be below all SCAQMD localized significance thresholds for the worst-case conditions where construction activities are located near residences. Therefore, the Project's localized impacts from criteria pollutants would be less than significant.

Project Operation

There is no anticipated increase in operation activities, which are comprised of occasional inspection and maintenance events; therefore, there would be no emissions increase, and impacts would be less than significant.

Toxic Air Contaminants (TAC) Health Risk Analysis

Emissions of air toxics are comprised of the short-term construction period diesel particulate matter (DPM) emissions. From a localized health risk perspective, the construction emissions impacts are primarily associated with the DPM emissions from the diesel-fueled construction equipment operating at the project site during construction. There are transportation DPM emissions during construction, but those emissions are spread over a large area and are not substantial at the project site. Additionally, the operations activities (maintenance and inspection) and emissions are not forecast to increase and would go down over time as average vehicle and off-road equipment emissions decrease, resulting in no increase in health risk from existing operation conditions.

The on-site DPM emissions during construction would occur over a relatively short period (intermittently over a period of approximately 12 months) in relation to life-time exposure periods; however, DPM has a high cancer potency. Given the fact that there are nearby residential receptors, a health risk assessment of the Project's construction emissions was completed. Health risk assessments can be completed using more conservative

screening level methods to more sophisticated refined modeling methods that include air dispersion modeling techniques. An initial screening level approach from SCAQMD risk assessment guidance was completed by determining a conservative worst-case concentration based on the annual on-site DPM emissions (0.0604 tons per the emissions estimate in Appendix A) multiplied by the SCAQMD published Chi/Q (X/Q) appropriate dispersion factor[1] The maximum concentration value using this screening technique is 0.0604 tons/year x 2.99 = 0.179 µg/m^3. Using this concentration of DPM in the OEHHA/ARB Risk Assessment Standalone Tool (RAST) model[2] these worst-case screening level risks are calculated to be 20.1 x 10^{-6} for cancer and a chronic health index of 0.04[3]. SCAQMD has published TACs health risk significance thresholds of 10 in a million (10 x 10^{-6}) for increased cancer risk and scores of more than 1.0 for chronic and acute hazard indices (SCAQMD, 2015). Therefore, for this very simple screening level approach the cancer risk is determined to be almost two times greater than the significance threshold and the screening level chronic risk is below the significance level.

The initial simplified screening level approach summarized above assumed that all of the project's DPM emission were emitted within 40 meters of the maximum exposed residential receptor. However, the project's emissions are emitted along a linear drainage project area that is approximately 1,000 meters long. A more refined screening level approach can be completed that estimates the emissions at different distance intervals from the maximum exposed residential location (assumed to be either of the two nearest residences on Whittram Avenue). This method includes the same multiplication of the emissions by the SCAQMD published Chi/Q (X/Q) for each of the distance intervals, based on a conservative determination of the location of the emissions for the different construction tasks, to determine a concentration for the emissions at that interval[4]. These interval-based concentrations are then summed to provide a maximum concentration to use for risk determination. Using this approach, the maximum concentration was determined to be 0.043 µg/m^3 (see Appendix A – Air Quality Assumptions). The cancer risk determined for this concentration is 4.8 x 10^{-6}, which is below the significance criteria of 10 x 10^{-6}. The determined risk values using this screening level risk analysis approach are below the TAC health risk significance thresholds.

Valley Fever Risk Analysis

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil, and varies with the season. This disease is caused by inhalation of arthroconidia (spores) of the fungus Coccidioides immitis (CI). The disease is most often symptomatic and diagnosed in adults age 60 and older. However, African Americans, Filipinos, women in the third trimester of pregnancy, and persons whose immunity is compromised are most likely to develop the most severe form of the disease (CDC, 2018). In addition to humans, a total of 70 different species are known to be susceptible to Valley Fever infections, including dogs, cats, and horses; with dogs being the most susceptible (LACPH, 2007).

The project site is located in an area designated as "suspected endemic" for Valley Fever by the Center for Disease Control (CDC, 2016). The annual incidence rates reported from 2001 through 2017, by the State Department of Public Health, indicate that San Bernardino County has relatively low rates (ranging from 1.1 to

[1] For diesel engines (average total rating between 400 and 600 break horsepower [bhp] and use less than 12 hours per day) that have a downwind distance to nearest receptor of 50 meters in the project area's closest guideline meteorological station (Fontana). This value in Table 10.4 A in the SCAQMD guidance manual appendix is 2.99 (units of [µg/m^3]/[ton/year]) (SCAQMD, 2017), based on linear interpolation between the 25 and 50 meter table values.

[2] For the worst-case risks, using the worst-case 0.6-year (~7 month) exposure period for this yearly average concentration, the worst-case risks are calculated starting in the third trimester.

[3] Diesel emissions do not have a substantial acute health risk potential, so acute impacts are not provided in RAST for diesel emissions, and the Project's acute health impacts from TACs are considered to be less than significant

[4] This still represented a conservative screening level analysis. A more refined analysis using dispersion modeling would show reduced receptor concentrations and impacts than provided by the screening level analyses performed.

3.9 cases per 100,000 population) of reported Valley Fever infections, with reported case rates being well below the state average for each year reported (CDPH, 2019).

Substantial exposure to the CI spores could cause construction workers and area residents to contract the disease. The primary way to avoid Valley Fever, which is not transmittable person to person, is to limit exposure to the CI spores. Additionally, as noted above the County does not have a high incidence rate for Valley Fever infection, so a substantial presence of CI spores at the project site, while unknown, is certainly questionable. Therefore, Project caused exposure of CI spores to the area's residential population is expected to be minimal. Also, the required fugitive dust controls (SCAQMD Rule 403 compliance) would provide significant control of the fugitive dust emissions during construction. The impacts during operation periodic maintenance events would also need to comply with SCAQMD Rule 403 dust control requirements. Given low likelihood of substantial residential exposure, with the implementation of the SCAQMD Rule 403 fugitive dust control measures, it is concluded that the potential risk from Valley Fever infection due to the proposed Project is less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant. Potentially objectionable odors would be temporarily created during the Project's construction activities, primarily from paving operations required to repave Calabash Avenue. However, these asphalt odors would occur only for two days and these are odors that are not overly offensive and asphalt odors are regularly experienced in an urban/suburban setting. Other minor odor sources during construction and operation include tailpipe emissions from off-road equipment and on-road vehicles used during construction. These minor odor sources would not be expected to pose a significant concern.

The Project would not cause a large amount of airborne dust, given compliance with SCAQMD Rule 403 fugitive dust control requirements, or other emissions that could cause a nuisance or otherwise adversely affect a substantial number of people surrounding the Project site.

Air Quality Impact Conclusions:

No significant adverse impacts are identified or anticipated and no mitigation measures are required.

4. BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

☒ Check if project is located in the Biological Resources Overlay or Contains habitat for any species listed in the California Natural Diversity Database

Environmental Setting

This section of the IS describes biological resources at the Project site and evaluates the Project's potential impacts to biological resources, including jurisdictional waters, and identifies feasible mitigation for any impacts that may be significant. The analysis is based on a Biological Resources Technical Report (BRTR) and A Jurisdictional Delineation (JD), both prepared by Aspen Environmental Group (Aspen) in October 2019 (Appendices B and C). The BRTR includes a literature review of special-status biological resources reported by the California Natural Diversity Database (CNDDB) for the Cucamonga Peak, Devore, Fontana, and Guasti United States Geological Survey (USGS) 7.5-minute topographic quad. It also includes a review of the California Native Plant Society (CNPS) On-line Electronic Inventory (CNPS, 2019) and the Consortium of California Herbaria data (CCH, 2019). In addition, the BRTR describes field surveys conducted by Justin M. Wood (of Aspen) in April 2019 and all survey results. Finally, the BRTR identifies special-status biological resources either occurring or potentially occurring on the Project site. The JD reports field surveys conducted by Wood during the April 2019 site visit and identifies the type and extent of jurisdictional waters and wetlands present within the Project site.

Impact Analysis

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. The Project has a potential to adversely affect burrowing owl (*Athene cunicularia*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), San Diego desert woodrat (*Neotoma lepida intermedia*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and Cooper's hawk (*Accipiter cooperii*), which are all special-status species that have a potential to be present within the Project site. If present on the Project site, the Project would have potential to cause disturbance to one or more of these species. With implementation of the minimization measures below the Project does not have a potential to significantly impact any special-status species.

Listed and Candidate Plant and Wildlife Species

No state or federally listed plants or animals were observed on the Project site. No state or federally listed plants or animals have at least a moderate potential to be present.

Other Special-status Species

No special-status plants were observed on the Project site. No special-status plants were determined to have at least a moderate potential to be present (see Table 2 in Biological Resources Technical Report (Aspen, 2019) Appendix B). The Project is not expected to impact any special-status plants.

No special-status animals were observed on the Project site. Several non-listed special-status species have at least a moderate potential to be present but were not observed. These include
burrowing owl (*Athene cunicularia*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), San Diego desert woodrat (*Neotoma lepida intermedia*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and Cooper's hawk (*Accipiter cooperii*). These species are described in more detail in the BRTR (Appendix B).

Project activities have a potential to kill, displace, or disturb burrowing owl. These impacts, should they occur, would be significant. Burrowing owls may be found on the site during the nesting season (February 1 to August 31) or outside the nesting season. Destruction of burrowing owls or active burrowing owl burrows would be significant at any time of year. Any significant impacts to burrowing owls can be reduced or avoided with implementation of the mitigation measure BIO-1 which requires avoidance of burrowing owls by establishing a buffer area around active burrows or (for non-nesting burrowing owls) excluding them from the burrow. The Project's potential impacts to burrowing owl would be less than significant within mitigation incorporated.

Nesting Birds

The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, and 3513 prohibit take of migratory birds, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting). Although no nesting birds were observed during the survey in April of 2019, common birds such as killdeer (*Charadrius vociferus*), black phoebe (*Sayornis nigricans*), and mallard (*Anas platyrhynchos*) are likely to nest on the Project site. Project activities that take place during the nesting season could destroy nests or disturb nesting birds. These impacts could be significant if an active nest is destroyed. Any significant impacts to nesting birds can be reduced or avoided with implementation of the mitigation measure BIO-2 which requires (1) avoidance of habitat disturbance during nesting season, (2) a pre-construction clearance survey of

the Project site during bird nesting season; (3) identification of buffer areas around any bird nest within or near the Project site; (4) on-site monitoring during Project activities.

The Project site provides suitable foraging habitat for Cooper's hawk. If it is foraging on the Project site, Project activities may cause them to temporarily leave the site. Project impacts to this species would be negligible because large areas of similar foraging habitat are available in the surrounding lands and they would have the ability to temporarily leave the Project site.

Mitigation Measures:

BIO-1 **Burrowing Owl.** The San Bernardino County Flood Control District (District) will assign a qualified biologist to conduct pre-construction surveys for burrowing owl and related tasks listed below. A "qualified biologist" is defined as a person with appropriate education, training, and experience to conduct such surveys and monitor Project activities. The Project Biologist will survey planned disturbance areas within the site in advance of all Project activities to determine burrowing owl presence or absence. If burrowing owls are present on the site outside of the nesting season (September 1 to January 31) and construction activities are planned at the occupied burrow or within 300 feet, then the California Department of Fish and Wildlife (CDFW) will be consulted and the Project Biologist may be authorized to exclude the burrowing owls from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012), or to monitor project activities to ensure no disturbance to the occupied burrow. If burrowing owls are present in or near planned work areas on the site during nesting season (February 1 through August 31), then Project activities will be either be postponed until nesting is completed, or the Project Biologist will monitor activities in the vicinity of the burrowing owl and will establish a buffer as needed to avoid direct or indirect impacts to the burrowing owls or occupied burrows.

BIO-2 **Nesting birds.** Project activities that would disturb soil or vegetation will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 1 through August 31), or after a pre-construction nesting bird survey has confirmed that no active nests are located within the area to be disturbed. The Project Biologist will determine if birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the Project Biologist will designate appropriate avoidance buffers around nests to protect nesting birds. No Project related disturbance will be allowed within these buffers. The Project Biologist will remove the buffers and allow Project activities to continue once the nestlings have fledged or once the nest is no longer active.

BIO-3 **Pre-construction Surveys**. Prior to the start of any Project activities that would disturb soils or vegetation, the Project Biologist will survey the work area to determine if coastal whiptail, San Diego desert woodrat, San Diego black-tailed jackrabbit, or any other special-status species are present. Special-status reptiles will be relocated out of harm's way. San Diego black-tailed jackrabbit will be allowed to leave the site on their own, and San Diego woodrat will be actively encouraged to leave the site by deconstruction of their middens and exclusion fencing, if needed. The Project Biologist will be authorized by the County to temporarily halt Project activities if needed to prevent harm to any other special-status species.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. Project activities are not expected to result in permanent or temporary impacts to natural communities of special concern or any regulated riparian habitat. Therefore, no impacts are expected, and no mitigation is required.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant. There are 1.1 acres of federally jurisdictional non-wetland water of the United States on the Project site. There is also a total of 5.1 acres of CDFW jurisdictional waters of the state present on the Project site that are regulated under section 1600 of the California Fish and Game Code. The Project is expected to permanently impact 0.3 acres of non-wetland water of the United States and 2.5 acres of CDFW jurisdictional waters of the state. The Project is also expected to temporarily impact 0.8 acres of non-wetland water of the United States and 2.6 acres of CDFW jurisdictional waters of the state. The non-wetland water of the United States and CDFW jurisdictional waters of the state within the Project site are highly developed and urbanized. The Project site is located within an industrial area and these areas provide very little wildlife habitat or stream function. The loss of these features would likely be considered less than significant because of their location and condition. Regardless of the insignificance of the loss of these features, any impacts to these jurisdictional features would require the San Bernardino County Flood Control District to obtain regulatory permits from the following agencies:

- United States Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act (CWA);
- CDFW, under section 1600 of the California Fish and Game Code; and
- Santa Ana River Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA.

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

Less Than Significant with Mitigation Incorporated. Wildlife may use the Project site on occasion to move around the general area or to travel along flood control channels in the vicinity. The Project site is located in a highly urbanized area that is not expected to support a significant wildlife population. Regardless, the Project would not erect permanent or long-term barriers to wildlife movement, although there would be some short-term interruption of potential movement during Project activities. These short-term impacts would not prevent fish or wildlife access to important resources or habitat areas and therefore would be less than significant.

Wildlife nursery sites such as shrubs for birds; bare ground for ground-nesting birds; and burrows or other nesting areas for ground-dwelling vertebrates are present. Project activities will remove vegetation that birds could nest in and will also disturb bare ground and burrows that other wildlife could utilize for nesting. Due to the poor quality of the habitat and availability of similar habitat surrounding the Project area, any loss of habitat would be negligible and less than significant.

There is a potential for nesting birds to be present on the Project site and to be impacted by Project activities. Mitigation Measure BIO-2 would require pre-construction nesting bird surveys on the Project area and would require avoidance of nests until the nestlings fledge or the nest is no longer active. Nesting bird buffers would be established, as needed to further avoid impacts to any nesting birds should they be present during Project activities. By implementing BIO-2, the project would avoid or minimize disturbance to nesting birds any potential effects to these wildlife nursery sites would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Project site is not located within any designated open space or wildlife corridors identified in the County of San Bernardino General Plan Open Space Element (County of San Bernardino, 2007). The Plant Protection and Management Section (Section 88.01.070) of the County of San Bernardino County Development Code regulates the removal of native trees with a minimum size of six inch or greater stem diameter measured 4.5 feet above natural grade level. The Plant Protection and Management Section (Section 88.01.080) of the County of San Bernardino County Development Code regulates the removal of riparian plants within 200 feet of a stream bank. These Development Codes do not apply to the San Bernardino County Flood Control District and therefore the Project would have no impacts to any local policies or ordinances protecting biological resources.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

NO IMPACT. The Project site is not located within an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or State habitat conservation plan. No impacts would occur.

Biological Resources Impact Conclusions:

With the implementation of Measures BIO-1 through BIO-3, no significant impacts to Biological Resources are expected to result from the Project.

5. CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?		X		
b) Cause a substantial adverse change I the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

(Check if project is located in the Cultural ☐ overlays or cite results of cultural resource review)

Environmental Setting

The following analysis is based on *Phase I Cultural Resources Inventory of the West Fontana Channel Improvement Project City of Fontana, San Bernardino County, California,* a report prepared by San Bernardino County staff (Hatheway and Yorck 2018). A record search of the Project area and a 1-mile buffer was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. Four previous projects have been conducted within the record search area, including a recent effort by McKenna in 2016 for the Proposed Project. A total of nine resources were recorded in the record search area, two of which overlap with the Project area. All of these resources are associated with the historic era. An intensive field survey of the Project area was conducted 2018. Three new historic-era resources were identified and recorded during this effort. In total, five resources are or were present within the Project Area. These resources, their eligibility for the California Register of Historical Resources (CRHR), and potential Project impacts are presented below.

P-36-004131/ CA-SBR-004131H - Kaiser Steel Plant:
The Kaiser Steel Plant was built in the early 1940's by Henry J. Kaiser to meet the steel manufacturing needs of the Department of Defense in War II, particularly pertaining to the need for ships and shell production. After the War, the Kaiser Steel Plant continued to manufacture of large-scale steel goods, making it a vital part of the local economy. Site P-36-004131 was listed as a California Point of Historical Interest in 1975 but was demolished in the 1990's to make way for the construction of the California Speedway. The Plant was documented as being no longer extant in 2008. As this resource no longer exists, it cannot be eligible for the CRHR and cannot be impacted by the Project.

P-36-006847/ CA-SBR-006847H - Atchison, Topeka and Santa Fe Railroad Segment (AT&SF): A segment of the AT&SF, now known as the Burlington Northern Santa Fe (BNSF) Railway passes through the Project area. This resource is a portion of the Kite–Shaped Track, developed by the California Southern Railway Company, between 1880 and 1892. The segment in the Project area was built in 1887. A remnant portion of an historic AT&SF concrete bridge abutment at the BNSF Railway & West Fontana Channel undercrossing was identified during the field survey. An exact date of construction for this feature is unknown, but is estimated at anywhere from 1906 to the mid-1940s. Segments of this resource have been recommended both eligible and not eligible for the CRHR and NRHP, however the segment in the Project area has not been evaluated. The resource was not evaluated due to the fact that the evaluation of such a large resource, extending between Los Angeles and San Bernardino, is beyond the scope of this Project. In addition, the existing at-grade alignment is vertically outside of the Project area and will not be subject to direct impacts. Temporary "shoe-flys" or switches may be constructed by the BNSF Railroad, however the tracks themselves have been altered many times as part of historic track improvements and upgrades and/or maintenance, and the temporary nature of the "shoe-fly" improvements shall not impact the historic nature and character of the Railroad alignment itself. In summary, the Project would not impact this resource.

1-803-4A - Banana Basin, 1-809-6B - West Fontana Channel, and 1-811-3A & 4A – Hickory Basin:
These three flood control features are functionally and historically related and so they are described together. The first flood control improvements within the APE were made circa 1887 during construction of the AT&SF railroad alignment. None of these historic flood control improvements remain. Additional historic flood control improvements on the north side of the AT&SF/BNSF Railway railroad tracks were made in the 1940s and 1950s as part of the construction of the historic Kaiser Steel Plant. None of these flood control improvements remain intact, having been repeatedly upgraded between the1960 and the late-1980s.

The Banana Basin served as a pass-through drainage and/or collection "sump" from 1887 until around 1942. In April 1942, the County of San Bernardino Flood Control District built a series of flood control improvements in association with the construction of the Fontana Kaiser Steel Plant. By 1966, the crude waterway/channel extending to the east of Banana Basin had been substantially improved. By 1994 Banana Basin was connected so as to allow the inflow of waters from the West Fontana Channel from the east and on the north side of the AT&SF RR alignment.

Today's West Fontana Channel (originally known as San Sevaine Channel) from Banana Basin to the railway bridge undercrossing to the west was built by the County of San Bernardino in 1942. It was originally part of a simple basin (Banana Basin), a gravel pit, and/or a sump and waterway/channel and dike extending to the west on the north side of the RR alignment, which directed waters away from the Kaiser Steel Plant property by directing those waters under the first railway bridge to the west of the Kaiser Steel Plant. This basin and channel were not yet connected to any other channel or County flood control facility to the east. Additional improvements were made to West Fontana Channel as late as the mid-1990s.

As described above, the first flood control improvements directly impacting what is now the Hickory Basin property took place in 1942. In 1954 a waterway with dikes were present at the current location of Hickory Basin. In 1966 a large gravel pit was present. The County of San Bernardino built the current Hickory Basin in 1987.

Like other flood control facilities in the San Bernardino Valley, these three flood control features are not recommended eligible for the NRHP or the CRCR because the majority of components 50 years old or older have been destroyed by floods or structural improvements associated with previous projects which caused substantial adverse change in the significance of the resource. Finally, these resources are not associated with significant historic individuals and are not considered engineering and or design features of significance. In summary, these resources are not eligible for the CRHR, and therefore cannot be impacted by the Project.

Impact Analysis

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less Than Significant with Mitigation Incorporated. No known resources eligible for the CRHR or NRHP are present within the Proposed Project area. One unevaluated resource, P-36-006847/ CA-SBR-006847H - AT&SF segment is present but would be avoided, therefore no impacts are anticipated. However, it is possible that previously unknown buried resources could be discovered and damaged or destroyed during ground disturbing work, which would constitute a significant impact absent mitigation. Therefore, Mitigation Measure CUL-1 is recommended to reduce potential impacts to unanticipated historical resources to a less-than-significant level.

Mitigation Measures:

CUL-1 Management of Unanticipated Historical Resources or Unique Archaeological Resources.

Should unanticipated or inadvertent surface and/or subsurface prehistoric or historic archaeological resources, built environment, and/or tribal cultural resources, appear to be encountered during construction or maintenance activity associated with this project, then all work must halt within a 100-foot radius of the discovery until a qualified professional can evaluate the discovery. If the finds are archaeological or historic in nature, then an archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and/or historic archaeology have evaluated the significance of the find. This archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following shall apply, depending on the nature of the find:

A. If the professional archaeologist determines that the find *does not* represent a cultural resource, then work may resume immediately and no agency notifications are required.

B. If the professional archaeologist determines that the find *does* represent a cultural resource from any time or cultural affiliation then, depending on the nature of the discovery, appropriate treatment measures shall be developed.

C. If the find represents a Native American or potentially Native American resource that does not include human remains, which may or may not include a Tribal Cultural Resource, then the archaeologist shall consult with appropriate Tribe[s] on whether or not the resource represents either a Tribal Cultural Resource or a Historical Resource, or both, and, if so, consult on appropriate treatment measures. Preservation in place is the preferred treatment, if feasible. Work cannot resume within the no-work radius until the County, through consultation as appropriate, determines that the site either: 1) is not a Tribal Cultural Resource or Historical Resource; or 2) that the treatment measures for the Tribal Cultural Resource or Historical Resource have been completed.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant with Mitigation Incorporated. No known unique archaeological resources are present within the Project area. However, it is possible that previously unknown unique archaeological resources could be discovered and damaged or destroyed during ground disturbing work, which would constitute a significant impact absent mitigation. Therefore, Mitigation Measure CUL-1 is recommended to reduce impacts to unique archaeological resources to a less-than-significant level.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant with Mitigation Incorporated. No known human remains are present within the Project area. However, it is possible that previously unknown human remains could be discovered and damaged or destroyed during ground disturbing work, which would constitute a significant impact absent mitigation.

Therefore, Mitigation Measure CUL-2 is recommended to reduce impacts to unique archaeological resources to a less-than-significant level.

Mitigation Measures:

CUL-2 Management of Unanticipated Human Remains.

If the find during construction or maintenance activity includes human remains, or remains that are potentially human, the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per §7050.5 of the Health and Safety Code). The Coroner's Office may be contacted at Coroner's Division, County of San Bernardino, 175 South Lena Road, San Bernardino, California 92415 or by calling 909.387.2978. The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American, the Coroner will notify the NAHC by telephone within 24 hours. The NAHC will then immediately notify the person it believes to be the Most Likely Descendant (MLD) of the remains (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours, from the time access to the property is granted, to make recommendations concerning treatment of the remains, in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the County, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

If the Coroner determines that the remains are not of Native American origin and that the remains are from the historic-era, the County Coroner will make a recommendation as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code has been addressed and an authorization to proceed is issued by the County Coroner.

Cultural Resources Impact Conclusions:

No significant adverse impacts to historical resources are identified or anticipated. If a previously unidentified cultural resource is identified during ground-disturbing activities, implementation of Mitigation Measures CUL-1 and CUL-2 would reduce impacts to a less-than-significant level.

6. ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Environmental Setting

State CEQA Guidelines. The California Natural Resources Agency adopted certain amendments to the State CEQA Guidelines effective in 2019, to change how CEQA Lead Agencies consider the environmental impacts of energy use. The State CEQA Guidelines, §15126.2(b) requires analysis of a project's energy use, in order to assure that energy implications are considered in project decisions. CEQA requires a discussion of the potential environmental effects of energy resources used by projects, with particular emphasis on avoiding or reducing the "wasteful, inefficient, and unnecessary consumption of energy" (see Public Resources Code section 21100(b)(3)). The analyses contained in this section complies with this regulatory requirement.

All construction- and operation-related activities would involve use of energy-consuming equipment and processes. This analysis presents a qualitative discussion of the proposed project's energy use. As set forth in the State CEQA Guidelines, Appendix F: Energy Conservation, the goal of conserving energy implies the wise and efficient use of energy including:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Lead agency actions that are consistent with these goals would not be likely to cause an energy-related impact. The energy impact analysis emphasizes avoiding or reducing inefficient, wasteful and unnecessary consumption of energy resources, and whether the project would result in a potentially significant environmental impact due to inefficient, wasteful, and unnecessary consumption of energy.

The Project would directly consume motor fuels from on-road vehicles (passenger vehicles, delivery vehicles, and heavy haul trucks) and off-road equipment during construction and operation. These fuels would primarily be diesel and gasoline, but natural gas may also be used. Motor vehicle fuels, primarily gasoline and diesel fuel, would come from public and private refueling stations (aka "gas stations") located throughout the Project area, or in the case of the construction period off-road equipment these fuels would be delivered directly to the site for equipment refueling. Additionally, some of the energy used by on-road vehicles, commuting vehicles, during construction and operation could be in the form of electrical energy. However, the Project would not otherwise use electricity during construction or operation. Electricity for vehicle use Project operations would come from the SCE transmission system that serves 15 million people in central, coastal and southern California, excluding the City of Los Angeles and certain other cities, are served by the SCE transmission system (CAISO, 2018).

Regulatory Setting

Energy efficiency is regulated at the federal, state, and local levels. For California, many of the federal energy efficiency standards are repeated in the California regulations. The State of California's Code of Regulations (CCR) has several building standards (Title 24) and appliance efficiency regulations (Title 20), however none of these regulations apply to infrastructure projects such as the proposed Project which does not include the construction of habitable structures or have permanent on-site energy consuming operating equipment, such as pumps.

There are no standards that would directly apply to the Project related to the sources that would consume energy, on-road vehicles and off-road vehicles. There are federal and state standards related to fuel efficiency that apply to various types of on-road vehicles that would indirectly apply to the Project and personal commuting vehicles used during project construction. While there are emissions reduction regulations related to off-road equipment there are no regulations specifically related to fuel or energy consumption efficiency. However, there are construction waste recycling policies and regulations that are related to the State's Climate Change Scoping Plan and the County's Renewable Energy and Conservation Element into the General Plan (County of San Bernardino, 2017). Compliance and conformance with these waste recycling regulations and policies is discussed in the Greenhouse Gas Emissions subsection (subsection 8.).

Impact Analysis

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Less Than Significant. The Project would consume energy in the form of on- and off-road vehicle fuel during Project construction and operation. The Project is designed to be efficiently constructed and future operation activities would be completed as efficiently as possible. Indirectly, the Project is designed to improve the West Fontana Channel system convey 100-year storm flow, which would reduce future flood related damage and demolition reconstruction needs (see Section 1.2) and would reduce future energy consumption that would be required without the Project. Therefore, the Project would not include the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant. The Project does not include renewable energy, restrict renewable energy projects, or restrict the use of renewable energy. The Project does not include energy consumption sources during construction or operation that are directly subject to state or local energy efficiency plans. Indirectly, on-road vehicles used during the Project's construction and operation would have to meet the ongoing federal and state fuel efficiency requirements. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Energy Impact Conclusions:

No significant adverse impacts are identified or anticipated and no mitigation measures are required.

7. GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury death involving?				X
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii. Strong seismic ground shaking?			X	
iii. Seismic-related ground failure, including liquefaction?			X	
iv. Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?		X		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

(Check if project is located in the Geologic Hazards ☐ or Paleontologic Resources ☐Overlay District):

Environmental Setting

The Project site is located within the Transverse Ranges geomorphic province of California which is characterized by generally east-west trending mountain ranges and valleys. The Project area is located near northeastern portion of the Chino Basin, which is a sedimentary basin formed by tectonic activity along major fault zones in the area. It is bounded on the north by the San Gabriel Mountains and Cucamonga fault zone, on the east by the San Jacinto fault zone, on the south by the Santa Ana River, and on the west by the Chino and Puente Hills. The Project site is on flat to very gently sloping alluvial fans from the Project alignment.

Superficial geologic materials underlying the Project site consist primarily of very young and young alluvial fan deposits (USGS, 2003). The very young alluvial fan deposits are unconsolidated and undissected deposits of sand, gravel, and boulders on active and recently active alluvial fans. The young alluvial valley deposits are unconsolidated to slightly consolidated and slightly dissected to undissected silt, sand, pebbly cobbly sand, and bouldery alluvium (USGS, 2003). The very young and young alluvial deposits have slight to no soil development. Soil develops from weathering of the underlying geologic material and chemical and mechanical breakdown of deposited materials such as biologic material and windblown sediments; the extent of development depends on

climate, topography, biologic factors, and time (the older the geologic unit the more time a soil has had to develop). Examination of sediments in the lowest part of Banana Basin showed some development of pedogenic calcium carbonate, as well as rhizoconcretions (plant root fossils) cemented by calcium carbonate. These indicate some soil development, as well as an age in excess of 10,000 years. Radiocarbon dates of caliche deposits show that it requires at least 10,000 years to develop substantial amounts in soils of arid regions of southern California (Schlesinger, 1985; Paleo Resource Consultants, 2004; Stewart and Hakel, 2017; Stewart et al., 2012). Significant paleontological resources have been recovered from Pleistocene fossil soils in the area of Fontana, including extinct animals recovered from localities near the project area in Quaternary older alluvium (which underlies the young alluvial fan deposits at the surface, such as saber-toothed cat, mammoth, mastodon, bison, and camel. Other localities in similar sediments in San Bernardino and Riverside counties have also produced ground sloths, dire wolves, and horses (Raum et al., 2014; Stewart and Hakel, 2016, 2017, 2019; Stewart et al., 2012).

Two soil unit are mapped underlying the proposed Project components, Tujunga loamy sand and Tujunga gravelly loamy sand. Tujunga soils are formed in alluvium derived from granitic sources on alluvial fans and alluvial plains. These soils have low shrink-swell (expansive) potential, low potential for erosion, and limited to no organic topsoil (NRCS, 2019).

The West Fontana Channel is located in a seismically active area of Southern California, and in close proximity to numerous active and potentially active fault zones. Active faults near to the Project site include the Cucamonga, San Jacinto, San Andreas, Chino, and Elsinore fault zones (USGS, 2019). Table 7-1 summarizes the distance to the project site, estimated magnitude, and the percent probability of an M>6.7 earthquake in the next 30 years (starting 2014) for the faults in the proposed Project vicinity.

Table 7-1. Fault Distances to Project Site

Fault Name	Distance to Site (miles)	Estimated Maximum Earthquake Magnitude[a, b]	30-Year Probability of M>6.7 Earthquake (%)[c]
Cucamonga	5.0	6.7	2
San Jacinto	8.3	7.1-7.8	9
San Andreas	11.6	6.9-8.0	53
Chino	14.4	6.8	1
Elsinore	18.4	7.0-7.8	5

Notes:
a. Fault-to-site distances and Maximum Earthquake Magnitude based 2008 National Seismic Hazard Maps: Fault Parameters website (USGS 2019)
b. Magnitude range based on earthquake occurring on one or more segment of a fault.
c. 30-year probability of Mw ≥ 6.7 earthquake based on 2014 WGCEP (WGCEP 2015).

The intensity of earthquake-induced ground motions can be described using peak site accelerations (PGAs), represented as a fraction of the acceleration of gravity (g) (980 cm/sec^2). Peak ground acceleration is the maximum acceleration experienced by a particle on the Earth's surface during an earthquake. The Project site would be subject to PGAs of approximately 0.8 g with a 2 percent in 50 years probability of exceedance (a return interval of 2,475 years for a maximum considered earthquake), which corresponds to strong ground shaking in the event of an earthquake on one of the nearby faults (CGS, 2019).

Liquefaction is the phenomenon in which saturated granular sediments temporarily lose their shear strength during periods of earthquake-induced strong ground shaking. The susceptibility of a site to liquefaction is a function of the depth, density, and water content of the granular sediments and the magnitude and frequency of earthquakes in the surrounding region. Saturated, unconsolidated silts, sands, and silty sands within 50 feet of the ground surface are most susceptible to liquefaction. The Project site is underlain by loose unconsolidated sandy alluvial sediments. Groundwater in the project area is generally greater than 400 feet below ground surface (DWR, 2019), although perched zones may be present, and levels may vary seasonally and in wet years.

Impact Analysis

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. Although the Project site is located in a very seismically active area of Southern California, no known active or Alquist-Priolo zoned faults cross or are in the immediate vicinity of the Project site. The closest known active faults are the Cucamonga fault zone, and the San Jacinto fault zone, located approximately 5.0 miles north and 8.3 miles northeast of the Project site, respectively.

ii. Strong seismic ground shaking?

Less Than Significant. The Project site is located in a seismically active area that may experience one or more earthquakes in its lifetime. The Project site may undergo strong ground shaking in the event of a large earthquake on one or more of the local or regional faults. However, proposed Project structures would be designed and constructed per the 2016 California Building Standards Code (Title 24 of the California Code of Regulations), which requires appropriate seismic design. As the proposed Project does not include any habitable structures and would be designed and constructed in compliance with State design guidelines, there would be a less-than-significant impact related to adverse effects from strong seismic ground shaking.

iii. Seismic related ground failure, including liquefaction?

Less Than Significant. The Project site is underlain by loose unconsolidated sandy alluvial sediments. Groundwater in the Project area is generally greater than 300 feet below ground surface (DWR, 2019), although levels may vary seasonally and in wet years. The Project site is not located in a mapped liquefaction susceptibility area on the County of San Bernardino Geologic Hazard Overlays (County of San Bernardino, 2007). The Project site is unlikely to be subject to liquefaction. Additionally, the Project structures would be designed and constructed per the 2016 California Building Standards Code (Title 24 of the California Code of Regulations), which requires appropriate seismic design. Therefore, there would be a less-than-significant impact related to adverse effects from liquefaction or liquefaction related phenomena.

iv. Landslides?

Less Than Significant. The proposed Project is located in relatively flat to gently sloping area and would not be subject to landslides. Additionally, the Project site is not included in a mapped landslide susceptibility area on the County of San Bernardino Geologic Hazard Overlays (County of San Bernardino, 2007). Therefore, it is unlikely that the Project site would be subject to earthquake induced landslides resulting in a less- than-significant impact.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant with Mitigation Incorporated. The soils underlying the Project area have limited to no topsoil, however, construction related ground disturbance consisting of grading, excavation, and construction of

access roads could increase the potential for erosion. The movement of equipment and materials during construction could destabilize the soil surface and increase erosion potential from water and wind. However, as the proposed Project would disturb a surface area greater than one acre it would be required to obtain, under Clean Water Act regulations, a National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity. Compliance with the NPDES would require that the District submit a project-specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP (see Mitigation Measure HYD-1) would require development and implementation of best management practices (BMPs) to identify and control erosion, which would reduce the potential for construction to trigger erosion. Operation and maintenance activities would primarily be related to trash and graffiti removal, vegetation management, and limited sediment removal and would not trigger soil erosion. Therefore, there is a less-than-significant impact related to soil erosion or destruction of top soil.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant. As noted above, the Project site is located on flat to gently sloping terrain and would not be subject to landslides, and the Project site is unlikely to be subject to liquefaction or liquefaction related phenomena such as lateral spreading. The Project would be designed per California Building Code Title 24 which requires appropriate seismic design. Therefore, impacts would be less-than significant.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Less Than Significant. The soils underlying the Project area, Tujunga, are sandy soils formed in alluvium and have low shrink-swell (expansive) potential (NRCS, 2019). Therefore, there is a less-than-significant impact from the potential for damage from expansive soils.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

No Impact. The proposed Project does not include installation of septic tanks or alternative wastewater disposal systems. No impact would occur.

f) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less Than Significant with Mitigation Incorporated
The sediments in the lower part of Banana Basin are old enough to produce significant paleontological resources. If any inadvertent or unanticipated finds are discovered during grading and excavation of sediments in the shallow or lower part (20 or more feet below existing grade) of the basin, monitoring would reduce the impact to a less-than-significant level. Implementation of Mitigation Measure GEO-1 described below would evaluate and protect discoveries of unique paleontological resources or unique geologic features, thereby reducing this impact to less than significant.

Mitigation Measures:

GEO-1 Incidental Discovery of Paleontological or Geological Resources. If any inadvertent or unanticipated finds in the shallow or lower part (20 or more feet below existing grade) of the basin during construction appear to be paleontological in nature, then a qualified paleontological Principal Investigator shall evaluate the finds and prepare a Paleontological Mitigation and Monitoring Plan (PMMP). The PMMP shall include a plan to address unanticipated Paleontological finds during construction. It shall also contain provisions for monitoring and sampling of sediments in the Banana Basin when work is more than 20 feet below street surface. The PMMP shall be prepared in accordance with all appropriate California Environmental Quality Act (CEQA) and County of San Bernardino guidelines. The PMMP shall then be adhered to for the remainder of any land disturbing activities for the project. If significant paleontological resources are recovered, a final report shall be written describing the geologic context of the finds, the methods employed while monitoring, the identification of the resources recovered, and the repository where the finds are curated.

Geology and Soils Impact Conclusions:

Construction related ground disturbance consisting of grading, excavation, and construction of access roads could increase the potential for erosion. Mitigation Measure HYD-1 would require development and implementation of BMPs to identify and control erosion, reducing impacts to a less-than-significant level. If a previously unidentified paleontological resource is identified during ground-disturbing activities, implementation of Mitigation Measure GEO-1 would reduce impacts to a less-than-significant level.

8. GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Environmental Setting

While climate change has been a concern since at least 1998, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), efforts devoted to greenhouse gas (GHG) emissions reduction, and climate change research and policy have increased dramatically in recent years.

Global climate change (GCC) is expressed as changes in the average weather of the Earth, as measured by change in wind patterns, storms, precipitation, and temperature. Much scientific research has indicated that the human-related emissions of GHGs above natural levels are likely a significant contributor to GCC.

Greenhouse gases are gases that trap heat in the atmosphere and are emitted by natural processes and human activities. Examples of GHGs that are produced both by natural processes and by industry include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The accumulation of GHGs in the atmosphere regulates the earth's temperature. GHGs have varying amounts of global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. By convention, CO_2 is assigned a GWP of 1. In comparison, CH4 per the IPCC's Fourth Assessment Report has a GWP of 25, which means that it has a global warming effect 25 times greater than CO_2 on an equal-mass basis. To account for their GWP, GHG emissions are often reported as CO_2e (CO_2 equivalent). The CO_2e for a source is calculated by multiplying each GHG emission by its GWP, and then adding the results together to produce a single, combined emission rate representing all GHGs.

Because the direct environmental effect of GHG emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans, the area of influence for GHG impacts associated with the proposed Project would be global. However, those cumulative global impacts would be manifested as impacts on resources and ecosystems in California.

California's Fourth Climate Change Assessment describes how global climate change would affect the environment in California. The impacts described in the assessment reports, including the Statewide Summary Report (Bedsworth et al., 2018) and the Los Angeles Summary Report (Hall et al., 2018), include changing sea levels, changes in snow pack and availability of potable water, changes in storm flows and flood inundation zones, health and other impacts from extreme temperature events, increases in wildfires, and other impacts.

Regulatory Setting

All levels of government have some responsibility for the protection of air quality, and each level (federal, State, and regional/local) has specific responsibilities relating to air quality regulation. Regulation of GHGs is a relatively new component of air quality. Several legislative actions have been adopted to regulate GHGs on a federal,

State, and local level. There are currently no federal regulations that would apply directly to the Project, and most State and local GHG emissions reduction regulations, policies, and goals apply to new structure construction, appliance efficiency, electricity generation and use efficiency, etc. that do not apply to the Project. However, there are a few State and local greenhouse gas emissions reduction regulations, goals, and policies that would apply directly or indirectly to the Project's construction and operation.

California Governor's Office of Planning and Research, Guidelines on GHG (SB 97)

In late December 2009, the California Natural Resources Agency adopted certain amendments to the State CEQA Guidelines for reviewing the environmental impacts of greenhouse gas emissions to implement the California Legislature's directive in PRC Section 21083.05 (enacted as part of SB 97 (Chapter 185, Statutes, 2007)). These amendments became effective in March 2010. As part of the administrative rulemaking process, the Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The Final Statement of Reasons guides the scope of GHG analyses for CEQA documents and addresses the subject of life-cycle analysis.

Life-cycle analysis (i.e., assessing economy-wide GHG emissions from the processes in manufacturing and transporting all raw materials used in developing a given project and infrastructure) depends on emission factors or econometric factors that are not well established for all processes. The basis of State CEQA Guidelines set forth by the California Natural Resources Agency indicate that a full life-cycle analysis would be beyond the scope of a given CEQA document because of a lack of consensus guidance on life-cycle analysis methodologies.

California Governor's Executive Orders on GHG Emissions

The California Governor's Executive Order S 3 05 (June 2005) declared California's particular vulnerability to climate change and sets a target of an 80 percent reduction of California greenhouse gas emissions from 1990 levels by 2050 and a target to achieve 1990 levels by 2020. In response to Executive Order S 3 05 and increasing societal concern about the effects of climate change, the California Legislature enacted California Global Warming Solutions Act of 2006, Assembly Bill 32 (AB 32). In passing the bill, the California Legislature found that:

Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems [HSC Section 38501, Division 25.5, Part 1].

In September 2018, Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The California Air Resources Board (ARB) was directed to develop the framework for implementing the goal of carbon neutrality. Executive Order B 30 15 (April 2015) established a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030. One purpose of this interim target is to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. This executive order also specifically addresses the need for climate adaptation and directs state agencies to update the California Climate Adaptation Strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change. Senate Bill 32 (SB 32) of 2016 codified the GHG emissions target to 40 percent below the 1990 level by 2030.

AB 32 Climate Change Scoping Plan and Scoping Plan Updates

With AB 32, the 2020 GHG emissions reduction goal became law and requires California to maintain and continue reductions beyond 2020. AB 32 also directed the ARB to develop regulations and market mechanisms to reduce GHG and prepare a scoping plan to identify how best to reach the 2020 limit. AB 32 requires ARB to update the Scoping Plan at least every five years. Accordingly, the 2017 Scoping Plan Update, approved on December 14, 2017, provides the strategy for achieving California's 2030 target in SB 32 (ARB, 2017).

The initial AB 32 Climate Change Scoping Plan (ARB, 2008) identified the strategies for achieving the maximum technologically feasible and cost-effective GHG reductions by 2020, and to maintain and continue reductions beyond 2020. The first statewide AB 32 Scoping Plan was adopted by ARB in December 2008, and the ARB approved the First Update to the Scoping Plan in May 2014 (ARB, 2014). The project itself conforms with the renewable energy objectives of the Scoping Plan, and at least one regulation that has come from enacting the climate change strategies in the Scoping Plan, the Low Carbon Fuel Standard (LCFS), would indirectly cause a small reduction in the GHG emissions from Project construction and operation.

County of San Bernardino Greenhouse Gas Emissions Reduction Plan (GGERP)

The County of San Bernardino adopted a Greenhouse Gas Emissions Reduction Plan (County of San Bernardino, 2011) that includes a number of GHG emissions reduction strategies; however, only a few would apply to this infrastructure improvement construction project. Objective GHG SW 1.3 includes GHG emissions reduction strategies related to waste recycling and recycled materials use including the following that could apply to the project:

- Reduction Strategy 2 - Construction and Demolition Debris Diversion. This reduction strategy provides a goal for diverting at least 50 percent of construction and building materials and demolition debris to recycling programs.
- Reduction Strategy 3 – County Waste Diversion Program. Part i of this reduction strategy requires the use of salvaged and recycled-content materials and other materials that have low production energy costs for building materials, hard surfaces, and non-plant landscaping; requires sourcing of construction materials locally, as feasible; and encourages the use of cement substitutes and recycled building materials for new construction.

Parts of these construction GHG emissions reduction strategies could apply to the Project; however, the use of cement substitutes would not be technically feasible for the Project.

Impact Analysis

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant. The proposed Project would generate greenhouse gas (GHG) emissions through construction and ongoing maintenance activities. However, there is no anticipated increase in operation activities, which are comprised of occasional inspection and maintenance events; therefore, no emissions estimate has been completed for operations. The Project would also create a small amount of indirect GHG emissions from water use during construction for dust control; however, the amount of water use is unknown and those emissions would be minor in comparison with the direct construction emissions. So, these indirect emissions are considered negligible and were not calculated for this Project.

The South Coast Air Quality Management District (SCAQMD) has established a GHG significance threshold of 10,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) emissions per year (SCAQMD, 2015) for industrial facilities, which would not apply to this flood control infrastructure project. SCAQMD's GHG working group also suggested that threshold of 3,000 $MTCO_2e$ per year could be applied to non-industrial projects (SCAQMD, 2008). The County also has adopted a project review standard of 3,000 $MTCO_2e$ per year, where projects with emissions below this level being "considered to be consistent with the County's GHG Emissions Reduction Plan and determined to have a less than significant individual and cumulative impact for GHG emissions" (County of San Bernardino, 2011). Therefore, a significance threshold of 3,000 $MTCO_2e$ per year has been used to determine the Project's GHG emissions significance.

The GHG emissions estimate calculations for the project's direct construction emissions are provided in Appendix A (Air Quality Assumptions), and the summary of the proposed project's construction carbon dioxide equivalent (CO_2e) emissions estimates is shown in Table 8-1.

Table 8-1. Greenhouse Gas Emissions

Construction	GHG Emissions ($MTCO_2e$)
Equipment and Vehicle Emissions	444
GHG Emissions Significance Threshold	3,000
Exceeds Thresholds?	*No*

Source: Appendix A

The Project's determined direct annual GHG emissions, shown above in Table 8-1, are well below the GHG emissions significance threshold. Additionally, the project life is expected to exceed 50 years, so the annualized emissions over the project life would be less than 14 $MTCO_2e$ per year. Therefore, the Project's GHG emissions do not require additional analysis or mitigation, and would have less-than-significant GHG emissions impacts.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant. The GHG emissions for the proposed Project, as described above, are expected to be minimal and would not be subject to federal and State mandatory reporting regulations. The proposed Project's GHG emissions would not trigger regulatory action under the federal 40 CFR Part 52 and the State Cap-and-Trade regulations, nor is the Project subject to other state regulations that directly or indirectly reduce GHG emissions such as Title 20 appliance efficiency standards or Title 24 building construction standards.

Table 8-2 identifies current potentially applicable State Climate Change Scoping Plan and County Greenhouse Gas Emissions Reduction Plan GHG emission reduction strategies and identifies the Project conformance with these potentially applicable strategies.

Table 8-2. State and Local GHG Emissions Reduction Strategy Conformance

Applicable GHG Emissions Reduction Strategy	Project Design/Mitigation to Comply with Strategy
State Strategy	
Vehicle Climate Change Standards	These are ARB enforced standards; vehicles that access the Project that are required to comply with the standards would comply with these strategies.
Limit Idling Time for Commercial Vehicles	Project vehicles would be required to comply with ARB idling restriction regulations.
Construction and Demolition Waste Reduction	Construction and routine maintenance wastes, specifically any asphalt and concrete wastes, would be recycled to the extent feasible.
Increase Water Use Efficiency	The Project would only use water as necessary to comply with regulations for dust control.
Local Strategy	

Table 8-2. State and Local GHG Emissions Reduction Strategy Conformance

Applicable GHG Emissions Reduction Strategy	Project Design/Mitigation to Comply with Strategy
GGERP Objective GHG SW 1.3, Strategy 2	Construction and routine maintenance wastes, specifically any asphalt and concrete wastes, would be recycled to meet the 50 percent landfill diversion target.
GGERP County Review Standard	Table 8-1 indicates that the annual GHG emissions are below the San Bernardino GHG Emissions Reduction Plan review standard threshold of 3,000 MT CO_2e per year. So, additional Project emissions analysis and mitigation is not triggered.

Source: ARB 2017, County of San Bernardino, 2011.

In summary, the proposed Project would conform to state and local GHG emissions/climate change regulations, policies, and strategies; therefore, the proposed Project would have less-than-significant GHG impacts.

Greenhouse Gas Emissions Impact Conclusions:

No significant adverse impacts are identified or anticipated and no mitigation measures are required.

9. HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
b) 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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) 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, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk loss, injury or death involving wildland fires?			X	

Environmental Setting

Hazardous materials are generally substances that by their nature and reactivity have the capacity to cause harm or health hazards during normal exposure, an accidental release, or other mishap. Hazardous materials are characterized as being toxic, corrosive, flammable, reactive, an irritant, or strong sensitizers. The term “hazardous substances” encompasses chemicals regulated by both the United States Department of Transportation’s (DOT) “hazardous materials” regulations and the U.S. Environmental Protection Agency’s (USEPA) “hazardous waste” regulations, including emergency response. Hazardous wastes require special handling and disposal because of their potential to impact public health and the environment. A designation of “acutely” or “extremely” hazardous refers to specific listed chemicals and quantities.

Hazardous substances are defined by State and federal regulations to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in CERCLA Section 101(14), and also in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, which provides the following definition:

> A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or

incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Impact Analysis

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant with Mitigation Incorporated. The proposed Project would not involve the routine transport, use, or disposal of hazardous materials in any substantial quantities. Potentially hazardous materials such as motor oil, gasoline, diesel fuel, and other materials necessary to operate construction vehicles and equipment would be utilized during construction of the proposed Project, and would occasionally be utilized during operation of the project as related to inspection and maintenance activities. However, use of such materials for the operation of vehicles and equipment would occur under standard construction best management practices (BMPs) to avoid accidental spill(s) or leak(s), and would not introduce significant potential for hazard to the public or the environment. Additionally, the Project applicant will be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), as approved by the Regional Water Quality Control Board (RWQCB). Please refer to Section 10 – Hydrology and Water Quality, and implementation of that plan is also covered under mitigation measure HYD-1. Adherence to the SWPPP will ensure that any spills or leaks do not transmit hazardous materials via stormwater (Please refer to Section 10 – Hydrology and Water Quality). During maintenance, the use of any herbicides for vegetation management, and pesticides (insecticide and rodenticide as needed) for vector control would all occur consistent with manufacturer's recommendations, applicable regulations, and San Bernardino County standard practices. Therefore, construction and maintenance activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) 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?

Less Than Significant. As described above under criterion (a), the proposed Project would not introduce significant potential for hazard to the public or the environment associated with reasonably foreseeable upset and accident conditions.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant. The closest school to the project site is the Montessori Child Development Center (8176 Mulberry Ave), located approximately 0.7-miles north of the project site. Construction and maintenance of the project would utilize hazardous materials in limited quantities, as described above under criterion (a). Access to the project site during construction and operation would likely utilize Whittram and Cherry Avenues and other major arterials to reach the I-10, I-15 or SR-210. Traffic associated with the project would not directly pass by the Montessori Child Development Center, but may travel within 0.25-mile of this school and few others, such as the Sacred Heart Parish School and Redwood Elementary School. As described above under criterion (a), the proposed Project would not introduce significant potential for hazard to the public or the environment associated with the transport or use of hazardous materials that could adversely impact these adjacent schools. Additionally, the proposed Project would not emit hazardous emissions that could affect these existing schools.

d) 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, would it create a significant hazard to the public or the environment?

No Impact. Government Code Section 65962.5 requires the California Department of Toxic Substances Control (DTSC) to compile and update a list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, and to submit this list to the Secretary for Environmental Protection. This list, referred to as the Cortese List, currently identifies no sites within boundary of the project site, meaning that no hazardous materials sites are located on the project site or along the localized proposed access routes (DTSC, 2019). Therefore, the proposed project would not be located on a hazardous materials site and would not create a significant hazard to the public or the environment by disrupting an identified hazardous material site.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The nearest airport to the project site is the Ontario International Airport, with the closest runway located more than 4.5 miles to the southwest of the project site. The proposed Project would only require a small temporary workforce during construction and maintenance, which would not be subject to any safety hazards from operation of this airport. As a below-grade flood channel, the proposed Project features would not result in an aviation safety hazard for people residing or working in the project area.

f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant. Roadways affected by the proposed Project are not known to be part of an adopted or designated public emergency evacuation route or plan. During construction, temporary and minor disruptions to small portions of Whittram Avenue may occur during the workday. Any affected segment would be reopened during non-working hours. While the proposed Project could affect emergency access and evacuation of the Auto Club Speedway due to periodic and temporary rerouting or closure of travel lanes on Calabash Avenue south of Whittram Avenue, there are five other points of ingress/egress to the Speedway from Etiwanda Avenue to the west (via Napa Street), San Bernardino Avenue to the south (via Vip Road), and Cherry Avenue to the east (which is the main entrance to the Speedway via driveways at Randall Avenue, Merrill Avenue, and Rancho Vista Drive). Given the multiple points of ingress/egress, the proposed Project's impacts on emergency access and evacuation would be less than significant. Operation and maintenance of the proposed Project is expected to generate minimal daily traffic volumes and would rarely require any temporary disruptions to travel lanes. Due to the limited nature of operational and maintenance activities, no impacts to emergency access and evacuation is anticipated to occur. The proposed Project would not significantly impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Expose people or structure, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant. The project site is not located within or adjacent to forested or heavy brush areas. Because the proposed Project includes upgrades to an existing flood channel within a previously disturbed easement, sparks or heat from construction vehicle and equipment engines are not expected to create a significant potential for fire ignition that could spread outside of the immediate work area. Additionally, Project work and staging areas would be clear of flammable vegetation and all construction and maintenance work would be conducted in accordance with standard safety measures to reduce the potential for fire ignition. The proposed Project would not introduce a significant risk of loss, injury, or death involving wildland fires.

Mitigation Measures:

MM HYD-1: Construction Storm Water Pollution Prevention Plan. (see full text under Section 10, Hydrology and Water Quality)

Hazards and Hazardous Materials Impact Conclusions:

Less than significant impacts would occur with implementation of Mitigation Measures HYD-1.

10. HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?		X		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would?			X	
I. Result in substantial erosion or siltation on – or off-site;			X	
II. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on – or off-site;			X	
III. Create or contribute runoff water which would exceed the capacity of the existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff; or			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	

Environmental Setting

Much of the hydrologic setting for this Project is contained in the project description. To summarize, the Project is on the West Fontana Channel, which is a trapezoidal flood-control channel and part of the San Sevaine Channel system draining ultimately to the Santa Ana River and the Pacific Ocean. The Project reach of the West Fontana Channel is between the Banana and Hickory Flood Control Basins west of the City of Fontana in San Bernardino County, California.

The Project reach of the Fontana Channel is an earthen and riprap-sided channel that has been determined to be inadequate in places to convey the 100-year discharge. Flood-control improvements currently being implemented upstream of the Banana Basin will increase the risk of flooding along this reach of the Fontana Channel.

The site is within the jurisdiction of the Santa Ana Regional Water Quality Control Board. Beneficial uses of Fontana Channel waters include municipal and domestic supply, groundwater recharge, water contact and non-contact recreation, cold freshwater habitat, and wildlife habitat. All are considered intermittent beneficial uses (RWQCB, 1994). None of the waters within the Project area are listed as impaired by the State Water Resources Control Board (SWRCB, 2019).

Groundwater beneath the Project is in the Upper Santa Ana Valley Groundwater Basin Chino Subbasin. This basin has a total area of 240 square miles with approximately 5,300,000-acre feet groundwater in storage.

Groundwater levels have declined in the past but have been recovering since 1980. Groundwater recharge is primarily from infiltration of precipitation or surface flow, and from inflow from adjacent basins (DWR, 2004).

Impact Analysis

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant with Mitigation Incorporated. During Project construction there could be a potential for spills of oil, grease, trash, or other water contaminants associated with the use of vehicles, equipment, and construction materials. Existing flows within the Fontana Channel could be disturbed with resultant degradation of water quality from bed sediments.

The Project is located within the jurisdiction of the Santa Ana RWQCB and is subject to the management direction of the Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin region. The Project would be compliant with the District's MS4 Permit Order No. R8-2010-0036 (National Pollutant Discharge Elimination System No. CAS618036) and APAP Permit Order No. 2013-0002-DWQ, amended by 2016-0073-EXEC (General Permit No. CAG990005) issued by the Santa Ana RWQCB. The MS4 permit is intended to ensure non-degradation of waters of the State and U.S. The permit requirements ensure compliance with the RWQCB Basin Plan, which establishes water quality standards for the ground and surface waters of the region, includes procedures to protect the beneficial uses of specific waterbodies, and describes the levels of quality which must be met and maintained to protect those uses.

The Fontana Channel and tributaries qualify as jurisdictional waters of the State under Section 1600 of the State Fish and Game Code. Prior to initiation of the Project, correspondence with the California Department of Fish and Wildlife (CDFW) would be required to obtain a Streambed Alteration Agreement. The Fontana Channel and tributaries are also jurisdictional under Section 404 of the Federal Clean Water Act (CWA). Therefore, a CWA Section 404 permit would be required. A 404 Permit would ensure minimization of, and mitigation of, impacts to Waters of the U.S. A water quality certification from the RWQCB would be required under Section 401 of the CWA.

The total area of disturbance would be more than one acre. The Project would therefore require development of a Stormwater Pollution Prevention Plan (SWPPP) in order to comply with the California Construction General Permit for stormwater. Mitigation Measure HYD-1 is proposed to ensure certain minimal requirements for the SWPPP to avoid and reduce water quality impacts. Mitigation Measure HYD-1, along with required permit restrictions, including MS4, the SWPPP, RWQCB Basin Plan requirements, Section 1600 of the State Fish and Game Code, and Sections 401 and 404 of the Clean Water Act, would ensure that the potential for surface water and ground water contamination from the proposed construction would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant. The proposed Project does not involve the pumping of local groundwater resources and would not introduce substantial new impervious areas such that recharge rates or patterns would be affected. Rock slope protection would be non-grouted and therefore permeable as is the existing slope protection. New culverts would replace existing culverts. The proposed rectangular concrete channel is 200 feet long and given the overall size of the watershed is too small to have more than a negligible effect on recharge. Any water needed for implementation of the proposed Project would be obtained from a local water purveyor. No significant impact to groundwater resources would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would?

I. Result in substantial erosion or siltation on – or off-site;

II. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;

III. Create or contribute runoff water which would exceed the capacity of the existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff; or

Less Than Significant.

I. Although some temporary increase in erosion potential could occur during construction and would be addressed by compliance with existing regulations and Mitigation Measure HYD-1 as described in Impact "a", no increase in erosion potential is expected during Project operation. The Project consists of permanent bank stabilization and erosion-control measures intended to reduce erosion. The overall drainage pattern would not be altered.

II. The Project purpose is flood control. Flooding would be reduced by implementation of the Project. Drainage patterns would not be substantially altered.

III. The Project purpose is flood control. Flooding would be reduced by implementation of the Project. Drainage patterns would not be substantially altered. The Project has no potential to increase runoff.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant. The Project is in a flood zone which is the reason the Project is being implemented. The Project will reduce floodplain limits without introducing new sources of pollutants. This impact is less than significant.

Mitigation Measures:

HYD-1 **Stormwater Pollution Prevention Plan (SWPPP)**. Prior to construction, the San Bernardino County Flood Control District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes all State Water Resources Control Board requirements as well as the following Best Management Practices (BMPs) to ensure that disturbed soils do not impact water quality downstream. The SWPPP shall include, but not be limited to, the following BMPs.

BMP 1 **Avoid Channel Work during the Rainy Season to the Greatest Extent Practicable**. To the extent practicable, construction shall be avoided during the rainy season. In the Santa Ana watershed (Valley Areas), the rainy season is typically from October through April. If work must occur within the channel, water diversion structures shall be in place to protect water quality downstream.

BMP 2 **Clear Water Diversion**. Should water be encountered during construction, clear water diversion structures such as diversion ditches, berms, dikes, cofferdams, slope drains, rock, gravel bags, filter fabric or turbidity curtains, drainage and interceptor swales, pipes or flumes shall be employed as needed to protect water quality downstream.

BMP 3 **Avoid Spills and Leaks.** The District shall ensure that equipment operating in and near the facility is in good working condition and free of leaks. Equipment used during

construction shall be parked outside of the channel. All construction staff working with heavy equipment shall have been trained in the use of the equipment and in spill containment and response for any unforeseeable accidents that may occur. A spill kit shall always be kept on-site while construction crews are working at the site. Any spills that occur shall be reported to California State Warning Center (Cal OES) at (800) 852-7550. Additionally, a copy of the Cal OES California Hazardous Materials Spill/Release Notification Guidance shall be kept on-site during construction.

BMP 4 **Concrete Washout Protocols**. The District shall implement the appropriate waste management practices during on-site construction operations. Waste management practices shall be applied to the stockpiling of concrete, curing, and finishing of concrete as well as concrete washout operations. Waste management practices shall be adequate to ensure that all fluids associated with the curing, finishing, and washout of concrete shall not be discharged into any area with the potential to enter an aquatic resource. Further, all concrete waste shall be stockpiled separately from sediment and protected with erosion control measures to ensure that concrete dust and/or debris is not discharged into an aquatic resource. The District shall determine the appropriate waste management practices based on considerations of flow velocities, site conditions, availability of stockpile locations, availability of erosion control materials, construction costs, and other requirements that may be outlined within the District's MS4 permits.

BMP 5 **Location of Temporary Stockpiles and Staging Areas.** Stockpile locations and staging areas shall be located within the disturbed/graded areas outside of the channel bottom. Silt fences, berms, or other methods of erosion control may be used if stockpiles are to remain in designated areas for longer than 10 days.

BMP 6 **Remove Debris**. Remove litter and debris from the facility as necessary after construction is completed.

BMP 7 **Wind Erosion**. Prevent dust and wind erosion by applying water or other dust palliatives as necessary to reduce or alleviate dust nuisance generated by construction activities.

Hydrology and Water Quality Impact Conclusions:

With implementation of mitigation measure HYD-1, all impacts are less than significant.

11. LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

Environmental Setting

The Project site is located in a highly urbanized area within unincorporated San Bernardino County that is zoned Regional Industrial (IR) (San Bernardino County, 2009). The site is bordered on the north by commercial and industrial land uses, with a scattering of residences less than 300 feet from the Project along Calabash Avenue and Mulberry Avenue. The Metrolink San Bernardino Line is located immediately south of the Project site, and crosses through the western end of the Project site on two railway bridges. The channel flows under the bridges and just south of the bridges are pipe culverts through which the channel discharges into Hickory Basin. Further south, the Project is bordered by the 568-acre Auto Club Speedway facility. Additional commercial and industrial land uses border the site to the east and west (Google Earth, 2018).

The County has developed the following goals and policies specific to preserving and enhancing flood control systems within the surrounding watershed (San Bernardino County, 2007):

County of San Bernardino 2007 General Plan: Safety Element
Goal S5: The County will provide adequate flood protection to minimize hazards and structural damage.

- **Policy S5.4:** Protect existing development in floodways and floodplains.
- **Policy S5.6:** Prevent flood hazard resulting from drainage from adjacent development.
- **Policy S5.8:** Design flood control and drainage measures as part of an overall community improvement program that advances the goals of recreation, resource conservation, preservation of natural riparian vegetation and habitat, and the preservation of the scenic values of the County's streams and creeks.

Impact Analysis

a) Physically divide an established community?

No Impact. A community may be divided if a project were to introduce a new physical barrier through that community (e.g., a highway or railroad). The proposed Project would involve improvements to the existing West Fontana Channel, and all Project-related activities would occur within the flood control right-of-way except at the railway crossing. The proposed Project would not introduce any new infrastructure that could create a barrier across an existing community. No impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. All activities associated with the proposed Project would occur within the existing West Fontana Channel and within flood control areas adjacent to the channel. The proposed Project would not result in any change to established land uses surrounding the Project area (e.g., commercial and industrial uses; a railroad). The proposed Project would be consistent with the County's planning and zoning designation of Regional Industrial. The Project would also be consistent with the County's goals and policies for its watersheds, as it

involves improvements to an existing flood control system that would eliminate downstream flooding during a 100-year storm event. No impact with land use plans, policies, or regulations would occur.

Land Use and Planning Impact Conclusions:

No potentially significant impacts to land use and planning are anticipated, and no mitigation measures are required.

12. MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) 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?			X	
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Environmental Setting

Mineral resources are broadly divided in California into fuel and non-fuel. Fuel resources consist of oil and gas resources and non-fuel include metals, industrial minerals, and construction aggregate. No oil or gas fields or active oil/gas wells are located in the project vicinity (DOGGR, 2019). Mineral resources are varied in San Bernardino County with many active mines; materials actively being mined include rare earth minerals, clay, gold, silver, talc, borates, sand and gravel, and decorative rock (San Bernardino County, 2019). The CGS Mine Online website identifies one sand and gravel (aggregate) producer in the vicinity of the project site, the Fontana Pit (CGS, 2019). The Fontana Pit is located approximately 2 miles east of the project site and although the site is listed as an active mine on the San Bernardino active mines list (County of San Bernardino, 2019), the Division of Mine Reclamation (DMR) Mines Online website identifies the site as currently undergoing reclamation (DMR, 2019).

The State Geologist, under the Surface Mining and Reclamation Act (SMARA), has mapped and classified areas of non-fuel mineral resources in California into four categories based on: available geologic information, likelihood of mineral resources being present, and whether they have areas of known mineral resources. The project area is within a mapped MRZ-3 zone (CGS, 1984) which is an area that likely includes mineral resources, but the significance cannot be determined based on available data.

Impact Analysis

a) 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?

Less Than Significant. Although the Project site is located in an MRZ-3 zone with likely mineral resources of unknown significance, the proposed Project would only include channel improvements in the existing right-of-way and channel maintenance. The Project site is located in a fully developed industrial/commercial area and there are no active mines or known mineral resource locations in the project area. Therefore, no loss in availability of known mineral resources due to proposed Project activities would occur and there would be a less than significant impact.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The Project site is located in a fully developed industrial/commercial area with no identified mineral resource sites or mines in the vicinity of the Project site. There are no delineated mineral resource recovery sites identified in the San Bernardino County or City of Fontana General Plans (County of San Bernardino, 2007; City

of Fontana, 2003) Therefore, there would be no impact related to loss of availability of locally important mineral resource recovery site.

Mineral Resources Impact Conclusions:

No significant adverse impacts to mineral resources are identified or anticipated, and no mitigation measures are required.

13. NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration of groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or 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?				X

Environmental Setting

The site is generally located within an area characterized as industrial and is bordered on the north by commercial and industrial land uses, with a scattering of residences less than 300 feet from the Project along Calabash Avenue and Mulberry Avenue. The Metrolink San Bernardino Line is located immediately south of the Project site, and crosses through the western end of the Project site on two railway bridges. The channel flows under the bridges and just south of the bridges are pipe culverts through which the channel discharges into Hickory Basin. Further south, the Project is bordered by the 568-acre Auto Club Speedway facility. Additional commercial and industrial land uses border the site to the east and west (Google Earth, 2018). Ambient noise sources in the Project area are primarily traffic associated with adjacent commercial and industrial land uses and noise from the land uses themselves (such as Metrolink train noise, event noise from the Auto Club Speedway facility located directly to the south, etc.). With respect to adjacent sensitive receptors, the nearest residences are located 0.5 mile north of the Project site, south of Foothill Boulevard.

The nearest sensitive receptors are a pocket of five residences located on the northwest corner of Whittram Avenue and Mulberry Avenue, with the nearest of those homes located 700-feet from the proposed channel crossing under the rail line (where the proposed Project's nighttime work would occur). The next nearest residences from this location are approximately 1,800 feet away from that location.

Impact Analysis

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Operation (use) of the Project would not produce noise. Instead, the proposed Project would only generate temporary noise from occasional maintenance activities after project. The Project site is located within unincorporated San Bernardino County. While the nearest adjacent residential receptors are located within the City of Fontana, as CEQA Lead Agency, the applicable noise standards are those within the County of San Bernardino Development Code and the County of San Bernardino General Plan.

The County of San Bernardino General Plan Noise Element defines noise-sensitive land uses as residences, schools, churches, and parks. However, the Noise Element does not include any applicable goals or policies related to construction noise compatibility. The County of San Bernardino Development Code defines noise-

sensitive land uses as residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses (San Bernardino County, 2019). Applicable sections of the San Bernardino County Development Code that regulate construction noise associated with the Project include (San Bernardino County, 2019):

- Section 83.01.080(g) – Exempt Noise: Noise from temporary construction, maintenance, repair or demolition activities is exempt between 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays.
- Section 83.01.080(c)(Table 83-2) – Noise Standards for Stationary Noise Sources: Within industrial zones (which the nearest residential receptors are located within), a noise standard of 70 dBA is established between the hours of 7:00 p.m. and 7:00 a.m.

Construction activities more than 100 feet upstream or downstream of the Metrolink railway bridges would occur between 7:00 a.m. and 6:00 p.m. Monday through Saturday and be exempt from any noise standard per Section 83.01.080(g) of the San Bernardino Development Code. However, as described within Section 3 (Detailed Project Description), intermittent overnight construction would be necessary at the Metrolink railway bridge crossing location. Table 13-1 presents the expected noise levels from key equipment used during this construction work.

Table 13-1. Noise Levels and Usage Factors for Construction Equipment, Unmitigated

Equipment	Acoustical Usage Factor (%)	Measured Maximum Noise Level, dBA (at 50 feet)	Average Noise Level, dBA (at 50 feet)*
Air Compressor	40	78	74
Auger	20	84	80
Backhoe	40	78	74
Concrete Pump Truck	20	81	77
Concrete Mixer Truck	40	79	75
Dozer	40	82	78
Dump Truck	40	76	73
Excavator	40	81	77
Front End Loader	40	79	75
Generator	70	81	79

Source: FHWA, 2006.
*Average noise levels calculated from the maximum noise levels using the usage factors.

As shown in Table 13-1, average noise levels during construction from equipment use are expected to range from 70 to 78 dBA at 50 feet. Overlap of several pieces of equipment used in close proximity could increase the overall average level by 3-6 dBA (70 dBA + 70 dBA = 73 dBA). Construction-related noise levels would attenuate at an average rate of 6 dBA every doubling of distance for stationary sources depending on adjacent surfaces and noise spreading (FHWA, 2006). Assuming a peak average noise level of 80 dBA at 50-feet with the nearest residential receptor being 700 feet from the nighttime work area, at this distance average noise levels would attenuate to approximately 59 dBA. Therefore, nighttime construction noise would not exceed the 70 dBA threshold established by Section 83.01.080(c) of the San Bernardino Development Code. This impact would be less-than-significant.

Once constructed, routine maintenance and repair activities would occur as needed. All activities would normally occur between the hours of 8:00 a.m. and 6:00 p.m., Monday through Saturday only. As discussed above, temporary noise from maintenance and repair (considered applicable with “construction” noise) would occur during times exempt from any performance standards per Section 83.01.080(g) of the San Bernardino

Development Code. Therefore, maintenance noise would be consistent with the San Bernardino Development Code. This impact would be less-than-significant.

b) Generation of excessive groundborne vibration of groundborne noise levels?

Less Than Significant. Heavy equipment used during construction has the potential to generate groundborne vibration. Additionally, heavy truck haul trips may produce short-term groundborne vibration. Typically, groundborne vibrations generated by man-made activities attenuate rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source (FTA, 2006). The nearest sensitive receptors to the proposed Project site are residential homes located approximately 0.5 mile north of the Project site. Because no sensitive receptors or structures are located proximate (within 500 feet) to the Project site, temporary construction vibration at the site would have less than significant impacts. Furthermore, heavy truck haul trips during the temporary construction period would only utilize roads designated for allowable weight and use. Therefore, any structures located proximate to those roads are already subject to any momentary vibration from heavy truck transit. Once constructed, the Project would not generate vibration outside of routine maintenance and repairs, which would be similar or less than that generated during construction. This impact would be less-than-significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest civil aviation facility to the proposed Project site is Ontario International Airport, which is located approximately 5.5 miles southwest of the proposed Project site. Given the distance of this airport to the Project and the temporary duration of proposed construction and maintenance activities, the Project would not subject workers to excessive aviation-generated noise levels. The Project does not include any residential or other development that would have persons reside at the site. No impact would occur.

Noise Impact Conclusions:

No potentially significant adverse impacts are identified or anticipated, and no mitigation measures are required.

14. POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned 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)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Environmental Setting

The proposed improvements to the West Fontana Channel are located in a highly urbanized area within unincorporated San Bernardino County. The site is bordered on the north by commercial and industrial land uses, with a scattering of residences less than 300 feet to the north of the channel along Calabash Avenue and Mulberry Avenue. The Metrolink San Bernardino Line is located immediately south of the Project site, with the Auto Club Speedway facility located further south. Additional commercial and industrial land uses border the site to the east and west.

Impact Analysis

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The ultimate purpose of the proposed Project is the protection of life and existing property. Improvements to the West Fontana Channel are necessary to convey a 100-year storm event within the reach between Banana Basin and Hickory Basin and eliminate potential downstream flooding. The immediate area to be protected has already been developed with industrial and commercial properties. Implementation of the proposed Project would not directly result in the construction of new homes, businesses, or infrastructure that could induce unplanned population growth within the County or adjacent cities.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed Project involves upgrades to an existing flood channel that travels through commercial and industrial development. The proposed improvements to the West Fontana Channel would occur primarily within the existing flood control right-of-way, with the exception of activities at the railway crossing. The Project would not require the permanent removal or displacement of housing or persons that would warrant replacement housing be constructed elsewhere.

Population and Housing Impact Conclusions:

No significant adverse impacts to population growth (existing or projected) or numbers of housing are identified or anticipated, and no mitigation measures are required.

15. PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 public services:				
i. Fire protection?			X	
ii. Police protection?			X	
iii. Schools?				X
iv. Recreation/Parks?				X
v. Other public facilities?				X

Environmental Setting

The Project site is not located within the City of Fontana. The Project site is also not technically within the City of Rancho Cucamonga boundary; however, a portion of the Auto Club Speedway, Whittram Avenue, and Etiwanda Avenue are located within the City of Rancho Cucamonga Boundary. For these reasons, it is expected County and/or City of Rancho Cucamonga public services are likely to serve the Project (primarily related to police and fire). The following describes key public services serving the Project site and surrounding area:

- The San Bernardino County Fire Department and City of Rancho Cucamonga Fire Department are likely to provide police protection to the Project area. The nearest County Fire Station to the Project site is Station 73 located at 8143 Banana Avenue, approximately 0.7-mile north of the Project site. The City of Rancho Cucamonga primary station is located at 10500 Civic Center Drive, approximately 3 miles northwest of the Project site.
- The City of Fontana and City of Rancho Cucamonga Police Departments provide police protection to the Project area. The City of Fontana primary station is located at 17005 Upland Avenue, approximately 3 miles east of the Project site. The City of Rancho Cucamonga primary station is located at 10510 Civic Center Drive, approximately 3 miles northwest of the Project site.
- The Fontana Unified School District and Cucamonga School District provide public school services to the Project area. Several private and parochial schools and many licensed preschools also serve the immediate area.
- Public parks near the Project site include Victoria Arbors Park 2.2 miles northwest and Cucamonga-Guasti Regional Park 5 miles west of the Project site.

Impact Analysis

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 public services: Fire protection, Police protection, Schools, Recreation/Parks, Other public facilities?*

i) Fire protection?

Less Than Significant. Construction and routine maintenance of the proposed Project is not expected to significantly increase the risk of fire. Furthermore, because adjacent lands are developed, there is little risk of spread of wildfire. Vegetation management associated with maintenance activities under the proposed Project would ensure the site is maintained in a manner to reduce the risk of fire occurring within the site. Furthermore, maintenance activities would include debris and trash removal, maintenance of chain link fencing and gates, and repairs of facilities. These activities are considered to reduce the potential for fires and fire service calls to the site through trespass.

Emergency response via the fire department could be required at the Project site in the event of an accident during construction or maintenance. However, the likelihood of an accident requiring such a response is unknown and is not expected to be significant, as construction and maintenance activities associated with the Project would be short-term and temporary. Furthermore, the Project would not induce an increase in population that may require fire protection. Therefore, the proposed Project would have a less-than-significant impact with respect to disrupting existing fire service levels and would not require new or expanded fire facilities.

ii) Police Protection?

Less Than Significant. The presence of workers and equipment associated with construction and maintenance activities may attract vandals or other security risks that would increase demand on law enforcement services. However, the likelihood of requiring such a response is unknown and is not expected to be significant as construction and maintenance activities associated with the proposed Project would be short-term and temporary. Furthermore, the proposed Project would not induce an increase in population levels. Project activities would include debris and trash removal, maintenance of chain link fencing and gates, and repairs of facilities. These activities are considered to reduce the potential for police service calls to the site through trespass. Implementation of these routine maintenance activities are expected to reduce the potential for law enforcement calls to the site. Therefore, the proposed Project would have a less-than-significant impact with respect to disrupting existing police service levels and would not require new or expanded police facilities.

iii) Schools?

No Impact. The Project would have no direct physical impact to schools. During construction, a relatively small number of construction workers would be required. It is expected that most of these workers would commute to the Project site from surrounding communities. Operation of the Project would not induce an increase in population levels. Therefore, substantial increases in population that would adversely affect local school populations are not expected and the proposed Project would not generate a permanent increase in population that would impact school populations.

iv) Parks?

No Impact. The proposed Project would have no direct physical impact on parks or recreational facilities. Construction and maintenance activities would not generate a permanent increase in population that would impact park facilities or conditions. No impact on parks or demand for recreational areas would occur.

v) Other Public Facilities?

No Impact. Construction and maintenance activities would not generate a permanent increase in population that would impact public facilities, such as post office and library services. Consequently, it is not anticipated that the proposed Project would increase population in a manner that would substantially affect public facilities. The proposed Project is expected to result in less than significant impacts on public services.

Public Services Impact Conclusions:

No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

16. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Environmental Setting

The proposed Project is located in a highly urbanized area surrounded by commercial and industrial land uses, with residential development to the north of the channel. The nearest recreational facility is the 568-acre Auto Club Speedway facility located approximately 800 feet south of Banana Basin. The Auto Club Speedway has three road courses to accommodate motorcycles and full-size race cars, as well as a separate course for "go-karts" (Auto Club Speedway, 2019). No other community or regional parks are located within one mile of the Project (Google Earth, 2018).

Impact Analysis

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed flood control improvements would not influence the use of existing recreational facilities. All construction and maintenance activities would be carried out by District personnel or District contractors, and the Project would not require an additional workforce to relocate to the area. The Project would have a short-term (i.e. 12-month) construction period, and none of the proposed activities would cause an increase in the local population. Subsequently, the Project would not contribute to increased use of community recreational facilities. No impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. Activities under the proposed Project would be limited to the construction and maintenance of flood control improvements within West Fontana Channel. None of the proposed activities would involve the construction or expansion of recreational facilities. Therefore, the Project would not contribute to an adverse physical effect on the environment associated with a recreational facility.

Recreation Impact Conclusions:

No potentially significant impacts to recreation are anticipated, and no mitigation measures are required.

17. TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?			X	
d) Result in inadequate emergency access?				X

Environmental Setting

Regional and local access to the Project site is provided by Interstate 10 (I-10) and I-15. Local access from the freeways occurs via Etiwanda Avenue and Cherry Avenue (off I-10) and Foothill Boulevard (off I-15). The upstream end of the Project is located at the outlet of Banana Basin which is southwest of the intersection of Banana Avenue and Whittram Avenue. The downstream end of the Project is located at the entrance to Hickory Basin, southwest of the intersection of Mulberry Avenue and Whittram Avenue. These roadways provide local access to the Project site.

The roadways in unincorporated San Bernardino County must also be consistent with the Circulation and Infrastructure Element of the County of San Bernardino General Plan, which presents goals and objectives for the County's transportation system and establishes a hierarchy of roadway classifications with specific functions and geometric standards for each category. The General Plan addresses vehicular travel as well as alternative modes of transportation such as public transit, bicycles, and pedestrians.

Impact Analysis

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant. Construction of the proposed Project would result in workers traveling to/from the site as well as deliveries of equipment and materials generating temporary vehicle trips to the area. The estimated maximum addition of 115 daily trips during construction (average of 48 daily trips during construction) would temporarily increase traffic volumes on local roadways and may slightly reduce their performance. However, this impact would be temporary. The Project also includes necessary utility potholing and geotechnical testing components, ancillary activities such as maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. These activities may require temporary and minor disruptions to small portions of Whittram Avenue, but would not impact an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, including bicycles, public transportation, and pedestrian facilities. While the Project would require construction immediately adjacent to the Metrolink San Bernardino Line, it would not disrupt rail service. Operation and maintenance of the proposed Project is expected to generate minimal daily traffic volumes and would not require any temporary disruptions to travel lanes. Due to the limited nature of construction and maintenance activities,

less-than-significant impacts to an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system would occur.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant. As discussed in CEQA Guidelines Section 15064.3(b.3), a qualitative analysis of construction traffic vehicle miles travelled (VMT) may be appropriate. Temporary construction worker commute trips are assumed to come from the local Fontana and Rancho Cucamonga areas or from the greater San Bernardino County area. It would be cost effective for the contractor to source local materials and decrease VMTs from materials and equipment deliveries. Therefore, it is assumed truck trips associated with materials and equipment deliveries are expected to also originate from similar areas. While some construction truck trips may require high VMT to access the Project site, they would be temporary trips and only in limited volumes necessary to deliver equipment and materials to the site. Upon completion of construction, all worker commute trips and truck trips would cease. Maintenance of the proposed Project is expected to generate minimal daily traffic volumes, with VMT being identical or similar to that occurring under maintenance of the existing flood control channel. At this time, no known applicable VMT thresholds of significance for temporary construction trips that may indicate a significant impact are known. Therefore, while the proposed Project may include temporary construction trips with VMT from outside the immediate Project area, these trips would not affect existing transit uses or corridors and are presumed to cause a less than significant transportation impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

Less Than Significant. The Project also includes necessary utility potholing and geotechnical testing components, ancillary activities such as maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. These activities may require temporary and minor disruptions to small portions of Whittram Avenue but would not substantially increase roadway hazards. The Project would also include construction of two (2) access ramps/service roads and replace one (1) existing access ramp. These access ramps and service roads would be gated and private, providing maintenance access to the Project flood control channel only. Therefore, these features would not substantially increase roadway hazards. Operation and maintenance of the proposed Project is expected to generate minimal daily traffic volumes and would not require any temporary disruptions to travel lanes. Less than significant impacts would occur.

d) *Result in inadequate emergency access?*

No Impact. Roadways utilized by the proposed Project are not known to be part of an adopted or designated public emergency evacuation route or plan. During construction, temporary and minor disruptions to small portions of Whittram Avenue may occur during the workday. Any affected segment would be reopened during non-working hours. While the proposed Project could affect emergency access and evacuation of the Auto Club Speedway due to periodic and temporary rerouting or closure of travel lanes on Calabash Avenue south of Whittram Avenue, there are five other points of ingress/egress to the Speedway from Etiwanda Avenue to the west (via Napa Street), San Bernardino Avenue to the south (via Vip Road), and Cherry Avenue to the east (which is the main entrance to the Speedway via driveways at Randall Avenue, Merrill Avenue, and Rancho Vista Drive). Given the multiple points of ingress/egress, the proposed Project's impacts on emergency access and evacuation would be less than significant. Operation and maintenance of the proposed Project is expected to generate minimal daily traffic volumes and would not require any temporary disruptions to travel lanes. Due to the limited nature of operational and maintenance activities, no impacts to emergency access and movement of emergency access vehicles is anticipated to occur.

Transportation Impact Conclusions:

No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

18. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project 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, lace, 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:				
a) Listed or eligible for listing in California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

Environmental Setting

Information presented in this section was gathered through AB 52 government-to-government consultation between the San Bernardino County and California Native American Tribes that have cultural affiliations with the Proposed Project area and that have requested to consult on the Proposed Project. Supplementary information was gathered from the cultural resources literature and records search, cultural resources field survey, and ethnographic summary that was described in detail in a report prepared by County staff (Hatheway and Yorck 2018).

The Proposed Project's effects on tribal cultural resources (TCRs) was evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines and with consideration to Assembly Bill (AB) 52 and the Governor's Office of Planning and Research's, "Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (June 2017)."

On April 18, 2018, the San Bernardino County Flood Control District sent letters to a total of four (4) tribes that had previously submitted a written request to the County to receive notification of proposed projects. These tribes included the Gabrieleno Band of Mission Indians, Kizh Nation, the Morongo Band of Mission Indians, The San Manuel Band of Mission Indians and the Soboba Band of Luiseno Indians. The letters included a brief description of the Proposed Project, instructions on how to contact the lead agency Project Manager, and a statement that responses must be received within 30 days of the date of receipt of the email. Four (4) responses were received from tribal contacts who requested to consult on the Proposed Project.

Four (4) tribes requested to consult on the Proposed Project. In-person and/or email exchanges occurred with all consulting tribes and the cultural resources report was provided to tribes who requested it.

No TCRs were identified that may be impacted by the Proposed Project, and consultations were closed.

There are no known TCRs located within the Proposed Project area and no known TCRs within a 1 mile of the Proposed Project area's boundary. Therefore, the analysis concludes that there would be no potential impacts to TCRs. However, there is always the potential for impacts to cause an unexpected impact to TCRs that are at

present unknown and unrecorded. Implementation of Mitigation Measures TCR-1 through TCR-4 as well as MMs CUL-1, CUL-2 will reduce impacts from unexpected finds to below a level of significance.

Impact Analysis

a) 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)?

Less Than Significant with Mitigation Incorporated. There are no known Tribal Cultural Resources (TCRs) that are listed in, or are known to be eligible for listing in, the California Register of Historical Resources (CRHR) or local register of historical resources are within the Proposed project area or the 1-mile surrounding area. However, it is possible that previously unidentified TCRs that may be eligible for inclusion in the CRHR or local registers could be discovered and damaged, or destroyed, during maintenance related ground disturbance, which would constitute a significant impact absent mitigation. Implementation of Mitigation Measures TCR-1 through TCR-4, as well as CUL-1 and CUL-2, would reduce impacts associated with the disturbance of TCRs to a less-than-significant level.

Mitigation Measures:

TCR-1 **Management of Unanticipated Discoveries of Tribal Cultural Resources.**

Appropriate consulting Tribe(s) shall be contacted, as detailed in CR-1, of any pre-contact cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input within 48 hours with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended, 2018), a cultural resource Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with consulting Tribe(s), and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents consulting Tribe(s) for the remainder of the project, should Tribe(s) elect to place a monitor on-site at the Tribe's cost.

As necessary, and in accordance with Project-Specific consultations conducted with the NAHC and various Tribal entities in association with AB52, SB18, and/or any other legal guidelines relating to Native American consultations, the specific language noted in CR-1 and CR-2 may change to reflect Project-Specific needs and requirements.

TCR-2 If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to CR-2 and State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the project.

TCR-3 Only the NAHC Designated MLD Tribal representative shall make all future decisions regarding the treatment of human remains of Native American origin within the response times outlined below. The MLD shall determine the disposition and treatment of Native American human remains and any associated grave goods following Native American Graves Protection and Repatriation Act (NAGPRA) protocols, and what constitutes "appropriate dignity" as that term is used in the applicable statutes and in the Tribe's customs and traditions.

The MLD or his/her designee shall complete an inspection and provide written recommendations to the DPW and the landowner (if different than the DPW) within forty-eight (48) hours of being granted access to the site. If the descendant does not make recommendations within 48 hours, the landowner shall re-inter the remains in a secure area of the property where there will be no further disturbance. Should the landowner not accept the descendant's recommendations, either

the owner or the MLD may request mediation by NAHC. According to the California Health and Safety Code, six (6) or more human burials at one (1) location constitute a cemetery (Section 8100), and willful disturbance of human remains in a cemetery is a felony (Section 7052).

TCR-4 Any and all archaeological/cultural documents as related to documented tribal cultural resources created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be disseminated to appropriate consulting Tribe(s) in the form of an un-redacted report (containing DPR forms). The Lead Agency and/or applicant shall, in good faith, consult with the appropriate Tribe(s) until construction completion of the project and completion of any measures imposed to protect resources.

b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant with Mitigation Incorporated. There are no known TCRs identified by the consulting tribes during AB 52 Native American consultation or that were determined by the lead agency to qualify as a historical resource within the Proposed Project or a 1-mile surrounding area. However, it is possible that previously unidentified TCRs that may be eligible for inclusion in the CRHR or local registers could be discovered and damaged, or destroyed, during maintenance related ground disturbance, which would constitute a significant impact absent mitigation. Implementation of Mitigation Measures TCR-1 through TCR-4, as well as CUL-1 and CUL-2, would reduce impacts associated with the disturbance of TCRs to a less-than-significant level.

Tribal Cultural Resources Conclusions:

No known TCRs are present within the Project area or within a 1-mile surrounding area. If a previously unidentified TCR is identified during ground-disturbing activities, implementation of Mitigation Measures TCR-1 through TCR-4, CUL-1 and CUL-2 would reduce impacts to a less-than-significant level.

19. UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) 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?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Environmental Setting

The Project site is an existing flood control channel. Adjacent development is served by existing wastewater, potable water, electrical, natural gas, and telecommunication service providers. It is assumed that roadways surrounding the site contain buried utilities.

Impact Analysis

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant. Wastewater generation would be limited to construction workers and would be contained within portable toilet facilities or at approved public facilities, both of which would dispose of wastewater with the local treatment provider. Construction and some maintenance/repair activities would require the temporary use of water for dust suppression and possibly equipment wash down, soil compaction, and other miscellaneous uses (such as concrete or grout production). Water used for these purposes would be obtained from the closest neighborhood fire hydrant(s). However, water used for these purposes would be temporary and not in quantities requiring the construction of new or expanded water supplies. The proposed Project itself would expand and improve storm water drainage. Finally, modification and maintenance of the flood channel would not directly require new or expanded electrical, natural gas, or telecommunication facilities. The proposed Project would not induce population or other facilities that may place increased demands on these utility services. Less than significant impacts to such facilities would occur.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant. As described above under criterion (a), construction and some maintenance/repair activities would require the temporary use of water for dust suppression and possibly equipment wash down, soil compaction, and other miscellaneous uses (such as concrete or grout production). However, water used for these purposes would be temporary and not in quantities that could impact water supplies, regardless of seasonal rainfall, snowmelt, and groundwater recharge. Additionally, due to the type and amount of water required, it is likely that non-potable (reclaimed) water would be utilized if available to serve Project needs. The proposed Project would not induce population or other facilities that may place increased demands on water supplies. Less than significant impacts would occur.

c) 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?

Less Than Significant. As described above under criterion (a), wastewater generation would be limited to construction workers and would be either be contained within portable toilet facilities or at approved public facilities, both of which would dispose of wastewater with the local treatment provider. Due to the temporary and short-term nature of the proposed construction and maintenance activities, the volume of wastewater generated would not impact the capacity of wastewater treatment providers serving the Project area.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant. Construction and maintenance activities would generate waste in the form of vegetation, soil spoils, trash and refuse, and aggregate construction materials (cement, rebar, rock, etc.). Material that is not suitable for reuse would be disposed of at an approved off-site facility. The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operation and management of the County's solid waste disposal system, which consists of five regional landfills and nine transfer stations. Vegetation and other simple wastes (trash, etc.) would likely be disposed of locally at waste disposal facilities accepting green waste. Other inert construction-type material wastes would likely be disposed of at the Mid-Valley Sanitary Landfill located at 2390 North Alder Avenue in Rialto, located approximately 4 miles east or other approved construction/demolition waste recycling/disposal facility. Most SWMD landfills are permitted to accept construction and demolition debris and are assumed to have sufficient combined throughput and capacity to accommodate waste generated by the proposed Project. Waste generated during construction and maintenance of the Project would be limited and is not expected to be at a level that could impact daily throughput or overall capacity of any landfill or waste disposal facility.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant. The proposed Project would generate solid waste during construction and routine maintenance, thus requiring the consideration of waste reduction and recycling measures. The 1989 California Integrated Waste Management Act (AB 939) requires San Bernardino County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development Projects to incorporate storage areas for recycling bins into the Project design. The proposed Project would reuse and recycle material to the extent feasible. Furthermore, some waste generated during construction and maintenance would be green waste (vegetation) and recycled (plastic and aluminum trash, other metals, etc.). Therefore, the Project is consistent with AB 939 and the California Solid

Waste Reuse and Recycling Access Act of 1991, resulting in less than significant impacts with respect to compliance with these applicable regulations.

Utilities and Service Systems Impact Conclusions

No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

20. WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project?				X
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Environmental Setting

The Project site is not located in or near State responsibility areas or lands classified as very high fire hazard severity zones (CalFire, 2019). The Project area contains relatively flat terrain, with developed areas in all directions. Online research indicates no known historic wildfires to have affected the immediate Project area.

Impact Analysis

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. Construction would not require detours or blockages of roadways. All activities would be conducted within the proposed Project disturbance area, with improvements occurring entirely within flood control right-of-way except at the railway crossing. Roadways utilized by the proposed Project are not known to be part of an adopted or designated emergency evacuation route or plan. Operation and maintenance of the proposed Project is expected to generate minimal daily traffic volumes and would not require any temporary disruptions to travel lanes. Due to the limited nature of operational and maintenance activities, no impacts to emergency access and evacuation is anticipated to occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The Project site is not located within or adjacent to forest areas nor does it have slopes or other landscape features that exacerbate fire risks or make the site or adjacent areas more susceptible to wildfire. Construction of the proposed Project would not include the use of motorized vehicles or equipment adjacent to open lands. Because the proposed Project includes upgrades to an existing flood channel within a previously disturbed easement, sparks or heat from vehicle and equipment engines are not expected to create a significant potential for fire ignition that could spread outsize the immediate work area. Additionally, construction work and

staging areas would be clear of flammable vegetation and all construction and maintenance work would be conducted in accordance with standard safety measures to reduce the potential for fire ignition. The proposed Project would not introduce new development or population and would not introduce a significant wildfire risk that could expose persons to pollutant concentrations from a wildfire. No impacts would occur.

c) *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

No Impact. The proposed Project would modify and improve an existing storm water drainage channel. Construction and maintenance of the proposed flood channel improvements would not directly require new or expanded infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No impacts would occur.

d) *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

No Impact. The Project site is not located within or adjacent to forest areas nor does it have slopes or other landscape features that exacerbate fire risks or make the site or adjacent areas more susceptible to wildfire. The proposed Project would occur within an existing flood channel, with developed areas surrounding the site. Once completed, the Project would improve an existing storm water drainage channel, thus improving storm water flows to decrease flooding of the adjacent area. This is considered a beneficial impact with respect to drainage changes to the area. Finally, the Project would not introduce new development or population and would not expose people or structures to flooding or landslide risks due to post-fire instability. No impacts would occur.

Wildfire Impact Conclusions:

No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

21. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant with Mitigation Incorporated. As described in Section 4 (4. Biological Resources), the proposed Project could result in impacts to habitats that support sensitive species, riparian habitats, and wetlands. However, implementation of mitigation measures would reduce these impacts to a less-than-significant level.

Section 4 (5. Cultural Resources and 18. Tribal Cultural Resources) shows the Project will not have any direct or indirect impacts on any significant archaeological resources. Ground disturbance associated with the proposed Project is not anticipated to impact historical resources as defined in CEQA Guidelines Section 15064.5. However, it is possible that previously unknown buried historical resources could be discovered and damaged or destroyed during ground disturbing work, which would constitute a significant impact absent mitigation.

Section 4 (7. Geology and Soils, 9. Hazards and Hazardous Materials, 10. Hydrology and Water Quality) shows that the soils underlying the Project area have limited to no topsoil, however, construction related ground disturbance consisting of grading, excavation, and construction of access roads could increase the potential for erosion. As the proposed Project would disturb a surface area greater than one acre it would be required to obtain, under Clean Water Act regulations, a National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity. Compliance with the NPDES would require that the District submit a project-specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would require development and implementation of best management practices (BMPs) to identify and control erosion, which would reduce the potential for construction to trigger erosion. Adherence to the SWPPP will ensure that any spills or leaks do not transmit hazardous materials via stormwater and would also ensure that

the potential for surface water and ground water contamination from the proposed construction and maintenance activities would be less than significant.

The sediments in the lower part of Banana Basin are old enough to produce significant paleontological resources. If any inadvertent or unanticipated finds are discovered during grading and excavation of sediments in the shallow or lower part (20 or more feet below existing grade) of the basin, monitoring would reduce the impact to a less-than-significant level. Implementation of Mitigation Measure GEO-1 described below would evaluate and protect unanticipated discoveries of unique paleontological resources or unique geologic features, thereby reducing this impact to less than significant.

Mitigation Measures

BIO-1 **Burrowing Owl.** The San Bernardino County Flood Control District (District) will assign a qualified biologist to conduct pre-construction surveys for burrowing owl and related tasks listed below. A "qualified biologist" is defined as a person with appropriate education, training, and experience to conduct such surveys and monitor Project activities. The Project Biologist will survey planned disturbance areas within the site in advance of all Project activities to determine burrowing owl presence or absence. If burrowing owls are present on the site outside of the nesting season (September 1 to January 31) and construction activities are planned at the occupied burrow or within 300 feet, then the California Department of Fish and Wildlife (CDFW) will be consulted and the Project Biologist may be authorized to exclude the burrowing owls from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012), or to monitor project activities to ensure no disturbance to the occupied burrow. If burrowing owls are present in or near planned work areas on the site during nesting season (February 1 through August 31), then Project activities will be either be postponed until nesting is completed, or the Project Biologist will monitor activities in the vicinity of the burrowing owl and will establish a buffer as needed to avoid direct or indirect impacts to the burrowing owls or occupied burrows.

BIO-2 **Nesting birds.** Project activities that would disturb soil or vegetation will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 1 through August 31), or after a pre-construction nesting bird survey has confirmed that no active nests are located within the area to be disturbed. The Project Biologist will determine if birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the Project Biologist will designate appropriate avoidance buffers around nests to protect nesting birds. No Project related disturbance will be allowed within these buffers. The Project Biologist will remove the buffers and allow Project activities to continue once the nestlings have fledged or once the nest is no longer active.

BIO-3 **Pre-construction Surveys**. Prior to the start of any Project activities that would disturb soils or vegetation, the Project Biologist will survey the work area to determine if coastal whiptail, San Diego desert woodrat, San Diego black-tailed jackrabbit, or any other special-status species are present. Special-status reptiles will be relocated out of harm’s way. San Diego black-tailed jackrabbit will be allowed to leave the site on their own, and San Diego woodrat will be actively encouraged to leave the site by deconstruction of their middens and exclusion fencing, if needed. The Project Biologist will be authorized by the County to temporarily halt Project activities if needed to prevent harm to any other special-status species.

CUL-1 **Management of Unanticipated Historical Resources or Unique Archaeological Resources.** Should unanticipated or inadvertent surface and/or subsurface prehistoric or historic archaeological resources, built environment, and/or tribal cultural resources, appear to be

encountered during construction or maintenance activity associated with this project, then all work must halt within a 100-foot radius of the discovery until a qualified professional can evaluate the discovery. If the finds are archaeological or historic in nature, then an archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and/or historic archaeology have evaluated the significance of the find. This archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following shall apply, depending on the nature of the find:

A. If the professional archaeologist determines that the find *does not* represent a cultural resource, then work may resume immediately and no agency notifications are required.

B. If the professional archaeologist determines that the find *does* represent a cultural resource from any time or cultural affiliation then, depending on the nature of the discovery, appropriate treatment measures shall be developed.

C. If the find represents a Native American or potentially Native American resource that does not include human remains, which may or may not include a Tribal Cultural Resource, then the archaeologist shall consult with appropriate Tribe[s] on whether or not the resource represents either a Tribal Cultural Resource or a Historical Resource, or both, and, if so, consult on appropriate treatment measures. Preservation in place is the preferred treatment, if feasible. Work cannot resume within the no-work radius until the County, through consultation as appropriate, determines that the site either: 1) is not a Tribal Cultural Resource or Historical Resource; or 2) that the treatment measures for the Tribal Cultural Resource or Historical Resource have been completed.

CUL-2 Management of Unanticipated Human Remains.

If the find during construction or maintenance activity includes human remains, or remains that are potentially human, the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per §7050.5 of the Health and Safety Code). The Coroner's Office may be contacted at Coroner's Division, County of San Bernardino, 175 South Lena Road, San Bernardino, California 92415 or by calling 909.387.2978. The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American, the Coroner will notify the NAHC by telephone within 24 hours. The NAHC will then immediately notify the person it believes to be the Most Likely Descendant (MLD) of the remains (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours, from the time access to the property is granted, to make recommendations concerning treatment of the remains, in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within

the no-work radius until the County, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

If the Coroner determines that the remains are not of Native American origin and that the remains are from the historic-era, the County Coroner will make a recommendation as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code has been addressed and an authorization to proceed is issued by the County Coroner.

GEO-1 **Incidental Discovery of Paleontological or Geological Resources.** If any inadvertent or unanticipated finds in the shallow or lower part (20 or more feet below existing grade) of the basin during construction appear to be paleontological in nature, then a qualified paleontological Principal Investigator shall evaluate the finds and prepare a Paleontological Mitigation and Monitoring Plan (PMMP). The PMMP shall include a plan to address unanticipated Paleontological finds during construction. It shall also contain provisions for monitoring and sampling of sediments in the Banana Basin when work is more than 20 feet below street surface. The PMMP shall be prepared in accordance with all appropriate California Environmental Quality Act (CEQA) and County of San Bernardino guidelines. The PMMP shall then be adhered to for the remainder of any land disturbing activities for the project. If significant paleontological resources are recovered, a final report shall be written describing the geologic context of the finds, the methods employed while monitoring, the identification of the resources recovered, and the repository where the finds are curated.

HYD-1 **Stormwater Pollution Prevention Plan (SWPPP)**. Prior to construction, the San Bernardino County Flood Control District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes all State Water Resources Control Board requirements as well as the following Best Management Practices (BMPs) to ensure that disturbed soils do not impact water quality downstream. The SWPPP shall include, but not be limited to, the following BMPs.

BMP 1 **Avoid Channel Work during the Rainy Season to the Greatest Extent Practicable**. To the extent practicable, construction shall be avoided during the rainy season. In the Santa Ana watershed (Valley Areas), the rainy season is typically from October through April. If work must occur within the channel, water diversion structures shall be in place to protect water quality downstream.

BMP 2 **Clear Water Diversion**. Should water be encountered during construction, clear water diversion structures such as diversion ditches, berms, dikes, cofferdams, slope drains, rock, gravel bags, filter fabric or turbidity curtains, drainage and interceptor swales, pipes or flumes shall be employed as needed to protect water quality downstream.

BMP 3 **Avoid Spills and Leaks.** The District shall ensure that equipment operating in and near the facility is in good working condition and free of leaks. Equipment used during construction shall be parked outside of the channel. All construction staff working with heavy equipment shall have been trained in the use of the equipment and in spill containment and response for any unforeseeable accidents that may occur. A spill kit shall always be kept on-site while construction crews are working at the site. Any spills that occur shall be reported to California State Warning Center (Cal OES) at (800) 852-7550. Additionally, a copy of the Cal OES California Hazardous Materials Spill/Release Notification Guidance shall be kept on-site during construction.

BMP 4 **Concrete Washout Protocols**. The District shall implement the appropriate waste management practices during on-site construction operations. Waste management practices shall be applied to the stockpiling of concrete, curing, and finishing of concrete as well as concrete washout operations. Waste management practices shall be adequate to ensure that all fluids associated with the curing, finishing, and washout of concrete shall not be discharged into any area with the potential to enter an aquatic resource. Further, all concrete waste shall be stockpiled separately from sediment and protected with erosion control measures to ensure that concrete dust and/or debris is not discharged into an aquatic resource. The District shall determine the appropriate waste management practices based on considerations of flow velocities, site conditions, availability of stockpile locations, availability of erosion control materials, construction costs, and other requirements that may be outlined within the District's MS4 permits.

BMP 5 **Location of Temporary Stockpiles and Staging Areas.** Stockpile locations and staging areas shall be located within the disturbed/graded areas outside of the channel bottom. Silt fences, berms, or other methods of erosion control may be used if stockpiles are to remain in designated areas for longer than 10 days.

BMP 6 **Remove Debris**. Remove litter and debris from the facility as necessary after construction is completed.

BMP 7 **Wind Erosion**. Prevent dust and wind erosion by applying water or other dust palliatives as necessary to reduce or alleviate dust nuisance generated by construction activities.

TCR-1 **Management of Unanticipated Discoveries of Tribal Cultural Resources.**

Appropriate consulting Tribe(s) shall be contacted, as detailed in CR-1, of any pre-contact cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input within 48 hours with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended, 2018), a cultural resource Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with consulting Tribe(s), and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents consulting Tribe(s) for the remainder of the project, should Tribe(s) elect to place a monitor on-site at the Tribe's cost.

As necessary, and in accordance with Project-Specific consultations conducted with the NAHC and various Tribal entities in association with AB52, SB18, and/or any other legal guidelines relating to Native American consultations, the specific language noted in CR-1 and CR-2 may change to reflect Project-Specific needs and requirements.

TCR-2 If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to CR-2 and State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the project.

TCR-3 Only the NAHC Designated MLD Tribal representative shall make all future decisions regarding the treatment of human remains of Native American origin within the response times outlined below. The MLD shall determine the disposition and treatment of Native American human remains and any associated grave goods following Native American Graves Protection and Repatriation

Act (NAGPRA) protocols, and what constitutes "appropriate dignity" as that term is used in the applicable statutes and in the Tribe's customs and traditions.

The MLD or his/her designee shall complete an inspection and provide written recommendations to the DPW and the landowner (if different than the DPW) within forty-eight (48) hours of being granted access to the site. If the descendant does not make recommendations within 48 hours, the landowner shall re-inter the remains in a secure area of the property where there will be no further disturbance. Should the landowner not accept the descendant's recommendations, either the owner or the MLD may request mediation by NAHC. According to the California Health and Safety Code, six (6) or more human burials at one (1) location constitute a cemetery (Section 8100), and willful disturbance of human remains in a cemetery is a felony (Section 7052).

TCR-4 Any and all archaeological/cultural documents as related to documented tribal cultural resources created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be disseminated to appropriate consulting Tribe(s) in the form of an un-redacted report (containing DPR forms). The Lead Agency and/or applicant shall, in good faith, consult with the appropriate Tribe(s) until construction completion of the project and completion of any measures imposed to protect resources.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less Than Significant with Mitigation Incorporated. CEQA defines a cumulative impact as an effect that is created as a result of the combination of the proposed project together with other projects (past, present, or future) causing related impacts. Cumulative impacts of a project need to be evaluated when the project's incremental effect is cumulatively considerable and, therefore, potentially significant.

As discussed in preceding Section 4 (1. Aesthetics through 20. Wildfire), many of the potential impacts of the proposed Project would occur during construction, with few lasting operational effects. Because the construction-related impacts of the proposed Project would be temporary and localized, they would only have the potential to combine with similar impacts of other projects if they occur at the same time and in close proximity. Construction impacts caused by the proposed Project (primarily related to biological resources, cultural resources, and hydrology and water quality) could combine with similar effects of other projects being built in the area. However, impacts would be less than significant with implementation of mitigation measures.

Mitigation Measures

BIO-1 **Burrowing Owl.** The San Bernardino County Flood Control District (District) will assign a qualified biologist to conduct pre-construction surveys for burrowing owl and related tasks listed below. A "qualified biologist" is defined as a person with appropriate education, training, and experience to conduct such surveys and monitor Project activities. The Project Biologist will survey planned disturbance areas within the site in advance of all Project activities to determine burrowing owl presence or absence. If burrowing owls are present on the site outside of the nesting season (September 1 to January 31) and construction activities are planned at the occupied burrow or within 300 feet, then the California Department of Fish and Wildlife (CDFW) will be consulted and the Project Biologist may be authorized to exclude the burrowing owls from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation

(CDFG, 2012), or to monitor project activities to ensure no disturbance to the occupied burrow. If burrowing owls are present in or near planned work areas on the site during nesting season (February 1 through August 31), then Project activities will be either be postponed until nesting is completed, or the Project Biologist will monitor activities in the vicinity of the burrowing owl and will establish a buffer as needed to avoid direct or indirect impacts to the burrowing owls or occupied burrows.

BIO-2 **Nesting birds.** Project activities that would disturb soil or vegetation will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 1 through August 31), or after a pre-construction nesting bird survey has confirmed that no active nests are located within the area to be disturbed. The Project Biologist will determine if birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the Project Biologist will designate appropriate avoidance buffers around nests to protect nesting birds. No Project related disturbance will be allowed within these buffers. The Project Biologist will remove the buffers and allow Project activities to continue once the nestlings have fledged or once the nest is no longer active.

BIO-3 **Pre-construction Surveys**. Prior to the start of any Project activities that would disturb soils or vegetation, the Project Biologist will survey the work area to determine if coastal whiptail, San Diego desert woodrat, San Diego black-tailed jackrabbit, or any other special-status species are present. Special-status reptiles will be relocated out of harm's way. San Diego black-tailed jackrabbit will be allowed to leave the site on their own, and San Diego woodrat will be actively encouraged to leave the site by deconstruction of their middens and exclusion fencing, if needed. The Project Biologist will be authorized by the County to temporarily halt Project activities if needed to prevent harm to any other special-status species.

CUL-1 **Management of Unanticipated Historical Resources or Unique Archaeological Resources.** Should unanticipated or inadvertent surface and/or subsurface prehistoric or historic archaeological resources, built environment, and/or tribal cultural resources, appear to be encountered during construction or maintenance activity associated with this project, then all work must halt within a 100-foot radius of the discovery until a qualified professional can evaluate the discovery. If the finds are archaeological or historic in nature, then an archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and/or historic archaeology have evaluated the significance of the find. This archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following shall apply, depending on the nature of the find:

A. If the professional archaeologist determines that the find *does not* represent a cultural resource, then work may resume immediately and no agency notifications are required.

B. If the professional archaeologist determines that the find *does* represent a cultural resource from any time or cultural affiliation then, depending on the nature of the discovery, appropriate treatment measures shall be developed.

C. If the find represents a Native American or potentially Native American resource that does not include human remains, which may or may not include a Tribal Cultural Resource, then the archaeologist shall consult with appropriate Tribe[s] on whether or not the resource represents either a Tribal Cultural Resource or a Historical Resource, or both, and, if so, consult on appropriate treatment measures. Preservation in place is the preferred treatment, if feasible. Work cannot resume within the no-work radius

until the County, through consultation as appropriate, determines that the site either: 1) is not a Tribal Cultural Resource or Historical Resource; or 2) that the treatment measures for the Tribal Cultural Resource or Historical Resource have been completed.

CUL-2 Management of Unanticipated Human Remains.

If the find during construction or maintenance activity includes human remains, or remains that are potentially human, the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per §7050.5 of the Health and Safety Code). The Coroner's Office may be contacted at Coroner's Division, County of San Bernardino, 175 South Lena Road, San Bernardino, California 92415 or by calling 909.387.2978. The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American, the Coroner will notify the NAHC by telephone within 24 hours. The NAHC will then immediately notify the person it believes to be the Most Likely Descendant (MLD) of the remains (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours, from the time access to the property is granted, to make recommendations concerning treatment of the remains, in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the County, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

If the Coroner determines that the remains are not of Native American origin and that the remains are from the historic-era, the County Coroner will make a recommendation as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code has been addressed and an authorization to proceed is issued by the County Coroner.

GEO-1 Incidental Discovery of Paleontological or Geological Resources. If any inadvertent or unanticipated finds in the shallow or lower part (20 or more feet below existing grade) of the basin during construction appear to be paleontological in nature, then a qualified paleontological Principal Investigator shall evaluate the finds and prepare a Paleontological Mitigation and Monitoring Plan (PMMP). The PMMP shall include a plan to address unanticipated Paleontological finds during construction. It shall also contain provisions for monitoring and sampling of sediments in the Banana Basin when work is more than 20 feet below street surface. The PMMP shall be prepared in accordance with all appropriate California Environmental Quality Act (CEQA) and County of San Bernardino guidelines. The PMMP shall then be adhered to for the remainder of any land disturbing activities for the project. If significant paleontological resources are recovered, a final report shall be written describing the geologic context of the finds, the methods employed while monitoring, the identification of the resources recovered, and the repository where the finds are curated.

HYD-1 **Stormwater Pollution Prevention Plan (SWPPP)**. Prior to construction, the San Bernardino County Flood Control District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes all State Water Resources Control Board requirements as well as the following Best Management Practices (BMPs) to ensure that disturbed soils do not impact water quality downstream. The SWPPP shall include, but not be limited to, the following BMPs.

BMP 1 **Avoid Channel Work during the Rainy Season to the Greatest Extent Practicable**. To the extent practicable, construction shall be avoided during the rainy season. In the Santa Ana watershed (Valley Areas), the rainy season is typically from October through April. If work must occur within the channel, water diversion structures shall be in place to protect water quality downstream.

BMP 2 **Clear Water Diversion**. Should water be encountered during construction, clear water diversion structures such as diversion ditches, berms, dikes, cofferdams, slope drains, rock, gravel bags, filter fabric or turbidity curtains, drainage and interceptor swales, pipes or flumes shall be employed as needed to protect water quality downstream.

BMP 3 **Avoid Spills and Leaks.** The District shall ensure that equipment operating in and near the facility is in good working condition and free of leaks. Equipment used during construction shall be parked outside of the channel. All construction staff working with heavy equipment shall have been trained in the use of the equipment and in spill containment and response for any unforeseeable accidents that may occur. A spill kit shall always be kept on-site while construction crews are working at the site. Any spills that occur shall be reported to California State Warning Center (Cal OES) at (800) 852-7550. Additionally, a copy of the Cal OES California Hazardous Materials Spill/Release Notification Guidance shall be kept on-site during construction.

BMP 4 **Concrete Washout Protocols**. The District shall implement the appropriate waste management practices during on-site construction operations. Waste management practices shall be applied to the stockpiling of concrete, curing, and finishing of concrete as well as concrete washout operations. Waste management practices shall be adequate to ensure that all fluids associated with the curing, finishing, and washout of concrete shall not be discharged into any area with the potential to enter an aquatic resource. Further, all concrete waste shall be stockpiled separately from sediment and protected with erosion control measures to ensure that concrete dust and/or debris is not discharged into an aquatic resource. The District shall determine the appropriate waste management practices based on considerations of flow velocities, site conditions, availability of stockpile locations, availability of erosion control materials, construction costs, and other requirements that may be outlined within the District's MS4 permits.

BMP 5 **Location of Temporary Stockpiles and Staging Areas.** Stockpile locations and staging areas shall be located within the disturbed/graded areas outside of the channel bottom. Silt fences, berms, or other methods of erosion control may be used if stockpiles are to remain in designated areas for longer than 10 days.

BMP 6 **Remove Debris**. Remove litter and debris from the facility as necessary after construction is completed.

BMP 7 **Wind Erosion**. Prevent dust and wind erosion by applying water or other dust palliatives as necessary to reduce or alleviate dust nuisance generated by construction activities.

TCR-1 Management of Unanticipated Discoveries of Tribal Cultural Resources.

Appropriate consulting Tribe(s) shall be contacted, as detailed in CR-1, of any pre-contact cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input within 48 hours with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended, 2018), a cultural resource Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with consulting Tribe(s), and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents consulting Tribe(s) for the remainder of the project, should Tribe(s) elect to place a monitor on-site at the Tribe's cost.

As necessary, and in accordance with Project-Specific consultations conducted with the NAHC and various Tribal entities in association with AB52, SB18, and/or any other legal guidelines relating to Native American consultations, the specific language noted in CR-1 and CR-2 may change to reflect Project-Specific needs and requirements.

TCR-2 If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to CR-2 and State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the project.

TCR-3 Only the NAHC Designated MLD Tribal representative shall make all future decisions regarding the treatment of human remains of Native American origin within the response times outlined below. The MLD shall determine the disposition and treatment of Native American human remains and any associated grave goods following Native American Graves Protection and Repatriation Act (NAGPRA) protocols, and what constitutes "appropriate dignity" as that term is used in the applicable statutes and in the Tribe's customs and traditions.

The MLD or his/her designee shall complete an inspection and provide written recommendations to the DPW and the landowner (if different than the DPW) within forty-eight (48) hours of being granted access to the site. If the descendant does not make recommendations within 48 hours, the landowner shall re-inter the remains in a secure area of the property where there will be no further disturbance. Should the landowner not accept the descendant's recommendations, either the owner or the MLD may request mediation by NAHC. According to the California Health and Safety Code, six (6) or more human burials at one (1) location constitute a cemetery (Section 8100), and willful disturbance of human remains in a cemetery is a felony (Section 7052).

TCR-4 Any and all archaeological/cultural documents as related to documented tribal cultural resources created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be disseminated to appropriate consulting Tribe(s) in the form of an un-redacted report (containing DPR forms). The Lead Agency and/or applicant shall, in good faith, consult with the appropriate Tribe(s) until construction completion of the project and completion of any measures imposed to protect resources.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation Incorporated. The preceding sections of this IS/MND discuss various types of impacts that could have adverse effects on human beings, including:

- Spills or leaks of hazardous materials (see Section 4, 9. Hazards and Hazardous Materials)
- Water quality standards, waste discharge requirements, and erosion control (see Section 4, 7. Geology and Soils and 10. Hydrology and Water Quality)

These are temporary impacts associated with the proposed Project's construction activities. Each type of impact with the potential to cause substantial adverse effects on human beings has been evaluated, and this IS/MND concludes that with implementation of mitigation measures (MM HYD-1, NOISE-1 through NOISE-8, and TR-1 through TR-3), these impacts are less than significant.

Section 4 (7. Geology and Soils, 9. Hazards and Hazardous Materials, 10. Hydrology and Water Quality) shows that the soils underlying the Project area have limited to no topsoil, however, construction related ground disturbance consisting of grading, excavation, and construction of access roads could increase the potential for erosion. As the proposed Project would disturb a surface area greater than one acre it would be required to obtain, under Clean Water Act regulations, a National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity. Compliance with the NPDES would require that the District submit a project-specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would require development and implementation of best management practices (BMPs) to identify and control erosion, which would reduce the potential for construction to trigger erosion. Adherence to the SWPPP will ensure that any spills or leaks do not transmit hazardous materials via stormwater and would also ensure that the potential for surface water and ground water contamination from the proposed construction activities would be less than significant.

Mitigation Measures

HYD-1 **Stormwater Pollution Prevention Plan (SWPPP)**. Prior to construction, the San Bernardino County Flood Control District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes all State Water Resources Control Board requirements as well as the following Best Management Practices (BMPs) to ensure that disturbed soils do not impact water quality downstream. The SWPPP shall include, but not be limited to, the following BMPs.

BMP 1 **Avoid Channel Work during the Rainy Season to the Greatest Extent Practicable**. To the extent practicable, construction shall be avoided during the rainy season. In the Santa Ana watershed (Valley Areas), the rainy season is typically from October through April. If work must occur within the channel, water diversion structures shall be in place to protect water quality downstream.

BMP 2 **Clear Water Diversion**. Should water be encountered during construction, clear water diversion structures such as diversion ditches, berms, dikes, cofferdams, slope drains, rock, gravel bags, filter fabric or turbidity curtains, drainage and interceptor swales, pipes or flumes shall be employed as needed to protect water quality downstream.

BMP 3 **Avoid Spills and Leaks.** The District shall ensure that equipment operating in and near the facility is in good working condition and free of leaks. Equipment used during construction shall be parked outside of the channel. All construction staff working with heavy equipment shall have been trained in the use of the equipment and in spill containment and response for any unforeseeable accidents that may occur. A spill kit shall always be kept on-site while construction crews are working at the site. Any spills that occur shall be reported to California State Warning Center (Cal OES) at (800) 852-7550. Additionally, a copy of the Cal OES California Hazardous Materials Spill/Release Notification Guidance shall be kept on-site during construction.

BMP 4 **Concrete Washout Protocols**. The District shall implement the appropriate waste management practices during on-site construction operations. Waste management practices shall be applied to the stockpiling of concrete, curing, and finishing of concrete as well as concrete washout operations. Waste management practices shall be adequate to ensure that all fluids associated with the curing, finishing, and washout of concrete shall not be discharged into any area with the potential to enter an aquatic resource. Further, all concrete waste shall be stockpiled separately from sediment and protected with erosion control measures to ensure that concrete dust and/or debris is not discharged into an aquatic resource. The District shall determine the appropriate waste management practices based on considerations of flow velocities, site conditions, availability of stockpile locations, availability of erosion control materials, construction costs, and other requirements that may be outlined within the District's MS4 permits.

BMP 5 **Location of Temporary Stockpiles and Staging Areas.** Stockpile locations and staging areas shall be located within the disturbed/graded areas outside of the channel bottom. Silt fences, berms, or other methods of erosion control may be used if stockpiles are to remain in designated areas for longer than 10 days.

BMP 6 **Remove Debris**. Remove litter and debris from the facility as necessary after construction is completed.

BMP 7 **Wind Erosion**. Prevent dust and wind erosion by applying water or other dust palliatives as necessary to reduce or alleviate dust nuisance generated by construction activities.

SECTION 5 – SUMMARY OF MITIGATION MEASURES

The following mitigation measures were identified to reduce impacts to less than significant:

BIOLOGICAL RESOURCES:

BIO-1 **Burrowing Owl.** The San Bernardino County Flood Control District (District) will assign a qualified biologist to conduct pre-construction surveys for burrowing owl and related tasks listed below. A "qualified biologist" is defined as a person with appropriate education, training, and experience to conduct such surveys and monitor Project activities. The Project Biologist will survey planned disturbance areas within the site in advance of all Project activities to determine burrowing owl presence or absence. If burrowing owls are present on the site outside of the nesting season (September 1 to January 31) and construction activities are planned at the occupied burrow or within 300 feet, then the California Department of Fish and Wildlife (CDFW) will be consulted and the Project Biologist may be authorized to exclude the burrowing owls from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012), or to monitor project activities to ensure no disturbance to the occupied burrow. If burrowing owls are present in or near planned work areas on the site during nesting season (February 1 through August 31), then Project activities will be either be postponed until nesting is completed, or the Project Biologist will monitor activities in the vicinity of the burrowing owl and will establish a buffer as needed to avoid direct or indirect impacts to the burrowing owls or occupied burrows.

BIO-2 **Nesting birds.** Project activities that would disturb soil or vegetation will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 1 through August 31), or after a pre-construction nesting bird survey has confirmed that no active nests are located within the area to be disturbed. The Project Biologist will determine if birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the Project Biologist will designate appropriate avoidance buffers around nests to protect nesting birds. No Project related disturbance will be allowed within these buffers. The Project Biologist will remove the buffers and allow Project activities to continue once the nestlings have fledged or once the nest is no longer active.

BIO-3 **Pre-construction Surveys**. Prior to the start of any Project activities that would disturb soils or vegetation, the Project Biologist will survey the work area to determine if coastal whiptail, San Diego desert woodrat, San Diego black-tailed jackrabbit, or any other special-status species are present. Special-status reptiles will be relocated out of harm's way. San Diego black-tailed jackrabbit will be allowed to leave the site on their own, and San Diego woodrat will be actively encouraged to leave the site by deconstruction of their middens and exclusion fencing, if needed. The Project Biologist will be authorized by the County to temporarily halt Project activities if needed to prevent harm to any other special-status species.

CULTURAL RESOURCES:

CUL-1 **Management of Unanticipated Historical Resources or Unique Archaeological Resources.** Should unanticipated or inadvertent surface and/or subsurface prehistoric or historic archaeological resources, built environment, and/or tribal cultural resources, appear to be encountered during construction or maintenance activity associated with this project, then all work must halt within a 100-foot radius of the discovery until a qualified professional can evaluate the discovery. If the finds are archaeological or historic in nature, then an archaeologist, meeting the

Secretary of the Interior's Professional Qualification Standards for prehistoric and/or historic archaeology have evaluated the significance of the find. This archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following shall apply, depending on the nature of the find:

A. If the professional archaeologist determines that the find *does not* represent a cultural resource, then work may resume immediately and no agency notifications are required.

B. If the professional archaeologist determines that the find *does* represent a cultural resource from any time or cultural affiliation then, depending on the nature of the discovery, appropriate treatment measures shall be developed.

C. If the find represents a Native American or potentially Native American resource that does not include human remains, which may or may not include a Tribal Cultural Resource, then the archaeologist shall consult with appropriate Tribe[s] on whether or not the resource represents either a Tribal Cultural Resource or a Historical Resource, or both, and, if so, consult on appropriate treatment measures. Preservation in place is the preferred treatment, if feasible. Work cannot resume within the no-work radius until the County, through consultation as appropriate, determines that the site either: 1) is not a Tribal Cultural Resource or Historical Resource; or 2) that the treatment measures for the Tribal Cultural Resource or Historical Resource have been completed.

CUL-2 Management of Unanticipated Human Remains*.*

If the find during construction or maintenance activity includes human remains, or remains that are potentially human, the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per §7050.5 of the Health and Safety Code). The Coroner's Office may be contacted at Coroner's Division, County of San Bernardino, 175 South Lena Road, San Bernardino, California 92415 or by calling 909.387.2978. The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American, the Coroner will notify the NAHC by telephone within 24 hours. The NAHC will then immediately notify the person it believes to be the Most Likely Descendant (MLD) of the remains (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours, from the time access to the property is granted, to make recommendations concerning treatment of the remains, in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the County, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

If the Coroner determines that the remains are not of Native American origin and that the remains are from the historic-era, the County Coroner will make a recommendation as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code has been addressed and an authorization to proceed is issued by the County Coroner.

GEOLOGY AND SOILS:

GEO-1 Incidental Discovery of Paleontological or Geological Resources. If any inadvertent or unanticipated finds in the shallow or lower part (20 or more feet below existing grade) of the basin during construction appear to be paleontological in nature, then a qualified paleontological Principal Investigator shall evaluate the finds and prepare a Paleontological Mitigation and Monitoring Plan (PMMP). The PMMP shall include a plan to address unanticipated Paleontological finds during construction. It shall also contain provisions for monitoring and sampling of sediments in the Banana Basin when work is more than 20 feet below street surface. The PMMP shall be prepared in accordance with all appropriate California Environmental Quality Act (CEQA) and County of San Bernardino guidelines. The PMMP shall then be adhered to for the remainder of any land disturbing activities for the project. If significant paleontological resources are recovered, a final report shall be written describing the geologic context of the finds, the methods employed while monitoring, the identification of the resources recovered, and the repository where the finds are curated.

HYDROLOGY AND WATER QUALITY:

HYD-1 Stormwater Pollution Prevention Plan (SWPPP). Prior to construction, the San Bernardino County Flood Control District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes all State Water Resources Control Board requirements as well as the following Best Management Practices (BMPs) to ensure that disturbed soils do not impact water quality downstream. The SWPPP shall include, but not be limited to, the following BMPs.

BMP 1 Avoid Channel Work during the Rainy Season to the Greatest Extent Practicable. To the extent practicable, construction shall be avoided during the rainy season. In the Santa Ana watershed (Valley Areas), the rainy season is typically from October through April. If work must occur within the channel, water diversion structures shall be in place to protect water quality downstream.

BMP 2 Clear Water Diversion. Should water be encountered during construction, clear water diversion structures such as diversion ditches, berms, dikes, cofferdams, slope drains, rock, gravel bags, filter fabric or turbidity curtains, drainage and interceptor swales, pipes or flumes shall be employed as needed to protect water quality downstream.

BMP 3 Avoid Spills and Leaks. The District shall ensure that equipment operating in and near the facility is in good working condition and free of leaks. Equipment used during construction shall be parked outside of the channel. All construction staff working with heavy equipment shall have been trained in the use of the equipment and in spill containment and response for any unforeseeable accidents that may occur. A spill kit shall always be kept on-site while construction crews are working at the site. Any spills that occur shall be reported to California State Warning Center (Cal OES) at (800) 852-

7550. Additionally, a copy of the Cal OES California Hazardous Materials Spill/Release Notification Guidance shall be kept on-site during construction.

BMP 4 **Concrete Washout Protocols**. The District shall implement the appropriate waste management practices during on-site construction operations. Waste management practices shall be applied to the stockpiling of concrete, curing, and finishing of concrete as well as concrete washout operations. Waste management practices shall be adequate to ensure that all fluids associated with the curing, finishing, and washout of concrete shall not be discharged into any area with the potential to enter an aquatic resource. Further, all concrete waste shall be stockpiled separately from sediment and protected with erosion control measures to ensure that concrete dust and/or debris is not discharged into an aquatic resource. The District shall determine the appropriate waste management practices based on considerations of flow velocities, site conditions, availability of stockpile locations, availability of erosion control materials, construction costs, and other requirements that may be outlined within the District's MS4 permits.

BMP 5 **Location of Temporary Stockpiles and Staging Areas.** Stockpile locations and staging areas shall be located within the disturbed/graded areas outside of the channel bottom. Silt fences, berms, or other methods of erosion control may be used if stockpiles are to remain in designated areas for longer than 10 days.

BMP 6 **Remove Debris**. Remove litter and debris from the facility as necessary after construction is completed.

BMP 7 **Wind Erosion**. Prevent dust and wind erosion by applying water or other dust palliatives as necessary to reduce or alleviate dust nuisance generated by construction activities.

TRIBAL CULTURAL RESOURCES

TCR-1 **Management of Unanticipated Discoveries of Tribal Cultural Resources.**

Appropriate consulting Tribe(s) shall be contacted, as detailed in CR-1, of any pre-contact cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input within 48 hours with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended, 2018), a cultural resource Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with consulting Tribe(s), and all subsequent finds shall be subject to this Plan. This Plan shall allow a monitor to be present that represents consulting Tribe(s) for the remainder of the project, should Tribe(s) elect to place a monitor on-site at the Tribe's cost.

As necessary, and in accordance with Project-Specific consultations conducted with the NAHC and various Tribal entities in association with AB52, SB18, and/or any other legal guidelines relating to Native American consultations, the specific language noted in CR-1 and CR-2 may change to reflect Project-Specific needs and requirements.

TCR-2 If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to CR-2 and State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the project.

TCR-3 Only the NAHC Designated MLD Tribal representative shall make all future decisions regarding the treatment of human remains of Native American origin within the response times outlined

below. The MLD shall determine the disposition and treatment of Native American human remains and any associated grave goods following Native American Graves Protection and Repatriation Act (NAGPRA) protocols, and what constitutes "appropriate dignity" as that term is used in the applicable statutes and in the Tribe's customs and traditions.

The MLD or his/her designee shall complete an inspection and provide written recommendations to the DPW and the landowner (if different from the DPW) within forty-eight (48) hours of being granted access to the site. If the descendant does not make recommendations within 48 hours, the landowner shall re-inter the remains in a secure area of the property where there will be no further disturbance. Should the landowner not accept the descendant's recommendations, either the owner or the MLD may request mediation by NAHC. According to the California Health and Safety Code, six (6) or more human burials at one (1) location constitute a cemetery (Section 8100), and willful disturbance of human remains in a cemetery is a felony (Section 7052).

TCR-4 Any and all archaeological/cultural documents as related to documented tribal cultural resources created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be disseminated to appropriate consulting Tribe(s) in the form of an un-redacted report (containing DPR forms). The Lead Agency and/or applicant shall, in good faith, consult with the appropriate Tribe(s) until construction completion of the project and completion of any measures imposed to protect resources.

SECTION 6 - REFERENCES

San Bernardino County. 2009. San Bernardino County General Plan Land Use Zoning Districts. FH28A and FH29A. [online]: http://cms.sbcounty.gov/lus/Planning/ZoningOverlayMaps/ZoningMaps.aspx. Accessed October 28, 2019.

Google Earth. 2018. 34°05'39.56"N and 117°30'20.34"W. Accessed March 14, 2019.

Aesthetics

Caltrans (California Department of Transportation), 2019. San Bernardino County Designated Scenic Highway Routes. [online]: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed February 27.

Air Quality

ARB (California Air Resources Board). 2019. Area Designation Maps/State and National. [online]: https://www.arb.ca.gov/desig/adm/adm.htm. Accessed March 2019.

_____. 2011. Regulation to Establish a Statewide Portable Equipment Registration Program. Effective February 19, 2011. [online]: https://www.arb.ca.gov/portable/perp/perpreg.pdf. Accessed March 2019.

CDC (U.S. Center for Disease Control and Prevention). 2018. Valley Fever Awareness. [online]: http://www.cdc.gov/features/ValleyFever/index.html. Accessed March 2019.

CDPH (California Department of Public Health). 2019. Coccidioidomycosis (Valley Fever) webpage. https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Coccidioidomycosis.aspx. Accessed March 2019.

County of San Bernardino. 2019. Countywide Plan. Natural Resources Element [online]: http://countywideplan.com/policy-plan/beta/nr/. Accessed March 2019.

LACPH (County of Los Angeles Department of Public Health). Veterinarian's Brief: Valley Fever in Animals in Los Angeles County. [Online]: https://admin.publichealth.lacounty.gov/vet/docs/ValleyFeverAnimals.pdf. Accessed March 2019.

SCAQMD (South Coast Air Quality Management District). 2019. South Coast Air Quality Management District Rules and Regulations. [online]: http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/table-of-contents. Accessed March 2019.

_____. 2017. Risk Assessment Procedures for Rules 1401, 1401.1 and 212. Version 8.1 September 1, 2017. [online]: http://www.aqmd.gov/home/permits/risk-assessment. Accessed February 2019.

_____. 2015. SCAQMD Air Quality Significance Thresholds. [online]: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. Accessed March 2019.

_____. 2009. Air Quality Analysis Guidance Handbook, Localized Significance Thresholds – Appendix C – Mass rate Look-up Table. [online]: http://aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf. Accessed March 2019.

The Weather Channel. 2019. Highland, CA Monthly Weather Averages. [online]: https://weather.com/weather/monthly/l/c09e2b4315cb183d93f1ef2105b87ee0cc281b8abd19ca25b4079d9cb7496f6a. Accessed May 2019.

USEPA (United States Environmental Protection Agency). 2019. Nonattainment Areas for Criteria Pollutants (Green Book). [online]: https://www.epa.gov/green-book. Accessed March 2019.

Agriculture and Forestry Resources

DOC (California Department of Conservation). 2017. San Bernardino County Important Farmland, Sheet 2 of 2. August

_____. 2016.San Bernardino County Williamson Act FY 2015/2016, Sheet 2 of 2.

San Bernardino County. 2009. San Bernardino County General Plan Land Use Zoning Districts. FH28A and FH29A. [online]: http://cms.sbcounty.gov/lus/Planning/ZoningOverlayMaps/ZoningMaps.aspx. Accessed October 28, 2019.

Biological Resources

CDFG (California Department of Fish and Game). 2012. Staff Report on Burrowing Owl Mitigation. Online: http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf

CDFW (California Department of Fish and Wildlife). 2019. California Natural Diversity Database (CNDDB), Rarefind, Version 5. Heritage section, CDFW, Sacramento.

CNPS (California Native Plant Society). 2019. Inventory of rare and endangered plants. California Native Plant Society. Sacramento. Online: http://www.cnps.org/inventory. Accessed July 2019.

CCH (Consortium of California Herbaria). 2019. Botanical specimen data provided by the participants of the Consortium of California Herbaria. Online*:* http://ucjeps.berkeley.edu/consortium/ Accessed July 2019.

County of San Bernardino. 2007. Open Space Element of the San Bernardino County General Plan.

Cultural Resources

Hatheway, Roger and Jesse Yorck. 2018. *Phase I Cultural Resources Inventory of the West Fontana Channel Improvement Project City of Fontana, San Bernardino County, California.* Report prepared by the County of San Bernardino Department of Public Works Environmental Management Division for the San Bernardino County Flood Control District.

McKenna, Jeanette A. 2016. *A Phase I Cultural Resources Investigation of the Proposed West Fontana Flood Control Channel, Fontana, San Bernardino County, California.* Prepared by McKENNA et al. for Lilburn Corporation.

Energy

CAISO (California Independent System Operator). 2018. 2017-2018 Transmission Plan. March 22. [online]: http://www.caiso.com/Documents/BoardApproved-2017-2018_Transmission_Plan.pdf. Accessed March 2019.

County of San Bernardino. 2017. General Plan Renewable Energy and Conservation Element. [online]: http://www.sbcounty.gov/uploads/LUS/Renewable/RECElementFINALADOPTEDVersion8817WEB.pdf. Accessed March 2019.

Geology and Soils

2014 Working Group on California Earthquake Probabilities (2014 WGCEP). 2015. Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast (UCERF3) and associated electronic supplements. Bulletin of the Seismological Society of America (BSSA), Vol. 105, N0. 2A, pp 511-543, April.

California Geological Survey (CGS). 2019. Ground Motion Interpolator website. [online]: https://www.conservation.ca.gov/cgs/ground-motion-interpolator. Accessed May 2019

County of San Bernardino, 2007. 2007 General Plan Geologic Hazard Map Overlays, FH29C - Fontana. [online:] http://cms.sbcounty.gov/lus/planning/zoningoverlaymaps/geologichazardmaps.aspx. Accessed May 2019.

DWR (Department of Water Resources). 2019. Water Data Library Interactive Map, [On-line]: http://wdl.water.ca.gov/waterdatalibrary/ Accessed May 2019.

National Resources Conservation Service (NRCS). 2019. Web Soil Survey, Soil Data Explorer. [online]: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed May 2019.

United States Geological Survey (USGS). 2003. Preliminary Geologic Map of the San Bernardino 30' x 60' Quadrangle, California, [online]: https://pubs.usgs.gov/of/2003/of03-293/. Accessed May 2019.

Greenhouse Gas Emissions

Bedsworth et al. (Bedsworth, Louise, Dan Cayan, Guido Franco, Leah Fisher, Sonya Ziaja). 2018. California Governor's Office of Planning and Research, Scripps Institution of Oceanography, California Energy Commission, California Public Utilities Commission). Statewide Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-013. [Online]: http://www.climateassessment.ca.gov/state/index.html. Accessed March 2019.

ARB (California Air Resources Board). 2017. 2017 Climate Change Scoping Plan. [online]: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm. Accessed March 2019.

_____. 2014. First Update to the AB 32 Climate Change Scoping Plan. May 2014. [Online]: https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed March 2019.

_____. 2008. Climate Change Scoping Plan: A Framework for Change. Pursuant to AB 32 the California Global Warming Solutions Act of 2006. December 2008. [Online]: https://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm. Accessed March 2019.

County of San Bernardino. 2011. Greenhouse Gas Emissions Reduction Plan. [Online]: http://www.sbcounty.gov/Uploads/lus/GreenhouseGas/FinalGHGFull.pdf. Accessed March 2019.

Hall et al. (Hall, Alex, Neil Berg, Katharine Reich [University of California, Los Angeles]). 2018. Los Angeles Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-007. [online]: http://www.climateassessment.ca.gov/regions/. Accessed March 2019.

SCAQMD (South Coast Air Quality Management District. 2015. SCAQMD Air Quality Significance Thresholds. [Online]: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. Accessed March 2019.

_____. 2008. SCAQMD Board Meeting Agenda Item No. 31, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Air Quality Significance Thresholds. [Online]: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf. Accessed March 2019.

Hazards and Hazardous Materials

DTSC (Department of Toxic Substances Control). 2019. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). [online]: https://dtsc.ca.gov/dtscs-cortese-list/. Accessed May.

Hydrology and Water Quality

DWR (California Department of Water Resources). 2004. California's Groundwater Bulletin 118.

RWQCB (Santa Ana Regional Water Quality Control Board). 1994. Water Quality Control Plan for the Santa Ana Region.

SWRCB (California State Water Resources Control Board). 2019. Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report). [Online] https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml. Accessed May 22, 2019.

Land Use and Planning

Google Earth. 2018. 34°05'39.56"N and 117°30'20.34"W. Accessed March 14, 2019.

San Bernardino County. 2009. San Bernardino County General Plan Land Use Zoning Districts. FH28A and FH29A. [online]: http://cms.sbcounty.gov/lus/Planning/ZoningOverlayMaps/ZoningMaps.aspx. Accessed October 28, 2019.

_____. 2007. County of San Bernardino 2007 General Plan. Adopted March 13. [online]: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed October 28, 2019.

Mineral Resources

California Geological Survey (CGS), 1984. Mineral Land Classification of the Greater Los Angeles Area, Part VII, Classification of Sand and Gravel Resource Areas San Bernardino Production-Consumption Region, Special Report 143.

City of Fontana. 2003. City of Fontana General Plan, Chapter 9. Open Space and Conservation Element. [online:] https://www.fontana.org/DocumentCenter/View/4302/Ch09-Open-Space-and-Conservation-Element---Full?bidId=. Accessed May 2019.

County of San Bernardino, 2007. 2007 General Plan, adopted March, 13, 2007, amended April 24, 2014. [online:] http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed May 2019.

Division of Mine Reclamation (DMR), 2019. Mines Online website. [Online:] https://maps.conservation.ca.gov/mol/index.html. Accessed May 2019.

Division of Oil, Gas, and Geothermal Resources (DOGGR), 2019. Well Finder website (DOGGR GIS). [Online:] https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-117.31696/34.07378/12. Accessed May 2019.

San Bernardino County, 2019. Land Use Services, Surface Mining and Reclamation, List of currently active mines. [On-line]: http://www.sbcounty.gov/uploads/lus/Mine/MineList.pdf. Accessed May 2019.

Noise

City of Fontana. 2019. Municipal Code Section 18-63(b)(7). [online]: http://www.nonoise.org/lawlib/cities/ordinances/Fontana,%20California.pdf. Accessed April 30.

City of Rancho Cucamonga. 2019. Municipal Code Section 17.66.050. [online]: http://qcode.us/codes/ranchocucamonga/view.php?topic=17-iv-17_66-17_66_050. Accessed April 30.

FTA (Federal Transit Authority). 2006. Transit Noise and Vibration Impact Assessment.

San Bernardino County. 2019. County of San Bernardino Development Code. Adopted March 13, 2007; Amended December 27, 2012. [On-line]: http://cms.sbcounty.gov/lus/Planning/DevelopmentCode.aspx. Accessed April 30.

Recreation

Auto Club Speedway. 2019. Track Facts. [online]: http://www.autoclubspeedway.com/About-Us/Track-Facts.aspx. Accessed May 15.

Google Earth. 2018. 34°05'39.56"N and 117°30'20.34"W. Accessed May 15, 2019.

Tribal Cultural Resources

Hatheway, Roger and Jesse Yorck. 2018. *Phase I Cultural Resources Inventory of the West Fontana Channel Improvement Project*
City of Fontana, San Bernardino County, California. Report prepared by the County of San Bernardino Department of Public Works Environmental Management Division for the San Bernardino County Flood Control District.

Governor's Office of Planning and Research. 2017. *Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA.* State of California. Sacramento, CA.

Wildfire

CalFire (California Department of Fire and Forestry). 2019. San Bernardino (South West) County FHSZ Map. [online]: http://www.fire.ca.gov/fire_prevention/fhsz_maps_sanbernardinosw. Accessed April 30.

Appendix A.
Air Pollutant Emission Calculations

West Fontana Channel Improvement Project

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	5.00	User Defined Unit	5.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Construction Phase - Schedule per County Engineer's data response

Off-road Equipment - Equipment based on County Engineer estimates

Trips and VMT - Based on County Engineer material import/export estimates, worker estimates, one mile unpaved round trip for internal fill trucking, and 2 fuel/sanitary/other vendor truck round trips per day.

On-road Fugitive Dust - Workers are assumed to park in paved areas. Vendor and haul trip pave percentages are based on 1,000 feet unpaved per trip, excepting internal trips that are 100 percent unpaved and paving import trips that are 100 percent paved.

Construction Off-road Equipment Mitigation - Mitigation assumes SCAQMD Rule 403 compliance measures (watering and speed control).

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.8089	81.6423	26.9165	0.2255	97.4507	1.2078	98.4053	10.0129	1.1405	10.8934	0.0000	24,052.9352	24,052.9352	2.4635	0.0000	24,114.5235
2022	1.0655	8.8429	7.4637	0.0224	5.8204	0.3129	6.1333	0.6673	0.3124	0.9798	0.0000	2,068.1799	2,068.1799	0.1456	0.0000	2,071.8194
Maximum	**3.8089**	**81.6423**	**26.9165**	**0.2255**	**97.4507**	**1.2078**	**98.4053**	**10.0129**	**1.1405**	**10.8934**	**0.0000**	**24,052.9352**	**24,052.9352**	**2.4635**	**0.0000**	**24,114.5235**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.8089	81.6423	26.9165	0.2255	32.7110	1.2078	33.6655	3.6663	1.1405	4.4921	0.0000	24,052.9352	24,052.9352	2.4635	0.0000	24,114.5235
2022	1.0655	8.8429	7.4637	0.0224	2.2372	0.3129	2.5501	0.3090	0.3124	0.6214	0.0000	2,068.1799	2,068.1799	0.1456	0.0000	2,071.8194
Maximum	**3.8089**	**81.6423**	**26.9165**	**0.2255**	**32.7110**	**1.2078**	**33.6655**	**3.6663**	**1.1405**	**4.4921**	**0.0000**	**24,052.9352**	**24,052.9352**	**2.4635**	**0.0000**	**24,114.5235**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**66.16**	**0.00**	**65.36**	**62.78**	**0.00**	**56.93**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Clear and Grub	Site Preparation	5/27/2021	5/28/2021	5	2	
2	Rock Slope Protection Excavation	Grading	5/31/2021	7/2/2021	5	25	
3	Rock Slope Protection Hauling	Grading	5/31/2021	7/12/2021	5	31	
4	Fill, Backfill, and Recompaction	Grading	7/13/2021	9/6/2021	5	40	
5	Fill, Backfill, Recompaction Internal Trips	Grading	7/13/2021	9/6/2021	5	40	
6	Calabash Ave. Paving	Paving	9/7/2021	9/8/2021	5	2	
7	Concrete Structures 1	Site Preparation	9/9/2021	10/6/2021	5	20	Site Preparation/Grading
8	Concrete Structures 2	Trenching	10/7/2021	11/10/2021	5	25	Excavation
9	Concrete Structures 3	Demolition	11/11/2021	11/30/2021	5	14	Breaking Abutment
10	Concrete Structures 4	Building Construction	12/1/2021	12/14/2021	5	10	Installing piles
11	Concrete Structures 5	Building Construction	12/15/2021	12/28/2021	5	10	Spreader Plates
12	Concrete Structures 6	Building Construction	12/28/2021	1/11/2022	5	11	Concrete Work

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Clear and Grub	Crawler Tractors	1	8.00	158	0.38
Clear and Grub	Off-Highway Trucks	1	8.00	402	0.38
Clear and Grub	Rubber Tired Loaders	1	8.00	203	0.36
Rock Slope Protection Excavation	Crawler Tractors	1	8.00	212	0.43
Rock Slope Protection Excavation	Excavators	1	8.00	158	0.38
Rock Slope Protection Hauling	Off-Highway Trucks	1	8.00	402	0.38
Rock Slope Protection Hauling	Rubber Tired Loaders	1	8.00	203	0.36
Fill, Backfill, and Recompaction	Crawler Tractors	1	8.00	212	0.43
Fill, Backfill, and Recompaction	Graders	1	8.00	187	0.41
Fill, Backfill, and Recompaction	Off-Highway Trucks	1	8.00	402	0.38
Fill, Backfill, and Recompaction	Rollers	1	8.00	80	0.38
Fill, Backfill, and Recompaction	Rubber Tired Loaders	1	8.00	203	0.36
Calabash Ave. Paving	Graders	1	8.00	187	0.41
Calabash Ave. Paving	Pavers	1	8.00	130	0.42
Calabash Ave. Paving	Rollers	1	8.00	80	0.38
Concrete Structures 1	Crawler Tractors	1	9.00	354	0.43
Concrete Structures 1	Generator Sets	8	9.00	8	0.74
Concrete Structures 1	Rubber Tired Loaders	1	9.00	203	0.36
Concrete Structures 1	Tractors/Loaders/Backhoes	1	9.00	97	0.37
Concrete Structures 2	Excavators	1	9.00	432	0.38
Concrete Structures 2	Generator Sets	8	9.00	8	0.74
Concrete Structures 2	Rubber Tired Loaders	1	9.00	203	0.36
Concrete Structures 3	Concrete/Industrial Saws	1	8.00	81	0.73
Concrete Structures 3	Excavators	2	9.00	97	0.38
Concrete Structures 3	Generator Sets	8	9.00	8	0.74

Concrete Structures 3	Rubber Tired Dozers	1	9.00	247	0.40
Concrete Structures 4	Bore/Drill Rigs	1	9.00	265	0.50
Concrete Structures 4	Bore/Drill Rigs	1	9.00	765	0.50
Concrete Structures 4	Excavators	1	9.00	432	0.38
Concrete Structures 4	Generator Sets	8	9.00	8	0.74
Concrete Structures 5	Excavators	1	9.00	432	0.38
Concrete Structures 5	Generator Sets	8	9.00	8	0.74
Concrete Structures 6	Air Compressors	1	9.00	78	0.48
Concrete Structures 6	Generator Sets	8	9.00	8	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Clear and Grub	3	18.00	4.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Rock Slope Protection Excavation	2	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Rock Slope Protection Hauling	2	38.00	4.00	7,516.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fill, Backfill, and Recompaction	5	28.00	4.00	2,788.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fill, Backfill, Recompaction Internal	0	4.00	0.00	4,000.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	HHDT
Calabash Ave. Paving	3	16.00	4.00	100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Structures 1	11	20.00	4.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Structures 2	10	16.00	4.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Structures 3	12	16.00	4.00	168.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Structures 4	11	16.00	4.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Structures 5	9	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Structures 6	9	24.00	4.00	100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Clear and Grub - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6513	0.0000	2.6513	0.2863	0.0000	0.2863			0.0000			0.0000
Off-Road	1.4101	13.7808	8.7079	0.0246		0.5809	0.5809		0.5344	0.5344		2,382.9484	2,382.9484	0.7707		2,402.2158
Total	**1.4101**	**13.7808**	**8.7079**	**0.0246**	**2.6513**	**0.5809**	**3.2321**	**0.2863**	**0.5344**	**0.8207**		**2,382.9484**	**2,382.9484**	**0.7707**		**2,402.2158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0760	2.5928	0.5727	7.6700e-003	3.1167	8.0800e-003	3.1248	0.3412	7.7300e-003	0.3490		833.2636	833.2636	0.0587		834.7317
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0753	0.0491	0.6758	2.0000e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		199.2417	199.2417	5.3700e-003		199.3759
Total	**0.1626**	**3.0250**	**1.3416**	**0.0107**	**4.4397**	**0.0104**	**4.4501**	**0.5113**	**9.8500e-003**	**0.5211**		**1,140.8028**	**1,140.8028**	**0.0708**		**1,142.5725**

3.2 Clear and Grub - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0340	0.0000	1.0340	0.1117	0.0000	0.1117			0.0000			0.0000
Off-Road	1.4101	13.7808	8.7079	0.0246		0.5809	0.5809		0.5344	0.5344	0.0000	2,382.9484	2,382.9484	0.7707		2,402.2158
Total	**1.4101**	**13.7808**	**8.7079**	**0.0246**	**1.0340**	**0.5809**	**1.6149**	**0.1117**	**0.5344**	**0.6460**	**0.0000**	**2,382.9484**	**2,382.9484**	**0.7707**		**2,402.2158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0760	2.5928	0.5727	7.6700e-003	1.1273	8.0800e-003	1.1354	0.1423	7.7300e-003	0.1500		833.2636	833.2636	0.0587		834.7317
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0753	0.0491	0.6758	2.0000e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		199.2417	199.2417	5.3700e-003		199.3759
Total	**0.1626**	**3.0250**	**1.3416**	**0.0107**	**1.7090**	**0.0104**	**1.7194**	**0.2382**	**9.8500e-003**	**0.2481**		**1,140.8028**	**1,140.8028**	**0.0708**		**1,142.5725**

3.3 Rock Slope Protection Excavation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7801	9.1215	5.7069	0.0130		0.3666	0.3666		0.3373	0.3373		1,260.5540	1,260.5540	0.4077		1,270.7462
Total	**0.7801**	**9.1215**	**5.7069**	**0.0130**	**0.0000**	**0.3666**	**0.3666**	**0.0000**	**0.3373**	**0.3373**		**1,260.5540**	**1,260.5540**	**0.4077**		**1,270.7462**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.0670**	**0.0437**	**0.6008**	**1.7800e-003**	**0.1788**	**1.3200e-003**	**0.1802**	**0.0474**	**1.2200e-003**	**0.0487**		**177.1037**	**177.1037**	**4.7700e-003**		**177.2231**

3.3 Rock Slope Protection Excavation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7801	9.1215	5.7069	0.0130		0.3666	0.3666		0.3373	0.3373	0.0000	1,260.5540	1,260.5540	0.4077		1,270.7462
Total	**0.7801**	**9.1215**	**5.7069**	**0.0130**	**0.0000**	**0.3666**	**0.3666**	**0.0000**	**0.3373**	**0.3373**	**0.0000**	**1,260.5540**	**1,260.5540**	**0.4077**		**1,270.7462**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.0670**	**0.0437**	**0.6008**	**1.7800e-003**	**0.1788**	**1.3200e-003**	**0.1802**	**0.0474**	**1.2200e-003**	**0.0487**		**177.1037**	**177.1037**	**4.7700e-003**		**177.2231**

3.4 Rock Slope Protection Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2280	0.0000	0.2280	0.0345	0.0000	0.0345			0.0000			0.0000
Off-Road	0.9489	9.1271	5.2030	0.0195		0.3219	0.3219		0.2962	0.2962		1,883.7492	1,883.7492	0.6092		1,898.9803
Total	**0.9489**	**9.1271**	**5.2030**	**0.0195**	**0.2280**	**0.3219**	**0.5499**	**0.0345**	**0.2962**	**0.3307**		**1,883.7492**	**1,883.7492**	**0.6092**		**1,898.9803**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8426	62.8632	13.8861	0.1860	75.5648	0.1960	75.7607	8.2735	0.1875	8.4610		20,202.6094	20,202.6094	1.4238		20,238.2043
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.1590	0.1037	1.4268	4.2200e-003	0.4248	3.1400e-003	0.4279	0.1127	2.9000e-003	0.1155		420.6214	420.6214	0.0113		420.9048
Total	**2.0129**	**63.3500**	**15.4059**	**0.1912**	**77.1113**	**0.1999**	**77.3112**	**8.5029**	**0.1911**	**8.6940**		**20,731.5282**	**20,731.5282**	**1.4418**		**20,767.5740**

3.4 Rock Slope Protection Hauling - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0889	0.0000	0.0889	0.0135	0.0000	0.0135			0.0000			0.0000
Off-Road	0.9489	9.1271	5.2030	0.0195		0.3219	0.3219		0.2962	0.2962	0.0000	1,883.7492	1,883.7492	0.6092		1,898.9803
Total	**0.9489**	**9.1271**	**5.2030**	**0.0195**	**0.0889**	**0.3219**	**0.4108**	**0.0135**	**0.2962**	**0.3096**	**0.0000**	**1,883.7492**	**1,883.7492**	**0.6092**		**1,898.9803**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8426	62.8632	13.8861	0.1860	27.3314	0.1960	27.5273	3.4502	0.1875	3.6377		20,202.6094	20,202.6094	1.4238		20,238.2043
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.1590	0.1037	1.4268	4.2200e-003	0.4248	3.1400e-003	0.4279	0.1127	2.9000e-003	0.1155		420.6214	420.6214	0.0113		420.9048
Total	**2.0129**	**63.3500**	**15.4059**	**0.1912**	**28.1367**	**0.1999**	**28.3366**	**3.6054**	**0.1911**	**3.7965**		**20,731.5282**	**20,731.5282**	**1.4418**		**20,767.5740**

3.5 Fill, Backfill, and Recompaction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0933	0.0000	0.0933	0.0141	0.0000	0.0141			0.0000			0.0000
Off-Road	2.1423	23.9440	11.2857	0.0366		0.8894	0.8894		0.8182	0.8182		3,539.8843	3,539.8843	1.1449		3,568.5060
Total	**2.1423**	**23.9440**	**11.2857**	**0.0366**	**0.0933**	**0.8894**	**0.9827**	**0.0141**	**0.8182**	**0.8324**		**3,539.8843**	**3,539.8843**	**1.1449**		**3,568.5060**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5297	18.0719	3.9920	0.0535	21.7234	0.0563	21.7797	2.3785	0.0539	2.4324		5,807.8470	5,807.8470	0.4093		5,818.0798
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.1172	0.0764	1.0513	3.1100e-003	0.3130	2.3200e-003	0.3153	0.0830	2.1300e-003	0.0851		309.9315	309.9315	8.3500e-003		310.1404
Total	**0.6582**	**18.5314**	**5.1363**	**0.0576**	**23.1581**	**0.0594**	**23.2176**	**2.5782**	**0.0568**	**2.6349**		**6,226.0760**	**6,226.0760**	**0.4244**		**6,236.6851**

3.5 Fill, Backfill, and Recompaction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0364	0.0000	0.0364	5.5100e-003	0.0000	5.5100e-003			0.0000			0.0000
Off-Road	2.1423	23.9440	11.2857	0.0366		0.8894	0.8894		0.8182	0.8182	0.0000	3,539.8843	3,539.8843	1.1449		3,568.5060
Total	**2.1423**	**23.9440**	**11.2857**	**0.0366**	**0.0364**	**0.8894**	**0.9258**	**5.5100e-003**	**0.8182**	**0.8238**	**0.0000**	**3,539.8843**	**3,539.8843**	**1.1449**		**3,568.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5297	18.0719	3.9920	0.0535	7.8572	0.0563	7.9136	0.9919	0.0539	1.0458		5,807.8470	5,807.8470	0.4093		5,818.0798
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.1172	0.0764	1.0513	3.1100e-003	0.3130	2.3200e-003	0.3153	0.0830	2.1300e-003	0.0851		309.9315	309.9315	8.3500e-003		310.1404
Total	**0.6582**	**18.5314**	**5.1363**	**0.0576**	**8.5507**	**0.0594**	**8.6102**	**1.1174**	**0.0568**	**1.1742**		**6,226.0760**	**6,226.0760**	**0.4244**		**6,236.6851**

3.6 Fill, Backfill, Recompaction Internal Trips - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5580	0.0000	0.5580	0.0615	0.0000	0.0615			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5580**	**0.0000**	**0.5580**	**0.0615**	**0.0000**	**0.0615**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1689	9.6657	1.1931	0.0120	73.5966	5.4100e-003	73.6020	7.3473	5.1800e-003	7.3525		1,296.0183	1,296.0183	0.1784		1,300.4774
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0167	0.0109	0.1502	4.4000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		44.2759	44.2759	1.1900e-003		44.3058
Total	**0.1856**	**9.6766**	**1.3433**	**0.0124**	**73.6413**	**5.7400e-003**	**73.6470**	**7.3592**	**5.4800e-003**	**7.3647**		**1,340.2942**	**1,340.2942**	**0.1796**		**1,344.7832**

3.6 Fill, Backfill, Recompaction Internal Trips - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2176	0.0000	0.2176	0.0240	0.0000	0.0240			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.2176**	**0.0000**	**0.2176**	**0.0240**	**0.0000**	**0.0240**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1689	9.6657	1.1931	0.0120	23.8615	5.4100e-003	23.8669	2.3738	5.1800e-003	2.3790		1,296.0183	1,296.0183	0.1784		1,300.4774
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0167	0.0109	0.1502	4.4000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		44.2759	44.2759	1.1900e-003		44.3058
Total	**0.1856**	**9.6766**	**1.3433**	**0.0124**	**23.9062**	**5.7400e-003**	**23.9120**	**2.3857**	**5.4800e-003**	**2.3912**		**1,340.2942**	**1,340.2942**	**0.1796**		**1,344.7832**

3.7 Calabash Ave. Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8887	10.4439	6.5524	0.0140		0.4307	0.4307		0.3963	0.3963		1,350.8338	1,350.8338	0.4369		1,361.7560
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8887**	**10.4439**	**6.5524**	**0.0140**		**0.4307**	**0.4307**		**0.3963**	**0.3963**		**1,350.8338**	**1,350.8338**	**0.4369**		**1,361.7560**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3800	12.9641	2.8637	0.0384	0.8733	0.0404	0.9137	0.2393	0.0387	0.2780		4,166.3178	4,166.3178	0.2936		4,173.6584
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.0256	7.8000e-004	0.0264	7.3700e-003	7.5000e-004	8.1200e-003		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.4582**	**13.3908**	**3.5574**	**0.0411**	**1.0777**	**0.0425**	**1.1203**	**0.2941**	**0.0406**	**0.3347**		**4,451.7190**	**4,451.7190**	**0.3051**		**4,459.3464**

3.7 Calabash Ave. Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8887	10.4439	6.5524	0.0140		0.4307	0.4307		0.3963	0.3963	0.0000	1,350.8338	1,350.8338	0.4369		1,361.7560
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8887**	**10.4439**	**6.5524**	**0.0140**		**0.4307**	**0.4307**		**0.3963**	**0.3963**	**0.0000**	**1,350.8338**	**1,350.8338**	**0.4369**		**1,361.7560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3800	12.9641	2.8637	0.0384	0.8733	0.0404	0.9137	0.2393	0.0387	0.2780		4,166.3178	4,166.3178	0.2936		4,173.6584
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.0256	7.8000e-004	0.0264	7.3700e-003	7.5000e-004	8.1200e-003		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.4582**	**13.3908**	**3.5574**	**0.0411**	**1.0777**	**0.0425**	**1.1203**	**0.2941**	**0.0406**	**0.3347**		**4,451.7190**	**4,451.7190**	**0.3051**		**4,459.3464**

3.8 Concrete Structures 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.0478	20.5482	13.7735	0.0328		0.8491	0.8491		0.7963	0.7963		2,986.5014	2,986.5014	0.8467		3,007.6699
Total	**2.0478**	**20.5482**	**13.7735**	**0.0328**	**0.0000**	**0.8491**	**0.8491**	**0.0000**	**0.7963**	**0.7963**		**2,986.5014**	**2,986.5014**	**0.8467**		**3,007.6699**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.6000e-003	0.2593	0.0573	7.7000e-004	0.3117	8.1000e-004	0.3125	0.0341	7.7000e-004	0.0349		83.3264	83.3264	5.8700e-003		83.4732
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.1026**	**0.6969**	**0.9012**	**4.0000e-003**	**1.6570**	**3.2400e-003**	**1.6603**	**0.2101**	**3.0400e-003**	**0.2131**		**413.0035**	**413.0035**	**0.0185**		**413.4669**

3.8 Concrete Structures 1 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.0478	20.5482	13.7735	0.0328		0.8491	0.8491		0.7963	0.7963	0.0000	2,986.5014	2,986.5014	0.8467		3,007.6699
Total	**2.0478**	**20.5482**	**13.7735**	**0.0328**	**0.0000**	**0.8491**	**0.8491**	**0.0000**	**0.7963**	**0.7963**	**0.0000**	**2,986.5014**	**2,986.5014**	**0.8467**		**3,007.6699**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.6000e-003	0.2593	0.0573	7.7000e-004	0.1127	8.1000e-004	0.1135	0.0142	7.7000e-004	0.0150		83.3264	83.3264	5.8700e-003		83.4732
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.1026**	**0.6969**	**0.9012**	**4.0000e-003**	**0.7168**	**3.2400e-003**	**0.7201**	**0.1161**	**3.0400e-003**	**0.1191**		**413.0035**	**413.0035**	**0.0185**		**413.4669**

3.9 Concrete Structures 2 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4473	12.8577	8.6597	0.0304		0.4790	0.4790		0.4558	0.4558		2,744.5399	2,744.5399	0.7685		2,763.7521
Total	**1.4473**	**12.8577**	**8.6597**	**0.0304**		**0.4790**	**0.4790**		**0.4558**	**0.4558**		**2,744.5399**	**2,744.5399**	**0.7685**		**2,763.7521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0122	0.4149	0.0916	1.2300e-003	0.4987	1.2900e-003	0.5000	0.0546	1.2400e-003	0.0558		133.3222	133.3222	9.4000e-003		133.5571
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.0904**	**0.8416**	**0.7854**	**4.0200e-003**	**1.7993**	**3.3900e-003**	**1.8027**	**0.2187**	**3.2100e-003**	**0.2219**		**418.7234**	**418.7234**	**0.0209**		**419.2451**

3.9 Concrete Structures 2 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4473	12.8577	8.6597	0.0304		0.4790	0.4790		0.4558	0.4558	0.0000	2,744.5399	2,744.5399	0.7685		2,763.7521
Total	**1.4473**	**12.8577**	**8.6597**	**0.0304**		**0.4790**	**0.4790**		**0.4558**	**0.4558**	**0.0000**	**2,744.5399**	**2,744.5399**	**0.7685**		**2,763.7521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0122	0.4149	0.0916	1.2300e-003	0.1804	1.2900e-003	0.1817	0.0228	1.2400e-003	0.0240		133.3222	133.3222	9.4000e-003		133.5571
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.0904**	**0.8416**	**0.7854**	**4.0200e-003**	**0.7398**	**3.3900e-003**	**0.7432**	**0.1128**	**3.2100e-003**	**0.1160**		**418.7234**	**418.7234**	**0.0209**		**419.2451**

3.10 Concrete Structures 3 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9042	0.0000	2.9042	0.4397	0.0000	0.4397			0.0000			0.0000
Off-Road	2.5601	23.7210	16.6424	0.0304		1.1960	1.1960		1.1293	1.1293		2,741.7136	2,741.7136	0.6103		2,756.9712
Total	**2.5601**	**23.7210**	**16.6424**	**0.0304**	**2.9042**	**1.1960**	**4.1001**	**0.4397**	**1.1293**	**1.5690**		**2,741.7136**	**2,741.7136**	**0.6103**		**2,756.9712**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0912	3.1114	0.6873	9.2000e-003	3.7400	9.7000e-003	3.7497	0.4095	9.2800e-003	0.4188		999.9163	999.9163	0.0705		1,001.6780
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.1694**	**3.5381**	**1.3810**	**0.0120**	**5.0407**	**0.0118**	**5.0525**	**0.5736**	**0.0113**	**0.5849**		**1,285.3175**	**1,285.3175**	**0.0819**		**1,287.3660**

3.10 Concrete Structures 3 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1326	0.0000	1.1326	0.1715	0.0000	0.1715			0.0000			0.0000
Off-Road	2.5601	23.7210	16.6424	0.0304		1.1960	1.1960		1.1293	1.1293	0.0000	2,741.7136	2,741.7136	0.6103		2,756.9712
Total	**2.5601**	**23.7210**	**16.6424**	**0.0304**	**1.1326**	**1.1960**	**2.3286**	**0.1715**	**1.1293**	**1.3008**	**0.0000**	**2,741.7136**	**2,741.7136**	**0.6103**		**2,756.9712**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0912	3.1114	0.6873	9.2000e-003	1.3528	9.7000e-003	1.3625	0.1708	9.2800e-003	0.1800		999.9163	999.9163	0.0705		1,001.6780
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.1694**	**3.5381**	**1.3810**	**0.0120**	**1.9121**	**0.0118**	**1.9240**	**0.2608**	**0.0113**	**0.2720**		**1,285.3175**	**1,285.3175**	**0.0819**		**1,287.3660**

3.11 Concrete Structures 4 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4001	34.9255	17.0624	0.0731		0.9076	0.9076		0.8501	0.8501		6,879.6172	6,879.6172	2.1059		6,932.2636
Total	**2.4001**	**34.9255**	**17.0624**	**0.0731**		**0.9076**	**0.9076**		**0.8501**	**0.8501**		**6,879.6172**	**6,879.6172**	**2.1059**		**6,932.2636**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0152	0.5186	0.1146	1.5300e-003	0.6233	1.6200e-003	0.6250	0.0683	1.5500e-003	0.0698		166.6527	166.6527	0.0117		166.9463
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.0934**	**0.9453**	**0.8083**	**4.3200e-003**	**1.9240**	**3.7200e-003**	**1.9277**	**0.2324**	**3.5200e-003**	**0.2359**		**452.0539**	**452.0539**	**0.0232**		**452.6343**

3.11 Concrete Structures 4 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4001	34.9255	17.0624	0.0731		0.9076	0.9076		0.8501	0.8501	0.0000	6,879.6172	6,879.6172	2.1059		6,932.2636
Total	**2.4001**	**34.9255**	**17.0624**	**0.0731**		**0.9076**	**0.9076**		**0.8501**	**0.8501**	**0.0000**	**6,879.6172**	**6,879.6172**	**2.1059**		**6,932.2636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0152	0.5186	0.1146	1.5300e-003	0.2255	1.6200e-003	0.2271	0.0285	1.5500e-003	0.0300		166.6527	166.6527	0.0117		166.9463
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0670	0.0437	0.6008	1.7800e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		177.1037	177.1037	4.7700e-003		177.2231
Total	**0.0934**	**0.9453**	**0.8083**	**4.3200e-003**	**0.7849**	**3.7200e-003**	**0.7886**	**0.1185**	**3.5200e-003**	**0.1220**		**452.0539**	**452.0539**	**0.0232**		**452.6343**

3.12 Concrete Structures 5 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0614	8.5110	6.8612	0.0233		0.3341	0.3341		0.3225	0.3225		2,063.6604	2,063.6604	0.5483		2,077.3673
Total	**1.0614**	**8.5110**	**6.8612**	**0.0233**		**0.3341**	**0.3341**		**0.3225**	**0.3225**		**2,063.6604**	**2,063.6604**	**0.5483**		**2,077.3673**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.0400e-003	0.1037	0.0229	3.1000e-004	0.1247	3.2000e-004	0.1250	0.0137	3.1000e-004	0.0140		33.3305	33.3305	2.3500e-003		33.3893
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0502	0.0328	0.4506	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8278	132.8278	3.5800e-003		132.9173
Total	**0.0645**	**0.5195**	**0.5665**	**2.6500e-003**	**1.3806**	**2.0900e-003**	**1.3827**	**0.1659**	**1.9700e-003**	**0.1679**		**274.4558**	**274.4558**	**0.0126**		**274.7715**

3.12 Concrete Structures 5 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0614	8.5110	6.8612	0.0233		0.3341	0.3341		0.3225	0.3225	0.0000	2,063.6604	2,063.6604	0.5483		2,077.3673
Total	**1.0614**	**8.5110**	**6.8612**	**0.0233**		**0.3341**	**0.3341**		**0.3225**	**0.3225**	**0.0000**	**2,063.6604**	**2,063.6604**	**0.5483**		**2,077.3673**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.0400e-003	0.1037	0.0229	3.1000e-004	0.0451	3.2000e-004	0.0454	5.6900e-003	3.1000e-004	6.0000e-003		33.3305	33.3305	2.3500e-003		33.3893
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.0502	0.0328	0.4506	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8278	132.8278	3.5800e-003		132.9173
Total	**0.0645**	**0.5195**	**0.5665**	**2.6500e-003**	**0.5598**	**2.0900e-003**	**0.5619**	**0.0838**	**1.9700e-003**	**0.0858**		**274.4558**	**274.4558**	**0.0126**		**274.7715**

3.13 Concrete Structures 6 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9241	6.4635	6.0444	0.0120		0.3300	0.3300		0.3300	0.3300		956.2017	956.2017	0.0825		958.2651
Total	**0.9241**	**6.4635**	**6.0444**	**0.0120**		**0.3300**	**0.3300**		**0.3300**	**0.3300**		**956.2017**	**956.2017**	**0.0825**		**958.2651**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0691	2.3571	0.5207	6.9700e-003	7.7242	7.3500e-003	7.7316	0.8286	7.0300e-003	0.8356		757.5123	757.5123	0.0534		758.8470
Vendor	0.0113	0.3831	0.0930	1.0100e-003	1.1218	7.8000e-004	1.1226	0.1167	7.5000e-004	0.1174		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.1004	0.0655	0.9011	2.6700e-003	0.2683	1.9900e-003	0.2703	0.0711	1.8300e-003	0.0730		265.6556	265.6556	7.1600e-003		265.8346
Total	**0.1808**	**2.8057**	**1.5148**	**0.0107**	**9.1143**	**0.0101**	**9.1244**	**1.0164**	**9.6100e-003**	**1.0260**		**1,131.4654**	**1,131.4654**	**0.0673**		**1,133.1465**

3.13 Concrete Structures 6 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9241	6.4635	6.0444	0.0120		0.3300	0.3300		0.3300	0.3300	0.0000	956.2017	956.2017	0.0825		958.2651
Total	**0.9241**	**6.4635**	**6.0444**	**0.0120**		**0.3300**	**0.3300**		**0.3300**	**0.3300**	**0.0000**	**956.2017**	**956.2017**	**0.0825**		**958.2651**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0691	2.3571	0.5207	6.9700e-003	2.7507	7.3500e-003	2.7580	0.3313	7.0300e-003	0.3383		757.5123	757.5123	0.0534		758.8470
Vendor	0.0113	0.3831	0.0930	1.0100e-003	0.3806	7.8000e-004	0.3813	0.0426	7.5000e-004	0.0433		108.2975	108.2975	6.7000e-003		108.4649
Worker	0.1004	0.0655	0.9011	2.6700e-003	0.2683	1.9900e-003	0.2703	0.0711	1.8300e-003	0.0730		265.6556	265.6556	7.1600e-003		265.8346
Total	**0.1808**	**2.8057**	**1.5148**	**0.0107**	**3.3995**	**0.0101**	**3.4096**	**0.4450**	**9.6100e-003**	**0.4546**		**1,131.4654**	**1,131.4654**	**0.0673**		**1,133.1465**

3.13 Concrete Structures 6 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8951	6.2380	6.0272	0.0120		0.3039	0.3039		0.3039	0.3039		956.2017	956.2017	0.0801		958.2044
Total	**0.8951**	**6.2380**	**6.0272**	**0.0120**		**0.3039**	**0.3039**		**0.3039**	**0.3039**		**956.2017**	**956.2017**	**0.0801**		**958.2044**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0657	2.1818	0.5152	6.8800e-003	4.4304	6.3500e-003	4.4367	0.4795	6.0800e-003	0.4856		748.4869	748.4869	0.0525		749.8002
Vendor	0.0106	0.3639	0.0881	1.0000e-003	1.1218	6.8000e-004	1.1225	0.1167	6.5000e-004	0.1173		107.3481	107.3481	6.4700e-003		107.5098
Worker	0.0942	0.0592	0.8333	2.5700e-003	0.2683	1.9300e-003	0.2702	0.0711	1.7800e-003	0.0729		256.1432	256.1432	6.4700e-003		256.3050
Total	**0.1705**	**2.6049**	**1.4365**	**0.0105**	**5.8204**	**8.9600e-003**	**5.8294**	**0.6673**	**8.5100e-003**	**0.6758**		**1,111.9782**	**1,111.9782**	**0.0655**		**1,113.6150**

3.13 Concrete Structures 6 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8951	6.2380	6.0272	0.0120		0.3039	0.3039		0.3039	0.3039	0.0000	956.2017	956.2017	0.0801		958.2044
Total	**0.8951**	**6.2380**	**6.0272**	**0.0120**		**0.3039**	**0.3039**		**0.3039**	**0.3039**	**0.0000**	**956.2017**	**956.2017**	**0.0801**		**958.2044**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0657	2.1818	0.5152	6.8800e-003	1.5884	6.3500e-003	1.5947	0.1953	6.0800e-003	0.2014		748.4869	748.4869	0.0525		749.8002
Vendor	0.0106	0.3639	0.0881	1.0000e-003	0.3806	6.8000e-004	0.3812	0.0426	6.5000e-004	0.0432		107.3481	107.3481	6.4700e-003		107.5098
Worker	0.0942	0.0592	0.8333	2.5700e-003	0.2683	1.9300e-003	0.2702	0.0711	1.7800e-003	0.0729		256.1432	256.1432	6.4700e-003		256.3050
Total	**0.1705**	**2.6049**	**1.4365**	**0.0105**	**2.2372**	**8.9600e-003**	**2.2461**	**0.3090**	**8.5100e-003**	**0.3175**		**1,111.9782**	**1,111.9782**	**0.0655**		**1,113.6150**

West Fontana Channel Improvement Project

South Coast Air Basin, Winter

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.8800	82.4308	27.6428	0.2219	97.4507	1.2080	98.4073	10.0129	1.1407	10.8954	0.0000	23,665.9867	23,665.9867	2.5162	0.0000	23,728.8927
2022	1.0776	8.8723	7.4257	0.0221	5.8204	0.3130	6.1335	0.6673	0.3126	0.9799	0.0000	2,036.3711	2,036.3711	0.1475	0.0000	2,040.0587
Maximum	**3.8800**	**82.4308**	**27.6428**	**0.2219**	**97.4507**	**1.2080**	**98.4073**	**10.0129**	**1.1407**	**10.8954**	**0.0000**	**23,665.9867**	**23,665.9867**	**2.5162**	**0.0000**	**23,728.8927**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.8800	82.4308	27.6428	0.2219	32.7110	1.2080	33.6676	3.6663	1.1407	4.4949	0.0000	23,665.9867	23,665.9867	2.5162	0.0000	23,728.8927
2022	1.0776	8.8723	7.4257	0.0221	2.2372	0.3130	2.5502	0.3090	0.3126	0.6216	0.0000	2,036.3711	2,036.3711	0.1475	0.0000	2,040.0587
Maximum	**3.8800**	**82.4308**	**27.6428**	**0.2219**	**32.7110**	**1.2080**	**33.6676**	**3.6663**	**1.1407**	**4.4949**	**0.0000**	**23,665.9867**	**23,665.9867**	**2.5162**	**0.0000**	**23,728.8927**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**66.16**	**0.00**	**65.36**	**62.78**	**0.00**	**56.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.2 Clear and Grub - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6513	0.0000	2.6513	0.2863	0.0000	0.2863			0.0000			0.0000
Off-Road	1.4101	13.7808	8.7079	0.0246		0.5809	0.5809		0.5344	0.5344		2,382.9484	2,382.9484	0.7707		2,402.2158
Total	**1.4101**	**13.7808**	**8.7079**	**0.0246**	**2.6513**	**0.5809**	**3.2321**	**0.2863**	**0.5344**	**0.8207**		**2,382.9484**	**2,382.9484**	**0.7707**		**2,402.2158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0780	2.6248	0.6102	7.5400e-003	3.1167	8.2000e-003	3.1249	0.3412	7.8500e-003	0.3491		818.9565	818.9565	0.0609		820.4796
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0830	0.0540	0.6118	1.8800e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		186.8672	186.8672	5.0300e-003		186.9929
Total	**0.1728**	**3.0609**	**1.3253**	**0.0104**	**4.4397**	**0.0105**	**4.4502**	**0.5113**	**9.9900e-003**	**0.5213**		**1,111.1732**	**1,111.1732**	**0.0731**		**1,113.0009**

3.2 Clear and Grub - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0340	0.0000	1.0340	0.1117	0.0000	0.1117			0.0000			0.0000
Off-Road	1.4101	13.7808	8.7079	0.0246		0.5809	0.5809		0.5344	0.5344	0.0000	2,382.9484	2,382.9484	0.7707		2,402.2158
Total	**1.4101**	**13.7808**	**8.7079**	**0.0246**	**1.0340**	**0.5809**	**1.6149**	**0.1117**	**0.5344**	**0.6460**	**0.0000**	**2,382.9484**	**2,382.9484**	**0.7707**		**2,402.2158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0780	2.6248	0.6102	7.5400e-003	1.1273	8.2000e-003	1.1355	0.1423	7.8500e-003	0.1502		818.9565	818.9565	0.0609		820.4796
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0830	0.0540	0.6118	1.8800e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		186.8672	186.8672	5.0300e-003		186.9929
Total	**0.1728**	**3.0609**	**1.3253**	**0.0104**	**1.7090**	**0.0105**	**1.7195**	**0.2382**	**9.9900e-003**	**0.2482**		**1,111.1732**	**1,111.1732**	**0.0731**		**1,113.0009**

3.3 Rock Slope Protection Excavation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7801	9.1215	5.7069	0.0130		0.3666	0.3666		0.3373	0.3373		1,260.5540	1,260.5540	0.4077		1,270.7462
Total	**0.7801**	**9.1215**	**5.7069**	**0.0130**	**0.0000**	**0.3666**	**0.3666**	**0.0000**	**0.3373**	**0.3373**		**1,260.5540**	**1,260.5540**	**0.4077**		**1,270.7462**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.0738**	**0.0480**	**0.5438**	**1.6700e-003**	**0.1788**	**1.3200e-003**	**0.1802**	**0.0474**	**1.2200e-003**	**0.0487**		**166.1042**	**166.1042**	**4.4700e-003**		**166.2159**

3.3 Rock Slope Protection Excavation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7801	9.1215	5.7069	0.0130		0.3666	0.3666		0.3373	0.3373	0.0000	1,260.5540	1,260.5540	0.4077		1,270.7462
Total	**0.7801**	**9.1215**	**5.7069**	**0.0130**	**0.0000**	**0.3666**	**0.3666**	**0.0000**	**0.3373**	**0.3373**	**0.0000**	**1,260.5540**	**1,260.5540**	**0.4077**		**1,270.7462**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.0738**	**0.0480**	**0.5438**	**1.6700e-003**	**0.1788**	**1.3200e-003**	**0.1802**	**0.0474**	**1.2200e-003**	**0.0487**		**166.1042**	**166.1042**	**4.4700e-003**		**166.2159**

3.4 Rock Slope Protection Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2280	0.0000	0.2280	0.0345	0.0000	0.0345			0.0000			0.0000
Off-Road	0.9489	9.1271	5.2030	0.0195		0.3219	0.3219		0.2962	0.2962		1,883.7492	1,883.7492	0.6092		1,898.9803
Total	**0.9489**	**9.1271**	**5.2030**	**0.0195**	**0.2280**	**0.3219**	**0.5499**	**0.0345**	**0.2962**	**0.3307**		**1,883.7492**	**1,883.7492**	**0.6092**		**1,898.9803**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8902	63.6382	14.7942	0.1828	75.5648	0.1989	75.7637	8.2735	0.1903	8.4638		19,855.7323	19,855.7323	1.4771		19,892.6592
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.1752	0.1139	1.2915	3.9600e-003	0.4248	3.1400e-003	0.4279	0.1127	2.9000e-003	0.1155		394.4974	394.4974	0.0106		394.7627
Total	**2.0772**	**64.1343**	**16.1891**	**0.1877**	**77.1113**	**0.2029**	**77.3142**	**8.5029**	**0.1940**	**8.6968**		**20,355.5793**	**20,355.5793**	**1.4948**		**20,392.9503**

3.4 Rock Slope Protection Hauling - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0889	0.0000	0.0889	0.0135	0.0000	0.0135			0.0000			0.0000
Off-Road	0.9489	9.1271	5.2030	0.0195		0.3219	0.3219		0.2962	0.2962	0.0000	1,883.7492	1,883.7492	0.6092		1,898.9803
Total	**0.9489**	**9.1271**	**5.2030**	**0.0195**	**0.0889**	**0.3219**	**0.4108**	**0.0135**	**0.2962**	**0.3096**	**0.0000**	**1,883.7492**	**1,883.7492**	**0.6092**		**1,898.9803**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8902	63.6382	14.7942	0.1828	27.3314	0.1989	27.5303	3.4502	0.1903	3.6405		19,855.7323	19,855.7323	1.4771		19,892.6592
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.1752	0.1139	1.2915	3.9600e-003	0.4248	3.1400e-003	0.4279	0.1127	2.9000e-003	0.1155		394.4974	394.4974	0.0106		394.7627
Total	**2.0772**	**64.1343**	**16.1891**	**0.1877**	**28.1367**	**0.2029**	**28.3395**	**3.6054**	**0.1940**	**3.7993**		**20,355.5793**	**20,355.5793**	**1.4948**		**20,392.9503**

3.5 Fill, Backfill, and Recompaction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0933	0.0000	0.0933	0.0141	0.0000	0.0141			0.0000			0.0000
Off-Road	2.1423	23.9440	11.2857	0.0366		0.8894	0.8894		0.8182	0.8182		3,539.8843	3,539.8843	1.1449		3,568.5060
Total	**2.1423**	**23.9440**	**11.2857**	**0.0366**	**0.0933**	**0.8894**	**0.9827**	**0.0141**	**0.8182**	**0.8324**		**3,539.8843**	**3,539.8843**	**1.1449**		**3,568.5060**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5434	18.2947	4.2531	0.0525	21.7234	0.0572	21.7805	2.3785	0.0547	2.4332		5,708.1268	5,708.1268	0.4246		5,718.7425
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.1291	0.0839	0.9516	2.9200e-003	0.3130	2.3200e-003	0.3153	0.0830	2.1300e-003	0.0851		290.6823	290.6823	7.8200e-003		290.8778
Total	**0.6843**	**18.7608**	**5.3081**	**0.0564**	**23.1581**	**0.0603**	**23.2184**	**2.5782**	**0.0576**	**2.6358**		**6,104.1586**	**6,104.1586**	**0.4396**		**6,115.1487**

3.5 Fill, Backfill, and Recompaction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0364	0.0000	0.0364	5.5100e-003	0.0000	5.5100e-003			0.0000			0.0000
Off-Road	2.1423	23.9440	11.2857	0.0366		0.8894	0.8894		0.8182	0.8182	0.0000	3,539.8843	3,539.8843	1.1449		3,568.5060
Total	**2.1423**	**23.9440**	**11.2857**	**0.0366**	**0.0364**	**0.8894**	**0.9258**	**5.5100e-003**	**0.8182**	**0.8238**	**0.0000**	**3,539.8843**	**3,539.8843**	**1.1449**		**3,568.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5434	18.2947	4.2531	0.0525	7.8572	0.0572	7.9144	0.9919	0.0547	1.0466		5,708.1268	5,708.1268	0.4246		5,718.7425
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.1291	0.0839	0.9516	2.9200e-003	0.3130	2.3200e-003	0.3153	0.0830	2.1300e-003	0.0851		290.6823	290.6823	7.8200e-003		290.8778
Total	**0.6843**	**18.7608**	**5.3081**	**0.0564**	**8.5507**	**0.0603**	**8.6110**	**1.1174**	**0.0576**	**1.1750**		**6,104.1586**	**6,104.1586**	**0.4396**		**6,115.1487**

3.6 Fill, Backfill, Recompaction Internal Trips - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5580	0.0000	0.5580	0.0615	0.0000	0.0615			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5580**	**0.0000**	**0.5580**	**0.0615**	**0.0000**	**0.0615**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1887	9.3325	1.5960	0.0106	73.5966	6.6200e-003	73.6032	7.3473	6.3300e-003	7.3537		1,152.9477	1,152.9477	0.2005		1,157.9601
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0185	0.0120	0.1360	4.2000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		41.5261	41.5261	1.1200e-003		41.5540
Total	**0.2072**	**9.3445**	**1.7319**	**0.0111**	**73.6413**	**6.9500e-003**	**73.6483**	**7.3592**	**6.6300e-003**	**7.3658**		**1,194.4737**	**1,194.4737**	**0.2016**		**1,199.5141**

3.6 Fill, Backfill, Recompaction Internal Trips - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2176	0.0000	0.2176	0.0240	0.0000	0.0240			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.2176**	**0.0000**	**0.2176**	**0.0240**	**0.0000**	**0.0240**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1887	9.3325	1.5960	0.0106	23.8615	6.6200e-003	23.8681	2.3738	6.3300e-003	2.3802		1,152.9477	1,152.9477	0.2005		1,157.9601
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0185	0.0120	0.1360	4.2000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		41.5261	41.5261	1.1200e-003		41.5540
Total	**0.2072**	**9.3445**	**1.7319**	**0.0111**	**23.9062**	**6.9500e-003**	**23.9132**	**2.3857**	**6.6300e-003**	**2.3923**		**1,194.4737**	**1,194.4737**	**0.2016**		**1,199.5141**

3.7 Calabash Ave. Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8887	10.4439	6.5524	0.0140		0.4307	0.4307		0.3963	0.3963		1,350.8338	1,350.8338	0.4369		1,361.7560
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8887**	**10.4439**	**6.5524**	**0.0140**		**0.4307**	**0.4307**		**0.3963**	**0.3963**		**1,350.8338**	**1,350.8338**	**0.4369**		**1,361.7560**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3898	13.1239	3.0510	0.0377	0.8733	0.0410	0.9143	0.2393	0.0392	0.2785		4,094.7825	4,094.7825	0.3046		4,102.3978
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.0256	8.1000e-004	0.0264	7.3700e-003	7.7000e-004	8.1400e-003		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.4754**	**13.5540**	**3.6982**	**0.0403**	**1.0777**	**0.0432**	**1.1209**	**0.2941**	**0.0412**	**0.3353**		**4,366.2362**	**4,366.2362**	**0.3162**		**4,374.1421**

3.7 Calabash Ave. Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8887	10.4439	6.5524	0.0140		0.4307	0.4307		0.3963	0.3963	0.0000	1,350.8338	1,350.8338	0.4369		1,361.7560
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8887**	**10.4439**	**6.5524**	**0.0140**		**0.4307**	**0.4307**		**0.3963**	**0.3963**	**0.0000**	**1,350.8338**	**1,350.8338**	**0.4369**		**1,361.7560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3898	13.1239	3.0510	0.0377	0.8733	0.0410	0.9143	0.2393	0.0392	0.2785		4,094.7825	4,094.7825	0.3046		4,102.3978
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.0256	8.1000e-004	0.0264	7.3700e-003	7.7000e-004	8.1400e-003		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.4754**	**13.5540**	**3.6982**	**0.0403**	**1.0777**	**0.0432**	**1.1209**	**0.2941**	**0.0412**	**0.3353**		**4,366.2362**	**4,366.2362**	**0.3162**		**4,374.1421**

3.8 Concrete Structures 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.0478	20.5482	13.7735	0.0328		0.8491	0.8491		0.7963	0.7963		2,986.5014	2,986.5014	0.8467		3,007.6699
Total	**2.0478**	**20.5482**	**13.7735**	**0.0328**	**0.0000**	**0.8491**	**0.8491**	**0.0000**	**0.7963**	**0.7963**		**2,986.5014**	**2,986.5014**	**0.8467**		**3,007.6699**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.8000e-003	0.2625	0.0610	7.5000e-004	0.3117	8.2000e-004	0.3125	0.0341	7.8000e-004	0.0349		81.8957	81.8957	6.0900e-003		82.0480
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
Total	**0.1119**	**0.7046**	**0.8441**	**3.8100e-003**	**1.6570**	**3.2800e-003**	**1.6603**	**0.2101**	**3.0700e-003**	**0.2132**		**394.8754**	**394.8754**	**0.0188**		**395.3462**

3.8 Concrete Structures 1 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.0478	20.5482	13.7735	0.0328		0.8491	0.8491		0.7963	0.7963	0.0000	2,986.5014	2,986.5014	0.8467		3,007.6699
Total	**2.0478**	**20.5482**	**13.7735**	**0.0328**	**0.0000**	**0.8491**	**0.8491**	**0.0000**	**0.7963**	**0.7963**	**0.0000**	**2,986.5014**	**2,986.5014**	**0.8467**		**3,007.6699**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.8000e-003	0.2625	0.0610	7.5000e-004	0.1127	8.2000e-004	0.1136	0.0142	7.8000e-004	0.0150		81.8957	81.8957	6.0900e-003		82.0480
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
Total	**0.1119**	**0.7046**	**0.8441**	**3.8100e-003**	**0.7168**	**3.2800e-003**	**0.7201**	**0.1161**	**3.0700e-003**	**0.1192**		**394.8754**	**394.8754**	**0.0188**		**395.3462**

3.9 Concrete Structures 2 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4473	12.8577	8.6597	0.0304		0.4790	0.4790		0.4558	0.4558		2,744.5399	2,744.5399	0.7685		2,763.7521
Total	**1.4473**	**12.8577**	**8.6597**	**0.0304**		**0.4790**	**0.4790**		**0.4558**	**0.4558**		**2,744.5399**	**2,744.5399**	**0.7685**		**2,763.7521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0125	0.4200	0.0976	1.2100e-003	0.4987	1.3100e-003	0.5000	0.0546	1.2600e-003	0.0559		131.0330	131.0330	9.7500e-003		131.2767
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.0981**	**0.8501**	**0.7448**	**3.8600e-003**	**1.7993**	**3.4400e-003**	**1.8028**	**0.2187**	**3.2500e-003**	**0.2220**		**402.4867**	**402.4867**	**0.0214**		**403.0210**

3.9 Concrete Structures 2 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4473	12.8577	8.6597	0.0304		0.4790	0.4790		0.4558	0.4558	0.0000	2,744.5399	2,744.5399	0.7685		2,763.7521
Total	**1.4473**	**12.8577**	**8.6597**	**0.0304**		**0.4790**	**0.4790**		**0.4558**	**0.4558**	**0.0000**	**2,744.5399**	**2,744.5399**	**0.7685**		**2,763.7521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0125	0.4200	0.0976	1.2100e-003	0.1804	1.3100e-003	0.1817	0.0228	1.2600e-003	0.0240		131.0330	131.0330	9.7500e-003		131.2767
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.0981**	**0.8501**	**0.7448**	**3.8600e-003**	**0.7398**	**3.4400e-003**	**0.7432**	**0.1128**	**3.2500e-003**	**0.1160**		**402.4867**	**402.4867**	**0.0214**		**403.0210**

3.10 Concrete Structures 3 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9042	0.0000	2.9042	0.4397	0.0000	0.4397			0.0000			0.0000
Off-Road	2.5601	23.7210	16.6424	0.0304		1.1960	1.1960		1.1293	1.1293		2,741.7136	2,741.7136	0.6103		2,756.9712
Total	**2.5601**	**23.7210**	**16.6424**	**0.0304**	**2.9042**	**1.1960**	**4.1001**	**0.4397**	**1.1293**	**1.5690**		**2,741.7136**	**2,741.7136**	**0.6103**		**2,756.9712**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0936	3.1497	0.7322	9.0500e-003	3.7400	9.8400e-003	3.7499	0.4095	9.4200e-003	0.4189		982.7478	982.7478	0.0731		984.5755
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.1792**	**3.5799**	**1.3794**	**0.0117**	**5.0407**	**0.0120**	**5.0527**	**0.5736**	**0.0114**	**0.5850**		**1,254.2015**	**1,254.2015**	**0.0847**		**1,256.3198**

3.10 Concrete Structures 3 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1326	0.0000	1.1326	0.1715	0.0000	0.1715			0.0000			0.0000
Off-Road	2.5601	23.7210	16.6424	0.0304		1.1960	1.1960		1.1293	1.1293	0.0000	2,741.7136	2,741.7136	0.6103		2,756.9712
Total	**2.5601**	**23.7210**	**16.6424**	**0.0304**	**1.1326**	**1.1960**	**2.3286**	**0.1715**	**1.1293**	**1.3008**	**0.0000**	**2,741.7136**	**2,741.7136**	**0.6103**		**2,756.9712**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0936	3.1497	0.7322	9.0500e-003	1.3528	9.8400e-003	1.3626	0.1708	9.4200e-003	0.1802		982.7478	982.7478	0.0731		984.5755
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.1792**	**3.5799**	**1.3794**	**0.0117**	**1.9121**	**0.0120**	**1.9241**	**0.2608**	**0.0114**	**0.2722**		**1,254.2015**	**1,254.2015**	**0.0847**		**1,256.3198**

3.11 Concrete Structures 4 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4001	34.9255	17.0624	0.0731		0.9076	0.9076		0.8501	0.8501		6,879.6172	6,879.6172	2.1059		6,932.2636
Total	**2.4001**	**34.9255**	**17.0624**	**0.0731**		**0.9076**	**0.9076**		**0.8501**	**0.8501**		**6,879.6172**	**6,879.6172**	**2.1059**		**6,932.2636**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0156	0.5250	0.1220	1.5100e-003	0.6233	1.6400e-003	0.6250	0.0683	1.5700e-003	0.0698		163.7913	163.7913	0.0122		164.0959
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.1012**	**0.9551**	**0.7692**	**4.1600e-003**	**1.9240**	**3.7700e-003**	**1.9278**	**0.2324**	**3.5600e-003**	**0.2359**		**435.2450**	**435.2450**	**0.0238**		**435.8402**

3.11 Concrete Structures 4 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4001	34.9255	17.0624	0.0731		0.9076	0.9076		0.8501	0.8501	0.0000	6,879.6172	6,879.6172	2.1059		6,932.2636
Total	**2.4001**	**34.9255**	**17.0624**	**0.0731**		**0.9076**	**0.9076**		**0.8501**	**0.8501**	**0.0000**	**6,879.6172**	**6,879.6172**	**2.1059**		**6,932.2636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0156	0.5250	0.1220	1.5100e-003	0.2255	1.6400e-003	0.2271	0.0285	1.5700e-003	0.0300		163.7913	163.7913	0.0122		164.0959
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0738	0.0480	0.5438	1.6700e-003	0.1788	1.3200e-003	0.1802	0.0474	1.2200e-003	0.0487		166.1042	166.1042	4.4700e-003		166.2159
Total	**0.1012**	**0.9551**	**0.7692**	**4.1600e-003**	**0.7849**	**3.7700e-003**	**0.7886**	**0.1185**	**3.5600e-003**	**0.1220**		**435.2450**	**435.2450**	**0.0238**		**435.8402**

3.12 Concrete Structures 5 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0614	8.5110	6.8612	0.0233		0.3341	0.3341		0.3225	0.3225		2,063.6604	2,063.6604	0.5483		2,077.3673
Total	**1.0614**	**8.5110**	**6.8612**	**0.0233**		**0.3341**	**0.3341**		**0.3225**	**0.3225**		**2,063.6604**	**2,063.6604**	**0.5483**		**2,077.3673**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.1200e-003	0.1050	0.0244	3.0000e-004	0.1247	3.3000e-004	0.1250	0.0137	3.1000e-004	0.0140		32.7583	32.7583	2.4400e-003		32.8192
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0553	0.0360	0.4078	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.5781	124.5781	3.3500e-003		124.6619
Total	**0.0703**	**0.5231**	**0.5356**	**2.5300e-003**	**1.3806**	**2.1300e-003**	**1.3827**	**0.1659**	**1.9900e-003**	**0.1679**		**262.6859**	**262.6859**	**0.0130**		**263.0095**

3.12 Concrete Structures 5 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0614	8.5110	6.8612	0.0233		0.3341	0.3341		0.3225	0.3225	0.0000	2,063.6604	2,063.6604	0.5483		2,077.3673
Total	**1.0614**	**8.5110**	**6.8612**	**0.0233**		**0.3341**	**0.3341**		**0.3225**	**0.3225**	**0.0000**	**2,063.6604**	**2,063.6604**	**0.5483**		**2,077.3673**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.1200e-003	0.1050	0.0244	3.0000e-004	0.0451	3.3000e-004	0.0454	5.6900e-003	3.1000e-004	6.0100e-003		32.7583	32.7583	2.4400e-003		32.8192
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.0553	0.0360	0.4078	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.5781	124.5781	3.3500e-003		124.6619
Total	**0.0703**	**0.5231**	**0.5356**	**2.5300e-003**	**0.5598**	**2.1300e-003**	**0.5619**	**0.0838**	**1.9900e-003**	**0.0858**		**262.6859**	**262.6859**	**0.0130**		**263.0095**

3.13 Concrete Structures 6 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9241	6.4635	6.0444	0.0120		0.3300	0.3300		0.3300	0.3300		956.2017	956.2017	0.0825		958.2651
Total	**0.9241**	**6.4635**	**6.0444**	**0.0120**		**0.3300**	**0.3300**		**0.3300**	**0.3300**		**956.2017**	**956.2017**	**0.0825**		**958.2651**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0709	2.3862	0.5547	6.8500e-003	7.7242	7.4600e-003	7.7317	0.8286	7.1400e-003	0.8357		744.5059	744.5059	0.0554		745.8905
Vendor	0.0118	0.3822	0.1034	9.8000e-004	1.1218	8.1000e-004	1.1226	0.1167	7.7000e-004	0.1175		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.1107	0.0720	0.8157	2.5000e-003	0.2683	1.9900e-003	0.2703	0.0711	1.8300e-003	0.0730		249.1563	249.1563	6.7000e-003		249.3238
Total	**0.1934**	**2.8403**	**1.4738**	**0.0103**	**9.1143**	**0.0103**	**9.1245**	**1.0164**	**9.7400e-003**	**1.0262**		**1,099.0117**	**1,099.0117**	**0.0692**		**1,100.7428**

3.13 Concrete Structures 6 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9241	6.4635	6.0444	0.0120		0.3300	0.3300		0.3300	0.3300	0.0000	956.2017	956.2017	0.0825		958.2651
Total	**0.9241**	**6.4635**	**6.0444**	**0.0120**		**0.3300**	**0.3300**		**0.3300**	**0.3300**	**0.0000**	**956.2017**	**956.2017**	**0.0825**		**958.2651**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0709	2.3862	0.5547	6.8500e-003	2.7507	7.4600e-003	2.7582	0.3313	7.1400e-003	0.3384		744.5059	744.5059	0.0554		745.8905
Vendor	0.0118	0.3822	0.1034	9.8000e-004	0.3806	8.1000e-004	0.3814	0.0426	7.7000e-004	0.0433		105.3495	105.3495	7.1600e-003		105.5284
Worker	0.1107	0.0720	0.8157	2.5000e-003	0.2683	1.9900e-003	0.2703	0.0711	1.8300e-003	0.0730		249.1563	249.1563	6.7000e-003		249.3238
Total	**0.1934**	**2.8403**	**1.4738**	**0.0103**	**3.3995**	**0.0103**	**3.4098**	**0.4450**	**9.7400e-003**	**0.4547**		**1,099.0117**	**1,099.0117**	**0.0692**		**1,100.7428**

3.13 Concrete Structures 6 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8951	6.2380	6.0272	0.0120		0.3039	0.3039		0.3039	0.3039		956.2017	956.2017	0.0801		958.2044
Total	**0.8951**	**6.2380**	**6.0272**	**0.0120**		**0.3039**	**0.3039**		**0.3039**	**0.3039**		**956.2017**	**956.2017**	**0.0801**		**958.2044**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0674	2.2066	0.5476	6.7600e-003	4.4304	6.4500e-003	4.4368	0.4795	6.1700e-003	0.4857		735.5256	735.5256	0.0544		736.8865
Vendor	0.0111	0.3627	0.0979	9.8000e-004	1.1218	7.0000e-004	1.1225	0.1167	6.7000e-004	0.1174		104.4088	104.4088	6.9100e-003		104.5815
Worker	0.1041	0.0650	0.7530	2.4100e-003	0.2683	1.9300e-003	0.2702	0.0711	1.7800e-003	0.0729		240.2349	240.2349	6.0500e-003		240.3862
Total	**0.1826**	**2.6343**	**1.3985**	**0.0102**	**5.8204**	**9.0800e-003**	**5.8295**	**0.6673**	**8.6200e-003**	**0.6759**		**1,080.1694**	**1,080.1694**	**0.0674**		**1,081.8542**

3.13 Concrete Structures 6 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8951	6.2380	6.0272	0.0120		0.3039	0.3039		0.3039	0.3039	0.0000	956.2017	956.2017	0.0801		958.2044
Total	**0.8951**	**6.2380**	**6.0272**	**0.0120**		**0.3039**	**0.3039**		**0.3039**	**0.3039**	**0.0000**	**956.2017**	**956.2017**	**0.0801**		**958.2044**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0674	2.2066	0.5476	6.7600e-003	1.5884	6.4500e-003	1.5948	0.1953	6.1700e-003	0.2015		735.5256	735.5256	0.0544		736.8865
Vendor	0.0111	0.3627	0.0979	9.8000e-004	0.3806	7.0000e-004	0.3813	0.0426	6.7000e-004	0.0432		104.4088	104.4088	6.9100e-003		104.5815
Worker	0.1041	0.0650	0.7530	2.4100e-003	0.2683	1.9300e-003	0.2702	0.0711	1.7800e-003	0.0729		240.2349	240.2349	6.0500e-003		240.3862
Total	**0.1826**	**2.6343**	**1.3985**	**0.0102**	**2.2372**	**9.0800e-003**	**2.2463**	**0.3090**	**8.6200e-003**	**0.3176**		**1,080.1694**	**1,080.1694**	**0.0674**		**1,081.8542**

West Fontana Channel Improvement Project

South Coast Air Basin, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1999	3.1818	1.3136	7.2800e-003	3.0199	0.0628	3.0827	0.3232	0.0587	0.3819	0.0000	679.0798	679.0798	0.1010	0.0000	681.6044
2022	3.7300e-003	0.0312	0.0260	8.0000e-005	0.0188	1.1000e-003	0.0199	2.1700e-003	1.0900e-003	3.2600e-003	0.0000	6.5071	6.5071	4.6000e-004	0.0000	6.5187
Maximum	**0.1999**	**3.1818**	**1.3136**	**7.2800e-003**	**3.0199**	**0.0628**	**3.0827**	**0.3232**	**0.0587**	**0.3819**	**0.0000**	**679.0798**	**679.0798**	**0.1010**	**0.0000**	**681.6044**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1999	3.1818	1.3136	7.2800e-003	1.0609	0.0628	1.1237	0.1264	0.0587	0.1851	0.0000	679.0796	679.0796	0.1010	0.0000	681.6041
2022	3.7300e-003	0.0312	0.0260	8.0000e-005	7.2900e-003	1.1000e-003	8.3800e-003	1.0200e-003	1.0900e-003	2.1200e-003	0.0000	6.5071	6.5071	4.6000e-004	0.0000	6.5187
Maximum	**0.1999**	**3.1818**	**1.3136**	**7.2800e-003**	**1.0609**	**0.0628**	**1.1237**	**0.1264**	**0.0587**	**0.1851**	**0.0000**	**679.0796**	**679.0796**	**0.1010**	**0.0000**	**681.6041**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**64.85**	**0.00**	**63.51**	**60.83**	**0.00**	**51.39**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

West Fontana Channel Flood Control Improvement Project

Screening Health Risk Calculations

Worst-Case Screening Level DPM Concentration Calculations

Assumptions:

1) Nearby Residence 1 is on northwest corner of Mulberry and Whittram Avenues

2) Nearby Residence 2 is on north side of Whittram Avenue near Calabash Avenue

3) X/Q multiplier values are from SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212. Version 8.1 , Table 10.4A for Fontana.

4) DPM emissions quantities are from the onsite results of the CalEEMod emissions estimate prepared for the project.

5) Estimate of percentage is based on review of distance of activities from each of the two residences with linear emissions assumed for activities that occur alone the length of the channel work area.

		Estimate of Fraction of DPM Emissions At Intervals from Nearby Residence 1							
Construtions Activity	DPM, tons	<50 meters	<75 meters	<100 meters	<200 meters	<300 meters	<500 meters	>500 meters	ug/m3
Clear and Grub	5.80E-04	0.056	0.028	0.028	0.222	0.222	0.222	0.222	6.14E-04
Rock Slope Protection Excavation	4.58E-03	0.056	0.028	0.028	0.222	0.222	0.222	0.222	4.84E-03
Rock Slope Protection Hauling	4.99E-03	0.056	0.028	0.028	0.222	0.222	0.222	0.222	5.28E-03
Fill, Backfill, and Recompaction	1.78E-02	0.056	0.028	0.028	0.222	0.222	0.222	0.222	1.88E-02
Fill, Backfill, Recompaction Internal Trips	1.20E-04	0.056	0.028	0.028	0.222	0.222	0.222	0.222	1.27E-04
Calabash Ave. Paving	4.30E-04	0	0.5	0.5	0	0	0	0	1.07E-03
Concrete Structures 1	8.49E-03	0	0	0	0	1	0	0	3.40E-03
Concrete Structures 2	5.99E-03	0	0	0	0	1	0	0	2.40E-03
Concrete Structures 3	8.37E-03	0	0	0	0	1	0	0	3.35E-03
Concrete Structures 4	4.54E-03	0	0	0	0	1	0	0	1.82E-03
Concrete Structures 5	1.67E-03	0	0	0	0	1	0	0	6.68E-04
Concrete Structures 6	1.72E-03	0	0	0	0	1	0	0	6.88E-04

Combined worst case concentration for use in health risk determination: **4.31E-02**

X/Q Mult.	8.67	2.99	1.99	1.37	0.4	0.15	0.05

		Estimate of Fraction of DPM Emissions At Intervals from Nearby Residence 2							
Construtions Activity	DPM, tons	<50 meters	<75 meters	<100 meters	<200 meters	<300 meters	<500 meters	>500 meters	
Clear and Grub	5.80E-04	0.056	0.028	0.028	0.222	0.222	0.222	0.222	6.14E-04
Rock Slope Protection Excavation	4.58E-03	0.056	0.028	0.028	0.222	0.222	0.222	0.222	4.84E-03
Rock Slope Protection Hauling	4.99E-03	0.056	0.028	0.028	0.222	0.222	0.222	0.222	5.28E-03
Fill, Backfill, and Recompaction	1.78E-02	0.056	0.028	0.028	0.222	0.222	0.222	0.222	1.88E-02
Fill, Backfill, Recompaction Internal Trips	1.20E-04	0.056	0.028	0.028	0.222	0.222	0.222	0.222	1.27E-04
Calabash Ave. Paving	4.30E-04	0	0	0	0	0	1	0	6.45E-05
Concrete Structures 1	8.49E-03	0	0	0	0	0	0	1	4.25E-04
Concrete Structures 2	5.99E-03	0	0	0	0	0	0	1	3.00E-04
Concrete Structures 3	8.37E-03	0	0	0	0	0	0	1	4.19E-04
Concrete Structures 4	4.54E-03	0	0	0	0	0	0	1	2.27E-04
Concrete Structures 5	1.67E-03	0	0	0	0	0	0	1	8.35E-05
Concrete Structures 6	1.72E-03	0	0	0	0	0	0	1	8.60E-05

Combined worst case concentration for use in health risk determination: **3.13E-02**

X/Q Mult.	8.67	2.99	1.99	1.37	0.4	0.15	0.05

Appendix B.
Biological Resources Technical Report

BIOLOGICAL RESOURCES TECHNICAL REPORT FOR THE WEST FONTANA CHANNEL FLOOD CONTROL IMPROVEMENT PROJECT

Prepared for:

San Bernardino County Flood Control District
825 East Third Street
San Bernardino, CA 92415

Prepared by:

Aspen Environmental Group
615 North Benson Avenue, Suite E
Upland, CA 91786

December 2019

Contents

1. Executive Summary 1

2. Project and Property Description 1
2.1 Project Description 1
2.2 Project Location 2

3. Methods 2

4. Biological Survey Results 3
4.1 General Setting 3
4.2 Vegetation and Land Cover Types 3
4.3 Sensitive Natural Communities 4
4.4 Wildlife 4

5. Special-status Species Results 4
5.1 Special-status Plants 4
5.2 Special-status Wildlife 6
5.3 Designated Critical Habitat 8
5.4 Wildlife Movement 9
5.5 Nesting Birds 9

6. Summary 9

7. Literature Cited 9

Tables

Table 1. Vegetation and cover types in the project site 4
Table 2. Special-status plants with potential to occur within the project site 5
Table 3. Special-status wildlife with potential to occur within the project site 6

Attachments

Attachment 1: Figures
Figure 1: Project Overview
Figure 2: Vegetation and Land Cover
Attachment 2: Representative Site Photos
Attachment 3: Observed Species List
Attachment 4: CNDDB Query Results
Attachment 5: Special-Status Species Not Addressed

1. Executive Summary

This report was prepared under contract to the San Bernardino County Flood Control District (County) to describe biological resources at the West Fontana Channel Flood Control Improvement Project (project) site. The project site is located within an unincorporated area of San Bernardino County, California (Figure 1; note that all figures are included within Attachment 1). The County proposes to improve West Fontana Channel by constructing non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Additional improvements to the facility will be made as described in Section 2.1. The project seeks to improve flood protection and enhance public safety for properties and infrastructure in the vicinity. This report describes the methods and results of a field survey for biological resources conducted by Aspen Environmental Group (Aspen) in 2019 and evaluates potential occurrence of special-status plants and animals, as well as sensitive vegetation communities or habitats. The term "special-status" species includes numerous designations, ranging from State or federally listed threatened or endangered species to agency "watch-lists," as defined in Table 2.

No State or federally listed species were observed on the project site. Crotch bumblebee is a State candidate for listing and has a low potential to occur on the project site. No critical habitat for any federally listed species is present in or near the project site. Burrowing owl was the only special-status wildlife species observed on the project site. No special-status plants were observed on the project site. Several additional special-status wildlife species have at least a moderate potential to be present including Cooper's hawk, San Diego black-tailed jackrabbit, three species of bats, and San Diego desert woodrat. No other special-status wildlife or plant species have greater than a low potential to be present.

No sensitive natural communities are present in the project site. Due to surrounding land uses, the project site is not likely to serve as a significant wildlife movement route, although it may be used as a forage or dispersal area for wildlife in the immediate vicinity. Additionally, the nature of the project would not present a barrier to terrestrial wildlife movement.

2. Project and Property Description

2.1 Project Description

The existing West Fontana Channel is a regularly maintained flood control channel which conveys storm flows from Banana Flood Control Basin (Banana Basin) westward to Hickory Flood Control Basin (Hickory Basin). The project consists of modifying the existing undersized earthen flood control channel. It includes construction of non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Two (2) of the culverts would replace existing culverts at the adjacent railway bridges near Hickory Basin and the third triple cell culvert would replace the pipe culverts under Calabash Ave. The overall Project length is approximately 0.6 miles. The rectangular concrete channel portion is approximately 200 feet long, not including transition lengths to the proposed culvert sections. The proposed concrete box culverts together are approximately 350 feet in total length. The width of the new channel will vary with a maximum width of 110 feet.

The project may also include replacement of an existing concrete weir in the outflow of Banana Basin as well as construction of two access ramps/service roads and replace one existing access ramp. It also includes maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. All activities would be conducted within the project disturbance area boundary. The project is expected to be constructed in two phases, with intermittent

construction activities expected to occur over a twelve (12) month period beginning in mid-2021. Operations and maintenance of the project is also expected to continue in perpetuity following the completion of construction.

2.2 Project Location

The project site is located 0.6 miles west of Cherry Ave. and about 2 miles east of Interstate 15 within an unincorporated area of San Bernardino County. It is located immediately south of Whittram Ave. and north of the Metrolink railroad and the Auto Club Speedway. The project site can be found on the Guasti and Fontana, California United States Geological Survey (USGS) 7.5' Quadrangle. The biological survey consisted of the project site and open vacant lands within about 500 feet of the project site. Surrounding land uses include flood control, industrial, agriculture, and residential.

3. Methods

Justin M. Wood of Aspen Environmental Group (Aspen) reviewed available literature to identify special-status plants and wildlife known from the vicinity. Data from the California Natural Diversity Database (CNDDB; CDFW, 2019) was reviewed for the following USGS 7.5-minute topographic quadrangles (topo quads): Devore, Cucamonga Peak, Guasti, and Fontana. CNDDB search results are provided in Attachment 4. Soil maps for the survey area were reviewed using the Soil Web Survey (NRCS, 2019). All state listed, federally listed, and other special-status plants and wildlife from comparable habitats within the region are addressed below in the results section. Many of the special-status plants and wildlife identified during the literature search occur only in specialized native habitats that are absent from the survey area (i.e., meadows or alpine) or occur only at significantly higher or lower elevations. These plants and wildlife are listed in Attachment 5 and are not addressed further in this report.

On April 16, 2019, Mr. Wood completed a focused botanical survey and special-status species habitat assessment. During the survey, Mr. Wood walked throughout all accessible portions of the project site to search for plants and animals. All plant species observed were either identified in the field or vouchered with photographs or collections for later identification. Plants were identified using keys, descriptions, and illustrations in Baldwin et al. (2012) and other regional references. All plant and wildlife species observed during the field surveys are listed in Attachment 3. The field survey constitutes 100 percent coverage of the project site for special-status plants (see Figure 1). However, the field survey does not constitute protocol level surveys for any listed wildlife species. During the biological survey, Mr. Wood used binoculars to search for birds in vegetation, flipped rocks and debris to look for reptiles and invertebrates, searched through leaf litter for invertebrates and reptiles, looked for burrowing animals, and listened for bird calls. Several reference sites for special-status plants were also visited to ensure that they were present and identifiable in 2019.

In conformance with California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game) guidelines (CDFW, 2018), botanical surveys were (a) conducted during flowering seasons for the special status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the sites, and (e) well documented, by this report, photos that will be uploaded to CalPhotos (BSCIT, 2019), and by voucher specimens to be deposited at Rancho Santa Ana Botanic Gardens and other herbaria. GPS location data, as well as habitat, phenology, and other environmental variables were collected for all special-status species documented within the survey area.

During the survey Mr. Wood drew tentative vegetation boundaries on high-resolution aerial images. Following the field visit, Wood digitized vegetation and land cover types (Figure 2). Digitizing was done

using 1-meter-pixel aerial imagery. The minimum mapping unit is approximately 0.1 acre (about 4,400 square feet). Vegetation was mapped according to the nomenclature and descriptions in *A Manual of California Vegetation* (Sawyer et al. 2009). Mapped vegetation boundaries are accurate to within approximately 10 feet. Any vegetation map is subject to imprecision for several reasons:

1. Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
2. Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
3. Vegetation tends to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.

4. Biological Survey Results

4.1 General Setting

The climate in the region consists of warm, dry summers and mild, wet winters. The average annual high temperature is about 77.8°F and the average annual low is about 53.2°F (U.S. climate data 2018). Roughly 75 percent of the rain falls from December through March. The mean seasonal precipitation for the region is approximately 15.04 inches (U.S. climate data 2018). Rainfall was above average in the region during the 2018-2019 rainfall year (July 1 through June 30). Approximately 19.76 inches were recorded, about 12 percent of the average (San Bernardino County, 2019).

The project site is located on an extensive historic alluvial fan at an elevation of approximately 1140 feet above mean sea level. Soils in the area are loam, sand, and gravel derived from alluvial fans originating in the San Gabriel Mountains to the north. Two soil types are mapped within the project site: Tujunga loamy sand (0 to 5 percent slopes) and Tujunga gravelly loamy sand (0 to 9 percent slopes) (NRCS, 2019). No Delhi sands are present in the project site.

Vegetation and land cover on the project site include open ruderal areas, the developed flood control channel, and non-native grassland. Vegetation and cover within the project site is further described below.

4.2 Vegetation and Land Cover Types

The earthen-bottomed portions of West Fontana Channel support a variety of weedy species such as dog fennel (*Anthemis cotula*), summer mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), red brome (*Bromus madritensis* ssp. *rubens*), and hairy leaved sunflower (*Helianthus annuus*). There are a few mulefat (*Baccharis slicifolia*) shrubs and a very small patch of tall cyperus (*Cyperus eragrostis*) near an inlet in the western half of the project site but no riparian or wetland vegetation was mapped. The channel does not clearly match any vegetation types and for the purpose of this report was mapped as maintained channel.

An open non-native grassland is also present along the southern edge of the project site and was dominated by ripgut brome (*Bromus diandrus*) with other species such as hairy leaved sunflower, telegraph weed (*Heterotheca grandiflora*), golden crownbeard (*Verbesina encelioides*), and tocalote also

present. This non-native grassland is best described as annual brome grassland (*Bromus diandrus* Herbaceous Semi-Natural Alliance) in *A Manual of California Vegetation* (Sawyer et al. 2009).

More than half of the project site is unvegetated and is regularly maintained for flood control. These portions of the project site are mapped as developed. All vegetation and cover types present within the project site were quantified (Table 1) and mapped (Figure 4).

Table 1: Vegetation and cover types present on the project site.

Vegetation and Cover Type	Impact Areas (Acres)	
	Temporary	Permanent
Developed	0.10	0.30
Maintained Basin	0.02	0.01
Maintained Channel	2.60	2.50
Total:	2.72	2.81

4.3 Sensitive Natural Communities

Sensitive vegetation communities are defined by CDFG (2010) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." The literature review identified nine sensitive vegetation communities recorded in the vicinity: California walnut woodland, coastal and valley freshwater marsh, Riversidian alluvial fan sage scrub, southern riparian forest, southern sycamore alder riparian woodland. None of these sensitive natural communities are present in the survey area.

4.4 Wildlife

Wildlife and wildlife sign observed during the field surveys included species common in the region, such as common side-blotched lizard (*Uta stansburiana*), California ground squirrel (*Otospermophilus beecheyi*), mallard (*Anas platyrhynchos*), and black phoebe (*Sayornis nigricans*). No special-status wildlife species were observed during the field survey. Other wildlife species common in developed areas, including flood control facilities throughout the region are also likely to be present but were not observed.

5. Special-status Species Results

Plants or wildlife may be ranked as special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. Certain species have been listed as threatened or endangered under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). Others have not been listed, but declining populations or habitat availability cause concern for their long-term viability. These species of conservation concern appear on lists compiled by resource agencies or private conservation organizations. In this report, "special-status species" includes all plants and wildlife listed as threatened or endangered or included in these other compilations. All special-status plants and wildlife occurring in the region in habitats like those found within the survey area are addressed in Table 2, with brief descriptions of habitat and distribution, conservation status, and probability of occurrence.

5.1 Special-status Plants

No special status plants were found within the project site, and there is only a low probability that any could occur there. Table 2 lists all special-status plants that were identified in the literature review that

have at least a low potential to be present within the project site. Many special-status species known from the region occur in habitats that are absent from the survey area (e.g., meadows or chaparral) or at elevations much higher than the site. These plants and animals are listed in Attachment 5 and are not addressed further in this report.

Table 2. Special-status plants with potential to occur within the project site

Name	Status	Habitat	Potential for Occurrence
Ambrosia monogyra Singlewhorl burrobrush	Fed: none CA: S2 CRPR 2B.2	Perennial Shrub; Sandy soil in chaparral, or Sonoran Desert Scrub. 32-1640 ft. elev.	Low. Not observed during survey; minimally suitable habitat; known historically from within 5 miles of the project site.
Phacelia stellaris Brand's star phacelia	Fed: none CA: S1 CRPR 1B.1	Annual herb; Coastal dunes and coastal scrub. 1-1300 ft. elev.	Low. Not observed during survey; minimally suitable habitat; known from within 1 mile of the project site.
Monardella pringlei Pringle's monardella	Fed: none CA: SX CRPR: 1A	Annual herb; inland sand dunes in and around Colton. 1000-1300 ft. elev.	Low. Not observed during survey; minimally suitable habitat; currently considered extinct, historically known from within 5 miles of the project site.
Pseudognaphalium leucocephalum White rabbit-tobacco	Fed: none CA: S2 CRPR 2B.2	Perennial herb; Sand and gravel soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland. 0-6900ft. elev.	Low. Not observed during survey; minimally suitable habitat present; known historically from within 5 miles of the survey area.

Sources: CDFW, 2019; CCH, 2019; CNPS, 2019

Conservation Status

Federal (Fed.) designations: (federal Endangered Species Act, U.S. Fish and Wildlife Service).

END: Federally listed, endangered.

State (CA) designations: (California Endangered Species Act, California Department of Fish and Wildlife (CDFW))

CAND: Candidate for State listing.

SC: California species of special concern. Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.

California Native Plant Society Rare Plant Rank (CRPR) designations. Note: According to CNPS (http://www.cnps.org/cnps/rareplants/ranking.php), plants ranked as California Rare Plant Rank (CRPR) 1A, 1B, and 2 meet definitions as threatened or endangered and are eligible for state listing. That interpretation of the state Endangered Species Act is not in general use.

1A: Plants presumed extinct in California.

1B: Plants rare and endangered in California and throughout their range.

2: Plants rare, threatened or endangered in California but more common elsewhere in their range.

3: Plants about which we need more information; a review list.

4: Plants of limited distribution; a watch list.

California Rare Plant Rank Threat designations:

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Fairly endangered in California (20-80% occurrences threatened)

.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

State (S) ranking: The state rank is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within C

SX: Presumed extinct or extirpated.

S1: Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) extirpation from the state.

S2: Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declir state.

S3: Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread d state.

S4: Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.

S5: Secure—Common, widespread, and abundant in the state.

Definitions of occurrence probability: Estimated occurrence probabilities based on literature sources cited earlier and field surveys and habitat analyses reported here.

Present: Taxa were observed along the Project alignment during recent botanical surveys.

High: Both a documented recent record (within 10 years) exists of the taxa along the Project alignment or in the immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa are present.

Table 2. Special-status plants with potential to occur within the project site

Name	Status	Habitat	Potential for Occurrence
Moderate:	Both a documented recent record (within 10 years) exists of the taxa along the Project alignment or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited along the Project alignment or the Project alignment is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa are present.		
Low:	A historical record (over 10 years) exists of the taxa along the Project alignment or in the general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa are present but marginal and/or limited.		
Unlikely:	Species not observed along the Project alignment, outside of the known range, and conditions unsuitable for occurrence.		

5.2 Special-status Wildlife

Burrowing owl is the only special-status wildlife species known to be present on the project site. No additional special-status wildlife species were observed during the biological survey. Table 3 lists special-status wildlife species that were identified in the literature review that have at least a low potential to occur. Those that were excluded due to elevation or habitat are include in Attachment 5. Special-status species with at least a moderate potential to be present are discussed in paragraphs following the table.

Table 3. Special-status wildlife with potential to occur on the project site

Name	Status	Habitat Type	Occurrence Potential
INVERTEBRATES AND MOLLUSCS			
Bombus crotchii Crotch bumble bee	Fed: none CA: CAND, S1S2	Colonial insect; open grassland and scrub; underground colonies, often in old rodent burrows. Food plants include many native species such as *Chaenactis, Lupinus, Phacelia, Salvia,* and *Eriogonum*. Much of southern and central CA, SW Nevada and Baja.	Low. Not observed during survey; suitable habitat and food plants present; historical records from within 5 miles.
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	Fed: END CA: S1	Endemic to the Colton Dunes and surrounding areas with Delhi sands. Restricted to a very small range in S. Calif. Adults feed on nectar from a variety of plants including California buckwheat, telegraph weed, and others.	Low. Minimally suitable habitat present, no suitable Delhi sands within the project site, historic records from within about 1 mile.
REPTILES			
Anniella stebbinsi Southern California legless lizard	Fed: none CA: SC, S3	Generally, south of the Transverse Range, south to NW Baja Calif. Sandy or loose loamy soils under sparse vegetation; soils typically have high moisture content.	Low. Not observed during survey; minimally suitable habitat present; known from within about 1 mile of the project site.
Arizona elegans occidentalis California glossy snake	Fed: none CA: SC, S2	Patchily distributed from the east. San Francisco Bay, so. San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja Calif. Loose sandy soils in coastal sage scrub and grasslands.	Low. Not observed during survey; minimally suitable habitat present; known from within about 5 miles.
Aspidoscelis tigris stejnegeri Coastal whiptail	Fed: none CA: SC, S3	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Coastal Calif., Transverse, and Peninsular ranges, south to Baja Calif.	Moderate. Not observed during survey; suitable habitat present; known from within about 1 mile of the project site.
BIRDS			

Table 3. Special-status wildlife with potential to occur on the project site

Name	Status	Habitat Type	Occurrence Potential
Accipiter cooperii Cooper's hawk	Fed: none CA: S4	Hunts in broken woodland and habitat edges. Nests in dense stands of live oak, riparian deciduous or other forest habitats near water used most frequently. Migrates out of southern Calif. during winter.	Moderate (foraging only). Not observed during surveys; suitable foraging habitat is present.
Athene cunicularia Burrowing owl	Fed: none CA: SC, S3	Nests mainly in rodent burrows, usually in open grassland or shrubland; forages in open habitat; increasingly uncommon in S Calif.; through W US and Mexico.	Present. A wintering adult was observed on the project site in December 2019. Suitable foraging habitat and burrows are present on the project site.
MAMMALS			
Eumops perotis californicus Greater Western mastiff bat	Fed: none CA: SC, S3S4	Lowlands (rare exceptions); cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roost in deep rock crevices, forage over wide area.	Low (foraging only). Suitable foraging habitat is present; known from within 5 miles of the project site.
Lasiurus xanthinus Western yellow bat	Fed: none CA: SC, S3	Mexico and Cent. Amer., north to S AZ; Riv., Imperial and San Diego Cos.; riparian and wash habitats; roosts in trees; evidently migrates from Calif. during winter.	Low (foraging only). Suitable foraging habitat is present; known from within 5 miles of the project site.
Lepus californicus bennettii San Diego black-tailed jackrabbit	Fed: none CA: SC, S3S4	Most habitat types, especially shrublands; W Calif. and NW Baja Calif.	Moderate. Not observed during survey; marginally suitable habitat is present; known from within about 1 mile of the project site.
Neotoma lepida intermedia San Diego desert woodrat	Fed: none CA: SC, S3S4	Coastal scrub with a moderate to dense canopies preferred. Particularly abundant in rock outcrops, rocky cliffs, and slopes. So. California from San Diego to San Luis Obispo Cos.	Moderate. Not observed during survey; marginally suitable habitat present; known from within about 1 mile of the project site.
Nyctinomops femorosaccus Pocketed free-tailed bat	Fed: none CA: SC, S3	Deserts and arid lowlands, SW US, Baja Calif., mainland Mexico; Roost mainly in crevices of high cliffs; forage over water and open shrubland.	Low (foraging only). Suitable foraging habitat is present; known from within 5 miles of the survey area.

Sources: American Ornithologists' Union, 1998; Barbour and Davis, 1969; CDFW, 2018a; Feldhamer et al, 2003; Garrett and Dunn, 1981; Hall, 1981; Harvey et al, 1999; Hatfield et al, 2015; iNaturalist, 2018; Jennings and Hayes, 1994; Jericho Systems, Inc. 2017, Lovich, 2017; Nafis, 2017; Parham and Papenfuss, 2008 & 2013; Pianka, 1970; Rossman et al, 1996; Stebbins, 2003; Wilson and Ruff, 1999; and Zeiner,et al, 1990.

See Table 2 for conservation status definitions and definitions of occurrence probabilities.

5.2.1 CDFW Species of Special Concern

Coastal whiptail (*Aspidoscelis tigris stejnegeri*). Coastal western whiptail is a CDFW Species of Special Concern. It occurs in woodlands, chaparral, washes, and annual grasslands. It is most common in dense vegetation but is also found around sandy areas along gravelly arroyos or washes (Stebbins, 2003). It is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges. Its range extends north into Ventura County and south to Baja California. Coastal whiptail is known from several locations throughout the region within approximately five miles of the project site (CDFW, 2019). Although not observed during the survey, coastal whiptail has a moderate potential to be present within the project site.

Burrowing owl (*Athene cunicularia*). The burrowing owl is a CDFW Species of Special Concern and, as a native bird, is protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. It is a small, terrestrial owl of open country. During the breeding season, it ranges throughout most

of the western U.S. It occurs year-round in southern California, but may be more numerous during fall and winter, when migratory individuals from farther north join the regional resident population. Burrowing owl favors flat, open annual or perennial grassland or gentle slopes and sparse shrub or tree cover. It uses the burrows of ground squirrels and other rodents for shelter and nesting, and availability of suitable burrows is an important habitat component. Where ground squirrel burrows are not available, the owl may use alternate burrow sites or man-made features such as drain pipes, debris piles, or concrete slabs. Burrowing owl nesting season, as recognized by the California Burrowing Owl Consortium (CBOC, 1993), is 1 February through 31 August. A wintering adult burrowing owl was observed by County Ecological Resource Specialist Karen Carter on the project site in December of 2019 (see Figure 3). Prior to this observation, the nearest record of burrowing owl was about 2 miles north of the project site in vacant land to the south of Victoria Ave. (ebird.org, 2019). Several additional records are also present west of Interstate 15 within the city of Rancho Cucamonga (CDFW, 2019). During the 2019 survey, nine suitable burrowing owl burrows were observed on the project site (see Figure 3).

San Diego desert woodrat (*Neotoma lepida intermedia*). San Diego desert woodrat is known from coastal and desert scrub and rocky outcrops throughout much of southern California (CDFW, 2016). It frequently builds large middens (piles of sticks and debris arranged to form a shelter) in rock outcrops or around the bases of shrubs. In some portions of its range it builds middens primarily at the bases of cactus (*Opuntia* sps.) and yucca (*Yucca* sps.) plants (Feldhamer et al., 2003). Habitat in the survey area is marginally suitable for San Diego desert woodrat and it has been documented within about 2 miles of the project site. There is a moderate potential for San Diego desert woodrat to construct middens in the rip-rap within West Fontana Channel although none were observed during the survey.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). San Diego black-tailed jackrabbit is found in arid scrub and grassland habitats in coastal portions of Los Angeles, Riverside, and San Bernardino counties. It inhabits open land but requires some shrubs for cover. The San Diego black-tailed jackrabbit does not typically use burrows; shallow depressions under shrubs are used for nesting. It is primarily nocturnal and feeds on grasses, forbs, and shrubs (Hall, 1981; Johnson and Anderson, 1984). Marginally suitable habitat is present in the project site and the species has been reported from the region. There is a moderate potential for San Diego black-tailed jackrabbit to be present in the future.

5.2.3 Other Special-status Wildlife Species

Cooper's hawk (*Accipiter cooperii*). Cooper's hawk is widespread, occurring throughout much of the United States, southern Canada, and northern Mexico. It breeds in deciduous, conifer, and mixed woodlands throughout its range. It frequently nests in suburban and urban environments (Curtis et al., 2006). Cooper's hawks utilize a variety of habitat types and often hunt on the edges of wooded areas (Palmer, 1988). Cooper's hawk has been regularly reported throughout the region. Although not observed during the survey, it has a moderate potential to forage over the project site, but suitable nesting habitat is absent.

5.3 Designated Critical Habitat

No designated critical habitat is present on the project site. The nearest critical habitat to the project site is for San Bernardino kangaroo rat and is located more than three miles north of the project site (USFWS, 2008).

5.4 Wildlife Movement

The ability for wildlife to move freely among populations and habitat areas is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to individual animals' ability to occupy their home ranges, if their ranges extend across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities. The project site is located in a heavy developed and urbanized area. Large-scale wildlife movement through the region is not expected and instead would include small-distance dispersal and foraging only.

5.5 Nesting Birds

Nesting birds are protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, and 3513 which prohibit take of migratory birds, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting). No birds were nesting in the survey area at the time of the survey, but several bird species were present, and are likely to nest there in some years. These include rock pigeon (*Columba livia*), black phoebe (*Sayornis nigricans*), mallard (*Anas platyrhynchos*) and house finch (*Carpodacus mexicanus*). Many other common birds such as killdeer (*Charadrius vociferus*) and lesser goldfinch (*Spinus psaltria*) are also expected to nest within the project site.

6. Summary

No state or federally listed species were observed, and none are expected to be present or be impacted by the project. No special-status plants were observed or have at least a moderate potential to be present. Burrowing owl was the only special-status species observed on the project site. No other special-status wildlife species were observed during the survey. Several special-status wildlife species have at least a moderate potential to be present including the following:

- Coastal whiptail
- San Diego black-tailed jackrabbit
- San Diego desert woodrat

No sensitive natural communities are present. The survey area is not within any designated wildlife corridors and is not likely to serve as a significant wildlife movement route, although it may be used as a forage or dispersal area for wildlife in the immediate vicinity.

7. Literature Cited

American Ornithologists' Union. 1998. Check-list of the North American Birds, 7th ed. Prepared by Committee on Classification and Nomenclature. American Ornithologists' Union, Washington DC.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, D.H. Wilken (eds.) 2012. The Jepson Manual: Vascular Plants of California, 2nd ed. University Press, Berkeley, California.

Barbour, R.W. and W.H. Davis. 1969. Bats of America. University Press of Kentucky, Lexington, Kentucky.

BSCIT (Biodiversity Sciences Technology Group). 2019. CalPhotos database. University of California, Berkeley. [Online]: http://calphotos.berkeley.edu/

CDFW (California Department of Fish and Wildlife). 2019. California Natural Diversity Database (CNDDB), Rarefind, Version 5. Heritage section, CDFW, Sacramento.

_____. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Unpublished. California Department of Fish and Wildlife, Sacramento, California.

CNPS (California Native Plant Society). 2019. Inventory of rare and endangered plants. California Native Plant Society. Sacramento. Online: http://www.cnps.org/inventory. Accessed May 2019.

CCH (Consortium of California Herbaria). 2019. Botanical specimen data provided by the participants of the Consortium of California Herbaria. Online: http://ucjeps.berkeley.edu/consortium/ Accessed May 2019.

Curtis, Odette E., R.N. Rosenfield and J. Bielefeldt. 2006. Cooper's Hawk (*Accipiter cooperii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/075. Accessed June 2018.

eBird.org. 2019. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. Accessed May 2019.

Feldhamer, G.A., B.C. Thompson, and J.A. Chapman (eds.). 2003. Wild Mammals of North America: Biology, Management and Conservation, 2nd ed. Johns Hopkins University Press, Baltimore MD.

Garrett, K. and J. Dunn. 1981. Birds of Southern California: Status and Distribution. Los Angeles Audubon Society, Los Angeles, California.

Grinnell, J. and A.H. Miller. 1944. The Distribution of the Birds of California. Cooper Ornithological Club, Berkeley (reprint 1986 by Artemisia Press, Lee Vining, Calif.).

Hall, E.R. 1981. The Mammals of North America. John Wiley and Sons, New York.

Harvey, M.J., J.S. Altenbach, and T. L. Best. 1999. Bats of the United States. Arkansas Game and Fish Commission and US Fish and Wildlife Service.

Hatfield, R., Jepsen, S., Thorp, R., Richardson, L. & Colla, S. 2015. *Bombus crotchii*. The IUCN Red List of Threatened Species 2015: e. T44937582A46440211. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937582A46440211.en. Downloaded on 03 December 2015.

Inaturalist.org. 2019. Inaturalist. [Online]: https://www.inaturalist.org/observations Accessed May 2019.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Dept. of Fish and Game, Sacramento.

Nafis, G. 2019. California Herps - A Guide to the Amphibians and Reptiles of California (2000-2019). [Online]: http://www.californiaherps.com/ Accessed May 2019.

Natural Resource Conservation Service (NRCS). 2019. Web Soil Survey 2.0. http://websoilsurvey.nrcs.usda.gov/. Accessed May 2019.

Parham, J. F., and T. J. Papenfuss. 2013. Four new species of California legless lizards (*Anniella*). Breviora Sept 2013, vol. 536:1-17.

_____. 2008. High genetic diversity among fossorial lizard populations (*Anniella pulchra*) in a rapidly developing landscape. Conservation Genetics 10:169–176.

Pianka, E.R. 1970. Comparative autecology of the lizard *Cnemidophorus tigris* in different parts of its geographic range. Ecology 51: 703-720.

San Bernardino County (San Bernardino County Flood Control District). 2019. San Bernardino County Flood Warning System Rainfall Data Report. http://www.sbcounty.gov/dpw/pwg/alert/reports.html Accessed May 2019.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans. 2009. Manual of California Vegetation, 2nd ed. California Native Plant Society, Sacramento, California. 1300 pp.

Stebbins, R.C. 2003. Western Reptiles and Amphibians, 3rd ed. Houghton Mifflin Company, Boston Mass.

Unitt, P. 1984. The Birds of San Diego County. Memoir 13, San Diego Society of Natural History, San Diego, California.

U.S. Climate Data. 2019. Average annual weather conditions for Ontario, California. https://www.usclimatedata.com/climate/ontario/california/united-states/usca2487 Accessed May 2019.

USFWS (U.S. Fish and Wildlife Service). 2008. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Bernardino Kangaroo Rat (*Dipodomys merriamii parvus*); Final Rule. Federal Register 73:61936-62002. (October 1).

Wilson, D.E. and S. Ruff (eds.). 1999. Smithsonian Book of North American Mammals. Smithsonian Institution Press, Washington DC.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990. California's Wildlife. Vol. III. Mammals. California Department of Fish and Wildlife, Sacramento.

Attachment 1 - Figures

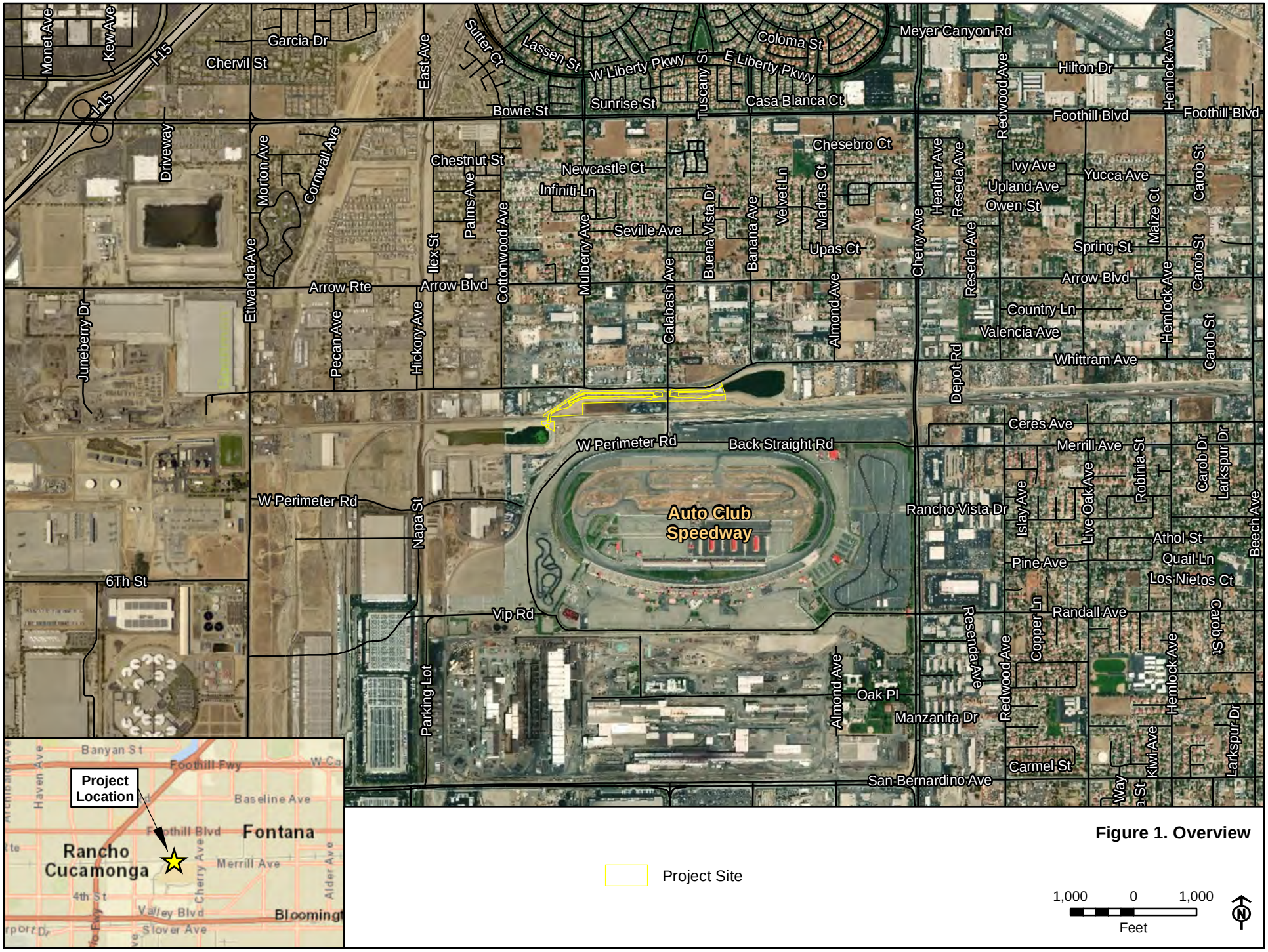
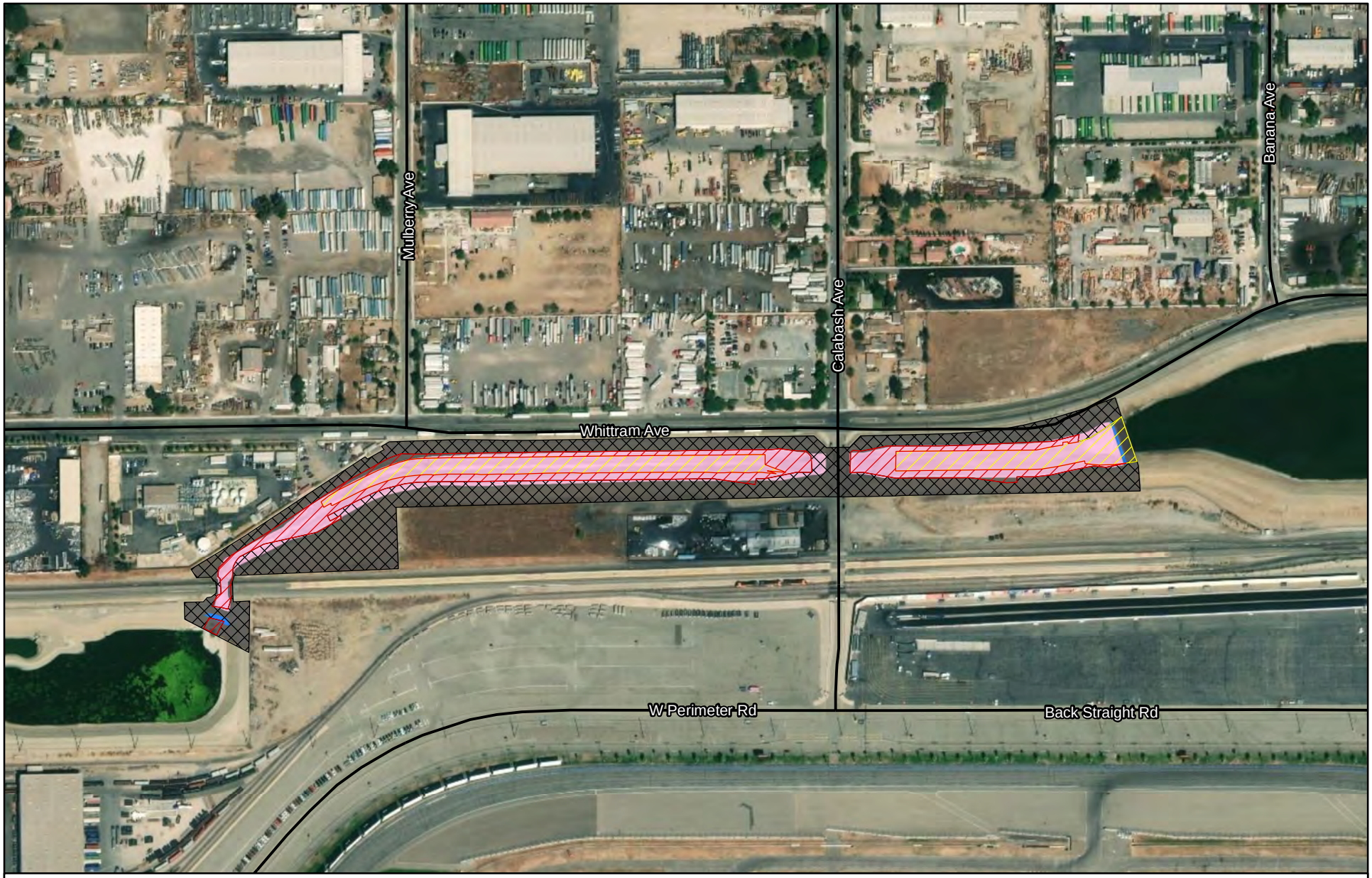


Figure 1. Overview

Project Site

1,000 0 1,000

Feet



Permanent Impact

Temporary Impact

Staging and Access Only

Vegetation and Cover Types

Developed (Permanent Impact: 0.3 ac; Temporary Impact: 0.1 ac)

Maintained basin (Permanent Impact: 0.003 ac; Temporary Impact: 0.02 ac)

Maintained channel (Permanent Impact: 2.5 ac; Temporary Impact: 2.6 ac)

Figure 2. Vegetation and Land Cover

0 500

Feet

N

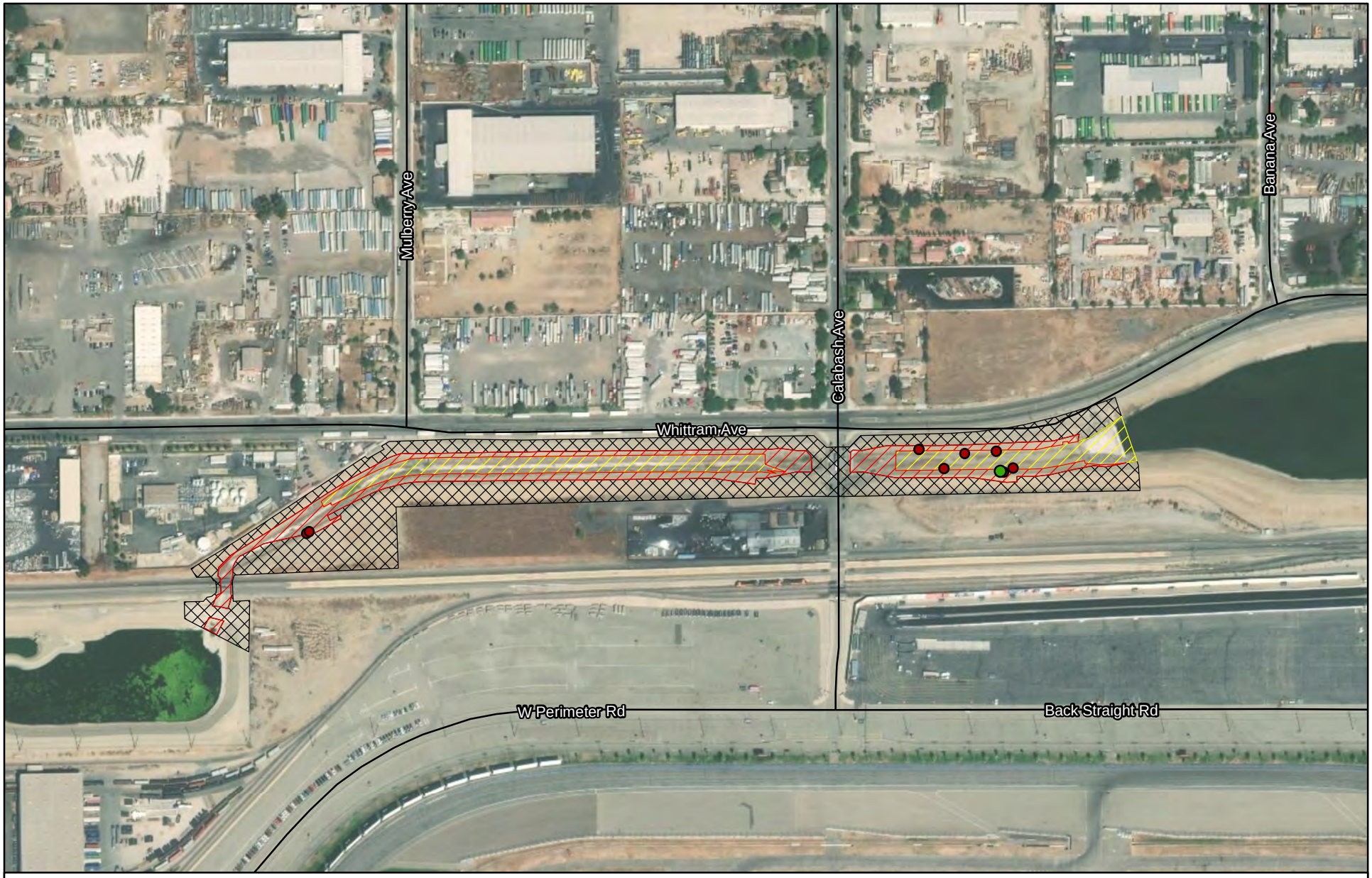


Figure 3. Biological Resources

Attachment 2 – Representative Site Photos



Photo 1: West-facing view of typical vegetation within the channel.



Photo 2: Close-up view of weedy vegetation within the channel just east of Whittram Avenue.



Photo 3: East-facing view of the annual brome grassland along the southern edge of the project site.



Photo 4: North-facing view of the railroad bridge over the channel.



Photo 5: West-facing view of the habitat within Hickory Basin.



Photo 6: Close-up view of one of the many suitable burrowing owl burrows within the project site.

Attachment 3 – Observed Species List

Latin Name	Common Name
VASCULAR PLANTS	
APIACEAE	CELERY FAMILY
* *Coriandrum sativum*	Coriander
ASTERACEAE	ASTER FAMILY
* *Anthemis cotula*	Dog fennel
Baccharis salicifolia	Mule fat
* *Centaurea melitensis*	Tocalote
* *Erigeron bonariensis*	Flax-leaved horseweed
Helianthus annuus	Hairy leaved sunflower
Heterotheca grandiflora	Telegraph weed
* *Lactuca serriola*	Prickly lettuce
* *Oncosiphon piluliferum*	Stinknet
* *Pseudognaphalium luteoalbum*	Jersey cudweed
* *Sonchus asper*	Spiny sowthistle
* *Sonchus oleraceus*	Common sow thistle
* *Verbesina encelioides*	Golden crownbeard
BORAGINACEAE	BORAGE FAMILY
Amsinckia menziesii	Fiddleneck
Emmenanthe penduliflora	Whispering bells
BRASSICACEAE	MUSTARD FAMILY
* *Hirschfeldia incana*	Shortpod mustard
Lepidium lasiocarpum	Shaggyfruit pepperweed
* *Sisymbrium orientale*	Indian hedge mustard
CARYOPHYLLACEAE	PINK FAMILY, CARNATION FAMILY
* *Polycarpon tetraphyllum* var. *tetraphyllum*	Four-leaved allseed
CHENOPODIACEAE	GOOSEFOOT FAMILY
* *Salsola tragus*	Russian thistle
EUPHORBIACEAE	SPURGE FAMILY
Croton californicus	Desert croton
* *Euphorbia maculata*	Spotted spurge
* *Ricinus communis*	Castor bean
FABACEAE	LEGUME FAMILY, PEA FAMILY
Acmispon americanus	"Spanish" clover
Acmispon glaber	Deerweed
* *Albizia julibrissin*	Silktree
* *Melilotus indicus*	Annual yellow sweetclover
* *Parkinsonia aculeata*	Jerusalem thorn
GERANIACEAE	GERANIUM FAMILY
* *Erodium cicutarium*	Redstem filaree
MYRSINACEAE	MYRSINE FAMILY
* *Anagallis arvensis*	Scarlet pimpernel
SIMAROUBACEAE	QUASSIA FAMILY
* *Ailanthus altissima*	Tree of heaven
SOLANACEAE	NIGHTSHADE FAMILY
Datura wrightii	Jimsonweed, tolguacha
* *Nicotiana glauca*	Tree tobacco

SCROPHULARIACEAE	FIGWORT FAMILY
Nuttallanthus canadensis	Canada toadflax
ZYGOPHYLLACEAE	CALTROP FAMILY
* *Tribulus terrestris*	Puncture vine
ARECACEAE	PALM FAMILY
* *Washingtonia robusta*	Mexican fan palm
CYPERACEAE	SEDGE FAMILY
Cyperus eragrostis	Tall umbrella sedge
POACEAE	GRASS FAMILY
* *Avena barbata*	Slender wild oat
* *Bromus catharticus*	Rescue grass
* *Bromus diandrus*	Ripgut brome
* *Bromus madritensis* ssp. *rubens*	Red brome
* *Bromus tectorum*	Downy chess
* *Cynodon dactylon*	Bermuda grass
Hordeum sp.	Unid. Barley
* *Pennisetum setaceum*	Crimson fountain grass
* *Polypogon viridis*	Water bentgrass
* *Schismus barbatus*	Mediterranean schismus
* *Setaria* sp.	Unid. bristlegrass
VERTEBRATE ANIMALS	
REPTILIA	REPTILES
Uta stansburiana	Side-blotched lizard
AVES	BIRDS
CORVIDAE	CROWS, JAYS, MAGPIES
Corvus brachyrhynchos	American crow
ANATIDAE	DUCKS, GEESE, AND SWANS
Anas platyrhynchos	Mallard
Oxyura jamaicensis	Ruddy duck
STRIGIDAE	OWLS
** *Athene cunicularia*	Burrowing owl
COLUMBIDAE	DOVES AND PIGEONS
* *Columba livia*	Rock pigeon
TYRANNIDAE	TYRANT FLYCATCHERS
Sayornis nigricans	Black phoebe
EMBERIZIDAE	SPARROWS AND TANAGERS
Passerculus sandwichensis	Savannah sparrow
FRINGILLIDAE	FINCHES
Carpodacus mexicanus	House finch
MAMMALIA	
SCIURIDAE	SQUIRRELS
Otospermophilus beecheyi	California ground squirrel
LEPORIDAE	RABBITS
Sylvilagus audubonii	Desert cottontail

Species introduced to California are indicated by an asterisk. Special-status species are indicated by two asterisks. This list includes species observed within the project site. Other species may have been overlooked or unidentifiable due to season. Plants were identified using keys, descriptions, and illustrations in Baldwin et al (2012) and other regional references. Wildlife taxonomy and nomenclature generally follow Stebbins (2003) for amphibians and reptiles, AOU (1998) for birds, and Wilson and Ruff (1999) for mammals.

Attachment 4 – CNDDB Query Results

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cladium californicum California saw-grass	PMCYP04010	None	None	G4	S2	2B.2
Claytonia lanceolata var. peirsonii Peirson's spring beauty	PDPOR03097	None	None	G5T1Q	S1	3.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Dipodomys merriami parvus San Bernardino kangaroo rat	AMAFD03143	Endangered	Candidate Endangered	G5T1	S1	SSC
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
Eriogonum microthecum var. johnstonii Johnston's buckwheat	PDPGN083W5	None	None	G5T2	S2	1B.3
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Linanthus concinnus San Gabriel linanthus	PDPLM090D0	None	None	G2	S2	1B.2
Lycium parishii Parish's desert-thorn	PDSOL0G0D0	None	None	G4	S1	2B.3
Malacothamnus parishii Parish's bush-mallow	PDMAL0Q0C0	None	None	GXQ	SX	1A
Monardella australis ssp. jokerstii Jokerst's monardella	PDLAM18112	None	None	G4T1?	S1?	1B.1
Monardella pringlei Pringle's monardella	PDLAM180J0	None	None	GX	SX	1A

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Muhlenbergia californica California muhly	PMPOA480A0	None	None	G4	S4	4.3
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	None	G5T1Q	S1	
Opuntia basilaris var. brachyclada short-joint beavertail	PDCAC0D053	None	None	G5T3	S3	1B.2
Oreonana vestita woolly mountain-parsley	PDAPI1G030	None	None	G3	S3	1B.3
Ovis canadensis nelsoni desert bighorn sheep	AMALE04013	None	None	G4T4	S3	FP
Perognathus longimembris brevinasus Los Angeles pocket mouse	AMAFD01041	None	None	G5T1T2	S1S2	SSC
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	IIDIP05021	Endangered	None	G1T1	S1	
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Southern Riparian Forest Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Sphenopholis obtusata prairie wedge grass	PMPOA5T030	None	None	G5	S2	2B.2
Streptanthus bernardinus Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Viola pinetorum ssp. grisea grey-leaved violet	PDVIO04431	None	None	G4G5T3	S3	1B.2
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 68

Attachment 5 – Special-Status Species Not Addressed

Taxa		Status Plants: (Fed/CA/CRPR) Wildlife: (Fed/CA)	Suitable habitat absent	Specific edaphic conditions absent	Outside of known elevation range	Outside of known geographic distribution	Conspicuous taxa not detected during surveys
Scientific Name	Common Name						
PLANTS							
Arctostaphylos glandulosa ssp. *gabrielensis*	San Gabriel manzanita	-- / S3 / 1B.2			X	X	
Arenaria paludicola	Marsh sandwort	FE/ CE, S1/ 1B.1		X		X	
Calochortus plummerae	Plummer's mariposa-lily	-- / -- / 4.2	X				
Chorizanthe parryi var. *parryi*	Parry's spineflower	-- / S2 / 1B.1	X				
Chorizanthe xanti var. *leucotheca*	White-bracted spineflower	-- / S3 / 1B.2	X				
Chloropyron maritimum ssp. *maritimum*	Salt marsh bird's-beak	FE/ CE, S1 / 1B.2	X				
Cladium californicum	California saw-grass	-- / S2 / 2B.2	X	X			
Claytonia lanceolata var. *peirsonii*	Peirson's spring beauty	-- / S1 / 3.1	X				
Dodecahema leptoceras	Slender-horned spineflower	-- / S3 / 1B.2	X				
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar	FE/ CE, S1 / 1B.1	X			X	
Eriogonum microthecum var. *johnstonii*	Johnston's buckwheat	-- / S2 / 1B.3			X	X	
Horkelia cuneata var. *puberula*	Mesa horkelia	-- / S1 / 1B.1					
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	-- / S3 / 4.3	X				
Lilium parryi	lemon lily	-- / S3 / 1B.2			X	X	
Linanthus concinnus	San Gabriel linanthus	-- / S2 / 1B.2			X	X	
Lycium parishii	Parish's desert-thorn	-- / S1 / 2B.3	X				X
Malacothamnus parishii	Parish's bush-mallow	-- / SX / 1A	X				X
Monardella australis ssp. *jokerstii*	Jokerst's monardella	-- / S1 / 1B.1			X	X	
Muhlenbergia californica	California muhly	-- / S4 / 4.3	X		X	X	
Navarretia prostrata	prostrate vernal pool navarretia	-- / S2 / 1B.1	X				
Opuntia basilaris var. *brachyclada*	short-joint beavertail	-- / S3 / 1B.2				X	
Oreonana vestita	woolly mountain-parsley	-- / S3 / 1B.3	X		X	X	
Sagittaria sanfordii	Sanford's arrowhead	-- / S3 / 1B.2	X	X			
Senecio aphanactis	chaparral ragwort	-- / S2 / 2B.2	X				
Sphenopholis obtusata	prairie wedge grass	-- / S2 / 2B.2	X				
Streptanthus bernardinus	Laguna Mountains jewelflower	-- / S3S4 / 4.3	X			X	
Symphyotrichum defoliatum	San Bernardino aster	-- / S2 / 1B.2	X	X			
Viola pinetorum ssp. *grisea*	grey-leaved violet	-- / S3 / 1B.2	X		X	X	
WILDLIFE							
Agelaius tricolor	tricolored blackbird	-- / **ST**, S1S2	X			X	
Artemisiospiza belli belli	Bell's sage sparrow	-- / S3	X				
Batrachoseps gabrieli	San Gabriel slender salamander	-- / S3S2	X		X		
Catostomus santaanae	Santa Ana sucker	**FT**/ S1	X				
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	-- / SC, S3S4	X				
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	-- / SC, S3S4	X			X	

Taxa		Status Plants: (Fed/CA/CRPR) Wildlife: (Fed/CA)	Suitable habitat absent	Specific edaphic conditions absent	Outside of known elevation range	Outside of known geographic distribution	Conspicuous taxa not detected during surveys
Scientific Name	Common Name						
Cicindela tranquebarica viridissima	greenest tiger beetle	-- / S1	X	X			
Dipodomys merriami parvus	San Bernardino kangaroo rat	**FE** / SC, S1	X				
Dipodomys stephensi	Stephens' kangaroo rat	**FE**/ **ST**, S2	X			X	
Gila orcuttii	arroyo chub	-- / SC, S2	X				
Lampropeltis zonata	California mountain kingsnake	-- / S2?	X		X		
Laterallus jamaicensis coturniculus	California black rail	-- / ST, S1	X				
Ovis canadensis nelsoni	desert bighorn sheep	-- / S3	X				
Perognathus longimembris brevinasus	Los Angeles pocket mouse	-- / SC, S1S2	X				
Phrynosoma blainvillii	coast horned lizard	-- / SC, S3S4	X				
Polioptila californica californica	coastal California gnatcatcher	**FT** / SC, S2	X				
Rana muscosa	southern mountain yellow-legged frog	**FE** / **SE**, S1	X				
Rhinichthys osculus ssp. *3*	Santa Ana speckled dace	-- / SC, S1	X				
Thamnophis hammondii	two striped gartersnake	-- / SC, S3S4					
Vireo bellii pusillus	least Bell's vireo	**FE** / **SE**, S2	X				

Federal (Fed) Rankings:
END – Federally Endangered
THR – Federally Threatened
State (CA) Rankings:
END – State Endangered
THR – State Threatened
CAN- State candidate for listing
SC: California Species of Special Concern
WL: California Watch List Species
S1 – Less than 6 existing occurrences OR less than 100 individuals
S2 – Between 6-20 existing occurrences OR between 1000-3000 individuals
S3 – Between 21-100 existing occurrences OR between 3000-10,000 individuals
.1 – Very threatened
.2 – Threatened
.3 – No current threats known
S4 – Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat. NO THREAT RANK.
(Rank may be expressed as a range of values; hence S2S3 means the rank is somewhere between the two; adding ? to the rank, such as in S2?, represents more certainty than S2S3, but less than S2)
California Rare Plant Ranks (CRPR):
CRPR 1A – Presumed extinct in California
CRPR 1B – Rare or endangered in California and elsewheres
CRPR 2A – Presumed extinct in California, more common elsewhere
CRPR 2B – Rare or endangered in California, more common elsewhere
CRPR 3 – More information needed
CRPR 4 – Limited distribution (Watch List)
0.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = Fairly endangered in California (20-80% occurrences threatened)
0.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Appendix C.
Preliminary Jurisdictional Waters and Wetlands Delineation Report

PRELIMINARY JURISDICTIONAL WATERS AND WETLANDS DELINEATION REPORT FOR THE WEST FONTANA CHANNEL FLOOD CONTROL IMPROVEMENT PROJECT

Prepared for:

San Bernardino County Flood Control District
825 East Third Street
San Bernardino, CA 92415

Prepared by:

Aspen Environmental Group
615 North Benson Avenue, Suite E
Upland, CA 91786

December 2019

Preliminary Jurisdictional Waters and Wetlands Delineation Report

West Fontana Channel Flood Control Improvement Project
San Bernardino County, California

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional determination and delineation for the above-referenced project.

Justin M. Wood, M.S.
Senior Biologist
Aspen Environmental Group

December 2019

Table of Contents

1.0 Introduction....1
1.1 Lead Agency Name and Address....1
1.2 Contact Person and Phone Number....1

2.0 Project Location and Description....1
2.1 Topography and Surrounding Land Uses....2
2.2 Vegetation....2
2.3 Climate....2
2.4 Hydrology and Geomorphology....2
2.5 Soils and Geology....3

3.0 Regulatory Background....3

4.0 Waters and Wetlands Delineation Methodology....3
4.1 Federal Wetlands....4
4.2 Federal Non-Wetland Waters....5
4.3 CDFW Jurisdictional Waters....5

5.0 Results....5
5.1 Federal Wetlands....6
5.2 Federal Non-Wetland Waters....6
5.3 CDFW Waters....6

6.0 Summary and Conclusions....6

7.0 References....7

List of Tables

Table 1 – Vegetation and Cover Types Present on the Project Site....2
Table 2 – Acreage of Jurisdictional Waters, Wetlands, and CDFW Habitat....5

List of Attachments

Attachment 1 – Figures
Attachment 2 – Representative Site Photos
Attachment 3 – Field Data Sheets
Attachment 4 – Federal Non-Wetland and Wetland Waters Indicator Information
Attachment 5 – Regulatory Background Information

1.0 Introduction

This report presents the findings of an investigation of jurisdictional features conducted by Aspen Environmental Group (Aspen) for the West Fontana Channel Flood Control Improvement Project (project). The project site is located within an unincorporated area of San Bernardino County, California (Figure 1; note that all figures are included within Attachment 1). West Fontana Channel carries flows from Banana Basin that originate in Fontana, west to Hickory Basin. Flows leave Hickory Basin and flow south through San Sevaine Channel to Jurupa Basin and eventually into the Santa Ana River. The project site includes approximately 0.55 miles of un-grouted rip-rap trapezoidal channel. It also includes several pipes that run under Calabash Ave. and a concrete-lined section that runs under the railroad track. The County proposes to improve West Fontana Channel by constructing non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Additional improvements to the facility will be made as described in Section 2.1. The project seeks to improve flood protection and enhance public safety for properties and infrastructure in the immediate vicinity.

1.1 Lead Agency Name and Address

San Bernardino County Flood Control District (SBCFCD)
825 East Third Street
San Bernardino, CA 92415

1.2 Contact Person and Phone Number

Nancy J. Sansonetti, AICP
Senior Planner, Environmental Management Division
Department of Public Works
825 E. Third Street, Room 123
San Bernardino, CA 92415
Phone: 909-387-8109
Email: Nancy.Sansonetti@dpw.sbcounty.gov

2.0 Project Location and Description

The existing West Fontana Channel is a regularly maintained flood control channel which conveys storm flows from Banana Flood Control Basin (Banana Basin) westward to Hickory Flood Control Basin (Hickory Basin). The project consists of modifying the existing undersized earthen flood control channel. It includes construction of non-grouted rock slope protection, sections of concrete rectangular channel and transition lengths and three (3) concrete box culverts. Two (2) of the culverts would replace existing culverts at the adjacent railway bridges near Hickory Basin and the third triple cell culvert would replace the pipe culverts under Calabash Ave. The overall Project length is approximately 0.6 miles. The rectangular concrete channel portion is approximately 200 feet long, not including transition lengths to the proposed culvert sections. The proposed concrete box culverts together are approximately 350 feet in total length. The width of the new channel will vary with a maximum width of 110 feet.

The project may also include replacement of an existing concrete weir in the outflow of Banana Basin as well as construction of two access ramps/service roads and replace one existing access ramp. It also includes maintenance on Whittram Avenue from construction traffic, any needed fencing, minor grading in Banana Basin, and equipment parking and staging. All activities would be conducted within the project

site. The project may be constructed in two phases, with intermittent construction activities expected to occur over a twelve (12) month period beginning in mid-2021. Operations and maintenance of the project is also expected to continue for in perpetuity following the completion of construction.

2.1 Topography and Surrounding Land Uses

The project site is located 0.6 miles west of Cherry Ave. and about 2 miles east of Interstate 15 within an unincorporated area of San Bernardino County. It is located immediately south of Whittram Ave. and north of the Metrolink railroad and the Auto Club Speedway. The project site can be found on the Guasti and Fontana, California United States Geological Survey (USGS) 7.5' Quadrangle. The biological survey consisted of the project site and open vacant lands within about 500 feet of the project site. Surrounding land uses include flood control, industrial, agriculture, and residential.

2.2 Vegetation

Vegetation within the earthen-bottomed portions of West Fontana Channel support a variety of weedy species such as dog fennel (*Anthemis cotula*), summer mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), red brome (*Bromus madritensis* ssp. *rubens*), and hairy leaved sunflower (*Helianthus annuus*). An open non-native grassland is also present along the southern edge of the project site and was dominated by ripgut brome (*Bromus diandrus*) with other species such as hairy leaved sunflower (*Helianthus annuus)*, telegraph weed (*Heterotheca grandiflora*), golden crownbeard (*Verbesina encelioides*), and tocalote (*Centaurea melitensis*) also present. The majority of the Project site is regularly maintained and is unvegetated.

Table 1: Vegetation and cover types present on the project site.

Vegetation and Cover Type	Impact Areas (Acres)	
	Temporary	Permanent
Developed	0.10	0.30
Maintained Basin	0.02	0.01
Maintained Channel	2.60	2.50
Total:	2.72	2.81

2.3 Climate

The climate in the region consists of warm, dry summers and mild, wet winters. The average annual high temperature is about 77.8°F and the average annual low is about 53.2°F (U.S. climate data 2018). Roughly 75 percent of the rain falls from December through March. The mean seasonal precipitation for the region is approximately 15.04 inches (U.S. climate data 2018).

2.4 Hydrology and Geomorphology

Surface flows from within the city of Fontana enter Fontana Channel and are conveyed west though a series of channels and a basin to reach the project site. Within the project site flows continue west through an earthen-bottom trapezoidal channel before entering Hickory Basin to the southwest of the project site. Downstream of Hickory Basin, flows eventually enter San Sevaine Channel. Flows then flow south into Jurupa Basin and eventually into the Santa Ana River about 8.3 miles south of the project site. The Santa Ana River flows to Prado Basin, and finally to the Pacific Ocean. The Pacific Ocean is recognized by the USACE as traditional navigable water (TNW) thereby establishing surface connectivity of West Fontana Chanel to navigable waters.

Based on field observations and a review of historic aerial images, surface water appears to be present during storms and for a very short period of time following storm flows. The surface water does not appear to stay in the channel long enough to develop wetland vegetation or hydric soils.

West Fontana Channel is mapped as a blue-line stream within the project site (NRCS, 2019a), although land use and flood control improvements have substantially altered the historical surface hydrology. The project site is within the Upper Santa Ana Valley Groundwater Basin (CDWR, 2004). It is also within the Santa Ana River hydrologic unit of the South Coast Hydrologic Region as designated by the California Regional Water Quality Control Board (CDWR, 2016).

2.5 Soils and Geology

The project site is located on an extensive alluvial bajada below the San Gabriel Mountains. Soils on the site are loam, sand, and gravel. Historic soil data from the National Resource Conservation Society (NRCS) were reviewed to identify any hydric soils that may have been historically present in the survey area. No hydric soils are mapped in the survey area. However, small patches of hydric soils may be found within non-hydric polygons based on NRCS minimum mapping units. Two soil types are mapped within the project site: Tujunga loamy sand (0 to 5 percent slopes) and Tujunga gravelly loamy sand (0 to 9 percent slopes) (NRCS, 2019).

Tujunga loamy sand, 0 to 5 percent slope (TuB). Tujunga loamy sand is a somewhat excessively drained soil that is found on alluvial fans and is derived from granite. It is found in areas with 0 to 5 percent slope and from elevations of about 650 to 3,110 feet. Water table depth is typically more than 80 inches and these areas are rarely flooded. The substrate is composed of loamy sand (0-6 inches), loamy sand (6-18 inches), and loamy sand (18-60 inches). It is present in about half of the project site (see Figure 3).

Tujunga gravelly loamy sand, 0 to 9 percent slope (TvC). Tujunga gravelly loamy sand is a somewhat excessively drained soil that is found in alluvial fans and is derived from granite. It is found in areas with 0 to 9 percent slope and from elevation of about 10 to 1,500 feet. Water table depth is typically more than 80 inches and these areas are rarely flooded. The substrate is composed of gravelly loamy sand (0-36 inches) and gravelly sand (36-60 inches). It is present in about half of the project site (see Figure 3).

3.0 Regulatory Background

Jurisdictional waters, including some wetlands and riparian habitats, may be are regulated by the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game), and the Santa Ana Regional Water Quality Control Board (SARWQCB). The USACE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (CWA); the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the SARWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. Refer to Attachment 5 for additional details on regulatory authorities and background.

4.0 Waters and Wetlands Delineation Methodology

The assessment of jurisdictional wetlands, other (non-wetland) waters of the United States (waters of the U.S.), waters of the State, and riparian habitat was conducted by Aspen biologist Justin Wood on April 16, 2019. Prior to conducting the field assessment Mr. Wood reviewed current and historic aerial photographs, the San Bernardino County Soil Survey (Natural Resource Conservation Service [NRCS], 2019a), and the local and state hydric soil list (NRCS 2019b) to evaluate the potential active channels and

wetland features in the survey area. Mr. Wood also reviewed the SBCFCD Master Storm Water System Maintenance Program (MSWSMP) Portal (SBCFCD, 2019).

A series of transect locations were determined prior to conducting fieldwork, based on methods in the USACE Wetland Delineation Manual (1987). Each transect was walked perpendicular to the channel and locations were each transect intersected with a state or federally Jurisdictional water a GPS point was collected. Attachment 3 contains the Wetland Determination Data Forms completed during the assessment.

During the field assessment, vegetation, hydrology, and locations of sample locations were mapped using a Trimble Juno 3B GPS unit and identified on aerial photographs (Figures 4 and 5). Field maps were digitized using Global Information System (GIS) and total state and federal jurisdictional areas were calculated.

Vegetation was classified using the names and descriptions in *A Manual of California Vegetation* (Sawyer et al., 2009), when appropriate. Mapping was done by drawing tentative boundaries onto high-resolution aerial images during the site visits, then digitizing these boundaries into GIS shapefiles. Vegetation was mapped digitally using ArcGIS (version 10.1) and one-foot pixel aerial imagery on a 22" diagonal flat screen monitor. The smallest mapping unit was approximately 0.10 acre and most mapped vegetation boundaries are accurate to within approximately 3 feet. Any vegetation map is subject to imprecision for several reasons:

1. Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
2. Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
3. Vegetation tends to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.

4.1 Federal Wetlands

Jurisdictional wetlands were delineated using a routine determination according to the methods outlined in the USACE Wetland Delineation Manual (1987) and the Arid West Supplement (2008) based on three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils. The three parameters were evaluated at a series of sample points throughout the survey area. The locations of these sample points were selected at locations judged most likely to meet wetlands criteria. Soil pits were excavated at these locations to evaluate the presence of hydric soils (Figures 5).

Hydrophytic Vegetation

At each sample location, the aerial cover of all plant species in each vegetation type was visually estimated. Plant species in each stratum (tree, sapling and shrub, herb, and woody vine) were ranked according to their canopy dominance (USACE 2008). Species that contributed to a cumulative coverage total of at least 50 percent and any species that comprised at least 20 percent of the total coverage for each stratum were recorded on the Field Data Sheets (50/20 Rule). Wetland indicator status was assigned to each dominant species using the Region 0 List of Plant Species that Occur in Wetlands and Summary of Wetland Indicator Status (Reed 1988), the California sub-region of the National List of Vascular Plant

Species that Occur in Wetlands: 1996 National Summary (USFWS 1997), and the Arid West Region of The National Wetland Plant List (USACE 2012). If greater than 50 percent of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation was met (refer to Table 3 of Attachment 4).

Wetland Hydrology

At each sample location, the presence or absence of wetland hydrology was evaluated by observing indicators of hydrology (USACE 2008). These indicators are divided into two categories (primary and secondary indicators). Presence of one primary indicator is evidence of wetland hydrology. Presence of two or more secondary indicators can also be evidence of wetland hydrology. The Arid West Supplement includes two additional indicator groups that can be utilized during dry conditions or in areas where surface water and saturated soils are not present including Group B (evidence of recent inundation) and Group C (evidence of recent soil saturation) (USACE 2008). For additional information regarding wetland hydrology indicators refer to Tables 4 and 5 in Attachment 4.

Hydric Soils

Soil pits were excavated at each sample location using a shovel. Whenever possible they were excavated to a depth of 20 inches (USACE 2008). At each soil pit, the soil texture and color were recorded by comparison with a Munsell soil color chart (2000). Any other indicators of hydric soils, such as redoximorphic features, hydrogen sulfide odor, buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils were also recorded (refer to Tables 6 and 7 of Attachment 4).

4.2 Federal Non-Wetland Waters

Jurisdictional non-wetland waters of the U.S. were delineated based on the limits of the ordinary high-water mark (OHWM) as determined by physical and biological features such as bank erosion, deposited vegetation or debris, and vegetation characteristics. See Tables 1 and 2 in Attachment 4 (Potential Geomorphic and Vegetative Indicators of Ordinary High-Water Marks for the Arid West) for a list of key physical features for determining the OHWM identified by the arid west manual.

4.3 CDFW Jurisdictional Waters

CDFW jurisdiction was delineated to the tops of the channel banks. Throughout the Project site the CDFW jurisdictional area extended beyond the OHWM. Therefore, the total acreage of CDFW jurisdictional waters is greater than the federal jurisdictional waters of the U.S.

5.0 Results

Based on the results of the field surveys and mapping, Aspen's professional opinion on acreage of jurisdictional waters, wetlands, and CDFW habitat is shown below in Table 2. Additional information for each location can be found on the field data sheets (Attachment 3).

Table 2: Acreage of Jurisdictional Waters, Wetlands, and CDFW Habitat

	USACE Jurisdictional Waters of The U.S. (Acres)		State Jurisdictional Waters (Acres)[a]
	Non-wetland waters of U.S.	Wetlands	
Permanent Impact Area	0.3	0.00	2.5
Temporary Impact Area	0.8	0.00	2.6

Total Project Impact Area	1.1	0.0	5.1

(a) Non-wetland waters of the United States and non-wetland waters of the State overlap; as such, jurisdictional acreages are not additive.

5.1 Federal Wetlands

Based on this assessment of hydrology, vegetation, and soils, no federal wetlands are present within the project site. None of the soil pits that were excavated satisfied the federal criteria as wetlands (USACE 1987 and USACE 2008). Additional information for each location can be found on the field data sheets (Attachment 3).

5.2 Federal Non-Wetland Waters

Based on this assessment of OHWMs and Aspen's professional opinion, approximately 0.8 acres of the temporary impact area and 0.3 acres of the permanent impact area meet the definition of waters of the U.S. as outlined in 33 CFR Part 328 (Figure 5). Some of the key hydrology indicators noted during the delineation included the following. See Tables 1 and 2 in Attachment 4 for additional information.

- B2 – Active floodplain
- B3 – Drift Deposits
- B8 – Change in particle size distribution
- B12 – Litter (organic debris, small twigs and leaves)

Federal non-wetland waters of the U.S. include part of the channel bottom and extend slightly up the side slopes depending on the location of drift deposits and vegetation (i.e., the OHWM). A review of historic aerial photography (1995 – 2018) confirms the approximate location and extent of federal non-wetland waters of the U.S. identified during our site visit. Additional non-wetland waters of the U.S. are also present both upstream and downstream of the project site.

5.3 CDFW Waters

Based on this assessment and Aspen's professional opinion, 2.5 acres within the permanent impact area and 2.6 acres within the temporary impact area meet the definition of CDFW jurisdictional waters of the State as outlined in Sections 1600-1616 of the California Fish and Game Code (Figure 5). This conclusion is primarily based on the presence of a clearly defined bed and bank. No riparian or wetland vegetation was present or extended beyond the top of the defined bank.

6.0 Summary and Conclusions

The Project site includes jurisdictional waters of the State and waters of the U.S. including federally jurisdictional non-wetland waters as follows:

- 1.1 acres of jurisdictional non-wetland waters of the United States where mapped in areas that had evidence of hydrology or a discernible OHWM. This included 0.3 areas within the permanent impact area and 0.8 acres within the temporary impact area.
- 5.1 acres of CDFW jurisdictional waters were mapped based on bed and bank and other field observations. This included 2.5 acres within the permanent impact area and 2.6 acres within the temporary impact area.

Note that these acreages overlap and are not additive. All USACE jurisdictional waters are included within the CDFW jurisdictional waters of the State. The conclusions presented above represent Aspen's professional opinion based on our knowledge and experience with the USACE and CDFW, including their regulatory guidance documents and manuals. However, the USACE and CDFW have final authority in determining the status and presence of jurisdictional wetlands and waters and the extent of their boundaries.

7.0 References

Baldwin, B.G., D.H., Goldman, D.J. Keil, R. Patterson, and T.J. Rosatti (eds.). 2012. The Jepson Manual: Higher Plants of California. 2nd edition. University of California Press, Berkeley, California.

California Department of Water Resources (CDWR). 2004. Hydrologic Region South Coast California's Groundwater, Upper Santa Ana Valley Groundwater Basin. [online]: https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/8-2.02.pdf (accessed May 2019).

_____. 2016. California's Groundwater, Bulletin 118, Interim Update 2016. [online]: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/Statewide-Reports/Bulletin_118_Interim_Update_2016.pdf (accessed May 2019).

Munsell Color. 2000 Revised Edition. *Soil Color Charts.* GretagMacbeth. New York.

Natural Resource Conservation Service (NRCS). 2019a. Web Soil Survey 2.0. [online]: http://websoilsurvey.nrcs.usda.gov/ Accessed May 2019.

_____. 2019b. National Hydric Soil List by State. [online]: http://soils.usda.gov/use/hydric/. Accessed May 2019.

_____. 2019c. Official Soil Series Descriptions. [online]: http://soils.usda.gov/technical/classification/osd. Accessed May 2019.

Reed, Porter B. Jr. 1988. National List of Plant Species That Occur in Wetlands: California (Region 0). U.S. Fish and Wildlife Service, National Ecology Research Center, St. Petersburg, FL.

San Bernardino County Flood Control District (SBCFCD). 2019. Master Storm Water System Maintenance Program (MSWSMP) portal. [online]: https://sbcounty.mswsmp.com/ accessed May 2019.

Sawyer, John O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation; 2nd Edition. California Native Plant Society, Sacramento, California.

United States Geological Survey (USGS). 1966. Guasti, California 7.5-minute Topographic Quadrangle (Photo Revised 1981).

_____. 1967. Fontana, California 7.5-minute Topographic Quadrangle (Photo Revised 1980).

U.S. Army Corps of Engineers (USACE). 1987. U.S. Army Cops Wetland Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, MS.

_____. 2008. Regional Supplement to the U.S Army Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. 2012. The National Wetland Plant List. ed. R. W. Lichvar. ERDC/CRREL TR-12-11. Hanover, NH: Cold Regions Research and Engineering Laboratory.

United States Department of Agriculture (USDA). 2019. Plants Database. [online]: https://plants.usda.gov/java/. Accessed May 2019.

United States Fish and Wildlife Service. 1997. The National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary. Ecology Section – National Wetlands Inventory.

U.S. climate data. 2019. Average annual weather conditions for Ontario, California. https://www.usclimatedata.com/climate/ontario/california/united-states/usca2487 Accessed May 2019.

Attachment 1 - Figures

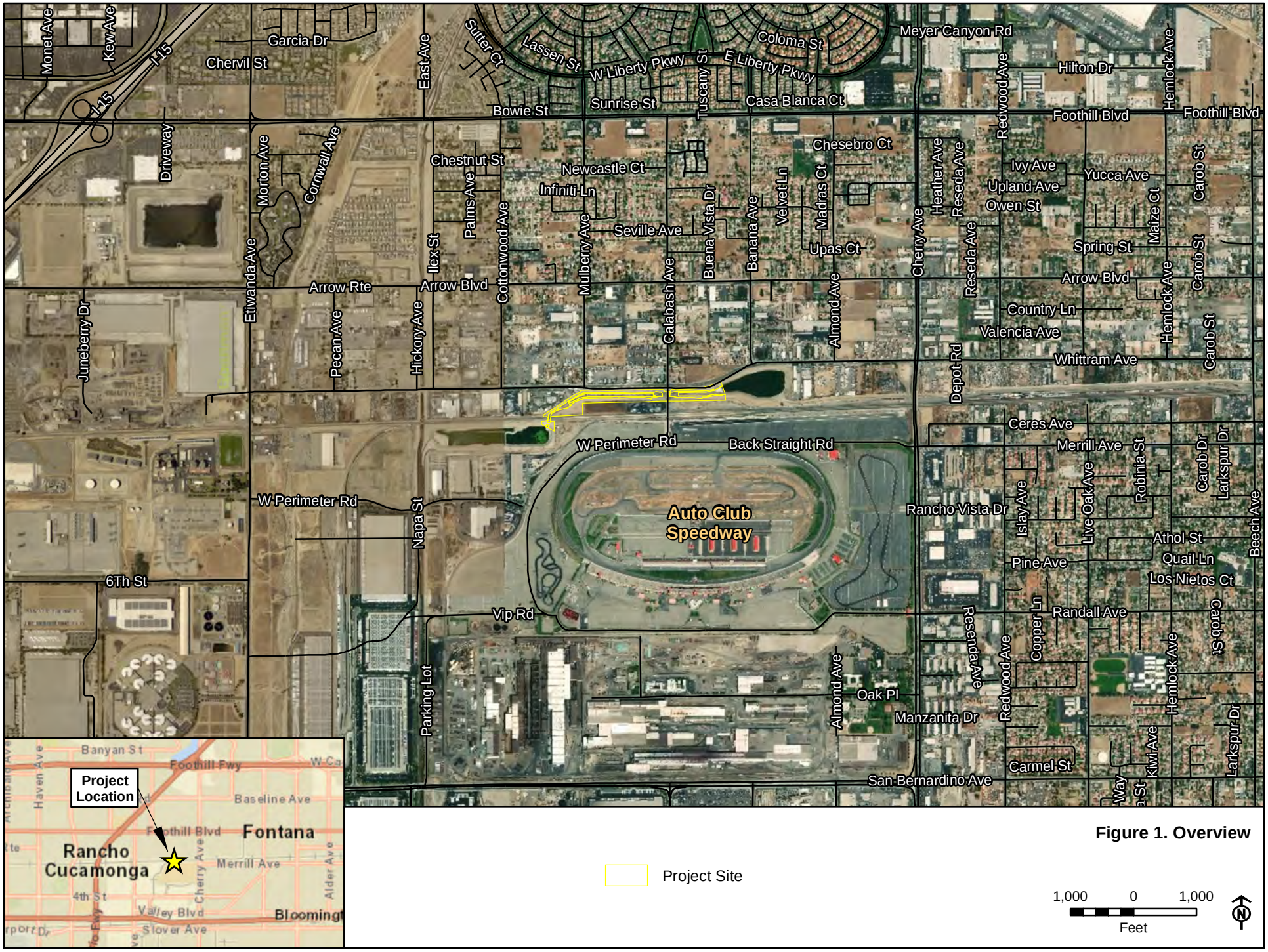
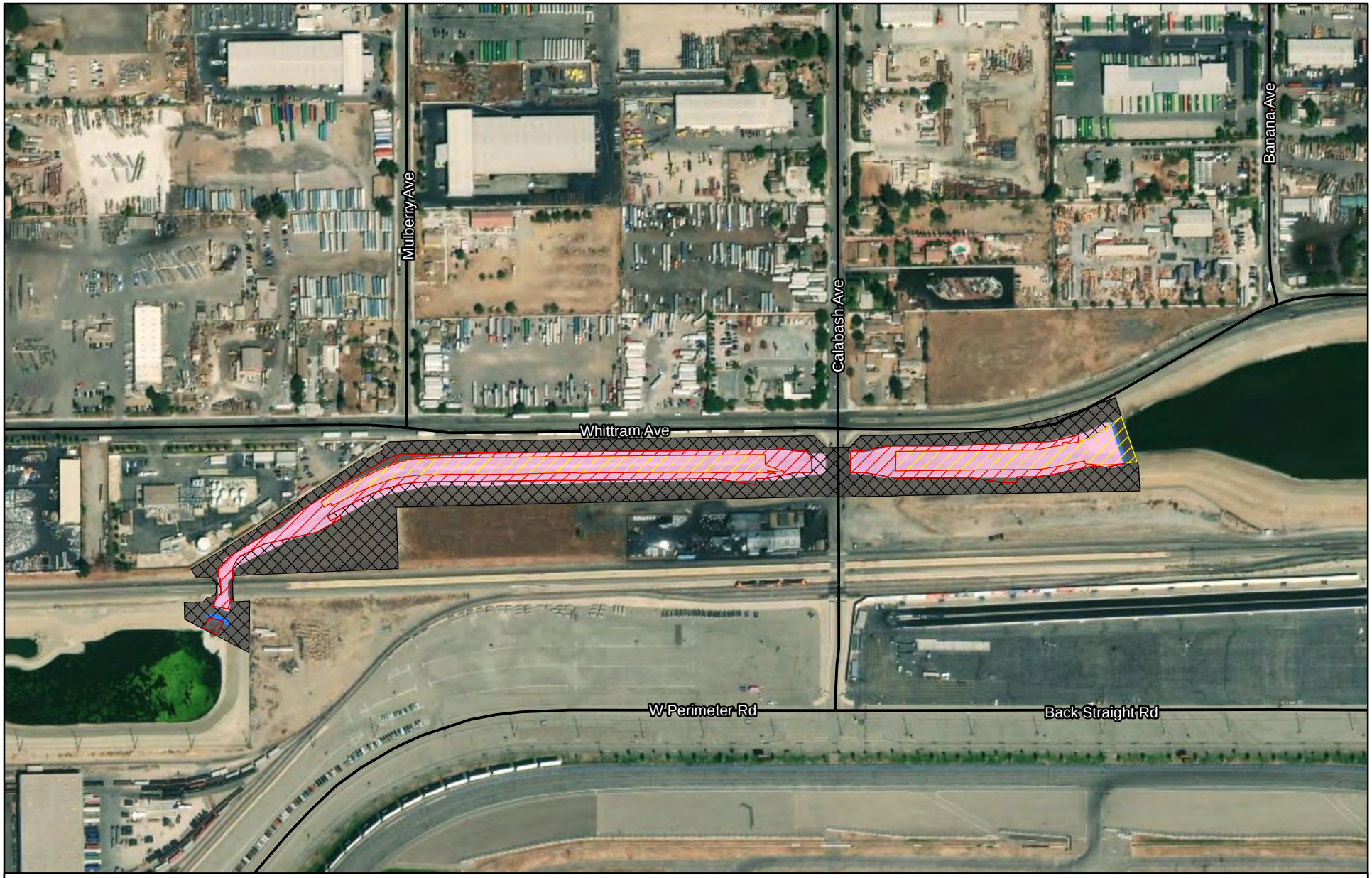


Figure 1. Overview

Project Site

1,000 0 1,000

Feet



Permanent Impact

Temporary Impact

Staging and Access Only

Vegetation and Cover Types

Developed (Permanent Impact: 0.3 ac; Temporary Impact: 0.1 ac)

Maintained basin (Permanent Impact: 0.003 ac; Temporary Impact: 0.02 ac)

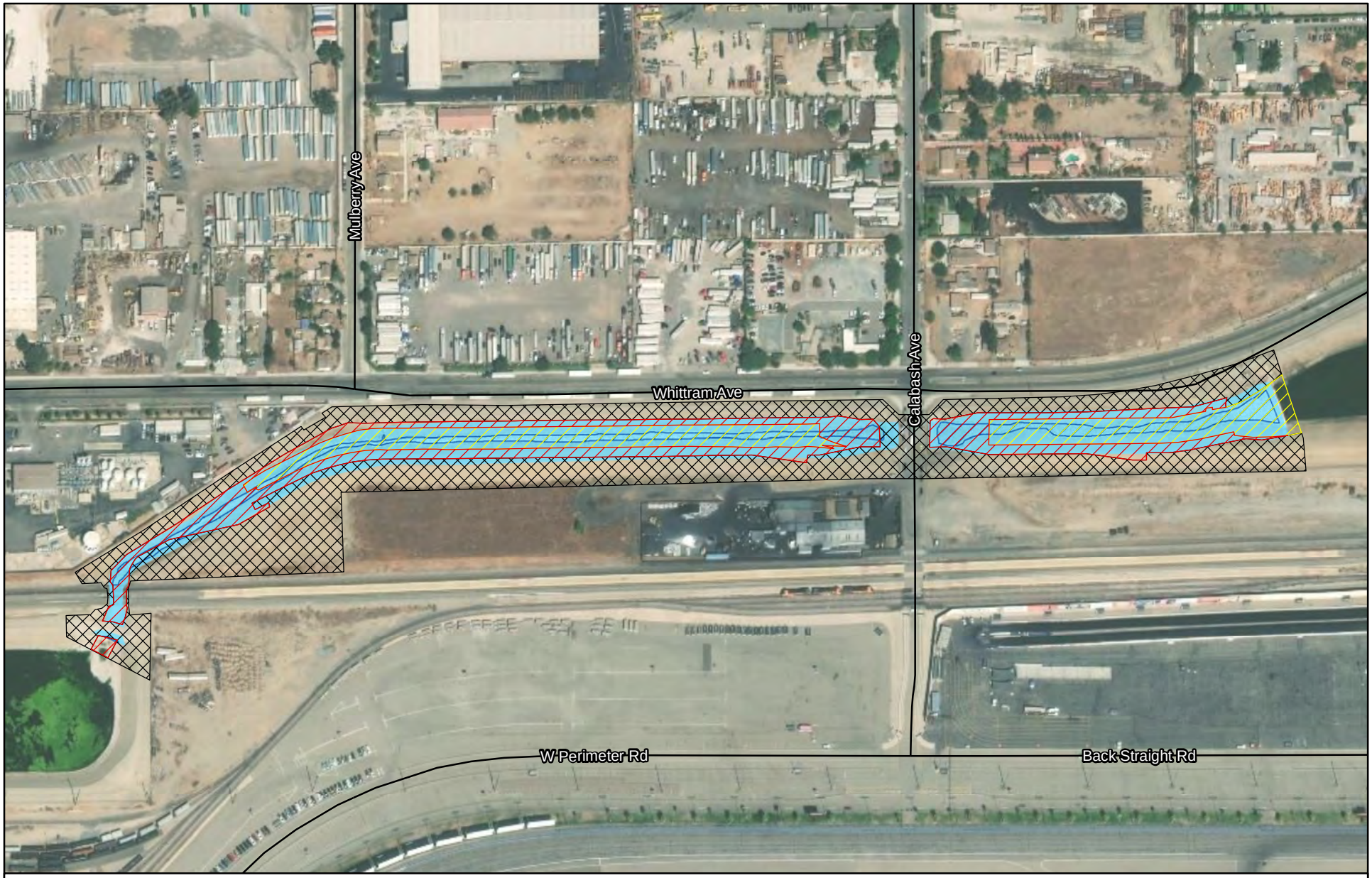
Maintained channel (Permanent Impact: 2.5 ac; Temporary Impact: 2.6 ac)

Figure 2. Vegetation and Land Cover

0 500

Feet

N



Permanent Impact

Temporary Impact

Staging and Access Only

Jurisdictional Waters

Waters of the U.S. (Permanent Impact: 0.3 ac; Temporary Impact: 0.8 ac)

CDFW (Permanent Impact: 2.5 ac; Temporary Impact: 2.6 ac)

Figure 3. Jurisdictional Waters

0 500

Feet

N

Attachment 2 – Representative Site Photos



Photo 1: Typical view of the channel with a clearly defined OHWM and top of bank.



Photo 2: Typical view of the downstream portion of the channel with a clearly defined top of bank.



Photo 3: Close-up photo of the portion of the wettest portion of the channel.



Photo 4: East-facing photo of Banana Basin at the upstream end fo the projuect site.



Photo 5: Close-up view of wetland sample location 1.



Photo 6: Close-up view of wetland sample lcoation 2.

Attachment 3 – Field Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: West Fontana Channel City/County: Fontana/San Bernardino Sampling Date: 16-Apr-2019

Applicant/Owner: San Bernardino County Flood Control District State: CA Sampling Point: #1

Investigator(s): Justin Wood Section, Township, Range: Section 10, T1S, R6W

Landform (hillslope, terrace, etc.): Flat bajada Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): Lat: 34.094317 Long: -117.501669 Datum: NAD83

Soil Map Unit Name: Tujunga loamy sand, 0 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1-m x 1-m)			
1. Helianthus annuus	20	Yes	FACU
2. Anthemis cotula	20	Yes	FACU
3. Polypogon monspeliensis	5	No	FACW
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 40	x 4 =	160
UPL species	x 5 =	
Column Totals: 40 (A)		160 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: #1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR 5/2	100					Sandy loa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: West Fontana Channel City/County: Fontana/San Bernardino Sampling Date: 16-Apr-2019

Applicant/Owner: San Bernardino County Flood Control District State: CA Sampling Point: #2

Investigator(s): Justin Wood Section, Township, Range: Section 10, T1S, R6W

Landform (hillslope, terrace, etc.): Flat bajada Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): Lat: 34.094285 Long: -117.506023 Datum: NAD83

Soil Map Unit Name: Tujunga loamy sand, 0 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5-m x 1-m)			
1. Baccharis salicifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 1-m x 1-m)			
1. Cyperus eragrostis	15	Yes	FACW
2. Anthemis cotula	10	Yes	FACU
3. Polypogon monspeliensis	10	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 25	x 2 =	50
FAC species 10	x 3 =	30
FACU species 10	x 4 =	40
UPL species	x 5 =	
Column Totals: 45 (A)		145 (B)

Prevalence Index = B/A = 2.66

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: #2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	100					Sandy loa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Attachment 4 – Federal Non-Wetland/Wetland Waters Indicator Information

Table 1. Potential Geomorphic Indicators of Ordinary High Water Marks for the Arid West

(A) Below OHW	(B) At OHW	(C) Above OHW
1. In-stream dunes	1. Valley flat	1. Desert pavement
2. Crested ripples	2. Active floodplain	2. Rock varnish
3. Flaser bedding	3. Benches: low, mid, most prominent	3. Clast weathering
4. Harrow marks	4. Highest surface of channel bars	4. Salt splitting
5. Gravel sheets to rippled sands	5. Top of point bars	5. Carbonate etching
6. Meander bars	6. Break in bank slope	6. Depositional topography
7. Sand tongues	7. Upper limit of sand-sized particles	7. Caliche rubble
8. Muddy point bars	8. Change in particle size distribution	8. Soil development
9. Long gravel bars	9. Staining of rocks	9. Surface color/tone
10. Cobble bars behind obstructions	10. Exposed root hairs below intact soil layer	10. Drainage development
11. Scour holes downstream of obstructions	11. Silt deposits	11. Surface relief
12. Obstacle marks	12. Litter (organic debris, small twigs and leaves)	12. Surface rounding
13. Stepped-bed morphology in gravel	13. Drift (organic debris, larger than twigs)	
14. Narrow berms and levees		
15. Streaming lineations		
16. Desiccation/mud cracks		
17. Armored mud balls		
18. Knick Points		

Table 2. Potential Vegetation Indicators of Ordinary High Water Marks for the Arid West

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1. Herbaceous marsh species 2. Pioneer tree seedlings 3. Sparse, low vegetation 4. Annual herbs, hydromesic ruderals 5. Perennial herbs, hydromesic clonals	1. Annual herbs, hydromesic ruderals 2. Perennial herbs, hydromesic clonals 3. Pioneer tree seedlings 4. Pioneer tree saplings	1. Annual herbs, xeric ruderals 2. Perennial herbs, non-clonal 3. Perennial herbs, clonal and non-clonal co-dominant 4. Mature pioneer trees, no young trees 5. Mature pioneer trees w/upland species 6. Late-successional species
Mesoriparian Indicators	6. Pioneer tree seedlings 7. Sparse, low vegetation 8. Pioneer tree saplings 9. Xeroriparian species	5. Sparse, low vegetation annual herbs, hydromesic 6. ruderals 7. Perennial herbs, hydromesic clonals 8. Pioneer tree seedlings 9. Pioneer tree saplings 10. Xeroriparian species 11. Annual herbs, xeric ruderals	7. Xeroriparian species 8. Annual herbs, xeric ruderals 9. Perennial herbs, non-clonal 10. Perennial herbs, clonal and non-clonal codominent 11. Mature pioneer trees, no young trees 12. Mature pioneer trees, xeric understory 13. Mature pioneer trees w/upland species 14. Late-successional species 15. Upland species
Xeroriparian indicators	10. Sparse, low vegetation 11. Xeroriparian species 12. Annual herbs, xeric ruderals	12. Sparse, low vegetation 13. Xeroriparian species 14. Annual herbs, xeric ruderals	16. Annual herbs, xeric ruderals 17. Mature pioneer trees w/upland species 18. Upland species

Table 3. Summary of Wetland Indicator Status

Category		Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability of 67–99%)
Facultative	FAC	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34–66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67–99%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	NI	No indicator status has been assigned

Source: Reed, 1988; USFWS, 1997; USACE, 2012.

Table 4. Wetland Hydrology Indicators*

Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Water-Borne Sediment Deposits	FAC-Neutral Test
Drift Lines	Water-Stained Leaves
Drainage Patterns Within Wetlands	Local Soil Survey Data

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 5. Wetland Hydrology Indicators for the Arid West*

	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)
Group A – Observation of Surface Water or Saturated Soils		
A1 – Surface Water	X	
A2 – High Water Table	X	
A3 – Saturation	X	
Group B – Evidence of Recent Inundation		
B1 – Water Marks	**X** (Non-riverine)	**X** (Riverine)
B2 – Sediment Deposits	**X** (Non-riverine)	**X** (Riverine)
B3 – Drift Deposits	**X** (Non-riverine)	**X** (Riverine)
B6 – Surface Soil Cracks	X	
B7 – Inundation Visible on Aerial Imagery	X	
B9 –Water-Stained Leaves	X	
B10 – Drainage	X	X
B11 – Salt Crust	X	
B12 – Biotic Crust	X	
B13 – Aquatic Invertebrates	X	
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen Sulfide Odor	X	
C2 – Dry-Season Water Table		X
C3 – Oxidized Rhizospheres along Living Roots	X	

Table 5. Wetland Hydrology Indicators for the Arid West*

	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)
C4 – Presence of Reduced Iron	X	
C6 – Recent Iron Reduction in Tilled Soils	X	
C7 – Thin Muck Surface	X	
C8 – Crayfish Burrows		X
C9 – Saturation Visible on Aerial Imagery		X
Group D – Evidence from other Site Conditions or Data		
D3 – Shallow Aquitard		X
D5 – FAC-Neutral Test		X

*Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.

Table 6. Field Indicators of Hydric Soil Conditions*

1. Indicators of Historical Hydric Soil Conditions	2. Indicators of Current Hydric Soil Conditions
a. Histosols b. Histic epipedons; c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix d. High organic content in surface of sandy soils e. Organic streaking in sandy soils f. Iron and manganese concretions g. Soil listed on county hydric soils list	a. Aquic or peraquic moisture regime (inundation and/or soil saturation for *7 continuous days) b. Reducing soil conditions (inundation and/or soil saturation for *7 continuous days) c. Sulfidic material (rotten egg smell)

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 7. Hydric Soil Indicators for the Arid West*

Hydric Soil Indicators			Hydric Soil Indicators for Problem Soils**
All Soils	**Sandy Soils**	**Loamy and Clay Soils**	
A1 – Histosol	S1 – Sandy Mucky Mineral	F1 – Loamy Mucky Mineral	A9 – 1 cm Muck
A2 – Histic Epipedon	S4 – Sandy Gleyed Matrix	F2 – Loamy Gleyed Matrix	A10 – 2 cm Muck
A3 – Black Histic	S5 – Sandy Redox	F3 – Depleted Matrix	F18 – Reduced Verti
A4 – Hydrogen Sulfide	S6 – Stripped Matrix	F6 – Redox Dark Surface	TF2 – Red Parent Material
A5 – Stratified Layers	—	F7 – Depleted Dark Surface	Other (See Section 5 of Regional Supplement, Version 2.0)
A9 – 1 cm Muck	—	F8 – Redox Depressions	—
A11 – Depleted Below Dark Surface	—	F9 – Vernal Pools	—
A12 – Thick Dark Surface	—	—	—

* Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.
** Indicators of hydrophytic vegetation and wetland hydrology must be present

Attachment 5 – Regulatory Background Information

Regulatory Background Information

Section 404 of the Clean Water Act (CWA)

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within "waters of the U.S." (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). "Waters of the U.S." are defined by the CWA as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined by the CWA as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The Corps has adopted several revisions to their regulations in order to more clearly define "waters of the U.S." Until the beginning of 2001, "waters of the U.S." included, among other things, isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable "waters of the U.S."

The jurisdictional extent of Corps regulation changed with the 2001 SWANCC (Solid Waste Agency of Northern Cook County) ruling. The U.S. Supreme Court held that the Corps could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-state waters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to Corps jurisdiction.

Section 401 of the CWA

Section 401 of the CWA requires that any applicant for a Federal permit for activities that involve a discharge to 'waters of the State,' shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act. Therefore, before the Corps will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the RWQCB. Applications to the RWQCB must include a complete CEQA document (e.g., Initial Study/Mitigated Negative Declaration).

Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires any person, State or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW will determine if the proposed project may impact fish or wildlife resources. If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be required. A completed CEQA document must be submitted to CDFW before a SAA will be issued.