Public Review Draft

Initial Study and Mitigated Negative Declaration

Vallejo Bluff Trail Project

Planning & Development Services Department
City of Vallejo
555 Santa Clara Street, Second Floor
Vallejo, CA 94590

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August 2019

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Environmental Checklist

A. SUMMARY OF PROJECT INFORMATION

1. Project Title: Vallejo Bluff Trail Project

2. Lead Agency Name and Address:

   Planning Division, Planning & Development Services Department, City of Vallejo
   555 Santa Clara Street, 2nd Floor
   Vallejo, California 94590

3. Contact Person and Phone Number:

   Aaron Sage
   Principal Planner
   Planning Division, Planning & Development Services Department
   City of Vallejo
   (707) 648-5391

4. Project Location:

   The proposed Vallejo Bluff Trail project would close a gap in three major regional trails that share an alignment near the northern landing of the Carquinez Bridge in Solano County: the San Francisco Bay Trail, the Bay Area Ridge Trail, and the California Delta Trail (see Figures 1 and 2). The northern limits of the project are the intersection of Sequoia Avenue and Lincoln Road East on the east side of I-80, and the intersection of Maritime Academy Drive/Sequoia Avenue and Sonoma Boulevard/SR 29 on the west side of I-80. On the west side of I-80 the Trail would be aligned along Sonoma Boulevard. A portion of the trail would pass directly under I-80. On the east side of I-80, the trail alignment would run near I-80 to a point near Carquinez Strait at Clearview Drive, where it would run east to connect with three existing trails that share an alignment near the Carquinez Bridge: the San Francisco Bay Trail, the Bay Area Ridge Trail, and the California Delta Trail. Most of the project site is located on Caltrans right-of-way, for which no Assessor's Parcel Number is available. The remainder is located on privately- and city-owned land, for which the Assessor's Parcel Numbers are 0075140190, 0075140200, 0075140120, 0075150190, 0079631750, and 0079340590.

5. Project Sponsor:

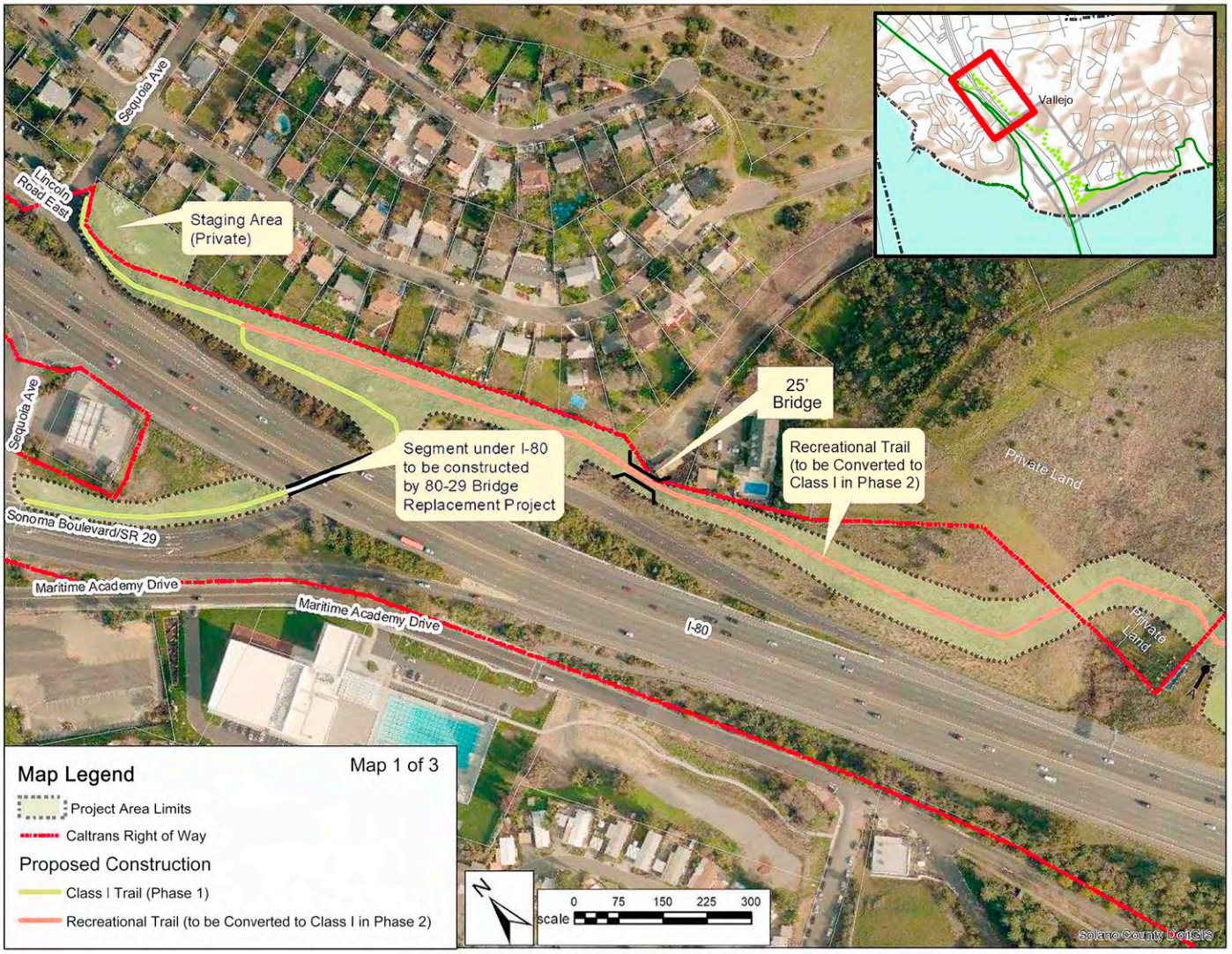
   City of Vallejo
   555 Santa Clara Street, 2nd Floor
   Vallejo, California 94590
   (707) 648-5391

Source: Trail People

Figure 1
Regional Location and Project Overview - Phase 1

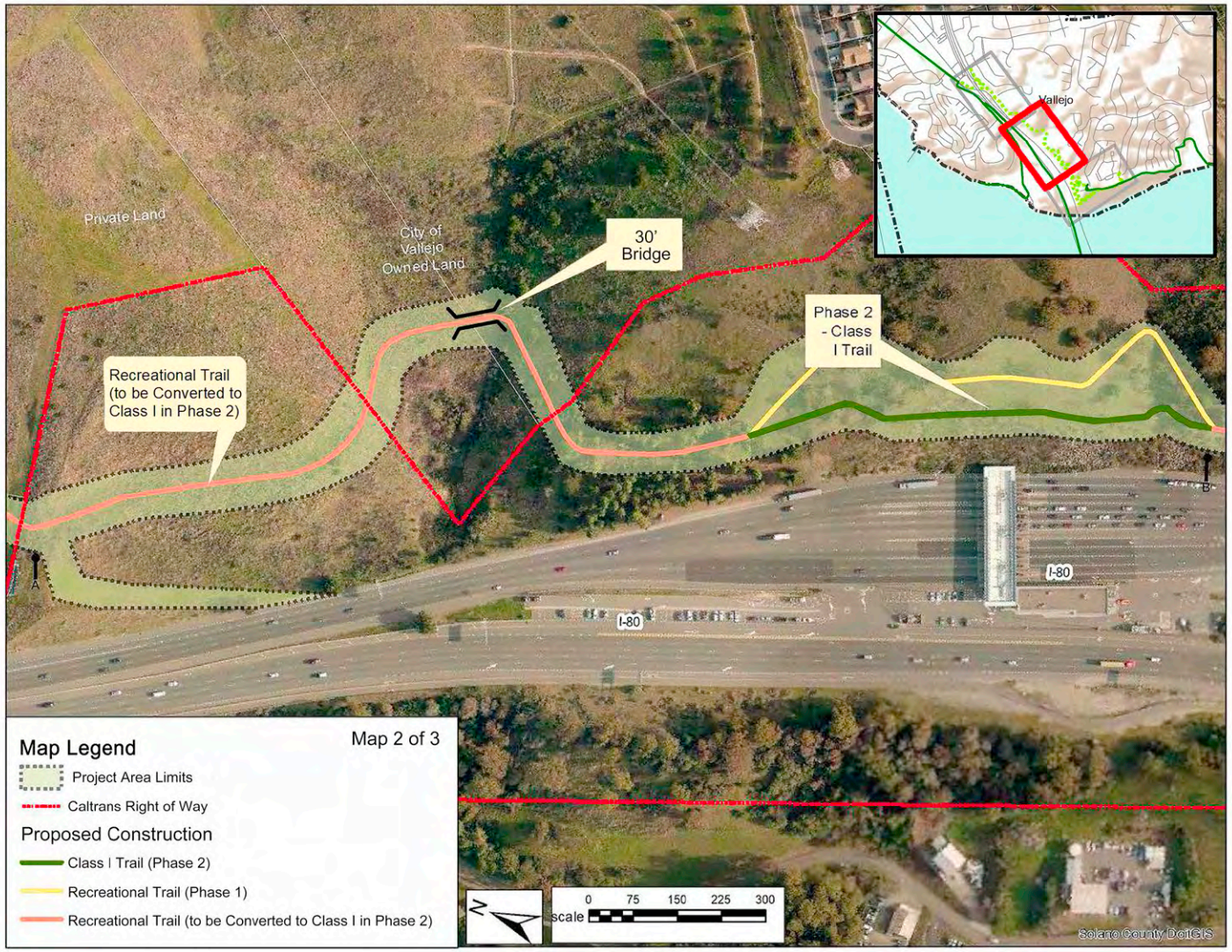
Source: Trail People

Figure 2
Regional Location and Project Overview - Phase 2



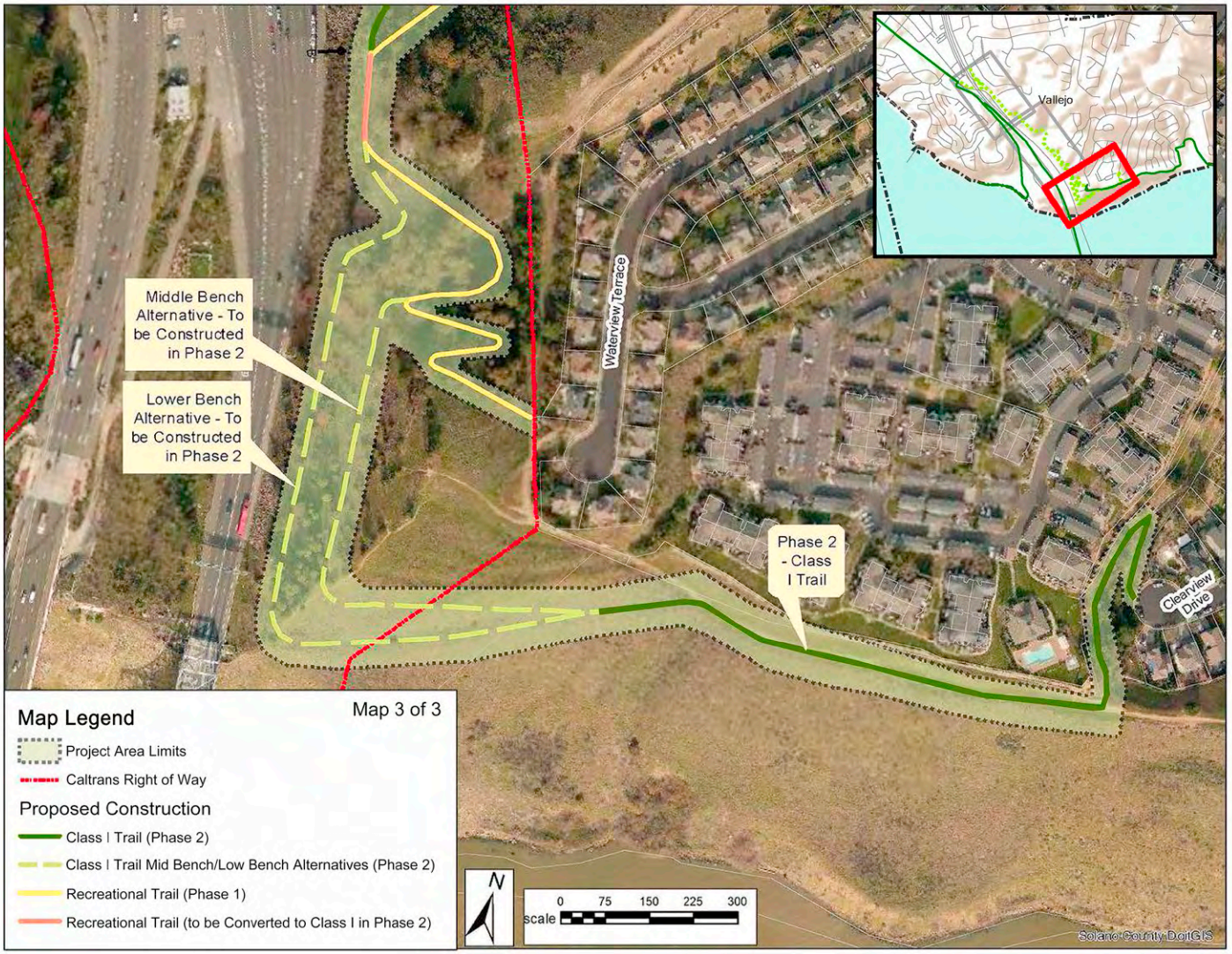
Source: Trail People

Figure 3
Project Detail - North



Source: Trail People

Figure 4
Project Detail - Middle



Source: Trail People

Figure 5
Project Detail - South

6. General Plan Designation: Public Facilities and Institutions; Parks, Recreation, and Open Space; Residential, Primarily Single Family

7. Zoning: The privately- or city-owned project parcels in the project site are zoned LDR: Low Density Residential, HDR: High Density Residential, PDR: Planned Development Residential, PF: Public Facilities, and C-L: Linear Commercial. Zoning is not available for the Caltrans right-of-way.

8. Description of Project:

Introduction

The Vallejo Bluff Trail Project is intended to close a gap in three major regional trails that share an alignment in Solano County near the Carquinez Bridge: the San Francisco Bay Trail (Bay Trail), the Bay Area Ridge Trail (Ridge Trail), and the California Delta Trail (see Figures 1 and 2). The Bay Trail and the Ridge Trail are part of a network of bicycling and hiking trails encircling the entire San Francisco Bay and the Carquinez Strait. The California Delta Trail follows the same alignment around the Carquinez Strait, but will connect east to Sacramento and Stockton, rather than around San Francisco Bay.

Project Location and Site Conditions

The project site is located in the southern portion of the City of Vallejo, in Solano County, California (see Figures 1 and 2). The northern limits of the project are the intersection of Sequoia Avenue and Lincoln Road East on the east side of I-80, and the intersection of Maritime Academy Drive/Sequoia Avenue and Sonoma Boulevard/SR 29 on the west side of I-80 (see Figures 1, 2, 3, 4, and 5). On the west side of I-80 the trail would be aligned along Sonoma Boulevard. A portion of the trail would pass directly under I-80 (a segment approximately 158 feet in length). On the east side of I-80, the trail alignment would run near I-80 to a point near Carquinez Strait at Clearview Drive, where it would run east to connect with three existing trails that share an alignment near the Carquinez Bridge: the San Francisco Bay Trail, the Bay Area Ridge Trail, and the California Delta Trail.

West of I-80, the proposed trail alignment is located along the existing Sonoma Boulevard/SR 29. The portion of the trail on Sonoma Boulevard/SR 29 that would pass under I-80 is located under an existing bridge on I-80. This portion of the trail, directly under I-80, will be built by Caltrans in conjunction with a separate I-80/SR 29 bridge replacement project (EA 2K840, Project No. 04 1700 0031) that will precede the proposed Vallejo Bluff Trail Project.

South of the trail segments described above, the trail alignment would pass through undeveloped land east of I-80 and west and south of the existing single-family residential development in the Glen Cove area.

The total length of the Vallejo Bluff Trail would be approximately 10,416 feet, or 1.97 miles. The total area of the site is 8.459 acres, or 804,077.9 square feet, although the area of land actually disturbed by construction would be substantially less. Most of the proposed

trail is located within Caltrans right-of-way. Two short segments of the trail east of I-80 are located on private and City of Vallejo-owned land, respectively, and the southernmost portion of the trail that runs eastward to Clearview Drive is located on land owned by the City of Vallejo.

Trail Design and Phasing

The Trail Project would be designed and constructed in two phases.

Phase 1 includes a paved bike and wheelchair accessible multi-use trail connection from Sequoia Avenue East and Lincoln Road East passing south and then west under I-80 at the Highway 29/Sonoma Boulevard undercrossing to Maritime Academy Drive/Sequoia Avenue West (see Figures 1, 2, and 3). As mentioned above, the portion of the trail directly under I-80 is part of a separate Caltrans bridge replacement project. At Lincoln Road East the trail would connect to local streets and sidewalks. On the west side of I-80 the Trail would connect to an existing signalized crosswalk and bike lanes on Sonoma Boulevard, and to a sidewalk and signed bike route on Maritime Academy Drive leading south to the trailhead for the Carquinez Bridge multi-use path. Phase 1 also includes an unpaved non-ADA (Americans with Disabilities Act) compliant recreational trail extending south on the east side of I-80 to connect to the top of the hill at Waterview Terrace – an existing Bay Trail/Ridge Trail trailhead. The northern 2,759 feet or 0.52 mile of the recreational trail would be approximately ten feet wide. The remaining, southern portion of the trail would be approximately four to six feet wide.

Phase 2 would improve and pave the southern portion of the trail described above, including addition of retaining walls and two bridges (a 25-foot bridge near the bottom of Swanzy Dam Road along the Highway 29 off ramp, and a 30-foot bridge at the detention pond north of the I-80 toll plaza), and extend the trail eastward around the bluff to connect to the existing trailhead at Clearview Drive. The southern portion of the trail would include a new trail located to the west of the Phase 1 trail described above, for which there are two alternative alignments: the “Middle Bench Alternative” and the parallel “Lower Bench Alternative” (see Figure 5). The route would be determined in the next phase of more detailed design. The trails constructed in Phase 2 would be paved and ten feet wide, making the entire route accessible for road bikes and wheelchairs.

After construction of the Class 1 connection in Phase 2, two segments of unpaved recreational trail would remain, as indicated on Figures 4 and 5. The length of the two permanent recreational trail segments is 2,009 feet or 0.38 miles, which is included in the above total project length.

Fencing and Lighting

The trail would be bordered on both sides by a six-foot-high vinyl coated chain link fence, with the exception of the portion of the proposed Class I trail alignment that parallels the Carquinez Strait, where a four-foot high chain link fence would be installed on the downhill side. The fence would be set back from the trail, especially on the downhill side, to maintain views, but would be located within the Project Area Limits shown on Figures 1 through 5.

The project would not include any lighting.

Vegetation Removal

Non-native ruderal plants and fennel would be removed along the entire trail alignment. Several dozen small (less than four-inch trunk diameter) oak, toyon, and eucalyptus shrubs and trees would be removed along the stretch that switches back up the hill to Waterview Terrace in the southern part of the project area (see Figure 5). In this area, one tree with trunk diameter greater than four inches, a non-native eucalyptus in poor health, would be removed.

Construction Access and Staging

Construction access for both phases would primarily be from Lincoln Road East, at the north end of the project. Additional access would be from the south end at Clearview Drive and, potentially, from I-80 via an access route to a private parcel (see Figure 4), and/or along the I-80 Sonoma Blvd off ramp. Construction staging would be at the Lincoln Road East access point on an adjacent vacant private parcel, and/or in portions of the Project Area Limits along the route.

Excavation, Cut/Fill, and Paving

Total cut and fill (grading) for the recreational trail portion of the project would be 4,950 cubic yards. Cut and fill for the Class I trail would be up to 6,300 cubic yards. If the recreational trail and Class I trail are constructed in separate phases, most of the 4,950 cubic yards of grading for the recreational trail would also be part of the Class I grading, but there would be approximately 1,000 additional cubic yards for the separate segments. Thus, total grading for the project would be 7,300 cubic yards. The excavated material would be placed elsewhere on the project site; none would be off-hauled from the site.

The recreational trail portion of the project (two segments totaling 2,009 feet, as shown in Figures 4 and 5) would not be paved. The Class I portion of the trail (8,407 feet in length, ten feet in width) would be paved; the paved area would be 84,070 square feet, or 1.9 acres.

Fence posts, gates and signage would be set two feet below surface. The trail itself would have cuts as deep as 15 feet in some locations where the trail is built on steep side slopes. The deepest excavations would be for the retaining wall footings, which would be as much as 38 feet below the surface if deep drilled pier wall footings are used (assuming, conservatively, that footing depth would be 2.5 times wall height). Various construction options are under consideration, including concrete retaining walls with spread footings, soil nail retaining walls, and segmental retaining walls, that can be constructed by excavating less than one times the wall height, or a maximum of 20 feet below the surface.

Project Construction Schedule

Construction of Phase 1 would take approximately 14 months, and Phase 2 would take approximately 18 months. Construction is proposed to begin the first full construction season after project approval. Normal construction working hours are anticipated to be 8:00 a.m. to 5:00 p.m.

Project Construction Workers and Equipment

Approximately eight construction workers would be on the project site at any one time. Heavy construction equipment is anticipated to include bulldozers, loader/backhoes, excavators, graders, generators, forklifts, water trucks, pavers, rollers, compactors, and a crane for bridge construction.

9. Surrounding Land Uses and Setting:

North of the project site are a mixed commercial and single-family residential area, and extensions of I-80 and Sonoma Boulevard/ SR 29. West of the northern portion of the trail, on the opposite (west) side of I-80, are a motel, California State University Maritime Academy, and single- and multi-family residential. Most of the proposed trail alignment is located east of I-80 and west of a mix of open space and single-family residences of the Glen Cove area occupying the bluffs above I-80. South of the trail site is Carquinez Strait and the Carquinez Bridge.

The schools closest to the project site are Grace Patterson Elementary School, located at 1080 Porter Street, approximately 1,000 feet northwest of the project site; the Vallejo Regional Education Center (formerly Vallejo Adult School), located at 436 Del Sur Street, approximately 1,500 feet northeast of the project site; and the California State University Maritime Academy, located approximately 750 feet west of the proposed trail alignment. No convalescent homes or hospitals are located within 1,000 feet of the project site.

10. Other Public Agencies Whose Approval Is Required:

The project would require an encroachment permit from Caltrans for work within the Caltrans right-of-way, and permits or approvals from the California Regional Water Quality Control Board, San Francisco Bay Region. In addition, easements for the trail would be required from two private property owners, and the City of Vallejo may require permits for its own project.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

As part of an archaeological investigation conducted for the project,1 the Native American Heritage Commission was contacted. The Commission responded that no Native American resources were identified, and provided a contact list of two Native American

[1] Sunshine Psota, Holman & Associates, *Letter Report to Randy Anderson, TrailPeople, Re: Results of a Section 106 Archaeological Literature Search and Initial Native American Consultation for the Vallejo Bluff Trail—Bay Trail/Ridge Trail, Vallejo, Solano County, California,* 13 April 2018.

individuals/organizations who may know of cultural resources in this area or have specific concerns about the project. In response to multiple requests of these two contacts, no comments or concerns were received. In addition, no Native Americans requested consultation with the City of Vallejo under AB 52 for the area that includes the Vallejo Bluff Trail project site. Thus, no Native American tribes traditionally and culturally affiliated with the project area have requested consultation pursuant to Public Resources Code Section 21080.3.1 (AB 52), and no consultation is required**.**

B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project as indicated by the checklists and responses contained on the following pages:

☐ Aesthetics	☐ Agriculture & Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology & Soils	☐ Greenhouse Gas Emissions	☒ Hazards & Haz. Materials
☒ Hydrology & Water Quality	☐ Land Use & Planning	☐ Mineral Resources
☒ Noise	☐ Population & Housing	☒ Public Services
☐ Recreation	☐ Transportation & Traffic	☐ Tribal Cultural Resources
☒ Utilities & Services Systems	☐ Wildfire	☒ Mandatory Findings

C. DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that 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.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that 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.

☐ I find that 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.

Aaron Sage — Signature

8/16/19 — Date

Aaron Sage, Principal Planner — Printed name

D. EVALUATION OF ENVIRONMENTAL IMPACTS

Evaluation of Environmental Impacts

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.

    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significance criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significance

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS – Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the 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 point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Background:

The Vallejo Bluff Trail project site is located in an urbanized area that contains some undeveloped open land. (See Figures 1 through 5.) The project vicinity slopes west- and southward toward Carquinez Strait. Most of the project vicinity is urbanized, with residential and commercial development, and roadways including Interstate Highway 80 (I-80). The majority of the proposed trail alignment would occupy a sloping, undeveloped area located east of I-80, and west of the residential development located upslope from I-80. Some of this undeveloped area retains its natural topography, while the southerly portion has been altered to create terraces during highway construction. The remainder of the trail alignment would be located along Sonoma Boulevard/SR 29, west of and underneath I-80. The visual environment of the site vicinity is characterized by a mixture of development and open space on sloping terrain, with open views. Except for the shorter trail segment along Sonoma Boulevard, the remainder of the trail alignment passes through an undeveloped area vegetated primarily with ruderal, non-native species. A shorter segment of the proposed trail, west of Waterview Terrace, is occupied by a grove

of mature trees, predominantly eucalyptus (see Figure 5). Most of the trail would pass along the west- and south facing bluffs, with expansive views of visual features including Mare Island, Carquinez Strait, the two spans of the Carquinez Bridge, San Pablo Bay, and the City of Crockett and the hills of northern Contra Costa County.

Discussion:

a. Scenic Vista - ***Less than Significant Impact.*** The proposed trail would be visible from public vantage points, including the adjacent segment of I-80, as depicted in Figures 6A and 6B, showing views looking southeast from I-80 near Sonoma Boulevard/SR 29 bridge, and Figures 7A and 7B, showing views looking north from I-80 near Sonoma Boulevard/SR 29 bridge. The trail would add a generally linear visual feature that would parallel the alignment of the existing I-80 and Sonoma Boulevard. While apparent from these local vantage points, the trail would be narrower, and less visually prominent, than the existing highway, which would remain as the dominant visual feature for travelers along the highway and the Carquinez Bridge.

The trail also would be visible from other public vantage points including the bicycle and pedestrian path along the Al Zampa Bridge (the western span of the Carquinez Bridge), vehicles on both spans of the Carquinez Bridge, and limited areas west of I-80 such as the McAllister Residence Hall and Bodnar Athletic Field of the California State University Maritime Academy, located on a local knoll. From these public vantage points, the trail would be less visually prominent than from I-80, due to distance. In addition, views from the Carquinez Bridge would be partially screened by the bridge's girders and suspension cables.

The trail would not be visible from private viewpoints at the Glen Cove residential area to the east, which is located at a higher elevation on the top of the bluffs. The trail would be visible from some private viewpoints in the residential area west of I-80 in Vallejo, and the northern part of Crockett on the south side of Carquinez Strait, but the trail would be less visually prominent due to distance. Many of the views from these areas would be screened by intervening trees and development.

In summary, the trail would be visible from public roads and trails including the bicycle and pedestrian trail on the Al Zampa Bridge, as well as some private vantage points, but the project would not substantially change the character of existing views, and the effect on these public and private views would be limited. The trail would add incrementally to the density of man-made visual features in the project vicinity, but would be consistent with the mixed visual character of the area, which includes I-80, residential and commercial development, and open space. The trail would not add a new or inconsistent visual element to the area. The impact of the proposed project on views would be ***less than significant***.

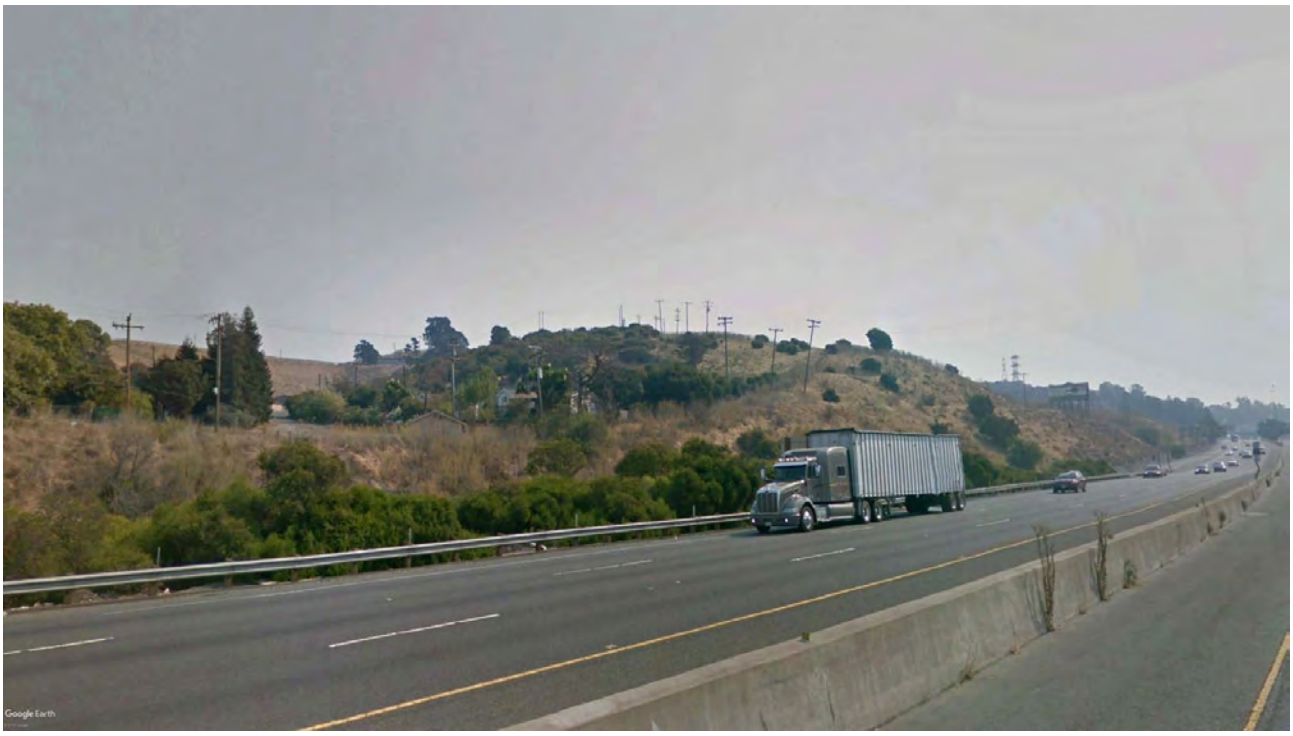


FIGURE 6A: View without project, looking southeast from I-80 near Sonoma Boulevard/SR 29 bridge

FIGURE 6B: View with project, looking southeast from I-80 near Sonoma Boulevard/SR 29 bridge

FIGURE 7A: View without project, looking north from I-80 near Sonoma Boulevard/SR 29 bridge

FIGURE 7B: View with project, looking north from I-80 near Sonoma Boulevard/SR 29 bridge

b. Scenic Highway - *No Impact*. The project does not contain any scenic trees, rock outcroppings, or historic buildings. The site is not visible from any state highways or designated scenic routes.[2] Therefore, there would be ***no impact*** on scenic resources.

c. Visual Quality – *Less than Significant Impact.* Most of the proposed trail alignment is currently undeveloped, but is located between I-80 to the west and residential development to the east, in an existing urbanized area, and much of the natural topography has been altered to create benches above I-80. The remainder of the proposed trail alignment, west of and under I-80, is located along existing roads. The proposed trail would incrementally increase the density of development, but would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The project would not conflict with applicable zoning and other regulations governing scenic quality. The trail project would change the visual character of the site, but would be visually consistent with the overall visual character of the project vicinity. The impact on the proposed project on visual quality of the site would be ***less than significant***.

d. Light and Glare – *No Impact.* The proposed trail would not include lighting. Therefore, the project would create ***no impact*** on light and glare.

[2] *State of California, Department of Transportation, California Scenic Highway Mapping System, available online at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways, accessed February 1, 2018.*

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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:				
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 on the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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 zone Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

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?	☐	☐	☐	☒

Background:

The project site is comprised of land classified as a combination "Urban and Built-Up Land" and "Grazing Land" by the State of California. No Prime, Unique, or Farmlands of Statewide Importance are mapped as existing on the site.[3] The project site is not under a California Land Conservation (Williamson Act) contract, since no agricultural land exists on the site. In addition, no forest resources exist on the site.

Discussion:

a, b. Farmland, Williamson Act - ***No Impact.*** The project site is located in an urbanized area consisting of transportation, commercial, residential and open space uses. The project would have no impact on conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program because no such designated lands are mapped on the site. The site is not under a Williamson Act Contract, and is not zoned for agricultural use. The project would result in ***no impact*** on farmland, land zoned for agricultural use, and Williamson Act contracts.

c, d. Forest Lands – ***No Impact.*** The project would not affect forest land or forest zoning because no such lands or zoning exist or are proposed on the site. The project would result in ***no impact*** on forest land or land zoned for forest or timberland use.

e. Conversion of Farmland – ***No Impact.*** The proposed project would not involve other changes in the existing environment that could result in conversion of Farmland to a non-agricultural use. No significant impacts are anticipated with regard to Agricultural Resources, since there is currently no Farmland, as defined by the California Department of Conservation, on the project site, nor is it zoned for agricultural use, nor protected under a California Land Conservation (Williamson Act) contract. The project would result in ***no impact*** on conversion of Farmland to non-agricultural use.

[3] *California Farmland Mapping Program, online California Important Farmland Finder, accessed February 7, 2018.*

III. 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?	☐	☐	☒	☐
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?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?	☐	☐	☒	☐

a. Air Quality Plans - *Less than Significant.* The San Francisco Bay Area Air Basin (SFBAAB) is classified by the Bay Area Air Quality Management District (BAAQMD) as non-attainment for ozone and inhalable particulates (PM_{10}). To address these exceedances, the BAAQMD, in cooperation with the MTC and ABAG, prepared the *Bay Area 2005 Ozone Strategy (BAOS)* in September 2005 and *Particulate Matter Implementation Schedule (PMIS)* in November 2005. The PMIS discusses how the BAAQMD implements the California Air Resources Board's 103 particulate matter control measures. The most recently adopted air quality plan in the Basin is the *2017 Clean Air Plan* (*CAP*). This *CAP* outlines how the SFBAAB will attain air quality standards, reduce population exposure and protect public health, and reduce greenhouse gas (GHG) emissions.

The consistency of the proposed project with the most recently adopted regional air quality plan, the *CAP,* is determined by comparing the project's consistency with pertinent land use and transportation control measures contained in the *CAP*. Pertinent measures relate to evaluating impacts according to the BAAQMD's CEQA Guidelines, as discussed below.

The project's construction-related and operational emissions were determined to not exceed the BAAQMD's CEQA significance thresholds for criteria air pollutants and diesel

particulate matter, as discussed in Sections III.b, III.c, and III.d, below. Therefore, the proposed project's emissions would be consistent with the BAAQMD's *CAP* (the most recently adopted regional air quality plan). The consistency of the proposed project with the most recently adopted regional air quality plan, the *CAP,* is also determined by comparing the project's consistency with the City of Vallejo General Plan. Since the *CAP* is based on population projections of the Association of Bay Area Governments (ABAG) that are based on the City's General Plan in effect at the time the *CAP* was approved, consistency of the project with the General Plan would indicate consistency with the *CAP*. Since there would be no population growth associated with the proposed project, the project would have a ***less-than-significant*** impact on regional air quality planning efforts.

b. Air Quality Standards - *Less than Significant With Mitigation.*

Regulatory and Planning Framework

The BAAQMD is responsible for attaining and/or maintaining air quality in the San Francisco Bay Area Air Basin (SFBAAB) within Federal and State air quality standards. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement strategies to attain the applicable Federal and State standards. In June 2010, the BAAQMD adopted CEQA thresholds of significance and updated its CEQA Air Quality Guidelines, which provides guidance for assessing air quality impacts under CEQA. However, on March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the Thresholds. The court issued a writ of mandate ordering the BAAQMD to set aside the Thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. On August 13, 2013, the California Court of Appeal reversed the Alameda County Superior Court judgment that invalidated the BAAQMD's CEQA thresholds of significance. The Court directed that the Superior Court vacate the writ of mandate issued in March 2012, ordering the BAAQMD to set aside its June 2010 resolution (Res. #2010-06) "Adopting Thresholds for Use in Determining the Significance of Projects' Environmental Effects Under the California Environmental Quality Act." In 2015, the California Supreme Court reviewed the decision, but limited its review to a separate issue of law that does not alter the result in the Court of Appeal's holding on the Thresholds, though the latter court's decision is no longer a published, citable precedent. The legal uncertainty created by the trial court decision no longer exists. Local agencies such as the City of Vallejo may rely on the BAAQMD thresholds.

Significance Thresholds

Exercising its own discretion as lead agency, similar to multiple other San Francisco Bay Area jurisdictions, the City of Vallejo has decided to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD.[4] The BAAQMD *Options and Justification Report* establishes thresholds based on substantial

[4] *Bay Area Air Quality Management District, 2009. Revised Draft Options and Justification Report. October. Available online at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx.*

evidence that are consistent with the thresholds outlined within the 2010 CEQA Air Quality Guidelines. Although BAAQMD failed to comply with CEQA before completing its 2010 recommendations, City staff believes that these recommendations, which are listed as follows, still represent the best available science on the subject of what constitute significant air quality effects in the SFBAAB:

- NO_X and ROG: 54 pounds/day
- PM10: 82 pounds/day
- PM2.5: 54 pounds/day

In addition to establishing the above significance thresholds for criteria pollutant emissions, the BAAQMD also recommended the following quantitative thresholds to determine the significance of construction-related and operational emissions of toxic air contaminants from individual project and cumulative sources on cancer and non-cancer health risks:

- Increased cancer risk of >10.0 in a million for individual projects and >100 in a million (from all local sources) for cumulative sources;
- Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute) for individual projects and >10.0 Hazard Index (from all local sources) for cumulative sources; and
- Ambient $PM_{2.5}$ increase: >0.3 $\mu g/m^3$ annual average for individual projects and >0.8 $\mu g/m^3$ annual average (from all local sources) for cumulative sources.

Project Emissions

Sensitive receptors in the project vicinity include residential uses, the nearest of which is located approximately 20 feet to the north of the proposed trail alignment. The schools closest to the project site are Grace Patterson Elementary School, located at 1080 Porter Street, approximately 1,000 feet northwest of the project site; the Vallejo Regional Education Center (formerly Vallejo Adult School), located at 436 Del Sur Street, approximately 1,500 feet northeast of the project site; and the California State University Maritime Academy, located approximately 750 feet west of the proposed trail alignment. No convalescent homes or hospitals are located within 1,000 feet of the project site.

Construction Impacts

Combustion or exhaust emissions from construction equipment and vehicles (i.e., heavy equipment and delivery/haul trucks, worker commute vehicles, air compressors, and generators) would be generated during project construction activities, including excavation, grading, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. Criteria pollutant emissions of reactive organic gases (ROG) and nitrogen oxides (NOx) from these emission sources would incrementally add to regional atmospheric loading of ozone precursors during project construction. These impacts would be temporary but would span the entire 32-month construction duration. Construction-related air pollutant emissions are evaluated in accordance with the Bay Area Air Quality Management District (BAAQMD)

guidelines for assessing and mitigating air quality impacts.[5] Table III-1 presents estimated daily equipment exhaust emissions of criteria pollutants (ROG, NOx, CO, SO_2, PM_{10}, and $PM_{2.5}$) that would be associated with proposed construction activities. These estimates indicate that the BAAQMD's thresholds would not be exceeded, and therefore, project-related construction emissions of criteria pollutants would be ***less than significant***.

TABLE III-1

PROJECT-RELATED CONSTRUCTION CRITERIA POLLUTANT EMISSIONS

	Average Daily Emissions (pounds/day)					
Project Activity	**ROG**	**NO_X**	**CO[b]**	**SO_2[c]**	**PM_{10} (Total)**	**$PM_{2.5}$ (Total)**
Project Construction (Off-Road Equipment Emissions[a]) – 2018	4.0	30.6	28.2	0.1	13.7	8.1
Significance Thresholds	54	54	-	-	82	54
Exceeds Significance Thresholds?	No	No	-	-	No	No
	Average Annual Emissions (tons/year)					
Project Activity	**ROG**	**NO_X**	**CO[b]**	**SO_2[c]**	**PM_{10} (Total)**	**$PM_{2.5}$ (Total)**
Project Construction (Off-Road Equipment Emissions[a]) – 2018	0.23	2.03	1.50	0.0	0.41	0.25
Significance Thresholds	10	10	-	-	15	10
Exceeds Significance Thresholds?	No	No	-	-	No	No

NOTES: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; exhaust PM_{10} = particulate matter less than 10 microns; exhaust $PM_{2.5}$ = particulate matter less than 2.5 microns.

[a] Construction assumptions:
- 20 days Site Prep: 2 dozers, 2 loader/backhoes
- 40 days Grading/Excavation: 1 excavator, 1 dozer, 2 loader/backhoes, 1 grader, 1 skid loader
- 80 days Bridge Construction: 1 crane, 1 gen set, 2 forklifts, 2 loader/backhoes
- 60 days Paving and Preparing Surfaces: 2 pavers, 2 rollers, 2 compactors

[b] CO: If localized carbon monoxide estimated emissions exceed 550 pounds/day, more detailed analysis is required. Therefore, emissions below this threshold indicate that CO emissions would be less than significant.

[c] SO_2: The SO_2 state and federal standards are currently being met throughout the Bay Area and have been met in recent decades. Therefore, the project's estimated emissions would be less than significant.

SOURCE: CalEEMod Output (see Appendices B and C)

[5] *Bay Area Air Quality Management District (BAAQMD), California Environmental Quality Act Guidelines, May 2010. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/Planning-Programs-and-Initiatives/CEQA-GUIDELINES.aspx. Accessed on 16 March 2018.*

Trail construction also would generate fugitive dust[6] (including suspended particulate matter [PM_{10} and $PM_{2.5}$]). The BAAQMD guidelines indicate that the significance of a project's impact should be evaluated based on the effectiveness of proposed control measures to reduce construction-related emissions (e.g., whether BAAQMD control measures are implemented as part of construction). If appropriate mitigation measures are implemented to control PM_{10} emissions during construction, the BAAQMD considers the potentially significant construction-related project and cumulative impacts to be less than significant. With implementation of Mitigation Measure III-1, which stipulates BAAQMD's Basic Construction Mitigation Measures for fugitive dust, the project's construction-related impact on fugitive dust would be reduced to a ***less-than-significant*** level.

> ***Mitigation Measure III-1**: **BAAQMD Basic Construction Mitigation Measures.** To limit the project's construction-related dust and criteria pollutant emissions, the following BAAQMD-recommended Basic Construction Mitigation Measures shall be included in the project's grading plan, construction plans, and contract specifications:*
>
> a. *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. Recycled water should be used wherever feasible.*
> b. *All haul trucks transporting soil, sand, or other loose material off-site shall be covered.*
> c. *All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*
> d. *All vehicle speeds on unpaved roads shall be limited to 15 mph.*
> e. *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible after grading unless seeding or soil binders are used.*
> f. *Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.*
> g. *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.*
> h. *Post a publicly visible sign with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.*

Operational Impacts

Operation of the bicycle and pedestrian trail project would not generate substantial additional criteria pollutant emissions, and may result in a net decrease in emissions. The

[6] *"Fugitive" emissions generally refer to those emissions that are released to the atmosphere by some means other than through a stack or tailpipe.*

project would connect several existing regional trails (the San Francisco Bay Trail, the Bay Area Ridge Trail, and the California Delta Trail), and would also serve as a recreational trail on its own. By connecting with existing trails, the Vallejo Bluff Trail would enable and encourage commuting and travel by bicycle, which would substitute for vehicle trips and reduce net vehicle miles. As a recreational trail conveniently located in the urban area of Vallejo, the project would generate additional recreational trips. Some of these recreational trips would involve vehicle travel from users' homes to the trail. To the extent that these recreational trips replace trips to more distant trails, there would be a net reduction in vehicle miles. New recreational trips involving vehicle travel would result in additional vehicle trips and emissions, but it is likely that these additional trips and emissions would be offset by the reductions in vehicle trips discussed above. In total, net criteria pollutant emissions during project operation would be similar to, or possibly less than, existing emission levels. The impact of project operation on criteria pollutant emissions would be ***less than significant***.

Use of the surfaced trail, most of which would be paved with asphalt, would not generate substantial fugitive dust emissions. Therefore, operational impacts on fugitive dust would be ***less than significant***.

Cumulative Air Quality impacts

To address cumulative impacts on regional air quality, the BAAQMD has established thresholds of significance for construction-related and operational criteria pollutants and precursor emissions. These thresholds represent the levels at which a project's individual emissions of criteria pollutants and precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If daily average or annual emissions exceed these thresholds, the project would result in a cumulatively significant impact. There would be few or no operational emissions associated with the proposed trail project, and the project's construction-related criteria pollutant emissions would not exceed BAAQMD significance thresholds. Therefore, the project's contribution is also considered to be less than cumulatively considerable, a ***less-than-significant*** impact.

In addition, when the project's construction-related diesel particulate matter (DPM) emissions are considered with other existing stationary and mobile sources of toxic air contaminants (TACs), cumulative health risks were determined to be less than significant. Therefore, the project's contribution to cumulative DPM emissions would be less than cumulatively considerable, a ***less-than-significant*** impact (see Section III.c below for more discussion of TACs).

c. Sensitive Receptors -- ***Less than Significant Impact.*** Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma,

emphysema, and bronchitis. There are potential sensitive residential receptors located as close as 20 feet north of the proposed trail alignment.

Potential TAC emissions would be associated with proposed construction activities. (There would be few or no TAC emissions during project operation.) Combustion emissions from construction equipment and haul trucks would be generated during proposed trail construction activities, which could expose sensitive receptors to DPM and other TACs. DPM emissions were estimated for this project and are presented in Table III-2. As indicated in this table, the project's construction-related DPM emissions would not exceed the above significance thresholds for health risks. Therefore, the health risks associated with the project's construction-related DPM emissions would be ***less than significant***.

TABLE III-2

CANCER RISK HEALTH RISKS AT THE CLOSEST SENSITIVE RECEPTORS DUE TO DPM EXPOSURE DURING PROJECT CONSTRUCTION

	$PM_{2.5}$ Exposure,[a] Excess Cancer Risk,[b] and Non-Cancer Chronic Hazard Index from Project Construction Activities at Closest Receptors
Maximum One-Hour $PM_{2.5}$	0.6970 µg/m^3
Annual Average $PM_{2.5}$ (one-hour x 0.1)	0.0697 µg/m^3
Annual Average $PM_{2.5}$ Significance Threshold	0.3 µg/m^3
Exceeds Significance Threshold?	No
Age-Weighted Excess Risk for Infants	2.99 in a million
Children	0.90 in a million
Adults	0.30 in a million
Cancer Risk Significance Threshold	Excess Cancer Risk >10 x 10^{-6}
Exceeds Threshold?	No
Chronic/Acute Non-Cancer Hazard Index	0.014/0.081
Chronic Non-Cancer Significance Threshold	Hazard Index >1.0
Exceeds Threshold?	No

NOTES:

[a] The predicted maximum one-hour DPM concentration is 0.6970 µg/m^3 resulting from on-site total project DPM emissions of 0.0406 tons. The hourly to annual scaling factor is 0.1. AERSCREEN output thus indicates that project construction would produce a maximum annual DPM concentration of 0.0697 µg/m^3.

[b] The excess individual cancer risk factor for DPM exposure is approximately 300 in a million per 1 µg/m^3 of lifetime exposure (DPM (µg/m^3) x ASF x 300 x 10^{-6}) / 70 years. More recent research has determined that young children are substantially more sensitive to DPM exposure risk. If exposure occurs in the first several years of life, an age sensitivity factor (ASF) of 10 should be applied. For toddlers though mid-teens, the ASF is 3.

SOURCES: A screening-level individual cancer analysis was conducted to determine the maximum $PM_{2.5}$ concentration from diesel exhaust. This concentration was combined with the DPM exposure

unit risk factor to calculate the inhalation cancer risk from project-related construction activities at the closest sensitive receptor. The EPA AERSCREEN air dispersion model was used to evaluate concentrations of DPM and $PM_{2.5}$ from diesel exhaust. The AERSCREEN model was developed to provide an easy to use method of obtaining pollutant concentration estimates and is a single source Gaussian plume model which provides a maximum one-hour ground-level concentration. The model output for this analysis is included in Appendix D.

There would be few or no operational emissions of DPM, and the health risks associated with the project's operational DPM emissions would be ***less than significant.***

In addition to the above construction-related risk and hazard impacts, sensitive receptors in the project vicinity would be exposed to cumulative risk and hazard impacts from the project's construction-related emissions in combination with existing stationary and mobile sources within approximately 1,000 feet of the project area. Therefore, in addition to project construction, possible local stationary or vehicular source emissions must be added to this concentration to determine the cumulative total. Specifically, the BAAQMD recommends that existing stationary and mobile emissions sources (i.e. freeways or roadways with more than 10,000 vehicles per day) within 1,000 feet of the project area also be considered. Any potential cumulative health risk would, therefore, derive from project activities plus any existing identified risk sources within the project vicinity. According to BAAQMD records, there is one stationary source within 1,000 feet of the project site (Table III-3), and one roadway within 1,000 feet of the site with average daily traffic volumes exceeding 10,000 (Table III-4). As shown in Table III-5, when emissions from these existing sources are added to project emissions, cumulative emissions would not exceed the cumulative significance thresholds for risk and hazard impacts at new on-site sensitive receptors or existing nearby receptors. As shown below, the project would add negligibly to the overall health risk. The major cause of potential health impacts is the adjacent freeway, which comprises more than 90 percent of cumulative values. Therefore, the project's contribution to cumulative construction-related risk and hazard impacts would be less than cumulatively considerable, a ***less-than-significant*** impact.

TABLE III-3

CUMULATIVE RISK AND HAZARD IMPACTS FROM EXISTING PERMITTED STATIONARY SOURCES

Site #	Facility Name	Street Address	City	Distance	Excess Cancer Risk	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
G6537	N&M Market/ Arco	101 W Lincoln Road	Vallejo	930 feet	0.939	0.001	0.00	<0.1
Total – Stationary Sources					**0.939**	**0.001**	**0.00**	**<0.1**

SOURCES: BAAQMD Stationary Source Screening Analysis Tool (May 30, 2012) and Distance Multiplier Tool for Gasoline Dispensing Facilities (June 13, 2012). Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

TABLE III-4

CUMULATIVE RISK AND HAZARD IMPACTS FROM EXISTING MOBILE SOURCES

Roadway	Distance	$PM_{2.5}$	Excess Cancer Risk (cases in a million)[a]	Chronic	Acute
I-80	370 feet	0.309	41.8	0.039	0.012
Total – Mobile Sources				**0.039**	**0.012**

SOURCE: BAAQMD Roadway Screening Analysis Calculator, April 16, 2015. Available online at Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

TABLE III-5

CUMULATIVE RISK AND HAZARD IMPACTS

	Excess Cancer Risk[a]	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Stationary Sources (see Table III-3 above)	0.939	0.001	0.00	<0.01
Roadways (see Table III-4 above)	41.8	0.039	0.012	0.309
Proposed Project (worst-case)	2.99	0.014	0.081	0.209
Maximum Cumulative	45.73	0.054	0.093	0.518
Threshold	100	1	1	0.8
Exceeds Threshold?	No	No	No	No

NOTES:

[a] Cancer cases in a million

SOURCES: Tables III-2, III-3, and III-4

d. Odors – *Less than Significant Impact.* According to the BAAQMD CEQA Guidelines, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The project would not include any uses identified by the BAAQMD as being associated with odors, nor would any new or unusual sources of nuisance odors would be associated with operation of the proposed trail project. Therefore, the project's potential for operational nuisance odor problems would be ***less than significant***.

During project construction, however, there is the potential for nuisance diesel odors associated with operation of diesel construction equipment on-site (primarily during initial grading phases), but this effect would be localized, sporadic, and short-term in nature. Therefore, temporary impacts from nuisance diesel odors on adjacent residential receptors would be ***less than significant***.

IV. BIOLOGICAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Background:

Information regarding biological and wetland resources within the Project Area Limits (PAL) is based on the review of available information, including project plans, a Natural Environment Study (NES) prepared for the project in 2003 (Environmental Collaborative, 2003), the occurrence records of the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW), and a list of special-status species prepared by the U.S. Fish and Wildlife Service (USFWS) as part of the Information for Planning and Consultation (IPaC) program. Field surveys of the project alignments were originally performed as part of the NES in 2003, including systematic surveys performed on 29 May 2002 and 14 May 2003. A follow-up systematic survey was conducted by the project biologist and botanist on 16 April 2018 to reinspect field conditions and survey segments that were not part of the previous project plans in 2003. The follow-up systematic survey served to inspect existing conditions, determine whether any potential jurisdictional waters or suitable habitat for special-status species is present, and assess the potential impacts of the proposed project.

a. Effect on Protected Species – *Less Than Significant With Mitigation.* A record search conducted by the CNDDB, together with a list prepared by the USFWS as part of their IPaC program, and the other relevant information sources, indicate that numerous plant and animal species with special status have either been recorded from or are suspected to occur in the Vallejo vicinity and southern Solano County area. Special-status species[7] are plants and animals that are legally protected under the State of California and/or federal Endangered Species Acts[8] or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species protected by the CESA and FESA often represent major constraints to development,

[7] *Special-status species include:*

- Officially designated (rare, threatened, or endangered) and candidate species for listing identified by the CDFW;
- Officially designated (threatened or endangered) and candidate species for listing identified by the U.S. Fish and Wildlife Service (USFWS);
- Species considered to be rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act (CEQA) Guidelines, such as those with a rank of 1 or 2 in the *Inventory of Rare and Endangered Plants of California* maintained by the California Native Plant Society (CNPS); and
- Possibly other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those with a rank of 3 and 4 in the CNPS *Inventory* or identified as animal "Species of Special Concern" (SSC) by the CDFW. Species of Special Concern have no legal protective status under the CESA but are of concern to the CDFW because of severe decline in breeding populations in California.

[8] The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of the FESA and pertains to native California species.

particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"[9] of these species.

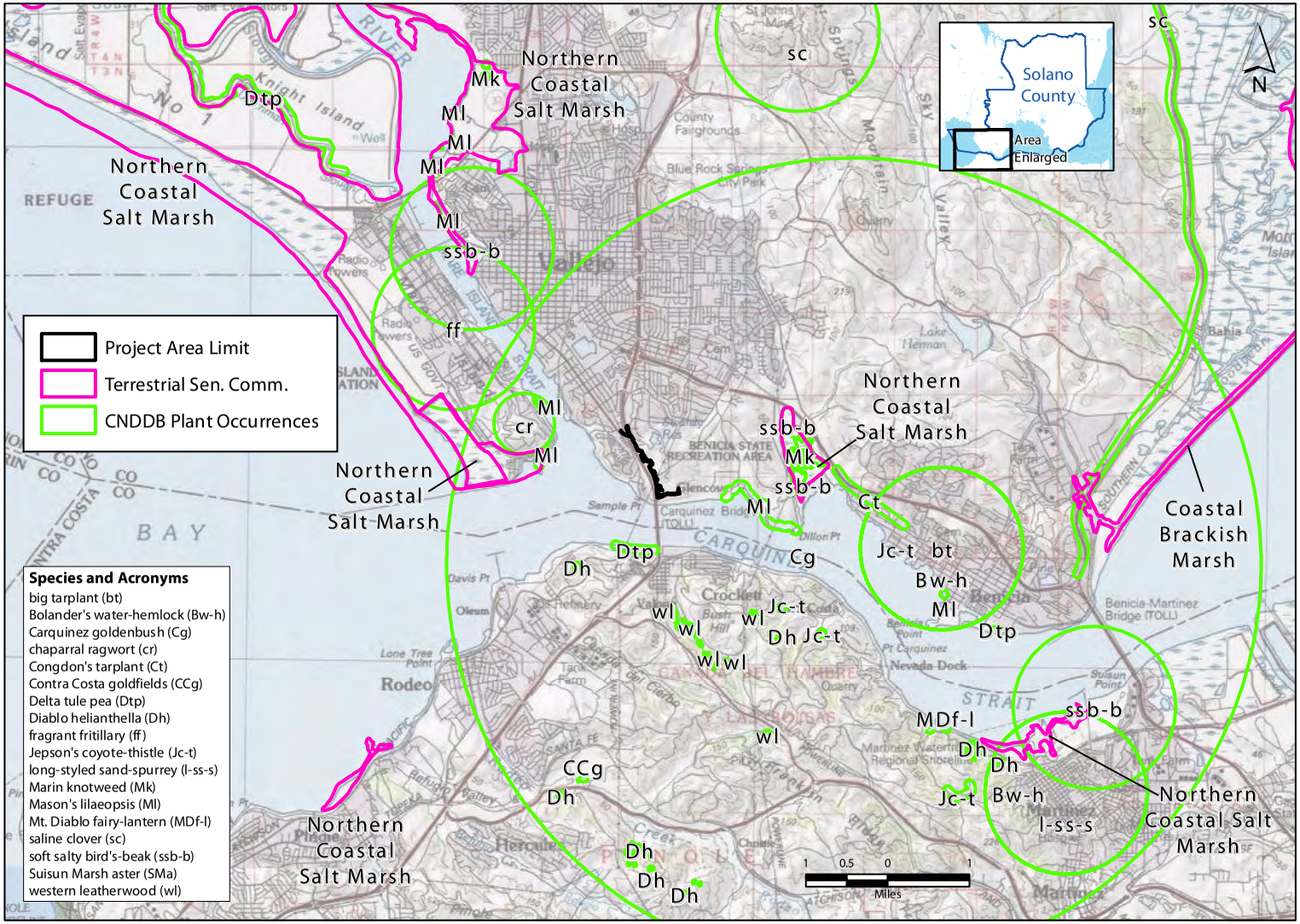
Figures 8 and 9 show the distribution of special-status plant and animal species, respectively, as reported by the CNDDB within approximately five miles of the PAL. List of special-status species reported from the CNDDB and IPaC program in the Vallejo vicinity are contained in Appendix E, including species scientific and common names and status. The list in the CNDDB summary table consists of 29 special-status animal species, 17 special-status plant species, and two sensitive natural community types. The IPaC list consists of 13 special-status animal species, two special-status plant species, and indicates that there is no designated critical habitats in the vicinity of the PAL.

According to CNDDB records, no special-status plant or animal species have been reported from or in the immediate vicinity of the PAL. An historic occurrence of Carquinez goldenbush (*Isocoma argute*) extends over Carquinez Strait and the surrounding area. This species has no listing status under the State or federal Endangered Species Acts, but has a rare plant rank of 1B.1 (plants rare, endangered, or threatened in California and elsewhere) in the CNPS *Inventory*. However, this species was not observed in the PAL during systematic surveys conducted in 2002, 2003, or 2018, and is not believed to be present. A list of plant species encountered during the systematic survey of the PAL is contained in Appendix E.

Most of the special-status species reported from the Vallejo vicinity occur in natural habitats such as coastal salt marsh, freshwater marsh, riparian woodlands, and native grasslands, all of which are absent from the PAL. Most of the trail alignment has been extensively disturbed by past grading for the freeway construction and nearby residential development. Due to the extent of past disturbance and absence of suitable habitat characteristics, no special-status plant species are believed to occur along the proposed trail alignment. Similarly, suitable habitat necessary to support special-status animal species, such as freshwater marsh, vernal pools and swales, coastal salt marsh, open water habitat, larval host plants, and other essential habitat characteristics is absent from the PAL. With the exception of possible presence of nesting birds that would be protected under state and federal regulations when the nests are in active use, no special-status species are suspected to occur within the PAL.

[9] "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the United States Fish and Wildlife Service (USFWS) to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The California Department of Fish and Wildlife (CDFW) also considers the loss of listed species habitat as take, although this policy lacks statutory authority and case law support under the CESA.

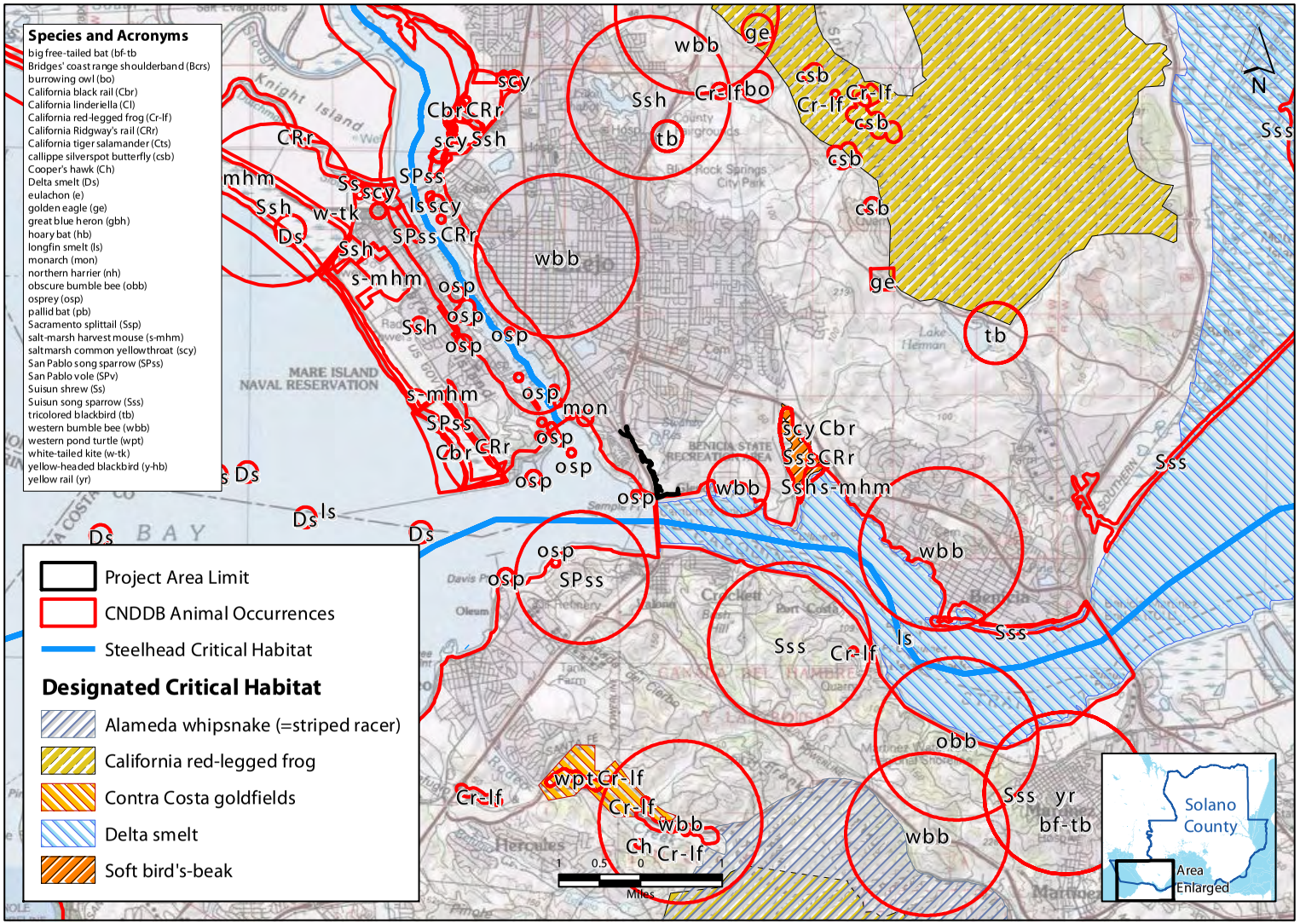
Figure 8. Special-Status Plant Species and Sensitive Natural Communities Vallejo Bluff Trail



SOURCES: California Natural Diversity Database accessed on April 4th, 2018; USFW Critical Habitat Database accessed in Sep 2017 (latest version); USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 4/16/2018.

Figure 9. Special-Status Animal Species and Critical Habitat

Vallejo Bluff Trail



SOURCES: California Natural Diversity Database accessed on April 4th, 2018; USFW Critical Habitat Database accessed in Sep 2017 (latest version); USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 4/17/2018.

Nests of most bird species are protected under the Migratory Bird Treaty Act (MBTA) when the nests are in active use, and nests of raptors (birds-of-prey) are also protected under the California Fish and Game Code when the nests are in active use. No nesting or roosting locations have been identified by the CNDDB for the PAL or immediate vicinity, or were observed during the field surveys. However, mature trees in the PAL contain suitable nesting substrate for some bird species recognized as a Species of Special Concern by the CDFW, as well as more common species, and new nests could be established in the future. The MBTA prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior; this prohibition includes whole birds, parts of birds, and bird nests and eggs. Tree removal, vegetation clearing and other construction activities during the breeding season could result in the incidental loss of fertile eggs or nestlings or nest abandonment. This would be considered a ***potentially significant*** impact.

A standard method to address the potential for nesting birds is either to initiate construction during the non-nesting season, which in Solano County is typically from September 1 to January 31, or to conduct a nesting survey within 14 days prior to initial tree removal, building demolition, and construction to determine whether any active nests are present that must be protected until any young have fledged and are no longer dependent on the nest. Protection of the nests, if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors. Without these controls, tree removal and construction activities could have a potentially significant impact on nesting birds. With implementation of Mitigation Measure IV-1, impacts on nesting birds would be reduced to a ***less-than-significant level***.

> ***Mitigation Measure IV-1: Nesting Birds.*** *Adequate measures shall be taken to avoid inadvertent take of raptor nests and other nesting birds protected under the Migratory Bird Treaty Act when in active use. This shall be accomplished by taking the following steps:*
>
> - *If vegetation removal and construction is proposed during the nesting season (February through August), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 14 days prior to the onset of construction, in order to identify any active nests on the project site and vicinity of proposed construction.*
>
> - *If no active nests are identified during the survey period, or if construction is initiated during the non-breeding season (September through January), vegetation removal and construction may proceed with no restrictions.*
>
> - *If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from*

the California Department of Fish and Wildlife (CDFW), and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the construction area.

- *A report of findings shall be prepared by the qualified biologist and submitted to the City for review and approval prior to initiation of construction within the no-disturbance zone during the nesting season (February through August). The report either shall confirm absence of any active nests, or shall confirm that any young within a designated no-disturbance zone have fledged and construction can proceed.*

b. Riparian or Other Habitats - *Less than Significant Impact.* Sensitive natural communities are community types recognized by CDFW and other agencies because of their rarity. In the Vallejo vicinity, sensitive natural community types include coastal salt marsh, brackish water, freshwater marsh and riparian habitats, and native grasslands. Figure 8 shows the known occurrences of coastal salt marsh sensitive natural communities in the vicinity, along the Carquinez Strait and lower Napa River. However, sensitive natural community types are absent from the PAL and immediate vicinity of proposed construction, and no adverse impacts are anticipated. An area of willow riparian scrub occurs about 2,500 feet north of the toll plaza along I-880, but the trail alignment would avoid this sensitive habitat area. Similarly, a number of freshwater seeps occur along the nearby off-ramp to northbound I-880, but again the trail alignment would avoid these features. Several small stands of beardless rye grass (*Elymus triticoides*) occur along the southern segment of the Bench Alternatives, and several stands of purple needlegrass (*Stipa pulchra*) occur near the crest of the ridge near the Waterview Terrace end of the main trail alignment. However, these stands are either completely outside the PAL or are not large enough in aerial extent to be considered a sensitive natural community type by the CNDDB. For these reasons, the impact on the proposed project on riparian and other sensitive habitats would be ***less than significant*.**

c. Wetlands - *Less than Significant Impact.* Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions.

The CDFW, U.S. Army Corps of Engineers (Corps), and California Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to wetlands and other "waters of the United States." Jurisdiction of the Corps is established through provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material without a permit. The RWQCB jurisdiction is established through Section 401 of the Clean Water Act, which requires certification or waiver to control discharges in water quality, and the State Porter-Cologne Act. Jurisdictional authority of the CDFW over wetland areas is established under Sections 1600-1607 of the State Fish and Game Code, which pertain to

activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream.

A preliminary wetland assessment was conducted during the April 2018 field survey. As noted above, a thicket of willow riparian scrub occurs about 2,500 feet north of the toll plaza along I-880, but the trail alignment would avoid this sensitive habitat area. Similarly, a number of freshwater seeps occur along a cut slope to the nearby off-ramp to northbound I-80, but the trail alignment avoids these features as well.

Numerous drainage structures were installed as part of the freeway improvements along the east side of I-80. No evidence of any surface flows was observed in any of the watersheds along the trail alignment during the April 2018 field surveys, including drainages with a natural bed or bank. A man-made dam occurs in the subwatershed about 1,000 north of the toll plaza. The trail would pass over a concrete spillway at this location. No wetlands would be affected by construction of the trail over the dam, but the spillway may be considered a jurisdictional waters. However, even if the spillway is considered a jurisdictional waters, Phase 1 of the project would include a short boardwalk over the spillway, and Phase 2 would construct a bridge below the spillway that bypasses it; therefore, no significant adverse impacts on jurisdictional waters are anticipated. If the spillway is considered a jurisdictional waters, appropriate authorizations from the Corps, RWQCB and CDFW would be necessary, but no physical impacts on wetlands would occur. Best Management Practices (BMPs) would be followed as part of the Stormwater Pollution Prevention Plan (SWPPP) required by Mitigation Measure VII-3 (see Section VII. Geology and Soils), which would prevent any indirect impacts on downstream waters associated with construction of the trail improvements. For these reasons, the impact on the proposed project on wetlands would be ***less than significant*.**

d. Wildlife Corridors - ***Less than Significant Impact.*** The proposed project would not have any significant adverse impacts on wildlife movement opportunities or adversely affect native wildlife nursery sites. Most of the PAL has been extensively disturbed by past freeway construction and residential development, with only limited habitat value to wildlife species common in suburban habitat. Wildlife in the vicinity of the PAL have already acclimated to human activity, and construction-related disturbance would not cause any significant impacts on common wildlife species found in the area. Some common species could be eliminated or displaced from the trail alignment during construction, but these are not special-status species and their loss or displacement would not be considered a significant impact. Pre-construction surveys recommended in Mitigation Measure IV-1 would ensure avoidance of any nesting birds if new nests become established before construction is initiated. Wildlife species commonly associated with suburban habitat would eventually frequent the PAL again following construction, using the remaining trees and other vegetation for foraging, roosting, and other activities.

The introduction of additional fencing into the PAL could impact wildlife movement. There is an existing series of six-foot chain link fences between the freeway and the residential areas along the portions of the PAL paralleling I-80, including along the boundaries of private properties extending almost to the freeway. As part of the project, additional fencing would

be added between the trail and the freeway, and between the trail and private properties uphill as part of the project. However, the existing extent of fencing, the objective to keep animals, as well as people, from entering the freeway, and the opening of continuous north-south access through a corridor that is currently severed by fencing at multiple locations, would result in the added fencing having a ***less-than-significant*** impact on wildlife movement.

On the portion of the proposed Class I trail alignment that parallels the Carquinez Strait there is no existing fencing that inhibits wildlife movement or access to the water. Because the trail through this segment would be built across a steep slope, the downhill side would require a four-foot high chain link fence to protect bicyclists and others from the slope. The low height of the fence, and the provision for gaps in the fencing that are included in the project plans, would result in a ***less-than-significant*** impact on wildlife movement.

In summary, no substantial disruption of movement corridors or access to native wildlife nursery sites is anticipated. The impact on wildlife movement opportunities would be ***less than significant***.

e. Local Policies/Ordinances - ***Less than Significant Impact.*** The Open Space & Resource Conservation Element of the Vallejo General Plan contains a number of policies related to the conservation of important biological and wetland resources. Most of these focus on recognizing and protecting areas of valuable natural habitat, such as marshlands, watershed lands north of Lake Herman, and the Hunter's Hill and Sulfur Springs Mountain areas, not found along the PAL. No major conflicts with the Vallejo General Plan are anticipated.

Title 10, Chapter Section 10.12, Trees, of the Vallejo Municipal Code serves to regulate the removal of trees in public areas or of a certain size. The ordinance defines a "street tree" as any tree of any species or size planted in parkways, sidewalk areas, easements, and rights-of-way granted to the city, and a "significant tree" as any tree or stand of trees on private property having either a height of twenty-five feet measured above ground level, or a diameter of ten inches. A permit is required prior to removal of any street tree or significant tree.

Trail improvements have generally been sited to avoid the mature trees found along segments of the PAL. These include native coast live oak (*Quercus agrifolia*) and planted blue gum (*Eucalyptus globulus*), pines (*Pinus* spp.) and other tree species of varying size and condition. A few trees may be removed or limbed up to accommodate trail improvements, but these are generally trees that have fallen or are in poor condition and pose a risk to future trail users.

Detailed landscape plans have not yet been prepared for the project, but would include new plantings of trees, shrubs, and groundcover species. Appropriate controls would be implemented to ensure that trees along the PAL in the vicinity of construction are adequately protected. The replacement landscaping provided as part of the project would serve to replace any trees and other landscaping removed to accommodate grading and trail

improvements and would serve to ensure that there are no major conflicts with the General Plan or provisions in the Municipal Code. Therefore, the project would be considered to have a ***less-than-significant*** impact.

f. Habitat Conservation Plan/Natural Communities Conservation Plan - *No Impact.* There are currently no adopted Habitat Conservation Plans or Natural Community Conservation Plans for the PAL or surrounding area. No adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other conservation plan applies to the PAL. ***No impacts*** regarding possible conflicts with an adopted plan are anticipated.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Background:

Prior to the arrival of the Spanish, the project area was occupied by the *Aguasto* tribelet of the Southern Patwin, whose main village was near or in the present city of Vallejo.[10] As late as 1827 there were apparently ten Southern Patwin villages occupied by as many as 527 individuals in southern Solano County. Smallpox epidemics and other European introduced diseases rapidly reduced their numbers; by 1930 the Southern Patwin were extinct. The American period began with the establishment of Benicia in 1850 to the east and the city of Vallejo in 1850 to the west; the general area encompassing the project site was not the subject of any known development. A cultural resources investigation in 2003 that included a field survey and records search found no archaeological or historic resources on the project site.[11] A subsequent investigation, which included a records search and Native American consultation, also found no archaeological or historic resources on the project site.[12]

There are no buildings on the project site.

a. Historic Resources – *No Impact*. There are no historic structures on the project site, and the project would have ***no impact*** on historical resources.

b. Archaeological Resources – *Less than Significant with Mitigation.* Although, as discussed above, there is no evidence of prehistoric archaeological resources on the project site, unknown subsurface resources could be affected by grading and excavation for the trail, retaining walls, and bridges. Although unlikely, it is possible that undiscovered

[10] Miley Paul Holman, Holman & Associates, *Negative Archaeological Survey Report for the Vallejo Bay/Ridge Trail Connector Project Vallejo, Solano County, California,* prepared for LandPeople, June 2003.

[11] *Ibid.*

[12] Sunshine Psota, Holman & Associates, *Letter Report: Results of a Section 106 Archaeological Literature Search and Initial Native American Consultation for the Vallejo Bluff Trail—Bay Trail/Ridge Trail, Vallejo, Solano County, California,* prepared for TrailPeople, 13 April 2018.

subsurface archaeological resources could exist at the site and be disturbed by project construction. Disturbance of a previously buried archaeological site would be considered a ***potentially significant*** impact, which would be reduced to a ***less-than-significant*** level with implementation of the following mitigation measure.

> ***Mitigation Measure V-1: Archaeological Resources.*** If any cultural artifacts are encountered during site grading or other construction activities, all ground disturbance shall be halted until the services of a qualified archaeologist can be retained to identify and evaluate the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). The project sponsor shall fund and implement the mitigation in accordance with Section 15064.5(c)–(f) of the CEQA Guidelines and Public Resources Code Section 21083.2.

c. Human Remains – ***Less than Significant with Mitigation.*** Although unlikely, it is possible that undiscovered subsurface human remains could exist at the site and be disturbed by project construction. Disturbance of buried human remains would be considered a ***potentially significant*** impact, which would be reduced to a ***less than significant*** level with implementation of the following mitigation measure.

> ***Mitigation Measure V-2: Buried Human Remains****.* In the event that any human remains are encountered during site disturbance, all ground–disturbing work shall cease immediately and the County coroner shall be notified immediately (Contra Costa County Sheriff-Coroner, 925-335-1510). If the coroner determines the remains to be Native American, the Native American Heritage Commission (916-653-4082) shall be contacted within 24 hours, and no work shall proceed. A qualified archaeologist, in consultation with the Native American Heritage Commission, shall recommend subsequent measures for disposition of the remains.

VI. ENERGY – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to 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?	☐	☐	☒	☐

a, b. Energy Use and Plans – ***Less than Significant.*** Operation of the pedestrian and bicycle trail project would directly consume a negligible amount of energy. As discussed above, total vehicle trips after construction of the project would be similar to, or less than, current conditions. Thus, energy use during operation would be similar to, or less than, existing conditions. Construction of the proposed project would require energy use, but this use would not be wasteful or inefficient, nor would it require new or expanded electric power or natural gas facilities. Energy used during construction would allow the operation of the trail, which, as discussed above, could result in a reduction of long-term energy use. No features of the proposed project would conflict with or obstruct state or local plans for renewable energy or energy efficiency. The project would not require the relocation or construction of new or expanded electric power or natural gas facilities. The impact on energy use and energy plans would be ***less than significant.***

VII. GEOLOGY AND SOILS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause 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 California Geologic Survey Special Publication 42.	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
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 on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Background:

A geotechnical evaluation was conducted for the project site in 2003.[13] The geotechnical evaluation found that bedrock at the site has been mapped as the Panoche Formation of upper Cretacious age. This formation typically develops a relatively shallow soil cover, consisting of moderate to highly plastic clays, which have the potential to develop moderate to high expansion pressures with variations in moisture content. The geotechnical evaluation concluded that the proposed trail would not create substantial geologic impacts, but it identified the following potential geology and soils issues: expansive soils at the site, three isolated areas of slope instability along the alignment, and the potential for erosion.

Seismic Hazards

Fault Rupture

The project site does not lie with an Alquist-Priolo Earthquake Fault Zone, as designated by the California Geologic Survey (formerly California Division of Mines and Geology) under the Alquist-Priolo Earthquake Fault Zoning Act (1972). The closest such fault zone is the Green Valley Fault zone located approximately seven miles east of the project site.[14] However, the potential exists for fault related surface rupture at the site.

Seismic Shaking

The site is located in a seismically active region of California. Significant earthquakes in the Bay Area have been associated with movements along well-defined fault zones. Earthquakes occurring along any of a number of other Bay Area faults have the potential to produce strong ground shaking at the site. The primary seismic risks at the site are from earthquakes along the Green Valley Fault. This fault is considered historically active, and is located approximately seven miles east of the project site.

Ground Failure

Liquefaction is the temporary transformation of a water-saturated, cohesionless (sandy) soil into a viscous liquid during strong- to violent ground shaking. Liquefaction can result in loss of support for foundations from differential settlement or flow-related failures on sloping ground or where open faces (such as creek channels) are present (lateral spreading). The potential for liquefaction at the project site is very low.[15]

Lateral spreading is the finite, lateral movement of sloping, saturated soil deposits caused by earthquake-induced liquefaction, and often occurs along riverbanks and shorelines where loose, saturated sandy soils are commonly encountered at shallow depths. The

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[13] *Kleinfelder, Geological and Geotechnical Engineering Evaluation, Various Trail Alternatives, Vallejo Bay/Ridge Trail Connector Project, Vallejo, California, File No. 18398-002, June 9, 2003.*

[14] *Solano County General Plan, Health and Safety Element, Figure HS-6.*

[15] *Solano County General Plan, Health and Safety Element, Figure HS-9.*

project site is not subject to lateral spreading because it is not subject to liquefaction and is not near, or adjacent to, the shoreline.

Landslides

Topography at the project site varies from relatively flat to quite steep, but the project site and vicinity are not identified as susceptible to landslide by the Solano County General Plan.[16]

Discussion:

a) i, ii, iii Fault Rupture, Ground Shaking, Ground Failure - *Less than Significant with Mitigation*. As described above, the site may be subject to fault rupture. These processes may damage or destroy the trail infrastructure proposed for the site, including retaining walls and bridges, if not properly designed or located. In addition, strong seismic shaking may damage even properly designed and constructed infrastructure, and result in injury or death to users from falling objects, gas line ruptures, and fires. These impacts are common to many sites near active faults in California.

A design-level geotechnical report has not been prepared for the project site, but will be required by the City of Vallejo prior to project approval. That report will specify a design intended to reduce the risk of major seismic shaking damage. Geotechnical and seismic design criteria would be required by the City of Vallejo to conform to engineering recommendations in conformance to the seismic requirements of Zone 4 of the currently adopted Uniform Building Code (UBC) and the California Building Code (Title 24) additions. Implementation of Mitigation Measure VII-1, below, would ensure that potential impacts related to seismic issues are reduced to a ***less-than-significant*** level.

> ***Mitigation Measure VII-1: Geotechnical Report.*** The project sponsor shall prepare a design-level geotechnical report prior to any grading or construction permit approvals. The project shall comply with all design criteria described in the preliminary and final geotechnical investigation. That report shall provide detailed design criteria for the project walls and bridges appropriate to expansive soils, including minimization of cuts, down-slope retaining structures, and runoff control in areas subject to slope instability. The project geotechnical investigation shall include recommendations that all structural and mechanical details be designed to resist earthquake ground shaking, and those measures also shall be implemented in infrastructure design.

a. iv. Landslides - ***Less than Significant with Mitigation.*** The project site is located in an urbanized area, the Solano County General Plan does not identify a significant landslide potential at the site, and project structures would be limited to bridges and short retaining walls. However, much of the proposed trail alignment is located on steeply sloping topography, and the geotechnical evaluation identified three area of slope

[16] *Solano County General Plan, Health and Safety Element, Figure HS-8.*

instability along the trail alignment. Landslides could affect the proposed trail, bridges, and retaining walls, and pose a hazard to trail users and construction workers. Implementation of Mitigation Measure VII-2, below, would ensure that potential impacts related to landslides are reduced to a ***less-than-significant*** level.

Mitigation Measure VII-2: Landslides. Implement Mitigation Measure VII-1.

b. Soil Erosion - ***Less than Significant with Mitigation.*** Soil erosion hazards could occur during the preliminary stages of construction, especially during grading, cutting, and filling prior to surfacing the trail and construction of retaining walls. Soil exposed by grading and other soil movement activities could be subject to erosion if exposed to heavy winds or rain. In addition to causing sedimentation problems in storm drain systems, rapid water erosion could undermine engineered soils beneath the trail.

The City of Vallejo's grading permit process requires creation and implementation of an erosion control plan prior to the start of grading activities. (Most of the project alignment would be exempt from the requirement for a City grading permit because it is a public facility located in a public right-of-way;[17] however, some of the project is located on private property.) In addition, because the project would disturb more than one acre of land, a storm water pollution prevention plan (SWPPP) would be required by the California Regional Water Quality Control Board. The SWPPP would incorporate best management practices (BMPs) during construction activities to minimize soil erosion hazard during construction activities. Soil erosion and/or loss of topsoil during construction and grading activities would be a potentially significant impact that would be reduced to a ***less-than-significant*** level with implementation of the following mitigation measure.

> ***Mitigation Measure VII-3: Erosion.*** Prior to grading activities, as required by the City of Vallejo's grading ordinance, the project sponsor shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the requirements of the statewide Construction General Permit. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.
>
> The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD). The SWPPP shall include the minimum BMPs required for the identified risk level. BMP

[17] *The City of Vallejo Grading Ordinance Section 12.40.030.I does not require grading permits for "Work conducted in any city street, public right-of-way, or easement when the work is for a public facility, public utility, or other public purpose."*

implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction or the Caltrans Stormwater Quality Handbook Construction Site Best Management Practices (BMPs) Manual.

The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate, depending on the project risk level, sampling of site effluent and receiving waters. A Qualified SWPPP Practitioner (QSP) shall be responsible for implementing the BMPs at the project site. The QSP shall also be responsible for performing all required monitoring, BMP inspection, maintenance and repair activities, and reporting.

c. Unstable Soil - *Less than Significant with Mitigation*. As discussed above, the project site is not subject to liquefaction, differential settlement, landslides, or lateral spreading. The project site is subject to seismically-induced ground failure. Compliance with the geotechnical report recommendations, as required by Mitigation Measure VII-1, would reduce the potential for unstable soils at the project site to create substantial risk to life or property to a ***less-than-significant*** level.

d. Expansive Soil - *Less than Significant with Mitigation*. The soils at the project site have high expansion potential.[18] This potentially significant impact would be reduced to a ***less-than-significant*** level by site preparation, use of engineered fill, and design of trail, retaining wall, and bridge foundation as specified in the project geotechnical report, the implementation of which is specified in Mitigation Measure VII.1, above.

e. Inadequate Soils for Disposal - *No Impact*. The project would not include the installation of septic tanks or alternative wastewater disposal systems, and would therefore have ***no impact*** on soils related to septic tanks or alternative wastewater disposal systems.

f. Paleontological Resources - *Less than Significant with Mitigation*. A fossil search was performed using the University of California, Museum of Paleontology's (UCMP) online locality search page.[19] No recorded localities appeared in the project site vicinity. The project would disturb surface soil at the site (in which fossils are not generally found), and also would disturb underlying bedrock, in which fossils are generally found. Although the likelihood is low, it is possible that unrecorded paleontological resources could be encountered during the construction of the project. Implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure VII-4: Paleontological Resources. If paleontological resources are encountered during construction, all work shall be halted within a 50-foot radius of the findings and a qualified paleontologist shall be retained to

[18] *Solano County General Plan, Health and Safety Element, Figure HS-10.*

[19] *University of California, Museum of Paleontology, Locality Search. Available online at: https://ucmpdb.berkeley.edu/loc.html, accessed on March 16, 2018.*

ascertain the nature of the discovery, the significance of the find, and provide proper management recommendations. Project personnel shall not collect paleontological resources found.

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

Discussion:

Overview

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHGs in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in units of "carbon dioxide-equivalents" (CO_2e).[20]

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.[21]

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[20] *Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.*

[21] California Climate Change Portal. Frequently Asked Questions about Global Climate Change. Available Online at: http://www.climatechange.ca.gov/publications/faqs.html.

The California Air Resources Board (CARB0 estimated that in 2015 California produced 440.4 million gross metric tons of CO_2e.[22] CARB found that transportation is the source of 39 percent of the state's GHG emissions, followed by industrial sources at 23 percent and electricity generation (both in-state and out-of-state) at 19 percent. Agricultural use accounted for 8 percent of GHG emissions.[23]

In the San Francisco Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial and commercial sectors are the two largest sources of GHG emissions, accounting for 39.7 and 35.7 percent of the San Francisco Bay Area's 86.6 million metric tons of CO_2e emitted in 2011.[24] Electricity generation accounts for approximately 14.0 percent of the San Francisco Bay Area's GHG emissions followed by residential fuel usage at 7.7 percent, and off-road equipment and agriculture each at 1.5 percent.[25]

As part of its Climate Action Plan, the City of Vallejo published a community-wide GHG emissions inventory for the year of 2008.[26] The inventory attributed the largest sources of GHG emissions to transportation (47 percent), residential (29 percent), and commercial/industrial sources (19 percent). The City of Vallejo emitted approximately 588,040 metric tons of CO_2e in 2008.

AB 32, SB 32, and the California Air Resources Board 2014 Scoping Plan

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32, or AB 32), which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020—a 25 percent reduction statewide, with mandatory caps for significant emissions sources. The Scoping Plan was first approved by the ARB in 2008 and must be updated every five years. The First Update to the Climate Change Scoping Plan was approved by the ARB on May 22, 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32.

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[22] *California Air Resources Board (ARB), "California Greenhouse Gas Emission Inventory 2017 edition". Available Online at https://www.arb.ca.gov/cc/inventory/data/data.htm.*

[23] *Ibid.*

[24] *Bay Area Air Quality Management District, Bay Area Emissions Inventory Summary Report: Base Year 2011, Updated: January 2015. Available Online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/BY2011_GHGSummary.ashx?la=en.*

[25] *Ibid.*

[26] *City of Vallejo, Climate Action Plan, Final, March 2012. Available Online at: http://www.cityofvallejo.net/common/pages/DisplayFile.aspx?itemId=30907.*

The CARB's Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction targets established by AB 32 and SB 32. To estimate the reductions necessary, CARB projects statewide business-as-usual (BAU) GHG emissions and identifies statewide reductions required to reduce GHG emissions to achieve the targets of AB 32 and SB 32. The calculated reductions incorporate emissions standards enacted under Assembly Bill 1493 (Pavley) and the 50 percent renewable portfolio standard (RPS) enacted under SB 350. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS),[27] California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the corporate average fuel economy (CAFE) standards, and other early action measures that would ensure the state is on target to achieve the GHG emissions reduction goals of AB 32 and SB 32. In addition, new buildings constructed are required to comply with the Building and Energy Efficiency Standards and California Green Building Standards Code (CALGreen).

California Green Building Standards Code

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. CALGreen is a comprehensive and uniform regulatory code for all residential, commercial and school buildings.

CALGreen does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. CALGreen recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50 percent diversion requirement. CALGreen also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard, which buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, CALGreen is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impacts during and after construction.

[27] On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the court's rulings preliminarily enjoins the CARB from enforcing the regulation during the pendency of the litigation. In January 2012, CARB appealed the decision and on April 23, 2012, the Ninth Circuit Court granted CARB's motion for a stay of the injunction while it continues to consider CARB's appeal of the lower court's decision. In a separate case, on July 15, 2013, the State of California Court of Appeal, Fifth Appellate District issued its opinion in POET, LLC v. California Air Resources Board. The Court held that the LCFS would remain in effect and that the CARB can continue to implement and enforce the 2013 regulatory standards while it corrects certain aspects of the procedures by which the LCFS was originally adopted.

CALGreen contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. CALGreen provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. CALGreen also requires building commissioning, which is a process for verifying that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

California Air Pollution Control Officers Association

The California Air Pollution Control Officers Association (CAPCOA), representing California's 35 local air districts, launched the CAPCOA *Greenhouse Gas Reduction Exchange (GHG Rx)*.[28] The *Exchange* provides a reliable, low-cost, secure platform to encourage locally generated, high quality GHG emission reduction credits that can be used to meet CEQA or other compliance requirements. The GHG Rx features locally generated and properly validated GHG emission reduction credits from voluntary projects within California and allow interaction between those who create the credits, potential buyers and funding organizations.

Bay Area Air Quality Management District

The BAAQMD is the primary agency responsible for air quality regulation in the nine county San Francisco Bay Area Air Basin. As part of their role in air quality regulation, BAAQMD has prepared CEQA air quality guidelines to assist lead agencies in evaluating air quality impacts of proposed projects and plans. The guidelines provide procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements. The *CEQA Air Quality Guidelines* provide CEQA thresholds of significance for operational GHG emissions from land use projects for the first time. The BAAQMD has not defined GHG thresholds from construction activities, but recommends that significance be determined in relation to meeting AB 32 GHG reduction targets. OPR's amendments to the CEQA Guidelines as well as BAAQMD's *CEQA Air Quality Guidelines* and thresholds of significance have been incorporated into the analysis of potential GHG impacts associated with the project.

Vallejo Climate Action Plan

The Vallejo General Plan 2040 confirms the City's Climate Action Plan (CAP), adopted in 2012. The Vallejo CAP identifies policies that will achieve the state-recommended GHG reduction target of 15% below 2008 levels by the year 2020. The CAP provides goals and associated measures, also referred to as reduction measures, in the sectors of energy use, transportation, land use, water, solid waste, and off-road equipment.[29] Reduction measures in the CAP applicable to the proposed trail project include:

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[28] *CAPCOA* Greenhouse Gas Exchange*, http://xappprod.aqmd.gov/ghgrx.*

[29] *Vallejo Climate Action Plan, Final, March 2102. Available online at: http://www.cityofvallejo.net/common/pages/DisplayFile.aspx?itemId=30907.*

TDM-3. Bicycle and Pedestrian Travel
Expand and link the network of pedestrian and bicycle paths and facilities through preparation of a Bicycle and Pedestrian Master Plan, with the goal of increasing the bicycle and pedestrian mode share 20% by 2035.

TDM-7. Commute Behavior
Reduce emissions from commute travel to and from schools and workplaces.

Significance Thresholds

The BAAQMD CEQA Air Quality Guidelines identify a project specific threshold of either a brightline threshold of 1,100 metric tons of CO2e per year or an efficiency threshold of 4.6 metric tons of CO2e per year per service population (i.e., the number of residents plus the number of employees associated with a new development) as resulting in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact. Alternatively, a project that is found to be consistent with a Qualified Climate Action Plan would have a less than significant impact to global climate change. This analysis applies the 1,100 metric tons of CO2e per year significance criterion while also reviewing the goals, policies, and measures within the Vallejo Climate Action Plan.

As discussed above, the BAAQMD has not defined GHG thresholds from construction activities, but recommends that significance be determined in relation to meeting AB 32 GHG reduction targets.

a. Greenhouse Gas Emissions - *Less than Significant*. CalEEMod was used to quantify GHG emissions associated with project construction activities (for informational purposes). CalEEMod incorporates local energy emission factors and mitigation measures based on the CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* and the *California Climate Action Registry General Reporting Protocol*.

Estimated construction GHG emissions that would be generated by the project are estimated at 241.5 metric tons of CO2e. The 30-year amortized annual construction related GHG emissions would be 8.1 metric tons of CO2e. As noted above, there is no BAAQMD CEQA significance threshold for construction-related GHG emissions. However, it should be noted that estimated construction emissions are substantially less than the operational GHG threshold of 1,100 metric tons of CO2e per year.

As discussed in Section III.b, Air Quality, above, operation of the bicycle and pedestrian trail project would not generate substantial criteria air pollutant emissions, and may result in a net decrease in emissions. The project would connect existing regional trails, and encourage and enable commuting and travel by bicycle. As a recreational trail conveniently located in the urban area of Vallejo, the project would generate additional recreational trips, some of which would involve vehicle travel from users' homes to the trail. To the extent that these recreational trips replace trips to more distant trails, there would be a net reduction in vehicle miles. New recreational trips involving vehicle travel would result in additional vehicle trips and emissions, but it is likely that these additional trips and

emissions would be offset by the reductions in vehicle trips discussed above. In total, net greenhouse gas emissions during project operation would be similar to, or possibly less than, existing emission levels, and would be well below the BAAQMD threshold of 1,100 metric tons of CO2e per year.

For these reasons, the impact of both construction and operational GHG emissions would be ***less than significant.***

b. Conflict with Plans, Policies, and Regulations - *Less than Significant*. The City of Vallejo has adopted a Climate Action Plan regarding the reduction of GHG emissions. The City has established a baseline government and community-wide inventory of GHG emissions. The project would result in a significant impact if it would be in conflict with AB 32 and SB 32 State goals and the goals, policies, and measures of the applicable Climate Action Plan for reducing GHG emissions. The assumption is that AB 32, SB 32, and the Climate Action Plan will be successful in reducing GHG emissions and reducing the cumulative GHG emissions statewide by 2030. The City and State have taken these measures, because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG. Therefore, the project has been reviewed relative to the AB 32 and SB 32 measures and Vallejo Climate Action Plan and it has been determined that the project would not conflict with the goals of AB 32, SB 32, and the Vallejo Climate Action Plan.

The principal State plan and policy adopted for the purpose of reducing GHG emissions is SB 32. The quantitative goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. Statewide plans and regulations such as GHG emissions standards for vehicles and the Low Carbon Fuel Standards (LCFS) are being implemented at the statewide level, and compliance at the specific plan or project level is not addressed. Therefore, the project does not conflict with these plans and regulations.

The regulations, plans, and polices adopted for the purpose of reducing GHG emissions that are directly applicable to the project include construction-related provisions of the Title 24 California Green Building Standards Code. The project would be required to comply with Title 24 California Green Building Standards Code; the project would be developed in compliance with the requirements of these regulations.

In summary, the project would not conflict with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions and thus have ***no impact***.

IX. HAZARDS AND HAZARDOUS MATERIALS – would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

Background:

A Phase I Environmental Site Assessment (ESA) was prepared for the project site in 2002.[30] The ESA included a review of aerial photographs and regulatory agency databases, a site reconnaissance, and an interview with the Vallejo Department of Public

[30] *Kleinfelder, Phase I Environmental Site Assessment, Vallejo Bay/Ridge Trail Connector Project, Vallejo, California, August 28, 2002.*

Works. The ESA found no evidence of Recognized Environmental Conditions (releases or potential releases to the environment of hazardous substances or petroleum products on or near the project site), and did not recommend any further investigation of the site.

Since 2002 when the ESA was prepared, no activities that would result in substantial soil or water contamination have occurred at the project site.

Discussion:

a. Hazardous Materials Transport and Use - *Less than Significant with Mitigation.* The proposed project would consist of a bicycle and pedestrian trail. Operation of the trail would not involve use or storage of substantial amounts of hazardous materials on the site. Project visitors and government maintenance workers would be required to comply with all Federal and State safety regulations relating to the transport, use, handling, disposal, and storage of hazardous materials and wastes, and businesses are required by law to ensure employee safety by identifying hazardous materials, and adequately training workers. Therefore, the hazards to the public would be minimized and the proposed project would not pose a significant hazard to the public or environment. Compliance with existing regulations would reduce this impact to a ***less-than-significant*** level.

Construction activities would require the use of certain hazardous materials such as fuels, oils, solvents, and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. On-site storage and/or use of large quantities of materials capable of impacting soil and groundwater would not typically be required for a project of the size and type proposed. The potentially significant risk associated with hazardous materials used during construction would be reduced to a ***less-than-significant*** level with implementation of Mitigation Measure VII-3, above, which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP)**.**

b. Hazardous Releases – *Less than Significant with Mitigation*. As discussed in Section IX.a. above, construction of the project would require the use of certain hazardous materials, which could be inadvertently released. The potentially significant risk associated with hazardous materials used during construction would be reduced to a ***less-than-significant*** level with implementation of Mitigation Measure VII-3, above, which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP).

Operation of the proposed bicycle and pedestrian trail would not involve activities that could result in accidents or upsets that release substantial amounts of hazardous materials. This impact would be ***less-than-significant.***

c. Hazardous Materials Near Schools - *Less than Significant with Mitigation.* The schools closest to the project site are the California State University Maritime Academy, located approximately 750 feet west of the proposed trail alignment; Grace Patterson Elementary School, located at 1080 Porter Street, approximately 1,000 feet northwest of the project site; and the Vallejo Regional Education Center (formerly Vallejo Adult School),

located at 436 Del Sur Street, approximately 1,500 feet northeast of the project site. However, the project would consist of a pedestrian and bicycle trail and would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. As described in Section IX.a, above, construction of the project would require the use of certain hazardous materials, which could be inadvertently released. The potentially significant risk associated with hazardous materials used during construction would be reduced to a ***less-than-significant*** level with implementation of Mitigation Measure VII-3, above.

d. Hazardous Site List - *No Impact.* The project site is not on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, commonly called the "Cortese List".[31] Therefore, ***no impact*** would result.

e. Airport Hazards - *No Impact*. The closest public use airport to the project site is the Oakland International Airport, located in the city of Oakland, approximately eighteen miles south of the project site. The closest private airstrip to the project site is Buchanan Field in Concord, approximately eight miles southeast of the project site. Therefore, ***no impact*** of safety hazard or excessive noise would result.

f. Emergency Response Plan - *No Impact.* The project would not interfere with any roadways or other emergency access-ways, or establish any barrier that would interfere with any adopted emergency response or evacuation plan. Therefore, ***no impact*** would result.

h. Wildland Fires - *No Impact.* Although most of the project site is undeveloped, it is surrounded by extensive developed areas and Carquinez Strait. There are no substantial areas of wildlands in the project vicinity. On or near the project site, the California Department of Forestry and Fire Protection (CAL FIRE) has not identified any Very High Fire Hazard Severity Zones in either the State Responsibility Area or the Local Responsibility Area. The proposed trail project would not exacerbate wildfire risks, interfere with emergency response or evacuation plans, require fire-related infrastructure, or expose people, directly or indirectly, to significant risks associated with wildfire. Therefore, ***no impact*** would result.

[31] California Department of Toxic Substances Control, Hazardous Waste and Substances Site List, http://www.enivrostar.dtsc.ca.gov/public/, accessed 9 February 2018.

X. HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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 existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
(iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management?	☐	☒	☐	☐

Background:

The site is located in the San Pablo Bay Watershed, on generally sloping terrain near Carquinez Strait, with elevations ranging from approximately 75 to 295 feet above mean seal level. The topography of the site is varied, but most of the site slopes steeply westward and southward towards Carquinez Strait. The terrain includes very steep cuts and hillsides, approximately 1.5:1 at the steepest cuts with 2:1 slopes being more frequent. Many of the larger cuts have benches to collect drainage and stabilize the hillside areas. With the exception of the man-made cuts and benches on the hillsides, the terrain of the project site is undeveloped. The project site is not located in a 100-year or 500-year flood zone.[32]

Discussion:

a. Water Quality Standards – *Less than Significant with Mitigation.* To address changes in surface water quality as a result of development and construction activities, the federal government implemented the National Pollution Discharge Elimination System (NPDES). NPDES is a 1987 amendment of the federal Clean Water Act that mandates that each population center obtain a permit to discharge stormwater. The limits vary by category of industry and are based on a level of treatment that uses the best available technology. Additionally, the 1987 amendments required that municipal stormwater discharges obtain NPDES permit coverage, which, in effect, prohibited non-stormwater discharges into municipal storm drain systems and required the implementation of controls to reduce pollutants in stormwater to the maximum extent practicable. The San Francisco Bay RWQCB has issued a Municipal Regional Stormwater NPDES Permit (Permit Number R2-2015-0049) (MRP), which applies to a number of bay area counties and cities including Vallejo. The provisions of the MRP generally require that projects that add and/or replace more than 10,000 square feet of impervious surface are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff; however, the MRP specifically excludes "Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees".[33]

The California State Water Resources Board is responsible for establishing water quality standards statewide, and designates the San Francisco Bay Regional Water Quality Control Board (RWQCB) for regulation of discharges of wastes and runoff to San Francisco Bay, and as well as issuing permits for discharges of wastewater and runoff. Development projects, either during construction or from use, may result in a variety of types of pollution discharges in violation of water quality standards or requirements, depending on size, location, topography, nearby creeks and drainages, soil conditions, and connections to public water and sewer systems. Construction activity and final

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[32] *City of Vallejo, General Plan 2040, Map NBE-5 Flood Zones and Dam Inundation Areas.*

[33] California Regional Water Quality Control Board, San Francisco Bay Region, *Municipal Regional Stormwater NPDES Permit Order No. R2-2015-0049, NPDES Permit No. CAS612008,* November 19, 2015, Section C.3.b.ii.4.d. Available online at: ttps://www.waterboards.ca.gov/rwqcb2/water_issues/programs/stormwater/Municipal/R2-2015-0049.pdf

characteristics of developments may result in violations of water quality standards or discharge requirements, and have adverse impacts on water quality.

The project would comply with the City of Vallejo grading permit process, which would require creation and implementation of an erosion control plan prior to the start of grading activities (see also VII. Geology and Soils, above). This would be included in the storm water pollution prevention plan (SWPPP), which would be required by the Regional Water Quality Control Board. The SWPPP would incorporate best management practices (BMPs) during construction activities to minimize soil erosion hazard during construction activities.

Construction Impacts

Construction of the proposed project, including demolition, grading, excavation, construction, and paving activities, may result in temporary impacts to surface water quality, by carrying sediment and pollutants into stormwater drainage systems and local waterways. The accumulation of sediment could result in the blockage of flows, potentially causing increased localized ponding or flooding. Discharges of stockpiled fill materials or erosion of exposed soil into local storm drains and culverts during rainstorms could have adverse water quality impacts on Carquinez Strait and San Pablo Bay. Construction activities would require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, excavators, graders, pavers, rollers, compactors, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances could be used during construction. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters.

As described in Section VII, Geology and Soils, above, the project would be required to include a Stormwater Pollution Prevention Plan (SWPPP) to control construction stormwater quality. Implementation of Mitigation Measure VII-3, above, which requires a SWPPP (see Section VII.b, Geology and Soils, above), would reduce construction impacts on water quality to a ***less-than-significant*** level.

Operational Impacts

After construction, use of the trail by pedestrians and bicycles is not anticipated to add substantial pollutants, such as oil and grease, to runoff from the project site. However, the development of new impervious surfaces on the project site could result in the discharge of pollutants, and herbicides and pesticides used in maintenance of landscaping could contaminate runoff from the project site. Implementation of Mitigation Measures X-1, and X-2, below, which stipulate water quality protection features, and appropriate control and use of pesticides and fertilizers, respectively, would reduce the impact of trail operation on water quality to a ***less-than-significant*** level.

Mitigation Measure X-1: Water Quality. The proposed project shall incorporate site design measures and Low Impact Development design standards to the best ability feasible, such as, but not limited to, minimizing disturbed areas and impervious surfaces, infiltration, evapotranspiration, and/or bio-treatment of stormwater runoff.

Mitigation Measure X-2: Pesticides and Herbicides. The project sponsor shall comply with the provisions of Municipal Regional Stormwater NPDES Permit Number R2-2015-0049 regarding release of water contaminants during project operation, including Section C.3.a.i.7, which stipulates that landscaping for new projects shall minimize irrigation and runoff, and use of pesticides and fertilizers; and Section C.9, which stipulates use of Integrated Pest Management (IPM), training municipal employees in the appropriate use of pesticides, and requiring contractors to implement IPM.

Neither construction nor operation of the proposed project would conflict with or obstruct implementation of applicable water quality control plans.

b. Groundwater – *Less than Significant Impact.* The proposed trail would add approximately 1.97 miles of 10-foot-wide trail to the site, most of which would paved with an impervious surface, but this trail would be surrounded by pervious surfaces. Runoff from the new paved trail would drain to the adjacent pervious areas or Carquinez Strait, and would not substantially interfere with existing patterns of groundwater recharge at the site. In any case, the project site does not represent a major groundwater resource, because it is not located over a groundwater basin.[34] No water service would be installed by the project, and water consumption during operation of the trail would be negligible. The project would not deplete groundwater supplies and would not substantially affect recharge or local groundwater table levels, or impede sustainable groundwater management of the any basin. Impacts on groundwater supplies would be ***less than significant***.

c.i. Erosion - *Less than Significant Impact with Mitigation*.

Construction Impacts

Construction of the proposed project would expose and move soils, and could result in substantial erosion. As discussed previously, the State Water Resources Control Board adopted a NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). To obtain coverage under the Construction General Permit, a project applicant must submit various documents, including a Notice of Intent and a SWPPP. Activities subject to the

[34] *Department of Water Resources, California Groundwater Basins and Subbasins, CWP 2013. Available online at: https://www.water.ca.gov/LegacyFiles/groundwater/bulletin118/maps/statewide_basin_map_V3_subbas.pdf*

Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation.

The purpose of the SWPPP is to identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges and to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity.

Implementation of Mitigation Measure VII-3, above, which requires a SWPPP (see Section VII.b, Geology and Soils, above), would reduce the impact of construction-generated erosion to a ***less-than-significant*** level.

Operational Impacts

Because the project would replace undisturbed vegetated surface with approximately 1.97 miles of 10-foot-wide trail, most of which would be paved, there would be an increase in the area of impervious surfaces at the site. As such, the proposed project would result in alterations of the existing drainage of the area. Although the trail is designed to minimize these alterations, the increase in impervious surfacing would result in an increase of runoff. The shoulders along the path would be designed to dissipate the runoff flow and velocity, which would limit the changes in the drainage pattern that would occur.

The proposed trail would pass through 16 watersheds, as shown in Figure 2 of Appendix F. Watersheds 1 through 5, located in the northern portion of the site, shed runoff by sheet and concentrated flows to State Route 29 and both the City of Vallejo and the State of California's drainage systems, which ultimately release into the Carquinez Strait. Watersheds 6 through 9 and 11 through 15, located in the middle and southern portions of the site, also create runoff that enters the State's drainage system of slope benches, inlets, and culverts that outfall to the Carquinez Strait. Runoff from watershed 10, located in the middle of the site, collects into a detention basin and is assumed to enter the State's drainage system, ultimately outfalling into the Carquinez Strait.

The project's intent is to maintain the drainage patterns of these watersheds as much as possible, while not increasing erosion and concentrated runoff from the new impervious areas along the project. The project would add impervious surfaces equal to 3 percent of the total area of the 16 watersheds on the project site (see Table 1 of Appendix F). In the 16 individual watersheds, the increase in impervious surfaces would range from 0.0 to 5.4 percent of each watershed. This would not substantially alter the existing topography of the site. After completion of construction of the paved trail, including shoulders along the trail designed to dissipate the runoff flow and velocity, there would be no substantial new sources of erosion or siltation, on- or off-site. For these reasons, the impact of project operation on erosion would be ***less than significant***.

c.ii. Flooding - *Less than Significant Impact*. The project site contains existing storm drainage infrastructure serving State Route 29 and Interstate 80. The existing storm drainage infrastructure discharges runoff to the City of Vallejo and State of California storm

drainage systems. The project would increase the net amount of impervious surface and associated runoff, however the increase in imperious surface in relation to the surrounding terrain is not substantial. As discussed in Section X.c.i, above, the average addition of impervious surface in all the watersheds through which the trail passes is 3 percent, and the highest level of addition is 5.4 percent. The project would utilize existing drainage infrastructure and would not create any new outfall locations into the receiving waters. Therefore, the impact on flooding would be ***less than significant.***

c.iii. Stormwater Drainage Systems - ***Less than Significant Impact with Mitigation***. The project site contains existing storm drainage infrastructure consisting of catch basins and underground piping. The existing storm drainage infrastructure discharges runoff to connections with the City of Vallejo and State of California storm drainage systems. This existing infrastructure would continue to serve the project. The proposed project would increase the impervious surfaces on the site, which would increase volumes and flows to the existing system. As discussed above, the increase in impervious surface, and the associated increase in stormwater volumes and flows, would not be substantial. Nevertheless, this relatively small increase in stormwater could exceed the capacity of the existing stormwater drainage systems.

Implementation of Mitigation Measure X-3 would reduce the impact on stormwater drainage systems to a ***less-than-significant*** level.

> ***Mitigation Measure X-3: Stormwater Runoff.*** Prior to construction, the project sponsor shall conduct an analysis of additional stormwater runoff generated by the project and its effect on existing stormwater drainage systems. If the analysis determines that the increase in runoff will not exceed the capacity of the stormwater drainage systems, no further mitigation is necessary.
>
> If the analysis determines that the increase in runoff would exceed the capacity of the stormwater drainage systems, then the project sponsor shall, prior to construction, identify locations for, design, and incorporate into the project construction documents, detention basins, infiltration basins, and/or other drainage improvements with capacity sufficient to ensure that project-generated stormwater runoff does not contribute to any exceedance of the capacity of the drainage system serving the project site. These drainage improvements shall be developed in coordination with, and the approval of, the City of Vallejo and/or Caltrans, depending on the location of the affected stormwater drainage system(s).

c.iv. Flood Flows – ***No Impact*****.** The project site is not located within the 100-year flood zone. The site is located within Zone X, Areas of Minimal Flood Hazard, according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 06095C0628G dated August 03, 2016 (see Figure 3 of Appendix F). The proposed project is outside any area that would potentially impede or redirect 100-year flood flows. There would be ***no impact***.

d. Dam Failure, Tsunami, Seiche, or Mudflow – ***Less than Significant Impact*****.** The northern portion of the project site is located within the inundation area of the Swanzy

Reservoir, which is located approximately one-quarter mile east of the project site.[35] Phase 2 of the proposed project includes construction of a 40-foot bridge over the area where water would run from Swanzy Dam Road to the Highway 29 off-ramp in the event of a dam failure. Water from a dam failure would inundate the project portion of Sonoma Boulevard/SR 29, but addition of the trail to Sonoma Boulevard would not substantially increase the risk of injury or death due to dam failure on this currently heavily used road, or risk of release of pollutants due to project inundation. Other parts of the project site are not within an area anticipated to be subject to significant flooding.

The United States Geologic Service has estimated that the San Francisco Bay will experience a tsunami once every 200 years. A probable maximum tsunami wave of about 7.0 feet above Mean Sea Level (msl) Datum is estimated to occur at 500-year intervals. The project site is located near Carquinez Strait, at an elevation of 75 feet or more above msl. Therefore, the project site is not at risk from a tsunami. For the same reason, the project site is also not susceptible to seiche impacts. In any event, the Bay Area has not been adversely affected by seiches during its history. Most of the project site is steeply sloping, but the project does not include any structures other than bridges and short retaining walls, and soils at the site have a very low potential for liquefaction (see VII. Geology and Soils, above). Accordingly, the risk of damage due to inundation by mudflow is considered to be low. Because the risk of tsunami, seiche, and mudflow is low, the risk of release of pollutants due to these events also is low. In summary, impacts from inundation by dam failure, seiche, tsunami, or mudflow would be ***less than significant***.

e. Water Quality Control Plans and Groundwater Management – *Less than Significant Impact with Mitigation.* As discussed in X.a, above, implementation of Mitigation Measure VII-3, above, which requires a SWPPP (see Section VII.b, Geology and Soils, above), would reduce construction impacts on water quality to a ***less-than-significant*** level. Implementation of Mitigation Measures X-1, and X-2, above, which stipulate water quality protection features, and appropriate control and use of pesticides and fertilizers, respectively, would reduce the impact of trail operation on water quality to a ***less-than-significant*** level.

As discussed in X.b, above, impacts on groundwater management and supplies would be ***less than significant***.

[35] *City of Vallejo, General Plan 2040, MAP NBE-5, Flood Zones and Dam Inundation Areas.*

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Background:

The project site is located in the southern portion of the City of Vallejo. On the west side of I-80 the Trail would be aligned along Sonoma Boulevard, and a portion of the trail would pass directly under I-80. On the east side of I-80, the trail alignment would run near and generally parallel to I-80 to a point near Carquinez Strait, where it would run east to connect with an existing trail. On the east side of I-80, the trail alignment would pass through undeveloped land east of I-80 and west and south of the existing single-family residential development in the Glen Cove area.

North of the project site are a mixed commercial and single-family residential area, and I-80 and Sonoma Boulevard/ SR 29. West of the northern portion of the trail, on the west side of I-80, are a motel, California State University Maritime Academy, and single-family residential. Most of the proposed trail alignment is located east of I-80, and west of a mix of open space and single-family residences of the Glen Cove area occupying the bluffs above I-80. South of the trail is Carquinez Strait and the Carquinez Bridge.

The project site is designated in the Vallejo General Plan 2040 as Public Facilities and Institutions; Parks, Recreation, and Open Space; and Residential, Primarily Single Family. The privately- and city-owned project parcels are zoned LDR: Low Density Residential, HDR: High Density Residential, PDR: Planned Development Residential, PF: Public Facilities, and C-L: Linear Commercial. Zoning is not available for the Caltrans right-of-way.

Discussion:

a. Division of Community – ***No Impact.*** The project proposes a pedestrian and bicycle trail that would connect three existing trails: the San Francisco Bay Trail, the Bay Area Ridge Trail, and the California Delta Trail. The trail project would not physically divide any established communities, and would be compatible with surrounding land uses. There would be **no impact.**

b. Plan Conflict – ***No Impact.*** The proposed project would be consistent with the General Plan Land Use designations that apply to the site: Public Facilities and Institutions; Parks, Recreation, and Open Space; and Residential, Primarily Single Family. The project also would be consistent with the zoning districts applicable to the site: LDR: Low Density Residential, HDR: High Density Residential, PDR: Planned Development Residential, PF: Public Facilities, and C-L: Linear Commercial (zoning is not available for the Caltrans right-of-way).

The project would be consistent with the following General Plan policies:

> ***POLICY CP-1.6 Active Transportation Network****. Promote the health benefits of walking and bicycling by providing a convenient and safe network of bicycle paths and routes, sidewalks, pedestrian paths, and trails, including connections with major destinations such as civic facilities, educational institutions, employment centers, shopping, and recreation areas.*
>
> ***POLICY NBE-4.3 Trails.*** *Support development and implementation of a comprehensive plan for trails that provides access to the waterfront.*
>
> ***POLICY MTC-1.5 Regional Trail Network.*** *Continue to participate in efforts to complete the regional trail network through Vallejo.*
>
> ***POLICY MTC-1.6 Public Access.*** *Promote public access to open space and trails.*
>
> ***POLICY MTC-3.4 Walking, Biking, and Rolling.*** *Expand the local bicycle and trail network to provide safe, healthy, attractive options for non-motorized travel among destinations in Vallejo, including for wheelchair users.*

The project would not cause any significant environmental impacts due to a conflict with any land use plan, policy, or regulation, and there would be ***no impact*** on consistency with plans and policies.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Background:

There are no known mineral resources on the site. The City of Vallejo General Plan 2040 does not identify any mineral resources in the vicinity of the project.

Discussion:

a. and b. Mineral Resources - *No Impact.* The site contains no known mineral resources. There would be **no impact** on mineral resources from the proposed project**.**

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE - Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive ground-born vibration or ground-born noise levels?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion:

a. Noise Impacts – *Less than Significant With Mitigation*. Potential noise impacts could result from construction and operation of the project. The applicable noise guidelines, as well as the potential impacts of the project, are discussed below.

Noise Descriptors

To describe noise environments and to assess impacts on noise–sensitive areas, a frequency weighting measure, which simulates human perception, is commonly used. It has been found that A–weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A–weighted decibel scale (dBA)[36] is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Table XIII-1 identifies decibel levels for common sounds heard in the environment.

[36] *A decibel (dB) is a unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level") measured in dB. An A–weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels.*

Table XIII-1: Typical Noise Levels

Noise Level (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80–90	Diesel truck at 50 feet	Loud television at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: Modified from Caltrans Technical Noise Supplement, 1998

Several time–averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (L_{eq});[37] average day–night 24–hour average sound level (L_{dn})[38] with a nighttime increase of 10 dBA to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL),[39] also a 24–hour average that includes both an evening and a nighttime sensitivity weighting.

Noise Attenuation

Stationary point sources of noise, including live music, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dBA per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces

[37] *The Equivalent Sound Level (L_{eq}) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.*

[38] *L_{dn} is the day–night average sound level that is equal to the 24–hour A–weighted equivalent sound level with a 10–decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.*

[39] *CNEL is the average A–weighted noise level during a 24–hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.*

(e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dBA per doubling). Widely distributed noise, such as a large industrial facility spread over many acres or a street with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA each time the distance doubles from the source, which also depends on ground absorption.[40] Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, will increase the attenuation that occurs by distance alone.

Noise Standards

City of Vallejo General Plan

The applicable noise standards governing the project site are set forth in the Nature and Built Environment Element of the General Plan. The City of Vallejo has adopted the State of California Land Use Noise Compatibility Matrix as part of the Nature and Built Environment Element of the General Plan. The City's outdoor noise exposure standards for "Playgrounds, Neighborhood Parks" (the category most applicable to the proposed trail project) are shown in Table XIII-2.

Table XIII-2: City of Vallejo Noise Standards for Playgrounds, Neighborhood Parks (CNEL)

	City of Vallejo[a]
Normally Acceptable[b]	<70 dBA
Conditionally Acceptable[c]	67.5 dBA to 75 dBA
Unacceptable[d]	>72.5 dBA

[a] Standards for the "Playgrounds, Neighborhood Parks" land use category
[b] New construction or development is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
[c] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional constructions, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
[d] New construction or development should generally not be undertaken.
Source: City of Vallejo General Plan 2040, Table NBE-1 California Land Use Compatibility for Community Noise Environments

City of Vallejo Municipal Code

The City of Vallejo Municipal Code does not contain quantitative standards for noise. Municipal Code §7.84.010 (General prohibition--Loud unnecessary and unusual noise) regulates construction noise as follows:

> *"7.84.010 General prohibition--Loud unnecessary and unusual noise.*

[40] California Department of Transportation (Caltrans), *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, October 1998.

Notwithstanding any other provisions of the Vallejo Municipal Code and in addition thereto, it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. The standard which may be considered in determining whether a violation of the provisions of this chapter exists may include, but not be limited to, the following:

A. The level of noise;
B. Whether the nature of the noise is usual or unusual;
C. Whether the origin of the noise is natural or unnatural;
D. The level and intensity of the background noise, if any;
E. The proximity of the noise to residential sleeping facilities;
F. The nature and zoning of the area within which the noise emanates;
G. The density of the inhabitation of the area within which the noise emanates;
H. The time of the day and night the noise occurs;
I. The duration of the noise;
J. Whether the noise is recurrent, intermittent, or constant; and
K. Whether the noise is produced by a commercial or noncommercial activity."

Noise Sources and Levels

The noise environment of the project site is dominated by vehicle noise from I-80 and Sonoma Boulevard/SR 29. Other noise sources include passing aircraft and construction, but these sources are intermittent, while traffic noise from I-80 and other nearby roads is constant during the daylight hours that the proposed trail would be used.

Existing Sensitive Receptors

Noise sensitive receptors (land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise) typically include residential dwellings, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. The nearest sensitive receptors to the project site would be the existing single-family residences to the north, south and west of the project, and the motel west of I-80 and south of Sonoma Boulevard. The nearest building, a residence located at the west end of Swanzy Dam Road near the north end of the proposed trail, is approximately 20 feet east of the trail alignment. Single-family residences along Jordan Street, east of the north end of the trail, are approximately 100 feet east of the proposed trail alignment.

Noise Impacts from Construction

Project construction would be completed in two phases, with Phase 1 lasting approximately 14 months and Phase 2 lasting approximately 18 months. This analysis assumes that construction would be limited to the working hours of 7:00 a.m. to 8:00 p.m. Construction activities would require the use of numerous pieces of noise-generating equipment, such as dozers, loader/backhoes, excavators, graders, generators, forklifts, water trucks, pavers, rollers, compactors, and a crane for bridge construction.

Construction worker traffic and construction-related material haul trips would raise ambient noise levels along local haul routes, depending on the number of haul trips made and types of vehicles used. Construction activities would occur during the daytime, increasing the ambient noise levels above existing conditions, which could be annoying to people at sensitive receptor locations in the area.

The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. The maximum noise levels for various types of typical construction equipment are provided in Table XIII-3: Typical Noise Levels from Construction Equipment, below. The maximum noise levels from most construction equipment at 50 feet would be in the mid to high 80-dBA range.

Table XIII-3: Typical Noise Levels from Construction Equipment (L_{max})

Construction Equipment	Noise Level (dBA at 50 feet)
Pile Driver	101
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Pump	76
Jackhammer	88
Dozer	87
Paver	89
Generator	76
Backhoe	85

Notes: dBA = A-weighted decibel; L_{max} = maximum sound level
Source: Federal Transit Administration, 2006

Construction activities associated with the project would result in noise impacts to the residents of the adjacent properties. Noise from construction activities generally attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance from the source. Where topography or physical structures obstruct the line of sight from the noise-producing equipment to the receptor location, noise levels would be further reduced (generally by at least 5 dBA).

The project would be required to comply with the noise restrictions included in the Vallejo Municipal Code. However, construction noise can still be a nuisance when conducted in close proximity to residential and commercial receptors. Some phases of construction could cause maximum noise levels to exceed the City of Vallejo thresholds (Table XIII-2).

Therefore, the noise impact from construction would be considered a ***potentially significant*** short-term impact.

Implementation of Mitigation Measure XIII-1 would reduce this impact to a ***less-than-significant*** level.

> ***Mitigation Measure XIII-1: Construction Noise.*** The project sponsor shall implement technically and economically feasible measures construction noise control measures to reduce, as feasible, the noise levels generated by the use of construction equipment below the maximum noise level standards specified in Table NBE-1 California Land Use Compatibility for Community Noise Environments of the City of Vallejo General Plan. The measures shall include, but not be limited to, the following measures.
>
> *a)* Limit construction activity to the hours between 7 a.m. and 8 p.m., Monday through Friday.
> *b)* Muffle and maintain all equipment used on-site. All internal combustion engine-driven equipment shall be fitted with mufflers that are in good condition and comply with all applicable standards and regulations.
> *c)* Use "quiet" air compressors and other stationary noise sources where technology exists.
> *d)* Locate all stationary noise-generating equipment, such as air compressors and portable power generators, away from adjacent land uses.
> *e)* Notify all adjacent residents and commercial properties of the construction schedule in writing.
> *f)* Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the complaint and shall require that reasonable measures warranted to correct the problem be implemented.
> *g)* Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent in the neighbors regarding the construction schedule.
> *h)* Combine noisy operations so that they occur in the same time period.

Noise Impacts from Operations

Use of the pedestrian and bicycle itself would not generate substantial noise. Availability of the trail may cause some vehicle trips to be replaced by bicycle trips, reducing ambient noise in the project vicinity. The trail may induce some additional vehicle trips by trail users, but these trips would be distributed throughout the day, and small in number compared to existing vehicle travel. Maintenance of the trail would involve a small number of vehicle trips. Due to the additive properties of noise, traffic volumes would have to nearly double for a perceptible change in noise levels to occur. Any additional vehicle travel induced by the project would be small in comparison to existing traffic on I-80 and Sonoma Boulevard, and would not substantially increase ambient noise levels. Operation of the project would not substantially increase long-term noise levels in the surrounding

area or result in the exceedance of existing noise level thresholds, and noise impacts from operations would be ***less than significant***.

b. Groundborne Vibration and Noise – *No Impact*. Groundborne vibration or groundborne noise levels can be an impact when there is major construction within 25 feet of any building or 100 feet of a historic building.[41,42] The project would not involve pile driving, and major construction would not occur within 25 feet of any building or 100 feet of a historic building. There would be ***no impact*** from ground-borne noise or vibration.

c. Airport Noise – *No Impact*. The project site would not be located within an area covered by an airport land use plan or within two miles of a public or public use airport. Development on the site would not expose people working or residing in the project area to excessive airport noise levels and ***no impact*** would occur.

[41] Caltrans, *Transportation Related Earthborne Vibrations*, prepared by the Division of Environmental Analysis, Office of Noise, Air Quality, and Hazardous Waste Management, 2002.

[42] *Caltrans, Transportation- and Construction-Induced Vibration Guidance Manual, Prepared by Jones & Stokes, 2004.*

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – 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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Background:

The proposed project would construct approximately 1.97 miles of trail, connecting three existing regional trails, which would be consistent with the site's zoning and General Plan designations. No residences, commercial facilities, roads, or other infrastructure would be constructed as part of this project.

Discussion:

a. Population Growth - ***Less than Significant Impact***. The project vicinity is a mostly developed residential and commercial area, already served by roads and other infrastructure, including I-80. No residential units are proposed as part of the project, and the project would not introduce substantial unplanned population growth to the area. The project would generate temporary construction jobs, but no permanent employment. The number of temporary new construction jobs on the project site would be small relative to the current number of unemployed residents within commuting distance of the project site. For these reasons, the project's effect on growth inducement would be ***less than significant***.

b. Displace Housing or People – ***No Impact***. The project site contains no housing, and the proposed project would not displace any housing or people. There would be ***no impact.***

XV. 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? 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?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☐	☒

Background:

Fire Protection: Fire protection services for the project site are provided by the Vallejo Fire Department (VFD). The Vallejo Fire Department currently has six open fire stations, located strategically throughout the city.[43] Stations 22, 23, 24, 25 and 27 are each staffed with three firefighters (Fire Captain, Engineer and a Paramedic) on an Engine. Station 21 is staffed with three firefighters on a 110-foot Ladder Truck, and the Battalion Chief. Fire crews perform fire suppression, emergency medical calls, rescues, hazard mitigation, vehicle accidents and other calls as needed. The station closest to the project site is Station 22 at 700 Fifth Street, approximately 3/4 mile from the northern end of the project site.

Police Protection: Police protection services for the project site are provided by the Vallejo Police Department (VPD), which is headquartered at 111 Amador Street. The VPD headquarters is located approximately 1.5 miles north of the project site.

Schools: The schools closest to the project site are the California State University Maritime Academy, located approximately 750 feet west of the proposed trail alignment; Grace Patterson Elementary School, located at 1080 Porter Street, approximately 1,000 feet northwest of the project site, and the Vallejo Regional Education Center (formerly

[43] *City of Vallejo Fire Department website, http://www.ci.vallejo.ca.us/city_hall/departments___divisions/fire/stations___divisions/stations/, accessed 15 February 2018.*

Vallejo Adult School), located at 436 Del Sur Street, approximately 1,500 feet northeast of the project site.

Parks: The Greater Vallejo Recreation District (GVDR) operates 20 Neighborhood Parks, four Community Parks, and four Special Purpose Parks, located throughout the city.[44] The parks nearest the project site are Beverly Hills Park, an 11-acre Neighborhood Park located at Del Sur Street, approximately 1,500 feet northeast of the project site; Glen Cove School Park, a four-acre Neighborhood Park located at 501 Glen Cove Parkway, approximately 3/4 mile feet east of the project site; and Glen Cove Nature Area, a 15-acre Neighborhood Park located on Whitesides Drive off Regatta Drive, approximately 1/2 mile east of the project site.

Discussion:

i) Fire Protection -- *Less than Significant Impact*. The trail project would be located within the urban limits of Vallejo in the existing service area of the VFD. The project would not add residents or employees, or new types of activities that could require substantial additional fire protection, to Vallejo. The project would not preclude the VFD from meeting its service goals. The VFD would be able to continue to provide fire protection to the site and would not be required to construct new facilities or physically alter existing stations to serve the site. Impacts on fire protection would be ***less-than-significant***.

ii) Police Protection -- *Less than Significant Impact*. The trail project would be located within the urban limits of Vallejo in the existing service area of the VPD. The project would not add residents or employees, or new types of activities that could require substantial additional police protection, to Vallejo. The project is not expected to substantially affect the Police Department's ability to provide service, or require construction of new or physically altered facilities to serve the project site. Impacts on police protection would be ***less-than-significant***.

iii) Schools -- *No Impact*. The trail project would not add residents or employees to Vallejo, and therefore would not result in the need for new schools, require the construction of new school facilities, or compromise the service level of the school districts. For these reasons, the project would have ***no impact*** on schools.

iv) Parks -- *Less than Significant Impact.* The proposed project would not add residents or employees to Vallejo. The trail project would construct a pedestrian and bicycle trail that connects three existing regional trails adjacent to the project site, providing an additional recreational amenity to the area. This could result in additional use of these trails, but not at a level that would necessitate new or altered recreational facilities, or substantially increase maintenance requirements. For these reasons, the project's impact on parks would be ***less than significant***.

[44] *Greater Vallejo Recreation District website, http://www.gvrd.org/?page=Home, accessed 15 February 2018.*

v) Other public facilities -- *No Impact.* The proposed project would not add residents or employees to Vallejo, and would not affect other public facilities by increasing demand beyond anticipated levels. There would be ***no impact***.

XVI. 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?	☐	☐	☒	☐
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?	☐	☒	☐	☐

Discussion:

a. Increase Park Usage - ***Less than Significant Impact.*** The trail project would provide a new recreational amenity in Vallejo. As discussed under Section XV.a.iv, above, the project would construct a pedestrian and bicycle trail connection to three existing regional trails adjacent to the project site, which could generate additional use of these trails. However, this increase in use would not be at a level that would result in substantial or accelerated physical deterioration of these existing trails. No residential or commercial facilities are proposed as part of the project, and there would be no increase Vallejo's population or demand for parks. For these reasons, the impact on parks would be ***less than significant.***

b. Impact of Project Recreational Facilities - ***Less than Significant Impact With Mitigation.*** The project consists of a pedestrian and bicycle trail that would include connect to three existing regional trails. The project would not require the construction or expansion of other recreational facilities. With implementation of the mitigation measures identified in this Initial Study, the impacts of the proposed trail project on the environment would be reduced to a ***less than significant*** level.

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

Existing Road and Trail Network

Roads and highways in the project vicinity include I-80, which runs parallel to the proposed trail; Sonoma Boulevard/SR 29, along which a portion of the trail would run, passing directly under I-80; and Sequoia Avenue and Lincoln Road East, at the northern end of the proposed trail. The north end of Maritime Academy Drive connects to the intersection of Sequoia Avenue and Sonoma Boulevard/SR 29.

Farther south on Maritime Academy Drive, the Carquinez Bridge Trail, a bicycle and pedestrian path, runs along the west side of I-80 and the Al Zampa Bridge (the western span of the Carquinez Bridge). The Carquinez Bridge Trail is part of the San Francisco Bay Trail and Bay Area Ridge Trail. East of the project site, the Bay Trail and Ridge Trail share the same alignment running eastward along the south-facing bluffs. The proposed project would connect these two existing segments of the Bay Trail/Ridge Trail. The eastern segment of the Bay Trail/Ridge Trail described above is also part of the planned Great California Delta Trail System.

a. Conflict With Transportation Plans and Policies – *No Impact.* The project would construct a pedestrian and bicycle trail, which would enhance alternative transportation in Vallejo. The project would not result in an increase in traffic that would conflict with applicable plans, ordinances or policies relating to effectiveness for the performance of the circulation system, taking into account all modes of transportation. There would be ***no adverse impact*** on transportation plans or policies from the project.

b. Vehicle Miles Traveled and Performance of Circulation System – *Less than Significant Impact.* CEQA Guidelines Section 15064.3(b), and the current version of the Initial Study checklist, which went into effect on December 28, 2018, stipulate vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts, replacing Level of Service (LOS), which was previously used in CEQA documents. Although local jurisdictions may choose to continue to use LOS until July 1, 2020, after that time VMT must be used. This Initial Study uses VMT in the evaluation of transportation impacts below. The proposed bicycle and pedestrian trail project would connect several existing regional trails (the San Francisco Bay Trail, the Bay Area Ridge Trail, and the California Delta Trail), and would also serve as a recreational trail on its own. By connecting with existing trails, the Vallejo Bluff Trail would encourage and enable commuting and travel by bicycle, and reduce net vehicle trips and vehicle miles traveled. As a recreational trail conveniently located in the urban area of Vallejo, the project would generate additional recreational trips. Some of these recreational trips would involve vehicle travel from users' homes to the trail. To the extent that these recreational trips replace trips to more distant trails, there would be a net reduction in vehicle miles traveled. New recreational trips involving vehicle travel would result in additional vehicle trips, but these would be distributed throughout the day and would be small in number compared to existing travel on the local road network. Overall, vehicle trips and vehicle miles traveled after construction of the project would be similar to, or less than, current conditions.

During project construction, approximately eight construction workers would commute to the project site at any one time, and, on a typical day, there would be several truck trips to deliver equipment and materials. This level of vehicle traffic during the construction period would not have a substantial effect on traffic volumes of performance of the circulation system.

The impact on existing traffic patterns and conditions would be ***less than significant***.

c. Transportation Hazards – *No Impact.* The proposed trail project would not alter existing roads and intersections in a manner that would substantially increase transportation hazards due to design features such as sharp curves or inadequate sight distance, or introduce new incompatible uses. Therefore would be ***no impact*** on transportation hazards from the project.

d. Emergency Access -- *Less than Significant Impact.* The proposed trail project would not block, or substantially alter, existing roads and intersections. The project would not add substantial additional traffic, or interfere with existing sight distances. There project's impact on emergency access would be ***less than significant***.

XVIII. 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, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Background

A cultural resources investigation for the project site included a search of the Native American Heritage Commission's Sacred Land Files, and contacts with two Native American individuals, identified by the Commission, who may know of cultural resources in the area or have specific concerns about the project.[45] This investigation identified no evidence of cultural resources or traditional properties of potential concern.

No Native American tribes traditionally and culturally affiliated with the project area have requested consultation pursuant to Public Resources Code Section 21080.3.1 (AB 52).

[45] Sunshine Psota, Holman & Associates, *Letter Report: Results of a Section 106 Archaeological Literature Search and Initial Native American Consultation for the Vallejo Bluff Trail—Bay Trail/Ridge Trail, Vallejo, Solano County, California,* prepared for TrailPeople, 13 April 2018.

There are no buildings on the project site.

a. Listed Cultural Resources – *No Impact.* As discussed in Section V. Cultural Resources, above, there are no historic structures on the project site. There would be ***no impact*** on historic structures that are listed or eligible for listing on the California or local registers of historic resources.

b. Significant Cultural Resources – *No Impact.* As discussed in Section V. Cultural Resources, above, there are no historic structures on the project site, and no evidence of prehistoric archaeological resources. No Native American tribes traditionally and culturally affiliated with the project area have requested consultation pursuant to Public Resources Code Section 21080.3.1. Therefore, the lead agency determines that there is no evidence of significant tribal cultural resources on the project site. There would be ***no impact*** on tribal cultural resources.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – 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?	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☒	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☒	☐	☐

Background:

The Vallejo Flood and Wastewater District provides wastewater collection and treatment to the greater Vallejo area. Wastewater is treated at the Ryder Street Treatment Plant, approximately one mile north of the project site. The Flood and Wastewater District also provides storm drainage. The City of Vallejo Water Department provides water service to residents and businesses in Vallejo, but there is no water service to the project site. Recology Vallejo provides residential and commercial garbage, recycling, and yard waste collection for Vallejo residents and businesses. There is electric power, natural gas, and telecommunications service to areas near the project site, but none to the site itself.

Discussion:

a. Water, Wastewater Treatment, Drainage, Electric Power, Natural Gas, and Telecommunications Facilities - *Less than Significant Impact with Mitigation.* During operation of the trail, there would be no irrigation of project landscaping, and no increase existing water demand. Construction of the trail would temporarily increase water use at the site, but not to a level that would require new or expanded water treatment facilities.

The project site currently generates no wastewater, and none would be generated by project operation. During the construction period, portable toilets would collect domestic sewage generated by construction workers, which would be disposed into the sewer system or at the Ryder Street Treatment Plant. The quantity of sewage would be very small compared to existing volumes at the Treatment Plant, and would be treated in accordance with the plant's existing NPDES permit. The sewage generated by the project would not exceed the wastewater treatment requirements of the San Francisco Regional Water Quality Control Board RWQCB, due to compliance with regulations, and would not exceed the capacity of the existing wastewater treatment facility, or require new or expanded wastewater treatment facilities.

The proposed project would add approximately 1.97 miles of 10-foot-wide trail, most of which would be paved, to the site. Runoff from the new paved trail would continue to drain to adjacent pervious areas or Carquinez Strait. As discussed in Section X.c.ii, above, the proposed project would increase the impervious surfaces on the site, which would increase volumes and flows to the existing system. The increase in imperious surface, and the associated increase in stormwater volumes and flows, would not be substantial. Nevertheless, this relatively small increase in stormwater could exceed the capacity of the existing stormwater drainage systems. Implementation of Mitigation Measure X-3, above, which requires drainage improvements, if necessary, to avoid exceedance of the capacity of the existing drainage system, would reduce the impact on stormwater drainage systems to a ***less-than-significant*** level.

The project would not require the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities.

In summary, impacts related to water, wastewater treatment, drainage, electric power, natural gas, and telecommunications facilities, with implementation of Mitigation Measure X-3, above, would be ***less than significant***.

b. Water Supplies - *Less than Significant Impact.* Operation of the trail would not involve irrigation of landscaping, and would not increase existing water demand. Construction of the trail would temporarily increase water use at the site, but not to a level that would require new or expanded water entitlements. The impact on water supplies would be ***less than significant***.

c. Wastewater Treatment Capacity - *Less than Significant Impact.* As discussed in Section XIX.a, above, the small quantity of sewage generated by the project would not exceed the capacity of the existing wastewater treatment facility, or require new or expanded wastewater treatment facilities. The impact on waterwater treatment capacity would be ***less than significant***.

d. Landfill Capacity – *Less than Significant with Mitigation.* The Potrero Hills Landfill serving the project site has a permitted capacity of 4,330 tons/day and a total permitted capacity of 83.1 million cubic yards. The landfill has an estimated life of 30 years.

Operation of the proposed trail project would generate a negligible amount of solid waste. Construction of the proposed project would generated a relatively small amount of solid waste in comparison to the total quantities disposed; however, landfill disposal capacity is a diminishing resource that is difficult and expensive to expand or develop at new sites. Project-generated construction waste would contribute to the exhaustion of the capacity of the Potrero Hills Landfill and/or other regional landfills. Furthermore, the City of Vallejo, as are all jurisdictions in California, is legally obligated to divert 50 percent of the waste stream from disposal. Project construction would have a ***potentially significant*** impact on landfill capacity and attainment of solid waste reduction goals. Implementation of Mitigation Measure XIX-1, below, would reduce impacts on landfill capacity and solid waste reduction goals to a ***less-than-significant*** level.

> ***Mitigation Measure XIX-1: Recycling Plan for Construction.*** Prior to the initiation of project construction, the project sponsor shall prepare a recycling plan to cover all phases of project construction. The recycling plan shall identify a strategy for handling all waste materials that will be generated during construction, in order to divert a minimum of 50 percent by weight. The project sponsor shall prepare a summary report of construction diversion.

e. Solid Waste Statutes and Regulations - *Less than Significant Impact with Mitigation.* The project site is served by Recology's waste and collection recycling services. Implementation of Mitigation Measure XIX-1, above, would reduce the impact on compliance with laws and regulations pertaining to management and reduction of solid waste to a ***less-than-significant*** level.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a, b, c, d. Very High Fire Hazard Severity Zones - ***No Impact***. Although most of the project site is undeveloped, it is surrounded by extensive developed areas and Carquinez Strait. There are no substantial areas of wildlands in the project vicinity. On or near the project site, the California Department of Forestry and Fire Protection (CAL FIRE) has not identified any Very High Fire Hazard Severity Zones in either the State Responsibility Area or the Local Responsibility Area. The proposed trail project would not exacerbate wildfire risks, interfere with emergency response or evacuation plans, require fire-related infrastructure, or expose people, directly or indirectly, to significant risks associated with wildfire. Therefore, ***no impact*** would result.

XXI. 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?	☐	☒	☐	☐
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)?	☐	☒	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion:

a) ***Less than Significant with Mitigation.*** As discussed in the Section IV. Biological Resources of this document, with the incorporation of mitigation measures, the project would not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. Mitigation measures have been included to reduce the impacts to biological resources and unidentified cultural resources to a ***less-than-significant*** level.

b) ***Less Than Significant with Mitigation.*** Cumulative impacts of the project and other planned, approved, or reasonably foreseeable projects have been assessed in this Initial Study. Based on information provided by City staff, there is one planned but not yet

constructed Caltrans project, replacement of the I-80 bridge over California State Route 29/Sonoma Boulevard. (As mentioned in Project Description, above, this project, which will include the section of the Vallejo Bluff Trail directly under the bridge, will precede the proposed Vallejo Bluff Trail Project.)

The proposed project would contribute incrementally to cumulative air pollutant emissions, traffic, and noise. Project-related air quality emissions would be below the BAAQMD significance thresholds for construction emissions, with implementation of Mitigation Measure III-1, and the project would not make cumulatively considerable contributions to the Bay Area's regional problems with ozone or particulate matter. Thus, by complying with the regional air quality plan, cumulative air quality emission impacts of the project would be less than significant.

The traffic analysis indicated that the project would not add substantial vehicle traffic or have a significant effect on congestion or performance of the circulation system. The project would not make a cumulatively considerable contribution to traffic impacts.

As a trail within an urbanized area, operation of the project would have a less-than-significant impact on increases in ambient noise levels in the project vicinity**.** Implementation of Mitigation Measure XIII-1 would reduce temporary construction noise impacts to a less-than-significant level**.** The project is not expected to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street and highway system. Therefore, project-related vehicle trips would not cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. The project would not result in cumulatively considerable noise impacts and, therefore, no significant cumulative noise impacts are expected.

In summary, with implementation of mitigation measures identified in this Initial Study, cumulative impacts of the proposed project would be ***less than significant.***

c) ***Less than Significant with Mitigation.*** As discussed in Section IX. Hazards and Hazardous Materials, the project would follow all laws and regulations involving the use and transport of hazardous materials and would not cause potential health risks to the public. Mitigation measures have been included to reduce the impacts of Hazards and Hazardous Materials to a ***less-than-significant*** level.

E. REPORT PREPARERS

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Persons Referenced:

Jomari Peterson, Administrative Analyst II – Special Projects Senior Planner, Planning & Development Services Department, City of Vallejo, Email Communication, 9 March 2018.

Appendix A: Mitigation Monitoring and Reporting Program (to be added to Final IS)

Appendix B: Air Quality: CalEEMod Annual

Vallejo Bluff Trail

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.19	Acre	1.19	51,836.40	0
Other Non-Asphalt Surfaces	6.56	Acre	6.56	285,753.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vallejo Bluff Trail - San Francisco Bay Area Air Basin, Annual

Project Characteristics -

Land Use - 8.46 total acres, 1.9 acres paved

Construction Phase - 20 days prep, 40 days excavation and grade, 60 days pave and prepare trail, 80 days construct bridges

Off-road Equipment - Prep: 2 dozers, 2 backhoes

Off-road Equipment - Grade/Excavate: 1 excavator, 1 grader 1 dozer, 2 loader/backhoes, 1 skid steer loader

Off-road Equipment - Bridge Construction: 1 crane, 1 gen set, 2 loader/backhoes, 2 forklifts

Off-road Equipment - Trail Prep and Pave: 2 pavers, 1 paving equipment, 2 rollers, 2 compactors

Trips and VMT - 10 trips prep, 18 trips grade, 18 trips pave, 50 trips bridge construction

Construction Off-road Equipment Mitigation -

Vallejo Bluff Trail - San Francisco Bay Area Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	80.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	5/27/2019	12/14/2018
tblConstructionPhase	PhaseEndDate	7/9/2018	8/24/2018
tblConstructionPhase	PhaseEndDate	6/24/2019	11/16/2018
tblConstructionPhase	PhaseEndDate	6/11/2018	6/25/2018
tblConstructionPhase	PhaseStartDate	7/10/2018	8/25/2018
tblConstructionPhase	PhaseStartDate	6/12/2018	6/30/2018
tblConstructionPhase	PhaseStartDate	5/28/2019	8/25/2018
tblGrading	AcresOfGrading	20.00	10.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblTripsAndVMT	VendorTripNumber	55.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00

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					
2018	0.2338	2.0337	1.4972	2.6800e-003	0.2994	0.1137	0.4131	0.1472	0.1058	0.2530	0.0000	239.9114	239.9114	0.0537	0.0000	241.2526
Maximum	**0.2338**	**2.0337**	**1.4972**	**2.6800e-003**	**0.2994**	**0.1137**	**0.4131**	**0.1472**	**0.1058**	**0.2530**	**0.0000**	**239.9114**	**239.9114**	**0.0537**	**0.0000**	**241.2526**

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					
2018	0.2338	2.0337	1.4972	2.6800e-003	0.1493	0.1137	0.2629	0.0660	0.1058	0.1719	0.0000	239.9112	239.9112	0.0537	0.0000	241.2524
Maximum	**0.2338**	**2.0337**	**1.4972**	**2.6800e-003**	**0.1493**	**0.1137**	**0.2629**	**0.0660**	**0.1058**	**0.1719**	**0.0000**	**239.9112**	**239.9112**	**0.0537**	**0.0000**	**241.2524**

	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**	**50.15**	**0.00**	**36.36**	**55.12**	**0.00**	**32.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-1-2018**	**7-31-2018**	0.7123	0.7123
2	**8-1-2018**	**9-30-2018**	0.7427	0.7427
		Highest	0.7427	0.7427

2.2 Overall Operational

Unmitigated Operational

	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	tons/yr										MT/yr					
Area	0.0336	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	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
Mobile	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	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0336**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

2.2 Overall Operational

Mitigated Operational

	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	tons/yr										MT/yr					
Area	0.0336	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	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
Mobile	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	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0336**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

	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**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Vallejo Bluff Trail - San Francisco Bay Area Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/29/2018	6/25/2018	5	20	
2	Grading	Grading	6/30/2018	8/24/2018	5	40	
3	Building Construction	Building Construction	8/25/2018	12/14/2018	5	80	
4	Paving	Paving	8/25/2018	11/16/2018	5	60	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 7.75

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Skid Steer Loaders	1	8.00	65	0.37
Paving	Plate Compactors	2	8.00	8	0.43
Grading	Excavators	1	4.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	4.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	1	4.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

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
Building Construction	7	142.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2018

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	tons/yr										MT/yr					
Fugitive Dust					0.1204	0.0000	0.1204	0.0662	0.0000	0.0662	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.3038	0.1343	2.3000e-004		0.0159	0.0159		0.0147	0.0147	0.0000	21.2816	21.2816	6.6300e-003	0.0000	21.4473
Total	**0.0286**	**0.3038**	**0.1343**	**2.3000e-004**	**0.1204**	**0.0159**	**0.1364**	**0.0662**	**0.0147**	**0.0809**	**0.0000**	**21.2816**	**21.2816**	**6.6300e-003**	**0.0000**	**21.4473**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-004	3.1000e-004	3.0900e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7369	0.7369	2.0000e-005	0.0000	0.7374
Total	**4.0000e-004**	**3.1000e-004**	**3.0900e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7369**	**0.7369**	**2.0000e-005**	**0.0000**	**0.7374**

3.2 Site Preparation - 2018

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	tons/yr										MT/yr					
Fugitive Dust					0.0470	0.0000	0.0470	0.0258	0.0000	0.0258	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.3038	0.1343	2.3000e-004		0.0159	0.0159		0.0147	0.0147	0.0000	21.2816	21.2816	6.6300e-003	0.0000	21.4472
Total	**0.0286**	**0.3038**	**0.1343**	**2.3000e-004**	**0.0470**	**0.0159**	**0.0629**	**0.0258**	**0.0147**	**0.0405**	**0.0000**	**21.2816**	**21.2816**	**6.6300e-003**	**0.0000**	**21.4472**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-004	3.1000e-004	3.0900e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7369	0.7369	2.0000e-005	0.0000	0.7374
Total	**4.0000e-004**	**3.1000e-004**	**3.0900e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7369**	**0.7369**	**2.0000e-005**	**0.0000**	**0.7374**

3.3 Grading - 2018

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	tons/yr										MT/yr					
Fugitive Dust					0.1257	0.0000	0.1257	0.0668	0.0000	0.0668	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.6067	0.3265	5.8000e-004		0.0307	0.0307		0.0283	0.0283	0.0000	53.2566	53.2566	0.0166	0.0000	53.6711
Total	**0.0544**	**0.6067**	**0.3265**	**5.8000e-004**	**0.1257**	**0.0307**	**0.1565**	**0.0668**	**0.0283**	**0.0950**	**0.0000**	**53.2566**	**53.2566**	**0.0166**	**0.0000**	**53.6711**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.4500e-003	1.1000e-003	0.0111	3.0000e-005	2.8400e-003	2.0000e-005	2.8600e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.6528	2.6528	8.0000e-005	0.0000	2.6547
Total	**1.4500e-003**	**1.1000e-003**	**0.0111**	**3.0000e-005**	**2.8400e-003**	**2.0000e-005**	**2.8600e-003**	**7.6000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.6528**	**2.6528**	**8.0000e-005**	**0.0000**	**2.6547**

3.3 Grading - 2018

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	tons/yr										MT/yr					
Fugitive Dust					0.0490	0.0000	0.0490	0.0260	0.0000	0.0260	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.6067	0.3265	5.8000e-004		0.0307	0.0307		0.0283	0.0283	0.0000	53.2566	53.2566	0.0166	0.0000	53.6711
Total	**0.0544**	**0.6067**	**0.3265**	**5.8000e-004**	**0.0490**	**0.0307**	**0.0798**	**0.0260**	**0.0283**	**0.0543**	**0.0000**	**53.2566**	**53.2566**	**0.0166**	**0.0000**	**53.6711**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.4500e-003	1.1000e-003	0.0111	3.0000e-005	2.8400e-003	2.0000e-005	2.8600e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.6528	2.6528	8.0000e-005	0.0000	2.6547
Total	**1.4500e-003**	**1.1000e-003**	**0.0111**	**3.0000e-005**	**2.8400e-003**	**2.0000e-005**	**2.8600e-003**	**7.6000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.6528**	**2.6528**	**8.0000e-005**	**0.0000**	**2.6547**

3.4 Building Construction - 2018

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	tons/yr										MT/yr					
Off-Road	0.0907	0.7806	0.5730	9.1000e-004		0.0485	0.0485		0.0458	0.0458	0.0000	79.5953	79.5953	0.0185	0.0000	80.0571
Total	**0.0907**	**0.7806**	**0.5730**	**9.1000e-004**		**0.0485**	**0.0485**		**0.0458**	**0.0458**	**0.0000**	**79.5953**	**79.5953**	**0.0185**	**0.0000**	**80.0571**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	2.1000e-004	5.3600e-003	1.4200e-003	1.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	8.0000e-005	4.0000e-005	1.2000e-004	0.0000	1.0612	1.0612	6.0000e-005	0.0000	1.0628
Worker	0.0228	0.0174	0.1755	4.6000e-004	0.0449	3.1000e-004	0.0452	0.0119	2.9000e-004	0.0122	0.0000	41.8547	41.8547	1.2400e-003	0.0000	41.8856
Total	**0.0230**	**0.0228**	**0.1769**	**4.7000e-004**	**0.0451**	**3.5000e-004**	**0.0455**	**0.0120**	**3.3000e-004**	**0.0124**	**0.0000**	**42.9159**	**42.9159**	**1.3000e-003**	**0.0000**	**42.9483**

3.4 Building Construction - 2018

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	tons/yr										MT/yr					
Off-Road	0.0907	0.7806	0.5730	9.1000e-004		0.0485	0.0485		0.0458	0.0458	0.0000	79.5952	79.5952	0.0185	0.0000	80.0570
Total	**0.0907**	**0.7806**	**0.5730**	**9.1000e-004**		**0.0485**	**0.0485**		**0.0458**	**0.0458**	**0.0000**	**79.5952**	**79.5952**	**0.0185**	**0.0000**	**80.0570**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	2.1000e-004	5.3600e-003	1.4200e-003	1.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	8.0000e-005	4.0000e-005	1.2000e-004	0.0000	1.0612	1.0612	6.0000e-005	0.0000	1.0628
Worker	0.0228	0.0174	0.1755	4.6000e-004	0.0449	3.1000e-004	0.0452	0.0119	2.9000e-004	0.0122	0.0000	41.8547	41.8547	1.2400e-003	0.0000	41.8856
Total	**0.0230**	**0.0228**	**0.1769**	**4.7000e-004**	**0.0451**	**3.5000e-004**	**0.0455**	**0.0120**	**3.3000e-004**	**0.0124**	**0.0000**	**42.9159**	**42.9159**	**1.3000e-003**	**0.0000**	**42.9483**

3.5 Paving - 2018

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	tons/yr										MT/yr					
Off-Road	0.0312	0.3128	0.2546	3.9000e-004		0.0181	0.0181		0.0167	0.0167	0.0000	34.6973	34.6973	0.0104	0.0000	34.9576
Paving	1.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0328**	**0.3128**	**0.2546**	**3.9000e-004**		**0.0181**	**0.0181**		**0.0167**	**0.0167**	**0.0000**	**34.6973**	**34.6973**	**0.0104**	**0.0000**	**34.9576**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	1.6000e-004	4.0200e-003	1.0700e-003	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	6.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.7959	0.7959	5.0000e-005	0.0000	0.7971
Worker	2.1700e-003	1.6600e-003	0.0167	4.0000e-005	4.2700e-003	3.0000e-005	4.3000e-003	1.1400e-003	3.0000e-005	1.1600e-003	0.0000	3.9791	3.9791	1.2000e-004	0.0000	3.9821
Total	**2.3300e-003**	**5.6800e-003**	**0.0178**	**5.0000e-005**	**4.4700e-003**	**6.0000e-005**	**4.5300e-003**	**1.2000e-003**	**6.0000e-005**	**1.2500e-003**	**0.0000**	**4.7751**	**4.7751**	**1.7000e-004**	**0.0000**	**4.7791**

3.5 Paving - 2018

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	tons/yr										MT/yr					
Off-Road	0.0312	0.3128	0.2546	3.9000e-004		0.0181	0.0181		0.0167	0.0167	0.0000	34.6973	34.6973	0.0104	0.0000	34.9576
Paving	1.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0328**	**0.3128**	**0.2546**	**3.9000e-004**		**0.0181**	**0.0181**		**0.0167**	**0.0167**	**0.0000**	**34.6973**	**34.6973**	**0.0104**	**0.0000**	**34.9576**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	1.6000e-004	4.0200e-003	1.0700e-003	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	6.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.7959	0.7959	5.0000e-005	0.0000	0.7971
Worker	2.1700e-003	1.6600e-003	0.0167	4.0000e-005	4.2700e-003	3.0000e-005	4.3000e-003	1.1400e-003	3.0000e-005	1.1600e-003	0.0000	3.9791	3.9791	1.2000e-004	0.0000	3.9821
Total	**2.3300e-003**	**5.6800e-003**	**0.0178**	**5.0000e-005**	**4.4700e-003**	**6.0000e-005**	**4.5300e-003**	**1.2000e-003**	**6.0000e-005**	**1.2500e-003**	**0.0000**	**4.7751**	**4.7751**	**1.7000e-004**	**0.0000**	**4.7791**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	tons/yr										MT/yr					
Mitigated	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	0.0000	0.0000
Unmitigated	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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.570523	0.041853	0.194077	0.115893	0.018544	0.005373	0.016909	0.024079	0.002502	0.002562	0.005975	0.000872	0.000837
Other Non-Asphalt Surfaces	0.570523	0.041853	0.194077	0.115893	0.018544	0.005373	0.016909	0.024079	0.002502	0.002562	0.005975	0.000872	0.000837

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	tons/yr										MT/yr					
Mitigated	0.0336	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Unmitigated	0.0336	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0117					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0218					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0336**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

6.2 Area by SubCategory

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0117					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0218					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0336**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C: Air Quality: CalEEMod Daily

Vallejo Bluff Trail

San Francisco Bay Area Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.19	Acre	1.19	51,836.40	0
Other Non-Asphalt Surfaces	6.56	Acre	6.56	285,753.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vallejo Bluff Trail - San Francisco Bay Area Air Basin, Summer

Project Characteristics -

Land Use - 8.46 total acres, 1.9 acres paved

Construction Phase - 20 days prep, 40 days excavation and grade, 60 days pave and prepare trail, 80 days construct bridges

Off-road Equipment - Prep: 2 dozers, 2 backhoes

Off-road Equipment - Grade/Excavate: 1 excavator, 1 grader 1 dozer, 2 loader/backhoes, 1 skid steer loader

Off-road Equipment - Bridge Construction: 1 crane, 1 gen set, 2 loader/backhoes, 2 forklifts

Off-road Equipment - Trail Prep and Pave: 2 pavers, 1 paving equipment, 2 rollers, 2 compactors

Trips and VMT - 10 trips prep, 18 trips grade, 18 trips pave, 50 trips bridge construction

Construction Off-road Equipment Mitigation -

Vallejo Bluff Trail - San Francisco Bay Area Air Basin, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	80.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	5/27/2019	12/14/2018
tblConstructionPhase	PhaseEndDate	7/9/2018	8/24/2018
tblConstructionPhase	PhaseEndDate	6/24/2019	11/16/2018
tblConstructionPhase	PhaseEndDate	6/11/2018	6/25/2018
tblConstructionPhase	PhaseStartDate	7/10/2018	8/25/2018
tblConstructionPhase	PhaseStartDate	6/12/2018	6/30/2018
tblConstructionPhase	PhaseStartDate	5/28/2019	8/25/2018
tblGrading	AcresOfGrading	20.00	10.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblTripsAndVMT	VendorTripNumber	55.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00

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					
2018	4.0459	30.6411	28.2385	0.0502	12.1263	1.8262	13.7206	6.6422	1.7118	8.1090	0.0000	4,925.1774	4,925.1774	0.9357	0.0000	4,948.5700
Maximum	**4.0459**	**30.6411**	**28.2385**	**0.0502**	**12.1263**	**1.8262**	**13.7206**	**6.6422**	**1.7118**	**8.1090**	**0.0000**	**4,925.1774**	**4,925.1774**	**0.9357**	**0.0000**	**4,948.5700**

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					
2018	4.0459	30.6411	28.2385	0.0502	4.7794	1.8262	6.3737	2.6038	1.7118	4.0705	0.0000	4,925.1774	4,925.1774	0.9357	0.0000	4,948.5700
Maximum	**4.0459**	**30.6411**	**28.2385**	**0.0502**	**4.7794**	**1.8262**	**6.3737**	**2.6038**	**1.7118**	**4.0705**	**0.0000**	**4,925.1774**	**4,925.1774**	**0.9357**	**0.0000**	**4,948.5700**

Vallejo Bluff Trail - San Francisco Bay Area Air Basin, Summer

	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	60.59	0.00	53.55	60.80	0.00	49.80	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	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					
Area	0.1840	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7000e-003	1.7000e-003	0.0000		1.8100e-003
Energy	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
Mobile	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
Total	**0.1840**	**1.0000e-005**	**8.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**0.0000**	**1.8100e-003**

Mitigated Operational

	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					
Area	0.1840	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7000e-003	1.7000e-003	0.0000		1.8100e-003
Energy	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
Mobile	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
Total	**0.1840**	**1.0000e-005**	**8.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**0.0000**	**1.8100e-003**

	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**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	Site Preparation	Site Preparation	5/29/2018	6/25/2018	5	20	
2	Grading	Grading	6/30/2018	8/24/2018	5	40	
3	Building Construction	Building Construction	8/25/2018	12/14/2018	5	80	
4	Paving	Paving	8/25/2018	11/16/2018	5	60	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 7.75

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Skid Steer Loaders	1	8.00	65	0.37
Paving	Plate Compactors	2	8.00	8	0.43
Grading	Excavators	1	4.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	4.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	1	4.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

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
Building Construction	7	142.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2018

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					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	2.8644	30.3794	13.4264	0.0233		1.5937	1.5937		1.4662	1.4662		2,345.8986	2,345.8986	0.7303		2,364.1564
Total	**2.8644**	**30.3794**	**13.4264**	**0.0233**	**12.0442**	**1.5937**	**13.6379**	**6.6205**	**1.4662**	**8.0867**		**2,345.8986**	**2,345.8986**	**0.7303**		**2,364.1564**

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	0.0421	0.0272	0.3350	8.8000e-004	0.0822	5.5000e-004	0.0827	0.0218	5.1000e-004	0.0223		87.3564	87.3564	2.5500e-003		87.4202
Total	**0.0421**	**0.0272**	**0.3350**	**8.8000e-004**	**0.0822**	**5.5000e-004**	**0.0827**	**0.0218**	**5.1000e-004**	**0.0223**		**87.3564**	**87.3564**	**2.5500e-003**		**87.4202**

3.2 Site Preparation - 2018

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					4.6972	0.0000	4.6972	2.5820	0.0000	2.5820			0.0000			0.0000
Off-Road	2.8644	30.3794	13.4264	0.0233		1.5937	1.5937		1.4662	1.4662	0.0000	2,345.8986	2,345.8986	0.7303		2,364.1564
Total	**2.8644**	**30.3794**	**13.4264**	**0.0233**	**4.6972**	**1.5937**	**6.2910**	**2.5820**	**1.4662**	**4.0482**	**0.0000**	**2,345.8986**	**2,345.8986**	**0.7303**		**2,364.1564**

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	0.0421	0.0272	0.3350	8.8000e-004	0.0822	5.5000e-004	0.0827	0.0218	5.1000e-004	0.0223		87.3564	87.3564	2.5500e-003		87.4202
Total	**0.0421**	**0.0272**	**0.3350**	**8.8000e-004**	**0.0822**	**5.5000e-004**	**0.0827**	**0.0218**	**5.1000e-004**	**0.0223**		**87.3564**	**87.3564**	**2.5500e-003**		**87.4202**

3.3 Grading - 2018

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					6.2872	0.0000	6.2872	3.3389	0.0000	3.3389			0.0000			0.0000
Off-Road	2.7199	30.3328	16.3257	0.0292		1.5353	1.5353		1.4125	1.4125		2,935.2689	2,935.2689	0.9138		2,958.1137
Total	**2.7199**	**30.3328**	**16.3257**	**0.0292**	**6.2872**	**1.5353**	**7.8225**	**3.3389**	**1.4125**	**4.7513**		**2,935.2689**	**2,935.2689**	**0.9138**		**2,958.1137**

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	0.0758	0.0490	0.6030	1.5800e-003	0.1479	1.0000e-003	0.1489	0.0392	9.2000e-004	0.0401		157.2415	157.2415	4.5900e-003		157.3563
Total	**0.0758**	**0.0490**	**0.6030**	**1.5800e-003**	**0.1479**	**1.0000e-003**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**157.2415**	**157.2415**	**4.5900e-003**		**157.3563**

3.3 Grading - 2018

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					2.4520	0.0000	2.4520	1.3022	0.0000	1.3022			0.0000			0.0000
Off-Road	2.7199	30.3328	16.3257	0.0292		1.5353	1.5353		1.4125	1.4125	0.0000	2,935.2689	2,935.2689	0.9138		2,958.1137
Total	**2.7199**	**30.3328**	**16.3257**	**0.0292**	**2.4520**	**1.5353**	**3.9873**	**1.3022**	**1.4125**	**2.7146**	**0.0000**	**2,935.2689**	**2,935.2689**	**0.9138**		**2,958.1137**

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	0.0758	0.0490	0.6030	1.5800e-003	0.1479	1.0000e-003	0.1489	0.0392	9.2000e-004	0.0401		157.2415	157.2415	4.5900e-003		157.3563
Total	**0.0758**	**0.0490**	**0.6030**	**1.5800e-003**	**0.1479**	**1.0000e-003**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**157.2415**	**157.2415**	**4.5900e-003**		**157.3563**

3.4 Building Construction - 2018

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	2.2685	19.5145	14.3246	0.0227		1.2112	1.2112		1.1444	1.1444		2,193.4686	2,193.4686	0.5091		2,206.1948
Total	**2.2685**	**19.5145**	**14.3246**	**0.0227**		**1.2112**	**1.2112**		**1.1444**	**1.1444**		**2,193.4686**	**2,193.4686**	**0.5091**		**2,206.1948**

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	5.1600e-003	0.1320	0.0334	2.8000e-004	6.7700e-003	1.0200e-003	7.7900e-003	1.9500e-003	9.8000e-004	2.9300e-003		29.5498	29.5498	1.6200e-003		29.5904
Worker	0.5982	0.3863	4.7574	0.0125	1.1665	7.8700e-003	1.1744	0.3094	7.2600e-003	0.3167		1,240.4607	1,240.4607	0.0362		1,241.3664
Total	**0.6034**	**0.5183**	**4.7908**	**0.0127**	**1.1733**	**8.8900e-003**	**1.1822**	**0.3114**	**8.2400e-003**	**0.3196**		**1,270.0105**	**1,270.0105**	**0.0379**		**1,270.9568**

3.4 Building Construction - 2018

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	2.2685	19.5145	14.3246	0.0227		1.2112	1.2112		1.1444	1.1444	0.0000	2,193.4686	2,193.4686	0.5091		2,206.1948
Total	**2.2685**	**19.5145**	**14.3246**	**0.0227**		**1.2112**	**1.2112**		**1.1444**	**1.1444**	**0.0000**	**2,193.4686**	**2,193.4686**	**0.5091**		**2,206.1948**

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	5.1600e-003	0.1320	0.0334	2.8000e-004	6.7700e-003	1.0200e-003	7.7900e-003	1.9500e-003	9.8000e-004	2.9300e-003		29.5498	29.5498	1.6200e-003		29.5904
Worker	0.5982	0.3863	4.7574	0.0125	1.1665	7.8700e-003	1.1744	0.3094	7.2600e-003	0.3167		1,240.4607	1,240.4607	0.0362		1,241.3664
Total	**0.6034**	**0.5183**	**4.7908**	**0.0127**	**1.1733**	**8.8900e-003**	**1.1822**	**0.3114**	**8.2400e-003**	**0.3196**		**1,270.0105**	**1,270.0105**	**0.0379**		**1,270.9568**

3.5 Paving - 2018

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	1.0411	10.4272	8.4867	0.0130		0.6041	0.6041		0.5574	0.5574		1,274.9071	1,274.9071	0.3826		1,284.4717
Paving	0.0520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0931**	**10.4272**	**8.4867**	**0.0130**		**0.6041**	**0.6041**		**0.5574**	**0.5574**		**1,274.9071**	**1,274.9071**	**0.3826**		**1,284.4717**

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	5.1600e-003	0.1320	0.0334	2.8000e-004	6.7700e-003	1.0200e-003	7.7900e-003	1.9500e-003	9.8000e-004	2.9300e-003		29.5498	29.5498	1.6200e-003		29.5904
Worker	0.0758	0.0490	0.6030	1.5800e-003	0.1479	1.0000e-003	0.1489	0.0392	9.2000e-004	0.0401		157.2415	157.2415	4.5900e-003		157.3563
Total	**0.0810**	**0.1810**	**0.6365**	**1.8600e-003**	**0.1546**	**2.0200e-003**	**0.1567**	**0.0412**	**1.9000e-003**	**0.0431**		**186.7913**	**186.7913**	**6.2100e-003**		**186.9467**

3.5 Paving - 2018

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	1.0411	10.4272	8.4867	0.0130		0.6041	0.6041		0.5574	0.5574	0.0000	1,274.9071	1,274.9071	0.3826		1,284.4717
Paving	0.0520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0931**	**10.4272**	**8.4867**	**0.0130**		**0.6041**	**0.6041**		**0.5574**	**0.5574**	**0.0000**	**1,274.9071**	**1,274.9071**	**0.3826**		**1,284.4717**

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	5.1600e-003	0.1320	0.0334	2.8000e-004	6.7700e-003	1.0200e-003	7.7900e-003	1.9500e-003	9.8000e-004	2.9300e-003		29.5498	29.5498	1.6200e-003		29.5904
Worker	0.0758	0.0490	0.6030	1.5800e-003	0.1479	1.0000e-003	0.1489	0.0392	9.2000e-004	0.0401		157.2415	157.2415	4.5900e-003		157.3563
Total	**0.0810**	**0.1810**	**0.6365**	**1.8600e-003**	**0.1546**	**2.0200e-003**	**0.1567**	**0.0412**	**1.9000e-003**	**0.0431**		**186.7913**	**186.7913**	**6.2100e-003**		**186.9467**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.570523	0.041853	0.194077	0.115893	0.018544	0.005373	0.016909	0.024079	0.002502	0.002562	0.005975	0.000872	0.000837
Other Non-Asphalt Surfaces	0.570523	0.041853	0.194077	0.115893	0.018544	0.005373	0.016909	0.024079	0.002502	0.002562	0.005975	0.000872	0.000837

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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					
Mitigated	0.1840	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7000e-003	1.7000e-003	0.0000		1.8100e-003
Unmitigated	0.1840	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7000e-003	1.7000e-003	0.0000		1.8100e-003

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0643					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7000e-003	1.7000e-003	0.0000		1.8100e-003
Total	**0.1840**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.7000e-003**	**1.7000e-003**	**0.0000**		**1.8100e-003**

6.2 Area by SubCategory

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0643					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7000e-003	1.7000e-003	0.0000		1.8100e-003
Total	**0.1840**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.7000e-003**	**1.7000e-003**	**0.0000**		**1.8100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix D: Air Quality: Aerscreen

AERSCREEN 11126 / AERMOD 1135 03/06/18
13:51:03

TITLE: Vallejo

********** AREA PARAMETERS **********

SOURCE EMISSION RATE: 0.605E-03 g/s 0.480E-02 lb/hr

AREA EMISSION RATE: 0.326E-06 g/(s-m2) 0.258E-05 lb/(hr-m2)
AREA HEIGHT: 3.05 meters 10.00 feet
AREA SOURCE LONG SIDE: 609.60 meters 2000.00 feet
AREA SOURCE SHORT SIDE: 3.05 meters 10.00 feet
INITIAL VERTICAL DIMENSION: 3.05 meters 10.00 feet
RURAL OR URBAN: URBAN
POPULATION: 40000

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** FLOW SECTOR ANALYSIS **********
25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

SECTOR	Zo SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	0.6957	0	300.0	WIN

* = worst case diagonal

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 249.8 / 310.9 (K)

MINIMUM WIND SPEED: 2.0 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR	MO	DY	JDY	HR
10	01	01	1	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-18.63	0.174	-9.000	0.020	-999.	167.	21.6	1.000	1.50	0.35	2.00

HT	REF TA	HT
10.0	249.8	2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR	MO	DY	JDY	HR
10	01	01	1	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-18.63	0.174	-9.000	0.020	-999.	167.	21.6	1.000	1.50	0.35	2.00

HT	REF TA	HT
10.0	249.8	2.0

********** AERSCREEN AUTOMATED DISTANCES **********

OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	0.6209	2525.00	0.6143E-02
25.00	0.6298	2550.00	0.6065E-02
50.00	0.6391	2575.00	0.5988E-02
75.00	0.6484	2600.00	0.5913E-02
100.00	0.6579	2625.00	0.5840E-02
125.00	0.6477	2650.00	0.5769E-02
150.00	0.6546	2675.00	0.5699E-02
175.00	0.6616	2700.00	0.5632E-02
200.00	0.6685	2725.00	0.5566E-02
225.00	0.6753	2750.00	0.5501E-02
250.00	0.6821	2775.00	0.5438E-02
275.00	0.6889	2800.00	0.5377E-02
300.00	0.6957	2825.00	0.5316E-02
325.00	0.3111	2850.00	0.5258E-02
350.00	0.2028	2875.00	0.5201E-02
375.00	0.1521	2900.00	0.5145E-02
400.00	0.1237	2925.00	0.5090E-02
425.00	0.1049	2950.00	0.5037E-02
450.00	0.8579E-01	2975.00	0.4984E-02
475.00	0.7725E-01	3000.00	0.4933E-02
500.00	0.7016E-01	3025.00	0.4884E-02
525.00	0.6419E-01	3050.00	0.4835E-02
550.00	0.5909E-01	3075.00	0.4787E-02
575.00	0.5469E-01	3100.00	0.4741E-02
600.00	0.5086E-01	3125.00	0.4695E-02
625.00	0.4749E-01	3150.00	0.4651E-02
650.00	0.4451E-01	3175.00	0.4607E-02
675.00	0.4185E-01	3200.00	0.4564E-02
700.00	0.3947E-01	3225.00	0.4523E-02
725.00	0.3732E-01	3250.00	0.4482E-02
750.00	0.3538E-01	3275.00	0.4442E-02

775.00	0.3361E-01	3300.00	0.4403E-02
800.00	0.3199E-01	3325.00	0.4364E-02
825.00	0.3051E-01	3350.00	0.4327E-02
850.00	0.2915E-01	3375.00	0.4290E-02
875.00	0.2789E-01	3400.00	0.4254E-02
900.00	0.2673E-01	3425.00	0.4219E-02
925.00	0.2565E-01	3450.00	0.4185E-02
950.00	0.2465E-01	3475.00	0.4151E-02
975.00	0.2364E-01	3500.00	0.4118E-02
1000.00	0.2278E-01	3525.00	0.4085E-02
1025.00	0.2198E-01	3550.00	0.4054E-02
1050.00	0.2122E-01	3575.00	0.4022E-02
1075.00	0.2051E-01	3600.00	0.3992E-02
1100.00	0.1984E-01	3625.00	0.3962E-02
1125.00	0.1920E-01	3650.00	0.3933E-02
1150.00	0.1860E-01	3675.00	0.3904E-02
1175.00	0.1802E-01	3700.00	0.3876E-02
1200.00	0.1748E-01	3725.00	0.3848E-02
1225.00	0.1697E-01	3750.00	0.3821E-02
1250.00	0.1648E-01	3775.00	0.3794E-02
1275.00	0.1602E-01	3800.00	0.3768E-02
1300.00	0.1558E-01	3825.00	0.3742E-02
1325.00	0.1516E-01	3850.00	0.3717E-02
1350.00	0.1476E-01	3875.00	0.3692E-02
1375.00	0.1438E-01	3900.00	0.3668E-02
1400.00	0.1401E-01	3925.00	0.3644E-02
1425.00	0.1366E-01	3950.00	0.3621E-02
1450.00	0.1333E-01	3975.00	0.3598E-02
1475.00	0.1301E-01	4000.00	0.3575E-02
1500.00	0.1270E-01	4025.00	0.3553E-02
1525.00	0.1241E-01	4050.00	0.3531E-02
1550.00	0.1213E-01	4075.00	0.3510E-02
1575.00	0.1186E-01	4100.00	0.3489E-02
1600.00	0.1159E-01	4125.00	0.3468E-02
1625.00	0.1134E-01	4150.00	0.3448E-02
1650.00	0.1110E-01	4175.00	0.3428E-02
1675.00	0.1087E-01	4200.00	0.3408E-02
1700.00	0.1065E-01	4225.00	0.3389E-02
1725.00	0.1043E-01	4250.00	0.3370E-02
1750.00	0.1022E-01	4275.00	0.3351E-02
1775.00	0.1002E-01	4300.00	0.3332E-02
1800.00	0.9696E-02	4325.00	0.3314E-02
1825.00	0.9515E-02	4350.00	0.3297E-02
1850.00	0.9340E-02	4375.00	0.3279E-02
1875.00	0.9170E-02	4400.00	0.3262E-02
1900.00	0.9006E-02	4425.00	0.3245E-02
1924.99	0.8847E-02	4450.00	0.3228E-02
1950.00	0.8692E-02	4475.00	0.3211E-02

1975.00	0.8543E-02	4500.00	0.3195E-02
2000.00	0.8398E-02	4525.00	0.3179E-02
2025.00	0.8257E-02	4550.00	0.3164E-02
2050.00	0.8120E-02	4575.00	0.3148E-02
2075.00	0.7988E-02	4600.00	0.3133E-02
2100.00	0.7859E-02	4625.00	0.3118E-02
2125.00	0.7734E-02	4650.00	0.3103E-02
2150.00	0.7613E-02	4675.00	0.3088E-02
2175.00	0.7495E-02	4700.00	0.3074E-02
2200.00	0.7380E-02	4725.00	0.3060E-02
2225.00	0.7269E-02	4750.00	0.3046E-02
2250.00	0.7161E-02	4775.00	0.3032E-02
2275.00	0.7055E-02	4800.00	0.3018E-02
2300.00	0.6953E-02	4825.00	0.3005E-02
2325.00	0.6853E-02	4850.00	0.2991E-02
2350.00	0.6756E-02	4875.00	0.2978E-02
2375.00	0.6661E-02	4900.00	0.2965E-02
2400.00	0.6569E-02	4925.00	0.2953E-02
2425.00	0.6480E-02	4950.00	0.2940E-02
2450.00	0.6392E-02	4975.00	0.2928E-02
2475.00	0.6307E-02	5000.00	0.2915E-02
2500.00	0.6224E-02		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.6970	0.6970	0.6970	0.6970	N/A

DISTANCE FROM SOURCE 305.00 meters

IMPACT AT THE AMBIENT BOUNDARY	0.6209	0.6209	0.6209	0.6209	N/A

DISTANCE FROM SOURCE 1.00 meters

Appendix E: Biology

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Benicia (3812212) OR Mare Island (3812213))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Accipiter cooperii Cooper's hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	300 300	113 S:1	0	1	0	0	0	0	0	1	1	0	0
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None Candidate Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	136 136	951 S:1	0	0	0	0	0	1	1	0	1	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	120 120	411 S:1	0	0	0	0	0	1	1	0	1	0	0
Aquila chrysaetos golden eagle	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	420 420	319 S:1	1	0	0	0	0	0	1	0	1	0	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	12 128	147 S:2	1	1	0	0	0	0	1	1	2	0	0
Blepharizonia plumosa big tarplant	G2 S2	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden		53 S:1	0	0	0	0	1	0	1	0	0	1	0
Bombus caliginosus obscure bumble bee	G4? S1S2	None None	IUCN_VU-Vulnerable	100 100	181 S:1	0	0	0	0	0	1	1	0	1	0	0
Bombus occidentalis western bumble bee	G2G3 S1	None None	USFS_S-Sensitive XERCES_IM-Imperiled	15 500	282 S:6	0	0	0	0	0	6	6	0	6	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Calochortus pulchellus Mt. Diablo fairy-lantern	G2 S2	None None	Rare Plant Rank - 1B.2	150 200	52 S:2	0	1	0	0	0	1	1	1	2	0	0
Centromadia parryi ssp. congdonii Congdon's tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	80 80	93 S:1	0	0	0	0	1	0	1	0	0	0	1
Chloropyron molle ssp. molle soft salty bird's-beak	G2T1 S1	Endangered Rare	Rare Plant Rank - 1B.2	0 5	27 S:5	0	2	1	0	2	0	3	2	3	1	1
Cicuta maculata var. bolanderi Bolander's water-hemlock	G5T4 S2	None None	Rare Plant Rank - 2B.1		17 S:2	0	0	0	0	0	2	2	0	2	0	0
Circus cyaneus northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	5 5	53 S:1	0	1	0	0	0	0	0	1	1	0	0
Coastal Brackish Marsh Coastal Brackish Marsh	G2 S2.1	None None			30 S:2	0	0	0	0	0	2	2	0	2	0	0
Coturnicops noveboracensis yellow rail	G4 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	200 200	45 S:1	0	0	0	0	0	1	1	0	1	0	0
Danaus plexippus pop. 1 monarch - California overwintering population	G4T2T3 S2S3	None None	USFS_S-Sensitive	10 140	380 S:3	1	1	0	0	0	1	1	2	3	0	0
Dirca occidentalis western leatherwood	G2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	300 500	71 S:3	0	0	1	0	0	2	0	3	3	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	10 10	174 S:1	0	1	0	0	0	0	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	100 180	1340 S:3	0	0	0	1	0	2	1	2	3	0	0
Eryngium jepsonii Jepson's coyote-thistle	G2 S2	None None	Rare Plant Rank - 1B.2	200 600	19 S:4	0	0	0	0	0	4	1	3	4	0	0
Falco peregrinus anatum American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern	200 200	56 S:1	1	0	0	0	0	0	1	0	1	0	0
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	10 10	82 S:1	0	0	0	0	1	0	1	0	0	1	0
Geothlypis trichas sinuosa saltmarsh common yellowthroat	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	4 10	112 S:4	1	2	0	0	0	1	2	2	4	0	0
Helianthella castanea Diablo helianthella	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	150 540	107 S:5	0	4	1	0	0	0	1	4	5	0	0
Hypomesus transpacificus Delta smelt	G1 S1	Threatened Endangered	AFS_TH-Threatened IUCN_EN-Endangered	0 0	27 S:2	0	1	0	0	0	1	0	2	2	0	0
Isocoma arguta Carquinez goldenbush	G1 S1	None None	Rare Plant Rank - 1B.1		14 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia conjugens Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	80 80	33 S:1	0	1	0	0	0	0	0	1	1	0	0
Laterallus jamaicensis coturniculus California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	0 12	303 S:8	1	4	0	0	0	3	4	4	8	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Lathyrus jepsonii var. jepsonii Delta tule pea	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_BerrySB-Berry Seed Bank SB_RSABG-Rancho Santa Ana Botanic Garden	1 7	131 S:5	0	1	0	1	0	3	3	2	5	0	0
Lilaeopsis masonii Mason's lilaeopsis	G2 S2	None Rare	Rare Plant Rank - 1B.1	0 5	197 S:6	1	2	2	0	0	1	4	2	6	0	0
Masticophis lateralis euryxanthus Alameda whipsnake	G4T2 S2	Threatened Threatened		450 450	163 S:1	0	1	0	0	0	0	0	1	1	0	0
Melospiza melodia maxillaris Suisun song sparrow	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	5 6	36 S:5	0	1	0	0	0	4	4	1	5	0	0
Melospiza melodia samuelis San Pablo song sparrow	G5T2 S2	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	4 100	41 S:5	0	3	0	0	0	2	4	1	5	0	0
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	G3 S3.2	None None		0 10	53 S:7	0	0	0	0	0	7	7	0	7	0	0
Nyctinomops macrotis big free-tailed bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_MH-Medium-High Priority	200 200	32 S:1	0	0	0	0	0	1	1	0	1	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	0 19	502 S:11	0	3	1	0	1	6	1	10	10	0	1
Pogonichthys macrolepidotus Sacramento splittail	GNR S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_EN-Endangered	2 2	15 S:1	0	0	1	0	0	0	0	1	1	0	0
Polygonum marinense Marin knotweed	G2Q S2	None None	Rare Plant Rank - 3.1	5 5	32 S:1	0	0	0	0	0	1	1	0	1	0	0
Rallus obsoletus obsoletus California Ridgway's rail	G5T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	0 30	98 S:8	1	5	1	0	0	1	5	3	8	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Rana draytonii California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	40 150	1473 S:5	1	2	0	0	0	2	0	5	5	0	0
Reithrodontomys raviventris salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	0 5	144 S:4	0	3	0	0	0	1	2	2	4	0	0
Senecio aphanactis chaparral ragwort	G3 S2	None None	Rare Plant Rank - 2B.2	200 200	82 S:1	0	0	0	0	0	1	1	0	1	0	0
Sorex ornatus sinuosus Suisun shrew	G5T1T2Q S1S2	None None	CDFW_SSC-Species of Special Concern	5 100	15 S:5	0	0	0	0	0	5	5	0	5	0	0
Spergularia macrotheca var. longistyla long-styled sand-spurrey	G5T2 S2	None None	Rare Plant Rank - 1B.2	200 200	22 S:1	0	0	0	0	0	1	1	0	1	0	0
Speyeria callippe callippe callippe silverspot butterfly	G5T1 S1	Endangered None	XERCES_CI-Critically Imperiled	657 719	12 S:2	0	0	0	0	0	2	0	2	2	0	0
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened	CDFW_SSC-Species of Special Concern	0 0	46 S:4	0	0	0	0	0	4	0	4	4	0	0
Symphyotrichum lentum Suisun Marsh aster	G2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	10 10	173 S:1	0	0	0	0	0	1	1	0	1	0	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2		49 S:1	0	0	0	0	0	1	1	0	1	0	0
Xanthocephalus xanthocephalus yellow-headed blackbird	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	100 100	13 S:1	0	0	0	0	0	1	1	0	1	0	0

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2018-SLI-2481
Event Code: 08ESMF00-2018-E-07165
Project Name: Vallejo Bluff Trail

June 21, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2018-SLI-2481

Event Code: 08ESMF00-2018-E-07165

Project Name: Vallejo Bluff Trail

Project Type: RECREATION CONSTRUCTION / MAINTENANCE

Project Description: Project consists of construction of Class 1 and Recreational Trail improvements from the intersection of Sequoia Avenue and Lincoln Road East, along the east side of 1-80 and southward to the existing trailhead at Clearview Drive in Vallejo, CA.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.07163875022968N122.22674577892786W

Counties: Solano, CA

Endangered Species Act Species

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Western Snowy Plover *Charadrius alexandrinus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5524	Threatened
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Callippe Silverspot Butterfly *Speyeria callippe callippe* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3779	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Crustaceans

NAME	STATUS
California Freshwater Shrimp *Syncaris pacifica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Contra Costa Goldfields *Lasthenia conjugens* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
Soft Bird's-beak *Cordylanthus mollis ssp. mollis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8541	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Plant Species Observed at Vallejo Bluff Trail Site

April 16, 2018

Scientific Name	Common Name	Native
Agave americana (planted)	American agave	no
Anthriscus caucalis	Bur chevril	no
Artemisia californica (planted)	California sagebrush	yes
Avena barbata	Slender wild oats	no
Avena fatua	Wild oats	no
Baccharis pilularis	Coyote brush	yes
Brachypodium distachyon	Purple false brome	no
Bromus diandrus	Ripgut brome	no
*Bromus madritensis**	Madrid brome	no
Calystegia purpurata ssp. *purpurata*	Morning glory	yes
Cardamine oligosperma	Bitter cress	no
Carduus pycnocephalus	Italian thistle	no
Centaurea melitensis	Tocalote	no
Cercis occidentalis (planted)	Western redbud	yes
Chlorogalum pomeridianum	Soap plant	yes
Cistus sp. (planted)	Rockrose	no
Convolvulus arvensis	Common bindweed	no
*Cortaderia jubata**	Pampass grass	no
Cotoneaster pannosus	Woolly cotoneaster	no
Cotoneaster lacteus	Milkflower cotoneaster	no
Cynara cardunculus	Wild artichoke	no
Elymus triticoides	Beardless wild rye	yes
Eriogonum fasciculatum (planted)	California buckwheat	yes
Eriogonum nudum	Naked buckwheat	yes
Erodium botrys	Big heron bill	no
Erodium cicutarium	Coastal heron bill	no
Erodium moschatum	Whitestem filaree	no
Escholzia californica	California poppy	yes
Eucalyptus globulus	Blye gum	no
Eucalyptus sideroxylon	Red ironbark	no
Festuca bromoides	Brome fescue	no
Festuca perennis	Italian wildrye	no
*Foeniculum vulgare**	Sweet fennel	no
Galium aparine	Common bedstraw	yes
Geranium dissectum	Cutleaf geranium	no
Geranium robertianum	Robert's geranium	no
*Hedera helix**	English ivy	no
Helminthotehca echioides	Prickly ox-tongue	no
Heteromeles arbutifolia	Toyon	yes
Hirschfeldia incana	Shortpod mustard	no

Hordeum murinum ssp. *leporinum*	Mediterranean barley	no
Hypochaeris glabra	Smooth cat's ears	no
Lactuca serriola	Prickly lettuce	no
Lactuca virosa	Poison wild lettuce	no
Ligustrum lucidum	Glossy privet	no
Lotus corniculatus	Bird's foot trefoil	no
Lupinus succulentus	Arroyo lupine	yes
Lysimachia arvensis	Scarlet pimpernel	no
Malva nicaeensis	Bull mallow	no
Marah fabaceus	Manroot	yes
Medicago polymorpha	California burclover	no
Melilotus indicus	Annual yellow sweetclover	no
Parentucellia viscosa	Yellow glandweed	no
Phalaris aquatica	Harding grass	no
Pinus canariensis	Canary pine	no
Pinus radiata	Monterey pine	no
Plantago lanceolata	English plantain	no
Poa annua	Annual bluegrass	no
Prunus cerasifera	Wild plum	no
Pseudognaphalium luteoalbum	Jersey cudweed	no
Pyracantha sp.	Pyracantha	no
Quercus agrifolia	Coast live oak	yes
*Rubus armeniacus**	Himalayan blackberry	no
Rumex acetosella	Sheep sorrel	no
Rumex crispus	Curly dock	no
Senecio vulgaris	Groundsel	no
Silybum marianum	Milk weed	no
Sinapis arvensis	Field mustard	no
Sisyrinchium bellum	Blue-eyed grass	yes
Sonchus oleraceus	Common sow thistle	no
Stellaria media	Chickweed	no
Stipa pulchra	Purple needle grass	yes
Toxicodendron diversilobum	Poison oak	yes
Tragopogon porrifolius	Oyster plant	no
Trifolium hirtum	Rose clover	no
Vicia sativa	Common vetch	no
Vicia villosa	Hairy vetch	no
Wyethia angustifolia	Narrow leaf mule ears	yes

Nomenclature according to Jepson eFlora

* Invasive weeds of high rating

Appendix F: Hydrology

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

BKF Reference: 20185044

June 8, 2018

Randy Anderson,
Principal
Trail People
919 First Street, Suite 1
Benicia, CA 94510

Subject: Hydrology and Water Quality along Proposed Vallejo Bluff Trail

Dear Mr. Anderson:

Existing Conditions

The project site is located mainly with Caltrans right of way on the east side of Interstate 80 (I-80) in the City of Vallejo, in Solano County. The terrain includes very steep cuts and hillsides, approximately 1.5:1 at the steepest cuts with 2:1 slopes being more frequent. Many of the larger cuts have benches to collect drainage and stabilize the hillside areas. With the exception of the man-made cuts and benches on the hillsides, the terrain is untouched and undeveloped. There are very limited drainage improvements to convey any storm water runoff. The project proposes to construct initially a 10 foot wide or 6-foot wide unpaved recreational trail that will span from Sequoia Avenue to Waterview Terrace (roughly 1.1 miles). The portion of the trail from Sequoia to the Highway 29 off-ramp from I-80 will be initially improved as a paved Class I trail which will be 10 feet wide with 2 feet shoulders on each side of the trail. The 80/29 Bridge Replacement Project being completed by Caltrans will include construction of a paved Class I trail through the undercrossing to connect west to Maritime Academy Drive. A second phase of the project will pave and widen or extend the unpaved recreational trail a total distance of approximately 1.5 miles to Clearview Drive (see Figure 1 – Project Extents).

a) Would the project violate any water quality standards or waste discharge requirements?

Less than significant impact with mitigation incorporated. Development activities associated with the proposed project could result in the discharge of pollutants and could impact the quality of receiving waters during construction activities and during the operational phase. Each phase is discussed separately on the pages that follow.

Construction Activities

Development activities would involve demolition, grading, construction, and paving. During these activities, there would be the potential for surface water runoff from construction sites to carry sediment and pollutants into stormwater drainage systems and local waterways.

Grading and the exposure of shallow soils related to grading could result in erosion and sedimentation. The accumulation of sediment could result in the blockage of flows, potentially causing increased localized ponding or flooding. Construction activities would require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues,

and other substances could be used during construction. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters.

Prior to grading activities, a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the requirements of the statewide Construction General Permit. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD). The SWPPP shall include the minimum BMPs required for the identified risk level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction or the Caltrans Stormwater Quality Handbook Construction Site Best Management Practices (BMPs) Manual.

The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate, depending on the project risk level, sampling of site effluent and receiving waters. A Qualified SWPPP Practitioner (QSP) shall be responsible for implementing the BMPs at the project site. The QSP shall also be responsible for performing all required monitoring, BMP inspection, maintenance and repair activities, and reporting.

Operational Phase

The development of new impervious surfaces on the project site could result in the discharge of associated pollutants. The proposed project shall incorporate site design measures and Low Impact Development design standards to the best ability feasible, including minimizing disturbed areas and impervious surfaces, infiltration, evapotranspiration, and/or bio-treatment of stormwater runoff.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the total groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which have permits have been granted)?

Less than significant impact. The project is located within the embankment of Interstate 80, and no visible groundwater is present. Existing residential developments surrounding the project acquire municipal water from the City of Vallejo Water District and thus do not require the use or wells. As a result, the proposed project would not substantially deplete groundwater supplies.

c) Would the project substantially alter the existing drainage pattern of the area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than significant impact with mitigation incorporated. Development of the proposed project would include construction activities that would expose soils and could potentially result in substantial erosion. As discussed previously, the State Water Resources Control Board adopted a NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). To obtain coverage under the Construction General Permit, a project applicant must submit various documents, including a Notice of Intent and a SWPPP. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation.

The purpose of the SWPPP is to identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges and to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity.

Since the project will replace undisturbed vegetated surface, there will be a net increase in the amount of impervious surface area. As such, the proposed project will result in alterations of the existing drainage of the area, although the path is design to reduce as much alterations as possible an increase in impervious surfacing will result in an increase of runoff. The shoulders along the path will be designed to dissipate the runoff flow and velocity. This will limit the alterations in the drainage pattern that will occur due to the project.

The Watershed Map in Figure 2 illustrates the 16 watersheds through which the project will pass. Table 1 quantifies the watershed areas and added impervious surface. Currently watersheds #1- #5 shed runoff by sheet and concentrated flows to State Route 29 and are contained into both the City of Vallejo (City) and the State of California's (State) drainage systems which ultimately then release into the Carquinez Straight. Watersheds #6-#15 likewise create runoff that enters the State's drainage system of slope benches, inlets, and culverts that outfall to the Carquinez Straight. Watershed #10's runoff collects into a detention basin and is assumed to enter the State's drainage system ultimately outfalling into the Carquinez Straight.

The project's intent is to maintain the drainage patterns of these above-mentioned watersheds as as much as possible while not increasing erosion and concentrated runoff from the new impervious areas along the project.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than significant impact. The project site contains existing storm drainage infrastructure serving State Route 29 and Interstate 80. The existing storm drainage infrastructure discharges runoff to connections with the City of Vallejo storm drainage system. The Project will increase the net amount of impervious runoff, however the increase in imperious surface per foot in relation to the surrounding terrain is relatively insignificant. As indicated in Table 1, the average addition of impervious surface in all the watersheds through which the trail passes is 3%, and the highest level of addition is 5.4%.

The project will utilize the existing drainage infrastructure available and will not create any new outfall locations into the receiving waters.

e) Would the project create or contribute runoff water which would exceed the capacity existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than significant impact. The project site contains existing storm drainage infrastructure consisting of catch basins and underground piping. The existing storm drainage infrastructure discharges runoff to connections with the City of Vallejo storm drainage system. This existing infrastructure will be utilized to serve the project. As such, the proposed project will increase volumes and flows to the existing system. An analysis will be completed to verify that the increase in runoff will not exceed the capacity of the stormwater drainage systems.

f) Would the project otherwise substantially degrade water quality?

Less than significant impact with mitigation incorporated. Development activities associated with the proposed project could result in the discharge of pollutants and could impact the quality of receiving waters during construction activities and during the operational phase. As discussed in Section a) above, the project will obtain coverage under the State's Construction General Permit and Phase II Small MS4 Permit. Compliance with these required permits would ensure that runoff during construction and operation of the project site does not substantially degrade water quality.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal flood hazard boundary or flood insurance rate map or other flood hazard delineation map?

No impact. The proposed project is located an average of 50 ft to 60 ft above Interstate 80 and does not include any housing or commercial building infrastructure. This condition precludes the possibility of placement of housing within a 100-year flood hazard area.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No impact. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 06095C0628G dated August 03, 2016 (see Figure 3), the site is located within Zone X, Areas of Minimal Flood Hazard. The proposed improvements are outside any area which would potentially impede or redirect 100-year flood flows.

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less than significant Impact. The City of Vallejo General Plan identifies the project site to be within the potential inundation area of Swanzy Reservoir Dam (see Figure 4). Phase 2 of the Project includes construction of a 40 foot bridge to over the area where water would run from Swanzy Dam Road to the Highway 29 off-ramp in the event of a dam failure. Per Sections g) and h) above, other parts of the Project are not within an area anticipated to be subject to significant flooding.

j) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of inundation by seiche, tsunami, or mudflow?

No Impact. The City of Vallejo General Plan does not identify the project site to be within an area with a significant risk tsumani, as it is not located along the coast.

Figure 1: Project Extents

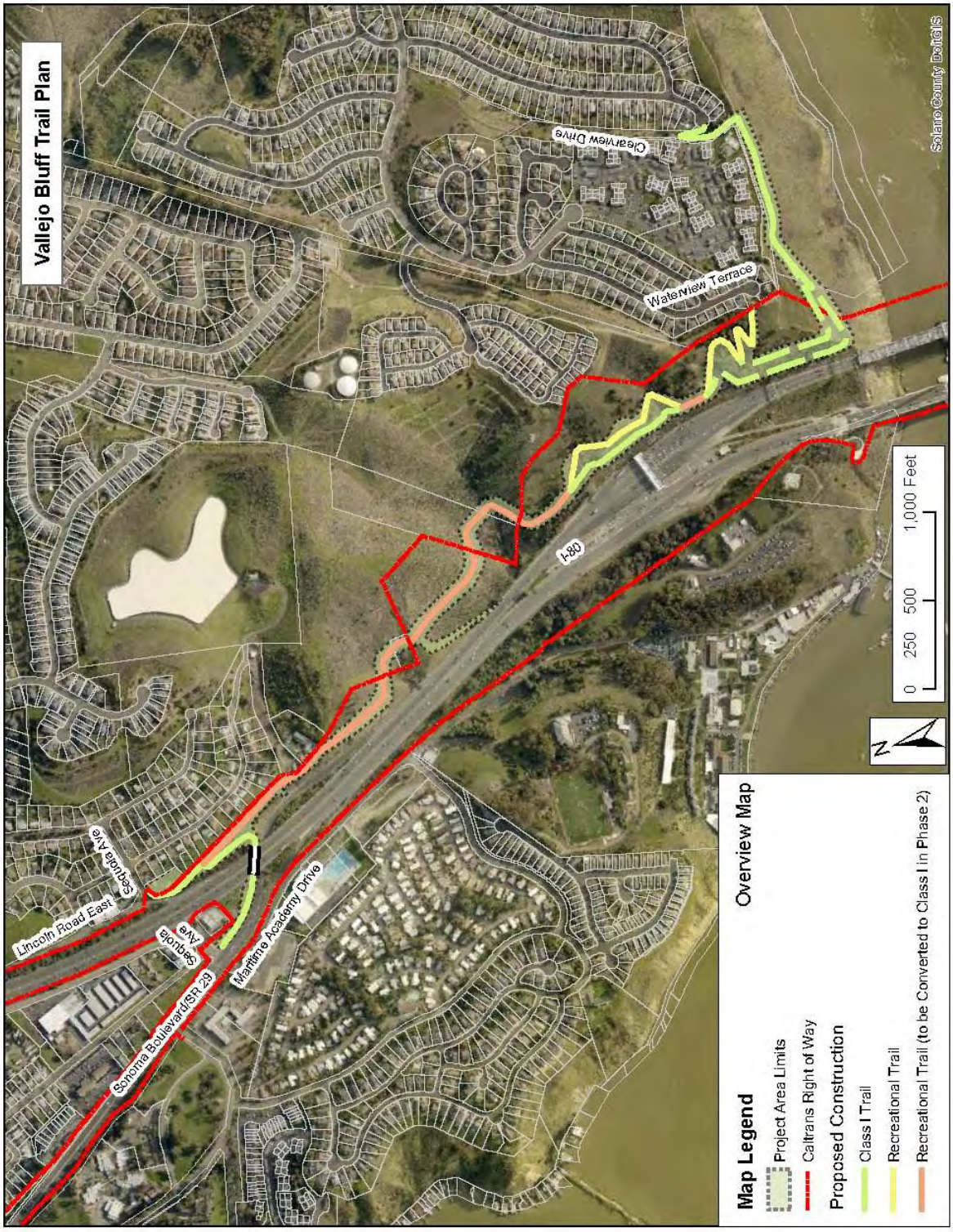

Figure 2: Watershed Areas

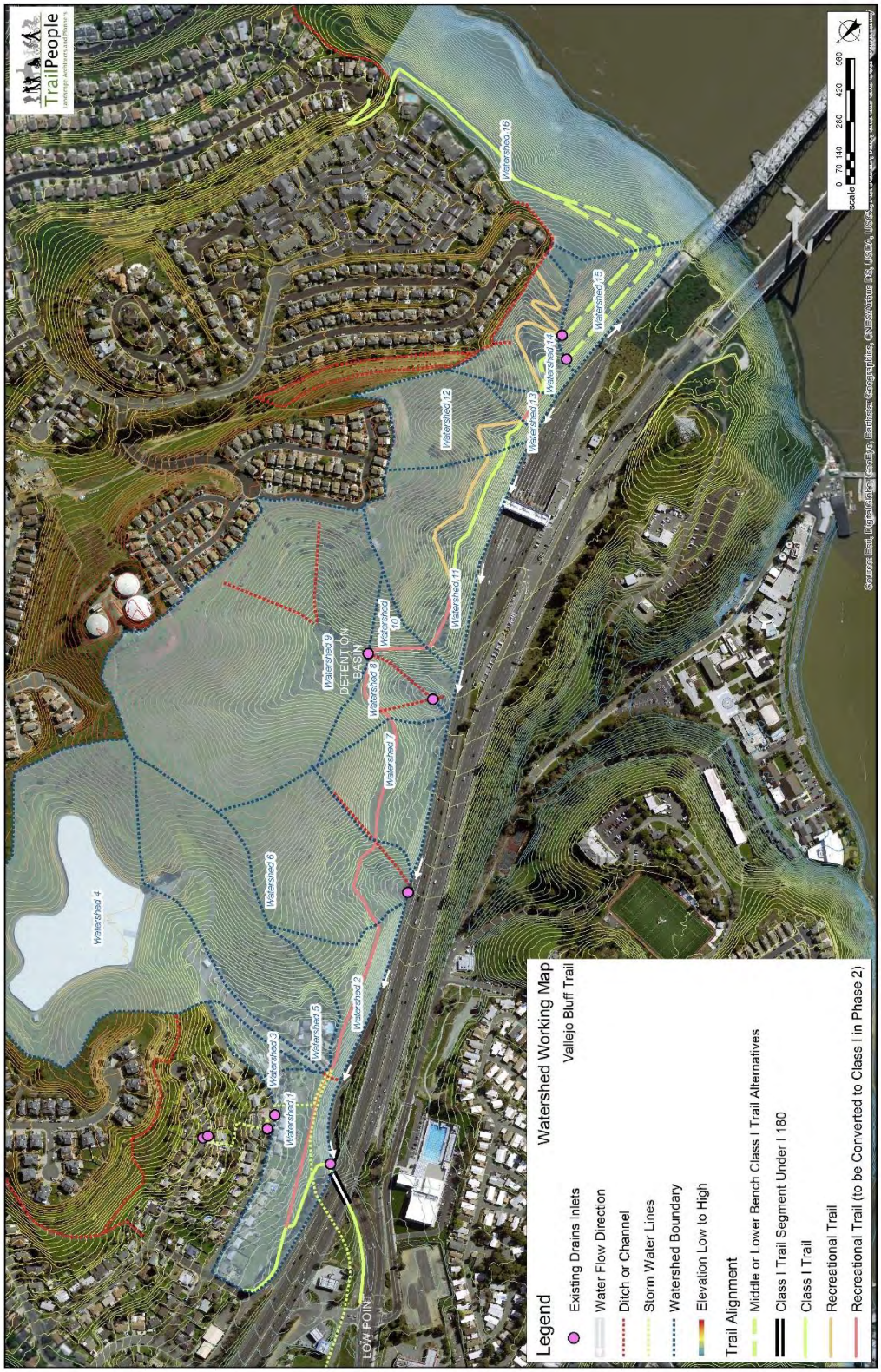

Table 1: Watershed Areas and Added Impervious Surface

Watershed Number	Area (sqft)	Phase I Rec Trail Pavement Area (sqft)	Phase I Rec Trail Pavement Area/ Watershed Area Ratio	Phase II Class I Trail Pavement Area (sqft)	Phase II Class I Trail Pavement Area/ Watershed Area Ratio	Notes
Watershed 1	274,012	7841	2.9%	14,814	5.4%	Drains to inlet on SR 29 ramp
Watershed 2	146,728	0	0.0%	7,224	4.9%	Drains to SR 29 and then to inlet on SR 29 ramp
Watershed 3	50,451	0	0.0%	0	0.0%	All drain to discharge point above trail; drains over side of highway embankment identified by Vallejo as potential erosion/drainage issue
Watershed 4	1,023,905	0	0.0%	0	0.0%	
Watershed 5	479,964	0	0.0%	0	0.0%	
Watershed 6	392,414	0	0.0%	4,428	1.1%	Drains to wetland and drain under I-80
Watershed 7	226,464	0	0.0%	5,618	2.5%	Drains to I-80 and then to above drain inlet
Watershed 8	107,368	0	0.0%	3,349	3.1%	Drains to inlet and under I-80
Watershed 9	1,115,279	0	0.0%	0	0.0%	Drains to detention dam and channel to inlet
Watershed 10	89,389	0	0.0%	2,575	2.9%	Drains to inlet and under I-80
Watershed 11	389,738	0	0.0%	9,815	2.5%	Drains to I-80 and then to above drain inlet
Watershed 12	214,677	0	0.0%	1,539	0.7%	Drains to I-80 and then to above drain inlet
Watershed 13	29,825	0	0.0%	1,515	5.1%	Drains to I-80 and then to above drain inlet
Watershed 14	166,638	0	0.0%	2,490	1.5%	Drains to I-80 and then to above drain inlet
Watershed 15	152,455	0	0.0%	6,779	4.4%	SF area is for lower bench alt. Drains to I-80 and then to Strait? Not clear if inlets on bench function.
Watershed 16	735,561	0	0.0%	14,855	2.0%	Drains to Carquinez Strait
Total SF of watersheds occupied bt trail	2,925,268			75,001	3%	Average % of added impervious surface

Figure 3: FEMA Flood Map

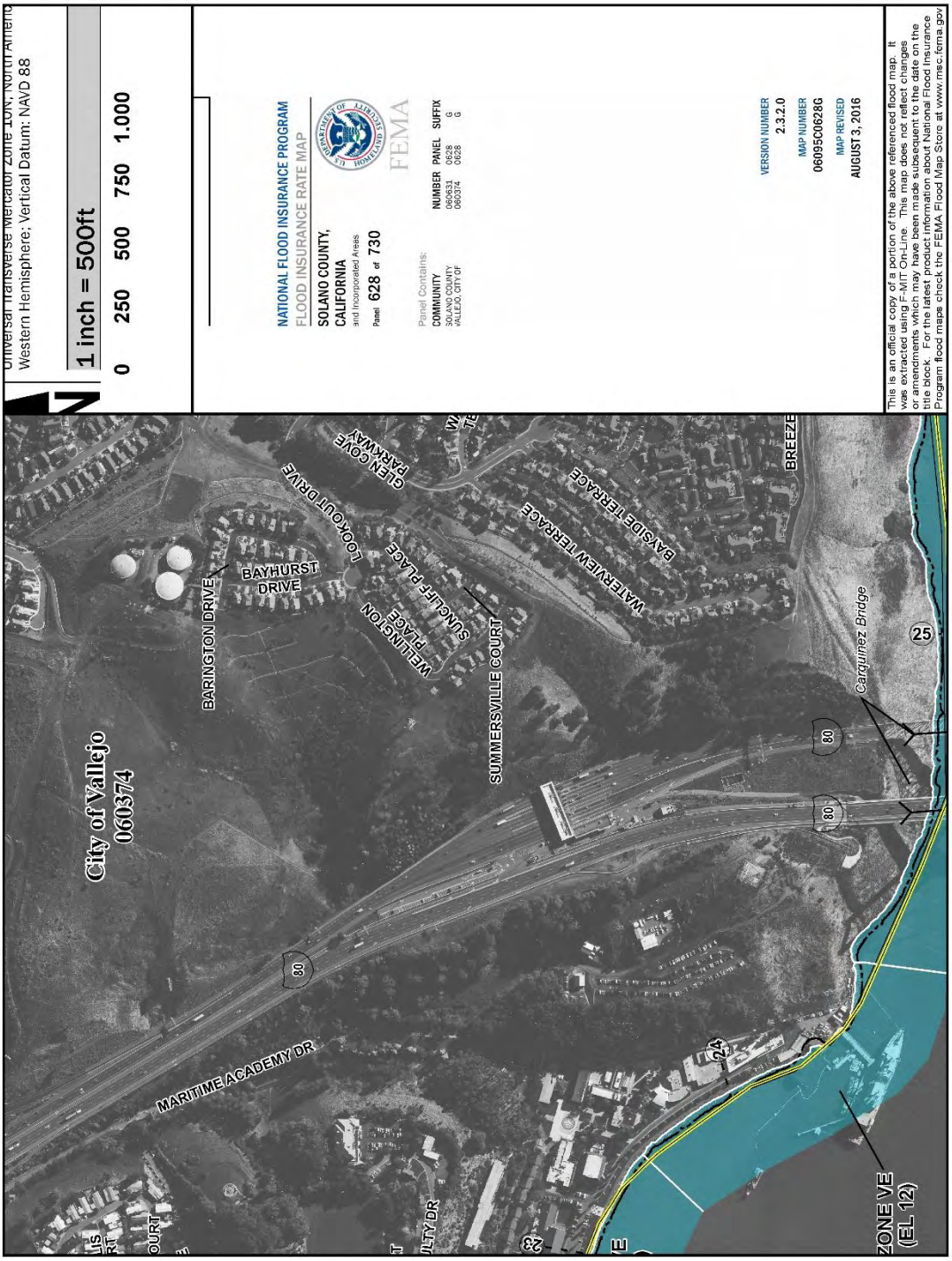

Figure 4: Vallejo Flood and Dam Inundation Areas Map