

**MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS
FLOOD CONTROL AND WATER CONSERVATION DISTRICT**

**DRAFT
SUBSEQUENT INITIAL STUDY /
MITIGATED NEGATIVE DECLARATION**

**NOVATO CREEK
FLOOD CONTROL DREDGING PROJECT**

APRIL 2016

Mr. Dave Nicholson
Marin County Department of Public Works
3501 Civic Center Drive, Room 304
San Rafael, California 94903

MITIGATED NEGATIVE DECLARATION

Marin County
Environmental Coordination and Review

Pursuant to Section 21000 et. seq. of the Public Resources Code and the Marin County Environmental Impact Review Guidelines and Procedures, a Mitigated Negative Declaration is hereby granted for the following project.

1. **Project Name:** Novato Creek Flood Control Dredging Project

2. **Location and Description:** The proposed project by the Marin County Flood Control and Water Conservation District (District) is in Flood Control Zone 1 and includes portions of Novato Creek, both east and west of US Highway 101 near San Pablo Bay (project area). In 2008, the District adopted an Initial Study/Mitigated Negative Declaration (IS/MND) for the overall Novato Dredge project, with an Addendum approved in 2012. In 2016 the proposed modifications to the project include only changes to the transport and placement of dredged material from Novato Creek; there are no proposed changes to the dredging aspect of the project along Novato Creek. The proposed changes described in the Subsequent Initial Study/Mitigated Negative Declaration (SIS/MND) include storage and reuse of dredged sediment to reconstruct an existing levee core, creation of a new eco-tone slope on the same levee, and sediment placement in a new thin layer of the Deer Island Flood Basin to adapt to sea level rise. The SIS/MND also conceptually evaluates the use of dredged material to support future alternatives as described in the Hydraulic Analysis of Alternatives for the Novato Creek Watershed Project (KHE 2016).

3. **Project Sponsor:** Marin County Flood Control and Water Conservation District

4. **Finding:** Based on the attached Subsequent Initial Study and without a public hearing, it is my judgment that:

 The project will not have a significant effect on the environment.

 The significant effects of the project noted in the Initial Study attached have been mitigated by modifications to the project so that the potential adverse effects are reduced to a point where no significant effects would occur.



Environmental Coordinator

Date: 4/20/16

Based on the attached Subsequent Initial Study and the comments received during the public review period, the Marin County Department of Public Works grants a Negative Declaration.

Raul Rojas Director
Marin County Department of Public Works

Date: _____

5. Mitigation Measures:

(Select one of the following statements)

- The Initial Study did not identify any potential adverse impacts and, therefore, the project does not require mitigation measures.
- Please refer to mitigation measures in the attached Subsequent Initial Study.
- The Initial Study concludes that the Department can modify the project's potential adverse impacts, as noted under the following factors in the attached Initial Study.

The Department of Public Works has incorporated into the project all of the mitigation measures described in the attached Subsequent Initial Study.

6. Preparation:

The Marin County Department of Public Works prepared this Mitigated Negative Declaration and interested parties may obtain copies at <http://www.marincounty.org/depts/cd/divisions/planning/environmental-review> or at the address listed below.

Dave Nicholson; Assistant Engineer
Marin County Department of Public Works
3501 Civic Center Drive, Room 304
San Rafael, CA 94903

Monday through Friday
8:30 a.m. to 4:30 p.m.
Telephone (415) 473-6535

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I. BACKGROUND

- A. Project Sponsor's Name and Address:** Marin County Flood Control and Water Conservation District
Flood Control Zone No. 1
3501 Civic Center Drive, Room 304
San Rafael, California 94903
- B. Lead Agency Name and Address:** Marin County
Department of Public Works
3501 Civic Center Drive, Room 304
San Rafael, California 94903
- C. Contact Person and Phone Number:** Mr. Dave Nicholson
Marin County Department of Public Work
3501 Civic Center Drive, Room 304
San Rafael, California 94903
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(415) 473-6535

II. PROJECT DESCRIPTION

- A. Project Title:** Novato Creek Flood Control Dredging Project
- B. Type of Application(s):** Routine Maintenance Dredging
- C. Project Location:** Novato Creek between Diablo Avenue at the Novato Fair Bridge, in downtown Novato, (just east of the railroad trestle), east of US Highway 101, Novato, Marin County, CA.
- D. General Plan Designation:** Flood Zone 1 District, OS Open Space
- E. Zoning:** Residential and Commercial, Publicly Owned Open Space Land; OS Open Space; PD Planned District
- F. Project Description:** The proposed project is described below

1. Introduction and Previous Environmental Review

Novato Creek is a perennial stream located at the northwestern extent of San Pablo Bay and is the main drainage of the Novato Creek Watershed. Portions of Novato Creek are managed by the Marin County Flood Control and Water Conservation District (District) as Flood Control Zone 1, which encompasses the City of Novato and surrounding unincorporated areas. Portions of the creek are regularly dredged and the District adopted an Initial Study Mitigated Negative Declaration (IS/MND) for the quadrennial dredging program in 2008, in compliance with the California Environmental Quality Act (CEQA). The 2008 IS/MND evaluated dredging of Novato Creek as well as specific storage, disposal and reuse locations for dredged material at five specific locations: Carneros River Ranch, Redwood Landfill, Gness Field, tops of existing levees along Novato Creek, and the Marsh Road site.

The 2008 IS/MND analyzed an application to remove an estimated 70,000 cubic yards (CY) of accumulated silt from the creek beds of Novato Creek, Warner Creek, and Arroyo Avichi approximately 20 miles north of San Francisco, California. On page one of the Initial Study project description, the project was stated, in error, to occur between June 2008 and September 2008; however, the project was intended to be ongoing, as was assumed in the environmental impact analysis of the original Negative Declaration. An Addendum to the 2008 IS/MND was adopted in 2012 in compliance with State CEQA Guidelines Section 15164(b) which states that an addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in State CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR or negative declaration have occurred. The Addendum clarified the ongoing nature of dredging within Novato Creek, and updated the description of the Gness Field spoils deposition site.

In 2012, Marin County Public Works implemented a comprehensive Watershed Program in the Novato watershed that analyzed the watershed from the baylands to the headwaters and developed a list of multi-benefit projects to improve both flood protection and habitat. Several short, medium and long-term projects were identified in the Novato Creek baylands (below Highway 101) as a result of this effort. Beneficial reuse of dredged material within Flood Control Zone 1 is instrumental to support the goals of the Watershed Program and to ultimately prepare for sea level rise impacts through restoration of large areas of former tidal marsh to full tidal conditions.

This Subsequent Initial Study (SIS) evaluates the changes to the transport and placement of dredged material from Novato Creek to support wetland restoration and flood control infrastructure that is consistent with *Hydraulic Analysis of Alternatives for the Novato Creek Watershed Project* document, henceforth referred to as Watershed Project Alternatives Study (KHE 2016). This study includes several specific flood-control infrastructure project elements. Additional, future specific projects seeking to incorporate the use of dredged material for wetland restoration or flood control may require separate analysis under CEQA at some later point in time. This initial study conceptually evaluates the use of dredged material to support those future projects in the lower Novato Creek watershed.

Specifically, this SIS addresses beneficial reuse of dredged material for flood control infrastructure and wetland restoration. This includes the construction of a new levee

and ecotone slope in the area of the Deer Island Flood Control Basin and beneficial reuse of dredged material for restoration of wetlands as foreseen in the Watershed Project Alternatives Study and the Novato Baylands Vision Plan developed by the San Francisco Estuary Institute as part of the Flood Control 2.0 Project funded by the U.S. Environmental Protection Agency. The potential use of “thin layer placement” of dredged material for wetland restoration and sea level rise adaptation is incorporated into this analysis, consistent with these guiding documents. Beneficial reuse of dredged material necessitates modified dredging material trucking routes that were not previously considered in the 2008 IS/MND and 2012 Addendum.

The environmental impacts reviewed in this Subsequent Initial Study are limited solely to new impacts resulting from changes to the project or changes in circumstances since approval of the 2008 IS/MND and the 2012 Addendum. Impacts analyzed in the 2008 IS/MND and the 2012 Addendum that do not require further analysis are included as Attachment 1 and incorporated into this analysis. Mitigation measures identified in either document are incorporated as existing measures in this SIS and are to be carried forward along with any new mitigation measures listed due to the proposed changes.

2. Site Location

Novato Creek originates at Stafford Lake and flows 17 miles east into San Pablo Bay near the mouth of the Petaluma River. Novato Creek, and its tributaries, drain an approximately 27,500-acre watershed. The upper creek flows through mostly low-density residential communities and flows into medium-density residential and commercial areas in the City of Novato before flowing into lower reaches surrounded by open spaces as it reaches San Francisco Bay (see Figure 1, Project Area Location Map.)

The Project Area is in and adjacent to Novato Creek near the intersection of Highway 101 and Highway 37. The upstream (western) extent of the project occurs in the area where Novato Creek intersects Highway 101, and is described in more detail in the 2008 IS/MND. The downstream (eastern) extent of the project is the focus of this Subsequent Initial Study, and includes lands located north of Novato Creek and east of the SMART train railway that are owned and/or operated by Marin County, including the areas that are part of the Novato Sanitary District. The full extent of the Project Area is shown in Figure 2 (Lower Sediment Reuse Area).

3. Existing Conditions

Aside from minor topographical changes arising from the permitted dredging episodes in 2008 and 2012, existing conditions within the project area are generally the same as those evaluated in the 2008 IS/MND.

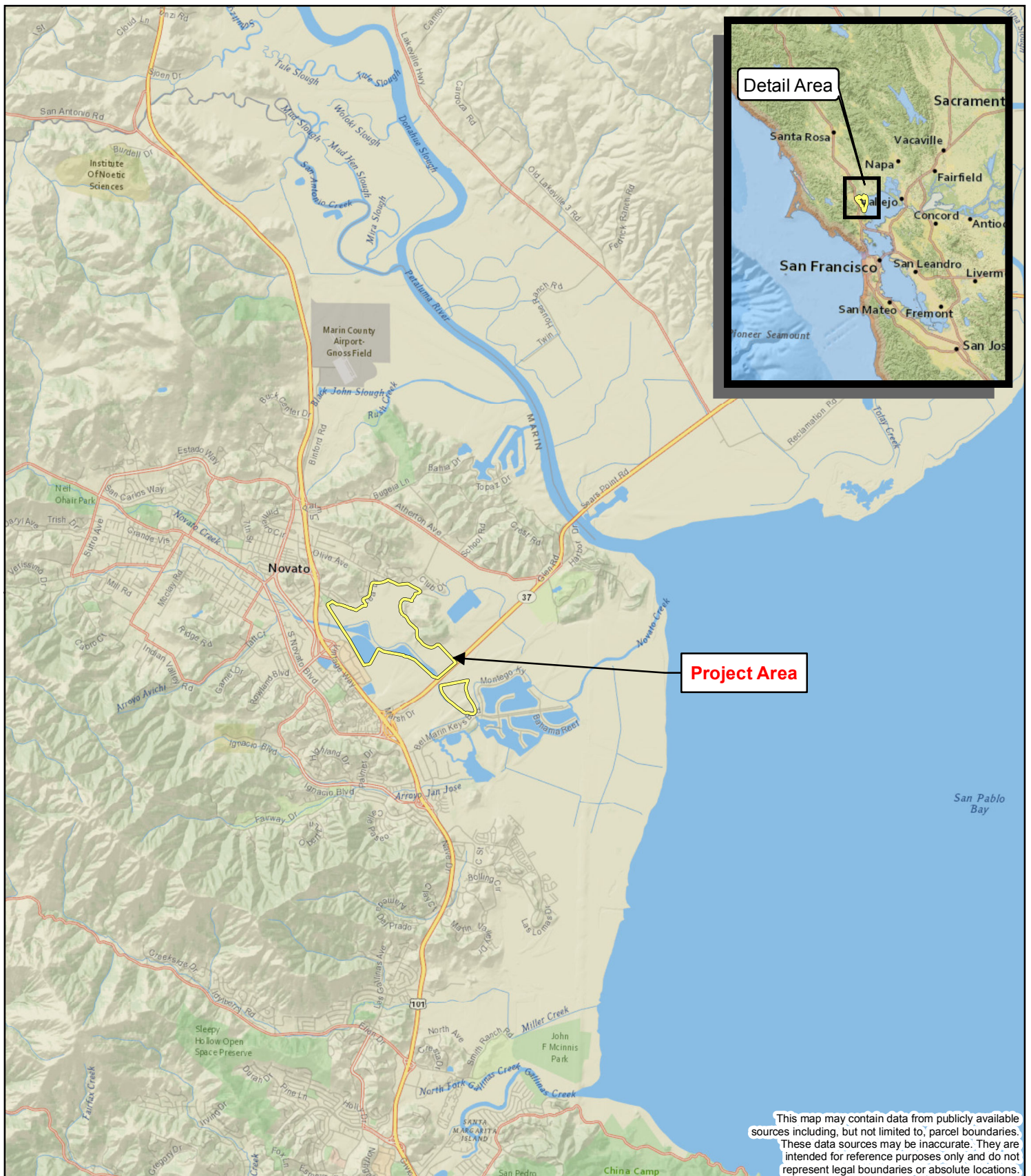
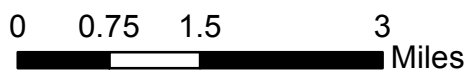


Figure 1. Project Area Location Map

Novato Creek Flood Control Dredging Project, Marin County, California



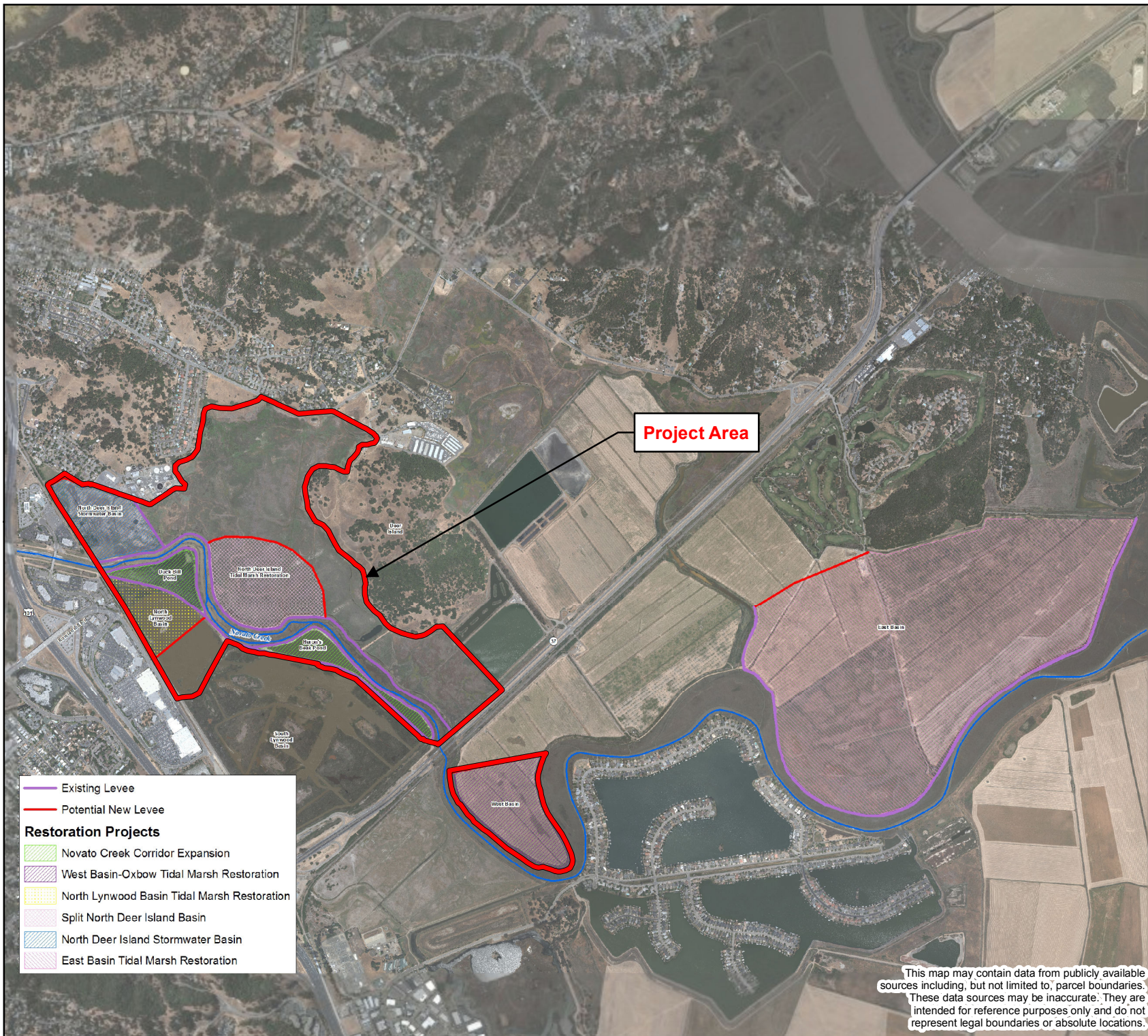
Map Prepared Date: 4/12/2016
 Map Prepared By: Fhourigan
 Base Source: Esri Streaming - National Geographic
 Data Source(s): WRA

Novato Creek
Flood Control
Dredging
Project

Marin County,
California

Figure 2.

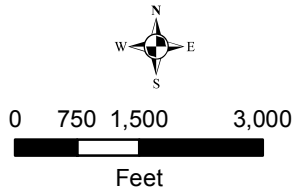
Lower Sediment
Reuse Area



— Existing Levee
— Potential New Levee

Restoration Projects

- Novato Creek Corridor Expansion
- West Basin-Oxbow Tidal Marsh Restoration
- North Lynwood Basin Tidal Marsh Restoration
- Split North Deer Island Basin
- North Deer Island Stormwater Basin
- East Basin Tidal Marsh Restoration



0 750 1,500 3,000
Feet

This map may contain data from publicly available sources including, but not limited to, parcel boundaries. These data sources may be inaccurate. They are intended for reference purposes only and do not represent legal boundaries or absolute locations.

Map Prepared Date: 4/14/2016
Map Prepared By: Fhourigan
Base Source: Esri Streaming - NAIP 2014
Data Source(s): WRA

4. Summary of New and Additional Project Elements

In addition to the dewatering and dredging discussed above and evaluated in the 2008 IS/MND and 2012 Addendum, the current project proposes to incorporate beneficial sediment reuse. Specific purposes for beneficial sediment reuse include:

- a. Deer Island Flood Basin Flood Control and Habitat Infrastructure, including:
 - i. A new levee structural core along the north border of Deer Island Flood Basin and east of the existing cross levee/truck access road.
 - ii. An ecotone slope placed along the existing cross levee/truck access road
 - iii. Temporary stockpiling of dredged material on the newly constructed structural core levee for future use to construct the subsequent lifts of the levee to achieve the final design elevation.
- b. Thin-layer placement of dredged material for future sea level rise adaptation, including a pilot project in the area of the Deer Island Flood Basin east of the cross levee/truck access road.
- c. Beneficial reuse of sediment to support restoration projects foreseen in the Watershed Alternative Study (KHE 2016).

Each of these foreseen end uses for dredged material is described in more detail below. This SIS evaluates the use of dredged material at these locations. Further project-specific CEQA analysis may be required for implementation of the projects described in the Watershed Alternatives Study.

a. Deer Island Flood Basin Flood Control and Habitat Infrastructure

i. New Structural Core Levee

The levee structural core consists of approximately 2,500 linear feet of new levee earthen construction (See Figures 3-5 Levee Location and Spoil Disposal Cross-Sections). To construct the new core levees, approximately 16,000 cubic yards of material from past dredges stored along the Lynwood levee and Gness Airfield will be trucked to the construction staging site located along the northern border of the Deer Island Basin (see Figures 6 and 7 Dredge-Truck Haul Routes). The strip of land where the levee structural core material will be placed is located within diked Baylands.

The new structural core levee, to be constructed in 2016 with material dredged from Novato Creek, will have a maximum elevation of 6.5-feet North American Vertical Datum 1988 (NAVD88). The existing cross levee/access road is currently at about 6.5-feet NAVD88. The addition of a structural core levee east of the existing cross levee/access road is planned to accommodate a wider base for a future final levee at a higher elevation in this location. The entire linear feet and earthen quantity for the new levee structural core includes this existing adjacent cross levee/access road. Dredged material from Novato Creek may be used in the future to supplement

material required for the final future levee elevation. This Subsequent Initial Study evaluates the use of beneficial reuse sediment for the construction of the new structural core levee; additional and future CEQA analysis may be required for the future, higher elevation levee and other potential supporting modifications to the Deer Island Flood Basin.

ii. Ecotone Levee Slope

The ecotone levee slope is part of the District's goal to restore the majority of the Deer Island Basin to a fully functional tidal marsh. The ecotone slope serves a dual purpose. First, it will allow for transgression of marsh habitats as sea level rises, while providing for flood protection of adjacent properties. Second, it provides valuable refugia habitat for aquatic species such as salt marsh harvest mouse and California black rail. The ecotone levee is consistent with the 2016 Watershed Alternatives Study. The Watershed Alternatives Study envisions future opening of diked Baylands to tidal action (as well as flood waters) and when this occurs marsh transition habitats such as the ecotone slope would be vital to protecting threatened and endangered species that inhabit the marshes.

Beneficial use of dredged sediments for the ecotone levee slope is a key aspect of SLR resiliency for the Novato Baylands. The ecotone levee would be constructed with low gradient side slopes facing the future tidal marsh. This would allow for development and transgression of high marshes to transitional habitats as the sea levels rise, as well as providing wildlife with high tide refugia. These slopes would not be integral to the structural integrity of the core levee(s). Therefore, the material content does not have to be as structurally suitable as the core levee material. Their grain size and moisture content is not as important and its placement need not be engineered. Ultimately these levees would have varying, non-uniform slopes from 7:1 to 30:1 (length : height).

2016 Habitat mapping of the levee locations confirms most of the area of the ecotone levee slope construction contains ruderal vegetation dominated by non-native vegetation (see Figure 8 Predominant Vegetation Map). It is anticipated that the existing vegetation would transition onto the newly-placed sediment material.

This Subsequent Initial Study evaluates the use of beneficial reuse sediment for the construction of the new ecotone slope levees; additional and future CEQA analysis may be required for other potential supporting modifications to the Deer Island Flood Basin.

iii. Temporary Material Stockpile

In order to reduce truck trips, the District is proposing to temporarily store dredged material on top of the newly constructed core levees. The material would be placed in a manner so as not to exceed an elevation of 3-feet above the new levee elevation (total 9.5 NAVD88) and would remain to dry in place until the water content is low enough for ease of movement and use.

The temporarily stored material would support future beneficial reuse activities for wetland restoration as well as provide supplemental material for the structural core levee.

This Subsequent Initial Study evaluates the temporary stockpiling of beneficial reuse sediment; additional and future CEQA analysis may be required for the future beneficial reuse activities that would utilize this stockpiled material.

b. Thin Layer Placement of Dredged Material

As sea level rises, marsh elevations in the Novato Creek Baylands may need to be raised to avoid excessive flooding, loss of habitat and conversion to mudflats following breaching to the tides. Thin layer placement of dredged material consists of applying a thin layer of dredged material over wetland areas to raise elevations to maintain wetland conditions and keep pace with sea level rise. Thin layer placement over the long term may be required to maintain restored wetlands and to keep pace with sea level rise. The District proposes to supply dredged sediment to support the thin layer placement program in the future as needed to support the Watershed Project Alternatives Study and to support marsh grades at suitable elevations for restoration to full tidal conditions.

In the near term, a feasibility study for a pilot project is proposed for thin layer placement that would evaluate the most cost-effective techniques for large-scale placement of sediments for thin layer placement. The pilot study is envisioned to occur prior to wetland restoration and tidal inundation, but would not raise grades to elevations that are higher than those that currently support wetlands. The pilot project would place several hundred to not more than a few thousand cubic yards of dredged sediments hydraulically east of the existing cross levee/access road, and allow the material to flow naturally in lifts to mimic natural sedimentation processes. Fill placement depths for the pilot project would not exceed 15 cm on average (up to approximately 20 cm in specific high points). Sediment is anticipated to be placed over a 3 to 5-acre area. However, the sediments may flow over a larger area depending on drainage patterns and sediment flow characteristics.

This Subsequent Initial Study evaluates the use of beneficial reuse sediment for thin layer placement over restored wetlands; additional and future CEQA analysis may be required for the future, pilot project anticipated to be developed from the results of the feasibility study.

c. Beneficial Sediment Reuse for Restoration and Flood Control

The Watershed Project Alternatives Study contains more specific alternatives for restoration and flood control as part of the Marin Watershed Program studies for Novato Creek. The Novato Creek Flood Control Dredging project proposes future beneficial reuse of sediments to construct flood control and restoration projects on properties adjacent to Novato Creek that are owned by Marin County and within the boundaries of Flood Control District No 1. This Subsequent Initial Study conceptually covers the proposed use of dredged sediment to support these future projects. This

analysis does not evaluate the potential impacts of those future restoration projects. The scope of those future restoration projects will be developed under future phases and the Flood District cannot feasibly evaluate nor enforce mitigation measures for those future restoration projects at this time.

The Watershed Project Alternatives Analysis evaluates a suite of alternatives including full tidal restoration and connection to Novato Creek to its adjacent former marshlands as well as various combinations of tidal and seasonal wetlands restoration to provide a range of habitat benefits across a full natural ecotone from the Bay into the urbanized areas under existing and sea level rise conditions. The study develops several projects designed to improve the level of flood protection while restoring and enhancing wetlands and transition zone habitats for a variety of threatened and endangered species including steelhead, black rail, and clapper rail. The proposed projects are divided into groups depending on the timeline that they are expected to be implemented once funded; short term projects (next 3 to 10 years), medium term projects (7 to 15 years) and long term projects (longer than 20 years out). Two of the highest rank short term projects include funding for restoration of channel functions and tidal habitat within Deer Island flood basin and the Novato Creek corridor expansion and tidal wetlands restoration project (i.e. removal of Novato creek levees along the Ducks Bill and Herons Beak ponds and restoration of these areas to full tidal/fluvial conditions). The removal of pond levees would directly restore approximately 32 acres to full tidal conditions. The larger Deer Island Tidal Marsh Restoration Project would restore up to 280 acres of former tidal marsh to fully tidal conditions. Ultimately, if all the proposed long-term Bayland projects are implemented there would be full tidal restoration up to 800 to 1,000 acres of tidal and seasonal wetlands that are currently diked off for other uses and potentially two miles of creek. The Novato Creek Flood Control Dredging Project would provide dredged material for beneficial reuse in support of these restoration activities, such as raising marsh elevations for restoration, levee construction to allow for full tidal restoration, and infrastructure necessary to maintain natural flows within Novato Creek and restored marshlands.

This Subsequent Initial Study evaluates the use of beneficial reuse sediment for restoration project such as those presented in the Watershed Project Alternatives Study; additional and future CEQA analysis may be required for future project-specific restoration activities.

5. Construction and Staging

Only limited changes to the construction and staging as discussed in the 2008 IS/MND and 2012 Addendum would be required for the additional project elements. Construction equipment is not anticipated to change. Changes to construction and staging necessary to incorporate beneficial reuse of sediment are described above and include:

- Additional staging and material storage areas in the northern portion of the Deer Island Flood Control Basin

- Storage of additional dredged material for future beneficial reuse on the top of the newly constructed structural core levee
- Use of a hydraulic sprayer for thin layer placement of dredged material
- Changes to truck haul routes for dredged material as described above and shown on Figure 6. The truck haul routes shown are for the 2016 dredge sediment, and do not show the routes required for the transport of the 2012 dredged sediment proposed for the Deer Island Basin levee or the route required to transport 2016 dredge sediment to the Marin County Airport. Figure 7 provides one of the haul route maps for the existing project as evaluated in the 2008 IS/MND and 2012 Addendum, which includes routes to the Marin County Airport as well as Highway 37 and routes through Novato, which may be utilized for transport of sediment for beneficial reuse in areas evaluated by this Subsequent Initial Study.

Transportation of sediment for Deer Island Flood Basin Flood Control and Habitat Infrastructure includes:

- 10,000 cy of 2012 sediment transported from Marin County Airport storage area (Gross Field) to the proposed levee core at the northern perimeter of the Deer Island Basin.
- 5,000 cy of 2012 sediment transported from the Lynwood levee storage area to the proposed levee core at the northern perimeter of the Deer Island Basin.
- 6,600 cy of 2016 dredge sediment to be stockpiled on top of the proposed Deer Island levee core for future levee construction projects.
- 5,225 cy of 2016 dredge sediment to be stored along the proposed Deer Island levee access road side-slopes for eco-tone levee construction.

Table 1. Distances and Quantities for Additional Project Elements

<i>Additional Project Elements</i>	<i>Linear Feet</i>	<i>Earthen Quantity (CY)</i>
New Levee Structural Core	2,500	15,000
Ecotone Slope	1,000	5,225
<u>Temporary Material Stockpile</u>	<u>2,500</u>	<u>6,600</u>
TOTAL	6,000 LF	26,825 CY

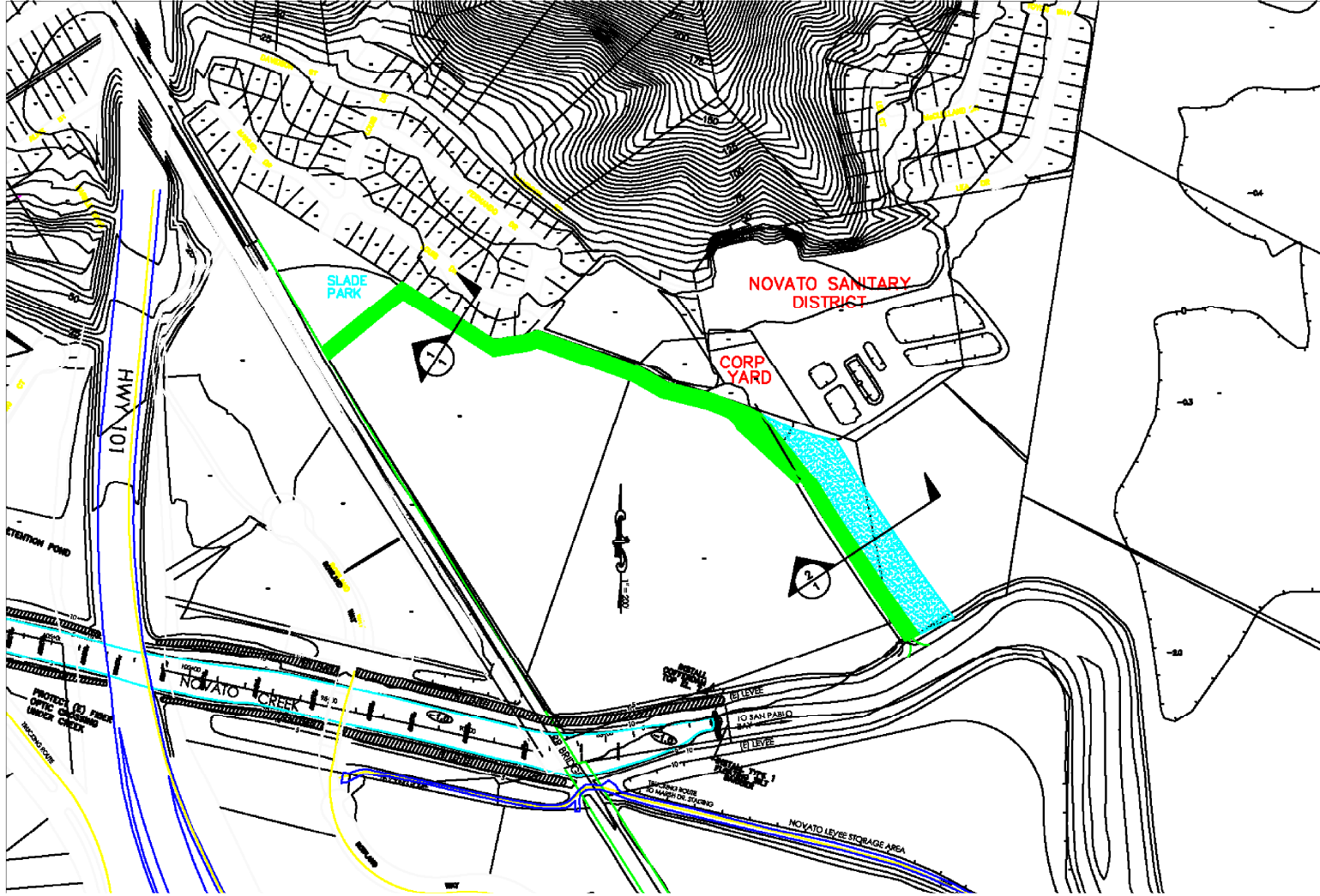


Figure 3. Levee Location

Novato Creek Flood Control Dredging Project
Marin County, California

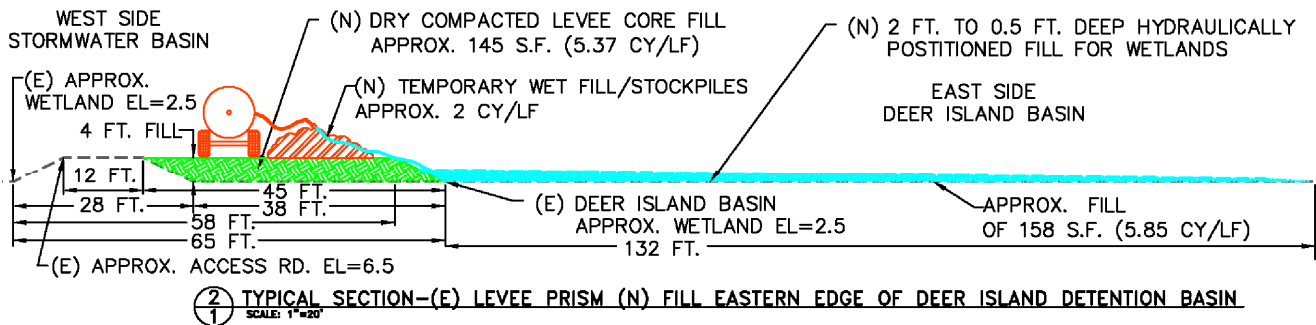
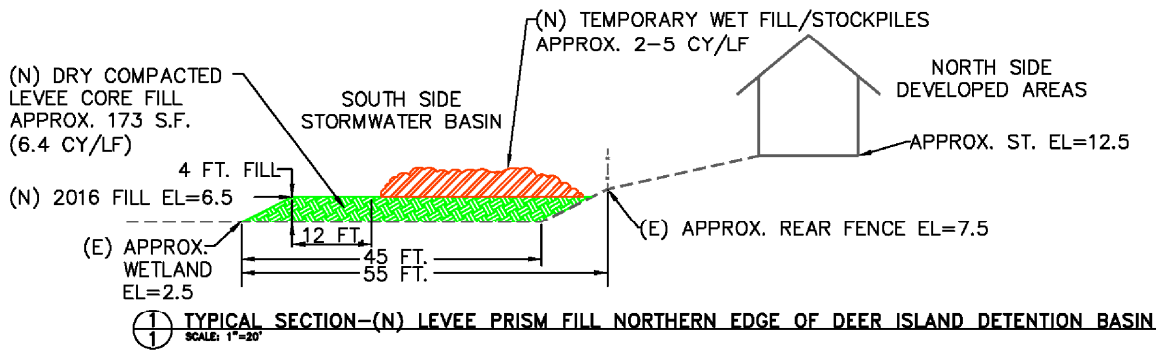


Figure 4. Spoil Disposal Cross-Section 1

Novato Creek Flood Control Dredging Project
Marin County, California

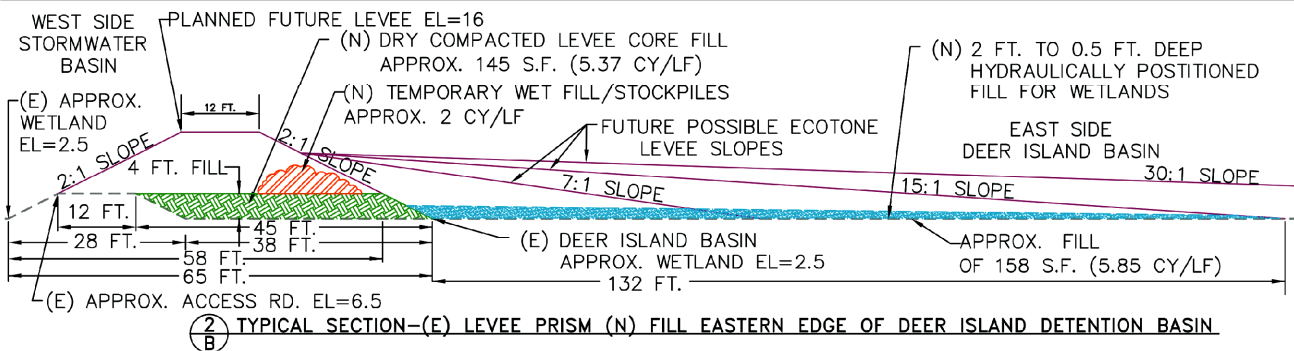
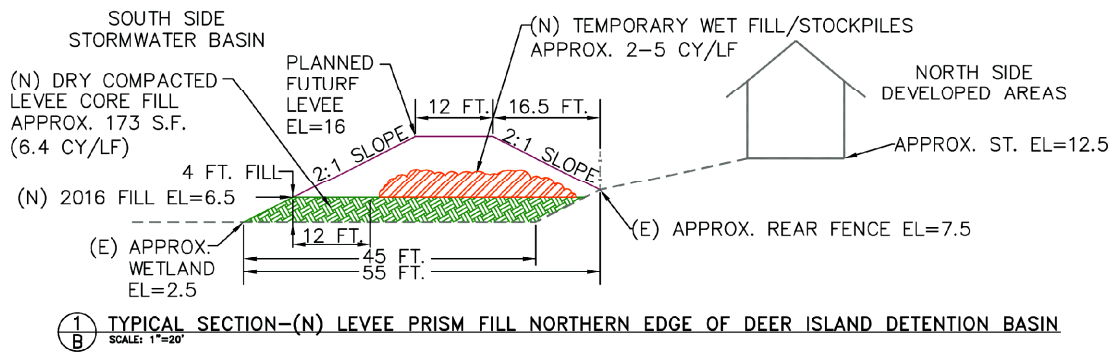


Figure 5. Spoil Disposal Cross-Section 2

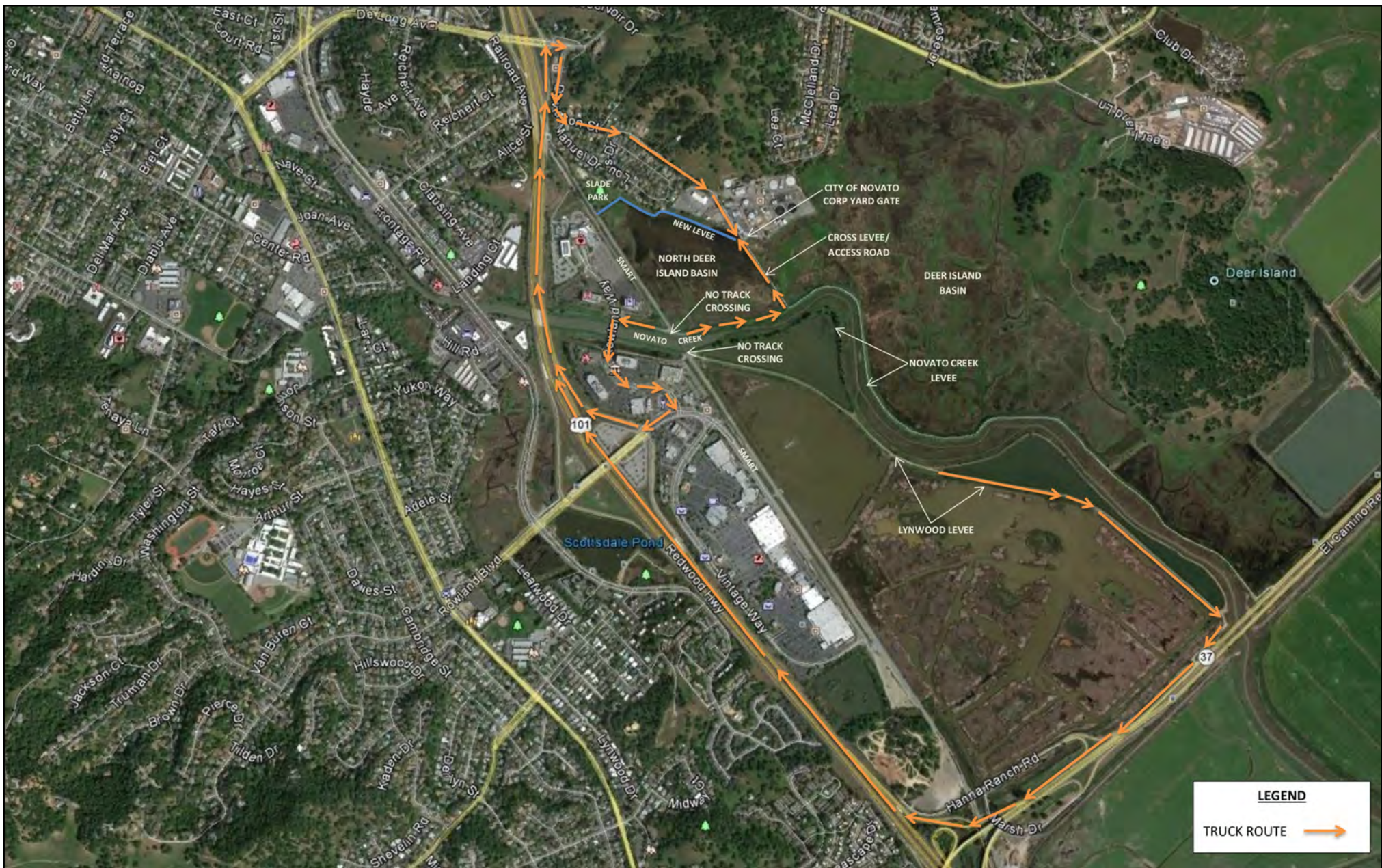


Figure 6. Dredge-Truck Haul Routes



Figure 7. 2008 Haul Routes Overview Map

Novato Creek Flood Control Dredging Project
Marin County, California



Date: April 2016
Source: 2008 IS/MND, Kleinfelder

III. CIRCULATION AND REVIEW

This Subsequent Initial Study is being circulated for a 30-day review and comment period pursuant to CEQA Guidelines Section 15073. It is being circulated to all agencies that have jurisdiction over the subject property or the natural resources affected by the project and to consultants, community groups, and interested parties to attest to the completeness and adequacy of the information contained in the Initial Study as it relates to the concerns which are germane to the agency's or organization's jurisdictional authority or to the interested parties' issues.

IV. PROJECT-RELATED APPROVALS, AGREEMENTS AND PERMITS

The information contained in this Initial Study will be used by the Marin County Public Works Department (the CEQA Lead Agency) as it considers whether to approve the proposed project. If the project is approved, the Initial Study would be used by the County and responsible and trustee agencies in conjunction with various approvals and permits. These actions may include, but may not be limited to, the following approvals by the agencies indicated:

Army Corps of Engineers

- Clean Water Act Section 404 Form 4345, Application for Department of the Army Permit

San Francisco Bay Regional Water Quality Control Board (Responsible Agency)

- Clean Water Act, Application for Section 401 Water Quality Certification
- Notice of Intent under the State Construction General NPDES Permit

California Department of Fish and Wildlife (Responsible Agency)

- Fish and Game Code Section 1602 requires a Streambed Alteration Agreement
- Fish and Game Code Section 2050: California Endangered Species Act
- Fish and Game Code Sections 1900-1913: Native Plant Protection Act

U.S. Fish and Wildlife Service

- Endangered Species Act of 1973, Section 7 consultation addressing avian and terrestrial species including salt marsh harvest mouse, and California ridge-way's rail and California black rail.

National Marine Fisheries Service

- Endangered Species Act of 1973, Section 7 consultation addressing aquatic including steelhead.

State Lands Commission (Interested Agency)

- Public Trust Doctrine regarding "navigable waters."

V. DOCUMENTS INCORPORATED BY REFERENCE

The following documents have been used in evaluating the proposed project. A complete listing of all technical reports and plans prepared by the District, as well as maps and documents on file in the Planning Division, that have been used in evaluating the proposed project and incorporated by reference in accordance with Section 15150 of the *California Environmental Quality Act Statutes and Guidelines* are contained in Attachment 1 of this Initial Study.

All reports, documents, and maps are matters of public record and are available for public review in the Community Development Agency - Planning Division, Room 308, Marin Civic Center, and San Rafael. Where appropriate, standard reference documents such as FEMA flood maps and biological references (i.e., the Jepson Manual) are listed in Attachment 1 with full citations and/or web links for the public record, but are not reproduced in full.

- County of Marin, Marin Countywide Plan, 2007
- County of Marin DPW, Novato Creek Flood Control and Dredging Project IS/MND, 2008
- County of Marin DPW, Addendum to Negative Declaration of Environmental Impact, Novato Creek Flood Control Dredging Project, 2012
- KHE, Hydraulic Analysis of Alternatives for the Novato Creek Watershed Project, 2016

VI. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Pursuant to Section 15063 of the State CEQA Guidelines, and the County EIR Guidelines, Marin County will prepare an Initial Study for all projects not categorically exempt from the requirements of CEQA. The Initial Study evaluation is a preliminary analysis of a project that provides the County with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR) or Negative Declaration. The points enumerated below describe the primary procedural steps undertaken by the County in completing an Initial Study checklist evaluation and, in particular, the manner in which significant environmental effects of the project are made and recorded.

- A. The determination of significant environmental effect is to be based on substantial evidence contained in the administrative record and the County's environmental database consisting of factual information regarding environmental resources and environmental goals and policies relevant to Marin County. As a procedural device for reducing the size of the Initial Study document, relevant information sources cited and discussed in topical sections of the checklist evaluation are incorporated by reference into the checklist (e.g., general plans, zoning ordinances). Each of these information sources has been assigned a number which is shown in parenthesis following each topical question and which corresponds to a number on the database source list provided herein as Attachment 1. See the sample question below. Other sources used or individuals contacted may also be cited in the discussion of topical issues where appropriate.
- B. In general, a Negative Declaration shall be prepared for a project subject to CEQA when either the Initial Study demonstrates that there is no substantial evidence that the project may have one or more significant effects on the environment. A Negative Declaration shall also be prepared if the Initial Study identifies potentially significant effects. A signature block is provided in Section VII of this Initial Study to verify that the project sponsor has agreed to incorporate mitigation measures into the project in conformance with this requirement.
- C. All answers to the topical questions must take into account the whole of the 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. Significant unavoidable cumulative impacts shall be identified in Section VI of this Initial Study (Mandatory Findings of Significance).
- D. A brief explanation shall be given for all answers except "Not Applicable" answers that are adequately supported by the information sources the Lead County Department cites in the parenthesis following each question. A "Not Applicable" 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 "Not Applicable" answer shall be discussed where it is based on project-specific factors as well as general standards (e.g. the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

- E. "Less-than-significant Impact" is appropriate if an effect is found to be less than significant based on the project as proposed and without the incorporation of mitigation measures recommended in the Initial Study.
- F. "Potentially Significant Unless Mitigated" applies where the incorporation of recommended mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less-than-significant Impact." The Lead County Department must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from Section V, "Earlier Analyses", may be cross-referenced).
- G. "Significant Impact" is appropriate if an effect is significant or potentially significant, or if the Lead County Department lacks information to make a finding that the effect is less than significant. If there are one or more effects, which have been determined to be significant and unavoidable, an EIR shall be required for the project.
- H. The answers in this checklist have also considered the current State California Environmental Quality Act Guidelines and the Initial Study Checklist contained in those Guidelines.

VII. ISSUES (AND SUPPORTING INFORMATION SOURCES):

A. LAND USE AND PLANNING

Would the proposed project:

<p>1) Conflict with applicable Countywide Plan designation or zoning standards? (source #(s): 2,3,4)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
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The Marin Countywide Plan (CWP) provides policies and implementation strategies for management of the resources and land uses in the County, and the County zoning provide restrictions and requirements to protect resources and comply with local, state, and federal laws. The 1994 CWP was utilized for the 2008 Initial Study analysis. The current 2007 CWP, is used for this subsequent analysis for project changes. The CWP provides protection for baylands in Section 2 Biological Resources. Flood control is discussed within this section, allowing land uses that provide flood protection, if they are necessary to protect public health and safety.

Accordingly, the changes to the project include proposed uses that are compatible with flood control land uses required for public health and safety. Additionally, the proposed project would provide increased habitat benefit associated with the use of beneficial reuse sediments to support restoration of the Novato Creek Baylands. The additional uses proposed for beneficial sediment reuse would occur on publically owned land zoned as Open Space (OS) and would therefore not conflict with appropriate uses for the existing zoning.

The Marin County Code (MCC) contains Marin County Flood Zoning Ordinances and the Zoning Code for the project area. According to MCC 22.94, zoning overlay F-1 applies to the primary floodway zone, which is defined as the waterway and adjoining floodplain and F-2 applies to the secondary floodway zone. The proposed changes to the project include beneficial reuse of dredged sediment and would not result in dredging, filling or dike construction with the intended purpose of increasing the water level or impeding the flow of the F-1 zone, and would therefore not conflict with the F-1 zone overlay. The proposed changes would also not reduce the ponding area and capacity within the project area and would therefore not conflict with the F-2 zone overlay.

In addition, the project does not require any land use designation amendments or zone changes. Therefore, a **less than significant** impact would occur.

2) Conflict with applicable environmental plans or policies adopted by Marin County? (source #(s): 2,3,4)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

The proposed project is subject to the environmental protection policies of the 2007 Marin Countywide Plan. The Countywide Plan serves as the general plan for the unincorporated areas of the County and contains goals, policies, and programs that govern existing and future development. The determinations of policy consistency as discussed in this Initial Study section represent County staff interpretation of policies. However, the Initial Study does not determine policy consistency. The formal policy consistency determinations are made by the County decision-makers.

Policy inconsistencies may not necessarily indicate significant environmental effects. Section 15358(b) of the CEQA Guidelines states that “effects analyzed under CEQA must be related to a physical change in the environment.” Therefore, only those policy inconsistencies that would lead to a significant effect on the physical environment are considered significant impacts pursuant to CEQA. Where potentially significant environmental impacts are raised in the discussion below, they have been mitigated to a less-than-significant impact and therefore, project activities are determined to be consistent with the relevant policies cited. Mitigations are addressed further in the topical impacts sections following plan policy analysis.

Local Plans, Policies, and Regulations

Land use designations and beneficial sediment reuse proposed by the project are governed by the objectives and policies of the 2007 Marin CWP. As discussed in Section IV.1 (a) “Land Use Planning” of this Initial Study, the project changes would result in less than significant environmental impacts and, therefore, are determined to be consistent with the relevant policies cited.

The 2007 Marin Countywide Plan (CWP)

Countywide Plan: Consistent

The basic goals and policy objectives of the CWP, which are relevant to the environmental consequences of the project include the following: (1) preservation of vegetation, wildlife species, and habitat; (2) protection of water quality and aquatic habitat; (3) avoidance of environmental hazards such as flooding; and (4) protection of ridgelines, baylands, and other environmentally sensitive lands.

The project would avoid physical hazards and development constraints, protect natural resources, and provide public services because the project would not result in significant adverse effects to the quality of the environment or character of the local community. Accordingly, based on the reasons stated above, as well

as the mitigation requirements included in this Initial Study, the project would be consistent with the following CWP policies.

Biological Resources Element

BIO-2.3 Preserve Ecotones. *Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands, and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.*

Consistency: As discussed in Section II. Project Description, the proposed changes to the project include various purposes for beneficial sediment reuse. One identified specific use is an ecotone slope to create transitional habitat levees suitable for tidal marsh wetlands establishment. Accordingly, the changes to the proposed project are consistent with this policy as they include the construction of an ecotone.

BIO-3.1 Protect Wetlands. *Require development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained (areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone). Establish a Wetland Conservation Area (WCA) for jurisdictional wetlands to be retained, which includes the protected wetland and associated buffer area. Development shall be set back a minimum distance to protect the wetland and provide an upland buffer.*

Consistency: The project is consistent with this policy. Exceptions to full compliance with this policy as stated in the CWP include areas where the parcel is undeveloped and falls entirely within the WCA. The parcels evaluated in this IS are undeveloped and fall entirely within the WCA.

BIO-3.2 Require Thorough Mitigation. *Where avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation. Mitigation wetlands should be of the same type as those lost and provide habitat for the species that use the existing wetland. Mitigation should also be required for incursion within the minimum WCA setback/transition zone.*

Consistency: The project is self-mitigating and would support the restoration in the next 3-8 years of 32 acres of tidal marsh and creek floodplain and of up to 800 to 1,000 acres of restoration is considered in the long term within currently diked baylands. Unavoidable impacts to wetlands resulting from some discrete project elements would be mitigated by contributions of sediment toward the restoration and creation of wetlands within the project area. **Mitigation Measure BIO-12** ensures consistency with this policy.

BIO-4.1 Restrict Land Use in Stream Conservation Areas. *A Stream Conservation Area (SCA) is established to protect the active channel, water quality and flood control functions, and associated fish and wildlife habitat values*

along streams. Development shall be set back to protect the stream and provide an upland buffer, which is important to protect significant resources that may be present and provides a transitional protection zone. Best management practices¹ shall be adhered to in all designated SCAs. Best management practices are also strongly encourages in ephemeral streams not defined as SCAs.

Consistency: The project is consistent with this policy. Exceptions to full compliance with this policy as stated in the CWP include areas where the parcel falls entirely within the SCA, and where the project is infeasible without affecting the SCA. The parcels evaluated in this I fall entirely within the SCA, and the project is infeasible without affecting the SCA.

BIO-4.4 Promote Natural Stream Channel Function. *Retain and, where possible, restore the hydraulic capacity and natural functions of stream channels in SCAs. Discourage alteration of the bed or banks of the stream, including filling, grading, excavating, and installation of storm drains and culverts. When feasible, replace impervious surfaces with pervious surfaces. Protect and enhance fish habitat, including through retention of large woody debris, except in cases where removal is essential to protect against property damage or prevent safety hazards. In no case shall alterations that create barriers to fish migration be allowed on streams mapped as historically supporting salmonids. Alterations of natural channels within SCAs for flood control should be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channel migration, and allows for reestablishment for woody trees and shrubs without compromising the flood flow capacity where avoidance of existing riparian vegetation is not possible.*

Consistency: The dredged project reach has become the functional sediment basin for the Novato Creek area and its connected sub-watersheds. The 2008 Initial Study addresses how the project improves hydraulic conditions and returns the system to a more functional hydrological drainage process. The proposed changes to the project promote and improve natural stream channel function by developing uses for beneficial sediment reuse to support flood control efforts and future restoration of tidal prism and marsh habitat. Therefore, the changes to the project support restoration of the natural function of Novato Creek and are consistent with this policy.

BIO-5.4 Restore Marshlands. *Enhance wildlife and aquatic habitat value of diked bay marshlands, and encourage land uses that provide or protect wetland or wildlife habitat and do not require diking, filling, or dredging.*

Consistency: The proposed changes to the project include beneficial sediment reuse to support future restoration and flood control activities including structural

¹ Such as those outlined in *Start at the Source* and *Start at the Source Tools Handbook* (Bay Area Stormwater Managers Agencies Association).

core levee construction, ecotone levees, and thin layer placement of sediment in wetlands. The structural core levees supports the overall increase of flood capacity within the system. The ecotone levee provides vital transitional habitat and high tide refuge for aquatic species by providing for the transgression of high marshes to transitional habitats as sea level rises. Thin layer placement of dredged material consists of applying a thin layer of dredged material over wetland areas to raise elevations to maintain wetland conditions and keep pace with sea level rise. The construction of these large levees of which the initial lifts are contained in this project, are required for protection under both current coastal flooding conditions as well as to protect developed areas under sea level rise conditions are critical to allow for the future restoration of 200 plus acres of former tidal marsh back to fully tidal conditions. These and other restoration actions would enhance conditions for aquatic wildlife.

Water Resources Element

WR-1.1 Protect Watersheds and Aquifer Recharge. Give high priority to the protection of watersheds, aquifer-recharge areas, and natural drainage systems in any consideration of land use.

Consistency: The proposed changes to the project include beneficial sediment reuse activities to in addition to the continue dredging of lower Novato Creek. This project is intended to restore natural stream channel function and improve flood capacity for the system. The specific purposes for the beneficial sediment reuse include a new structural core levee, ecotone slope levee, thin layer dredge material placement in wetlands and other restoration activities. The goals of these proposed uses are all to expand protection of the watershed and wetlands to consider sea level rise and future flood capacity. Therefore, the proposed changes to the project continue to support the goal of wetland restoration and natural drainage systems and comply with this policy.

WR-1.f Require Stream Restoration Projects. Require restoration of streams in conjunction with associated land use approvals to improve groundwater recharge and filtration and to ensure high-quality water. Restoration projects should follow the design principles of natural channel restoration utilizing geomorphic concepts.

Consistency: The proposed changes to the project support the goals 2008 project, which includes improvements to the hydraulic conditions and returns the system to a more functional hydrological drainage process. The proposed changes to the project continue to promote natural stream channel function through the continuing dredging of lower Novato Creek and developing uses for beneficial sediment reuse to support flood control efforts. Other restoration activities proposed for the beneficial reuse materials follow the design principles outlined in the Watershed Project Alternatives Study. Therefore, the changes to the project continue to support restoration of the natural function of Novato Creek and are consistent with this policy.

WR-2.3 Avoid Erosion and Sedimentation. Minimize soil erosion and discharge of sediments into surface runoff, drainage systems, and water bodies. Continue to require grading plans that address avoidance of soil erosion and on-site sediment retention. Require developments to include on-site facilities for the

retention of sediments, and, if necessary, require continued monitoring and maintenance of these facilities upon project completion.

Consistency: The changes to the proposed project would incorporate **Mitigation Measure GEO-1 and WATER-1**, which require the update of the SPCCP and SWPPP. These plans are both intended to provide protection for erosion, sedimentation, and hazardous material impacts on the water bodies present in the project site. Therefore, the changes to the project are consistent with this policy.

Environmental Hazards Element

EH-3.k Anticipate Sea Level Rise. *Work with the U.S. Geological Survey, the San Francisco Bay Conservation and Development Commission, and other monitoring agencies to track bay and ocean levels; utilize estimates for mean sea level rise to map potential areas subject to future inundation (including by updating information about watershed channel conditions and levee elevations); and amend the policies of BCDC's Bay Plan for any areas subject to increased flooding from a rise in sea level.*

Consistency: The changes to the project include specific purposes of beneficial sediment reuse that particularly consider the impacts of sea level rise on the project area. The proposed changes include beneficial reuse of dredged material for new structural core levee construction, ecotone levee construction, thin layer placement of dredged materials and other restoration activities. The ecotone levee is designed specifically to allow for the transgression of marsh habitats as sea level rises and provide valuable transitional refuge habitat for marsh species. Thin layer placement of dredged material consists of applying a thin layer of dredged material over wetland areas to raise elevations to maintain wetland conditions and keep pace with sea level rise. Preparing for sea level rise over the long term will require available sediment resources over time to build up marsh grades; a key beneficial sediment reuse purpose. Therefore the changes to the proposed project are consistent with this policy.

EH-3.m Maintain Flood Controls. *Continue to implement adopted flood control programs, including limitations on land use activities in flood hazard areas and through repair and maintenance of necessary flood control structures.*

Consistency: This reach of Novato Creek is designed to convey the 50 year storm event. The changes to the project include beneficial sediment reuse activities that continue to support flood control structures, including the development of levees and sediment removal from lower Novato Creek. Therefore, the changes are consistent with the District's flood control goal of providing conveyance of the 50-year storm event through the project reach.

EH-3.o Seek Levee Assistance. *Pursue funding for levee reconstruction in those areas threatened by sea level rise.*

Consistency: The changes to the project include beneficial reuse activities that support the flood control. Specific purposes for this reuse that consider levee reconstruction and sea level rise include the ecotone slope levee. The ecotone slope is part of longer-term planning effort to begin adapting the Novato Baylands for Sea Level Rise (SLR) and consistent with the District's goal to

restore the majority of the Deer Island Basin to a fully functional tidal marsh. The ecotone/transitional habitat levees require placement of sediment suitable for tidal marsh wetlands establishment (including removed sediment from Novato Creek). Therefore, the changes to the project are consistent with this policy.

Open Space Element

OS-2.4 Support Open Space Efforts Along Streams. Support efforts to restore, enhance, and maintain natural vegetation and other habitat values along streams in the Baylands and City-Centered corridors. Maintain strict controls and high environmental standards in these zones.

Consistency: Novato Creek is specifically targeted as part of this Open Space policy. The project supports restoration of habitat values and hydrologic function along Novato Creek and is consistent with this policy.

3) Affect agricultural resources, operations, or contracts (e.g. impacts to soils or farmlands, impacts from incompatible land uses, or conflicts with Williamson Act contracts)? (source #(s): 7)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would not adversely affect agricultural resources because the project area is not zoned for agriculture. The California Department of Conservation Division of Land Resource Protection (CDC) Farmland Mapping and Monitoring Program illustrates the project area as Urban and Built-up land, Other Land, as well as some Farmland of Local Importance. While portions of the project site contain Farmland of Local Importance, the site is not enrolled in a Williamson Act Contract. Therefore, impacts would be **less than significant**.

4) Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)? (source #(s): 2,3,4)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would continue to be consistent with the residential and open area zoning land use designation and standards contained in the Countywide Plan and Development Code. These changes to the project include beneficial sediment reuse within the existing project area in open space locations. Accordingly, this element is not applicable because no changes would occur to the existing physical arrangement of the established communities surrounding the project area. Therefore, impacts would be **less than significant**.

5) Result in substantial alteration of the character or functioning of the community, or present or planned use of an area? (source #(s): 2,3,4)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would have a less than significant impact relative to the planned use of the area as the project is intended to improve the functioning of the community by continuing to reduce the potential for flooding through dredging and levee construction. The character of the local community in the area would essentially be the same whether or not the proposed changes to the project are implemented. Therefore, impacts would be **less than significant**.

6) Substantially increase the demand for neighborhood or regional parks or other recreational facilities, or affect existing recreational opportunities? (source #(s): 2)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would not result in an increase in the demand for parks or recreation area because the dredging and beneficial sediment reuse activities would not require closure of parks or recreational facilities during project construction. In addition, these changes would not be growth-inducing and thus, would not increase the residential population that could lead to overcrowding of existing park and recreational facilities. The proposed changes to the project would not increase the demand for neighborhood or regional parks or other recreational facilities, or affect existing recreational opportunities. Existing levees are currently used as informal public trails. Future restoration projects that would be supported by the project may change public access opportunities; however, these potential future changes are unknown at this time and are not evaluated as part of this IS. Some activities included as part of the project may require temporary changes to the informal public access areas necessary for construction access and staging. The levee tops are primarily maintained for the purposes of access for flood control maintenance. While public access is not discouraged, it is not sanctioned. Therefore, potential short term effects to public access from project access and staging are determined to be a **less than significant impact**.

B. POPULATION AND HOUSING.

Would the proposed project:

<p>1) Increase density that would exceed official population projections for the planning area within which the project site is located as set forth in the Countywide Plan and/or community plan? (source #(s): 1,2)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
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The proposed changes to project would not increase population density because no residential construction is proposed. The proposed project would be within the creek corridor, existing rights-of-way, and open space land and would therefore not displace people or housing. Therefore, impacts would be **less than significant**.

<p>2) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)? (source #(s): 1,2)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
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The project area is located in developed areas that have been fully built-out as well as open space that do not include development. The proposed changes to the project would be within the creek corridor and other open space land and would not displace people or housing, nor induce substantial growth in an area either directly or indirectly. Therefore, impacts would be **less than significant**.

<p>3) Displace existing housing, especially affordable housing? (source #(s): 1,2)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
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The proposed changes to the project would be within the creek corridor, existing rights-of-way, and open space land and would not displace people or housing. Therefore, impacts would be **less than significant**.

C. GEOPHYSICAL.

Would the proposed project result in or expose people to potential impacts involving:

1) Location in an area of geologic hazards, including but not necessarily limited to: 1) active or potentially active fault zones; 2) landslides or mudslides; 3) slope instability or ground failure; 4) subsidence; 5) expansive soils; 6) liquefaction; 7) tsunami ; or 8) similar hazards? (source #(s): 1,6)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

As described in the 2008 IS/MND, County determinations of significance with respect to the project’s impacts to geologic hazards are based on environmental characteristics specific to the subject properties, as is further discussed below.

The project area in its entirety is not located in an area of geologic hazards, is not located within an Alquist-Priolo Earthquake Fault Zone or an evaluated Liquefaction Hazard Zone and no active faults were identified on the property. The nearest active faults are the Hayward Fault, located 8 miles east of the City of Novato (City), and the San Andreas Fault, located 12 to 14 miles west of the City. Seismic activity on these faults may cause some shaking and subsidence of fills and soils at some distance from the epicenter. ²

The soil types within the project area do present shaking amplification and shear wave velocity due to the sand, silt, and mud. However, the project area does not have structures located within Novato Creek, its tributaries, soil deposition locations, or proposed beneficial sediment reuse locations. The addition of fill to levees, stockpiling, and thin layer placement of dredged materials is intended to improve the existing conditions regarding stability and subsidence of receiving levees and surrounding wetlands. Accordingly, seismically-induced subsidence would affect only the fill and no structures would be at risk. The proposed changes to the project would result in a **less than significant** impact as they relate to geologic hazards, including landslides, slope stability, and liquefaction.

² ABAG Resilience Program. 2016.
<http://gis.abag.ca.gov/website/Hazards/?hlyr=northSanAndreas&co=6041>

2) Substantial erosion of soils due to wind or water forces and attendant siltation from excavation, grading, or fill? (source #(s): 1,6)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

The proposed changes to the project include beneficial sediment reuse activities that may cause short-term erosion associated with dredging operations and ingress/egress (but not associated with the actual maintenance dredging activities). Dredge material deposition locations, staging areas, and ingress/egress locations resulting from the proposed changes to the project, could involve potential erosion and sediment to enter into Novato Creek resulting in potentially significant impacts unless mitigated. Implementation of the **Mitigation Measure GEO-1** would reduce impacts to a *less than significant* level.

IMPACT GEO-1: Activities that may cause short-term erosion that would result in sediment in Novato Creek

Mitigation Measure GEO-1: The County shall update the previously prepared Stormwater Pollution Prevention Plan (SWPPP) to include any necessary staging areas for the proposed beneficial sediment reuse activities. The revised SWPPP shall be submitted as part of the Conditions of Approval. The County shall implement the revised SWPPP as approved.

3) Substantial changes in topography from excavation, grading or fill, including but not necessarily limited to: 1) ground surface relief features; 2) geologic substructures or unstable soil conditions; and 3) unique geologic or physical features? (source #(s): 1,6)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include beneficial sediment reuse activities including levee construction, widening of lower Novato Creek, and thin layer placement of sediment to raise wetland elevations. Accordingly, the project would result in less than significant impacts for changes in topography because the proposed actions involve restoring levees and the flood channel to a more natural design.

Proposed activities for the beneficial sediment reuse include a levee that would have a maximum elevation of 6.5-feet NAVD88. The existing cross levee/access road is currently at about 6.5-feet NAVD88 and the addition of a structural core levee adjacent to this levee is planned. The entire linear feet and earthen quantity for the new levee structural core includes this existing adjacent levee. Proposed ecotone slope levees would have varying, non-uniform slopes from 7:1 to 30:1 (length: height). In order to reduce truck trips, the District is proposing to temporarily store dredged material on top of the newly constructed levees. The material would be placed in a manner so as not to exceed an elevation of 3-feet

above the new levee elevation. The proposed thin layer placement of sediment would place several hundred to not more than a few thousand cubic yards of dredged sediments hydraulically over the western edge of the Deer Island Flood Basin and allow the material to flow naturally in lifts to mimic natural sedimentation processes. Fill placement depths for the pilot project would not exceed 15 cm on average (up to approximately 20 cm in specific high points). Sediment is anticipated to be placed over a 3 to 5-acre area. This Supplemental analysis evaluates the use of beneficial reuse sediment for the construction of these new levees and to support future restoration. The proposed beneficial reuse would not itself result in any substantial changes in topography and impacts to topographical features would be **less than significant**.

D. WATER.

Would the proposed project result in:

1) Substantial changes in absorption rates, drainage patterns, or the rate and amount of surface runoff? (source #(s): 1,2)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project include beneficial sediment reuse activities such as levee construction, thus improving the drainage patterns. The proposed beneficial reuse activities support the previous dredging of Novato Creek as continued stormwater flood alleviation. Therefore, the proposed changes to the project would be beneficial in terms of flooding impacts. The proposed changes to the project would alleviate flooding and would not contribute substantial erosion or siltation or increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. The project would not require use of groundwater supplies or affect groundwater recharge in the area. Therefore, the project would have a **less than significant impact** on water absorption and surface runoff.

2) Exposure of people or property to water related hazards, including, but not necessarily limited to: 1) flooding; 2) debris deposition; or 3) similar hazards? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project include utilizing fill materials to construct levees that would serve to reduce the potential for flooding. The proposed changes to the project would not involve placement of housing or other structures in a flood zone and would not expose people or structures to risks from flooding or inundation by seiche, tsunami, or mudflow. Therefore, the project would have a **less than significant impact**.

3) Discharge of pollutants into surface or ground waters or other alteration of surface or ground water quality (e.g. temperature, dissolved oxygen or turbidity)?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	[]	[X]	[]	[]

There are two issues relevant to this question (1) potential pollutants associated with the dredged materials to be used in beneficial reuse activities, and (2) potential pollutants associated with equipment to be used to move the sediment. Each is addressed in the sections below.

Equipment – Activities resulting from the proposed changes to the project, may present the potential for the discharge of pollutants from accidental spills of fuels, lubricants and other project equipment fluids. A revised *Hazards Materials Management/Spill Prevention Countermeasure and Control Plan* (SPCCP) as described in **Mitigation Measure WATER-1** (below) would mitigate potential impacts to less than significant levels for the changes to the proposed project.

Dredged Material for Beneficial Sediment Reuse – As described in the 2008 IS/MND, an analysis was conducted on the soils to be dredged from Novato Creek in 2006. The Weston/Kleinfelder Report *Results of Chemical, Physical and Biological Testing of Sediments from Novato Creek*, soil samples of the materials dredged were submitted to analytical laboratories for chemical and biological analysis to evaluate whether the material could be accepted at the environmentally sensitive Hamilton Wetlands Reclamation Site, a previously considered receiving location for the dredged material. As indicated by the acceptance letter, all applicable regulatory agencies concluded that the use of dredged material from Novato Creek would be acceptable for unconditional use for wetland restoration. Therefore, the reuse of the dredged material was considered to be a less than significant impact in the 2008 IS/MND. There is no reason to believe that there would be changes to the results of the 2006 sediment evaluation if sediment testing was completed in 2016. However, there is the potential that future events in the watershed (such as an accidental spill) could affect soil suitability for reuse as cover material for wetland restoration. For this reason, the proposed changes to the project including future beneficial reuse of dredged sediment from Novato Creek could result in a potentially significant impact to receiving surface waters unless mitigated. **Mitigation Measure WATER-2** (below) will mitigate potential impacts to less than significant levels for the changes to the proposed project.

Deposition Sites are covered by their own permit requirements and Conditions of Approval. However, without implementing required measures to reduce the chance of erosion, water quality could potentially be impacted by sedimentation. Accordingly, with the inclusion of **Mitigation Measure GEO-1** discussed in Section C (Geophysical) above, to reduce erosion and sedimentation, impacts would be reduced to **less than significant** levels.

Staging areas and ingress/egress locations associated with the changes to the proposed project could involve potential erosion and sediment to enter into

Novato Creek. Implementation of the mitigation measures below would reduce erosion and siltation impacts to a **less than significant** level.

IMPACT WATER-1: The potential for an accidental release of pollutants from equipment into Novato Creek

Mitigation Measure WATER-1: The Applicant shall have the contractor revise the previous *Hazardous Materials Management/Spill Prevention Control and Countermeasure Plan (SPCCP)* and submit to Marin County for review and approval prior to final submittal to the Regional Water Quality Control Board (RWQCB) for review and approval prior to construction. The revised approval plan would be given to contractors working on the project. At least one copy will be on-site at all times. The purpose of the SPCCP will be to provide on-site construction personnel, environmental compliance monitors, and regulatory agencies with a detailed description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with construction of the proposed changes to the project.

IMPACT WATER-2: The potential for introducing contaminants into receiving waters through reuse of dredged sediment for wetland restoration.

Mitigation Measure WATER-2: If circumstances or events (such as a contaminant spill affecting Novato Creek or its tributaries) indicate that there is potential for presence of contaminants in Novato Creek sediments, the County shall test sediments to be dredged for suitability of reuse as cover material for wetland restoration. Prior to use of the dredged material, the County shall receive a determination from applicable regulatory agencies (e.g., RWQCB, USEPA), that the material is suitable for the proposed beneficial reuse.

4) Substantial change in the amount of surface water in any water body or ground water either through direct additions or withdrawals, or through intersection of an aquifer by cuts or excavations? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would not require use of groundwater supplies or affect groundwater recharge in the area. The proposed beneficial sediment reuse would assist in restoring the capacity of the flood control system. As previously analyzed, increasing flood capacity would reduce surface runoff, which is considered a beneficial effect. Therefore, it would have a **less-than-significant** impact.

	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
5) Substantial changes in the flow of surface or ground waters, including, but not necessarily limited to: 1) currents; 2) rate of flow; or 3) the course or direction of water movements? (source #(s): 1)	[]	[]	[X]	[]

The proposed changes to the project would improve the current flood capacity of Novato Creek and surrounding baylands, improving surface flow rates in areas that are currently still subject to frequent flooding. Groundwater flow would not be impacted by the proposed changes to the project as the project activities entail dredging and reuse of dredged sediments. This analysis does not evaluate the potential actions of future restoration projects that may affect flow of surface or ground water. Therefore, impacts would be **less than significant**.

	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
6) Substantial reduction in the amount of water otherwise available for public water supplies? (source #(s): 1)	[]	[]	[X]	[]

The proposed changes to the project would not include public water use. Therefore, impacts would be **less than significant**.

E. AIR QUALITY.

Would the proposed project:

	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
1) Generate substantial air emissions that could violate official air quality standards or contribute substantially to an existing or projected air quality violation? (source #(s): 2,17,18)	[]	[X]	[]	[]

The proposed changes to the project would continue to fall under the San Francisco Bay Area Air Quality Management District (BAAQMD). The proposed changes to the project would include the same potential air quality impacts, including the generation of PM₁₀ (mainly dust) and mobile source exhaust emissions. The proposed changes to the project would include truck trips for beneficial sediment reuse from the dredging locations. As the dredged sediment would be used on-site for beneficial reuse activities, emissions would be less than under the original project where sediment was exported to off-site deposition locations. The changes to the proposed project would also include the BMPs from the 2008 Initial Study (**Mitigation Measure 5.a.1**) listed in the previous analysis, to further reduce potential impacts. Therefore, the changes to the proposed project would have a **less than significant** impact.

2) Expose sensitive receptors to pollutants, such as noxious fumes or fugitive dust? (source #(s): 1,2)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include temporary impacts from PM₁₀ and construction equipment emissions to the same receptors as in the 2008 Initial Study. With the implementation of the previously discussed BMPs, the proposed changes to the project would continue to follow BAAQMD recommendations and result in **less than significant** impacts for beneficial reuse activities and associated truck trips.

3) Alter air movement, moisture, or temperature, or cause any change in climate? (source #(s): 2,17,18)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would not significantly influence or cause alteration of air movements, temperature or change local or regional climates. Therefore, impacts would be **less than significant**.

4) Create objectionable odors? (source #(s): 2,17,18)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

BAAQMD's CEQA Guidelines identify the following as potential sources of objectionable odors: wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The proposed changes to the project do not involve construction of any of those types of facilities. Odors from construction emissions would be temporary in nature. Therefore, impacts related to objectionable odors would be **less than significant**.

5) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (source #(s): 2,19)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

Greenhouse gas (GHG) emissions from the proposed changes to the project would be produced from construction-related equipment emissions. These changes, including levee construction and wetland restoration, would not result in the generation of emissions after construction is complete. Based on the nature of the project and short duration of construction, GHG emissions resulting from construction activities are expected to be minor. While the project would have an incremental contribution to GHG emissions within the context of the County and region, the individual impact is **less than significant**.

	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
6) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (source #(s): 2,19)	[]	[]	[X]	[]

The project would not generate significant emissions of GHG and, therefore, would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, a **less-than-significant** impact would occur.

F. TRANSPORTATION/CIRCULATION.

Would the proposed project:

	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
1) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (source #(s): 1,2)	[]	[]	[X]	[]

The Transportation Authority of Marin (TAM) is designated as the congestion management agency for Marin County. The 2013 Congestion Management Program (CMP) adopted by TAM has specified level of service criteria for a number of facilities in the County and its member cities, including Novato. In the project vicinity, the CMP facilities include US 101 and State Route 37 (SR 37). The adopted minimum acceptable level of service (LOS) for these facilities during the p.m. peak hour is LOS E. TR Policy 4.1 of the City's current General Plan establishes the standard for signalized intersections at LOS D.

Compared to the 2008 IS/MND, there would be three additional project elements that would add truck trips. There would also be varying sediment quantities to be delivered to previous sediment destinations that would result in a change to the total truck trips. The three additional project elements include a new levee structural core along the north border of Deer Island Basin built using 2012 dredged sediment, an ecotone slope placed along the new core levee and along

an existing cross levee/truck access road, and a temporary stockpiling of dredge sediment on the newly constructed structural core levee.

Based on the proposed dredging quantities for placement in the existing wetland areas and upland areas, at most there would be transportation of 67,825 cubic yards of dredged sediment, either from the 2012 dredging or from the proposed 2016 project. There would be a maximum of 37 truck trip ends per hour created by the trucks transporting dredged material. The truck distribution estimates and trips added to various segments of US 101 are summarized in Table 2.

Table 2 – Truck Trip Distribution by Freeway Segment

Origin and Destination of Sediment	Percent Dredged Material Disposed	Truck Trip ends	Maximum Trucks per Hour on US 101		
			Rowland to/from SR 37	DeLong to/from Rowland	Atherton to/from DeLong
2012 Dredged Sediment					
Gross Field to Storage Area	15%	6	-	-	6
Lynwood Levee to Storage Area	7%	2	2	2	
2016 Dredged Sediment					
Dredging to Stockpile on Deer Island Basin Levee Core	10%	4	-	4	-
Dredging for ecotone levee	8%	3	-	3	-
Dredging to Marsh Drive Storage Area	7%	2	2	-	-
Dredging to Gross Field	37%	14	-	14	14
Dredging to Stockpile on Lynwood Levee	16%	6	6	-	-
Total	100%	37	10	23	20

The freeway segments anticipated to carry the largest share of dredging truck trips are US 101 between Rowland Boulevard and DeLong Avenue and between DeLong Avenue and Atherton Avenue. Approximately 23 and 20 bi-direction truck trips per hour, respectively, would travel along these segments. This is roughly equivalent to about one truck every three minutes in each direction.

Based on the City of Novato General Plan, the intersections at the Rowland Boulevard, DeLong Avenue, and Atherton Avenue interchanges with US 101 that would be affected by Project traffic currently operate at LOS C or better during both the a.m. and p.m. peak hours. The General Plan also notes that the US 101 freeway segments between Rowland Boulevard, DeLong Avenue, and Atherton Avenue operate at LOS C or better during the p.m. peak period. The segment of State Route (SR) 37 operates at LOS B in the eastbound direction and LOS A in the westbound direction during the p.m. peak hour.

The addition of up to 23 peak hour trips at any of the intersections reviewed would be expected to result in minor increases in delay, though certainly not enough to push delays beyond the limit of LOS D, which is considered acceptable by both the City of Novato and the County of Marin. Similarly, the addition of the proposed project trips to the segments would not push the existing service level beyond the acceptable limit of LOS E on any of the US 101 segments or SR 37. The increased traffic volumes occurring during the course of the dredging project would therefore be expected to have an almost imperceptible and **less-than-significant** impact on operating conditions for affected freeway segments and local intersections.

<p>2) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? (source #(s): 1,2)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------	-------------------------------------------------------------------	---------------------------------------------------------	-----------------------------------------

As described above in Section F (1) above, the increase in delays due to the truck trips would not increase average delays beyond the limit of LOS D for the intersections or LOS E for the freeway segments, both of which the City of Novato and the County of Marin consider acceptable. Therefore, impacts to LOS standards would be **less than significant**.

<p>3) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (source #(s): 1,13)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------	-------------------------------------------------------------------	---------------------------------------------------------	-----------------------------------------

The proposed project does not contain any feature or characteristics that would result in a change in air traffic patterns nor would any features be of sufficient height to affect air traffic, therefore, impacts would be **less than significant**.

<p>4) Traffic hazards related to: 1) safety from design features (e.g. sharp curves or dangerous intersections); 2) barriers to pedestrians or bicyclists; or 3) incompatible uses (e.g. farm equipment)? (source #(s): 1)</p>	<p>Significant Impact</p> <p>[]</p>	<p>Potentially Significant Unless Mitigated</p> <p>[]</p>	<p>Less Than Significant Impact</p> <p>[X]</p>	<p>Not Applicable</p> <p>[]</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------	-------------------------------------------------------------------	---------------------------------------------------------	-----------------------------------------

The proposed additional elements would not pose significant hazards and/or safety concerns in terms of traffic resulting from sharp curves. This dredging project would not result in a permanent action or entity off-site. The truck trips associated with hauling of dredge material would be temporary and during a defined period of time posing no barriers or long-term impacts to intersections or roadways. Any facilities built on-site, like the levee core, would be required to adhere to all local design and construction standards, and as such, would not substantially increase hazards due to a design feature. Therefore, impacts related to traffic hazards would be **less than significant**.

5) Inadequate emergency access or access to nearby uses? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

Similar to the 2008 Initial Study, project work areas are not located in or close to traffic corridors. Haul trucks may present momentary impediments to emergency vehicles but will move to the side of the road as necessary. Impacts relating to emergency access would be **less than significant**.

6) Substantial impacts upon existing transportation systems, including rail, waterborne or air traffic systems? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

In terms of the performance or safety of facilities for pedestrians and bicyclists, it is noted that no pedestrian or bicycle traffic is expected on the project sites, nor are there facilities for them. The project as a whole is a maintenance dredging project which will not result in a permanent action or entity to any project site facilities. The additional three elements to the 2008 Initial Study would be all onsite where pedestrian and bicyclist facilities would not be required. Therefore, the proposed changes to the project would have a **less-than-significant** impact on existing or proposed transit system or services.

G. BIOLOGICAL RESOURCES.

Would the proposed project result in:

1) Reduction in the number of endangered, threatened or rare species, or substantial alteration of their habitats including, but not necessarily limited to: 1) plants; 2) fish; 3) insects; 4) animals; and 5) birds listed as special-status species by State or Federal Resource Agencies?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

(sources #(s): 8,20,21)

The project area is comprised of agricultural land, ruderal upland, developed areas, brackish marsh, seasonal wetland, and tidal saltmarsh adjacent to Novato Creek. Figure 8 identifies the predominant vegetation communities within the project area. Figure 9 shows special status plant species known to occur within 5 miles of the project area. Figure 10 shows special status wildlife species known to be present within 5 miles of the project area.

Much of the project area is comprised of diked baylands that are no longer hydrologically connected to Novato Creek. Brackish marsh, seasonal wetland, and tidal saltmarsh vegetation communities within the project area are considered sensitive habitats under CEQA. The 2008 IS/MND evaluated potential impacts to Novato Creek and there are no changes to the biological resource impacts to Novato Creek from the proposed changes to the project. The project changes do introduce potential impacts to sensitive species and habitats associated with beneficial reuse of sediment in the Novato Creek Baylands, which are evaluated below

Plants

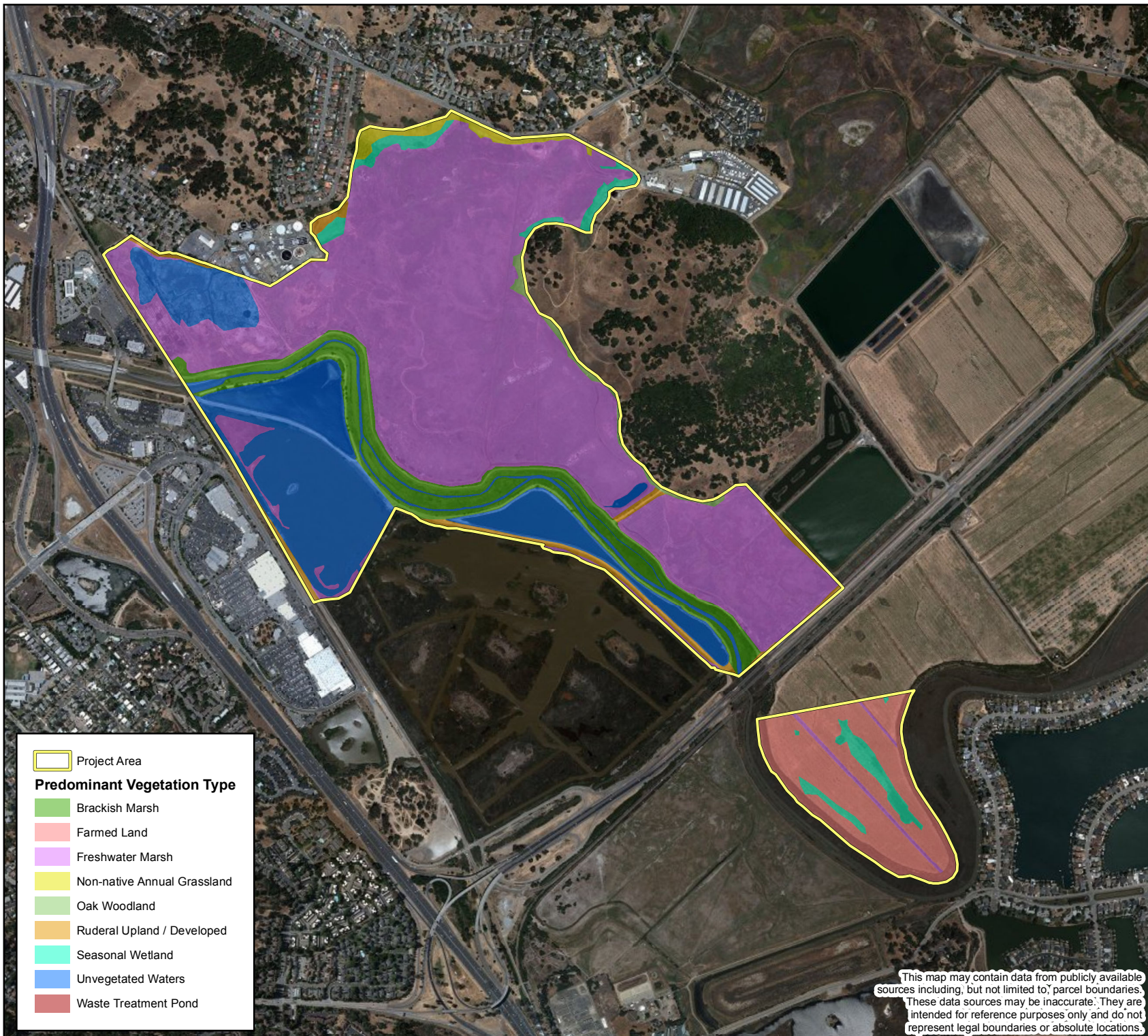
The project area has potential to support 22 special-status plant species, as indicated in the table below. Habitat suitability for these species varies throughout the project area. For example, the farmed agricultural fields south of Highway 37 have a much lower potential to support many of these species than the brackish marsh and freshwater marsh habitats along Novato Creek and in Baylands north of Highway 37.


Novato Creek
Flood Control
Dredging
Project

Marin County,
California










Figure 8.

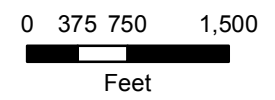
Predominant
Vegetation Map



 Project Area

Predominant Vegetation Type

-  Brackish Marsh
-  Farmed Land
-  Freshwater Marsh
-  Non-native Annual Grassland
-  Oak Woodland
-  Ruderal Upland / Developed
-  Seasonal Wetland
-  Unvegetated Waters
-  Waste Treatment Pond



This map may contain data from publicly available sources including, but not limited to, parcel boundaries. These data sources may be inaccurate. They are intended for reference purposes only and do not represent legal boundaries or absolute locations.

Map Prepared Date: 4/12/2016
Map Prepared By: Fhourigan
Base Source: Esri Streaming - NAIP 2014
Data Source(s): WRA

Table 3.Special Status Plant Species

Scientific Name	Common Name	Family	CNPS Rank
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	Poaceae	1B.1
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	Fabaceae	1B.2
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	Poaceae	2B.1
<i>Campanula californica</i>	swamp harebell	Campanulaceae	1B.2
<i>Carex buxbaumii</i>	Buxbaum's sedge	Cyperaceae	4.2
<i>Carex leptalea</i>	bristle-stalked sedge	Cyperaceae	2B.2
<i>Carex lyngbyei</i>	Lyngbye's sedge	Cyperaceae	2B.2
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	Orobanchaceae	4.2
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	Orobanchaceae	1B.2
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes bird's-beak	Orobanchaceae	1B.2
<i>Chloropyron molle</i> ssp. <i>molle</i>	soft bird's-beak	Orobanchaceae	1B.2
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	Apiaceae	2B.1
<i>Heteranthera dubia</i>	water star-grass	Pontederiaceae	2B.2
<i>Hosackia gracilis</i>	harlequin lotus	Fabaceae	4.2
<i>Lasthenia californica</i> ssp. <i>Bakeri</i>	Baker's goldfields	Asteraceae	1B.2
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	Apiaceae	1B.1
<i>Lilium maritimum</i>	coast lily	Liliaceae	1B.1
<i>Plagiobothrys glaber</i>	hairless popcornflower	Boraginaceae	1A
<i>Polygonum marinense</i>	Marin knotweed	Polygonaceae	3.1
<i>Rhynchospora californica</i>	California beaked-rush	Cyperaceae	1B.1
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	Malvaceae	1B.2
<i>Toxicoscordion fontanum</i>	marsh zigadenus	Melanthiaceae	4.2

Beneficial reuse of sediments for wetland restoration and construction of flood control facilities may directly or indirectly impact these species if they occur in the project area. Impacts from the proposed changes to the project to these species are considered to be potentially significant, but can be reduced to a less-than-significant level via implementation of **Mitigation Measures BIO-1 and BIO-2**.

Mitigation Measure BIO-1

Protocol-level rare plant surveys shall be conducted during the blooming period of plants prior to initiating ground-disturbing activities in areas of potentially suitable habitat. If special-status plant species are observed in the project area, they shall be avoided during project activities to the extent feasible. If avoidance is not feasible, a qualified biologist shall recommend appropriate means to mitigate for the impacted species. Feasible and appropriate mitigation for impacts to rare plants varies depending on species life history, sensitivity to disturbance, and habitat requirements. Appropriate mitigation for impacts to

special status species may include transplantation of individuals, seed collection and dispersal in areas of suitable habitat, preservation, recommendations for land management practices, or other appropriate measures supported by scientific literature and best practice. Recommendations for mitigation shall include such measures as appropriate depending on the species observed.

Mitigation Measure BIO-2

A qualified biologist shall conduct a training to inform construction crews about special-status plant and wildlife resources and potential exclusion zones within proposed construction areas, and appropriate steps to take if special-status species are encountered.

Salt Marsh Harvest Mouse (Federal Endangered, State Endangered, State Fully Protected)

The salt marsh harvest mouse (SMHM, *Reithrodontomys raviventris*) is found only in salt- and brackish-marsh habitat in the greater San Francisco Bay, San Pablo Bay, and Suisun Bay areas. Habitat associated with SMHM has been described as pickleweed- (*Salicornia*-) dominated marsh (Fisler 1965), though more recent studies have shown that SMHM is supported equally in pickleweed-dominated and mixed-vegetation (including native and non-native salt- and brackish-marsh species) (Sustaita et al. 2005, Sustaita et al. 2011). Known SMHM habitat in the Suisun Bay marshes is often composed of mixed salt- and brackish-marsh vegetation such as rushes, alkali heath (*Frankenia salina*), spearscale (*Atriplex triangularis*), and saltgrass (*Distichlis spicata*), with pickleweed as a relatively minor component. Furthermore, SMHM have also been found to inhabit brackish marshes with a developed thatch layer of vegetation, including bulrush (*Schoenoplectus* spp.), pepperweed (*Lepidium latifolium*)/bulrush, pepperweed/spearscale, cattail (*Typha* spp.) and common reed (*Phragmites australis*) marshes (Shellhammer et al. 2010, USFWS 2013, WRA 2014).

The SMHM does not burrow, and thus it is dependent on year-round vegetative cover. As such, the plant species composition is less important than the quality of cover from predators and the food sources provided by the vegetation. The SMHM prefers deep, dense vegetative cover greater than 11.8 inches (30 centimeters) in height (USFWS 1984), though there are indicators that shorter stands of vegetation (5.9 inches [15 centimeters]) is the shortest commonly used) may also support an abundance of this species (Fisler 1965; Shellhammer et al. 1982). In tidal areas, the suitability of cover and vegetation depth is also dependent on the degree to which tidal vegetation is submerged during high tide events.

Another key habitat requirement for this species is upland or tidal refuge habitat, which is used to escape high tides and storm events that flood portions of its habitat. SMHM is a good swimmer when necessary, but it feeds, nests, and seeks cover outside the water and thus requires refuge from incoming tides and floods. Tall stands of pickleweed that remain unsubmerged during high tides or floods, as well as gumplant (*Grindelia*), bulrush, natural and artificial dikes and levees, floating debris, and grasslands adjacent to the marsh edge are all potential sources of refuge.

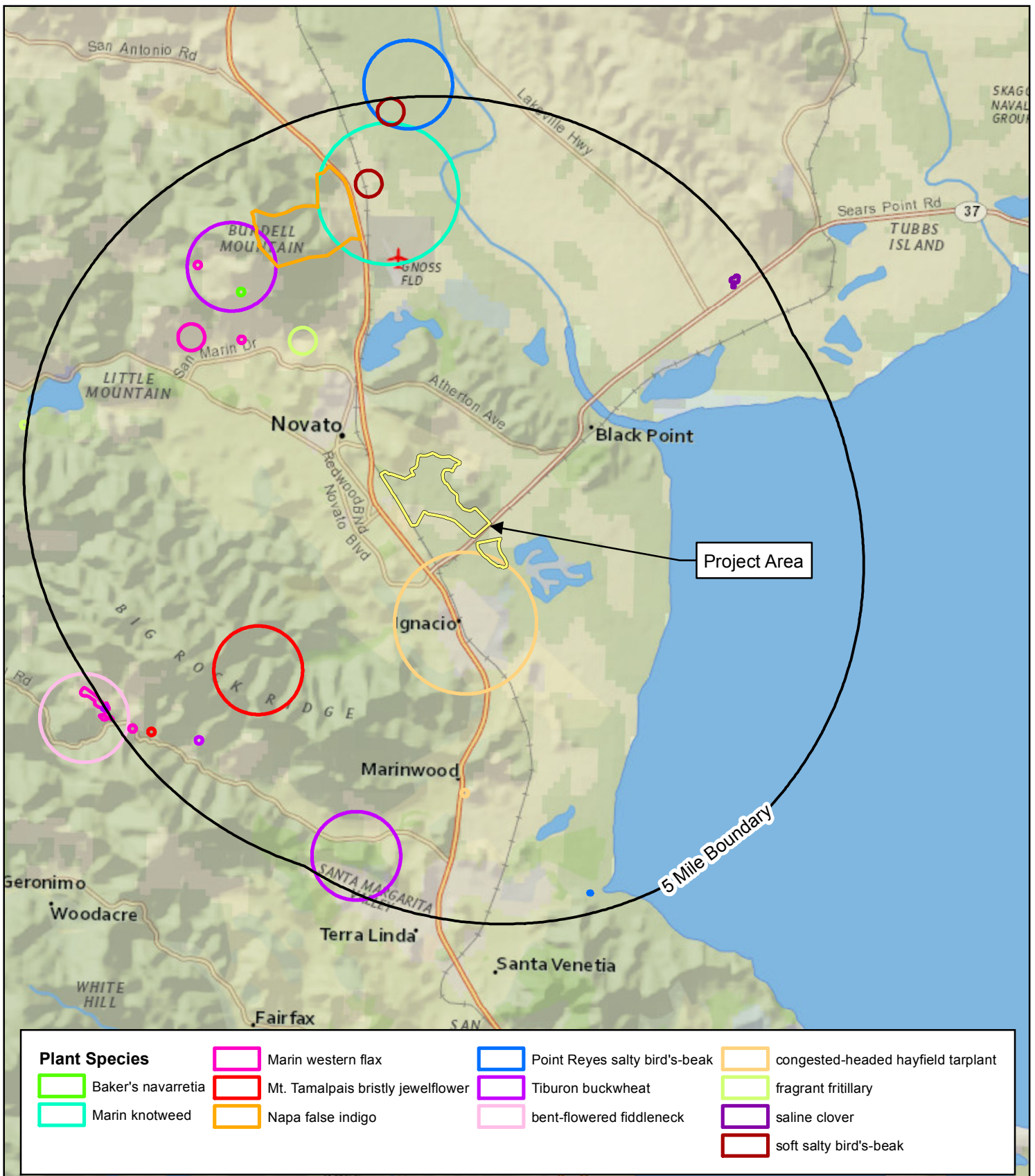
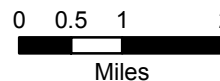
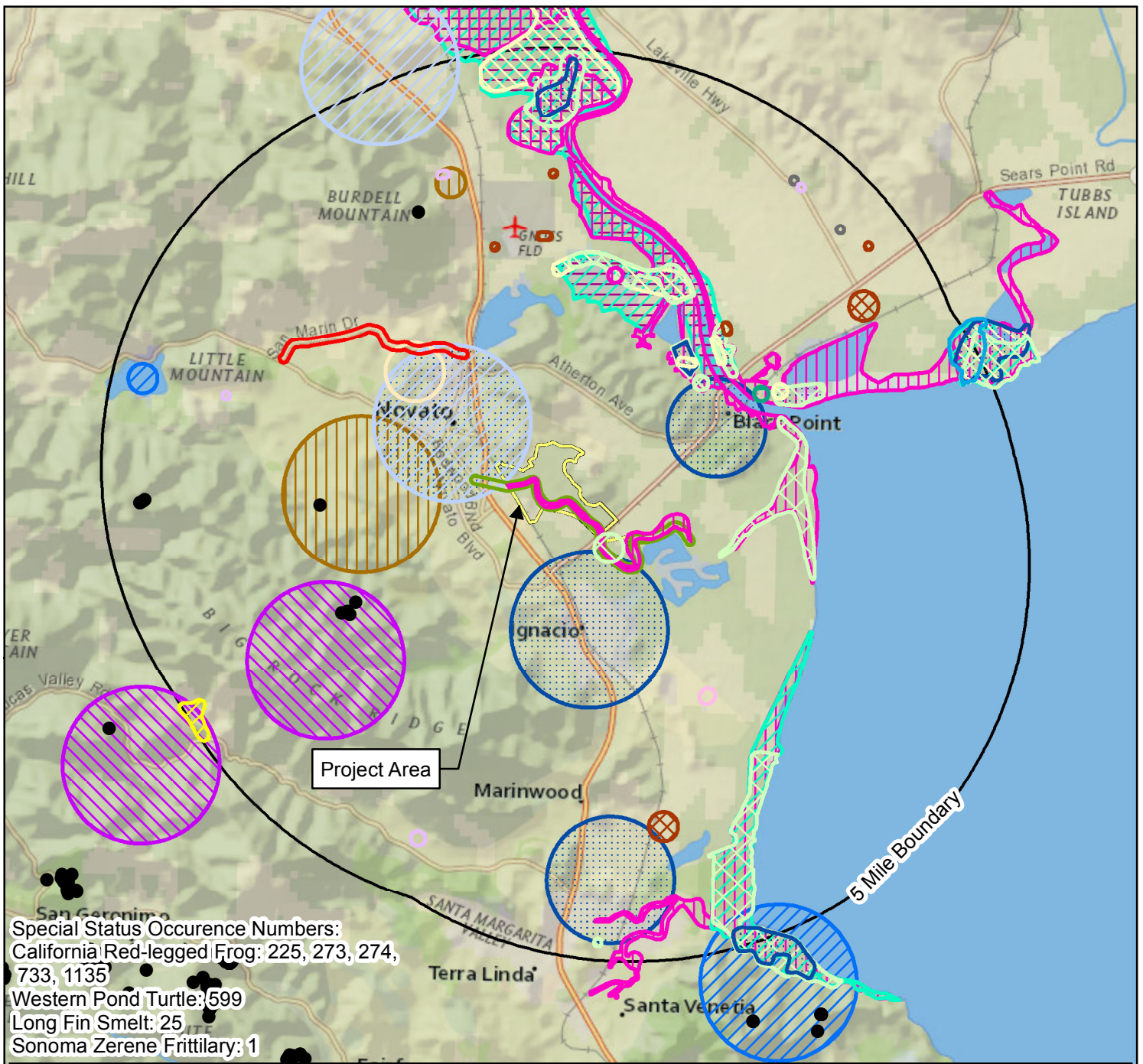


Figure 9. Special Status Plant Species within 5 miles of the Project Area

Novato Creek Flood
Control Dredging Project
Marin County, California



Map Prepared Date: 4/12/2016
Map Prepared By: Fhourigan
Base Source: National Geographic
Data Source(s): CNDDB (March 2016)

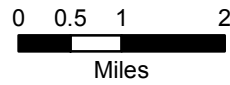


Special Status Occurrence Numbers:
 California Red-legged Frog: 225, 273, 274, 733, 1135
 Western Pond Turtle: 599
 Long Fin Smelt: 25
 Sonoma Zerene Fritillary: 1

Wildlife Species											
	Sacramento splittail		foothill yellow-legged frog		saltmarsh common yellowthroat						
	California black rail		San Pablo song sparrow		great blue heron		tidewater goby		tricolored blackbird		western bumble bee
	California clapper rail		Suisun shrew		mimic tryonia (=California brackishwater snail)		monarch - California overwintering population		western snowy plover		white-tailed kite
	California tiger salamander		Townsend's big-eared bat		pallid bat		salt-marsh harvest mouse		Spotted Owl Occurrences		
	Marin blind harvestman		Ubick's gnaphosid spider								
	Opler's longhorn moth		burrowing owl								

Figure 10. Special Status Wildlife Species within 5 miles of the Project Area

Novato Creek Flood Control Dredging Project
 Marin County, California



Map Prepared Date: 4/12/2016
 Map Prepared By: Fhourigan
 Base Source: National Geographic
 Data Source(s): CNDDB (March 2016)

Habitat for SMHM must also provide suitable food sources, such as seeds, grass, and pickleweed. The SMHM tolerates food and water with high salinities, which may give this species a competitive advantage over other small mammal species, though high salinity is not a strict habitat requirement. The presence of grassland habitat adjacent to the marsh is not a strict requirement either, though the SMHM's seasonal use of available upland grasslands (sometimes over 300 feet from the marsh edge) suggests that they opportunistically forage and seek cover within grasslands (USFWS 2010).

A large portion of the project area contains potentially suitable habitat for SMHM. The mosaic of seasonal and perennial wetlands and associated grassland north of Highway 37 provide potentially suitable habitat, as do wetlands adjacent to Novato Creek and in agricultural fields within 300 feet of freshwater marsh communities and within 300 feet of the levees along Novato Creek. Agricultural areas are likely to support mice only seasonally when the vegetation provides suitable cover and forage for SMHM (spring and summer months, or prior to harvest in the agricultural areas). Vegetated wetland areas which are inundated above the thatch layer are also unsuitable during periods of inundation. Seasonal inundation above the thatch layer occurs throughout most of the Baylands area north of Highway 37, and in much of the freshwater marsh areas south of Highway 37. These areas are inundated to a depth of 12 inches or more during the winter months, extending into the summer months in some areas. Open water, unvegetated open ground, areas with vegetation less than 6 inches in height, and areas with sparse vegetative cover are not suitable for SMHM. Levee construction and placement of dredged material for restoration may directly or indirectly impact SMHM through habitat modification or direct disturbance to individuals.

SMHM is a fully protected species under California Fish and Game Code. Take of Fully Protected species is not permitted, except for very specific circumstances, including efforts to support species recovery. The project's placement of beneficial reuse of dredged material in potential habitat for SMHM is necessary to support recovery of the species. While take of SMHM for the project to support recovery of the species may be permitted by California Fish and Game Code, potential impacts from the proposed changes to the project to SMHM are considered to be potentially significant under CEQA. These potential impacts can be reduced to a less-than-significant level via implementation of **Mitigation Measures BIO-2** (above) and **Mitigation Measures BIO-3** and **BIO-4** (below).

Mitigation Measure BIO-3

Prior to placement of dredged material as part of the project, the District shall ensure that the following measures are implemented to avoid and minimize potential impacts to SMHM. These measures may be implemented directly by the District, or the District will verify that these or similar measures are being implemented by another entity sponsoring a future restoration project.

A qualified biologist with experience in SMHM habitat requirements and life history shall survey the area of disturbance to determine the habitat suitability of the area of dredged material placement. The biologist will recommend appropriate mitigation and minimization measures as detailed below, or measures recommended or modified through consultation with the USFWS

and/or CDFW. The timing of dredged material placement shall be considered in relation to the seasonal suitability of habitat when recommending the implementation of detailed minimization measures. As part of the recommendation, the qualified biologist shall clearly state how the beneficial sediment reuse benefits SMHM in relation to requirements of California Fish and Game Code.

- In areas of suitable habitat for SMHM (including areas that are seasonally suitable at the time of dredged material placement), systematic removal of vegetation using mechanized or non-mechanized hand tools shall be completed prior to dredged material placement. Vegetation removal will eliminate any potential habitat and to aid visual location of the species if they have not already passively relocated out of the construction zone. The removal of vegetation shall be supervised by a qualified biological monitor.
- Subsequent to vegetation removal, a temporary exclusion fence shall be placed in and adjacent to suitable habitat in the immediate area of operating equipment. The temporary exclusion fence shall be at least 12 inches higher than the highest adjacent vegetation with a maximum height of 4 feet. The exclusion fence shall be made of a material that does not allow SMHM to pass through or climb, and the bottom shall be buried to a depth of at least 4 inches so that SMHM cannot crawl under the fence. All supports for the exclusion fencing shall be placed on the inside of the work area. The exclusion fencing shall be inspected at the start of each workday to ensure it is secure. The installation of the exclusion fence shall be supervised by a qualified biological monitor, and a qualified biological monitor shall conduct daily fence inspections or oversee fence maintenance requirements by completing weekly inspections.
- Removal of vegetation would not be necessary if placement of dredged sediment is located in areas of unsuitable habitat, or seasonally unsuitable habitat (open water, bare ground, areas with less than 6 inches of vegetation, upland areas greater than 300 feet from suitable wetland habitat, and areas with less than 50% vegetative cover including agricultural lands immediately following a harvest)

Mitigation Measure BIO-4

Dredged sediment placed in aquatic habitats for beneficial reuse will only be placed in areas necessary to support the dual goals of habitat restoration and flood control as guided by the *Hydraulic Analysis of Alternatives for the Novato Creek Watershed Project*, and related subsequent documents. These activities will substantially increase the quantity and quality of aquatic habitat and ecotones relative to the current condition, to the benefit of special status species and habitat functions and values of the lower Novato Creek system.

California Ridgway's Rail (Federal Endangered, State Endangered, State Fully Protected) and California Black Rail (State Threatened, State Fully Protected)

California Ridgway's rail (CRR, *Rallus obsoletus obsoletus*) and California black rail (CBR, *Laterallus jamaicensis coturniculus*) both occur locally in tidal and brackish marshes. CRR requires extensive marsh areas with direct tidal influence and well-defined marsh zonation. Important CRR habitat elements are:

well-developed sloughs and secondary tidal channels; extensive cordgrass (*Spartina* spp.) stands; dense salt marsh vegetation for cover; intertidal mudflats (for foraging); abundant invertebrate food resources; and, transitional upland vegetation for high-tide refuge (Harvey 1988). CRR nests are placed to avoid flooding by tides, yet in dense enough cover to be hidden from predators and to support a relatively large nest (Storey et al. 1988). The extremely secretive CBR is associated year-round with dense vegetation in the upper (higher-elevation) portions of occupied marshes, where somewhat limited direct tidal inundation occurs; nests are placed on the ground. CBR can also be found in diked or otherwise non-tidal marsh areas if the vegetation is suitably dense and similar in character to that of a tidal marsh.

CRR is known to occur within tidal marsh areas along Novato Creek within the project area. Summarizing several consecutive years of population-level studies, Liu et al. (2012) reported that CRR had been observed (albeit in very low densities) along Novato Creek from just east of the 101 freeway to the creek's mouth. CRR is presumably scarcest in the creek's upstream reach (where tidal marsh extent is narrowest), and most abundant in the lower reaches and at the mouth where relatively large areas of tidal marsh exist. There is no potential for CRR occupancy of brackish and seasonal wetlands within the project area that do not regularly receive direct tidal inundation. In addition to potentially occurring along Novato Creek within the project area, CBR may also be present in brackish marsh and seasonal wetland areas west of Highway 37, particularly the areas north of Novato Creek. CBR presence in these latter areas likely varies annually dependent upon habitat conditions (e.g., total extent of marsh, density of vegetation, etc.) but cannot be ruled out in any year.

Placement of beneficial reuse dredged material during the general CBR and CRR breeding season (February 1 through August 31) may cause a disturbance to these species, and could adversely impact nesting activity within or adjacent to the project area (e.g., by causing nest abandonment). These impacts from the proposed changes to the project are considered to be potentially significant, but can be reduced to a less-than-significant level via implementation of **Mitigation Measure BIO-2** and **BIO-4** (above) and **Mitigation Measures BIO-5** (below). Dredging within Novato Creek and its tributaries would have a less than significant impact on CRR and CBR because areas of dredging do not support suitable habitat, as determined by the 2008 IS/MND.

Mitigation Measure BIO-5

Placement of dredged material within 700 feet of tidal marsh along Novato Creek shall be avoided during the CRR and CBR breeding season (from February 1 through August 31) each year. If work within 700 feet of potential CRR habitat cannot feasibly be avoided during the CRR and CBR breeding season, a presence/absence survey effort using methods approved by CDFW and USFWS shall be conducted by a qualified biologist that covers tidal marsh areas within 700 feet of work areas. Work within these areas may not proceed until completion of the surveys and authorization from CDFW and USFWS is given.

Other Special-Status and Non-Special-Status Avian Species

The project's placement of dredged material has the potential to impact potential nesting and foraging habitat for special-status and non-special status avian

species and could impact nesting activity. These impacts are considered to be potentially significant, but can be reduced to a less-than-significant level via implementation of **Mitigation Measure BIO-6**.

Mitigation Measure BIO-6

No surveys or other avoidance measures for breeding bird species would be necessary for dredged material placement or vegetation clearing for dredged material placement completed during the period of September 1 through January 31, which is outside of the avian breeding season. If ground disturbance and/or vegetation removal occurs during the avian breeding season (February 1 through August 31), pre-construction breeding bird surveys shall be performed by a qualified biologist to avoid the destruction of or disturbance to active nests (those with eggs and/or young). Specifically, surveys shall be conducted within 14 days of work initiation and cover areas within 500 feet of direct disturbance areas. Surveys can be used to detect the nests of special-status (not including listed rails) as well as non-special-status birds, which are protected under the MBTA. An exclusion zone shall be established around each active nest found in the survey until a qualified biologist has determined that all young have fledged or the nest otherwise becomes inactive (e.g., due to predation). Suggested buffer zone distances differ depending on species, location, and placement of nest and shall be established under the direction of a qualified biologist. This measure may be completed by the District or the District may verify that an entity sponsoring a restoration project has implemented this or a similar measure prior to dredged material placement.

Riparian Habitat and Other Potential CDFW Jurisdictional Areas

Potential impacts and mitigation for riparian areas were evaluated as part of the 2008 IS/MND. Project changes to the placement of dredged material do not have the potential to affect streams or riparian habitat. Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code. Dredged material placement could affect areas within CDFW jurisdiction if it occurs within existing open water ponds adjacent to Novato Creek (i.e., Duck Bill and Herons Beak Ponds). These potential impacts are **less than significant** because the placement of dredged material within these open water areas would only be completed to support habitat restoration.

Federal Protected Wetlands and Waters

Temporary and permanent impacts to federal-protected wetlands would occur as a result of the placement of dredge material. Approximately 4 acres of permanent impacts to wetlands would occur as a result of the construction of a new levee structural core and the creation of the ecotone slope placed. Additional temporary and permanent impacts would occur as a result of restoration activities involving the placement dredged material in wetlands. These impacts are considered to be potentially significant, but can be reduced to a less-than-significant level via implementation of **Mitigation Measure BIO-4** (above). Additionally, the project will comply with **Mitigation Measure 7.a.1** from the 2008 IS/MND.

2) Substantial change in the diversity, number, or habitat of any species of plants or animals currently present or likely to occur at any time throughout the year?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

(source #(s) 2,8,20)

The proposed changes to the project would not substantially change the diversity, number, or habitat of any species of plants or animals currently present or likely to occur at any time. The proposed changes to the project would have potentially significant impacts during the levee construction, ground-disturbing activities, and restoration activities. **Mitigation Measures BIO-1** through **BIO-6** would reduce these potential impacts to a less-than-significant level. The overall project will restore and create wetland habitat, providing a net improvement over existing conditions and an overall benefit for plants and wildlife. Therefore, operational impacts of the proposed changes to the project would be less than significant.

3) Introduction of new species of plants or animals into an area, or improvements or alterations that would result in a barrier to the migration, dispersal or movement of animals?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

(source #(s): 2,8,20)

WRA previously identified New Zealand mudsnail in portions of lower Novato Creek during past fish rescue operations. Operation of equipment for the project has the potential to spread New Zealand mudsnail to other areas of the Bay, a potentially significant impact. Spread of this species within the project area is a less than significant impact based on its known presence in lower Novato Creek. Additionally, non-native plants are often introduced by construction equipment relocated from other construction sites. Without removal of excess sediment by washing construction equipment that could transport seed to the project site, the project has the potential to introduce non-native plant species to the project area. These impacts from the proposed changes to the project are considered to be potentially significant, but can be reduced to a less-than-significant level via implementation of **Mitigation Measure BIO-7**.

Mitigation Measure BIO-7

The District shall prevent the unintentional introduction of new plants or animals into the project area by cleaning all equipment prior to transporting the equipment to the project site. The District shall also require that equipment used for in-water work or for the hydraulic placement of dredged material be thoroughly cleaned and allowed to dry following in-water work at the project site. Dredged material not planned for hydraulic placement shall be allowed to dry for no less than 50 days after dewatering to minimize the spread of this invasive species within the watershed.

No significant migratory corridors are anticipated to be affected by project activities. No project activities are anticipated to impact wildlife migration corridors. Therefore, these impacts would be **less than significant**.

4) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

(source #(s): 2,8,20)

The project is not located within an area designated by the County as forest land or timberland. Therefore, impacts would be **less than significant**.

5) Result in the loss of forest land or conversion of forest land to non-forest use?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

(source #(s): 1,2)

The project is not located within an area designated by the County as forest land or timberland. Therefore, impacts would be **less than significant**.

H. ENERGY AND NATURAL RESOURCES.

Would the proposed project result in:

1) Substantial increase in demand for existing energy sources, or conflict with adopted policies or standards for energy use?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

(source #(s): 1)

The proposed changes to the project would not increase demand for existing energy sources or standards for energy because energy sources are not involved in the project. Accordingly, there would be a **less than significant** impact on energy or natural resources and the proposed changes would not conflict with any policies or standards.

2) Use of non-renewable resources in a wasteful and inefficient manner? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

Vehicle fuel would be required for transport of dredged sediment and construction of beneficial reuse activities, but these changes to the project are providing uses for dredged material within the project area. Therefore, the proposed changes create a more efficient use of vehicle fuel, rather than continuing to deposit all sediment off-site for future use. Construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Therefore, impacts would be *less than significant*.

3) Loss of significant mineral resource sites designated in the Countywide Plan from premature development or other land uses which are incompatible with mineral extraction? (source #(s): 1,14)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would occur within the same project area. Therefore, the proposed changes to the project would continue to have a *less than significant* impact on mineral resources.

I. HAZARDS.

Would the proposed project involve:

1) A risk of accidental explosion or release of hazardous substances including, but not necessarily limited to: 1) oil, pesticides; 2) chemicals; or 3) radiation)? (source #(s): 1,)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

Small amounts of hazardous materials would be used during construction activities for equipment maintenance (e.g., fuel and solvents). Use of hazardous materials would be limited to the construction phase and would comply with applicable local, state, and federal standards associated with the handling and storage of hazardous materials. **Mitigation Measure WATER-1** (Section D Water) requiring an updated SPCCP would reduce impacts to *less than significant*.

2) Possible interference with an emergency response plan or emergency evacuation plan? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The changes to the proposed project would also occur within Novato Creek, selected tributaries, City and County maintained roads as well as publically owned open space land. Therefore, beneficial reuse activities within the project site would not interfere with any emergency response or evacuation plans. Although new haul routes are proposed for these changes, trucking and traffic would continue to be routed specifically to disperse congestion at points of concentration. The proposed changes to the project would have a **less than significant** impact on emergency plans in the area.

3) The creation of any health hazard or potential health hazard? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

The proposed changes to the project would continue to reduce the potential of flood-related health hazards to the area by alleviating flood constrictions and increasing the capacity of the existing floodwater conveyances. Construction activities associated with the proposed beneficial sediment reuse have the potential to result in a significant impact from the accidental release of hazards materials, unless mitigated. **Mitigation Measure GEO-1** requiring an updated SPCCP would reduce potential impacts to **less than significant**.

4) Exposure of people to existing sources of potential health hazards? (source #(s): 10,22)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

There are no known existing sources of potential health hazards associated with the project area. Therefore, the changes to the project would have a **less than significant** impact on exposure to existing health hazards.

5) Increased fire hazard in areas with flammable brush, grass, or trees? (source #(s): 2,23)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would occur within Novato Creek and adjacent wetlands. Therefore, the proposed changes to the project would have a **less than significant** impact on fire hazards in the project area.

J. NOISE.

Would the proposal result in:

1) Substantial increases in existing ambient noise levels? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

The proposed changes to the project would include noise impacts associated with transport and placement of dredged sediment and levee construction. Noise impacts and regulations have been previously analyzed in the 2008 IS/MND. As with the previous analysis, all noise impacts would be intermittent and temporary from construction operations. The changes to the proposed project would comply with **Mitigation Measures 10.a.1** through **Mitigation Measure 10.a.4** (2008 IS/MND) to ensure noise related impacts are reduced to less than significant impacts. Therefore, impacts would be reduced to **less than significant**.

2) Exposure of people to significant noise levels, or conflicts with adopted noise policies or standards? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

As discussed above and in the 2008 IS/MND, the beneficial reuse activities may result in noise levels unacceptable to residential uses, but this would be temporary and intermittent. Application of the Mitigation Measures discussed above would serve to further reduce potential noise generation to **less than significant**.

K. PUBLIC SERVICES.

Would the proposal have an effect upon, or result in a need for new or altered government service in any of the following areas:

1) Fire protection? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve the need for fire protection and therefore would have a **less than significant** impact on fire protection services.

2) Police protection? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve the need for police protection and therefore would have a **less than significant** impact on police protection services.

3) Schools? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve the schools or increase the population in any way and therefore would have a **less than significant** impact on schools.

4) Maintenance of public facilities, including roads? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project include activities for beneficial sediment reuse and dredged material transportation. As described in Section F (Transportation/Traffic), the proposed changes are estimated to require a maximum of 37 truck trips per hours. Roads to be used are currently rated for truck traffic.

Due to the number of truck trips from the 2008 project analysis and from the proposed changes, the project has the potential for significant impacts as it related to the maintenance of public facilities/roads, unless mitigated. Implementation of **Mitigation Measure 11.d.1** and **Mitigation Measure 11.d.2** (2008 IS/MND) would reduce potential impacts to **less than significant**.

5) Other governmental services? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve the need for other governmental services and therefore would have a **less than significant** impact.

L. UTILITIES AND SERVICE SYSTEMS.

Would the proposal result in a need for new systems, or substantial alterations to the following utilities:

1) Power or natural gas? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve additional need for or alterations to power or natural gas and therefore would have a **less than significant** impact on these utilities.

2) Communications systems? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve additional need for or alterations to communication systems and therefore would have a **less than significant** impact.

3) Local or regional water treatment or distribution facilities? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve additional need for or alterations to water treatment or distribution facilities and therefore would have a **less than significant** impact on these utilities.

4) Sewer or septic tanks? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve additional need for or alterations to sewer and septic tanks and therefore would have a **less than significant** impact on these utilities.

5) Storm water drainage? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve additional need for or alterations to existing storm water drainage systems and therefore would have a **less than significant** impact on these facilities.

6) Solid waste disposal? (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These changes would not involve additional need for or alterations to solid waste disposal facilities as they would not increase the amount of material brought to landfills, and therefore would have a **less than significant** impact on solid waste disposal facilities.

M. AESTHETICS/VISUAL RESOURCES.

Would the proposed project:

1) Substantially reduce, obstruct, or degrade a scenic vista open to the public or scenic highway, or conflict with adopted aesthetic or visual policies or standards? (source #(s): 1,2,9)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The proposed changes to the project would include activities for beneficial sediment reuse and dredged material transportation. These activities would involve transportation or hydraulic placement of dredged materials in scenic areas that are visible from Highway 37 and visible from areas used by the public for informal recreational use. These disruptions would be minor and temporary, and would enhance the scenery of the area in the long term by supporting habitat restoration. Therefore, the project would have a **less than significant** impact on these resources.

2) Have a demonstrable negative aesthetic effect by causing a substantial alteration of the existing visual resources including, but not necessarily limited to: 1) an abrupt transition in land use; 2) disharmony with adjacent uses because of height, bulk or massing of structures; or 3) cast of a substantial amount of light, glare, or shadow? (source #(s): 1,2)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The changes to the proposed project would not substantially alter visual resources through substantial changes addressed by this impact category. The project will have **a less significant** impact on visual resources as they would remain consistent with the surrounding land uses, would not involve development of structures or sources of light.

N. CULTURAL RESOURCES.

Would the proposed project:

1) Disturb paleontological, archaeological, or historical sites, objects, or structures? (source #(s): 1,24)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[X]	[]	[]

The 2008 IS/MND included review of the Marin County Archeological Sensitivity Maps for the analysis of the subject property’s likelihood to encounter archeological resources. In order to update this analysis for the proposed changes to the project, in March 2016, Tom Origer & Associates (Origer) conducted archival research and field surveys, providing greater analysis of the project area in the Historical Resources Survey Report (HRSR) (Appendix A). The Native American Heritage Commission also provided a list of tribes to be consulted (Appendix B), and the results of this consultation are provided in the HRSR.

According to the HRSR, no cultural resources were located during the archival studies and there are no reported ethnographic sites within one mile of the survey area. However, prehistoric archeological sites could be found within the study area.

Based on the results of the prefield research, it was anticipated that there was a remote possibility that prehistoric and historic-period cultural resources could be found within the study area. Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

According the results of the field surveys, the Northwestern Pacific Railroad lies immediately west of, but outside of, the study area and a portion of the levee system that lines Novato Creek consists of the southern boundary of the study area. No further study is recommended for either of these resources.

Impacts related to the accidental discovery of cultural resources resulting from the proposed changes to the project may be potentially significant unless mitigated. The proposed changes to the project will result in a **less than significant** impact to cultural resources providing **Mitigation Measure 14.a.1** (2008 IS/MND) and **Mitigation Measure CULT-1** are implemented.

IMPACT CULT-1: Accidental Encounter of Cultural Resources

Mitigation Measure CULT-1: If archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

2) Have the potential to cause a physical change which would adversely affect unique ethnic cultural values, or religious or sacred uses within the project area? (source #(s): 1,24)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

No known historic ethnic, religious, or sacred uses are known to exist on or near the project site. Such uses were not identified in the HRSR or the 2008 IS/MND. Therefore, the proposed changes to the project would have a **less than significant** impact on such uses.

O. SOCIAL AND ECONOMIC EFFECTS.

Would the proposal result in:

1) Any physical changes which can be traced through a chain of cause and effect to social or economic impacts. (source #(s): 1)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
	[]	[]	[X]	[]

The changes to the proposed project would not result in known changes to soil and economic conditions and, therefore, impacts would be **less than significant**.

VIII. MANDATORY FINDINGS OF SIGNIFICANCE.

Pursuant to Section 15065 of the State EIR Guidelines, a project shall be found to have a significant effect on the environment if any of the following are true:

- | | Yes | No | Maybe |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-------|
| a) Does the project have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | [] | [X] | [] |

As described in Section V of this Initial Study and the analysis provided in the 2008 Novato Creek Flood Control Dredging Project Initial Study/Mitigated Negative Declaration, any potentially significant environmental impacts from the proposed project would be mitigated to a ***less-than-significant*** level.

- | | Yes | No | Maybe |
|-----------------------------------------------------------------------------------------------------------------------------|-----|-----|-------|
| b) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? | [] | [X] | [] |

As described in Section V of this Initial Study and the analysis provided in the 2008 Novato Creek Flood Control Dredging Project Initial Study/Mitigated Negative Declaration, any potentially significant environmental impacts from the proposed project would be mitigated to a ***less-than-significant*** level.

- | | Yes | No | Maybe |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-------|
| c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects). | [] | [X] | [] |

The impact analyses of this Initial Study and the 2008 Novato Creek Flood Control Dredging Initial Study/Mitigated Negative Declaration

considered cumulative and project-specific potential impacts. There are no known related projects currently proposed in the project area. The Initial Study analyses showed that all potentially significant project-related impacts would be reduced to less than significant and would not result in any cumulatively considerable impacts.

- | | Yes | No | Maybe |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-------|
| d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | [] | [X] | [] |

As described in Section V of this Initial Study and the analysis provided in the 2008 Novato Creek Flood Control Dredging Project Initial Study/Mitigated Negative Declaration, any potentially significant environmental impacts from the proposed project would be mitigated to a **less-than-significant** level.

IX. PROJECT SPONSOR'S INCORPORATION OF MITIGATION MEASURES:

Acting on behalf of the project sponsor or the authorized agent of the project sponsor, I (undersigned) have reviewed the Subsequent Initial Study for the Novato Creek Flood Control Dredging Project and have particularly reviewed the mitigation measures identified herein. I accept the findings of the Subsequent Initial Study, including the recommended mitigation measures, and hereby agree to modify the proposed project to include and incorporate all mitigation measures set out in this Subsequent Initial Study.

Arnold J. Ju

Marin County Flood Control District

4/20/16

Date

X. DETERMINATION:

(Completed by Marin County Environmental Coordinator). Pursuant to Sections 15081 and 15070 of the State Guidelines, the forgoing Initial Study evaluation, and the entire administrative record for the project:

I find that the proposed project WILL 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 the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

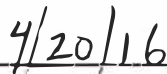
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.



Signature

Rachel Reid, Environmental Coordinator

Printed Name



Date

For

ATTACHMENT 1

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

The following is a list of relevant information sources that have been incorporated by reference into the foregoing Initial Study pursuant to Section 15150 of the California Environmental Quality Act Statutes and Guidelines. The number assigned to each information source generally corresponds to the number listed in parenthesis following the incorporating topical question of the Initial Study checklist. These documents are both a matter of public record and available for public inspection at the Planning Division office of the Marin County Community Development Agency (CDA), Room 308, Civic Center, 3501 Civic Center Drive, San Rafael or online. The information incorporated from these documents shall be considered to be set forth fully in the Initial Study.

1. Professional judgment and expertise of the environmental/technical specialists evaluating the project, based on a review of existing conditions and project details, including standard construction measures.
2. Marin Countywide Plan, CDA - Planning Division (2007).
3. Marin County Code, Development Code, Title 22, CDA - Planning Division (2003).
4. Marin County Development Standards, Title 24, Marin County Department of Public Works -Land Use & Water Resources Division.
5. Novato 1996 General Plan, 2016.
6. [ABAG] Association of Bay Area Governments 2013. Earthquake and Hazards Program. Liquefaction Maps and Information Website: <http://quake.abag.ca.gov/liquefaction/>. Accessed March 2016.
7. [CDC] California Department of Conservation. 2010. Farmland Mapping and Monitoring Program: Marin County Important Farmland 2010. Available at: < <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/>>. Accessed March, 2016.
8. [CDFW] California Department of Fish and Wildlife. 2016. California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch. Sacramento.
9. [Caltrans] California Department of Transportation. 2012. Scenic highways: Marin County. Available at: < http://www.dot.ca.gov/hq/LandArch/scenic_highways/ >. Accessed March, 2016.
10. [DTSC] Department of Toxic Substances Control. 2011. EnviroStor database: Novato. Available at: <<http://www.envirostor.dtsc.ca.gov/public/>>. Accessed March 2016.

11. [FEMA] Federal Emergency Management Agency. 2016 Flood Insurance Rate Map Panel 283 of 531; Map Number 06041C0283E and 2009 Flood Insurance Rate Map Panel 291 of 531; Map Number 06041C0291D. . Accessed March 2016.
12. County of Marin, 2011. Capital Improvement Program 2011-2012. Online at <http://www.co.marin.ca.us/depts/AD/Main/bgt11/CIP.pdf>.
13. The Marin County Bicycle and Pedestrian Master Plan, 2008.
14. Mineral Resource Preservation Sites map: California State Department of Conservation Division of Mines and Geology (1987).
15. [NRCS] Natural Resources Conservation Service. 2013. Soil Classification. Online at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/class/>.
16. Marin County, Marin County Stormwater Pollution Prevention Program (MCSTOPPP). Online at <http://www.marincounty.org/depts/pw/divisions/mcstoppp>.
17. [BAAQMD] Bay Area Air Quality Management District. 2010. Clean Air Plan. Online at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>.
18. [BAAQMD] Bay Area Air Quality Management District. 2014. CEQA Guidelines. <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>.
19. Marin County, Greenhouse Gas Reduction Plan. 2006. Marin County Community Development Agency Online at http://www.marincounty.org/depts/cd/divisions/planning/2007-marin-countywide-plan/~media/Files/Departments/CD/Planning/CurrentPlanning/Publications/County%20Wide%20Plan/BackGround%20Reports/Greenhouse_Gas_Reduction_Plan.pdf.
20. California State Water Resource Control Board. 2016. GeoTracker. Available at <http://geotracker.waterboards.ca.gov/>.
21. Marin County, MarinMap Data Viewer. 2016. Available at <http://www.marinmap.org/Geocortex/Essentials/Marinmap/Web/Viewer.aspx?Site=MMDataViewer>
22. Tom Origer & Associates (Origer). 2016. Historical Resources Survey Report for the Novato Creek Sediment Removal Project. Prepared for WRA, Inc.

Additional Biological References:

Fisler, GF. 1965. Adaptations and speciation in harvest mice of the marshes of San Francisco Bay. University of California Publications in Zoology 77: 1-108.

Harvey, T. E. 1988. Breeding biology of the California clapper rail in South San Francisco Bay. Transactions of the Western Section of the Wildlife Society 24: 98-104.

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Shellhammer, H.S., Jackson, R., Davilla, W., Gilroy, A.M., Harvey, H.T., and Simons, L. 1982. Habitat Preferences of Salt Marsh Harvest Mice (*Reithrodontomys raviventris*). The Wasmann Journal of Biology. Vol: 40(1-2). pp. 102-144.

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Storey, A.E., W.A. Montevecchi, H.F. Andrews, and N. Sims. 1988. Constraints on nest site selection: A comparison of predator and flood avoidance in four species of marsh nesting birds (Genera: *Catoptrophorus*, *Larus*, *Rallus*, and *Sterna*). J. Comp. Psychol. 102:14-20.

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Sustaita, D, PF Quickert, L Patterson, L Barthman-Thompson, S Estrella. 2011. Salt Marsh Harvest Mouse Demography and Habitat Use in the Suisun Marsh, California. The Journal of Wildlife Management 75(6): 1498-1507.

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USFWS. 2010. Salt marsh harvest mouse (*Reithrodontomys raviventris*) 5-Year Review: Summary and Evaluation. Sacramento, California. 49 pp. February 16.

[USFWS] U.S. Fish and Wildlife Service. 2013. Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California. Sacramento, California. xviii + 605 pp. August.

APPENDIX A

**HISTORICAL RESOURCES SURVEY REPORT (HRSR)
TOM ORIGER & ASSOCIATES
MARCH 2016**

**An Historical Resources Survey for the
Novato Creek Sediment Removal Project
Novato, Marin County, California**

Eileen Barrow, M.A.

March 23, 2016



**An Historical Resources Survey for the
Novato Creek Sediment Removal Project
Novato, Marin County, California**

Prepared by:



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March 23, 2016

ABSTRACT

Tom Origer & Associates conducted an historical resources survey for the Novato Creek Sediment Removal Project, Novato, Marin County, California. The study was requested and authorized by WRA, Inc., on behalf of the Marin County Department of Public Works, to meet requirements of the California Environmental Quality Act. The proposed project includes the removal of sediments from the lower channel of Novato Creek, constructing a levee from the dredged sediments, and stockpiling the dredged sediments until they can be used for wetland restoration. This study includes the approximately 40-acre location of the new levee and the sediment storage site.

This study included archival research at the Northwest Information Center, Sonoma State University (NWIC File No. 15-1299), examination of the library and files of Tom Origer & Associates, and field inspection of the study area. A portion of the Novato Creek levee was found within the study area. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 2016-029).

Synopsis

Project: Novato Creek Sediment Removal
Location: Novato, Marin County
Quadrangles: Novato 7.5' series
Study Type: Intensive (of exposed land)
Scope: Approximately 40 acres
Finds: a portion of P-21-002586 (levee)

Project Personnel

Eileen Barrow Mrs. Barrow has been with Tom Origer & Associates since 2005. She holds a Master of Arts in cultural resources management from Sonoma State University. Mrs. Barrow's experience includes work that has been completed in compliance with local ordinances, CEQA, NEPA, and Section 106 (NHPA) requirements. Her professional affiliations include the Society for American Archaeology, the Society for California Archaeology, the Cotati Historical Society, the Sonoma County Historical Society, and the Western Obsidian Focus Group.

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INTRODUCTION

This report describes an historical resources survey for the Novato Creek Sediment Removal project, Novato, Marin County, California. The study was requested and authorized by WRA, Inc., on behalf of the Marin County Department of Public Works, in compliance with requirements of the California Environmental Quality Act. The proposed project includes the removal of sediments from the lower channel of Novato Creek, constructing a levee from the dredged sediments, and stockpiling the dredged sediments until they can be used for wetland. This study includes the approximately 40-acre location of the new levee and the sediment storage site. Documentation pertaining to this study is on file at Tom Origer & Associates (File No. 2016-029).

REGULATORY CONTEXT

The California Environmental Quality Act (CEQA) requires that historical resources be considered during the environmental review process. This is accomplished by an inventory of resources within a study area and by assessing the potential that historical resources could be affected by development. The term “Historical Resources” encompasses prehistoric and historical archaeological sites and built environment resources (e.g., buildings, bridges, canals). An additional category of resources is defined in CEQA under the term “Tribal Cultural Resources” (Public Resources Code Section 21074). They are not addressed in this report. Tribal cultural resources are resources that are of specific concern to California Native American tribes, and knowledge of such resources is limited to tribal people. Pursuant to revisions to CEQA enacted in July of 2015, such resources are to be identified by tribal people in direct, confidential consultation with the lead agency (PRC §21080.3.1).

This historical resources survey was designed to satisfy environmental issues specified in the CEQA and its guidelines (Title 14 CCR §15064.5) by: (1) identifying all historical resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3) assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.

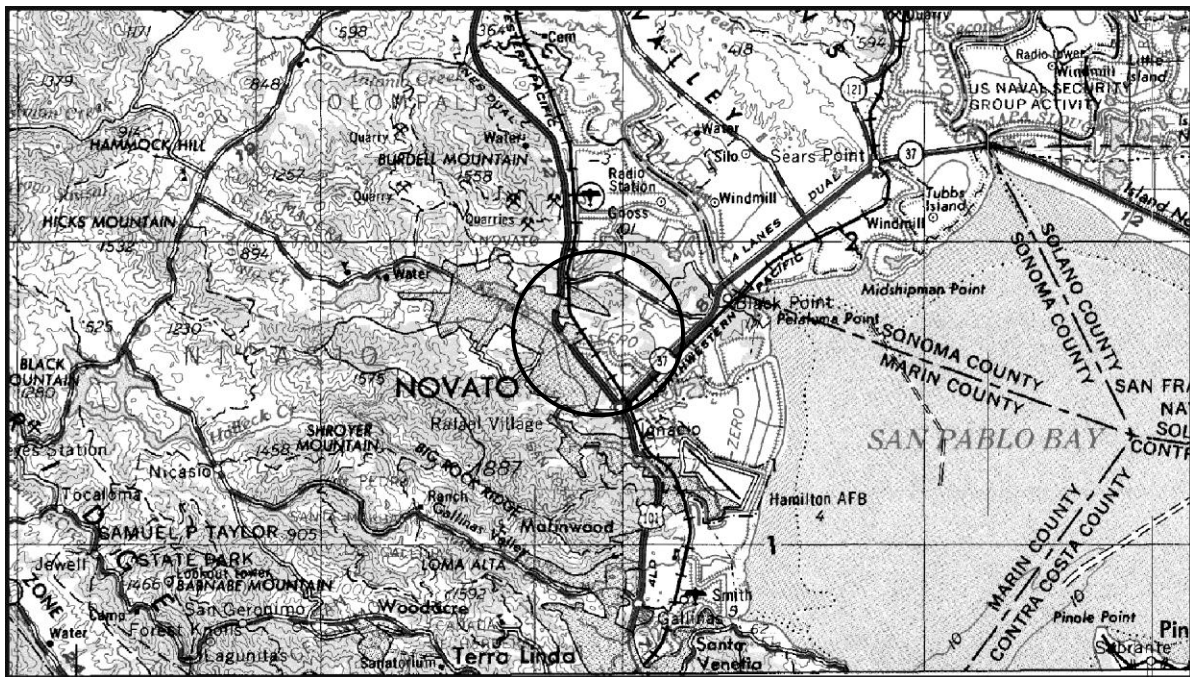


Figure 1. Project vicinity (adapted from the 1970 Santa Rosa 1:250,000-scale USGS map).

Resource Definitions

Historical resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects and districts, and each is described by OHP (1995) as follows.

Site. A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

Building. A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.

Structure. The term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.

Object. The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.

District. A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Significance Criteria

When a project might affect an historical resource, the project proponent is required to conduct an assessment to determine whether the effect may be one that is significant. Consequently, it is necessary to determine the importance of resources that could be affected. The importance of a resource is measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852(a)) as listed below. A resource may be important if it meets any one of the criteria below, or if it is already listed on the California Register of Historical Resources or a local register of historical resources.

An important historical resource is one which:

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of a master or possesses high artistic values.

4. Has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

Additionally, the OHP advocates that all historical resources over 45 years old be recorded for inclusion in the OHP filing system (OHP 1995:2), although the use of professional judgment is urged in determining whether a resource warrants documentation.

PROJECT SETTING

Study Area Location and Description

The study area is located in the city of Novato, near Slade Park and the Novato Sanitary District Wastewater Treatment facility on Davidson Street, Marin County, as shown on the Novato 7.5' USGS topographic map (Figure 2). It consists of approximately 40 acres of reclaimed marshland (Nichols and Wright 1971).

Soils within the study area primarily belong to the Reyes series; however, there are small amounts of Xerorthents fill and urban land near some of the edges of the study area (Kashiwagi 1985:Sheet 9). Reyes soils are very deep, somewhat poorly draining soil found on reclaimed tidelands. In a natural state these soils support the growth of water tolerant plants such as tule and salt grass. Historically, parcels containing Reyes soils were used for growing oat hay, and a few areas have been used for urban development (Kashiwagi 1985:49-50).

The study area is located on Holocene estuarine deposits which are less than 10,000 years old (Rice *et al.* 2002). The closest source of year-round fresh water is Novato Creek which has been channelized, but is located just south of the study area.

The study area and its surroundings include a nearby fresh water source and well-drained soils that could have supported a variety of plants that in turn could have served as food and cover for animals. The presence of these natural attributes suggests that the study area could have been a desirable place for prehistoric people to gather resources.

Cultural Setting

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago (Erlandson *et al.* 2007). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion.

Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

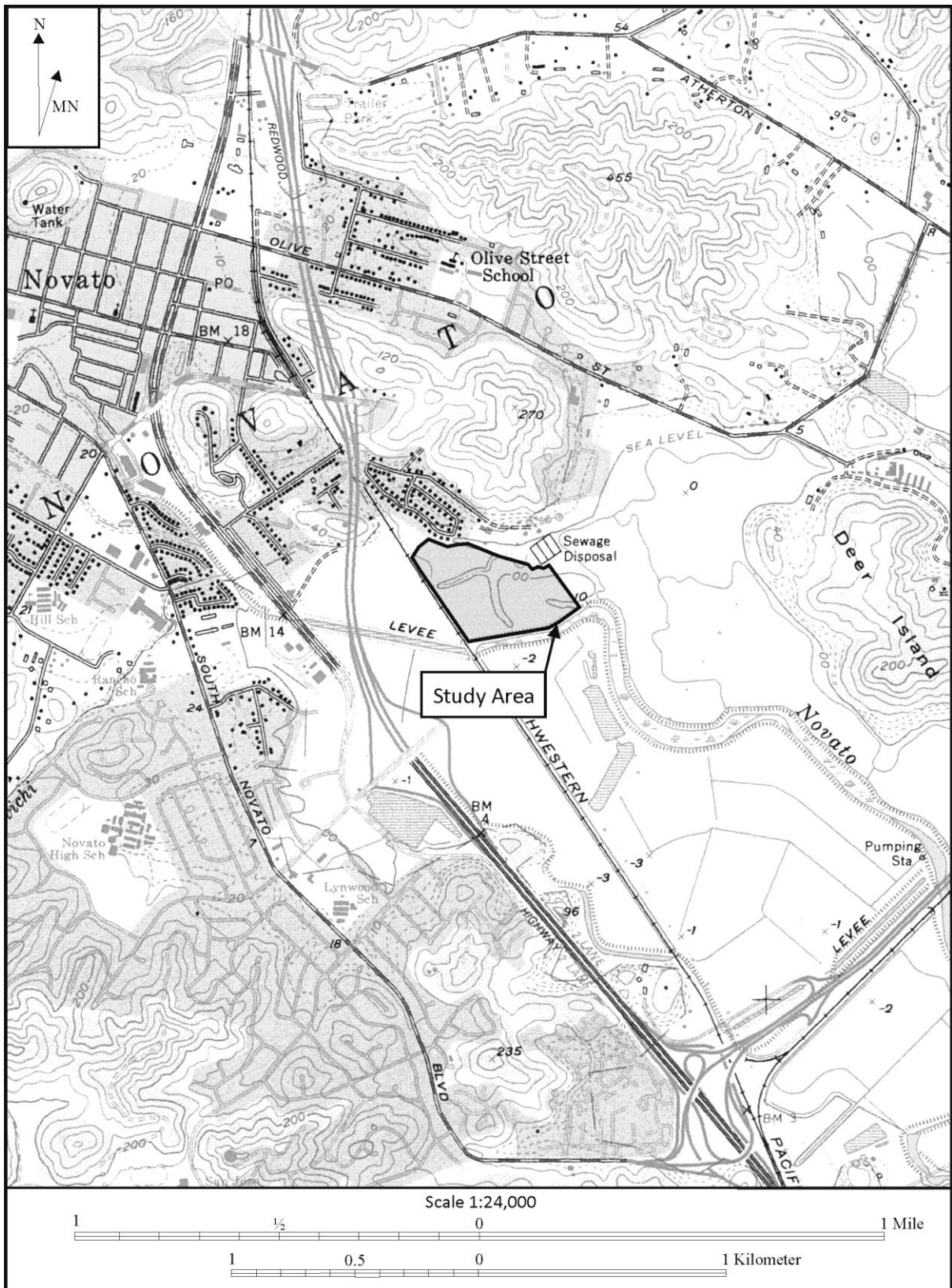


Figure 2. Study area location (adapted from the 1980 USGS Novato 7.5' USGS topographic map).

At the time of European settlement, the study area was included in the territory controlled by the Coast Miwok (Kelly 1978:414). The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Barrett 1908; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

STUDY PROCEDURES AND FINDINGS

Native American Contact

The State of California's Native American Heritage Commission and the Federated Indians of Graton Rancheria, were contacted in writing. A log of contact efforts is provided at the end of this report (Appendix A). This contact represents notification regarding the project, to provide an opportunity to comment, but does not constitute formal consultation with tribes.

Archival Study Procedures

Archival research included examination of the library and project files at Tom Origer & Associates. A review (NWIC File No. 15-1299) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's *Historic Property Directory* (OHP 2012).

The Office of Historic Preservation has determined that structures in excess of 45 years of age should be considered potentially important historical resources, and former building and structure locations could be potentially important historic archaeological sites. Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area. Maps ranged from hand-drawn maps of the 1800s (e.g., GLO) to topographic maps issued by the United States Geological Survey (USGS) and the United States Army Corps of Engineers (USACE).

In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed. Sources reviewed are listed in the "Materials Consulted" section of this report.

Archival Study Findings

Archival research found that the majority of the study area was previously surveyed (Holman *et al.* 1983; Strother *et al.* 2005). No cultural resources were located during these studies. Eight additional studies have been conducted adjacent to the study area (Desgrandchamp and Clark 1978; Dietz *et al.* 1973; Garcia and Associates 2004; Hayes and Fredrickson 1978; Koenig 2011; Koenig and Brewster 2011; Origer 1990; William Self Associates, Inc. 2006). In 2004, portions of the Northwestern Pacific

Railroad were recorded and/or updated as P-21-002618. However, no portion of the railroad has been recorded within one-half mile of the study area (Garcia and Associates 2004).

There are no reported ethnographic sites within one mile of the survey area (Barrett 1908).

A review of 19th and 20th century maps shows no buildings within the study area (Dodge 1892; GLO 1862, 1866; USACE 1942; USGS 1914, 1940, 1954a, 1955b; Whitney 1873). However, the railroad along the northwest edge of the study area was constructed by 1879 and the levee along Novato Creek was constructed over several years between the 1870s and 1935 later in the report it says the levee was built prior to 1914. (Lanz 2002; Stindt 1964; Ungemach 1989; USGS 1914).

Based on the distribution of known cultural resources and their environmental settings, it was anticipated that prehistoric archaeological sites could be found within the study area. Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; bedrock outcrops and boulders with mortar cups; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Field Survey Procedures

An intensive field survey was completed by Eileen Barrow and Julia Franco on March 21, 2016 and by Rachel Hennessy on March 22, 2016. The majority of the study area was covered with standing water and could not be surveyed. Where land could be surveyed, it was intensively surveyed by walking transects approximately 15 meters apart. Ground visibility was poor with vegetation being the primary hindrance.

Based on the results of the prefield research, it was anticipated that there was a remote possibility that prehistoric and historic-period cultural resources could be found within the study area. Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Field Survey Findings

The Northwestern Pacific Railroad lies immediately west of, but outside of, the study area.

A portion of the levee system that lines Novato Creek consists of the southern boundary of the study area (See Appendix B for full description).

RECOMMENDATIONS

Known Resources

The Northwestern Pacific Railroad is outside of the study area and is unlikely to be impacted by project activities; therefore, no recommendations are necessary.

The segment of the Novato Creek levee that lies at the southern end of the study area was constructed at some point prior to 1914. In 2002 and 2006, other portions of the levee and ditch system used to reclaim the marshland between Novato and San Pablo Bay were recorded (Gallagher 2006; Jones & Stokes 2004; Lanz 2002). Based on the research conducted by Jones & Stokes, the levees and ditches were constructed in phases over a period of several years by several different land owners. Because of this, the system could not be associated with one particular person or even that may have been important to the Novato area or Northern California. In addition, the integrity of the levee along Novato Creek was compromised when the Bel Marin Keyes development took place in the 1960s. At that time, the a new levee was constructed along the southern portion of Novato Creek to protect the development. Based on their research, Jones & Stokes (2004:18) determined that the levee and ditch system did not appear to meet criteria for inclusion on the California Register of Historic Resources (or the National Register of Historic Places).

Based on the findings of Jones & Stokes (2004) we do not recommend any further study in relation to the levee along Novato Creek.

Accidental Discovery

In order to estimate the possibility of buried prehistoric archaeological sites being present, the survey area was evaluated by considering distance to water, slope, and landform as outlined in Rosenthal and Meyer's report on buried site probability (Rosenthal and Meyer 2004). The survey area is within 100 meters of a fresh water source and survey area has between one and eight percent slopes. In addition, the study area lies on Holocene estuarine deposits which date to the time of human presence in North America; however, because the area has been marshland and subject to inundation due to tidal activity it is our opinion, the study area has a very low likelihood of containing surface or buried prehistoric resources. Although a remote possibility, accidental discovery could occur.

In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

SUMMARY

Tom Origer & Associates completed an historical resources study for the Novato Creek Sediment Removal Project, Novato, Marin County, California. The study was requested and authorized by WRA, Inc., on behalf of the Marin County Department of Public Works, in compliance with CEQA requirements. No cultural resources were found within the study area, and therefore, no resource-specific recommendations are warranted. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 2016-029).

MATERIALS CONSULTED

Barrett, S.

- 1908 *The Ethno-Geography of the Pomo and Neighboring Indians*. University of California Publications in American Archaeology and Ethnology Vol. 6, No. 1:1-322. University of California Press, Berkeley.

Bureau of Land Management

- 2014 General Land Office Records. Website, <http://www.glorerecords.blm.gov/search/default.aspx>. Accessed March 18, 2015.

Department of Parks and Recreation

- 1976 *California Inventory of Historical Resources*. State of California, Sacramento.

Desgrandchamp, C. and M. Clark

- 1978 *Pipeline and Water Treatment Plant Facilities, Marin County*. Document S-1165 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Dietz, S., M. Holman, and T. Jackson

- 1973 *An Archaeological Impact Survey of the Proposed Hannah Ranch Development in the Vicinity of Novato, California*. Document S-2306 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Dodge, G.

- 1892 *Official Map of Marin County, California*. Schmidt Label & Lith. Co., San Francisco.

Erlandson, J. T. Rick, T. Jones, J. Porcasi

- 2007 One if by Land, Two if by Sea: Who Were the First Californians? In: *California Prehistory: Colonization, Culture, and Complexity*. (pp 53-62) T. Jones and K. Klar, editors. AltaMira Press. Lanham, MD.

Fredrickson, D.

- 1984 The North Coastal Region. In *California Archaeology*, edited by M. Moratto. Academic Press, San Francisco.

Gallagher, M.

- 2006 Primary Record for P-21-002586. Document on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Garcia and Associates

- 2004 *Historic Architectural Resources Technical Report for the Sonoma Marin Area Rail transit (SMART) Project*. Document S-31738 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

General Land Office

- 1862 Plat of the Rancho Novato. Department of the Interior, Washington, D.C.

- 1866 *Survey plat for T3N/R6W, MDBM*. Bureau of Land Management, Washington, D.C

- Hayes, M. and D. Fredrickson
 1978 *An Archaeological Survey of the Proposed Novato Regional Shopping Center Site, Novato, California*. Document S-1337 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.
- Holman, M., C. Clark, and R. Wiberg
 1983 *A Preliminary Archaeological Reconnaissance of the Proposed Novato Flood Control Project, Marin County, California*. Document S-6497 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.
- Hoover, M., H. Rensch, E. Rensch, and W. Abeloe
 1966 *Historic Spots in California*. 3rd edition. Stanford University Press, Stanford.
- Hoover, M., H. Rensch, E. Rensch, W. Abeloe, and D. Kyle
 1990 *Historic Spots in California*. 4th edition. Stanford University Press, Stanford.
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United States Geological Survey

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1954b Petaluma, California. 15' map. Geological Survey, Washington, D.C.

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APPENDIX A

Native American Contact

Copies of Correspondence

Native American Contact Efforts
Novato Creek Sediment Removal Project, Novato, Marin County

Organization	Contact	Letters	Results
Native American Heritage Commission		3/21/16	No response received as of the date of this report.
Federated Indians of Graton Rancheria	Gene Buvelot Peter Nelson Buffy McQuillen Greg Sarris	3/22/16	No response received as of the date of this report.

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100

West Sacramento, CA 95691

(916) 373-3710

(916) 373-5471 – Fax

nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Novato Creek Sediment Removal Project

County: Marin

USGS Quadrangles

Name: Novato

Township T3N Range R6W Section(s) 17 MDBM (within the salt marshes just outside of the Novato Land Grant)

Date: March 21, 2015

Company/Firm/Agency: Tom Origer & Associates

Contact Person: Eileen Barrow

Address: PO Box 1531

City: Rohnert Park

Zip: 94927

Phone: (707) 584-8200

Fax: (707) 584-8300

Email: eileen@origer.com

Project Description:

The project area is approximately 17 acres. The project proponent is proposing to dredge sediments out of the lower portion of Novato Creek and use the study area as a storage location. Sediments will potentially be used at a later time for levee repair and construction.

Tom Origer & Associates

Archaeology / Historical Research

March 22, 2016

Peter Nelson
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: Novato Creek Flood Control Dredging Project, Novato, Marin County.

Dear Mr. Nelson:

I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. The Novato Creek Flood Control Dredging Project is the removal of sediments from the lower portion of Novato Creek, the construction of a new levee near Slade Park and the Novato Sanitary District Wastewater Treatment on Davidson Street, and the stockpiling of dredged soils along the new levee for use at a later time. The Marin County Department of Public Works is reviewing the project for CEQA compliance.

Enclosed is a portion of the Novato, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 21, 2016

Greg Sarris
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: Novato Creek Flood Control Dredging Project, Novato, Marin County.

Dear Mr. Sarris:

I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. The Novato Creek Flood Control Dredging Project is the removal of sediments from the lower portion of Novato Creek, the construction of a new levee near Slade Park and the Novato Sanitary District Wastewater Treatment on Davidson Street, and the stockpiling of dredged soils along the new levee for use at a later time. The Marin County Department of Public Works is reviewing the project for CEQA compliance.

Enclosed is a portion of the Novato, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 21, 2016

Buffy McQuillen
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: Novato Creek Flood Control Dredging Project, Novato, Marin County.

Dear Ms. McQuillen:

I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. The Novato Creek Flood Control Dredging Project is the removal of sediments from the lower portion of Novato Creek, the construction of a new levee near Slade Park and the Novato Sanitary District Wastewater Treatment on Davidson Street, and the stockpiling of dredged soils along the new levee for use at a later time. The Marin County Department of Public Works is reviewing the project for CEQA compliance.

Enclosed is a portion of the Novato, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 21, 2016

Gene Buvelot
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: Novato Creek Flood Control Dredging Project, Novato, Marin County.

Dear Mr. Buvelot:

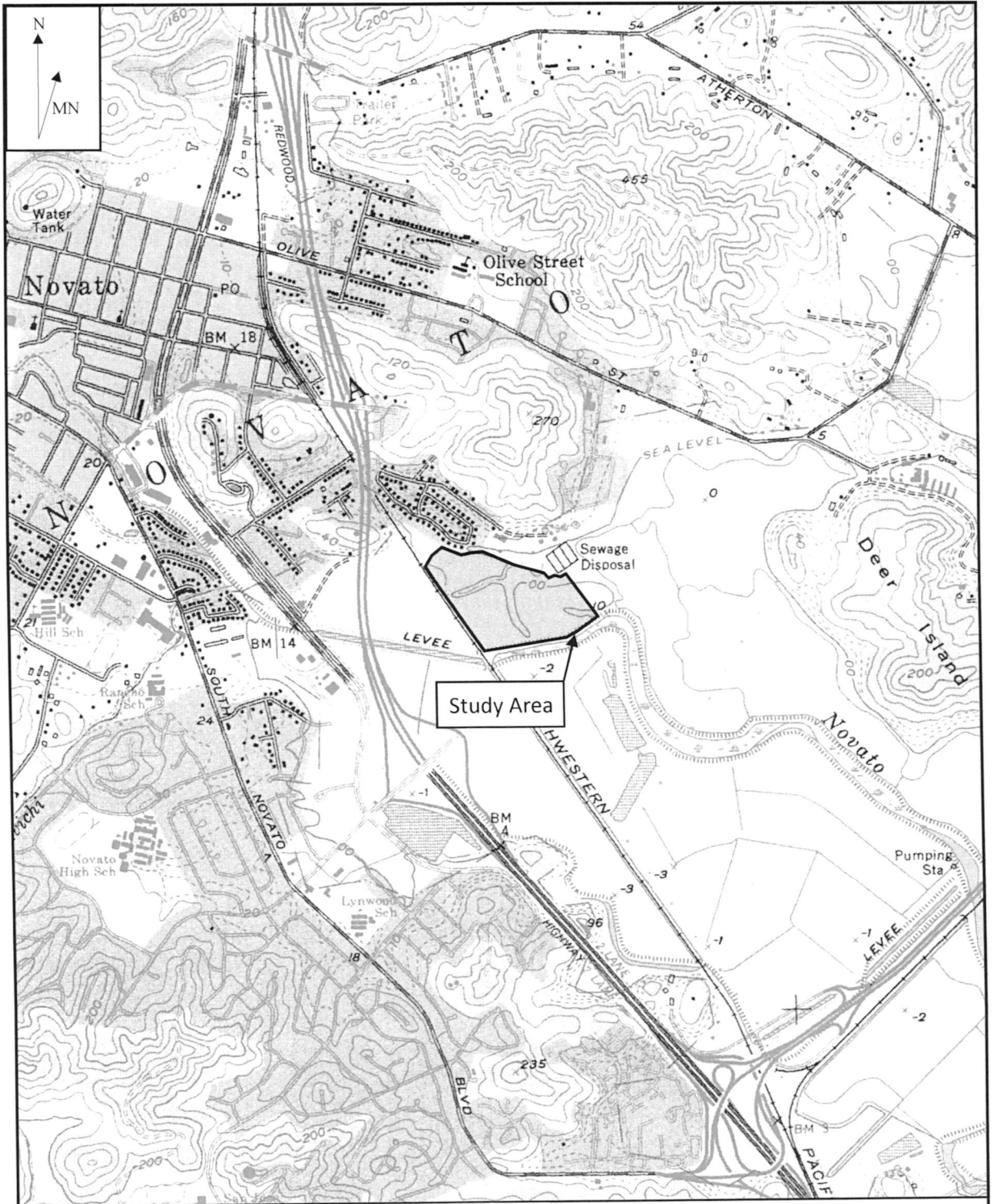
I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. The Novato Creek Flood Control Dredging Project is the removal of sediments from the lower portion of Novato Creek, the construction of a new levee near Slade Park and the Novato Sanitary District Wastewater Treatment on Davidson Street, and the stockpiling of dredged soils along the new levee for use at a later time. The Marin County Department of Public Works is reviewing the project for CEQA compliance.

Enclosed is a portion of the Novato, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate



Scale 1:24,000



APPENDIX B

DPR 523 Forms Resource Documentation

Archaeological site location information should be kept confidential to protect sites from damage by vandals and collectors

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-21-002586
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 3

*Resource Name or #: Levee and Ditch System

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted
and

*a. County Marin

*b. USGS 7.5' Quad Novato Date 1954 (pr 1980) T 3N; R 6W; ¼ of ¼ of Sec ; Mount. Dialbo B.M. San Jose (Pacheco) land grant

c. Address

City

Zip

d. UTM: Zone 10; 539924 mE/ 4215052 mN, 539744E/4215330N, 639656E/4215342N

e. Other Locational Data:

Beginning at Marsh Road, the levee travels 1,070 feet to the northwest, with a canal to the west and marshland to the east, and then curves to the west for an additional 330 feet.

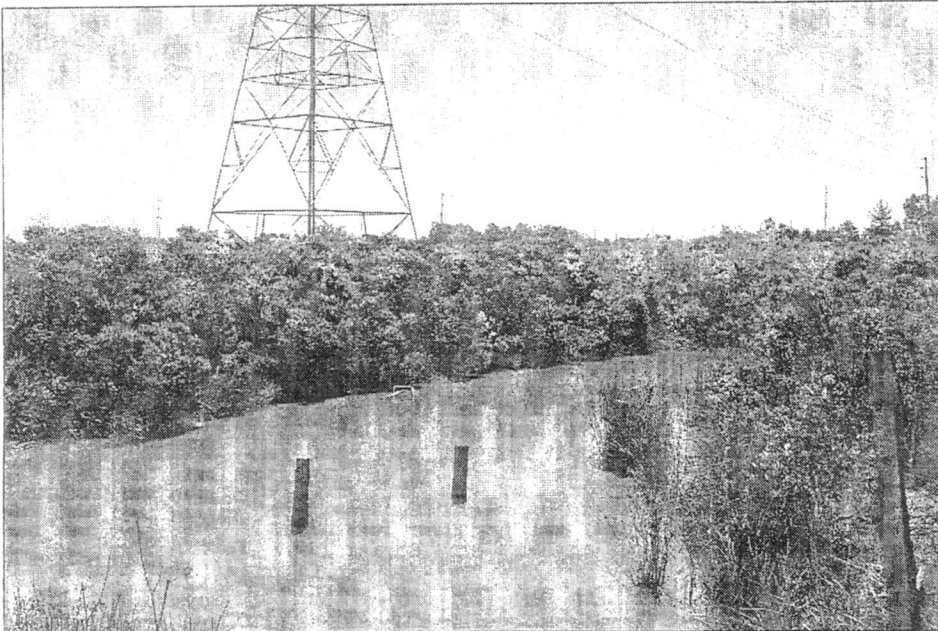
*P3a. Description:

This resource consists of a system of earthen levees and ditches that appear on the 1914 USGS Novato 7.5' topographic quadrangle. The levee measures 1,400 ft. long by 6 ft. high and has a base width of 48 ft. that tapers to 16 ft. in width at the top. The levee is located to the east of the Northwestern Pacific railroad tracks, which it parallels until it crosses them at the northern end of the segment.

P-21-002586 was originally recorded by Lanz (2002) as an earthen levee and ditch system 1-1/2 miles to the southeast. Lanz states that the levee and ditch systems she observed were built between 1876 and 1935.

*P3b. Resource Attributes: HP. 20 Canal/Aqueduct

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)



P5b. Description of Photo:
View of the levee and ditch in foreground; taken from the Northwestern Pacific Railroad tracks facing southwest.

*P6. Date Constructed/Age and Sources: Historic Prehistoric Both

*P7. Owner and Address:
California State Lands Commission
Nanci Smith, Public Land Management Specialist
100 Howe Avenue, Suite 100 South Sacramento, CA 95825-8202

*P8. Recorded by:
Melissa Gallagher
Anthropological Studies Center
1801 E. Cotati Ave., Bldg. 29
Rohnert Park, CA 94928

*P9. Date Recorded: 16 June 2006

*P10. Survey Type: intensive surface survey

*P11. Report Citation: Melissa Gallagher. 2006. *A Cultural Resources Study of the Novato Sanitary District Main Realignment Novato, Marin County, California*. Anthropological Studies Center, Rohnert Park, California. Prepared for Winzler & Kelly Consulting Engineers, Santa Rosa, California.

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (list)

L1. Historic and/or Common Name:

L2a. Portion Described: Entire Resource Segment Point Observation **Designation:**

b. Location of point or segment:

(NAD 83) 539918E/4215054N, 539757E/4215322N, 539657E/4215339N. Runs on the east side of the ditch heading northwest from Marsh Road, between the Northwestern Pacific Railroad tracks and the power lines.

L3. Description:

An earthen levee holding water in a canal to the west, with a marsh on the east. It is flattened on top, and was probably used for a road, but it has not been used for some time. The levee is heavily overgrown with vegetation and does not appear to be maintained.

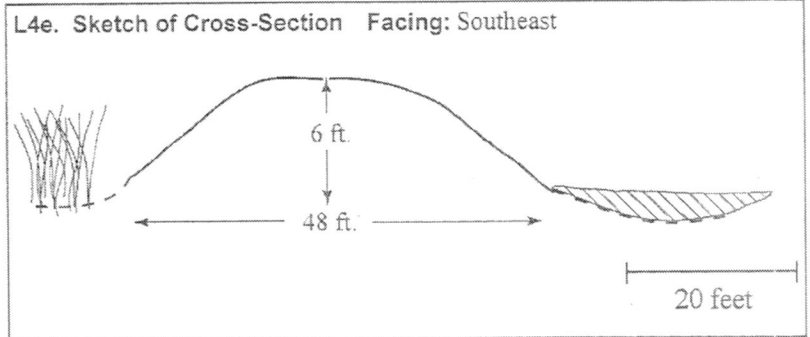
L4. Dimensions:

- a. Top Width 16 feet
- b. Bottom Width 48 feet
- c. Height or Depth 6 feet
- d. Length of Segment 780 feet

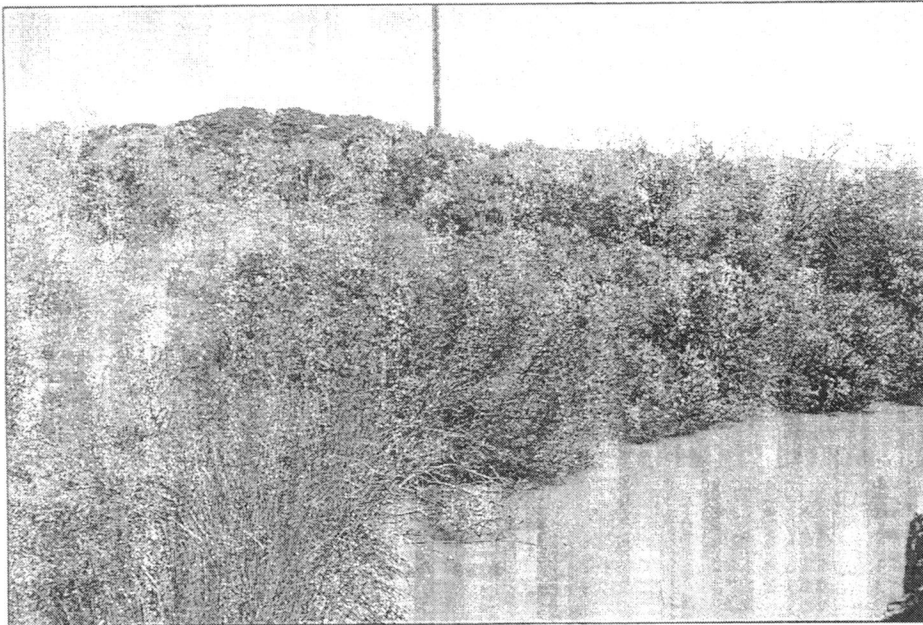
L5. Associated Resources:

L6. Setting:

There are hills to the west, commercial development to the north, and a marsh to the east.



L7. Integrity Considerations: The ditch has been filled on the northern end.



L8b. Description of Photo, Map, or Drawing

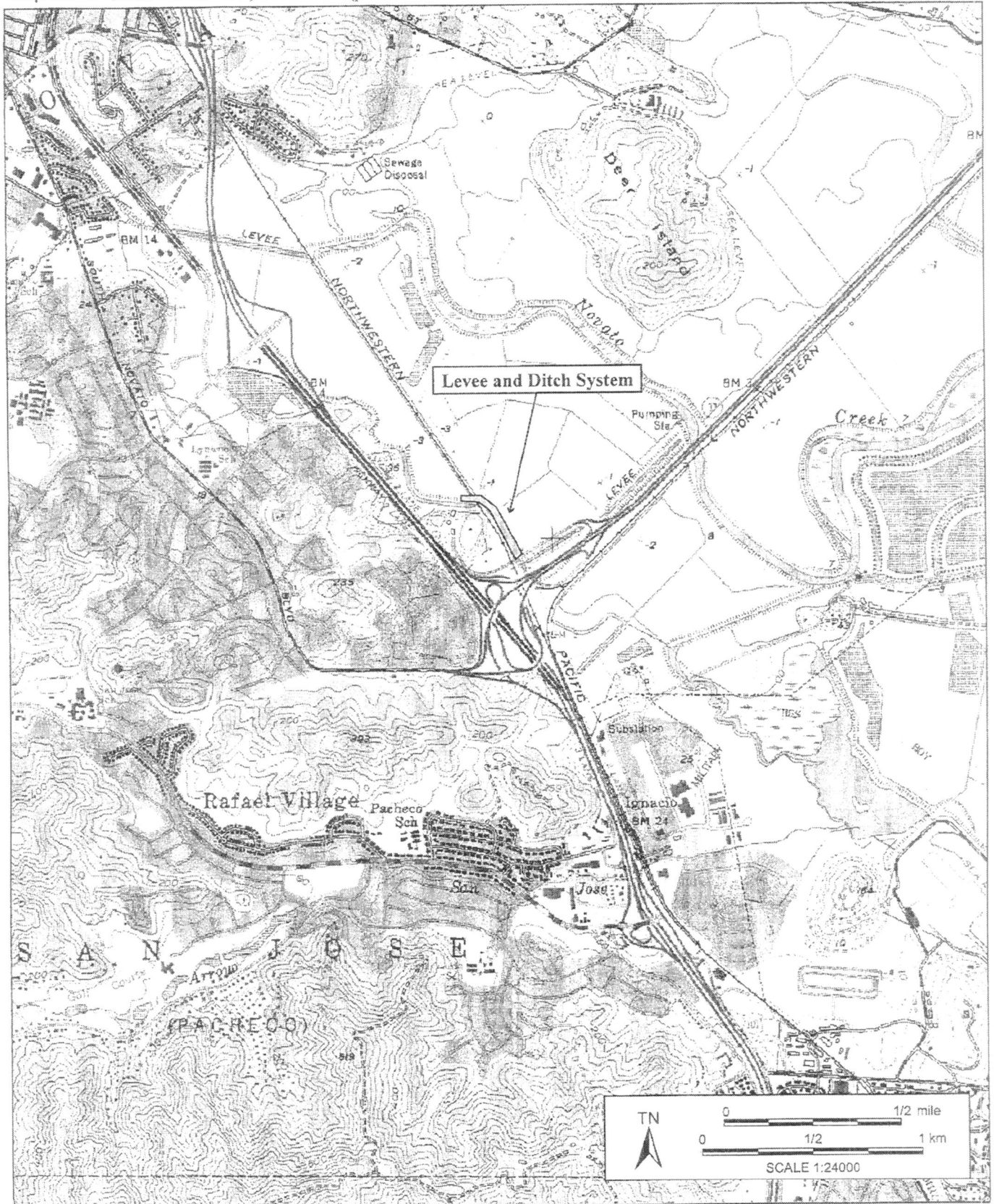
Facing east. Ditch is in the foreground.

L9. Remarks:

L10. Form Prepared by:

Melissa Gallagher
Anthropological Studies Center
1801 E. Cotati Ave, Bldg 29
Rohnert Park, CA 94928

L11. Date: 16 June 2006



PRIMARY RECORD

Primary # : P-21-002586

HRI #

Trinomial

NRHP Status Code 6

Other Listings

Review Code

Reviewer

Date

Page 1 of 6

*Resource Name or #: (Assigned by Recorder) Levee and Ditch System

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County Marin

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

(map #4844/4833)

*b. USGS 7.5' Quad Novato and Petaluma Point Date 1980 T ; R ; ¼ of ¼ of Sec ; B.M.

c. Address City Novato Zip

d. UTM: (Give more than one for large and/or linear resources) Zone: mE/ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc., as appropriate)

UTM: 10 541721E 4214586N; 10544815E 4216019N; 10544652E 4212270N

*P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

A system of levees and ditches is located throughout the project area. The levees are earthen features, the ditches are earthen, and concrete lined. The levees measure approximately twenty-five to forty feet in width and line the perimeter of much of the project area. The ditches are approximately twenty-five feet wide and orient north-south and east-west throughout the project area. In addition to the levees and ditches, an approximately 100-foot canal was constructed as part of the system directly north of Bel Marin Keys Boulevard.

*P3b. Resource Attributes: (List attributes and codes) HP20 Canal/Aqueduct

*P4. Resources present: Building Structure Object Site District Element of District Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)

See linear feature form

January 9, 2002

*P6. Date Constructed/Age and

Sources: Historic

Prehistoric Both

ca 1876 - 1935

*P7. Owner and Address:

California State Coastal Conservancy

1330 Broadway Suite 1100

Oakland, CA 94612

*P8. Recorded by: (Name, affiliation, and address)

Madeline R. Lanz, Jones & Stokes

2600 V Street

Sacramento CA, 95818

*P9. Date Recorded: 1/9/02

*P10. Survey Type: (Describe)

Intensive

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Jones & Stokes 2002 Cultural Resources Inventory and Evaluation for Bel Marin Keys Unit V Wetlands Restoration Project, Marin County, CA

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or # (Assigned by recorder) Levee and Ditch System

B1. Historic Name: _____

B2. Common Name: _____

B3. Original Use: Reclamation B4. Present Use: Reclamation

*B5. Architectural Style: N/A

*B6. Construction History: (Construction date, alterations, and date of alterations)
Ca 1876 to 1935. Substantially altered in 1960s with construction of Bel Marin Keys development.

*B7. Moved? No Yes Unknown Date: _____ Original Location: _____

*B8. Related Features:
canal

B9a. Architect: N/A b. Builder: N/A

*B10. Significance: Theme: Water Reclamation Area: Marin County, California
Period of Significance: 1935 Property Type: Drainage Property Applicable Criteria: N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

As early as 1876 reclamation efforts were underway in the project area. Between 1898 and 1914 additional levees and ditches were constructed. By 1935, the current system was in place (Dickens 1898; USGS 1914, 1916; Messner 1935).

The levee and ditch system does not appear to meet the criteria for listing in the NRHP or the CRHR. The system was constructed in phases over the past one hundred years and therefore is not directly associated with a particular time period or with any one particular persons or events that may have been important to the area or Northern California overall. In addition, the numerous changes to the system compromised the system's integrity. The levee and ditch system was initially constructed in the northern corner of the project area and gradually extended southeast until it was completed in the 1930s. Historic maps indicate that over the years levees and ditches were newly constructed, filled in, or destroyed (Dickens 1898; USGS 1914, 1916; Messner 1935; USGS 1980). The major destructive element to the system was the construction of the Bel Marin Keys development in the 1960s. Through this development the entire northern part of the system was destroyed and a new levee was constructed around the perimeter of the community. Because of a loss of integrity, the levee and ditch system does not appear to meet the NRHP or CRHR criteria.

B11. Additional Resource Attributes: (List attributes and codes) _____

*B12. References:
see Jones & Stokes 2002. Cultural Resources Inventory and Evaluation for Bel Marin Keys Unit V Wetlands Restoration Project, Marin County, CA.

B13. Remarks:

*B14. Evaluator: Madeline R. Lanz

*Date of Evaluation: August 14, 2002

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

Q

Page 3 of 6 *Resource Name or #: (Assigned by Recorder) Levee and Ditch System

L1. Historic And/or Common Name: _____

L2a. Portion Described: Entire Resource Segment Point Observation Designation: PI

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map)
 10545003E 4213819N

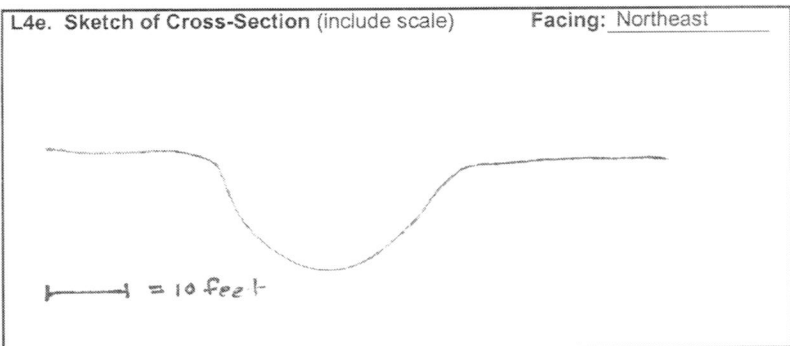
L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

The levees are earthen features, the ditches are both earthen, and concrete lined. The levees measure approximately twenty-five to forty feet in width and line the perimeter of much of the project area. The ditches are approximately twenty-five feet wide and orient north-south and east-west throughout the project area. In addition to the levees and ditches, an approximately 100-foot canal

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

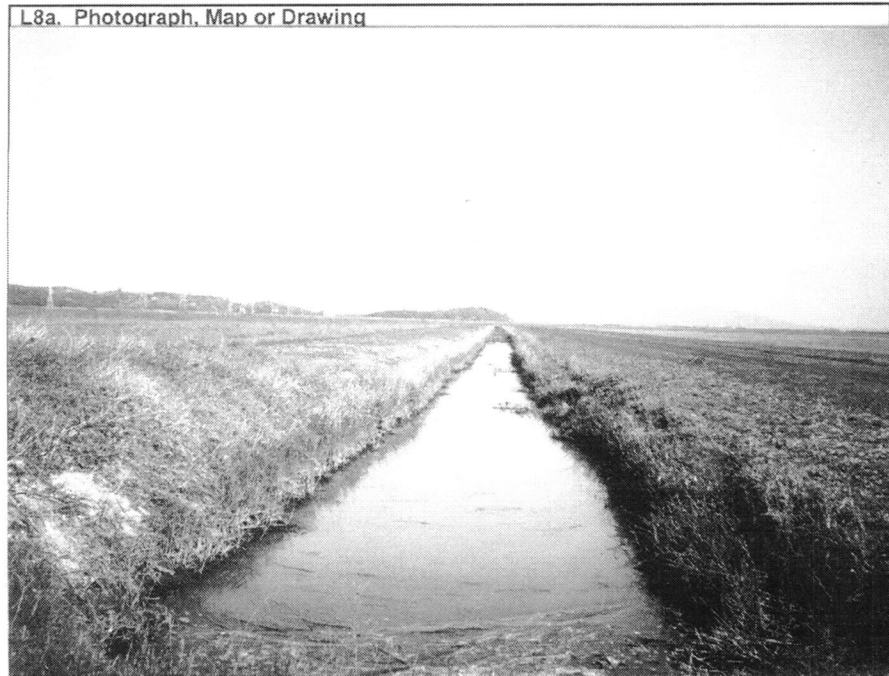
- a. Top Width 25 feet
- b. Bottom Width 20 feet
- c. Height or Depth 10 feet
- d. Length of Segment _____

L5. Associated Resources:
 None



L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)
 Seasonal grasses, brambles, ice plant, oat/hay farming in vicinity

L7. Integrity Considerations:
 See Significance Statement on Building, Structure, and Object Record



L8b. Description of Photo, Map, or Drawing
 View, scale, etc.)
 Facing Northeast

L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)
 Madeline Lanz
 Jones & Stokes
 2600 V Street
 Sacramento, CA 95816

L11. Date: 8/14/02

a

Page 4 of 6 *Resource Name or #: (Assigned by Recorder) Levee and Ditch System

L1. Historic And/or Common Name: _____

L2a. Portion Described: Entire Resource Segment Point Observation Designation: P2

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map)
 10543519E 4212580N

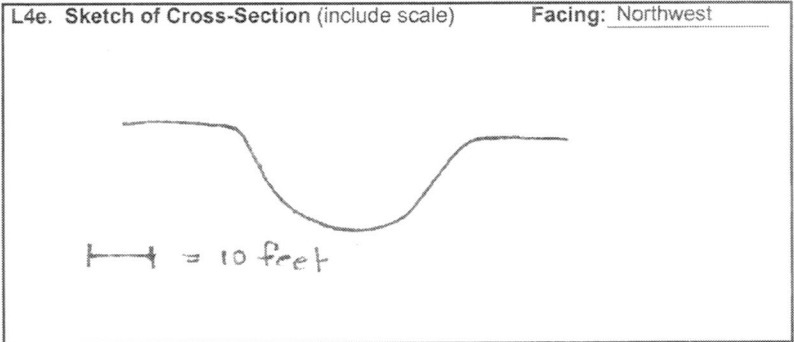
L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

The levees are earthen features, the ditches are both earthen, and concrete lined. The levees measure approximately twenty-five to forty feet in width and line the perimeter of much of the project area. The ditches are approximately twenty-five feet wide and orient north-south and east-west throughout the project area. In addition to the levees and ditches, an approximately 100-foot canal

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

- a. Top Width 20 feet
- b. Bottom Width 15-20 feet
- c. Height or Depth 10 feet
- d. Length of Segment _____

L5. Associated Resources:
 None



L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)
 Seasonal grasses, brambles, ice plant, oat/hay farming in vicinity

L7. Integrity Considerations:
 See Significance Statement on Building, Structure, and Object Record

L8a. Photograph, Map or Drawing

L8b. Description of Photo, Map, or Drawing
 (View, scale, etc.)
 Facing Northwest



L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)
 Madeline Lanz
 Jones & Stokes
 2600 V Street
 Sacramento, CA 95816

L11. Date: 8/14/02

Page 5 of 6 *Resource Name or #: (Assigned by Recorder) Levee and Ditch System

L1. Historic And/or Common Name: _____

L2a. Portion Described: Entire Resource Segment Point Observation Designation: P3

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map)
10541284E 4214510N

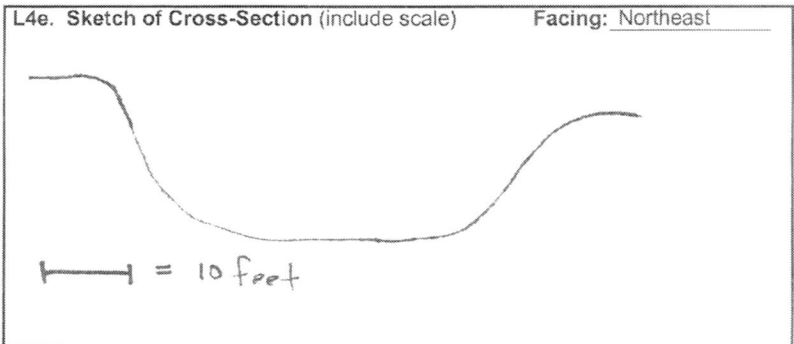
L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

The levees are earthen features, the ditches are both earthen, and concrete lined. The levees measure approximately twenty-five to forty feet in width and line the perimeter of much of the project area. The ditches are approximately twenty-five feet wide and orient north-south and east-west throughout the project area. In addition to the levees and ditches, an approximately 100-foot canal

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

- a. Top Width 100 feet
- b. Bottom Width 100 feet
- c. Height or Depth 35 feet
- d. Length of Segment _____

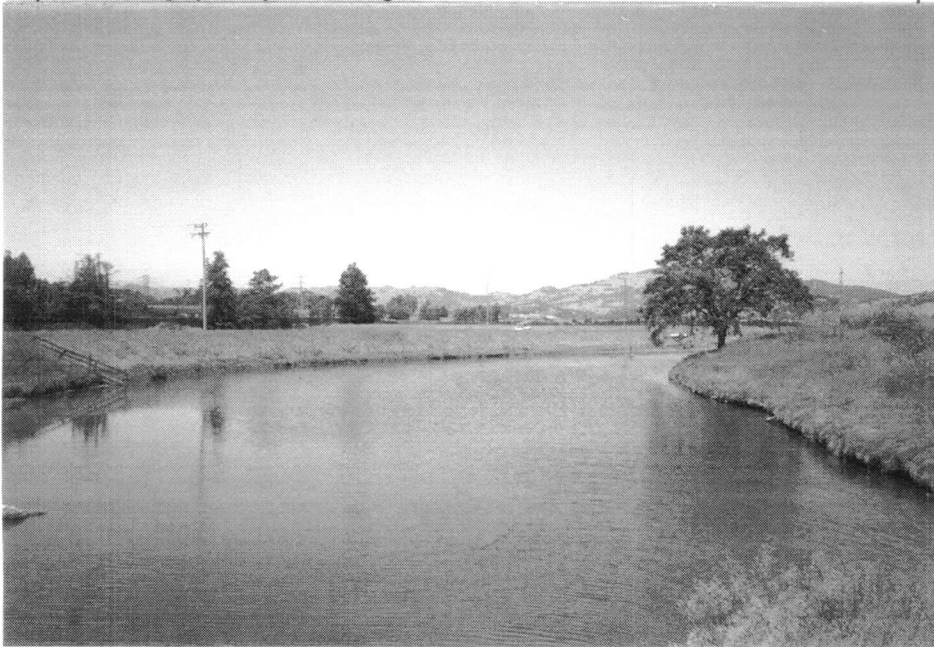
L5. Associated Resources:
None



L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)
Seasonal grasses, brambles, ice plant, oat/hay farming in vicinity

L7. Integrity Considerations:
See Significance Statement on Building, Structure, and Object Record

L8a. Photograph, Map or Drawing



L8b. Description of Photo, Map, or Drawing
(View, scale, etc.)
Facing Northeast

L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)
Madeline Lanz
Jones & Stokes
2600 V Street
Sacramento, CA 95816

L11. Date: 8/14/02

LOCATION MAP



Q

LINEAR FEATURE RECORD

Primary # P-21-002586 (Supplement)
HRI #
Trinomial:
NRHP Status Code:
Resource Name or #: Levee and Ditch System

Other Listings:
Review Code: Reviewer: Date:
Page 2 of 3

L1. Historic and/or Common Name:

L2a. Portion Described: Entire Resource Segment X Point Observation Designation:

b. Location of point or segment: (provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map) (see Primary Record for UTM)

L3. Description: (describe construction details, materials, and artifacts found at this segment/ point. Provide plans/ sections as appropriate.)

The resource is a portion of an earthen levee that was constructed between the 1870s and 1914. The portion recorded lies on the north side of Novato Creek. There is also a levee on the south side of the creek.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

- a. Top Width: 20 feet
- b. Bottom Width: 50 feet
- c. Height or Depth: 7 feet
- d. Length of Segment: 1,500 feet

L4e. Sketch of Cross-Section (include scale)	Facing:

L5. Associated Resources:

L6. Setting: (describe natural features, landscape characteristics, slope, etc., as appropriate.) The levee is located in the reclaimed marshland between Novato and San Pablo Bay.

L7. Integrity Considerations:

L8a. Photograph, Map or Drawing

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)

L9. Remarks:

L10. Form Prepared by:
Tom Origer & Associates
P.O. Box 1531
Rohnert Park, CA 94927

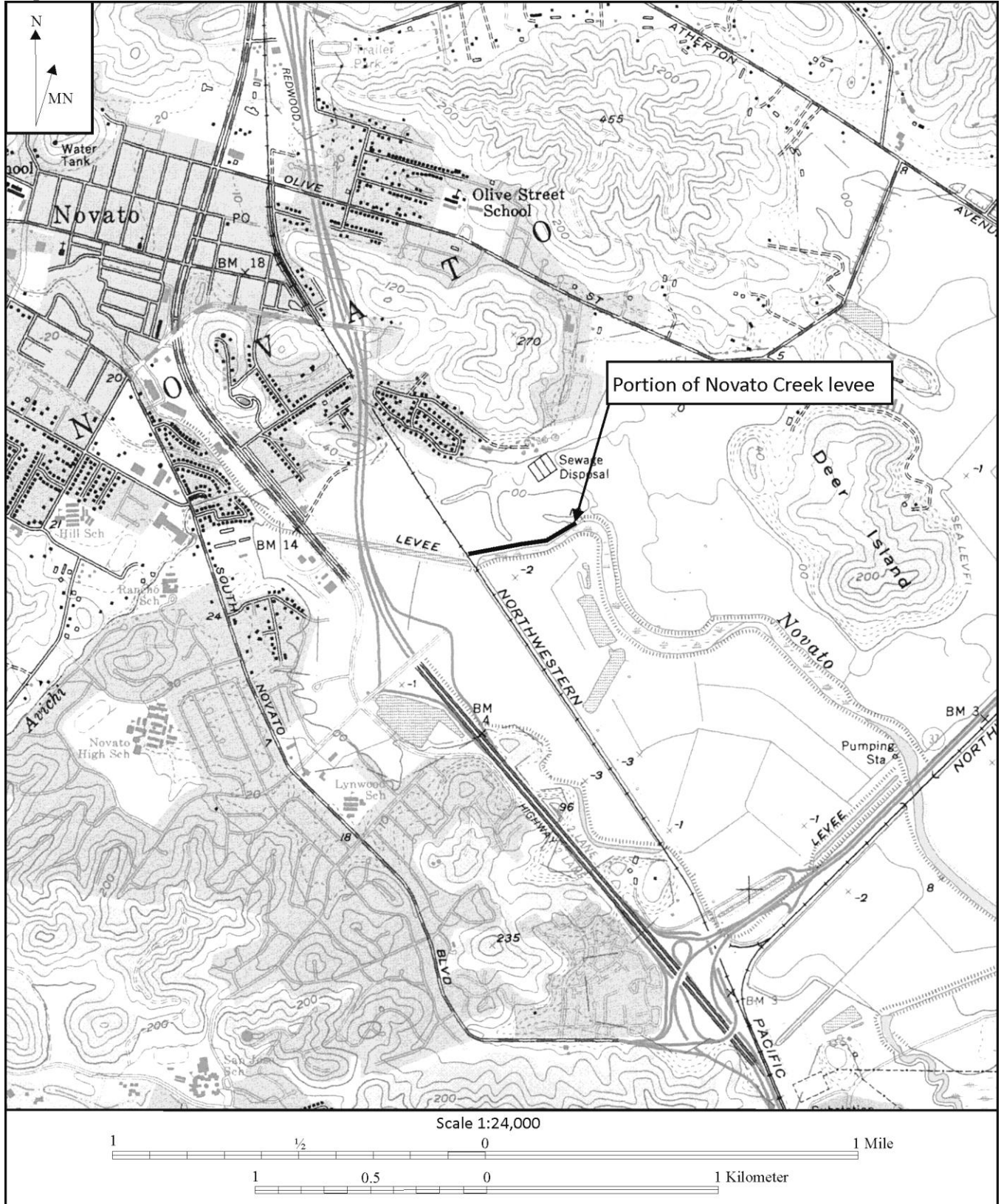
L11. Date: March 2016

LOCATION MAP

Primary #: P-21-002586 (Supplement)
HRI #:
Trinomial:
Resource Name or #: Levee and Ditch System
Date of Map: 1980

Page 3 of 3
Map Name: Novato

Scale: 7.5'



APPENDIX B

**TRIBAL CONSULTATION LIST
NATIVE AMERICAN HERITAGE COMMISSION
APRIL 2016**

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX



April 5, 2016

Eileen Barrow
Tom Origer & Assoc.

Sent by Email: eileen@orgier.com
Number of Pages: 3

RE: Novato Creek Sediment Removal Project, Marin County

Dear Ms. Barrow:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent above reference codes is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
 - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
 - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
 - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:
 - Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. A search of the SFL was completed for the USGS quadrangle information provided with negative results.
4. Any ethnographic studies conducted for any area including all or part of the potential APE; and
5. Any geotechnical reports regarding all or part of the potential APE.

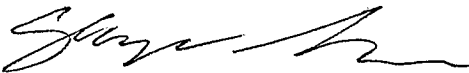
Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: Sharaya.souza@nahc.ca.gov

Sincerely,



Sharaya Souza
Staff Services Analyst

**Native American Heritage Commission
Tribal Consultation List
Marin County
March 30, 2016**

Federated Indians of Graton Rancheria
Greg Sarris, Chairperson
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park , CA 94928 Southern Pomo
(707) 566-2288 Office
(707) 566-2291 Fax

Federated Indians of Graton Rancheria
Gene Buvelot
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park , CA 94928 Southern Pomo
gbuvelot@gratonrancheria.
(415) 279-4844 Cell
(707) 566-2288 ext 103

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Novato Creek Sediment Removal Project, Marin County.