INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

Dry Creek Trunk Sewer Bank Stabilization Project

April 2014

Lead Agency:

311 Vernon Street
Roseville, CA 95678
Contact: Mark Morse
(916) 774-5334

Prepared by:

FOOTHILL ASSOCIATES

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NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION

for the

Dry Creek Trunk Sewer Bank Stabilization Project — City of Roseville

Public Notice is hereby given that a Mitigated Negative Declaration (Environmental Report) is available for public review for the Dry Creek Trunk Sewer Bank Stabilization Project – City of Roseville.

Project Location: The Proposed Project is located approximately 1.5 miles northwest of Interstate 80 at the southern end of 1655 Booth Road, Roseville, Placer County, California.

Project Description: The project proposes to construct Vegetated Rock Slope Protection (VRSP) bank protection along a segment of channel bank that has eroded within Dry Creek in order to protect an existing 39-inch sewer line directly adjacent to the area of erosion. The project will also involve bank cuts in certain areas due to the steep slope of the bank. VRSP will be placed both in the creek bed and along the bank above the ordinary high water mark (OHWM).

Document Review and Availability: The public review and comment period will extend for 30 days in accordance with CEQA Guidelines Section 15105 starting **April 11, 2014 and ending May 12, 2014**. The Initial Study/Mitigated Negative Declaration (IS/MND) is available for public review at the following location:

- City of Roseville Permit Center, 311 Vernon Street, Roseville, CA 95678 (8:00 A.M. to 5:00 P.M., Monday through Friday)

The IS/MND can also be viewed and/or downloaded at the City of Roseville website via the following: **http://www.roseville.ca.us/gov/community_development/edpn.asp**

Comments/Questions: Comments and/or questions regarding the IS/MND may be directed to: Mark Morse, Roseville City Manager Department, 311 Vernon Street, Roseville, CA 95678 (916-774-5334).

Public Meetings: The IS/MND is tentatively scheduled for consideration and possible adoption by the Roseville City Council on **June 4, 2014**. City Council meetings start at 7:00 P.M. in the Roseville Council Chambers, 311 Vernon Street. Interested parties should call the Roseville City Clerk's Office to confirm meeting agendas, times, and dates (916-774-5263).

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MITIGATED NEGATIVE DECLARATION

PROJECT TITLE:	Dry Creek Trunk Sewer Bank Stabilization Project
PROJECT LOCATION:	1655 Booth Road, Roseville, Placer County, California
DATE	April 11, 2014
PROJECT APPLICANT:	City of Roseville, Environmental Utilities Wastewater Division
LEAD AGENCY:	City of Roseville
CONTACT PERSON:	Mark Morse, Environmental Coordinator: (916) 774-5334

PROJECT DESCRIPTION:

Project development would result in the construction of Vegetated Rock Slope Protection (VRSP) bank protection along a segment of channel bank that has eroded within Dry Creek in order to protect an existing 39-inch sewer line directly adjacent to the area of erosion. To accommodate the VRSP, the project requires bank cuts in certain areas due to the existing steep slope. VRSP will be placed both in the creek bed and along the bank above the ordinary high water mark (OHWM).

DECLARATION

The City of Roseville Environmental Coordinator has determined that the above project will have no significant effect on the environment and is therefore exempt from the requirement of an Environmental Impact Report (EIR). The determination is based on the attached initial study and the following findings:

a) *The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.*

b) *The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*

c) *The project will not have impacts that are individually limited, but cumulatively considerable.*

d) *The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.*

e) *No substantial evidence exists that the project will have a negative or adverse effect on the environment.*

f) *The project incorporates all applicable mitigation measures identified in the Initial Study.*

g) *This Mitigated Negative Declaration reflects the independent judgment of the lead agency.*

Written comments shall be submitted no later than May 12, 2014. City Council determination on this Mitigated Negative Declaration is final.

Submit comments to:

Mark Morse, Environmental Coordinator
City of Roseville, City Manager's Office
311 Vernon Street
Roseville, CA 95678

Posting Period:

April 11, 2014 through May 12, 2014

Initial Study approved by:

Mark Morse, Environmental Coordinator

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Initial Study/Mitigated Negative Declaration
Dry Creek Trunk Sewer Bank Stabilization Project

Lead Agency: City of Roseville
311 Vernon Street
Roseville, CA 95678

Prepared by:

FOOTHILL ASSOCIATES

April 2014

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1.0 INTRODUCTION

This project-level Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared for the Dry Creek Trunk Sewer Bank Stabilization Project (Proposed Project) to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 *et seq.*) and State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 *et seq.*). The City of Roseville (City) is the lead agency for this project under CEQA.

1.1 Initial Study Purpose

CEQA requires that all State and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. An Initial Study is a public document used by the decision-making lead agency to determine whether a project may have a significant impact on the environment. If it is determined that the Proposed Project may have a significant impact on the environment, but that these impacts will be reduced to a Less Than Significant Level through implementation of specific recommended mitigation measures, a Mitigated Negative Declaration shall be prepared.

This IS/MND is a public information document that describes the Proposed Project, existing environmental setting at the project site, and potential environmental impacts of construction and operation of the Proposed Project. It is intended to inform decision-makers of the Proposed Project's compliance with CEQA and the State CEQA Guidelines.

1.2 Review Process

This IS/MND will be circulated for a 30-day public review and comment period as required by CEQA. During the review period, written comments may be submitted to:

Mr. Mark Morse
Environmental Coordinator
Roseville City Manager's Office
311 Vernon Street
Roseville, CA 95678
mmorse@roseville.ca.us

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2.0 PROJECT DESCRIPTION

This section provides an overview of the Proposed Project and contains the information used in **Section 3.0** to analyze potential effects on environmental resources.

2.1 Project Location

The Proposed Project is located approximately 1.5 miles northwest of Interstate 80 at the southern end of 1655 Booth Road, Roseville, Placer County, California, within Township 10 North, Range 6 East, Section 10 of the Citrus Heights, California USGS 7.5-minute topographic quadrangle map (**Figure 1**).

2.2 Project Setting

The project site encompasses approximately 0.4 acre (**Figure 2**) and is characterized by annual grassland, perennial drainage and riparian woodland biological communities. The project site is within an area zoned as a Floodway and designated within the City of Roseville General Plan Land Use Element as Open Space with a Flood Plain zoning overlay.

The site does not have direct street frontage and is accessible through the commercial parking area directly north of the project site. The site is bounded by industrial, commercial, and residential uses to the north and open space to the south.

2.3 Project Description

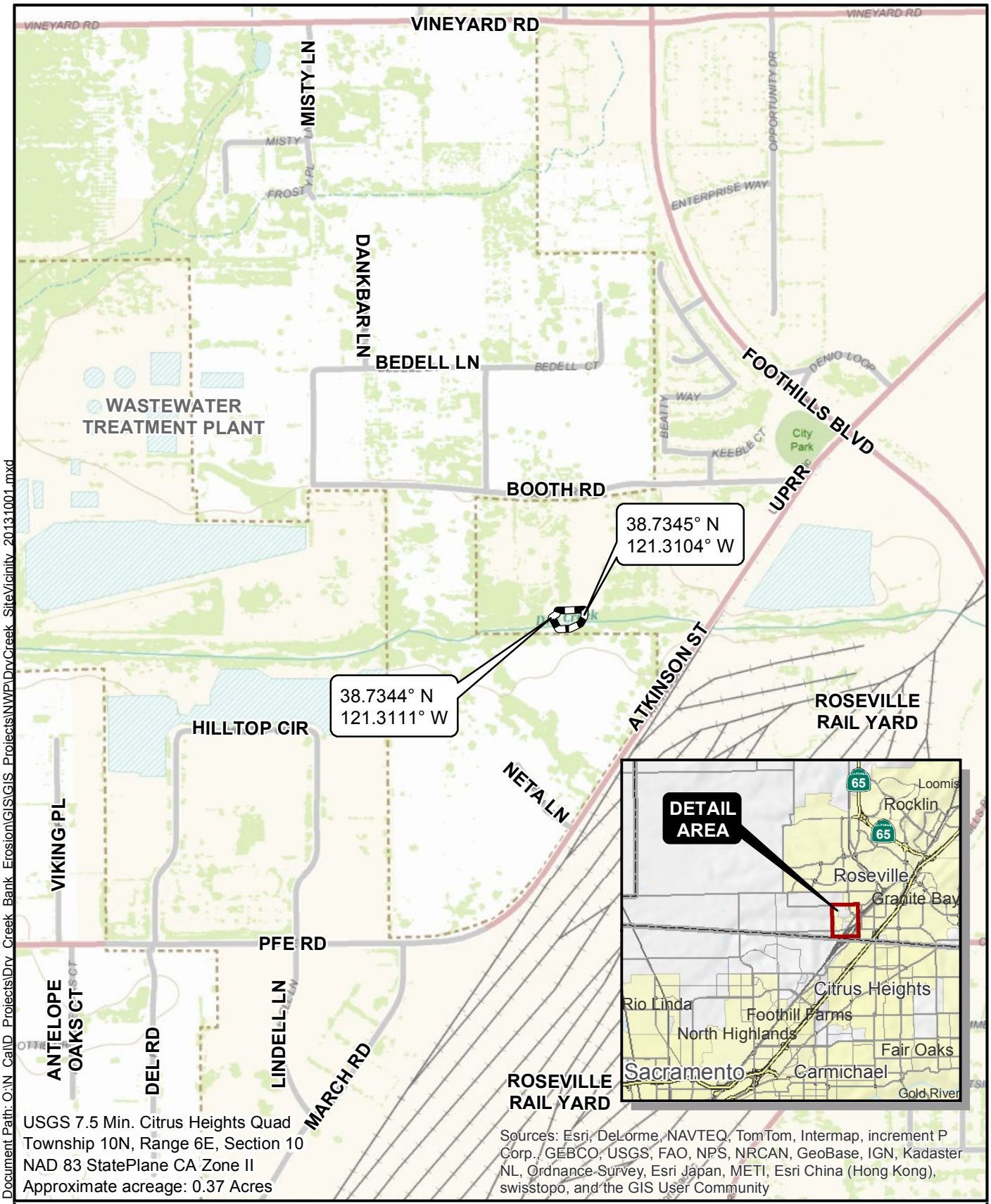
The project proposes to construct Vegetated Rock Slope Protection (VRSP) bank protection along a segment of channel bank that has eroded within Dry Creek in order to protect an existing 39-inch sewer line directly adjacent to the area of erosion. To accommodate the planned VRSP, the project requires bank cuts in certain areas due to the existing steep slope. VRSP will be placed both in the creek bed and along the bank above the ordinary high water mark (OHWM).

2.4 Background

A 39-inch sewer line currently exists along the north bank of Dry Creek from upstream Atkinson Street extending downstream to the Dry Creek Wastewater Treatment Plant (WWTP). This sewer line was constructed in 1956; based on record drawings, the sewer was at least 50 feet from the bank of the Dry Creek at that time. However, since that time, Dry Creek has meandered and now the bank is much closer to the sewer line.

During a storm event in December 2012, a section of the creek bank near the sewer became unstable and collapsed, causing a tree to fall into the creek. This event resulted in the new creek bank top being located within ± 4 feet of the 39-inch sewer manhole. The roots of the fallen tree extend to the location of the sewer. This situation represented an emergency condition because another storm event could have floated the fallen tree and pulled the tree and roots downstream, causing the bank to collapse from under the sewer, and potentially causing the sewer to collapse into the creek. If the sewer collapse had occurred, it would have resulted in a discharge of raw wastewater into the creek.

The U.S. Army Corps of Engineers (Corps), the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB), and the Central Valley Flood Protection Board (CVFPB), were contacted and advised of this emergency condition. They were also notified that if a significant storm was forecasted, City of Roseville (City) staff may, on an emergency basis, remove the tree and install rock scour protection along the creek bank to protect the sewer and prevent a discharge of wastewater to the creek. Each of these agencies agreed that the above described limited emergency repairs could be performed by the City if necessary with “After-the-Fact” permitting to follow.



USGS 7.5 Min. Citrus Heights Quad
Township 10N, Range 6E, Section 10
NAD 83 StatePlane CA Zone II
Approximate acreage: 0.37 Acres

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

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DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT
SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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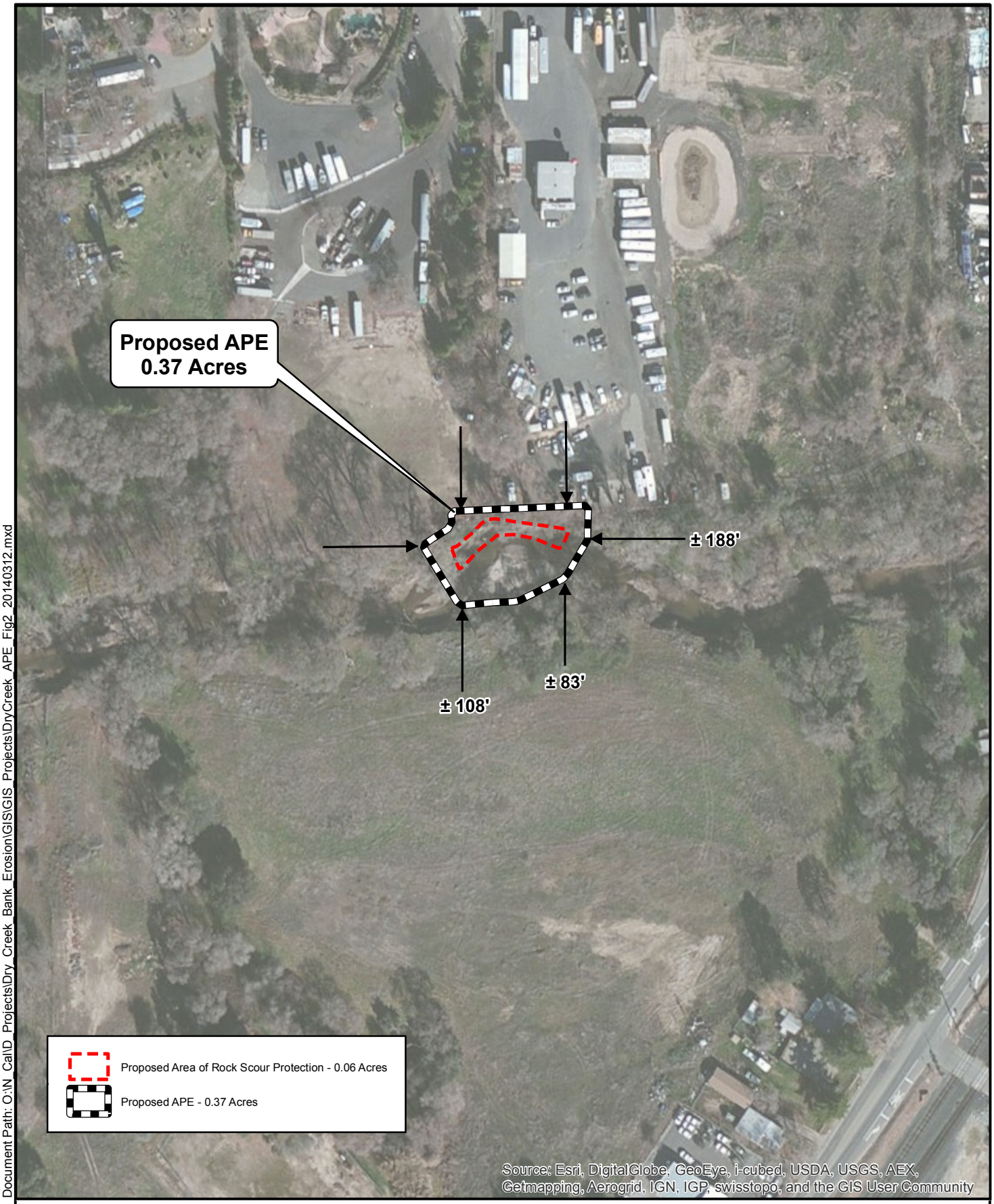
0 490 980
SCALE IN FEET

Drawn By: MUB
Date: 03/27/2014

FIGURE 1



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DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT
AREA OF POTENTIAL EFFECTS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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0 100 200
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Drawn By: MUB
Date: 03/27/2014

FIGURE 2

City staff has removed the tree from the creek, but the root ball was left in place. This approach eliminated the risk of the tree floating downstream and causing the sewer to collapse into the creek. Rock was also stockpiled near the erosion site. However, because no high flows were forecasted for the remainder of the winter, the rock scour protection was not installed. The emergency conditions continue to exist because the creek bank at the sewer has not been stabilized yet. The City is currently attempting to obtain the required permits for installing the rock scour protection through the standard permitting (non-emergency) processes. However, should a substantial storm be forecasted, the City will take emergency steps to protect the line as previously discussed with and agreed to with agencies with regulatory authority.

2.5 Proposed Action

As shown in **Figure 3**, the City proposes to construct Vegetated Rock Slope Protection (VRSP) bank protection along a segment of channel bank that has eroded within Dry Creek. The existing streambank where VRSP is proposed is steeper than the recommended maximum bank slope for VRSP. Therefore, to place VRSP, the banks have to be cut back to result in VRSP face slope of 2H:1V. At the sewer maintenance hole location on the project site, the bank will be cut back slightly and the rock will extend into the main channel. At the sections downstream and upstream of this location, the sewer is farther from the top of the channel bank, allowing space to cut the creek channel bank back without having to extend the rock into the area of the main channel. Proposed bank cuts will ultimately result in an increase of 0.02 acre of jurisdictional waters within the project area.

2.6 Impacts to Jurisdictional Waters of the U.S.

The Proposed Project will result in placement of approximately 700 cubic yards (0.09 acre) of rock (fill) within waters of the U.S. (Dry Creek), and approximately 105 cubic yards of rock above the OHWM. The Proposed Project will permanently disturb approximately 0.37 acre, including both the area within and the area above the OHWM. Temporary impacts resulting from soil excavation at the toe of the VRSP, proposed dewatering facilities, and construction equipment creek access ramps will result in 0.08 acre of impacts to waters of the U.S. (330 cubic yards of clean earthen material), however, the temporary impact area will be restored after construction is completed.

Placement of the rock will require construction equipment to operate within the creek channel. Soil disturbance from construction-related equipment will be minimized to the maximum extent practicable.

2.7 Alternatives

Several alternatives were identified during a site visit on May 3, 2013 and discussed in the *Dry Creek Trunk Sewer Bank Stabilization Project Predesign Report*, prepared by West Yost Associates, Inc. (**Appendix A**). The alternatives analysis concluded that VRSP was the best alternative because it will provide protection of the streambank and sewer immediately upon completion of construction and also because it is the most cost effective. Alternatives initially evaluated, but ultimately eliminated are discussed below.

2.7.1 Ercon Mats

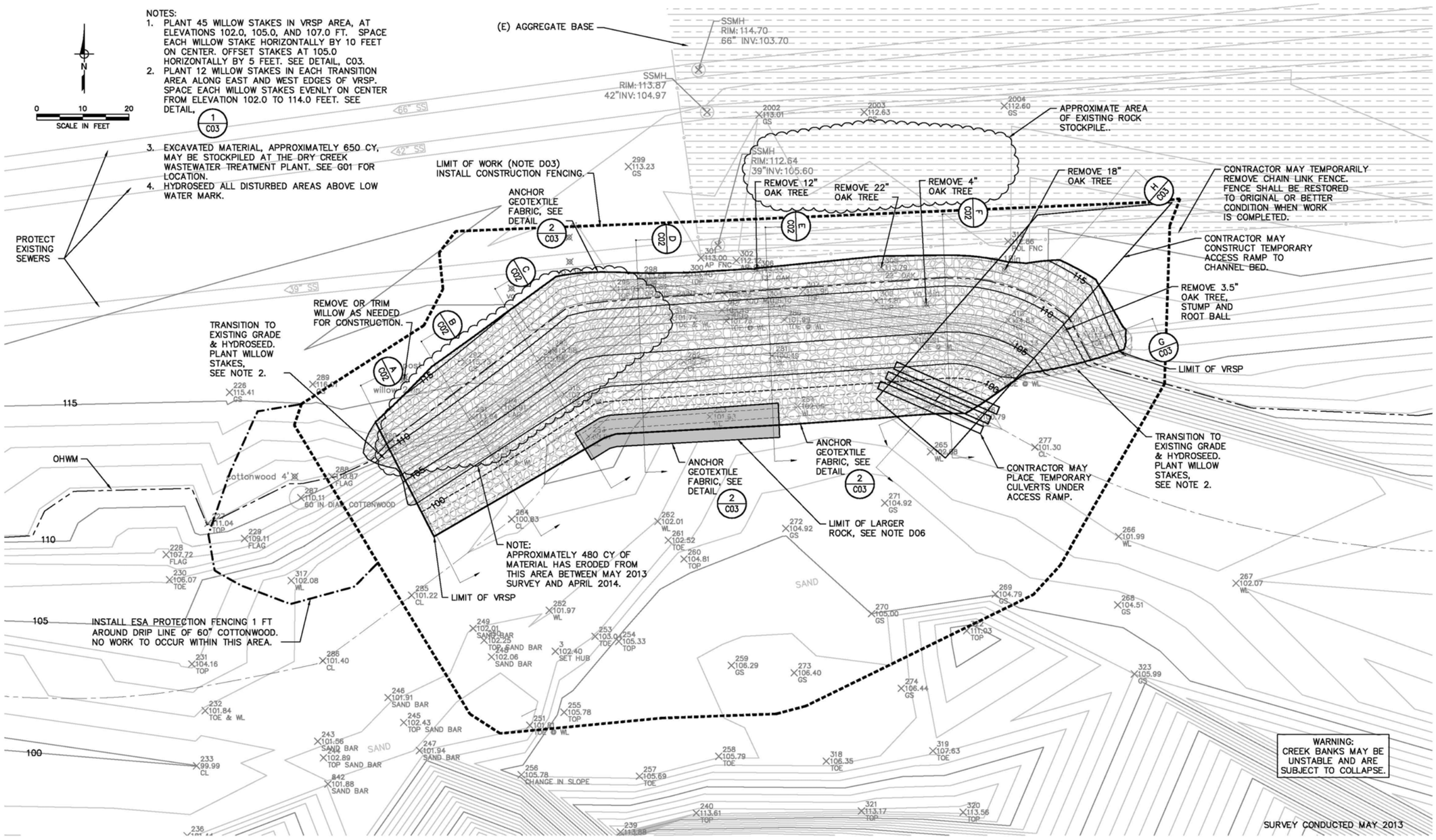
Ercon mats are intended for use on flat creek beds and are for pipeline scour protection, they are not a structural facing and they are not suitable for steep creek bank slopes.

2.7.2 Vegetated Gabions

Vegetated gabions would be more expensive than VRSP because wire baskets and a larger quantity of rock would be needed.

2.7.3 Rock Vane Weirs

Rock vane weirs redirect the flow in the creek from one area to another area; this could cause erosion at another location. During times of high flows, rock vane weirs may not be able to redirect flows to prevent further erosion of the creek bank by the sewer.



DRY CREEK TRUNK SEWER BANK STABILIZATION — PROPOSED PROJECT

FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	Digital Data Provided by City of Roseville	N	NO SCALE	Layout By: CTG Date: 04/07/14	FIGURE 3

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2.7.4 Soldier Piles and Lagging

Soldier piles and lagging would require a significant amount of driven piles into the creek bed at the toe of the unstable bank. Driving the piles could cause the unstable bank to collapse and is also costly.

2.7.5 Longitudinal Stone Toe Protection

Longitudinal stone toe protection and willow planting is costly and because it relies on the growth of vegetation, the protection is not immediately achieved after construction.

2.7.6 Crib Walls

Crib walls are more costly and complex than VRSP; also they require significant excavation of the bank behind the wall, which would put the sewer at further risk.

2.7.7 Eliminate 39-inch Sewer

The flow in the 39-inch sewer could be redirected into the existing 42-inch and 66-inch sewers. This alternative would require about 50 feet of new 39-inch sewer. This alternative would result in the loss of valuable sewer capacity and could contribute to increased potential for sewer overflows.

2.7.8 Cured in Place Lining

The cured in place lining alternative involves lining the existing 39-inch sewer with a cured in place liner which would protect the sewer from damage resulting from settling of the creek bank. It would not protect the sewer if the bank collapsed.

2.7.9 Relocating Sewer 15 Feet North

Another alternative involves relocating the sewer 15 feet northward. However, because the creek will continue to meander over time and endanger the new sewer, this alternative represents a temporary solution and would require the implementation of VRSP.

2.8 Construction

Construction of the project is planned to commence during the low flow period (Spring/Summer 2014), and will involve the use of various types of standard construction equipment, including, but not limited to backhoes and excavators.

2.8.1 Dewatering Plan

A dewatering plan will be developed, which will include placement of portable dams, inflatable bladder dams, or other temporary water control facilities just upstream and just downstream of the construction site. Temporary cutoff walls will also be constructed at the dams by burying heavy plastic sheets in the gravel of the creek bed up to 3 or 4 feet deep. A trench will be dug through the sand/gravel bar south of the construction and the trench will be lined with heavy plastic, which will be held in place with large rocks. When the construction is complete, all temporary materials will be removed and all trenches will be refilled with the original gravel removed from the trench.

2.8.2 VRSP Rock Design

Vegetated (and non-vegetated) Rock Slope Protection will consist of placing angular rock along a laid-back slope of approximately 2H:1V slope where the channel bank has eroded within Dry Creek. Based on the velocities of approximately 6.6 feet per second on the project site, a size of 12” d50 is deemed most appropriate. The rock and slope will be vegetated, due to the sandy nature of the bank.

The City previously purchased and stockpiled 11.8 tons of rock at the Proposed Project site to have on-hand in case it had to be installed under emergency conditions. This rock is ¼ ton to 1 ton riprap and is planned to be used for Proposed Project at the sewer maintenance hole as the outer facing at the toe of the VRSP.

2.9 City Of Roseville Mitigating Ordinances, Guidelines, and Standards

The CEQA Guidelines allow the use of previously adopted development policies or standards as mitigation for the environmental effects of future projects, when the standards have been adopted by the City with findings, based on substantial evidence, that the policies or standards will substantially mitigate environmental effects, unless substantial new information shows that the policies or standards will not substantially mitigate the effects (§15183[f]). In April 2008, the City of Roseville adopted Findings of Fact related to the mitigating policies and standards, and adopted the City of Roseville CEQA implementing procedures for the preparation, processing, and review of environmental documents (Resolution 08-172). These Findings are applicable to the following regulations and ordinances, which include standards and policies that are uniformly applied throughout the City, and will substantially mitigate specified environmental effects of future projects:

- Noise Regulation (RMC Ch.9.24)
- Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch.14.20)
- Stormwater Quality Design Manual (Resolution 07-432)
- City of Roseville Design and Construction Standards (Resolution 07-137)
- Community Design Guidelines (Resolution 95-347)
- Tree Preservation Ordinance (RMC Ch.19.66)

The City's Mitigating Ordinances, Guidelines, and Standards are referenced, where applicable, in the Environmental Checklist (**Section 3.0** in this IS/MND), and will be implemented by the City as part of the Proposed Project to reduce potential impacts to a Less Than Significant Level.

2.10 Environmental Commitments

In addition to the City's Mitigating Ordinances, Guidelines, and Standards discussed above, the project would implement a variety of Best Management Practices (BMPs) and other measures to avoid short- and long-term effects on the physical and human environment. These activities would be included in the contract specifications for contractors working on the Proposed Project, and implemented during project construction. The Applicant Proposed Measures (APMs) to be implemented relevant to the Proposed Project to maintain water quality and aquatic habitat objectives defined by current regulatory standards are described below.

APM — 1: Conduct Environmental Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a Qualified Biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid impacts on biological resources and the penalties for non-compliance. If new construction personnel are added to the project, the City will ensure that the personnel receive the mandatory training from the biologist before starting work.

APM — 2: Install Construction Barrier Fencing to Protect Environmentally Sensitive Areas

The City will install orange construction barrier fencing to identify environmentally sensitive areas (ESAs). ESAs in and adjacent to the construction area comprise mixed riparian forest, native oak trees greater than six inches diameter breast height (DBH), wetland drainages, and any trees that support migratory bird or raptor nests. Before construction, the City will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the ESAs to indicate these locations. The protected area will be clearly identified on the construction plans. The fencing will be

installed before construction activities are initiated and will be maintained throughout the construction period. The following note will be included in the construction plans:

"The contractor's attention is directed to the areas designated as "environmentally sensitive areas" as shown on the plans. These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized in writing by the City's project manager. The City and contractor's project managers will take measures to ensure that construction crew do not enter or disturb these areas, including giving written notice to crew members."

Temporary fences around the ESAs will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least four feet high (Tensor Polygrid or equivalent).

APM — 3: Retain a Biologist to Monitor Construction Activities in the Creek Corridor

The City will retain a biologist to make a weekly monitoring visit to the project site. The biological monitor will advise the construction crew, as needed how to comply with all project implementation restrictions and guidelines. Furthermore, the biological monitor will be responsible for notifying the contractor if the ESA barrier fencing needs maintenance.

APM — 4: Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City and contractor will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following:

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life;
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering Dry Creek channel;
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project;
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden material from the Proposed Project will not be sidecast into the creek channel, but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks;
- The City and contractor will establish spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of construction;

- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the *City's Stormwater Quality BMP Guidance Manual for Construction* (March 2007);

- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site; and

- During construction, all vehicles and equipment required on site will be parked or stored at the staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

APM — 5: Minimize Potential for the Long-Term Loss of Mixed Riparian Forest

To the extent possible, the City will minimize the potential for the long-term loss of riparian vegetation by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Disturbance or removal of vegetation will not exceed the minimum necessary to complete operations. Except for the vegetation specifically identified for trimming and/or removal in the notification, no native oak trees with a trunk diameter greater than six inches DBH will be removed or damaged without prior consultation and approval of a City Planning Department representative. Using hand tools (e.g., clippers, chain saw), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation will be removed out of the riparian/stream zone.

APM — 6: Conduct a Pre-Construction Survey for Western Pond Turtles and Implement Measures to Avoid Impacts

To avoid construction-related impacts on western pond turtles, the City will retain a wildlife biologist to conduct a pre-construction survey for western pond turtles no more than 48 hours before the start of construction. The wildlife biologist will look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If a western pond turtle is located in the construction area, the biologist will move the turtle to a suitable aquatic site outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the City will consult the CDFW to determine and implement appropriate avoidance measures, which may include a "no-disturbance" buffer around the nest site until the hatchlings have moved to a nearby aquatic site.

APM —7: Construct Outside of Nesting Season or Conduct Pre-Construction Raptor Nesting Surveys

To avoid disturbance of raptor breeding and nesting activity, including nesting of sensitive raptors, project activities will be avoided during the typical raptor breeding season of March through August, to the extent feasible. If construction must take place during the typical

nesting season, pre-construction surveys will be conducted by a Qualified Biologist no more than 30 days prior to initiation of proposed construction activities.

Surveys will be conducted to determine if active nesting is occurring on or directly adjacent to the study area. If active nests are found on or immediately adjacent to the site, survey results will be submitted to CDFW and consultation will be initiated with CDFW to determine appropriate avoidance measures. If no nesting is found to occur, necessary tree removal and other project activities could then proceed.

APM — 8: Comply with Agency Permitting Requirements and Provide for No Net Loss of Wetlands

The City shall comply with all applicable Corps, U.S. Fish and Wildlife Service (USFWS), CDFW, RWQCB, and National Marine Fisheries Service (NMFS) permitting and mitigation requirements. The City shall meet the agencies' no net loss of wetlands policy through one of the following measures:

- Avoid impacts through project design; and
- Compensate for impacts by acquiring (through fee title or credits in an approved mitigation bank) replacement habitat.

The City is responsible for obtaining all required permits and authorizations from local, State, and federal agencies. If a conflict arises between the provisions of any of the permits, the City shall comply with the provision that offers the greatest protection to water quality, Species of Special Concern, and/or Critical Habitat. Copies of the permits will be provided to the construction crew with the construction plans.

APM — 9: Avoid the Introduction or Spread of Noxious Weeds in the Project Area

To avoid the introduction or spread of noxious weeds into previously uninfested areas (especially within the riparian community along Dry Creek), the City will revegetate disturbed areas immediately after construction is complete using certified weed-free native and nonnative mixes.

APM — 10: Comply with Requirements of the Tree Preservation Chapter of the Roseville Zoning Ordinance

The City will comply with the City's Tree Preservation Ordinance as applicable, including avoidance, minimization, or compensation for the removal or disturbance of native oak trees greater than 6 inches DBH during construction. If native oak trees will be affected by the project, the City will be required to prepare a tree mitigation plan that identifies trees that qualify for protection and specifies mitigation for impacts. For any oak trees that would be removed, the City will mitigate the impact through either on-site planting or use of the City's in-lieu fee program.

2.11 Required Permits and Approvals

The following permits and/or approvals are anticipated for the Proposed Project:

- Streambed Alteration Agreement – California Department of Fish and Wildlife;
- Clean Water Act Section 401 Permit — Central Valley Regional Water Quality Control Boar;
- Clean Water Act Section 404 Permit— U.S. Army Corps of Engineer;
- Adoption of the Mitigated Negative Declaration for the Proposed Project and a Mitigation Monitoring and Reporting Plan enclosed as **Appendix B** of this document – Roseville City Council; and
- Project Approval – Roseville City Council.

3.0 INITIAL STUDY CHECKLIST

The California Environmental Quality Act (CEQA) Guidelines recommend that lead agencies use an Initial Study checklist to determine the potential impacts of the Proposed Project on the physical environment. The checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by the Proposed Project. This section of the Initial Study incorporates a portion of the Appendix "G" environmental checklist form, contained in the CEQA Guidelines (revised 2012). The City has modified the Appendix "G" environmental checklist form to include a reference to CEQA Section 21083 and CEQA Guidelines Section 15183 in order to identify impact areas that do not require further analysis than that which was provided in the applicable *Specific Plan* and/or *General Plan EIR*. Impact questions and responses are included in both tabular and narrative formats for each of the 17 environmental topic areas. There are four possible answers to the environmental impacts checklist questions on the following pages. Each possible answer is explained herein:

1) A "**Potentially Significant Impact**" is appropriate if there is enough relevant information and reasonable inferences from that information that a fair argument can be made to support a conclusion that a substantial or potentially substantial adverse change may occur to any of the physical conditions within the area affected by the proposed project. When one or more "Potentially Significant Impact" entries are made, an EIR is required.

2) A "**Less Than Significant With Mitigation Incorporated**" answer is appropriate when the applicant has agreed to incorporate a mitigation measure to reduce an impact from "Potentially Significant" to "Less Than Significant." For example, impacts to flood waters could be reduced from a "Potentially Significant Impact" to a "Less Than Significant Impact" by relocating a building to an area outside the floodway. The lead agency must describe the mitigation measures, and briefly explain how the measures would reduce the impact to a "Less Than Significant Level."

3) A "**Less Than Significant Impact**" is appropriate if there is evidence that one or more environmental impacts may occur, but the impacts are determined to be less than significant or the application of development policies and standards to the project will reduce the impact(s) to a "Less Than Significant Level." For example, the application of the City's Improvement Standards reduces potential erosion impacts to a "Less Than Significant Impact."

4) A "**No Impact**" answer is appropriate where it can be clearly seen that the impact at hand does not have the potential to adversely affect the environment. For example, a project in the center of an urbanized area will clearly not have an adverse effect on agricultural resources or operations.

All answers must take into account of the whole action involved, including off-site as well as on-site, cumulative as well as project level, indirect as well as direct, and construction as well as operational impacts, except as provided for under CEQA Guidelines Section 15183 and CEQA Section 21083.3.

A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources cited in the parentheses following each response. A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards.

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

On the basis of this initial evaluation:

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

■ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the proposed project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the Proposed Project MAY have a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR OR NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

April 7, 2014
Date

Mark Morse
Mark Morse, Environmental Coordinator

City of Roseville
Organization

3.1 Aesthetics

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Have a substantial adverse effect on a scenic vista?	0	0	0	•
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	0	0	0	•
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	0	0	•	0
d.	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	0	0	•	0

Discussion of Checklist Answers:

a,b. **No Impact**. The City has not designated any specific scenic vistas to be protected in the City of Roseville, and there is not a state-designated scenic highway in the project vicinity. There would be ***No Impact***. No mitigation is required.

c. **Less Than Significant Impact**. The Proposed Project involves the placement of VRSP along a portion of the Dry Creek Bank. The project will also result in the removal of several trees (as discussed further in the **Biological Resources, Section 3.4** of this document). The project site is characterized by mixed riparian woodlands, annual grasslands, and perennial drainage. The site is bordered on the south by open space and bordered on the north by commercial, industrial and some residential development. The project is designed to minimize the amount of VRSP and the number of trees to be removed. Additionally, construction on the project site would be temporary and would not permanently degrade the character of the project area. No new operational characteristics would be introduced that would substantially degrade the existing visual character of the site. Therefore this is a ***Less Than Significant Impact***. No mitigation is required.

d. **Less Than Significant Impact**. The Proposed Project would not include any project components that could increase glare in the project area. The project does not involve the installation of light fixtures, and therefore will not result in a new source of light or glare that would adversely affect nighttime views in the area. Therefore this is a ***Less Than Significant Impact***. No mitigation is required.

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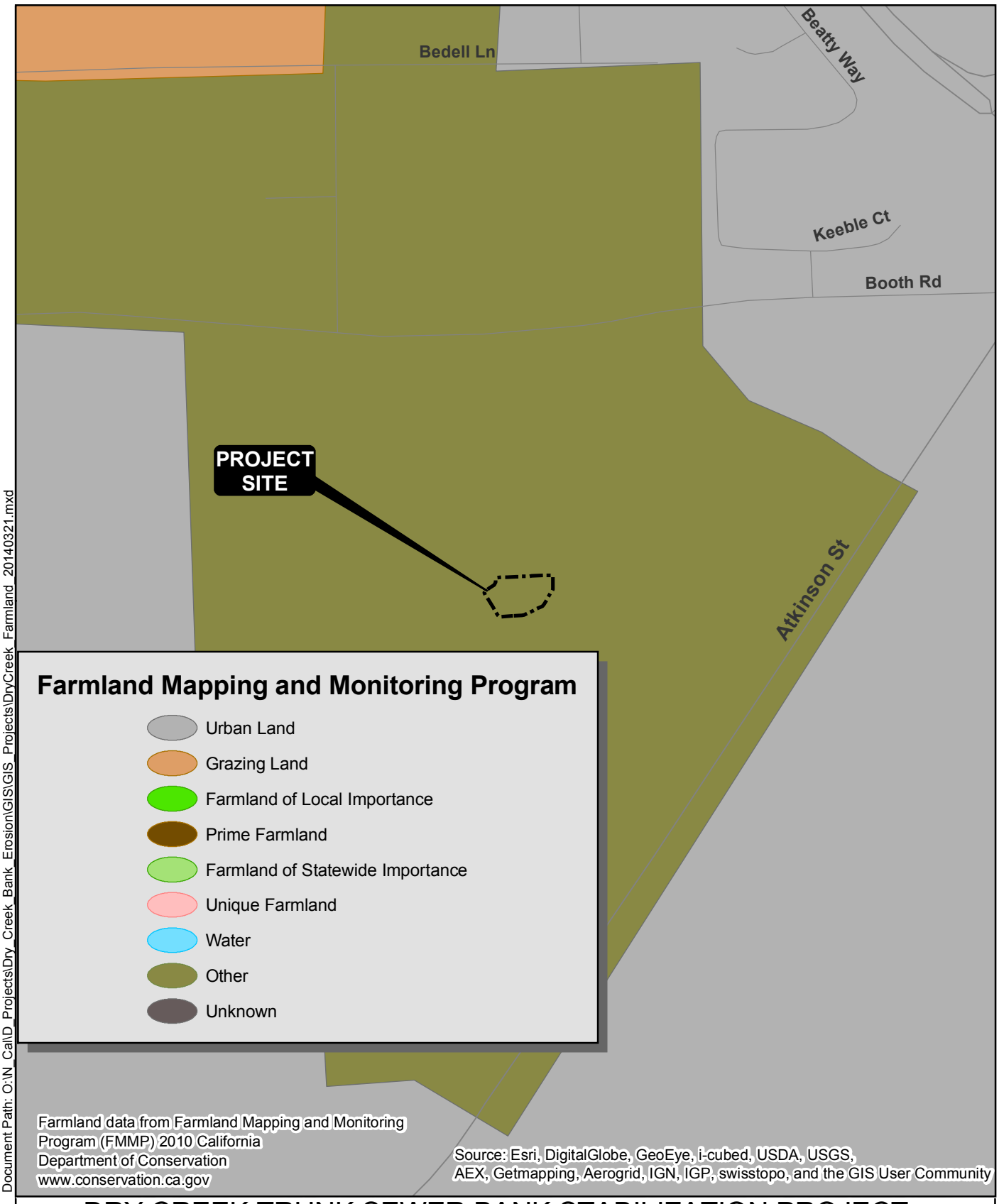
3.2 Agriculture and Forest Resources

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	0	0	0	•
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	0	0	0	•
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	0	0	0	•
d.	Result in the loss of forest land or conversion of forest land to non-forest use?	0	0	0	•
e.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	0	0	0	•

Discussion of Checklist Answers:

a-e. **No Impact**. The project site is designated as "Other Lands" by the State Farmland Mapping and Monitoring Program and is surrounded by commercial, industrial, residential, and open space land uses. The site contains no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or active agricultural operations (**Figure 4**). No forested areas are present on the project site. Therefore, the Proposed Project would not involve the loss of any forest land. The project site is not zoned for any agricultural use or designated for agricultural use by the City's General Plan or Zoning Ordinance. No agricultural operations exist in the project vicinity, and the project would not involve any changes that could result in conversion of any farmland to a non-agricultural use or forestland to non-forest land use. Therefore, there would be ***No Impact*** related to agricultural and/or forest resources. No mitigation is required.



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DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT FARMLANDS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 375
FEET
1 inch = 375 feet

Drawn By: KER
Date: 03/212014

FIGURE 4

3.3 Air Quality

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Conflict with or obstruct implementation of the applicable air quality plan?	0	0	•	0
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	0	0	•	0
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non- attainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	0	0	•	0
d.	Expose sensitive receptors to substantial pollutant concentrations?	0	0	•	0
e.	Create objectionable odors affecting a substantial number of people?	0	0	•	0

Discussion of Checklist Answers:

a. **Less Than Significant Impact**. Project development would occur under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD) within the Sacramento Valley Air Basin (SVAB). The SVAB is designated nonattainment for the federal particulate matter 2.5 microns in diameter ($PM_{2.5}$) and the State particulate matter 10 microns in diameter (PM_{10}) standards, as well as for both the federal and State ozone standards. In order to address the federal nonattainment for ozone, the PCAPCD, along with other local air districts in the SVAB, is required to comply with and implement the State Implementation Plan (SIP) to demonstrate when and how the region can attain the federal ozone standards. As such, the PCAPCD, along with the other air districts in the region, prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Plan) in December 2008. The PCAPCD adopted the Plan on February 19, 2009. The California Air Resources Board (CARB) determined that the Plan meets Clean Air Act requirements and approved the Plan on March 26, 2009 as a revision to the SIP. Accordingly, the Plan is the applicable air quality plan for the Proposed Project site. It should be noted that an update to the Plan, the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions), has been prepared and was approved and adopted on September 26, 2013. The 2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan will be submitted to the U.S. Environmental Protection Agency (EPA) as a revision to the SIP.

The Plan demonstrates how existing and new control strategies would provide the necessary future emission reductions to meet the federal Clean Air Act requirements, including the National Ambient Air Quality standards (NAAQS). Adoption of all reasonably available control measures is required for attainment. Measures could include, but are not limited to the following: regional mobile incentive programs; urban forest development programs; and local regulatory measures for emission

reductions related to architectural coating, automotive refinishing, natural gas production and processing, asphalt concrete, and various others.

A conflict with, or obstruction of, implementation of the Plan could occur if a project generates greater emissions than what has been projected for the site in the emission inventories of the Plan. Emission inventories are developed based on projected increases in population, employment, regional vehicle miles traveled (VMT), and associated area sources within the region, which are based on regional projections that are, in turn, based on the General Plan Land Use and Zoning Designations for the region. In addition, general conformity requirements of the Plan include whether a project would cause or contribute to new violations of any NAAQS, increase the frequency or severity of an existing violation of any NAAQS, or delay timely attainment of any NAAQS.

The Proposed Project would not modify the existing land use or operations on the site. Thus, the project would not conflict with the emissions inventories of the Plan, and would be considered consistent with the Plan. In addition, the PCAPCD's permits, rules, and regulations are in compliance with the Plan, and the Proposed Project is required to comply with all applicable PCAPCD rules and regulations. Furthermore, as analyzed and determined in the discussions below, the Proposed Project would not result in project-level construction emissions that would exceed the applicable thresholds of significance. Thus, the project would not cause or contribute to new violations of any NAAQS, increase the frequency or severity of an existing violation of any NAAQS, or delay timely attainment of any NAAQS.

Because the Proposed Project would not conflict with the emissions inventories of the Regional Air Quality Plan, would result in emissions below the thresholds of significance, and would not conflict with or obstruct implementation of the applicable Air Quality Plan, impacts would be considered ***Less Than Significant***.

b. **Less Than Significant Impact**. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, the PCAPCD recommends significance thresholds for emissions of PM_{10}, carbon monoxide (CO), and ozone precursors – reactive organic gases (ROG) and nitrous oxides (NO_X). The significance thresholds, expressed in pounds per day (lbs/day), listed in **Table 1** below are the PCAPCD's recommended thresholds of significance for use in the evaluation of air quality impacts associated with proposed development projects. The City of Roseville, as Lead Agency, utilizes the PCAPCD's recommended project-level criteria air pollutant thresholds of significance for CEQA evaluation purposes. Thus, if the Proposed Project's emissions exceed the pollutant thresholds presented in **Table 1**, the project could have a significant effect on air quality and the attainment of federal and State Ambient Air Quality Standards.

Table 1 — PCAPCD Recommended Thresholds of Significance

Pollutant	Construction/Operational Threshold (lbs/day)
ROG	82
NO_X	82
PM_{10}	82
CO	550

Source: PCAPCD, 2012.

Implementation of the Proposed Project would contribute local emissions in the area during construction. Short-term construction-related emissions resulting from project construction were estimated using the Roadway Construction Emissions Model version 7.1.5.1, a model developed by Jones & Stokes and TIAX LLC in partnership with the Sacramento Metropolitan Air Quality Management District.

Construction Emissions

During construction of the project, various standard types of equipment and vehicles would temporarily operate on the project site. Construction exhaust emissions would be generated from construction equipment, earth movement activities, construction worker commutes, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the Proposed Project would generate air pollutant emissions intermittently within the site and vicinity of the site, until all construction has been completed, construction is a potential concern because the Proposed Project is in a non-attainment area for ozone and PM.

The project is required to comply with all PCAPCD rules and regulations for construction, including, but not limited to Rule 202 related to visible emissions and Rule 228 related to fugitive dust, which would be noted on County-approved construction plans. In addition, the City has adopted construction standards that apply to all projects within the City limits that require projects to meet specific engineering and design requirements. The Proposed Project would be required to comply with the City's Department of Public Works Construction Standards, Section 111, that are intended to minimize fugitive dust and PM_{10} emissions during construction activities. Compliance with the engineering and design requirements would be noted on City-approved construction plans as well.

As shown in **Table 1** above, the PCAPCD threshold of significance for construction is 82 pounds per day for ROG, NOX, and PM_{10} and 550 pounds per day for CO. **Table 2** below presents the estimated construction-related emissions of ROG, NOX, PM_{10}, and CO resulting from the Proposed Project.

Table 2 — Maximum Unmitigated Project Construction Emissions

Pollutant	Project Emissions (lbs/day)	PCAPCD Significance Threshold (lbs/day)
ROG	7.9	82.0
NO_x	74.6	82.0
PM_{10}	5.3	82.0
CO	36.8	550.0

Source: Road Construction Emissions Model, March 2014 (**Appendix C**).

As shown in **Table 2**, the project's associated short-term construction-related emissions would be well below the PCAPCD thresholds of significance. Therefore, construction activities associated with development of the Proposed Project would not substantially contribute to the PCAPCD's nonattainment status for ozone or PM. Because the Proposed Project would not result in emissions above the PCAPCD's recommended thresholds of significance and would comply with PCAPCD rules and regulations for construction, the project would be considered to result in a ***Less Than Significant Impact*** associated with construction emissions.

Operational Emissions

Operational emissions of ROG, NOX, CO, and PM_{10} are generated by mobile and stationary sources, including day-to-day activities such as vehicle trips to and from a project site, natural gas combustion from heating mechanisms, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, cleaning products, spray paint, etc.). However, as discussed previously, the Proposed Project would not modify the existing land use or operations on the project site. Thus, the Proposed Project would not involve mobile, stationary, or area sources and new operational emissions would not occur. Therefore, the Proposed Project would be considered to result in a ***Less Than Significant Impact*** associated with operational emissions.

Conclusion

The Proposed Project would not exceed the applicable thresholds of significance for air pollutant emissions during construction or operation. The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, implementation of the Proposed Project would result in a ***Less Than Significant*** related to air quality.

c. **Less Than Significant Impact**. The Proposed Project is within a nonattainment area for ozone and PM. The growth and combined population, vehicle usage, and business activity within the nonattainment area from the project, in combination with other past, present, and reasonably foreseeable projects within the City of Roseville and surrounding areas, could either delay attainment of the standards or require the adoption of additional controls on existing and future air pollution sources to offset emission increases.

The Proposed Project would only involve emissions during construction, as the VRSP would not require regular maintenance and would not involve operation emissions. Construction emissions are a one-time release and would occur temporarily (approximately several months in this case). Accordingly, the incremental contribution of the Proposed Project's construction-related emissions would not be cumulatively considerable. Therefore, the Proposed Project would result in a ***Less Than Significant Impact***, cumulatively.

d. **Less Than Significant Impact**. The Proposed Project consists of the placement of VRSP along a portion of the Dry Creek bank in order to protect an existing sewer line. As presented above, CO emissions were determined to be well below thresholds during both construction and operation of the Proposed Project. Emissions of CO results from the incomplete combustion of carbon-containing fuels such as gasoline or wood and are particularly related to traffic levels. As the project does not involve operations on-site, the Proposed Project would not result in an increase in vehicle trips in the area. Accordingly, the Proposed Project would not cause substantial levels of CO at surrounding intersections or generate localized concentrations of CO that would exceed standards.

Toxic Air Contaminants (TACs) are a category of environmental concern as well. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommendations for citing new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

Because the Proposed Project does not involve on-site operations, long-term operation of any stationary diesel engine or other major on-site stationary source of TACs would not occur. Emissions of DPM resulting from construction-related equipment and vehicles would be temporary. In addition, the nearest sensitive receptor would be the existing residence located about 550 feet northwest of the project site. Therefore, the nearest sensitive receptors would not be expected to be exposed to substantial long-term concentrations of DPM emissions associated with construction of the Proposed Project.

Furthermore, the Proposed Project would not introduce any sensitive receptors to the area, and, thus, would not expose sensitive receptors to any existing sources of substantial pollutant concentrations.

In conclusion, the Proposed Project would not introduce sensitive receptors to the area and would not generate substantial levels of pollutant concentrations that would expose existing sensitive receptors in the area. Therefore, impacts related to exposing sensitive receptors to substantial pollutant concentrations would be a ***Less Than Significant Impact***.

e. Less Than Significant Impact. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and air districts. Project-related odor emissions would be limited to the construction period, when emissions from equipment may be evident in the immediately surrounding area. These activities would be short term and are not likely to result in nuisance odors that would violate PCAPCD odor regulations. This impact is therefore considered to be a ***Less Than Significant Impact***.

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3.4 Biological Resources

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	0	0	•	0
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	0	0	•	0
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling hydrological interruption, or other means?	0	0	•	0
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	0	0	•	0
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	0	0	•	0
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	0	0	0	•

Discussion of Checklist Answers:

a. **Less Than Significant Impact**. Based on a records search of the California Natural Diversity Database (CNDDB) and the USFWS list as well as field observations, several special-status species are found to have the potential to occur onsite or in the vicinity of the site. The CNDDB special-status species occurrences in the project vicinity are shown on Figure 3 of the attached **Biological Resources Assessment** (BRA) which was prepared for the Proposed Project on November 18, 2013

(**Appendix D**). The following set of criteria has been used to determine each species potential for occurrence on the site:

Present: Species known to occur on the site, based on CNDDB records, and/or was observed on the site during the field survey(s).

High: Species known to occur on or near the site (based on CNDDB records within 8 km or 5 mi, and/or based on professional expertise specific to the site or species) and there is suitable habitat on the site.

Low: Species known to occur in the vicinity of the site, and there is marginal habitat onsite. -OR- Species is not known to occur in the vicinity of the site, however there is suitable habitat on the site.

None: Species is not known to occur on or in the vicinity of the site and there is marginal habitat for the species on the site. -OR- There is no suitable habitat for the species on the site. -OR- Species was surveyed for during the appropriate season with negative results.

Only those special-status plants and wildlife species that are known to be present or that have a high or low potential for occurrence will be discussed in further detail below.

Special-Status Plants

Based on field observations and literature review specific to the special-status plants the potential for occurrence has been determined for each species. Special-status plant species that are considered to have a low potential to occur onsite include: Big-scale balsamroot (*balsamorhiza macrolepis* var. *macrolepis*), and Stinkbells *(fritillaria agrestis*).

Big-scale balsamroot

Big-scale balsam-root is an herbaceous perennial member of the sunflower family (Asteraceae). It is categorized as a CNPS Rank 1B species. This species has large yellow flowering heads and leaves that arise from the ground. It differs, in part, from other balsam-roots by having coarsely serrate leaves. Big-scale balsam-root grows in open woodlands and grasslands at widely scattered locations in northern California, and will tolerate serpentine soil (CNPS 2013). It blooms from March to June. The project site is below the published elevation range of the species; however the one known record for this species occurring within five miles of the project area (**Appendix D**) is at a similar elevation as the project site. This occurrence was recorded in 1957 (CDFW 2013). The woodlands and grasslands on the site are heavily disturbed and this species was not observed onsite during the biological assessment, which took place during the blooming season. Therefore, the potential for this species to occur on the site is low.

Stinkbells

Stinkbells, a CNPS Rank 4 species, is a small perennial lily found in chaparral, cismontane, pinyon, and juniper woodlands, and valley and foothill grasslands that blooms between March and June. It generally grows in clay or heavy soils between 30 and 4,500 feet above mean sea level (MSL). There is one CNDDB record of this species within five miles of the project (**Appendix D**) (CDFW 2013). Generally, the soils on site are loams underlain with gravel and sand rather than the clay soils that this species requires. However, there are unnamed hydric inclusions that may provide appropriate soil conditions. The woodlands and grasslands on the site are heavily disturbed and no stinkbells were observed during the biological assessment, which took place during the blooming season. Therefore, the potential for this species to occur on the site is low.

Special-Status Wildlife

Species that are considered to have a high potential to occur on the site include other raptor and other avian species protected by Migratory Bird Treaty Act (MBTA). Species that are considered to have a low potential to occur on the site include: Western pond turtle (*Emys marmorata*), Central Valley steelhead (*Oncorhynchus mykiss*), Purple martin (*Progne subis*), Swainson's hawk (*Buteo swainsonii*), White-tailed kite (*Elanus leucurus*), and special-status bat species.

Raptor and Other Migratory Bird Species

Raptor species forage and nest in a variety of habitats throughout Placer County. The nests of raptors and most other birds are protected under the MBTA. Raptors are also protected by Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest. The riparian woodlands and annual grasslands on the project site may provide potential nesting and foraging habitat for raptors and other protected bird species. Although no active nests were observed on the site, a variety of avian species were observed. Raptors and other protected migratory birds have a high potential to occur on the site.

Western Pond Turtle

Western pond turtles require slow moving perennial aquatic habitats with suitable basking sites. Pond turtles have sometimes adapted to using irrigation ditches. Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). Although there are no CNDDB records of western pond turtle within five miles of the project (**Appendix D**) (CDFW 2013), there is suitable basking habitat along the creek banks, on the sandbars, and in slower moving portions of the creek and a pond slider was observed on the project site. Therefore, the potential for this species to occur on the site is low.

Central Valley Steelhead

The Central Valley steelhead is listed as federally threatened and relies on streams, rivers, estuaries and marine habitat during their lifecycle. In freshwater and estuarine habitats, steelhead feed on small crustaceans, insects and small fishes. Eggs are laid in small and medium gravel and need good water flow (to supply oxygen) to survive. After emerging from the redd steelhead remain in streams and rivers for 1 to 4 years before migrating through the estuaries to the ocean. Unlike salmon, steelhead migrate individually rather than in schools. Steelhead spend one to five years at sea before returning to natal streams or rivers. At least two specific storages of steelhead have developed; those that enter fresh water during fall, winter and early spring -- the winter run -- and those that enter in spring, summer and early fall -- the summer run. Steelhead do not always die after spawning, but will migrate downstream through estuaries to the ocean.

There are no CNDDB records of Central Valley steelhead within five miles of the project area (**Appendix D**) (CDFW 2013). However, Dry Creek and its tributaries are known to support habitat for this species. The Central Valley steelhead is not expected to spawn within the portion of Dry Creek in the project area; but it may be used as a migration corridor. Therefore, there is low potential for Central Valley steelhead to occur on the project site.

Purple Martin

Purple martin is a type of swallow found in riparian woodlands and coniferous forests from March through September. They use existing cavities, such as abandoned woodpecker nests, nest boxes, or under bridges or structures for nesting. Purple martins eat insects, which are usually caught in the air, but they may also forage on the ground. The riparian woodland provides potential foraging and nesting habitat. There is one record in the CNDDB of this species within five miles of the project site

(**Appendix D**) (CDFW 2013). The species was not observed on the site during the biological assessment. There is low potential for this species on the project site.

Swainson's hawk

Swainson's hawk is a long-distance migrant with nesting grounds in western North America. The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters in South America (Bradbury *et. al*. in prep.). Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Zeiner *et. al.* 1990). In the Central Valley, Swainson's hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually in close proximity to suitable foraging habitats, which include fallow fields, annual grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and De Water 1994). There are five records in the CNDDB of this species within five miles of the site (**Appendix D**) (CDFW 2013), and the larger cottonwoods and oaks in the riparian woodland present potential nesting habitat. The species was not observed on the site during the biological assessment. For these reasons, Swainson's hawk has a low potential to occur within the site.

White-tailed Kite

The White-tailed kite is a medium-sized raptor that is a year long resident in coastal and valley lowlands in California. White-tailed kites are monogamous and breed from February to October, peaking from May to August (Zeiner *et. al*. 1990). This species nests near the top of dense oaks, willows, or other large trees. There are two CNDDB records of white-tailed kite listed within five miles of the project area (**Appendix D**) (CDFW 2013). The species was not observed on the site during the biological assessment. However, the riparian woodland on the site provides potential nesting habitat for this species, and the annual grassland on the site provides potential foraging habitat. Therefore, the potential for this species to occur on the site is low.

Special-Status Bat Species

Several special-status bat species, which are State Species of Concern, may be found within the project vicinity including: pallid bat (*Antrozous pallidus*), fringed myotis (*Myotis thysanodes*), Yuma myotis (*Myotis yumaensis*), long-legged myotis (*Myotis volans*), long-eared myotis (*Myotis evotis*), western small-footed myotis (*Myotis ciliolabrum*), hoary bat (*Lasiurus cinereus*), western red bat (*Lasiurus blossevillii*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

Five of the above species roost primarily in caves, rock outcroppings, or buildings. Fringed myotis roost in caves and the attics of old buildings. Yuma myotis roost in caves, tunnels, or buildings in arid areas throughout the State. Long-legged myotis roost in buildings and small pockets or crevices in rock outcroppings. Western small-footed myotis roost in caves, mine, tunnels, rock crevices or buildings, in or near forested areas. Townsend's big-eared bat roosts in caves, mine tunnels, and buildings. There are no suitable nesting sites for these species.

The remaining four species of bats are known to roost in trees. Long-eared myotis live in thinly forested areas and occasionally caves. Hoary bats live in wooded areas and hang in trees. Western red bat roosts primarily in trees, usually at edges of streams, fields, or urban areas. Pallid bats roost in rock crevices and caves and occasionally hollow trees and buildings.

There are no CNDDB records for any of these nine special-status bat species within five miles of the project site (**Appendix D**) (CDFW 2013) and no bat species were observed onsite during the biological assessment. However, the oak woodlands provide potential roosting habitat for long-eared

myotis, pallid bat, hoary bat, and western red bat. Therefore, the potential is low for special-status bat species to occur on the site.

Conclusion

The potential for the majority of the special-status species listed above to occur on the project site is low. The implementation of the following APMs will ensure that special-status species will not be adversely affected.

APM — 1: Conduct Environmental Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a Qualified Biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid impacts on biological resources and the penalties for non-compliance. If new construction personnel are added to the project, the City will ensure that the personnel receive the mandatory training from the biologist before starting work.

APM — 3: Retain a Biologist to Monitor Construction Activities in the Creek Corridor

The City will retain a biologist to make a weekly monitoring visit to the project site. The biological monitor will advise the construction crew, as needed how to comply with all project implementation restrictions and guidelines. Furthermore, the biological monitor will be responsible for notifying the contractor if the ESA barrier fencing needs maintenance.

APM — 6: Conduct a Pre-Construction Survey for Western Pond Turtles and Implement Measures to Avoid Impacts

To avoid construction-related impacts on western pond turtles, the City will retain a wildlife biologist to conduct a pre-construction survey for western pond turtles no more than 48 hours before the start of construction. The wildlife biologist will look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If a western pond turtle is located in the construction area, the biologist will move the turtle to a suitable aquatic site outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the City will consult the CDFW to determine and implement appropriate avoidance measures, which may include a “no-disturbance” buffer around the nest site until the hatchlings have moved to a nearby aquatic site.

APM —7: Construct Outside of Nesting Season or Conduct Pre-Construction Raptor Nesting Surveys

To avoid disturbance of raptor breeding and nesting activity, including nesting of sensitive raptors, project activities will be avoided during the typical raptor breeding season of March through August, to the extent feasible. If construction must take place during the typical nesting season, pre-construction surveys will be conducted by a Qualified Biologist no more than 30 days prior to initiation of proposed construction activities.

Surveys will be conducted to determine if active nesting is occurring on or directly adjacent to the study area. If active nests are found on or immediately adjacent to the site, survey results will be submitted to CDFW and consultation will be initiated

with CDFW to determine appropriate avoidance measures. If no nesting is found to occur, necessary tree removal and other project activities could then proceed.

APM — 8: Comply with Agency Permitting Requirements and Provide for No Net Loss of Wetlands

The City shall comply with all applicable Corps, USFWS, CDFW, RWQCB, and National Marine Fisheries Service (NMFS) permitting and mitigation requirements. The City shall meet the agencies' no net loss of wetlands policy through one of the following measures:

- Avoid impacts through project design; and
- Compensate for impacts by acquiring (through fee title or credits in an approved mitigation bank) replacement habitat.

The City is responsible for obtaining all required permits and authorizations from local, State, and federal agencies. If a conflict arises between the provisions of any of the permits, the City shall comply with the provision that offers the greatest protection to water quality, Species of Special Concern, and/or Critical Habitat. Copies of the permits will be provided to the construction crew with the construction plans.

The above APMs will ensure a ***Less Than Significant Impact*** to special-status species and no mitigation is required.

b. Less than Significant Impact. The project site contains several biological communities including mixed riparian woodland and annual grasslands which are discussed in detail below.

Mixed Riparian Woodland

Mixed riparian woodland habitat occurs along Dry Creek. Riparian woodland communities occur in association with bodies of water and waterways such as rivers, streams, springs, and ephemeral creeks. This habitat type is typically comprised of three vegetation layers including trees, shrubs, and herbs. The riparian woodland onsite is generally confined to a relatively narrow band along the banks of Dry Creek.

Tree species occurring within the riparian habitat area include: valley oak, blue oak, interior live oak, California black walnut (*Juglans nigra*), willows (*Salix* sp.), box elder (*Acer negundo*), southern catalpa (*Catalpa bignoniodes*), tree of heaven (*Ailanthus altissima*), silver maple (*Acer saccharinum*), California sycamore (*Platanus racemosa*), and Fremont's cottonwood (*Populus fremontii*). Shrub and herbaceous species that characterize the riparian habitat include: Japanese privet (*Ligustrum japonicum*), California mugwort (*Artemisia douglasiana*), Himalayan blackberry (*Rubus armeniacus*), elderberry, fennel (*Foeniculum vulgare*), ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), spear thistle (*Cirsium vulgare*), curly dock (*Rumex crispus*), tall cyperus (*Cyperus eragrostis*), cattail (*Typha* spp.), California poppy (*Eschscholzia californica*), smilo grass (*Piptatherum miliaceum*), black mustard (*Brassica nigra*), and wild radish (*Raphanus sativus*).

Mixed riparian woodland communities provide substantial breeding, cover, and foraging habitat for a variety of resident and migratory wildlife species. Additionally, this habitat community provides migration and dispersal corridors for wildlife. Wildlife species identified within this community type during the biological assessment include: wild turkey (*Meleagris gallopavo*), house wren (*Troglodytes aedon*), lesser goldfinch (*Carduelis psaltria*), black phoebe (*Sayornis nigricans*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), peacock (*Pavo* sp.), mourning dove (*Zenaida macroura*), and bushtit (*Psaltriparus minimus*).

Annual Grassland

Annual grassland community occurs in open, cleared, or disturbed areas within the project site, and form part of the understory of the mixed riparian woodland community. The annual grasslands on the site are generally dry and on high banks 5-10 feet above the channel of Dry Creek.

This community is dominated by native and non-native grasses intermixed with perennial and annual forbs. Species observed include: soft chess (*Bromus hordeaceus*) , ripgut brome, wild oat (*Avena* sp.), Bermuda grass (*Cynodon dactylon*), black mustard, winter vetch (*Vicia villosa*), yellow star-thistle (*Centaurea solstitialis*), ryegrass (*Festuca perennis*), medusahead grass (*Taeniatherum caput-medusae*), field bindweed (*Convolvulus arvensis*), California poppy (*Eschscholzia californica*), milk thistle (*Silybum marianum*), and wild radish (*Raphanus* sp.). There are some scattered oak trees within portions of the grasslands. Oak species within the annual grassland include: interior live oak, blue oak, and valley oak.

Wildlife species commonly associated with annual grasslands within the project sites include: western meadowlark (*Sturnella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*), California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), western fence lizard (*Sceloporus occidentalis*), and gopher snake (*Pituophis catenifer*). In addition, annual grassland provides foraging habitat for raptors that nest in the adjacent woodlands such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), white-tailed kite (*Elanus leucurus*), and American kestrel (*Falco sparverius*). Wildlife species observed in annual grasslands onsite include: yellow-billed magpie (*Pica nuttalli*) and California ground squirrel (*Otospermophilus beecheyi*).

Conclusion

The *City of Roseville's General Plan: Open Space and Conservation Element* lists the protection of natural habitat areas such as creeks, riparian corridors and adjacent grassland areas as one of three primary goals. The implementation of the following APMs will ensure that sensitive natural communities will not be adversely affected.

APM — 2: Install Construction Barrier Fencing to Protect Environmentally Sensitive Areas

The City will install orange construction barrier fencing to identify environmentally sensitive areas (ESAs). ESAs in and adjacent to the construction area comprise mixed riparian forest, native oak trees greater than six inches diameter breast height (DBH), wetland drainages, and any trees that support migratory bird or raptor nests. Before construction, the City will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the ESAs to indicate these locations. The protected area will be clearly identified on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following note will be included in the construction plans:

"The contractor's attention is directed to the areas designated as "environmentally sensitive areas" as shown on the plans. These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized in writing by the City's project manager. The City and contractor's project managers will take measures to ensure that construction crew do not enter or disturb these areas, including giving written notice to crew members."

Temporary fences around the ESAs will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as directed by the project engineer. The fencing will be

commercial-quality woven polypropylene, orange in color, and at least four feet high (Tensor Polygrid or equivalent).

APM — 5: Minimize Potential for the Long-Term Loss of Mixed Riparian Forest

To the extent possible, the City will minimize the potential for the long-term loss of riparian vegetation by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Disturbance or removal of vegetation will not exceed the minimum necessary to complete operations. Except for the vegetation specifically identified for trimming and/or removal in the notification, no native oak trees with a trunk diameter greater than six inches DBH will be removed or damaged without prior consultation and approval of a City Planning Department representative. Using hand tools (e.g., clippers, chain saw), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation will be removed out of the riparian/stream zone.

APM — 9: Avoid the Introduction or Spread of Noxious Weeds in the Project Area

To avoid the introduction or spread of noxious weeds into previously uninfested areas (especially within the riparian community along Dry Creek), the City will revegetate disturbed areas immediately after construction is complete using certified weed-free native and nonnative mixes.

These APMs as well as **APM — 1** and **APM — 3** (as previously discussed under subsection a) will ensure that any impacts to sensitive natural communities within the project site would be ***Less Than Significant Impact***. No mitigation is required.

c. Less Than Significant Impact. The Proposed Project would result in the permanent placement of approximately 700 cubic yards (0.09 acre) of rock within jurisdictional waters. The proposed dewatering facilities and construction equipment creek access ramps will result in additional temporary impacts to 0.08 acre of waters of the U.S.; however, the temporary impact area will be restored after construction is complete. Implementation of the proposed bank cuts will ultimately result in an increase of approximately 0.02 acre of waters of the U.S. within the project area.

The implementation of **APM — 8** will ensure that no net loss of aquatic functions and values will result from project development.

APM — 8: Comply with Agency Permitting Requirements and Provide for No Net Loss of Wetlands

The City shall comply with all applicable Corps, USFWS, CDFW, RWQCB, and National Marine Fisheries Service (NMFS) permitting and mitigation requirements. The City shall meet the agencies' no net loss of wetlands policy through one of the following measures:

- Avoid impacts through project design; and
- Compensate for impacts by acquiring (through fee title or credits in an approved mitigation bank) replacement habitat.

The City is responsible for obtaining all required permits and authorizations from local, State, and federal agencies. If a conflict arises between the provisions of any of the permits, the City shall comply with the provision that offers the greatest

protection to water quality, Species of Special Concern, and/or Critical Habitat. Copies of the permits will be provided to the construction crew with the construction plans.

The City has submitted Clean Water Act Section 401 and 404 permit applications for the Proposed Project. In order to ensure no net loss of wetlands, the City will utilize compensatory mitigation through the purchase of creation credits for 0.09 acre of waters of the U.S. from a Corps-approved mitigation bank. Compliance with the Section 404 Authorization issued by the Corps and the Section 401 Water Quality Certification issued by the RWQCB, combined with compensatory mitigation implemented to ensure no net loss of aquatic functions and values as described above will ensure that the impacts remain ***Less Than Significant***. No mitigation is required.

d. **Less Than Significant Impact**. The Proposed Project involves the placement of VRSP within the channel bed of Dry Creek. Juvenile spring and winter-run Chinook Salmon may utilize Dry Creek downstream of the project area. However, the project site is over 17 miles from the Sacramento River; therefore the project is expected to have no adverse effect on these runs of Chinook salmon. Project-related activities may result in increased turbidity and may temporarily impact habitat for Central Valley steelhead and fall-run Chinook salmon, but construction activities would be temporary and are not anticipated to have any measureable long-term adverse affects on the populations.

The City will coordinate with the required agencies as a part of the CWA Section 404 processes.

In addition, **APM — 4** includes requirements for the protection of aquatic habitat as described below.

APM — 4: Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City and contractor will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following:

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life;
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering Dry Creek channel;
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project;
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden material from the Proposed Project will not be sidecast into the creek channel, but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks;
- The City and contractor will establish spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment,

construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of construction;

- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the *City's Stormwater Quality BMP Guidance Manual for Construction* (March 2007);

- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site; and

- During construction, all vehicles and equipment required on site will be parked or stored at the staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

Implementation of **APM — 4** as well as **APM — 1**, **APM — 2** and **APM — 3** (as previously described above in subsections A and B) will prevent any substantial interference with the movement of resident or migratory fish or wildlife species. Impacts are therefore considered ***Less Than Significant*** and no mitigation is required.

e. **Less Than Significant Impact**. Chapter 19.66 (Tree Preservation) of Article IV (Special Area and Special Use Requirements) of Title 19 (Zoning) in the Roseville Municipal Code includes regulations controlling the removal and preservation of trees within the City of Roseville. A Protected Tree is defined in the Roseville Municipal Code as a native oak tree equal to or greater than six inches diameter at breast height (DBH) measured as a total of a single trunk or multiple trunks.

The project will result in the removal of three protected valley oak trees (over 6 inches DBH) as well as several unprotected trees such as an almond (*Prunus dulcis*), a small (less than 6 inches DBH) interior live oak, and 11 small valley oaks.

The implementation of **APM — 10** will ensure that native oak trees will not be adversely affected.

APM — 10: Comply with Requirements of the Tree Preservation Chapter of the Roseville Zoning Ordinance

The City will comply with the City's Tree Preservation Ordinance as applicable, including avoidance, minimization, or compensation for the removal or disturbance of native oak trees greater than 6 inches DBH during construction. If native oak trees will be affected by the project, the City will be required to prepare a tree mitigation plan that identifies trees that qualify for protection and specifies mitigation for impacts. For any oak trees that would be removed, the City will offset potential

adverse impacts through either on-site planting or use of the City's in-lieu fee program.

Per the requirements of **APM — 10**, the City will offset the loss of any oak tree through on-site planting or the use of the City's in-lieu fee program. Implementation of **APM — 10** will therefore reduce potential impacts to native oak trees to a ***Less Than Significant*** level. No mitigation is required.

f. **No Impact**. There are no approved Habitat Conservation Plans, Natural Conservation Community Plans, or other adopted plans applicable to the Proposed Project. No mitigation is required.

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3.5 Cultural Resources

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	0	0	0	•
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	0	•	0	0
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	0	•	0	0
d.	Disturb any human remains, including those interred outside of formal cemeteries?	0	•	0	0

A Cultural Resources Inventory and Evaluation Report was prepared for the Proposed Project (**Appendix E**). As a part of the inventory and evaluation, a records search was completed using the North Central Information Center, California Historical Resources Information System. The Native American Heritage Commission provided a search of its sacred lands file and list of Native American contacts, who were contacted. An archaeological field inspection of the project site was also completed. No archaeological resources, historic buildings, structures or objects 50 years old or older were identified through the records search, tribal consultation efforts, or on the surface or within visible cutbanks on the project site.

Discussion of Checklist Answers:

a. **No Impact**. No archaeological resources, historic buildings, structures or objects 50 years old or older have been identified on the project site. The 39-inch sewer line was constructed in 1956 but was not exposed sufficiently to evaluate its eligibility for the National Register. However, as the Proposed Project is intended to protect the pipeline from the effects of erosion, it is not anticipated that the project will disturb the pipeline. No historical or architectural resources that meet the criteria of significance under CEQA are located on or adjacent to the project site. ***No impact*** would result from development of the Proposed Project.

b. **Less Than Significant With Mitigation Incorporated**. Given the potential depth of excavation (up to approximately15 feet into the creek bed to create a slope sufficient for VRSP placement), it is possible that ground-disturbing activities may uncover buried and previously unknown cultural resources. In the event that construction activities occur within previously undisturbed soils and buried cultural resources are discovered, such resources could be damaged or destroyed, potentially resulting in significant impacts on cultural resources. Implementation of **Mitigation Measure CR — 1** would reduce potential impacts to ***Less Than Significant With Mitigation Incorporated***.

Mitigation Measure CR — 1 (Previously Unidentified Cultural Resources)

The City shall ensure construction specifications include the following information in the grading notes:

a) Construction shall stop if potential cultural resources are encountered. It is possible that previous activities have obscured surface evidence of cultural resources. If signs of an archeological site, such as any unusual amounts of stone, bone, or shell, are uncovered

during grading or other construction activities, work shall be halted within 100 feet of the find and the Roseville City Manager's Office shall be notified. A Qualified Archeologist shall be consulted for an on-site evaluation. If the site is or appears to be eligible for listing in state or federal registers, additional mitigation, such as further testing for evaluation or data recovery, may be necessary.

b) In the event resources are discovered, the City shall request a Qualified Archaeologist assess the find, and determine whether the resource requires further study. Any previously undiscovered resources found during construction should be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and evaluated for significance under all applicable regulatory criteria.

c) No further grading shall occur in the area of the discovery until the City approves the measures to protect the resources. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study.

c. **Less Than Significant With Mitigation Incorporated**. It is possible that ground-disturbing activities may uncover buried paleontological resources (i.e. fossils). In the event that construction activities occur within previously undisturbed soils and buried paleontological resources are discovered, such resources could be damaged or destroyed, potentially resulting in significant impacts to paleontological resources. Implementation of **Mitigation Measure CR — 2** would reduce impacts to ***Less Than Significant With Mitigation Incorporated***.

Mitigation Measure CR — 2 (Previously Unidentified Paleontological Resources)

The City shall ensure construction specifications shall include the following information in the grading notes:

a) If substantial fossil remains (particularly vertebrate remains) are discovered during earth-disturbing activities on the project site, activities will stop immediately until a state-registered Professional Geologist or Qualified Professional Paleontologist can assess the nature and importance of the find and a Qualified Professional Paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The City will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.

d. **Less Than Significant With Mitigation Incorporated**. There are no known formal cemeteries within the project area. However, the possibility that ground-disturbing activities during construction may uncover previously unknown and buried human remains exists, and this inadvertent discovery would be considered a potentially significant impact. Implementation of **Mitigation Measure CR — 3** would reduce this impact to ***Less Than Significant With Mitigation Incorporated***.

Mitigation Measure CR — 3 (Inadvertent Discovery of Human Remains)

The City shall ensure construction specifications include the following in the grading notes:

If human remains are discovered during any phase of construction, including disarticulated or cremated remains, the construction contractor shall immediately cease all ground-disturbing activities within 100 feet of the remains and notify Mark Morse, Environmental Coordinator, City of Roseville City Manager's Office.

b) In accordance with California State Health and Safety Code Section 7050.5, no further disturbance shall occur until the following steps have been completed:

- The County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code (PRC) § 5097.98.

- If the remains are determined by the County Coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. It is further recommended that a professional archaeologist with Native American burial experience conduct a field investigation of the specific site and consult with the Most Likely Descendant (MLD), if any, identified by the NAHC. As necessary and appropriate, a professional archaeologist may provide technical assistance to the MLD, including but not limited to, the excavation and removal of the human remains.

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3.6 Geology and Soils

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	0	0	•	0
	ii. Strong seismic groundshaking?	0	0	•	0
	iii. Seismic-related ground failure, including liquefaction?	0	0	•	0
	iv. Landslides?	0	0	•	0
b.	Result in substantial soil erosion or the loss of topsoil?	0	0	•	0
c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	0	0	•	0
d.	Be located on expansive soil, as defined in Section 1803.5.3 of the 2010 CBC, creating substantial risks to life or property?	0	0	0	•
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	0	0	0	•

Discussion of Checklist Answers:

a. **Less Than Significant Impact**. Several faults have been identified within 60 miles of the Sacramento area. However, no known active faults are located in Placer County, including the project vicinity, and the south Placer County area is classified as a low-severity earthquake zone. Three inactive faults lie within the immediate Roseville vicinity: the Volcano Hill fault, extending approximately 1 mile

northwesterly from just east of Roseville city limits; the Linda Creek fault, extending along a portion of Linda Creek through Roseville and a portion of Sacramento County; and an unnamed fault extending east to west between Folsom Lake and Rocklin. Portions of this fault are concealed, but they are possibly connected to the Bear Mountain fault near Folsom Lake. No Alquist-Priolo Earthquake Fault Zones are located in Roseville or Placer County.

The project site is not expected to experience faulting, strong ground shaking, seismically related ground failure, or liquefaction. The Proposed Project site is located on soils classified as Xerofluvents occasionally flooded and Xerofluvents, frequently flooded (**Figure 5**). The Xerofluvents, frequently flooded soil unit generally consists of narrow stringers of somewhat poorly drained recent alluvium adjacent to stream channels. Permeability is variable and water capacity is very low. The hydric soils list for Placer County identifies this soil unit as a hydric soil and also lists one unnamed hydric inclusion occurring within this soil type, both of which are found in drainageway landforms. Further, site-specific geotechnical information prepared for the project has been incorporated into project design to ensure compliance with applicable California Building Code (CBC) regulations for seismic safety as well as the City of Roseville Design and Construction Standards. The project would not consist of any structures. Impacts are therefore considered to be a ***Less Than Significant*** and no mitigation is required.

b. **Less Than Significant Impact**. Construction of the Proposed Project would involve excavations into the bank of Dry Creek, staging of materials and construction equipment onsite and the placement of cutoff walls three feet deep and trenching through the sand/gravel bar south of the construction area as a part of the dewatering plan. APMs include a measure to avoid and minimize disturbance of Dry Creek and associated aquatic habitat. This measure requires the use of sediment barriers and erosion control vegetation. Additionally, the City requires the project contractor to implement a Storm Water Pollution Prevention Plan (SWPPP) to comply with the National Pollutant Discharge Elimination System (NPDES) General Permit administered by the State Water Resources Control Board. The SWPPP will identify structural and nonstructural BMPs to control erosion. The SWPPP will include spill prevention and control plan to ensure transport, storage, and handling of hazardous materials required for construction is conducted in a manner consistent with relevant regulations and guidelines. In addition, the project will comply with the City's Design and Construction Standards, which prescribe erosion/sediment control and grading requirements addressing erosion. Impacts would therefore be considered to be ***Less Than Significant*** and no mitigation is required.

c. **Less Than Significant Impact**. Lateral spreading, a phenomenon associated with liquefaction, subsidence, or other geologic or soils conditions that could create unstable subsurface conditions that could affect Proposed Project features, is not a significant hazard for the project site. During project design and prior to construction, the City will ensure the design specifications in the site-specific geotechnical report prepared for the project are implemented, in accordance with City of Roseville Design and Construction Standards. Impacts would therefore be considered ***Less Than Significant*** and no mitigation is required.

d. **No Impact**. The project site is not located in an area of expansive soils and would not expose people to risk related to potential geologic impacts. ***No Impact*** would result from project development and no mitigation is required.

e. **No Impact**. No new sewer lines will be constructed as part of the Proposed Project, and there will be no consequent increase in wastewater due to project implementation. The Proposed Project will prevent erosion along the bank of Dry Creek in order to protect an existing 39-inch sewer line. Therefore, ***No Impact*** on soils related to the use of septic tanks would occur. No mitigation is required.

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DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT
SOILS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

Feet
0 50 100
1 inch = 100 feet

Drawn By: KER
Date: 03/25/2014

FIGURE 5

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3.7 Greenhouse Gas Emissions

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	0	0	•	0
b.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	0	0	•	0

Discussion of Checklist Answers:

a,b. **Less Than Significant Impact**. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and City, and virtually every individual on earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

As discussed previously, the Proposed Project would not modify the existing land use or operations on the project site. Thus, the Proposed Project would not involve mobile, stationary, or area sources and new operational emissions, including GHG emissions, would not occur. Accordingly, the only increase in GHG emissions generated by the Proposed Project that would contribute to global climate change would occur during the construction phase, which would be temporary. Due to the inherently cumulative nature of global climate change, effects of which occur over a long period of time, a project's GHG emissions contribution is typically quantified and analyzed on an annual basis (i.e., annual operational GHG emissions). Construction-related GHG emissions are a one-time release that occurs over a short period of time; nonetheless, construction-related GHG emissions have been quantified for the Proposed Project.

The estimated construction-related GHG emissions attributable to the Proposed Project would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and construction equipment usage. The Proposed Project's short-term construction-related emissions were estimated using the Roadway Construction Emissions Model version 7.1.5.1, a model developed by Jones & Stokes and TIAX LLC in partnership with the Sacramento Metropolitan Air Quality Management District. The model quantifies direct GHG emissions from construction, which are expressed in tons per project of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants. This number is then converted from English tons to metric tons through the conversion factor of 0.91. The estimated increase in GHG emissions associated with construction of the Proposed Project is summarized in **Table 3**.

Table 3 — Project Total Annual Construction GHG Emissions

	CO_2 emissions ($MTCO_2e$)
Total Construction GHG Emissions	93.18

Source: Road Construction Emissions Model, March 2014 (**Appendix C**).

As presented in **Table 3**, short-term emissions of GHG associated with construction of the Proposed Project are estimated to be 93.18 $MTCO_2e$. As stated above, because construction-related GHG emissions are a one-time release that occurs over a short period of time and are typically considered separate from operational emissions, construction-related GHG emissions are not typically considered to result in a substantial contribution towards global climate change. In addition, neither the PCAPCD nor the City has established thresholds of significance for construction-related GHG emissions. Due to the size of the Proposed Project and lack of any change to annual operational emissions, the GHG emissions resulting from construction of the Proposed Project are not expected to significantly contribute to the cumulative GHG levels of the area.

For comparison purposes, multiple agencies have developed draft interim thresholds of significance for GHG emissions, including the following:

- 1,100 $MTCO_2e$ per year according to Bay Area Air Quality Management District (BAAQMD);
- 1,600 $MTCO_2e$ per year according to CARB;
- 3,000 $MTCO_2e$ per year according to South Coast Air Quality Management District (SCAQMD); and
- 900 $MTCO_2e$ per year according to San Diego County.

The Proposed Project's construction-related emissions would be substantially below all of the draft interim thresholds of significance listed above for GHG emissions, and would occur only one time, not annually or over multiple years. Therefore, the Proposed Project's construction-related GHG emissions are not expected to cause a significant impact.

In conclusion, operational GHG emissions would be minimal and would not change as a result of the Proposed Project; however, construction of the Proposed Project would generate GHG emissions that would contribute to the overall GHG levels in the atmosphere. Although the Proposed Project would contribute to GHG levels during construction of the Proposed Project, the incremental contribution to cumulative GHG emissions and global climate change would be minor. In addition, the GHG emissions resulting from construction of the Proposed Project would occur only once temporarily during construction. Therefore, the Proposed Project's contribution to global climate change through GHG emissions would be considered a ***Less Than Significant Impact***.

3.8 Hazards and Hazardous Materials

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	0	0	•	0
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	0	0	•	0
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	0	0	0	•
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	0	0	0	•
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project vicinity?	0	0	0	•
f.	Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project vicinity?	0	0	0	•
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	0	0	0	•
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	0	0	0	•

Discussion of Checklist Answers:

a,b. **Less Than Significant Impact**. The Proposed Project would involve construction activities such as site preparation, excavation and VRSP installation. These activities would involve the use of heavy equipment, which would contain fuels, oils, lubricants, solvents and various other possible contaminants.

APM — 4 below requires the preparation of a spill prevention and countermeasure plan which includes onsite handling criteria, a staging and storage area and which must be approved by the City project manager prior to construction.

APM — 4: Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City and contractor will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following:

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life;
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering Dry Creek channel;
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project;
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden material from the Proposed Project will not be sidecast into the creek channel, but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks;
- The City and contractor will establish spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of construction;
- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the *City's Stormwater Quality BMP Guidance Manual for Construction* (March 2007);
- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site; and

- During construction, all vehicles and equipment required on site will be parked or stored at the staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

All hazardous materials used during construction would occur in compliance with applicable regulations:

Compliance with the City's Multi-Hazard Mitigation Plan (approved by the Federal Emergency Management Agency) which requires contractors to transport and store materials in appropriate and approved containers along designated truck routes, maintain required clearances, and handle materials using fire department–approved protocols, as illustrated in Roseville Fire Code Ordinance 4594.

Implementation of a spill prevention and control plan to minimize the exposure of people and the environment to potentially hazardous materials. The SWPPP will include spill prevention and control plan to ensure transport, storage, and handling of hazardous materials required for construction is conducted in a manner consistent with relevant regulations and guidelines.

Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.

Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering Dry Creek channel.

All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site.

Compliance with the City of Roseville Design and Construction Standards and the City's *Stormwater Quality BMP Guidance Manual for Construction* (2007) would be required and the Proposed Project would be required to implement the requirements of the *Placer County Flood Control and Water Conservation District's (PCFCWCD's) Stormwater Management Manual* (Placer County Flood Control and Water Conservation District 1994).

In addition, the City of Roseville Fire Department is the Certified Unified Program Agency (CUPA) for the City of Roseville. The Fire Department is available to respond to hazardous materials complaints or emergencies, if any, during construction.

In light of existing City Ordinances, Emergency Planning requirements and the City's APMs, combined with existing facilities/services within the project area, the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and would not result in reasonably foreseeable upset and accident

conditions involving the release of hazardous materials into the environment. Implementation and compliance with **APM — 4** described above would reduce any potential impacts to a ***Less Than Significant Level***. No mitigation is required.

c. **No Impact**. There are no public or private schools located within one-quarter mile of the project site. Construction would not generate hazardous air emissions or handle acutely hazardous substances within one-quarter mile of a school. Therefore, ***No Impact*** would result from development of the Proposed Project and no mitigation required.

d. **No Impact**. The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. According to the Envirostor database, there are no known hazardous sites within the immediate vicinity of the project site. Therefore, ***No Impact*** would result from development of the Proposed Project and no mitigation required.

e,f. **No Impact**. The project site is not located within an airport land use plan area, within two miles of an airport, or within the vicinity of a private airstrip. Therefore, ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

g. **No Impact**. The Proposed Project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, the ***No Impact*** would result from development of the Proposed Project and No mitigation is required.

h**.** **No Impact**. According to the California Department of Forestry and Fire Protection (CDFFP) Placer County Fire Hazard Severity Zone Map, the Proposed Project site is not located in a fire hazard region. ***No Impact*** associated with wildland fires would result from development of the Proposed Project and No mitigation is required.

3.9 Hydrology and Water Quality

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Violate any water quality standards or waste discharge requirements?	0	0	•	0
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	0	0	0	•
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	0	0	•	0
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	0	0	•	0
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	0	0	•	0
f.	Otherwise substantially degrade water quality?	0	0	•	0
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	0	0	0	•
h.	Place structures within a 100-year flood hazard area that would impede or redirect flood flows?	0	0	•	0

i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	0	0	0	•
j.	Contribute to inundation by seiche, tsunami, or mudflow?	0	0	0	•

Discussion of Checklist Answers:

a. **Less than Significant Impact**. The project site is within the Dry Creek Watershed. The applicable waste discharge requirements for the Proposed Project are the Statewide General Construction Permit and the NDPES Storm Water Management Program (SWMP), which implements the General Permit for Stormwater Discharge from the RWQCB.

A dewatering plan will be developed for the construction phases on the project site. The plan will include placement of inflatable bladder dams just upstream and just downstream of the construction site. Cutoff walls will also be constructed at the dams by burying heavy plastic sheets in the gravel of the creek bed up to three feet deep. A trench will be dug through the sand/gravel bar south of the construction and the trench will be lined with heavy plastic, which will be held in place with large rocks. When the construction is complete, all materials will be removed and all trenches will be refilled with the original gravel removed from the trench.

The City's Grading Ordinance requires grading plans to include an erosion control plan to eliminate off-site flows of sediment and to reduce site erosion to protect water quality in the storm drain system, and adjacent properties. The City would require the contractor to comply with the ordinance and prepare a SWPPP to meet the requirement of the City's General Permit for Stormwater Discharge from the RWQCB. In addition to required compliance with existing City ordinances, APMs are intended to ensure compliance with Basin Plan water quality standards and applicable NPDES requirements. APMs relevant to erosion prevention include the following:

APM — 4: Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City and contractor will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following:

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life;
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering Dry Creek channel;
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project;
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden

material from the Proposed Project will not be sidecast into the creek channel, but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks;

- The City and contractor will establish spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of construction;

- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the *City's Stormwater Quality BMP Guidance Manual for Construction* (March 2007);

- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site; and

- During construction, all vehicles and equipment required on site will be parked or stored at the staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

APM — 9: Avoid the Introduction or Spread of Noxious Weeds in the Project Area

To avoid the introduction or spread of noxious weeds into previously uninfested areas (especially within the riparian community along Dry Creek), the City will revegetate disturbed areas immediately after construction is complete using certified weed-free native and nonnative mixes.

Through implementation of **APM — 4** and **APM —9** and compliance with existing enforceable City Ordinances, combined with regulatory compliance with State and Federal Clean Water Act regulations, as well as California Department of Fish and Game Code, the City will ensure that the changes to Dry Creek resulting from the project will not result in substantial erosion or siltation. The project will result in ***Less Than Significant Impacts***. No mitigation is required

b. **No Impact**. The project site is located in the foothills North American Subbasin, which overlies the eastern central portion of the Sacramento Valley Groundwater Basin, which has a total surface area of approximately 351,000 acres, or 548 square miles. Groundwater recharge in the basin occurs mostly by infiltration from the Sacramento, Feather, and Bear Rivers, along with their tributaries. There are currently no artificial recharge areas for the North American Subbasin. The project site is primarily covered by crushed rock, and infiltration does serve to recharge groundwater.

Water for vegetation establishment would be obtained from existing City supplies and would be minimal. The project site would not substantially increase impermeable surface cover. Therefore, the Proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. There for there would be ***No Impact*** and no mitigation is required.

c. **Less than Significant Impact**. The proposed alteration of the existing channel bed includes the placement of VRSP which is necessary in order to prevent further onsite erosion of the bank. The APMs relevant to erosion prevention include the following:

APM — 4: Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City and contractor will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following:

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life;
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering Dry Creek channel;
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project;
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden material from the Proposed Project will not be sidecast into the creek channel, but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks;
- The City and contractor will establish spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of construction;
- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the *City's Stormwater Quality BMP Guidance Manual for Construction* (March 2007);
- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site; and
- During construction, all vehicles and equipment required on site will be parked or stored at the staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

APM — 8: Comply with Agency Permitting Requirements and Provide for No Net Loss of Wetlands

The City shall comply with all applicable Corps, USFWS, CDFW, RWQCB, and National Marine Fisheries Service (NMFS) permitting and mitigation requirements. The City shall meet the agencies' no net loss of wetlands policy through one of the following measures:

- Avoid impacts through project design; and
- Compensate for impacts by acquiring (through fee title or credits in an approved mitigation bank) replacement habitat.

The City is responsible for obtaining all required permits and authorizations from local, State, and federal agencies. If a conflict arises between the provisions of any of the permits, the City shall comply with the provision that offers the greatest protection to water quality, Species of Special Concern, and/or Critical Habitat. Copies of the permits will be provided to the construction crew with the construction plans.

APM — 9: Avoid the Introduction or Spread of Noxious Weeds in the Project Area

To avoid the introduction or spread of noxious weeds into previously uninfested areas (especially within the riparian community along Dry Creek), the City will revegetate disturbed areas immediately after construction is complete using certified weed-free native and nonnative mixes.

Through implementation of **APM — 4**, **APM —8**, and **APM —9** and compliance with existing enforceable City Ordinances, combined with regulatory compliance with State and Federal Clean Water Act regulations, as well as California Department of Fish and Game Code, the City will ensure that the changes to Dry Creek resulting from the project will not result in substantial erosion or siltation. The project will result in ***Less Than Significant Impacts***. No mitigation is required.

d,e,f. **Less Than Significant Impact**. The Proposed Project would involve the permanent placement of VRSP in the channel bed and above the OHWM as well as temporary impacts resulting from the placement of a ramp to the creek bed, dewatering facilities and equipment operation. Through the CWA Section 401 and 404 permitting processes, the City will coordinate with the necessary regulatory agencies in order to ensure full compliance.

In addition to **APM — 4** (as stated above), a dewatering plan will be developed, which will include placement of portable dams, inflatable bladder dams, or other temporary water control facilities just

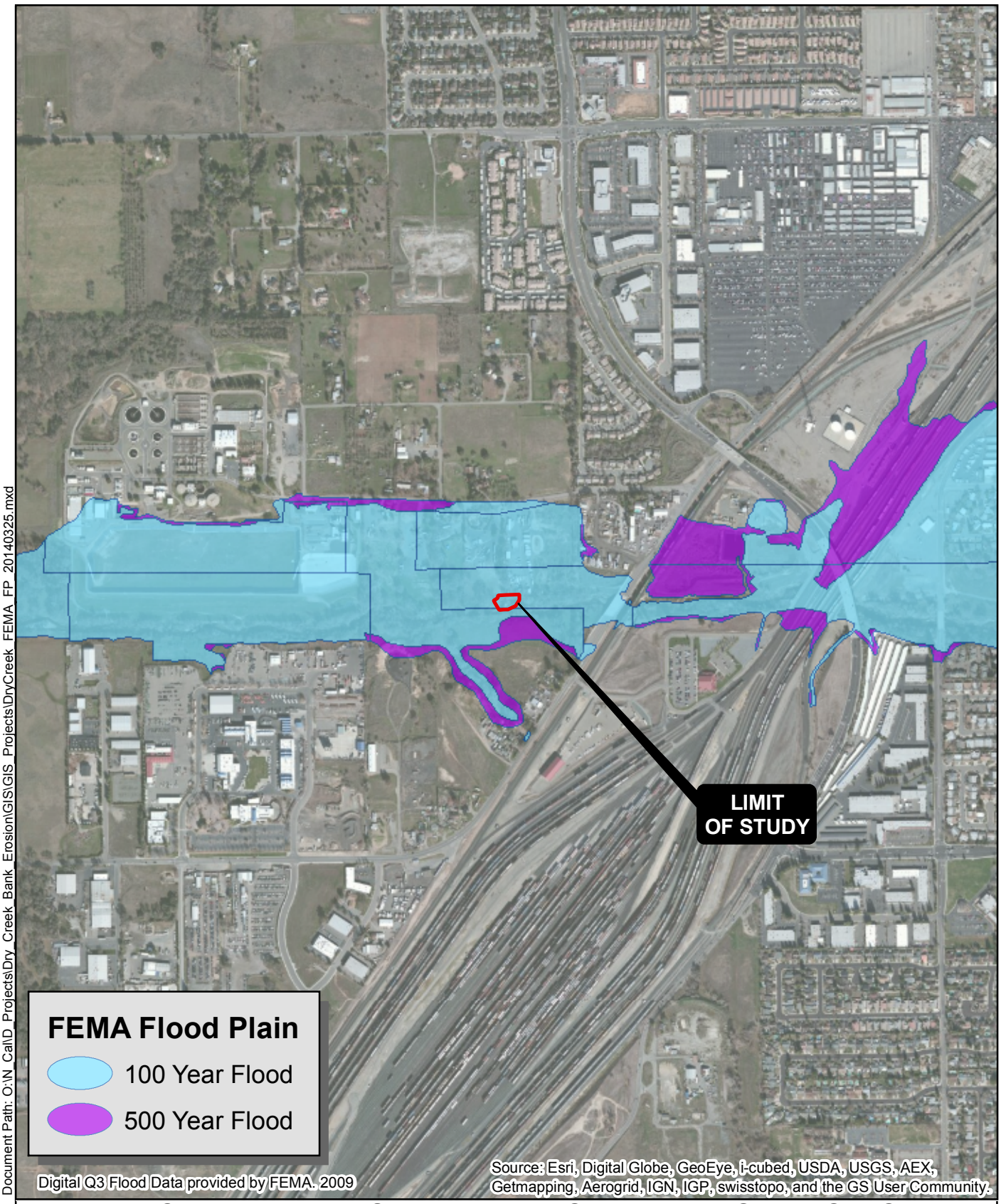
upstream and just downstream of the construction site. Impacts to water quality are considered ***Less Than Significant***, no mitigation is required.

g. **No Impact**. The project site is located within a FEMA-designated 100-year Flood Zone (**Figure 6**). However, the Proposed Project would not involve residential development and would not place housing in special flood hazard areas. Therefore, ***No Impact*** would result from project development and no mitigation is required.

h. **Less Than Significant Impact**. While the Proposed Project is located within a FEMA-designated 100-year Flood Zone (**Figure 6**) and it involves the placement of rock in a flood-prone creek bed, it will not result in a significant impediment to flood flows. West Yost Associates, Inc. completed a series of models, as discussed in their *Dry Creek Trunk Sewer Bank Stabilization Project Predesign Report* (**Appendix A**) the results of which are presented in **Table 2** of the report and are summarized here. The model showed no change in the surface water elevation downstream of the project site as a result of the project. Throughout the project area, the model showed an elevation change from a decrease of 0.02 feet to an increase of 0.02 feet. Upstream of the project site, the model showed a surface elevation decrease by 0.01 to 0.03 feet depending on the flow rate as a result of the project. Farther upstream, the results of the model indicated the occasional decrease of 0.01 feet. According to the report, changes in water surface elevations of a few hundredths of a foot are within the accuracy level of the model that was used. The model results indicate that the project will not cause a significant change in the water surface elevation downstream, at or upstream of the project site. Potential impacts associated with development of the Proposed Project are considered ***Less Than Significant***. No mitigation is required.

i. **No Impact**. Although the project site is within a designated flood inundation area, the project would not result in any increased risk. The project would not involve the construction of occupied structures and there would be no substantial risk of loss, injury, or death in the event of flooding at the project site. Therefore, ***No Impact*** would result from project development and no mitigation is required.

j. **No Impact**. The project site is not located near an ocean coast or enclosed body of water that could produce a seiche or tsunami. Nor is the site located near areas having steep slopes that would create mudflows. Therefore, ***No Impact*** would result from project development and no mitigation is required.



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DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT
FEMA FLOODPLAIN LOCATION

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

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FEET
1 inch = 1,000 feet

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Date: 03/25/2014

FIGURE 6

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3.10 Land Use and Planning

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Physically divide an established community?	0	0	0	•
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	0	0	0	•
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	0	0	0	•
d.	Result in land use/operational conflicts between existing and proposed on-site or off-site land uses?	0	0	0	•

Discussion of Checklist Answers:

a. **No Impact**. The Proposed Project is located along the Dry Creek bank in an area designated as open space. It is not located within a residential neighborhood and it is not likely to divide or otherwise impact a nearby community. Therefore, ***No Impact*** would result from project development and no mitigation is required.

b. **No Impact**. The project site is designated within the *City of Roseville General Plan Land Use Element* as Open Space with a Flood Plain zoning overlay (OS/FP). The City of Roseville Land Use Map within the General Plan shows the project site as bordered by land uses such as Light Industrial (LI) and Single-Family Residential to the east and LI/FP to the west. The site is bounded by industrial uses to the north and open space to the south. Within the Zoning Code of the City of Roseville, the project site is zoned as Floodway and is surrounded by areas zoned as Floodway Fringe (FF) to the east and Light Industrial (M1) to the west. The Proposed Project would remain consistent with the land use and zoning designation of the site. There would be ***No Impact*** due to a conflict with a land use policy. No mitigation is required.

c. **No Impact**. There is no applicable Habitat Conservation Plan or Natural Community Conservation Plan relevant to the project site. Therefore ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

d. **No Impact**. The Proposed Project would place VRSP within the Dry Creek bank in order to protect the banks from erosion and to prevent impacts to an existing sewer line. The project is consistent with existing uses and surrounding land uses and does not have the potential to result in land use or operational conflicts on- or off-site. Therefore, ***No Impact*** would result from project development and no mitigation is required.

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3.11 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	0	0	0	•
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	0	0	0	•

Discussion of Checklist Answers:

a,b. No Impact. As stated in the *City of Roseville General Plan*, mineral resources, consisting of sand and gravel, are limited and no mineral extraction operations currently exist or are anticipated to exist in the City. The City of Roseville has not designated the site as a locally important mineral resource area. There would be ***No Impact***. No mitigation is required.

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3.12 Noise

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	0	0	•	0
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	0	0	•	0
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	0	0	•	0
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	0	0	•	0
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project vicinity to excessive noise levels?	0	0	0	•
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project vicinity to excessive noise levels?	0	0	0	•

Discussion of Checklist Answers:

a,b,c,d. Less Than Significant Impact. The Proposed Project would result in the excavation of soil and placement of VRSP along a creek bed. The following evaluates the construction and operational impacts of the project.

The *City of Roseville General Plan Noise Element* has established Goals and Policies relating to evaluating noise impacts due to projects. The overall noise goal for the City is to protect the health and welfare of the community by promoting community development which is compatible with noise level criteria. The City Noise Element (2004) establishes noise standards for maximum allowable noise exposure due to transportation sources and performance standards for fixed noise sources. Transportation noise standards (60 dBA L_{dn}/CNEL) are applied at the outdoor activity area of noise sensitive land use (residential). Fixed noise sources are not to exceed 50 dBA L_{eq} and 70 dBA L_{max} during daytime hours (7:00 A.M. to 10:00 P.M.) and 45 dBA L_{eq} and 65 dBA $L_{max\ during}$ nighttime hours (10:00 P.M. to 7:00 A.M.) as measured at the property line of noise sensitive land uses or exceed the ambient sound level by +3 dBA at the noise sensitive land use property line, whichever is greater.

The City of Roseville Municipal Code, Health and Safety Ordinance Chapter 9.24 contains specific requirements for construction activities, stating that they are exempt from the provisions of the noise codes if all activities occur between 7:00 A.M. and 7:00 P.M. Monday through Friday and 8:00 A.M. to 8:00 P.M. on Saturday and Sunday, provided that all construction equipment is fitted with factory installed muffling devices and is maintained in good working order.

The existing noise environment at the site is influenced by vehicular noise attributable to traffic on Atkinson Street. The nearest residential uses occur about 550 feet from the project site at 1655 Booth Road located northwest of the project site and on the south side of Booth Road.

Construction Impacts

Construction of the Proposed Project would be a source of temporary or periodic increases in ambient noise levels that could be audible to nearby land uses. Construction would involve the loading and unloading of equipment and supplies, hauling rock and soil, excavating soil along the creek channel, and placing VRSP along the creek channel. The mix of equipment operating would vary depending on the activity being conducted onsite, and noise levels would vary based on the amount of equipment in operation and the location of the activity. Construction activities are not anticipated to result in excessive groundborne vibration or noise levels. As required by Chapter 9.24.030(G) of the City Code, construction activities would be limited to occur only between the hours of 7:00 A.M. and 7:00 P.M., Monday through Friday, and 8:00 A.M. and 8:00 P.M. on Saturdays and Sundays, as discussed above. Chapter 9.24.030(G) also requires the use of exhaust and intake silencers for internal combustion engines used during construction to reduce noise levels associated with construction activities.

It is anticipated that equipment utilized during construction of the Proposed Project would include, but may not be not limited to, the use of trucks, water trucks, excavators, rubber tired loaders, tractors and backhoes. As shown in **Table 4**, the noise level for a typical backhoe is 80 dBA measured at a receptor located 50 feet away from the source. The nearest sensitive receptor is approximately 550 feet from the project site. Therefore, it is not expected that the use of any of the above mentioned equipment will exceed 50 dBA L_{eq} and 70 dBA L_{max} during daytime hours (7:00 A.M. to 10:00 P.M.) and 45 dBA L_{eq} and 65 dBA L_{max} during nighttime hours (10:00 P.M. to 7:00 A.M.) or result in an increase of 3 dBA or more at any sensitive receptor location. It is acknowledged that construction-related noise may be considered a nuisance to sensitive receptors; however, this increase would be short-term, and would not result in a permanent increase in ambient noise levels.

Table 4 — Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 Ft. from Source
Air Compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81

Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile Driver (Impact)	101
Pile Driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	88

Source: U.S. Department of Transportation. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. May 2006.

The City exempts noise associated with construction that occurs between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday and between 8:00 A.M. and 8:00 P.M. on Saturdays and Sundays because these hours are outside of the recognized sleep hours for residents and outside of evening and early morning hours and time periods where residents are most sensitive to exterior noise. Therefore, the Proposed Project would be exempt from the noise standards during these hours. Construction-related noise would therefore result in a ***Less Than Significant Impact*** and no mitigation is required.

Operational Impacts

The project would result in a segment of creek bed armored with VRSP. Little to no operational noise would result from operation of the Proposed Project. Therefore, impacts to permanent ambient noise levels would be considered a ***Less Than Significant Impact***.

e,f. No Impact. The Proposed Project is not located within the immediate vicinity of an airport land use plan, within two miles of an airport, or within the vicinity of a private airstrip. There would be ***No Impact*** and no mitigation is required.

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3.13 Population and Housing

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	0	0	0	•
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	0	0	0	•
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	0	0	0	•

Discussion of Checklist Answers:

a. **No Impact**. The Proposed Project would involve minor excavation and VRSP placement along a portion of the Dry Creek bank, and does not propose any new homes or businesses. The Proposed Project would not directly induce population growth because it proposes no significant employment-generating uses. Project development would not indirectly induce population growth because it would not extend roads or infrastructure into previously undeveloped areas. Therefore ***No Impact*** would result from project development and no mitigation is required.

b,c. **No Impact**. The Proposed Project would not displace people or housing. ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

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3.14 Public Services

Would the project:		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:					
a.	Fire protection?	0	0	0	•
b.	Police protection?	0	0	0	•
c.	Schools?	0	0	0	•
d.	Parks?	0	0	0	•
e.	Other public facilities?	0	0	0	•

Discussion of Checklist Answers:

a-e. **No Impact**. The Proposed Project would involve the placement of VRSP along a portion of the Dry Creek bank in order to protect an existing sewer line. No increase in Fire or Police department staffing would be necessary to serve the project. The Proposed Project would not result in a population increase that would require schools or parks or other public facilities. Therefore, ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

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3.15 Recreation

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	0	0	0	•
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	0	0	0	•

Discussion of Checklist Answers:

a. **No Impact**. The Proposed Project would not involve creation of new housing or otherwise generate additional demand for recreational facilities. ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

b. **No Impact**. The Proposed Project would not include recreational facilities nor would it require the construction or expansion of recreational facilities that might result an adverse physical effects on the environment. Therefore ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

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3.16 Transportation/Traffic

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	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?	0	0	0	•
b.	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?	0	0	0	•
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	0	0	0	•
d.	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections or incompatible uses (e.g., farm equipment)?	0	0	0	•
e.	Result in inadequate emergency access?	0	0	•	0
f.	Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	0	0	0	•

Discussion of Checklist Answers:

a,b,d. **No Impact**. Project development would involve the placement of VRSP in a creek bed near a sewer line and after the construction phase would not generate vehicle trips (other than routine maintenance/monitoring visits). The project would not result in changes in vehicle circulation patterns or increase vehicle trips in the project vicinity. The Proposed Project would not alter the design of any roadways, and would therefore not include any design features that could result in increased safety hazards. ***No Impact*** would result from project development and no mitigation is required.

c. **No Impact**. The Proposed Project would not result in a change in air traffic patterns. There would be ***No Impact*** and no mitigation is required.

e. **Less Than Significant Impact**. Project development would not involve temporary road or lane closures during construction or operation and no emergency access routes would be affected by the project. The project site will be accessed through the commercial parking lot north of the project. Therefore impacts are considered ***Less Than Significant Impact*** and no mitigation is required.

f. **No Impact**. The Proposed Project would not involve development of new residential or non-residential uses that would increase the demand on transit systems, bicycle networks, or pedestrian facilities, and, therefore, would not conflict with the City's overall transportation service goal. ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

3.17 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	0	0	0	•
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	0	0	0	•
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	0	0	0	•
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	0	0	•	0
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	0	0	0	•
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	0	0	•	0
g. Comply with federal, state, and local statutes and regulations related to solid waste?	0	0	•	0

Discussion of Checklist Answers:

a,b,e. **No Impact**. The Proposed Project would not include the construction of any wastewater-generating uses, and would therefore not introduce any new wastewater to the project site. The Proposed Project would not increase population in the project vicinity, and there would be no additional wastewater flows as a result of project development. The Proposed Project would protect an existing sewer line from the effects of erosion along a portion of the Dry Creek bank. Therefore, the Proposed Project would not result in the need for new or expanded wastewater facilities and would not have an adverse effect on wastewater treatment requirements. ***No Impact*** would result from development to the Proposed Project and no mitigation is required.

c. **No Impact**. As discussed in the **Hydrology and Water Quality, Section 3.9** of this document, no changes to on-site runoff volumes are anticipated as a result project development. Therefore, there would be no need for construction of new stormwater infrastructure or the expansion of existing infrastructure related to project development. ***No Impact*** would result from development of the Proposed Project and no mitigation is required.

d. **Less Than Significant Impact**. Water use may be required to support planting of vegetation within the project site. This irrigation water would continue to be provided by the City by existing supplies. The project would not result in the need for new or expanded water supplies. Potential impacts associated with development of the Proposed Project are therefore considered ***Less Than Significant*** and no mitigation is required.

f,g. **Less Than Significant Impact**. The Western Placer Waste Management Authority is a regional agency handling recycling and waste disposal for Roseville and surrounding areas. Their facilities include a Material Recovery Facility and the Western Regional Sanitary Landfill. Project construction would generate construction debris and excavated soil. This would not affect landfill capacity because the amounts would not be substantial and would occur only during the construction period. As specified in the City's Design and Construction Standards for solid waste (Section 151), the City will ensure that contractors meet with the designated Roseville Environmental Utilities inspector prior to beginning work to ensure that an approved plan is in place to store and dispose of all construction debris, according to relevant federal, State, and local statutes. Therefore potential impacts associated with development of the Proposed Project are considered ***Less Than Significant*** and no mitigation is required.

3.18 Mandatory Findings of Significance

	Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	0	0	•	0
b.	Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	0	0	•	0
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	0	0	•	0

Discussion of Checklist Answers:

a. **Less Than Significant Impact**. As stated above in **Section 3.4**, **Biological Resources**, the Proposed Project would result in a Less Than Significant Impact on the habitat of a fish or wildlife species or population, Less Than Significant Impact on any plant or animal community, and would not restrict the range of a rare or endangered plant or animal. Through the implementation of APMs, the project would not significantly impact federally protected wetlands. In addition, as stated above in **Section 3.5**, **Cultural Resources**, with the adoption of proposed Mitigation Measures (**CR —1**, **CR — 2**, and **CR — 3**), development of the Proposed Project would not result in significant impacts to Cultural Resources.

b. **Less Than Significant Impact**. Project impacts would not be cumulatively considerable. No mitigation is required relevant to potential cumulative impacts.

For natural resource topics (Aesthetics, Agriculture and Forest Resources, Biological Resources, Cultural Resources, Geology and Soils, Hydrology and Water Quality, and Mineral Resources), there would be no cumulative effects because no resources would be adversely affected, or the project effects would be localized and of limited extent. Similarly, the project would involve minimal hazardous materials use, the risks of which are site-specific and are extensively regulated, and do not combine with similar effects resulting in a cumulative effect.

The Proposed Project would not induce population growth or result in the development of new housing or employment-generating uses; therefore, it would not combine with cumulative development to create a cumulative effect regarding increased demand for services or utilities, the expansion of which could result in significant environmental effects.

c. **Less Than Significant Impact**. There would be no significant adverse effects on human beings. There would be no significant increase in operational air emissions or noise levels as a result of development of the Proposed Project. For all other topics, there would be either No Impact or a Less Than Significant Impact.

4.0 REPORT PREPARERS

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Appendix A — Dry Creek Trunk Sewer Bank Stabilization Project Predesign Report

WEST YOST ASSOCIATES
Consulting Engineers

October 21, 2013

Project No.: 415-00-13-15

Mr. Dale Olson
Senior Engineer
City of Roseville, Environmental Utilities Department
2005 Hilltop Circle
Roseville CA 95747

SUBJECT: Dry Creek Trunk Sewer Bank Stabilization Project

Dear Dale:

West Yost Associates (West Yost) is pleased to present this Dry Creek (creek) Bank Erosion Project – Predesign Report (PDR). For the Riverside Avenue Project, this PDR presents relevant background information, a 30 percent design, a construction cost estimate, and identifies permitting and California Environmental Quality Act (CEQA) issues. For the Booth Road Project, this PDR presents relevant background information, an alternatives analysis, a 30 percent design, a construction cost estimate, and identifies permitting and CEQA issues.

This PDR includes the following Sections:

- Background
- Riverside Avenue Project
- Booth Road Project

BACKGROUND

Riverside Avenue Project Background

At the Riverside Avenue site, there is a segment of 21-inch sewer that runs under a steep section of the creek bank. There is evidence of bank erosion at this site. If this creek bank collapsed, it could damage the 21-inch sewer and cause a discharge of raw wastewater into the creek. Consequently, it is necessary to realign the sewer away from the creek bank to prevent the potential pipe failure and wastewater discharge. Additionally, there is a manhole that extends above the creek bank due to erosion around the manhole. Floating debris could hit and damage this manhole. If erosion near the sewer and manhole continues, it may soon constitute an emergency condition.

Booth Road Project Background

There is a 39-inch sewer along the north bank of the creek from upstream of Atkinson Street to the Dry Creek Wastewater Treatment Plant (WWTP). This sewer was constructed in 1956, and based on the record drawings, the sewer was at least 50 feet from the bank of the creek at that time. However, since then the creek has meandered and now the creek bank is much closer to the sewer at the Booth Road Site.

During a storm event in December 2012, a section of the creek bank near the sewer became unstable and collapsed, causing a tree to fall into the creek. This event resulted in the new creek bank top being located within about 4 feet of the 39-inch sewer manhole. The roots of the fallen tree extend to the location of the sewer. This situation represented an emergency condition because another storm event could have floated the fallen tree and pulled the tree and roots downstream, causing the bank to collapse from under the sewer, and potentially causing the sewer to collapse into the creek. If the sewer collapse had occurred, it would have resulted in a discharge of raw wastewater into the creek.

The US Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB), and the Central Valley Flood Protection Board (CVFPB), were contacted and advised of this emergency condition. They were also notified that if a significant storm was forecast, City of Roseville (City) staff may, on an emergency basis, remove the tree and install rock scour protection along the creek bank to protect the sewer and prevent a discharge of wastewater to the creek. Each of these agencies agreed that limited emergency repairs could be performed by the City if necessary to protect the sewer and to prevent a discharge of wastewater to the creek.

City staff have removed the tree from the creek, but the root ball was left in place. This approach eliminated the risk of the tree floating downstream and causing the sewer to collapse into the creek. However, the rock scour protection was not installed. The emergency conditions continue to exist because the creek bank at the sewer has not been stabilized yet. Because the probability of a large storm occurring over the summer is low, the urgency of implementing the bank stabilization has decreased. Consequently, the City is attempting to obtain the required permits for installing the rock scour protection through the standard permitting (nonemergency) processes. However, storms can occur during the summer, and storms will certainly occur during the fall and winter. Consequently, if permits for the project have not been issued by the time the next large storm is forecast, it again may become necessary to install the rock scour protection on an emergency basis.

RIVERSIDE AVENUE PROJECT

For the Riverside Avenue Project, the following work tasks were completed and are discussed below:

- Predesign of the Recommended Project
- Design and Construction Phase Project Elements
- Preliminary Permitting and CEQA Requirements

Predesign of the Recommended Project

The recommended Riverside Avenue Project is shown on Figure 1. The recommended project was discussed with City staff at the project kick-off meeting on April 25, 2013, and includes the construction of the following items:

- 135 feet of new 21-inch sewer.
- Abandoning in place 240 feet of 21-inch sewer that is under an unstable section of the creek bank. The abandoned sewer will be filled with 22 cubic yards of grout.

- Removing the cone and riser segments of one manhole that is within the unstable segment of the creek bank. The manhole would be covered and the creek bank would be restored above the manhole base.

The estimated construction and capital costs for the Riverside Avenue project are $72,000 and $112,000, respectively, as shown in Table 1. This cost is based on the construction being performed by City staff.

Design and Construction Phase Project Elements

The following items are included as elements of the project, and will be implemented during design or construction of the project.

Conduct Environmental Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a qualified biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid impacts on biological resources and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the City will ensure that the personnel receive the mandatory training from the biologist before starting work.

Install Construction Barrier Fencing to Protect Environmentally Sensitive Areas

The City will install orange construction barrier fencing to identify environmentally sensitive areas (ESAs). ESAs in and adjacent to the construction area comprise mixed riparian forest, native oak trees greater than six inches diameter at breast height (dbh), wetland drainages, and any trees that support migratory bird or raptor nests. Before construction, the City will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the ESAs to indicate these locations. The protected area will be clearly identified on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following note will be included in the construction plans:

> *"The City's attention is directed to the areas designated as "environmentally sensitive areas." As shown on the plans. These areas are protected, and no entry by the construction crews for any purpose will be allowed unless specifically authorized in writing by the City's project manager. The City's project manager will take measures to ensure that construction crew do not enter or disturb these areas, including giving written notice to crew members."*

Temporary fences around the ESAs will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least four feet high (Tensor Polygrid or equivalent).

Retain a Biologist to Monitor Construction Activities in the Creek Corridor

The City will retain a biologist to make a weekly monitoring visit to the project site. The biological monitor will assist the construction crew, as needed, to comply with all project implementation restrictions and guidelines. Furthermore, the biological monitor will be responsible for ensuring that the contractor maintains ESA barrier fencing.

Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following.

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the City inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering the Dry Creek channel.
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project.
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden material from the proposed project will not be sidecast into the creek channel but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks.
- The City will establish a spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of the construction.
- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the City's Stormwater Quality BMP Guidance Manual for Construction (March 2007).
- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, similar materials) will be stored off-site.
- During construction, all vehicles and equipment required on site will be parked or stored at the designated staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period and the following rainy season. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

Minimize Potential for the Long-Term Loss of Mixed Riparian Forest

To the extent possible, the City will minimize the potential for the long-term loss of riparian vegetation by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Disturbance or removal of vegetation will not exceed the minimum necessary to complete operations. Except for the vegetation specifically identified for trimming and/or removal in the notification, no native oak trees with a trunk diameter greater than six inches dbh will be removed or damaged without prior consultation and approval of a City Planning Department representative. Using hand tools (e.g., clippers, chain saw), trees may be trimmed to the extent necessary to gain access to the work site. All cleared material/vegetation will be removed out of the riparian/stream zone.

Conduct a Preconstruction Survey for Western Pond Turtles and Implement Measures to Avoid Impacts

To avoid construction-related impacts on western pond turtles, the City will retain a wildlife biologist to conduct a preconstruction survey for western pond turtles no more than 48 hours before the start of construction. The wildlife biologist will look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If a western pond turtle is located in the construction area, the biologist will move the turtle to a suitable aquatic site outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the City will consult the CDFW to determine and implement appropriate avoidance measures, which may include a “no-disturbance” buffer around the nest site until the hatchlings have moved to a nearby aquatic site.

Construct Outside of Nesting Season or Conduct Pre-Construction Raptor Nesting Surveys

To avoid disturbance of raptor breeding and nesting activity, including nesting of sensitive raptors, project activities will be avoided during the typical raptor breeding season of March through August, to the extent feasible. If construction must take place during the typical nesting season, preconstruction surveys will be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development activities. Surveys will be conducted to determine if active nesting is occurring on or directly adjacent to the study area. If active nests are found on or immediately adjacent to the site, survey results will be submitted to CDFW and consultation will be initiated with CDFW to determine appropriate avoidance measures. If no nesting is found to occur, necessary tree removal and other project activities could then proceed.

Avoid the Introduction or Spread of Noxious Weeds in the Project Area

To avoid the introduction or spread of noxious weeds into previously uninfested areas (especially within the riparian community along Dry Creek), the City will revegetate disturbed areas immediately after construction is complete using certified weed-free native and nonnative seed mixes.

Comply with Requirements of the Tree Preservation Chapter of the Roseville Zoning Ordinance

The City will comply with requirements of the City's tree preservation ordinance, including avoidance, minimization, or compensation for the removal or disturbance of native oak trees greater than six inches dbh during construction. If native oak trees will be affected by the project, the City will be required to prepare a tree mitigation plan that identifies trees that qualify for protection and specifies mitigation for impacts. For any oak trees that would be removed, the City will mitigate the impact through either on-site planting or use of the City's in-lieu fee program.

Stop Construction if Signs of an Archeological Site are Discovered during Construction

The construction crew shall stop construction and notify the Roseville Community Development Department if signs of an archeological site are discovered during construction of the project. The City will then notify a qualified archeologist, and additional mitigation may be required.

Implement Plan to Address Discovery of Human Remains

If remains of Native American origin are discovered during project construction, it will be necessary to comply with state laws concerning the disposition of Native American burials, which fall within Native America Heritage Commission's (NAHC) jurisdiction (PRC 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps occur:

- The Placer County coroner (530/265-1220) has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin (916/653-4038), one of the following occurs:
  - The descendants of the deceased Native Americans have made a recommendation to the City for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98.
  - NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are Native American. If the remains are determined to be Native American, the coroner must contact NAHC within 24 hours.

Reduce Construction Emissions of NOX

a. Include the following standard note on the Grading Plan or Improvement Plans: The City shall submit to the Placer County Air Pollution Control District (PCAPCD) a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower of greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the City shall contact the PCAPCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the PCAPCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.

b. Prior to approval of Grading Plan or Improvement Plans, whichever occurs first, the applicant shall provide a written calculation to the PCAPCD for approval by the PCAPCD demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction as required by ARB. Acceptable options for reducing emissions may include use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The following link shall be used to calculate compliance with this condition and shall be submitted to the PCAPCD as described above: http://www.airquality.org/ceqa/ (click on the current "Roadway Construction Emissions Model").

c. Include the following standard note on the Grading Plan or Improvement Plan: During construction the City shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.

Preliminary Permitting and CEQA Requirements

The jurisdictional waters of the United States (US) in the vicinity of the project was delineated by Foothill Associates (not yet confirmed by the USACE), and is shown on Figure 1.

The excavation for this site will be near the jurisdictional waters of the US, but should not have to enter the jurisdictional waters. Also, no fill will be placed in the jurisdictional waters of the US. Wet concrete will be used to cap the exiting manhole, but all concrete will be placed outside the jurisdictional waters of the US. No vehicles or construction equipment will enter the jurisdictional waters of the US for this construction. The area that will be disturbed is about 0.14 acres, including the trench, equipment operations area, and dirt stockpile area.

All of the work for this project will be outside the jurisdictional waters of the US. Consequently, a Clean Water Act Section 404 permit (USACE Permit) is not needed for this project. Also, a RWQCB Clean Water Act Section 401 Water Quality Certification is not needed for this project.

A CDFW Section 1600 Stream Bed Alteration Agreement will be needed because the project includes construction in a riparian area. A CVFPB Encroachment Permit is also needed because the project is within 300 feet of a regulated stream (see Figure 2).

City staff have concluded that appropriate CEQA document for this project is a Categorical Exemption (Class 1 Existing Facilities).

BOOTH ROAD PROJECT

For the Booth Road Project, the following work tasks were completed and are discussed below:

- Dry Creek Geomorphology Evaluation
- Booth Road Project Alternatives Screening Evaluation
- Predesign of the Booth Road Recommended Project
- Design and Construction Phase Project Elements
- Permitting and CEQA Requirements

Dry Creek Geomorphology Evaluation

As a subconsultant to West Yost, CBEC prepared a preliminary geomorphologic evaluation of the creek from the WWTP to the Rail Yard. The CBEC Memorandum is provided as Attachment 1. In the Memorandum, Point of Interest #1 (POI#1) is the Booth Road Site (see Figure 2).

The discussion below is based on the CBEC report and observations by West Yost staff during a site visit on May 20, 2013.

About 1,070 feet upstream of the Dry Creek WWTP (at the Booth Road Site, Point of Interest Number 1 in the CBEC report) the sewer is already at risk from the recently fallen tree. The sewer manhole is about four feet from the top of the creek bank. Just upstream of the remaining tree stump are three small oak trees at the top of a nearly vertical bank. These trees are about seven to eight feet from the existing sewer and if they fall, they will put the sewer at risk (Photo 1). Stabilization of the bank with vegetated rock slope protection (VRSP) is recommended. The design of the VRSP is discussed further below.

Photo 1. Near vertical bank with trees located 1,070 feet upstream of the Dry Creek WWTP (at the Booth Road Site). The Oak Trees are about seven to eight feet from the sewer and if the trees fall, they will put the sewer at risk.

Booth Road Project Alternatives Screening Evaluation

For the Booth Road Project several potential solutions were identified for a screening level evaluation during a site visit held on May 3, 2013. Each potential solution is discussed briefly below.

Vegetated Rock Slope Protection (VRSP)

Construct VRSP along the segment of eroded channel bank. This alternative will require cutting the bank back and extending the rock into the creek channel to achieve a 2H:1V bank. The estimated construction cost for this alternative is about $210,000.

Ercon Mats

Ercon mats are intended for use on flat creek beds or on gentle slopes, and are for pipeline scour protection. They are not intended for steep creek banks slopes. Ercon mats are not a structural facing. Consequently they are not appropriate for this situation, and have not been evaluated further.

Vegetated Gabions

Use of vegetated gabions would minimize the need to cut back the channel bank (like for VRSP), but wire baskets and a larger quantity of rock would be needed than for VRSP. Consequently, this alternative would be more expensive than VRSP. Use of vegetated gabions was not evaluated further.

Concrete Block Plantable Retaining Wall

This option would require excavation of the bank behind the wall, which would put the sewer at further risk. Also, this alternative requires more complex construction than VRSP, and would be more expensive than VRSP. Consequently use of a concrete block plantable retaining wall was not evaluated further.

Rock Vane Weirs

Rock vane weirs redirect the flow in the creek from one area to another area. However, the redirected flow could cause erosion at another location. Also, at high flows, rock vane weirs may not provide sufficient redirection of flow to adequately prevent further erosion of the creek bank by the sewer. Consequently, this alternative was not evaluated further.

Soldier Piles and Lagging

This alternative would require a significant amount of driven piles into the creek bed at the toe of the unstable bank. Driving the piles could cause the unstable bank to collapse. Also, this alternative would be very expensive. Consequently, this alternative was not evaluated further.

Longitudinal Stone Toe Protection and Willow Planting

This alternative could provide the required erosion protection (see the CBEC report). However, it relies on growth of vegetation so the protection is not achieved immediately after construction. Also, it is expected to be more expensive than vegetated rock scour protection. Consequently, this alternative was not considered further.

Crib Walls

This option would require significant excavation of the bank behind the wall, which would put the sewer at further risk. Also, this alternative requires more complex construction than VRSP, and would be more expensive than VRSP. Consequently use of a crib wall was not evaluated further.

Eliminate 39-Inch Sewer

In this alternative, the flow in the 39-inch sewer would be redirected into the existing 42-inch and 66-inch sewers. This alternative would require about 50 feet of new 39-inch sewer, and the relocation would be done at the set of maintenance holes upstream of the Booth Road site. A comparison level cost estimate for this alternative is about $60,000. This alternative would only be done if hydraulic studies of the sewer system indicted that the remaining 42-inch and 66-inch sewers had more than adequate capacity for flows from buildout of the City. Even then, this alternative would result in the loss of valuable sewer capacity and could contribute to increased potential for sewer overflows. Consequently, this alternative is not recommended.

Cured In Place Lining

In this alternative, the existing 39-inch sewer would be lined with a cured in place liner from the maintenance hole upstream of the Booth Road site to the maintenance hole downstream of the Booth Road site for a total length of about 900 feet. This liner would provide added strength to the sewer and help protect the sewer from damage in the event of minor settling of the creek bank. The liner would not protect the sewer if the bank completely collapsed from around the sewer. Consequently, if this alternative was implemented, it would also be recommended that the VRSP described above also be implemented. A comparison level cost estimate for this alternative is about $290,000 without the VRSP, and about $500,000 with the VRSP.

Relocate the Sewer 15 feet Northward

In this alternative the existing sewer would be abandoned and a new sewer would be constructed about 15 feet north of current sewer alignment, but still south of the existing 42-inch and 66-inch sewers. This would require construction of about 300 feet of new 39-inch sewer and three new maintenance holes. However, this alternative should be considered only a temporary solution because the creek will continue to meander and ultimately place the reconstructed sewer at risk again. Consequently, if this alternative was implemented, it would also be recommended that the VRSP described above also be implemented. Also, City staff performed a closed circuit television (CCTV) inspection of the sewer and reported that it is in good condition. Consequently, this alternative is not recommended. A comparison level cost estimate for this alternative is about $390,000 without the VRSP, and about $600,000 with the VRSP.

Recommendation

VRSP is the recommended alternative because it has the lowest cost and because it will provide protection of the creek bank and sewer immediately upon completion of the construction.

Predesign of the Booth Road Recommended Project

The predesign of the Booth Road Project is described below.

Project Description

For the Booth Road site, bank protection using VRSP is recommended. Figure 3 shows the area to receive VRSP. Creek cross sections from just downstream of this area to just upstream of this area are show on Figures 4 through 11. The existing creek banks where VRSP is to be placed are steeper than 2H:1V, which is the recommended maximum bank slope for VRSP. To place VRSP, the banks have to be cut back to result in VRSP face slope of 2H:1V. As shown on Figure 9, at Cross Section 6 (at the sewer maintenance hole), the bank will be cut back slightly and the rock will extend into the main channel. At the sections downstream (Sections 4 and 5, Figures 7 and 8) and upstream (Section 7, Figure 10), the sewer is farther from the top of the channel bank, so there is space to cut the creek channel bank back without having to extend the rock into the area of the main channel.

Hydraulic Evaluation

The hydraulic impacts of the Booth Road Project were evaluated using an existing HEC RAS model of the creek. The model was updated to include more detail at the Booth Road Project site. Cross sections of the main channel (top of bank to top of bank) were surveyed at eight locations. The locations of the surveyed cross sections are shown on Figure 3. These surveyed cross sections are shown in Figures 2 through 11. These surveyed cross sections only extended from the top of bank to the top of bank of the main channel of Dry Creek, and did not include surveys of the flood plain areas.

The existing model included cross sections near the locations of surveyed cross sections 1 and 8, just beyond the downstream and upstream ends of the Booth Road Project. The model cross sections included data for the floodplain areas. The model was updated to include the surveyed cross sections 2 through 7. The model cross sections include the main channel and the floodplain areas of the creek. The surveyed cross sections only included the main channel of the creek. Consequently, the floodplain areas of the new cross sections were interpolated between sections already in the model (which included the floodplains). The full cross sections (main channel and floodplains) are also shown on Figures 4 through 11 in the lower right corner. These graphic representations of the full cross sections were taken from the HEC RAS model. Small red dots in these sections distinguish the main channel from the overbank areas (floodplain areas).

The June 8, 1998, Federal Emergency Management Agency (FEMA) Flood Insurance Study identifies the 100-year flow rate at the Booth Road site to be 14,000 cubic feet per second (cfs). The City has established a 100-year flow of 17,000 cfs to account for future development within the watershed. The 50-year flow is 10,050 cfs, and the 10-year flow is 6,020 cfs. For each design storm (flow rate), the model was run for existing conditions. The resulting existing conditions water surface elevations are summarized on Figures 4 through 11 and shown in the full cross sections in the lower right corners of the figures.

The model was further updated to include the Booth Road Project, and the model was run again. The water surface elevations for existing conditions and with the Booth Road Project for each design storm and for each cross section are presented in Table 2. The changes in the water surface elevation resulting from the project are also presented in Table 2, and discussed below.

- Downstream of the Both Road Project (downstream of Station 66624) there are no changes in the water surface elevation.
- Through the project area, the water surface elevation changes range from a decrease of 0.02 feet to an increase of 0.02 feet. At Cross Section 6 (Station 66680), where the channel is slightly constricted by the proposed VRSP, the HEC RAS model results indicate that the water velocity would increase (as compared to existing conditions) and the water surface elevation would be unchanged or decrease by 0.01 to 0.02 feet depending on the flow rate.
- Just upstream of the project (Station 66784) the model results indicate that the water surface elevation would decrease by 0.01 to 0.03 feet depending on the flow rate. Farther upstream the results show occasional decrease of 0.01 feet.

Changes in water surface elevations of a few hundredths of a foot are within the accuracy level of the RAS model. Consequently, the model results indicate that the Booth Road Project will not cause any significant change in the water surface elevation downstream, at, or upstream of the project. The project causes no significant flood related impacts.

VRSP Rock Design

To ensure the maximum potential velocities were used for sizing the VRSP, ineffective flow areas were added to the model at the top of the bank for the cross sections from the Dry Creek WWTP to Atkinson Street. The use of ineffective flow areas tends to slightly increase water flow velocities Ineffective flow areas weren't used in the CBEC modeling discussed in the CBEC Memorandum in Attachment 1. The model was run for flows from 1,000 cfs up to 17,000 cfs. For each flow rate and for each section that will receive VRSP, the flow velocity is shown on Figure 12. As shown, most of the velocities are around 4 feet per second, which is consistent with the water velocity used in the CBEC memorandum (Attachment 1). However, for sizing the rock for the VRSP, the maximum water velocity from all of the sections that will receive VRSP should be used. The maximum velocity shown on Figure 12 is 6.6 feet per second.

A velocity of 6.6 feet per second was used to size the rock for the VRSP using the California Bank and Shore Rock Slope Protection Design Manual (October 2000) methodology. This velocity led to a Caltrans rock class of Method B Placement, Backing No. 2. However, the rock sizing is very sensitive to water velocity. If the actual maximum velocity was 7.1 feet per second, it would lead to a rock class of Method B Placement, Backing No. 1. Because hydraulic modeling is imprecise, we have selected a rock class of Method B Placement, Backing No. 1 as the appropriate size rock for this project. For this rock class, no layering of the rock is needed. However, a Type A Rock Slope Protection Fabric is required. Based on the design methodology, the single VRSP layer thickness would be 1.8 feet. However, we have rounded this up to 2 feet.

The City previously purchased and stockpiled 11.8 tons of rock at the Booth Road Site to have on-hand in case it had to be installed under emergency conditions. This rock is still stockpiled at the Booth Road Site. This rock is 1/4 ton to 1 ton riprap. This is larger than the Method B Placement, Backing No. 1 rock, which weighs 25 to 200 pounds. Nevertheless, the stockpiled rock can be used for the Booth Road Project at Cross Section 6 (see Figure 9) as the outer facing of the VRSP. The bottom 2 feet of the VRSP should be constructed with Method B Placement, Backing No. 1 rock, and the larger rock placed on the Method B Placement, Backing No. 1 rock.

The depth of potential scour was estimated for the location where the VRSP encroaches into the main channel using the US Department of Transportation Hydraulic Engineering Circular No 18, Evaluating Scour at Bridges (HEC 18). Based on Cross Section 6 shown in Figure 9, the contraction scour was calculated to be 0.8 feet. Local scour was not calculated because the VRSP face will smoothly encroach into the creek from the upstream and downstream sections, and there will not be a "structure" that abruptly blocks flow. Thus, there will be no significant local acceleration of flow around a structure and no local scour effects. Based on the contraction scour depth, the VRSP should be keyed into the creek bed to a depth of at least two feet.

Cost Estimate

The estimated construction and capital costs for the Booth Road Project are $210,000 and $325,000, respectively, as shown in Table 3. This cost is based on the project being constructed by City staff.

Design and Construction Phase Project Elements

The following items are included as elements of the project, and will be implemented during design or construction of the project.

Conduct Environmental Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a qualified biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid impacts on biological resources and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the City will ensure that the personnel receive the mandatory training from the biologist before starting work.

Install Construction Barrier Fencing to Protect Environmentally Sensitive Areas

The City will install orange construction barrier fencing to identify environmentally sensitive areas (ESAs). ESAs in and adjacent to the construction area comprise mixed riparian forest, native oak trees greater than six inches dbh, wetland drainages, and any trees that support migratory bird or raptor nests. Before construction, the City will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the ESAs to indicate these locations. The protected area will be clearly identified on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following note will be included in the construction plans:

> *"The City's attention is directed to the areas designated as "environmentally sensitive areas." As shown on the plans. These areas are protected, and no entry by the construction crews for any purpose will be allowed unless specifically authorized in writing by the City's project manager. The City's project manager will take measures to ensure that construction crew do not enter or disturb these areas, including giving written notice to crew members."*

Temporary fences around the ESAs will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least four feet high (Tensor Polygrid or equivalent).

Retain a Biologist to Monitor Construction Activities in the Creek Corridor

The City will retain a biologist to make a weekly monitoring visit to the project site. The biological monitor will assist the construction crew, as needed, to comply with all project

implementation restrictions and guidelines. Furthermore, the biological monitor will be responsible for ensuring that the contractor maintains ESA barrier fencing.

Avoid and Minimize Disturbance of Dry Creek and Associated Aquatic Habitat

To the extent possible, the City will minimize impacts on Dry Creek and associated aquatic habitat by implementing the following.

- Prior to working within the Dry Creek corridor, all heavy equipment will be checked by the city inspector and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances associated with project-related activities that could be hazardous to aquatic life will be prevented from contaminating the soil or entering the Dry Creek channel.
- During construction, the City will not dump any material in the stream channel except as shown on the project plans. All such debris and waste will be picked up daily and properly disposed of at an appropriate site. All construction debris and associated materials will be removed from the work site upon completion of the project.
- Sediment fences will be installed in appropriate locations to reduce the introduction of sediment into creeks during construction. Any overburden material from the proposed project will not be sidecast into the creek channel but will be stabilized or stored off site at approved disposal sites to preclude increased risk of sediment input to creeks.
- The City will establish spill prevention and countermeasure plan before project construction begins; the plan will include on-site handling criteria to avoid input of contaminants to the waterway. A staging and storage area will be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. This plan will be approved by the City project manager prior to the start of the construction.
- After construction, the work area within the creek corridor will be stabilized and landscaped according to the erosion and sediment control standards set forth in the City's Stormwater Quality BMP Guidance Manual for Construction (March 2007).
- All maintenance materials (e.g., oils, grease, lubricants, antifreeze, and similar materials) will be stored off-site.
- During construction, all vehicles and equipment required on site will be parked or stored at the designated staging areas.

Precautions to minimize turbidity/siltation will be taken into account during project planning and implementation. Such precautions may entail the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures will be taken. The sediment barrier(s) will be maintained in good operating condition throughout the construction period and the following rainy season. Maintenance includes, but is not limited to, removal of

accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Non-biodegradable silt barriers (such as plastic silt fencing) shall be removed after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season).

Minimize Potential for the Long-Term Loss of Mixed Riparian Forest

To the extent possible, the City will minimize the potential for the long-term loss of riparian vegetation by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Disturbance or removal of vegetation will not exceed the minimum necessary to complete operations. Except for the vegetation specifically identified for trimming and/or removal in the notification, no native oak trees with a trunk diameter greater than six inches dbh will be removed or damaged without prior consultation and approval of a City Planning Department representative. Using hand tools (e.g., clippers, chain saw), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation will be removed out of the riparian/stream zone.

Compensate for the Placement of Fill Material into Dry Creek at a 2:1 Ratio

The City will obtain a Section 404 permit from the USACE before construction activities are initiated. As part of the Section 404 permit application, the City has proposed to compensate for the placement of fill material into waters of the U.S. by implementing the following:

- Purchase mitigation bank credits at a 2:1 ratio to compensate for the permanent placement of fill material associated with the placement of VRSP into open water and unvegetated portions of Dry Creek. As part of this compensation, the City will purchase riverine aquatic bed credits from the National Fish and Wildlife Foundation in-lieu fee program. Proof of purchase will be provided to the USACE to support the nationwide permit authorization.
- Purchase mitigation bank credits at a 2:1 ratio to compensate for the temporary placement of fill material into riparian woodland wetlands. All temporary fill material will be removed from the riparian wetland area after construction activities are complete (described below). As stated above, proof of purchase will be provided to the USACE to support the nationwide permit authorization.

Conduct a Preconstruction Survey for Western Pond Turtles and Implement Measures to Avoid Impacts

To avoid construction-related impacts on western pond turtles, the City will retain a wildlife biologist to conduct a preconstruction survey for western pond turtles no more than 48 hours before the start of construction. The wildlife biologist will look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If a western pond turtle is located in the construction area, the biologist will move the turtle to a suitable aquatic site outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the City will consult the CDFW to determine and implement appropriate avoidance

measures, which may include a "no-disturbance" buffer around the nest site until the hatchlings have moved to a nearby aquatic site.

Construct Outside of Nesting Season or Conduct Pre-Construction Raptor Nesting Surveys

To avoid disturbance of raptor breeding and nesting activity, including nesting of sensitive raptors, project activities will be avoided during the typical raptor breeding season of March through August, to the extent feasible. If construction must take place during the typical nesting season, preconstruction surveys will be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development activities. Surveys will be conducted to determine if active nesting is occurring on or directly adjacent to the study area. If active nests are found on or immediately adjacent to the site, survey results will be submitted to CDFW and consultation will be initiated with CDFW to determine appropriate avoidance measures. If no nesting is found to occur, necessary tree removal and other project activities could then proceed.

Comply with Agency Permitting Requirements and Provide for No Net Loss of Wetlands

The City shall comply with all applicable USACE, USFWS, NMFS, CDFW, and Regional Water Quality Control Board (RWQCB) permitting and mitigation requirements. The City shall meet the agencies' no net loss of wetlands policy through one of the following measures:

- Avoid impacts through project design.
- Compensate for impacts by acquiring (through fee title or credits in an approved mitigation bank) replacement habitat.

This measure requires that when site-specific designs are available, project-level analysis would require a wetland delineation to be submitted to the USACE for verification. As described previously, the delineation conducted for the proposed project has not yet been verified by the USACE.

The City is responsible for obtaining all required permits and authorizations from local, state, and federal agencies. If a conflict arises between the provisions of any of the permits, the City shall comply with the provision that offers the greatest protection to water quality, species of special concern, and/or critical habitat. Copies of the permits will be provided to the construction crew with the construction plans.

Avoid the Introduction or Spread of Noxious Weeds in the Project Area

To avoid the introduction or spread of noxious weeds into previously uninfested areas (especially within the riparian community along Dry Creek), the City will revegetate disturbed areas immediately after construction is complete using certified weed-free native and nonnative seed mixes.

Comply with Requirements of the Tree Preservation Chapter of the Roseville Zoning Ordinance

The City will comply with requirements of the City's tree preservation ordinance, including avoidance, minimization, or compensation for the removal or disturbance of native oak trees greater than 6 inches dbh during construction. If native oak trees will be affected by the project, the City will be required to prepare a tree mitigation plan that identifies trees that qualify for

protection and specifies mitigation for impacts. For any oak trees that would be removed, the City will mitigate the impact through either on-site planting or use of the City's in-lieu fee program.

Stop Construction if Signs of an Archeological Site are Discovered during Construction

The construction crew shall stop construction and notify the Roseville Community Development Department if signs of an archeological site are discovered during construction of the project. The City will then notify a qualified archeologist, and additional mitigation may be required.

Implement Plan to Address Discovery of Human Remains

If remains of Native American origin are discovered during project construction, it will be necessary to comply with state laws concerning the disposition of Native American burials, which fall within NAHC's jurisdiction (PRC 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps occur:

- The Placer County coroner (530/265-1220) has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin (916/653-4038), one of the following occurs:
- The descendants of the deceased Native Americans have made a recommendation to the City for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98.
- NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are Native American. If the remains are determined to be Native American, the coroner must contact NAHC within 24 hours.

Reduce Construction Emissions of NO_X

a. Include the following standard note on the Grading Plan or Improvement Plans: The City shall submit to the PCAPCD a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower of greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the City shall contact the PCAPCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the PCAPCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.

b. Prior to approval of Grading Plan or Improvement Plans, whichever occurs first, the applicant shall provide a written calculation to the PCAPCD for approval by the PCAPCD demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction as required by ARB. Acceptable options for reducing emissions may include use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The following link shall be used to calculate compliance with this condition and shall be submitted to the PCAPCD as described above: http://www.airquality.org/ceqa/ (click on the current "Roadway Construction Emissions Model").

c. Include the following standard note on the Grading Plan or Improvement Plans: During construction the City shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.

Permitting and CEQA Requirements

A preliminary delineation of the jurisdictional waters of the US (not yet confirmed by the USACE) was prepared by Foothill Associates (see Figure 3) in the vicinity of the project, and is shown on Figure 3. The Booth Road Project will result in placement of about 530 cubic yards of rock (fill) within a jurisdictional water of the US, and about 60 cubic yards of rock above the jurisdictional waters of the US. This project will disturb about 0.37 acres, including the area where VRSP is placed, a ramp to the creek bed, and an area for stockpiling rock and soil. This project will not require placement of any concrete. Placement of the rock will require construction equipment to operate within the creek channel. Consequently, a Clean Water Act Section 404 permit (USACE Permit) is needed for this project. Also, a RWQCB Clean Water Act Section 401 Water Quality Certification is needed for this project. A CDFW Section 1600 Stream Bed Alteration Agreement will be needed because the project includes construction in a creek bed and a riparian area. A CVFPB Encroachment Permit is also needed because the project is within 300 feet of a regulated stream (see Figure 2).

A dewatering plan will be developed and included in the project plans. The dewatering plan will include placement of inflatable bladder dams just upstream and just downstream of the construction site. Cutoff walls will also be constructed at the dams by burying heavy plastic sheets in the gravel of the creek bed up to three feet deep. A trench will be dug through the sand/gravel bar south of the construction and the trench will be lined with heavy plastic, which will be held in place with large rocks. When the construction is complete, all materials will be removed and all trenches will be refilled with the original gravel removed from the trench.

A Categorical Exemption (Class 1 Existing Facilities) is the appropriate CEQA document for this project.

Please call or email if you have any questions or comments after your review of this letter report.

Sincerely,

WEST YOST ASSOCIATES

Douglas T. Moore
Engineering Manager
R.C.E. #C058122

DTM:np

attachments

Table 1. Riverside Avenue Project Cost Estimate					
Item No.	Item Description	Unit of Measure	Estimated Quanity	Unit Cost, dollars	Total Cost, dollars
1	Mobilization/Demobilization	LS	1	5,000	5,000
2	21-Inch Sewer	LF	135	210	28,350
3	Modify Existing Maintenance Hole	EA	3	2,000	6,000
4	Grout Fill Existing 21-Inch Sewer	CY	22	400	8,800
5	Revegetation	Acre	0.2	10,000	2,000
6	Incidentals	LS	1	5,000	5,000
Subtotal (Rounded)					**55,200**
	Estimating Contingency (10%)				5,500
Subtotal (Rounded)					**60,700**
	Construction Contingency (20%)				11,000
Total Estimated Construction Cost (Rounded)					**71,700**
	Design, Bidding, and Engineering Services During Construction (10%)				7,200
	City Costs (including Admin., Plan Check, etc) (15%)				10,800
	Construction Management (10%)				7,200
	Environmental Documentation, Mitigation, and Permitting (10%)				7,200
	Project Contingency (10%)				7,200
Total Estimated Capital Cost (Rounded)					**112,000**

Table 2. Changes in Water Surface Elevation Resulting From the Booth Road Project						
Location	Design Storm	River Sta	Q Total (cfs)	Existing Condition W.S. Elev (ft)	Proposed Condition W.S. Elev (ft)	Change in WSEL (ft)
	10-Year	72789	6020	127.28	127.28	0.00
	50-Year	72789	7110	129.99	129.99	0.00
	FEMA 100-Year	72789	14000	130.9	130.9	0.00
	Roseville 100-Year	72789	17000	131.42	131.42	0.00
Riverside Avenue	10-Year	72742	6020	127.23	127.23	0.00
Riverside Avenue	50-Year	72742	7110	130.03	130.03	0.00
Riverside Avenue	FEMA 100-Year	72742	14000	131.2	131.2	0.00
Riverside Avenue	Roseville 100-Year	72742	17000	131.98	131.98	0.00
Riverside Avenue	10-Year	72663	6020	126.36	126.36	0.00
Riverside Avenue	50-Year	72663	7110	129.09	129.09	0.00
Riverside Avenue	FEMA 100-Year	72663	14000	129.66	129.66	0.00
Riverside Avenue	Roseville 100-Year	72663	17000	130.84	130.84	0.00
	10-Year	72603	6020	125.98	125.98	0.00
	50-Year	72603	10050	127.73	127.73	0.00
	FEMA 100-Year	72603	14000	129.62	129.62	0.00
	Roseville 100-Year	72603	17000	130.85	130.85	0.00
	10-Year	72248	6020	124.93	124.93	0.00
	50-Year	72248	10050	127.13	127.13	0.00
	FEMA 100-Year	72248	14000	129.29	129.29	0.00
	Roseville 100-Year	72248	17000	130.52	130.52	0.00
	10-Year	71733	6020	124.32	124.32	0.00
	50-Year	71733	10050	126.69	126.69	0.00
	FEMA 100-Year	71733	14000	128.91	128.91	0.00
	Roseville 100-Year	71733	17000	130.15	130.15	0.00
	10-Year	71233	6020	124.01	124.01	0.00
	50-Year	71233	10050	126.49	126.49	0.00
	FEMA 100-Year	71233	14000	128.8	128.8	0.00
	Roseville 100-Year	71233	17000	130.06	130.05	-0.01
	10-Year	70701	6020	123.57	123.57	0.00
	50-Year	70701	10050	126.24	126.24	0.00
	FEMA 100-Year	70701	14000	128.63	128.63	0.00
	Roseville 100-Year	70701	17000	129.9	129.9	0.00
	10-Year	70111	6020	122.16	122.16	0.00
	50-Year	70111	10050	125.12	125.12	0.00
	FEMA 100-Year	70111	14000	127.95	127.95	0.00
	Roseville 100-Year	70111	17000	129.33	129.33	0.00
Vernon Street	10-Year	70072	6020	122.1	122.1	0.00
Vernon Street	50-Year	70072	10050	124.36	124.36	0.00
Vernon Street	FEMA 100-Year	70072	14000	126.4	126.4	0.00
Vernon Street	Roseville 100-Year	70072	17000	128.6	128.6	0.00
Vernon Street	10-Year	69993	6020	121.98	121.98	0.00
Vernon Street	50-Year	69993	10050	124.04	124.04	0.00
Vernon Street	FEMA 100-Year	69993	14000	125.99	125.99	0.00
Vernon Street	Roseville 100-Year	69993	17000	128.15	128.15	0.00
	10-Year	69964	6020	122.06	122.06	0.00
	50-Year	69964	10050	124.32	124.32	0.00
	FEMA 100-Year	69964	14000	126.33	126.33	0.00
	Roseville 100-Year	69964	17000	128.32	128.32	0.00
	10-Year	69652	6020	121.78	121.78	0.00
	50-Year	69652	10050	124.11	124.11	0.00

Table 2. Changes in Water Surface Elevation Resulting From the Booth Road Project						
Location	Design Storm	River Sta	Q Total (cfs)	Existing Condition W.S. Elev (ft)	Proposed Condition W.S. Elev (ft)	Change in WSEL (ft)
	FEMA 100-Year	69652	14000	126.15	126.15	0.00
	Roseville 100-Year	69652	17000	128.19	128.19	0.00
	10-Year	69327	6020	119.22	119.22	0.00
	50-Year	69327	10050	120.94	120.94	0.00
	FEMA 100-Year	69327	14000	123.41	123.41	0.00
	Roseville 100-Year	69327	17000	126	126	0.00
	10-Year	69243	6020	117.73	117.73	0.00
	50-Year	69243	10050	120.99	120.99	0.00
	FEMA 100-Year	69243	14000	123.6	123.6	0.00
	Roseville 100-Year	69243	17000	126.17	126.17	0.00
	10-Year	69188	6020	118.35	118.35	0.00
	50-Year	69188	10050	121.32	121.32	0.00
	FEMA 100-Year	69188	14000	123.67	123.67	0.00
	Roseville 100-Year	69188	17000	125.94	125.94	0.00
	10-Year	69088	6020	118.22	118.22	0.00
	50-Year	69088	10050	121.1	121.1	0.00
	FEMA 100-Year	69088	14000	123.37	123.36	-0.01
	Roseville 100-Year	69088	17000	125.63	125.63	0.00
	10-Year	68983	6020	118.38	118.38	0.00
	50-Year	68983	10050	121.48	121.48	0.00
	FEMA 100-Year	68983	14000	123.96	123.96	0.00
	Roseville 100-Year	68983	17000	126.35	126.35	0.00
	10-Year	68918	6020	118.34	118.34	0.00
	50-Year	68918	10050	121.35	121.35	0.00
	FEMA 100-Year	68918	14000	123.85	123.85	0.00
	Roseville 100-Year	68918	17000	126.34	126.34	0.00
	10-Year	68744	6020	118.44	118.44	0.00
	50-Year	68744	10050	121.52	121.52	0.00
	FEMA 100-Year	68744	14000	124.02	124.02	0.00
	Roseville 100-Year	68744	17000	126.41	126.41	0.00
	10-Year	68547	6020	117.73	117.73	0.00
	50-Year	68547	10050	120.41	120.4	-0.01
	FEMA 100-Year	68547	14000	122.52	122.52	0.00
	Roseville 100-Year	68547	17000	124.86	124.86	0.00
	10-Year	68252	6020	117.16	117.16	0.00
	50-Year	68252	10050	119.65	119.65	0.00
	FEMA 100-Year	68252	14000	121.67	121.67	0.00
	Roseville 100-Year	68252	17000	124.21	124.21	0.00
	10-Year	67735	6020	116.22	116.22	0.00
	50-Year	67735	10050	118.4	118.4	0.00
	FEMA 100-Year	67735	14000	120.26	120.25	-0.01
	Roseville 100-Year	67735	17000	123.19	123.19	0.00
	10-Year	67652	6020	116.15	116.14	-0.01
	50-Year	67652	10050	118.31	118.3	-0.01
	FEMA 100-Year	67652	14000	120.16	120.16	0.00
	Roseville 100-Year	67652	17000	123.14	123.14	0.00
	10-Year	67642	6020	116.03	116.02	-0.01
	50-Year	67642	10050	118.1	118.09	-0.01
	FEMA 100-Year	67642	14000	119.86	119.86	0.00
	Roseville 100-Year	67642	17000	122.87	122.87	0.00

Table 2. Changes in Water Surface Elevation Resulting From the Booth Road Project						
Location	Design Storm	River Sta	Q Total (cfs)	Existing Condition W.S. Elev (ft)	Proposed Condition W.S. Elev (ft)	Change in WSEL (ft)
	10-Year	67627	6020	115.92	115.92	0.00
	50-Year	67627	10050	117.91	117.9	-0.01
	FEMA 100-Year	67627	14000	119.6	119.6	0.00
	Roseville 100-Year	67627	17000	122.66	122.66	0.00
	10-Year	67596	6020	115.86	115.86	0.00
	50-Year	67596	10050	117.8	117.8	0.00
	FEMA 100-Year	67596	14000	119.47	119.46	-0.01
	Roseville 100-Year	67596	17000	122.65	122.65	0.00
Atkinson Street	10-Year	67584	6020	115.85	115.84	-0.01
Atkinson Street	50-Year	67584	10050	117.78	117.78	0.00
Atkinson Street	FEMA 100-Year	67584	14000	119.44	119.44	0.00
Atkinson Street	Roseville 100-Year	67584	17000	122.56	122.56	0.00
Atkinson Street	10-Year	67531	6020	115.46	115.45	-0.01
Atkinson Street	50-Year	67531	10050	117.13	117.12	-0.01
Atkinson Street	FEMA 100-Year	67531	14000	118.69	118.69	0.00
Atkinson Street	Roseville 100-Year	67531	17000	119.97	119.97	0.00
	10-Year	67480	6020	115.38	115.37	-0.01
	50-Year	67480	10050	117.06	117.05	-0.01
	FEMA 100-Year	67480	14000	118.77	118.77	0.00
	Roseville 100-Year	67480	17000	120.11	120.11	0.00
	10-Year	67184	6020	115.23	115.22	-0.01
	50-Year	67184	10050	117.25	117.24	-0.01
	FEMA 100-Year	67184	14000	119.02	119.02	0.00
	Roseville 100-Year	67184	17000	120.36	120.36	0.00
	10-Year	66874	6020	114.47	114.44	-0.03
	50-Year	66874	10050	116.98	116.97	-0.01
	FEMA 100-Year	66874	14000	118.84	118.83	-0.01
	Roseville 100-Year	66874	17000	120.21	120.21	0.00
Booth Rd Prj. VRSP	10-Year	66740	6020	114.36	114.37	0.01
Booth Rd Prj. VRSP	50-Year	66740	10050	116.88	116.89	0.01
Booth Rd Prj. VRSP	FEMA 100-Year	66740	14000	118.78	118.78	0.00
Booth Rd Prj. VRSP	Roseville 100-Year	66740	17000	120.17	120.17	0.00
Booth Rd Prj. VRSP	10-Year	66680	6020	114.29	114.27	-0.02
Booth Rd Prj. VRSP	50-Year	66680	10050	116.81	116.8	-0.01
Booth Rd Prj. VRSP	FEMA 100-Year	66680	14000	118.73	118.73	0.00
Booth Rd Prj. VRSP	Roseville 100-Year	66680	17000	120.14	120.14	0.00
Booth Rd Prj. VRSP	10-Year	66644	6020	114.37	114.36	-0.01
Booth Rd Prj. VRSP	50-Year	66644	10050	116.84	116.83	-0.01
Booth Rd Prj. VRSP	FEMA 100-Year	66644	14000	118.74	118.74	0.00
Booth Rd Prj. VRSP	Roseville 100-Year	66644	17000	120.14	120.14	0.00
Booth Rd Prj. VRSP	10-Year	66624	6020	114.17	114.19	0.02
Booth Rd Prj. VRSP	50-Year	66624	10050	116.76	116.76	0.00
Booth Rd Prj. VRSP	FEMA 100-Year	66624	14000	118.68	118.68	0.00
Booth Rd Prj. VRSP	Roseville 100-Year	66624	17000	120.1	120.11	0.01
	10-Year	66548	6020	114.15	114.15	0.00
	50-Year	66548	10050	116.74	116.74	0.00
	FEMA 100-Year	66548	14000	118.66	118.66	0.00
	Roseville 100-Year	66548	17000	120.09	120.09	0.00
	10-Year	66541	6020	114.1	114.1	0.00
	50-Year	66541	10050	116.72	116.72	0.00

Table 2. Changes in Water Surface Elevation Resulting From the Booth Road Project						
Location	Design Storm	River Sta	Q Total (cfs)	Existing Condition W.S. Elev (ft)	Proposed Condition W.S. Elev (ft)	Change in WSEL (ft)
	FEMA 100-Year	66541	14000	118.64	118.64	0.00
	Roseville 100-Year	66541	17000	120.06	120.06	0.00
	10-Year	66473	6020	113.9	113.9	0.00
	50-Year	66473	10050	116.65	116.65	0.00
	FEMA 100-Year	66473	14000	118.6	118.6	0.00
	Roseville 100-Year	66473	17000	120.02	120.02	0.00
	10-Year	65986	6020	113.75	113.75	0.00
	50-Year	65986	10050	116.54	116.54	0.00
	FEMA 100-Year	65986	14000	118.52	118.52	0.00
	Roseville 100-Year	65986	17000	119.94	119.94	0.00
	10-Year	65700	6020	113.67	113.67	0.00
	50-Year	65700	10050	116.47	116.47	0.00
	FEMA 100-Year	65700	14000	118.45	118.45	0.00
	Roseville 100-Year	65700	17000	119.88	119.88	0.00
Upstream Side of WWTP	10-Year	65650	6020	113.41	113.41	0.00
Upstream Side of WWTP	50-Year	65650	10050	116.27	116.27	0.00
Upstream Side of WWTP	FEMA 100-Year	65650	14000	118.24	118.24	0.00
Upstream Side of WWTP	Roseville 100-Year	65650	17000	119.66	119.66	0.00
	10-Year	65592	6020	113.3	113.3	0.00
	50-Year	65592	10050	116.12	116.12	0.00
	FEMA 100-Year	65592	14000	118.07	118.07	0.00
	Roseville 100-Year	65592	17000	119.48	119.48	0.00
	10-Year	65360	6020	112.69	112.69	0.00
	50-Year	65360	10050	115.49	115.49	0.00
	FEMA 100-Year	65360	14000	117.41	117.41	0.00
	Roseville 100-Year	65360	17000	118.82	118.82	0.00
	10-Year	65122	6020	112.37	112.37	0.00
	50-Year	65122	10050	115.14	115.14	0.00
	FEMA 100-Year	65122	14000	117.04	117.04	0.00
	Roseville 100-Year	65122	17000	118.46	118.46	0.00
	10-Year	65062	6020	112.28	112.28	0.00
	50-Year	65062	10050	115.06	115.06	0.00
	FEMA 100-Year	65062	14000	116.93	116.93	0.00
	Roseville 100-Year	65062	17000	118.35	118.35	0.00
	10-Year	64798	6020	111.92	111.92	0.00
	50-Year	64798	10050	114.65	114.65	0.00
	FEMA 100-Year	64798	14000	116.42	116.42	0.00
	Roseville 100-Year	64798	17000	117.83	117.83	0.00
	10-Year	64677	6020	112	112	0.00
	50-Year	64677	10050	114.77	114.77	0.00
	FEMA 100-Year	64677	14000	116.58	116.58	0.00
	Roseville 100-Year	64677	17000	118	118	0.00
	10-Year	64557	6020	111.85	111.85	0.00
	50-Year	64557	10050	114.58	114.58	0.00
	FEMA 100-Year	64557	14000	116.35	116.35	0.00
	Roseville 100-Year	64557	17000	117.75	117.75	0.00
	10-Year	64376	6020	111.56	111.56	0.00
	50-Year	64376	10050	114.24	114.24	0.00
	FEMA 100-Year	64376	14000	115.92	115.92	0.00
	Roseville 100-Year	64376	17000	117.31	117.31	0.00

Table 2. Changes in Water Surface Elevation Resulting From the Booth Road Project						
Location	Design Storm	River Sta	Q Total (cfs)	Existing Condition W.S. Elev (ft)	Proposed Condition W.S. Elev (ft)	Change in WSEL (ft)
	10-Year	64139	6020	111.41	111.41	0.00
	50-Year	64139	10050	114.09	114.09	0.00
	FEMA 100-Year	64139	14000	115.75	115.75	0.00
	Roseville 100-Year	64139	17000	117.13	117.13	0.00
	10-Year	63956	6020	111.15	111.15	0.00
	50-Year	63956	10050	113.79	113.79	0.00
	FEMA 100-Year	63956	14000	115.37	115.37	0.00
	Roseville 100-Year	63956	17000	116.75	116.75	0.00
	10-Year	63757	6020	110.96	110.96	0.00
	50-Year	63757	10050	113.58	113.58	0.00
	FEMA 100-Year	63757	14000	115.11	115.11	0.00
	Roseville 100-Year	63757	17000	116.49	116.49	0.00
	10-Year	63657	6020	110.79	110.79	0.00
	50-Year	63657	10050	113.4	113.4	0.00
	FEMA 100-Year	63657	14000	114.87	114.87	0.00
	Roseville 100-Year	63657	17000	116.23	116.23	0.00
	10-Year	63561	6020	110.68	110.68	0.00
	50-Year	63561	10050	113.28	113.28	0.00
	FEMA 100-Year	63561	14000	114.75	114.75	0.00
	Roseville 100-Year	63561	17000	116.12	116.12	0.00
	10-Year	63473	6020	110.67	110.67	0.00
	50-Year	63473	10050	113.29	113.29	0.00
	FEMA 100-Year	63473	14000	114.77	114.77	0.00
	Roseville 100-Year	63473	17000	116.15	116.15	0.00
	10-Year	63428	6020	110.61	110.61	0.00
	50-Year	63428	10050	113.23	113.23	0.00
	FEMA 100-Year	63428	14000	114.69	114.69	0.00
	Roseville 100-Year	63428	17000	116.08	116.08	0.00
Downstream Side of WWTP	10-Year	63415	6020	110.61	110.61	0.00
Downstream Side of WWTP	50-Year	63415	10050	113.28	113.28	0.00
Downstream Side of WWTP	FEMA 100-Year	63415	14000	114.78	114.78	0.00
Downstream Side of WWTP	Roseville 100-Year	63415	17000	116.19	116.19	0.00
	10-Year	63385	6020	110.66	110.66	0.00
	50-Year	63385	10050	113.31	113.31	0.00
	FEMA 100-Year	63385	14000	114.81	114.81	0.00
	Roseville 100-Year	63385	17000	116.22	116.22	0.00
	10-Year	63245	6020	110.52	110.52	0.00
	50-Year	63245	10050	113.22	113.22	0.00
	FEMA 100-Year	63245	14000	114.71	114.71	0.00
	Roseville 100-Year	63245	17000	116.13	116.13	0.00
	10-Year	62942	6020	110.05	110.05	0.00
	50-Year	62942	10050	112.91	112.91	0.00
	FEMA 100-Year	62942	14000	114.39	114.39	0.00
	Roseville 100-Year	62942	17000	115.85	115.85	0.00
	10-Year	62594	6020	109.51	109.51	0.00
	50-Year	62594	10050	112.58	112.58	0.00
	FEMA 100-Year	62594	14000	114.03	114.03	0.00
	Roseville 100-Year	62594	17000	115.49	115.49	0.00
	10-Year	62252	6020	109.06	109.06	0.00
	50-Year	62252	10050	112.3	112.3	0.00

Table 2. Changes in Water Surface Elevation Resulting From the Booth Road Project						
Location	Design Storm	River Sta	Q Total (cfs)	Existing Condition W.S. Elev (ft)	Proposed Condition W.S. Elev (ft)	Change in WSEL (ft)
	FEMA 100-Year	62252	14000	113.7	113.7	0.00
	Roseville 100-Year	62252	17000	115.15	115.15	0.00
	10-Year	61382	6020	108.08	108.08	0.00
	50-Year	61382	10050	111.67	111.67	0.00
	FEMA 100-Year	61382	14000	112.92	112.92	0.00
	Roseville 100-Year	61382	17000	114.51	114.51	0.00
	10-Year	60497	6020	107.1	107.1	0.00
	50-Year	60497	10050	111.06	111.06	0.00
	FEMA 100-Year	60497	14000	112.13	112.13	0.00
	Roseville 100-Year	60497	17000	113.92	113.92	0.00
	10-Year	60017	6020	106.37	106.37	0.00
	50-Year	60017	10050	110.64	110.64	0.00
	FEMA 100-Year	60017	14000	111.6	111.6	0.00
	Roseville 100-Year	60017	17000	113.58	113.58	0.00
	10-Year	59567	6020	105.61	105.61	0.00
	50-Year	59567	10050	110.29	110.29	0.00
	FEMA 100-Year	59567	14000	111.14	111.14	0.00
	Roseville 100-Year	59567	17000	113.29	113.29	0.00
	10-Year	59037	6020	104.49	104.49	0.00
	50-Year	59037	10050	109.93	109.93	0.00
	FEMA 100-Year	59037	14000	110.63	110.63	0.00
	Roseville 100-Year	59037	17000	112.98	112.98	0.00
	10-Year	58397	6020	104.04	104.04	0.00
	50-Year	58397	10050	109.77	109.77	0.00
	FEMA 100-Year	58397	14000	110.38	110.38	0.00
	Roseville 100-Year	58397	17000	112.82	112.82	0.00
Coor Riolo Rd	10-Year	58252	6020	103.89	103.89	0.00
Coor Riolo Rd	50-Year	58252	10050	109.76	109.76	0.00
Coor Riolo Rd	FEMA 100-Year	58252	14000	110.37	110.37	0.00
Coor Riolo Rd	Roseville 100-Year	58252	17000	112.81	112.81	0.00

Table 3. Booth Road Project Cost Estimate					
Item No.	Item Description	Unit of Measure	Estimated Quanity	Unit Cost, dollars	Total Cost, dollars
1	Mobilization/Demobilization	LS	1	6,800	6,800
2	Excvate and Refill Access into Creek	CY	2300	8	18,400
3	Rock	Tons	1200	80	96,000
4	Vegetation	Acre	0.2	10,000	2,000
5	Geotextile Fabric	Lump Sum	1	2,000	2,000
6	Tree Removal	Each	6	1,000	6,000
7	Dewatering	Lump Sum	1	20,000	20,000
8	Incidentals	LS	1	10,000	10,000
Subtotal (Rounded)					**161,200**
	Estimating Contingency (10%)				16,100
Subtotal (Rounded)					**177,300**
	Construction Contingency (20%)				32,200
Total Estimated Construction Cost (Rounded)					**209,500**
	Design, Bidding, and Engineering Services During Construction (10%)				21,000
	City Costs (including Admin., Plan Check, etc) (15%)				31,400
	Construction Management (10%)				21,000
	Environmental Documentation, Mitigation, and Permitting (10%)				21,000
	Project Contingency (10%)				21,000
Total Estimated Capital Cost (Rounded)					**325,000**

LEGEND

- EXISTING SANITARY SEWER
- PROPOSED NEW SANITARY SEWER
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED MODIFIED SANITARY SEWER MANHOLE
- JURISDICTIONAL WATERS OF THE US
- APPROXIMATE AREA OF DISTURBANCE (0.14 AC)

N

0 25 50
SCALE IN FEET

FIGURE 1
DRY CREEK BANK EROSION PROJECT
PREDESIGN REPORT

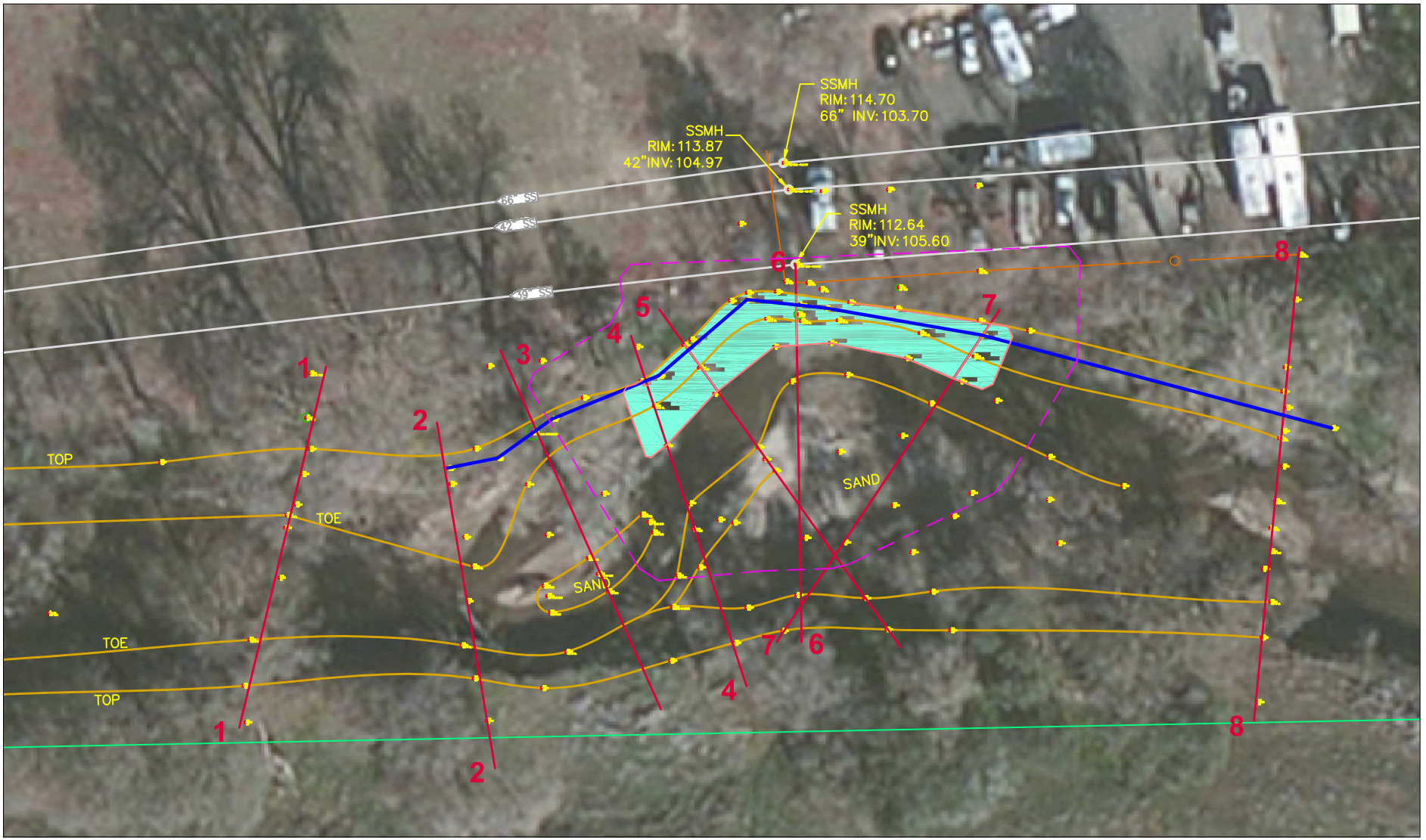
CITY OF ROSEVILLE
RIVERSIDE AVENUE PROJECT SEWER IMPROVEMENTS

WEST YOST ASSOCIATES
Consulting Engineers

N:\Clients\415 City of Roseville\00-13-15 Dry Creek Erosion\CAD\Figures\Riverside Ave v2 8.5x11.dwg 11/8/2013 8:33 AM jtolentino

Figure 2. CVFPB Designated Floodways and Regulated Streams

N:\Clients\415 City of Roseville\00-13-15 Dry Creek Erosion\CAD\Figures\Booth Road A 8.5x11.dwg 9/25/2013 2:14 PM jtolentino



LEGEND

- 1 — CROSS SECTON LOCATION AND NUMBER WITH SURVEY RESULTS
- PROPOSED AREA OF ROCK SCOUR PROTECTION
- JURISDICTIONAL WATERS OF THE US
- APPROXIMATE AREA OF DISTURBANCE (0.37 AC)

N

0 25 50
SCALE IN FEET

FIGURE 3
DRY CREEK BANK EROSION PROJECT
PREDESIGN REPORT

CITY OF ROSEVILLE
BOOTH ROAD PROJECT CROSS SECTIONS AND VRSP PLACEMENT

WEST YOST ASSOCIATES
Consulting Engineers

Figure 4. Cross Section 1 (at HEC RAS Station 66473)

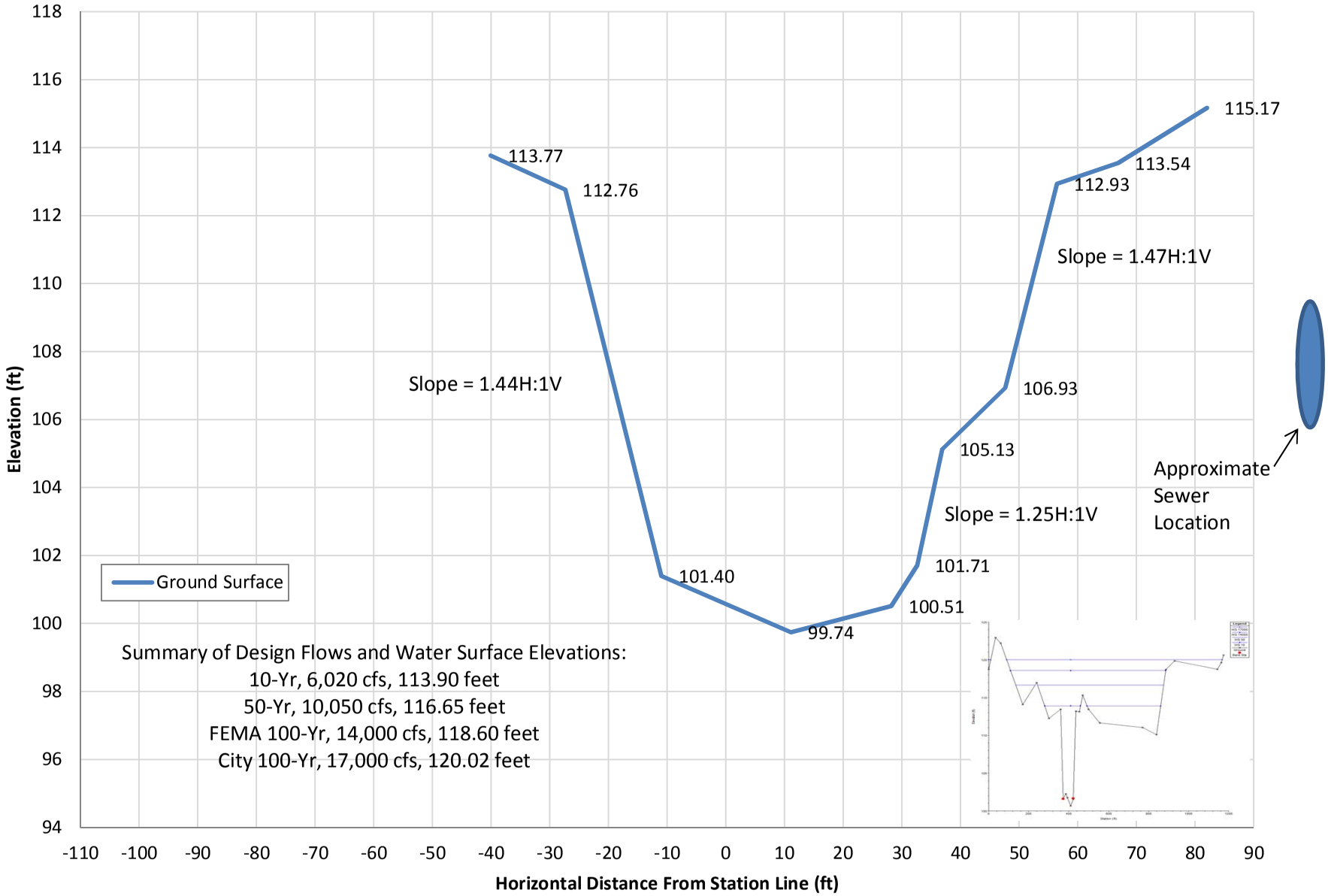


Figure 5. Cross Section 2 (at HEC RAS Station 66541)

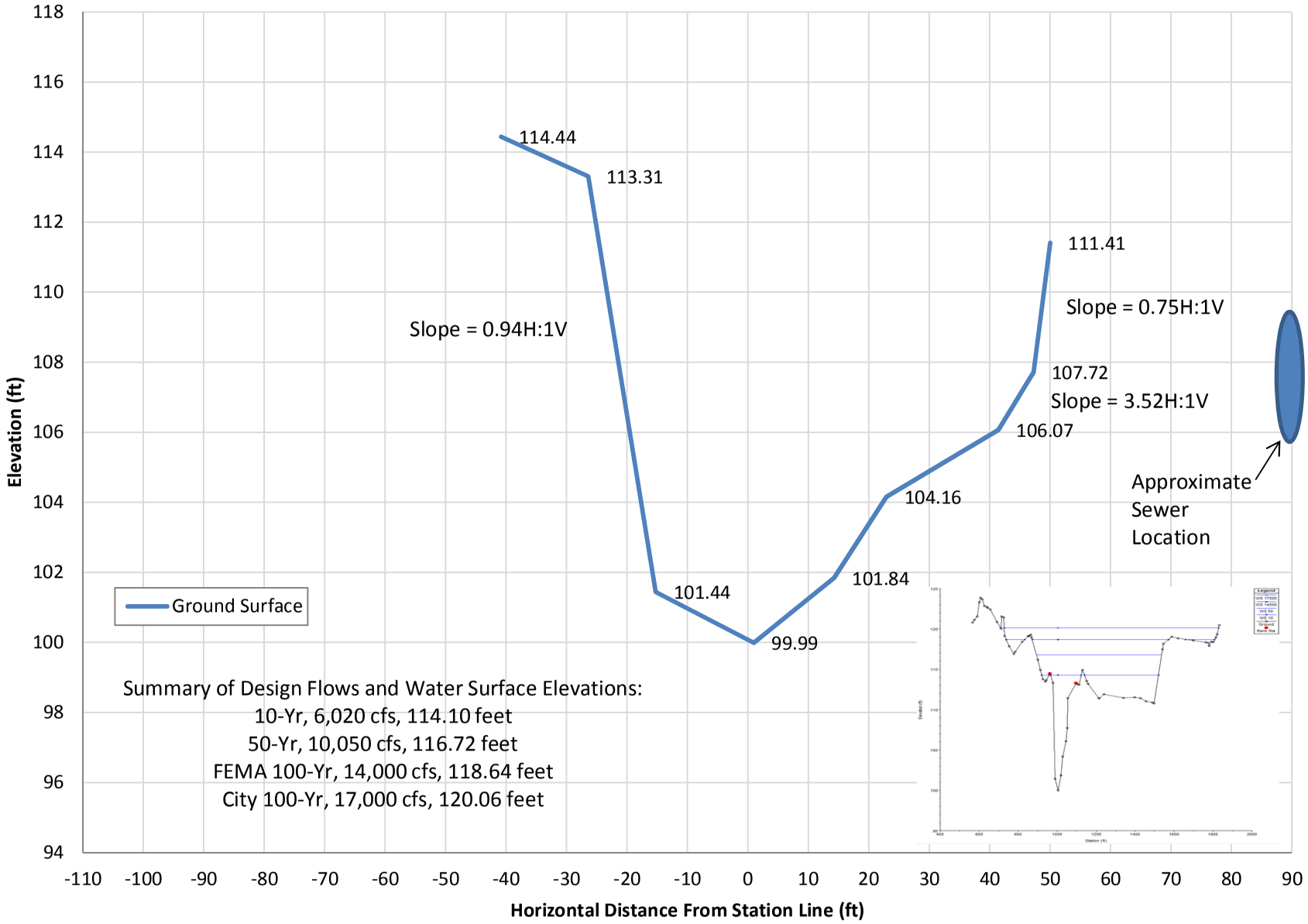


Figure 6. Cross Section 3 (at HEC RAS Station 66548)

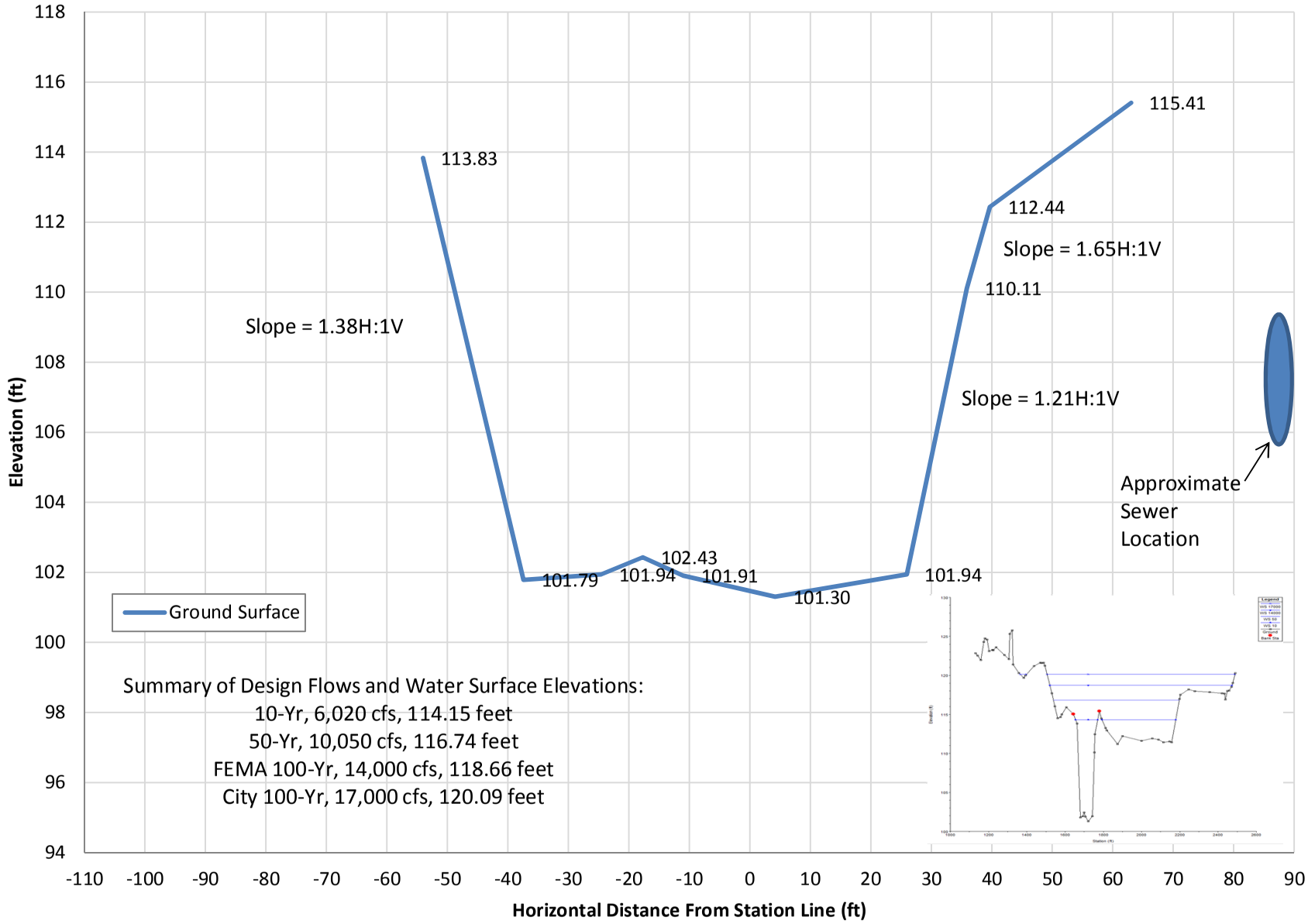


Figure 7. Cross Section 4 (at HEC RAS Station 66624)

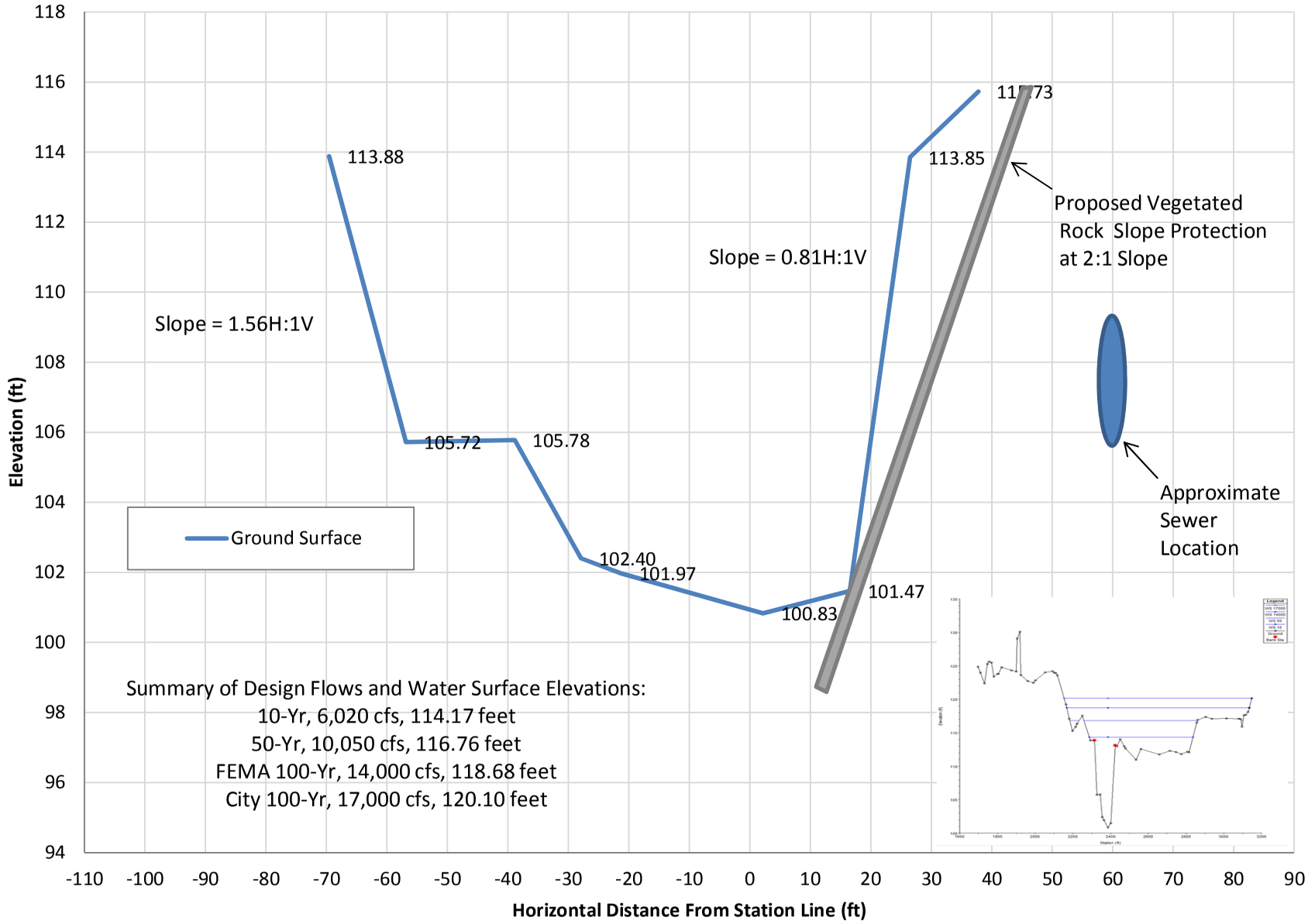


Figure 8. Cross Section 5 (at HEC RAS Station 66644)

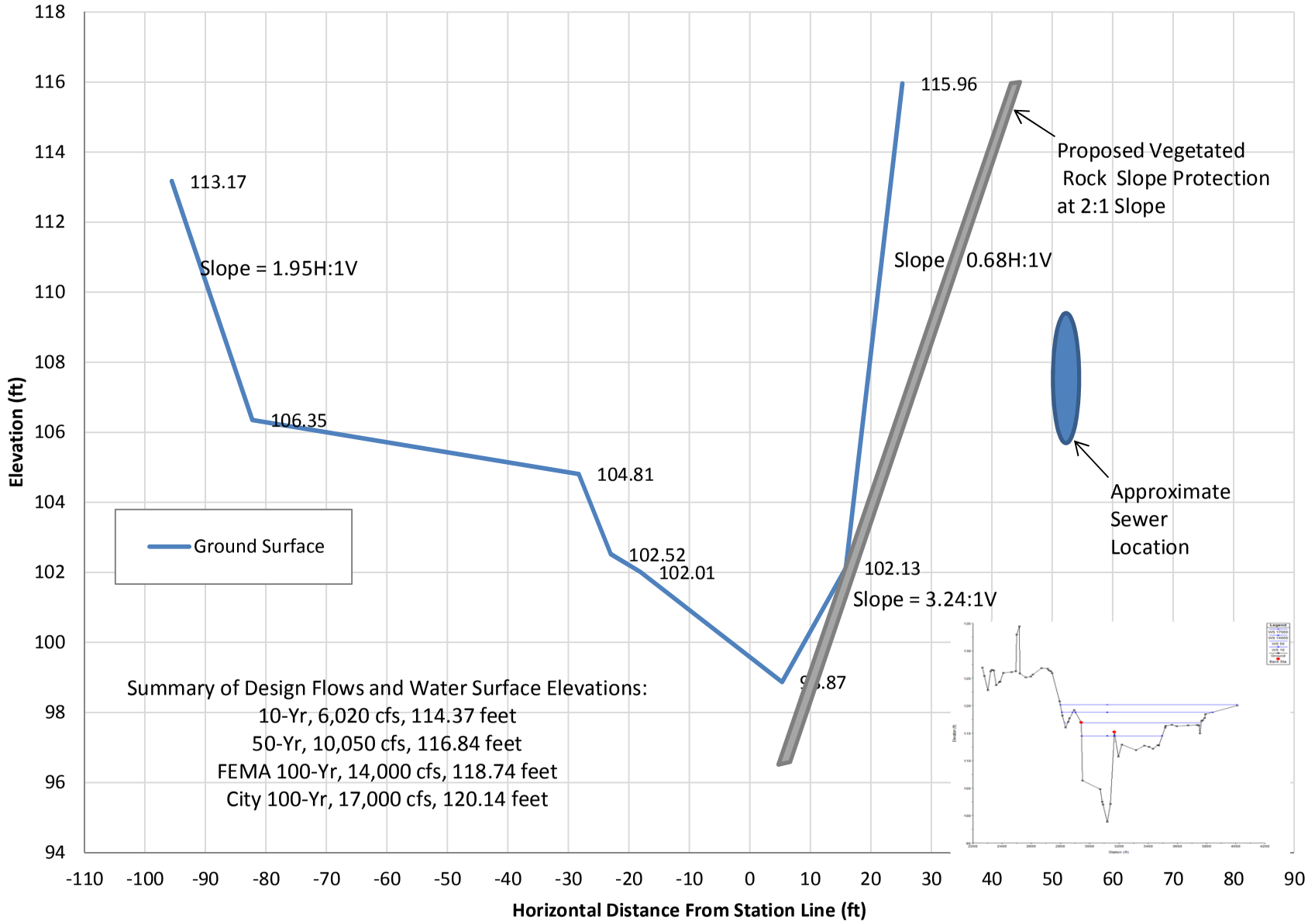


Figure 9. Cross Section 6 (Booth Road Site, at HEC RAS Station 66680)

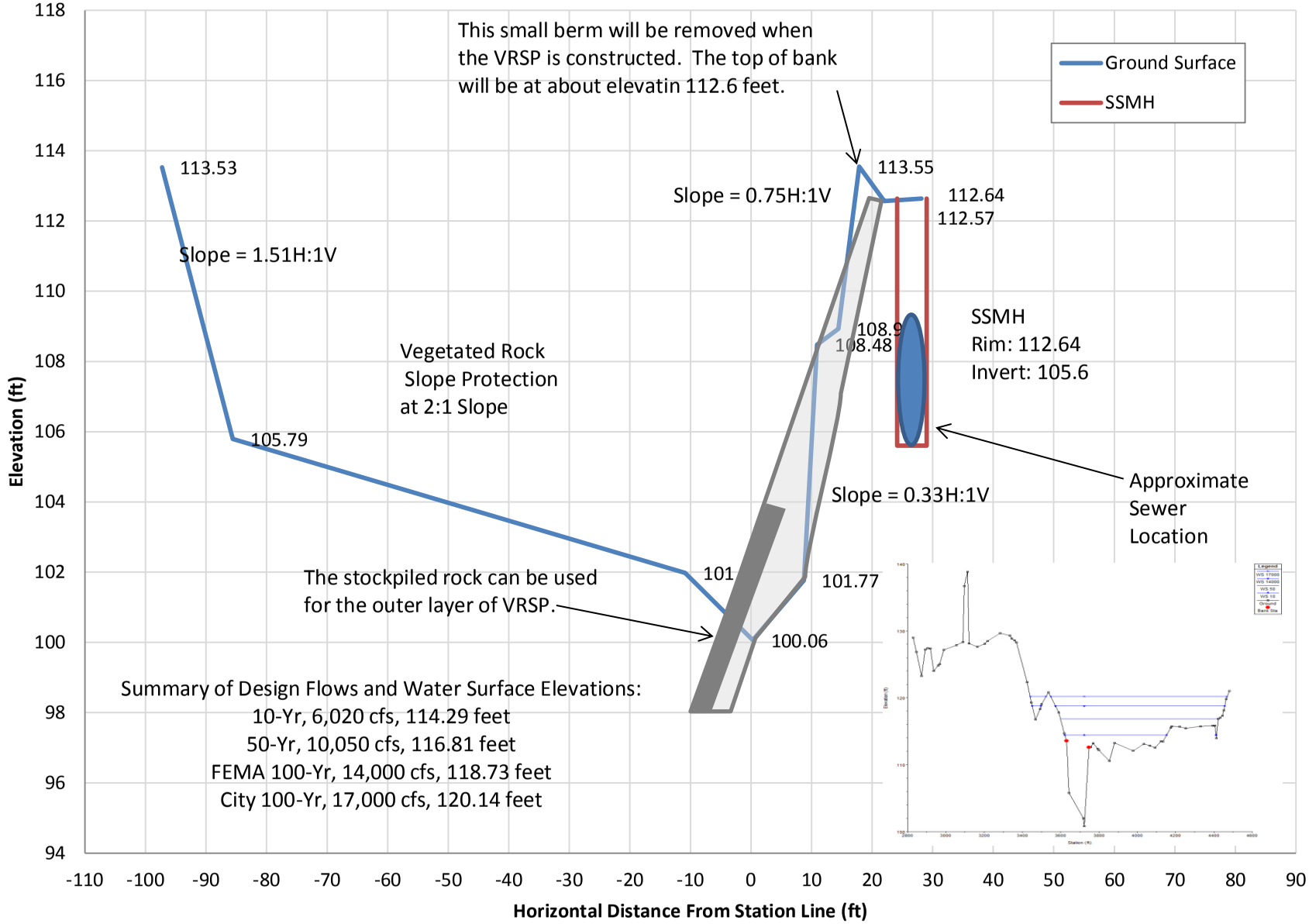


Figure 10. Surveyed Cross Section 7 (at HEC RAS Station 66740)

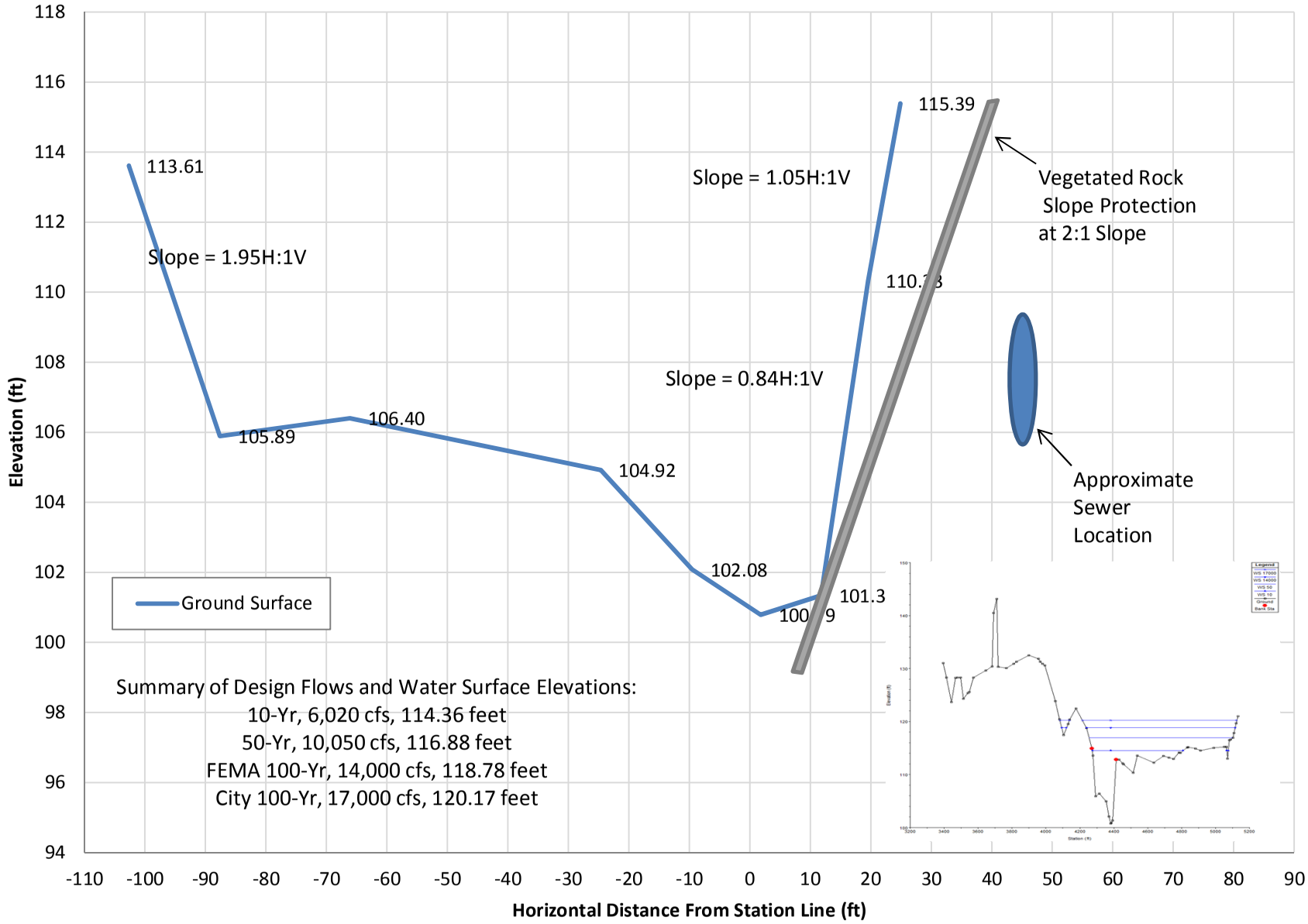


Figure 11. Cross Section 8 (at HEC RAS Station 66874.3)

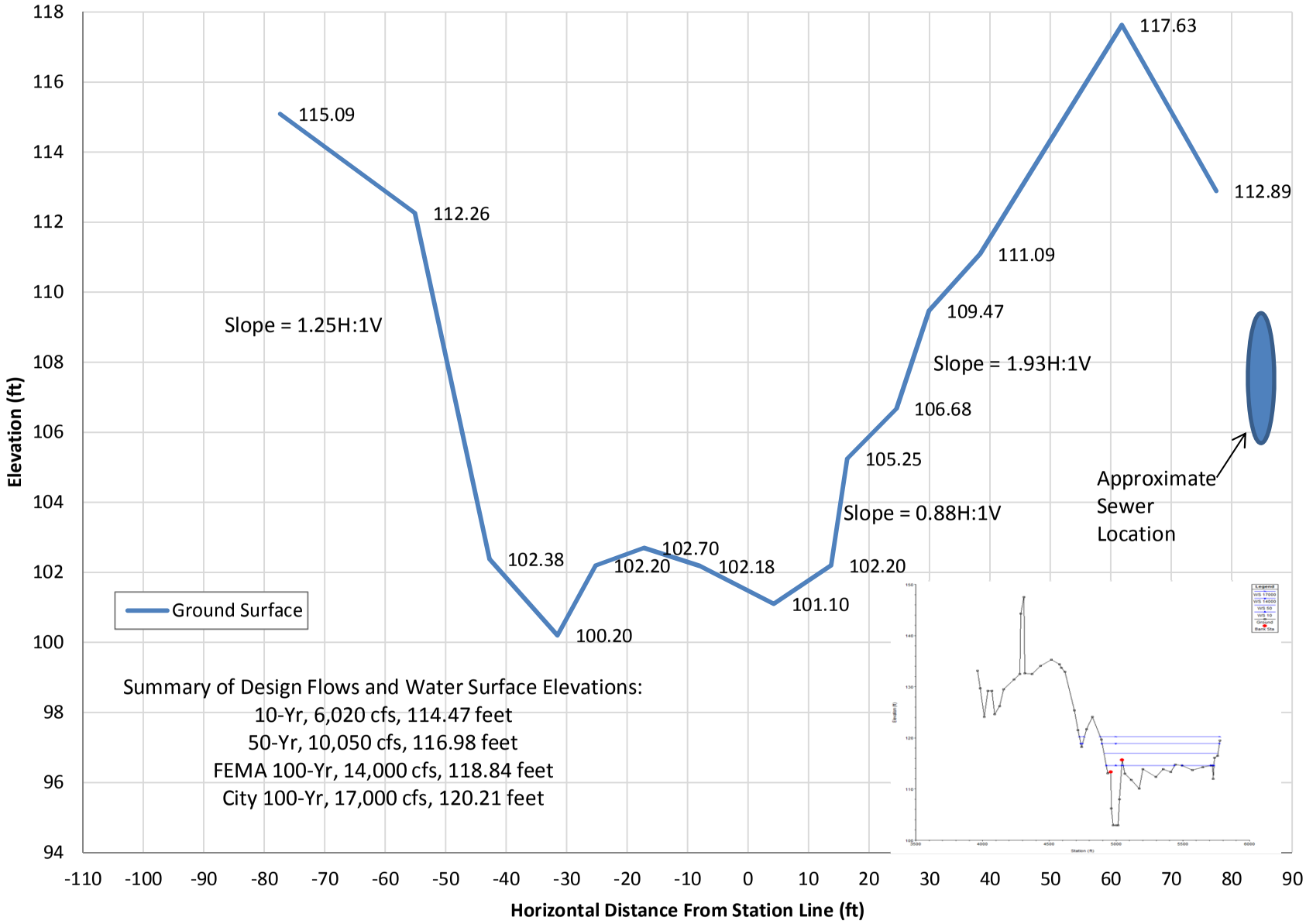
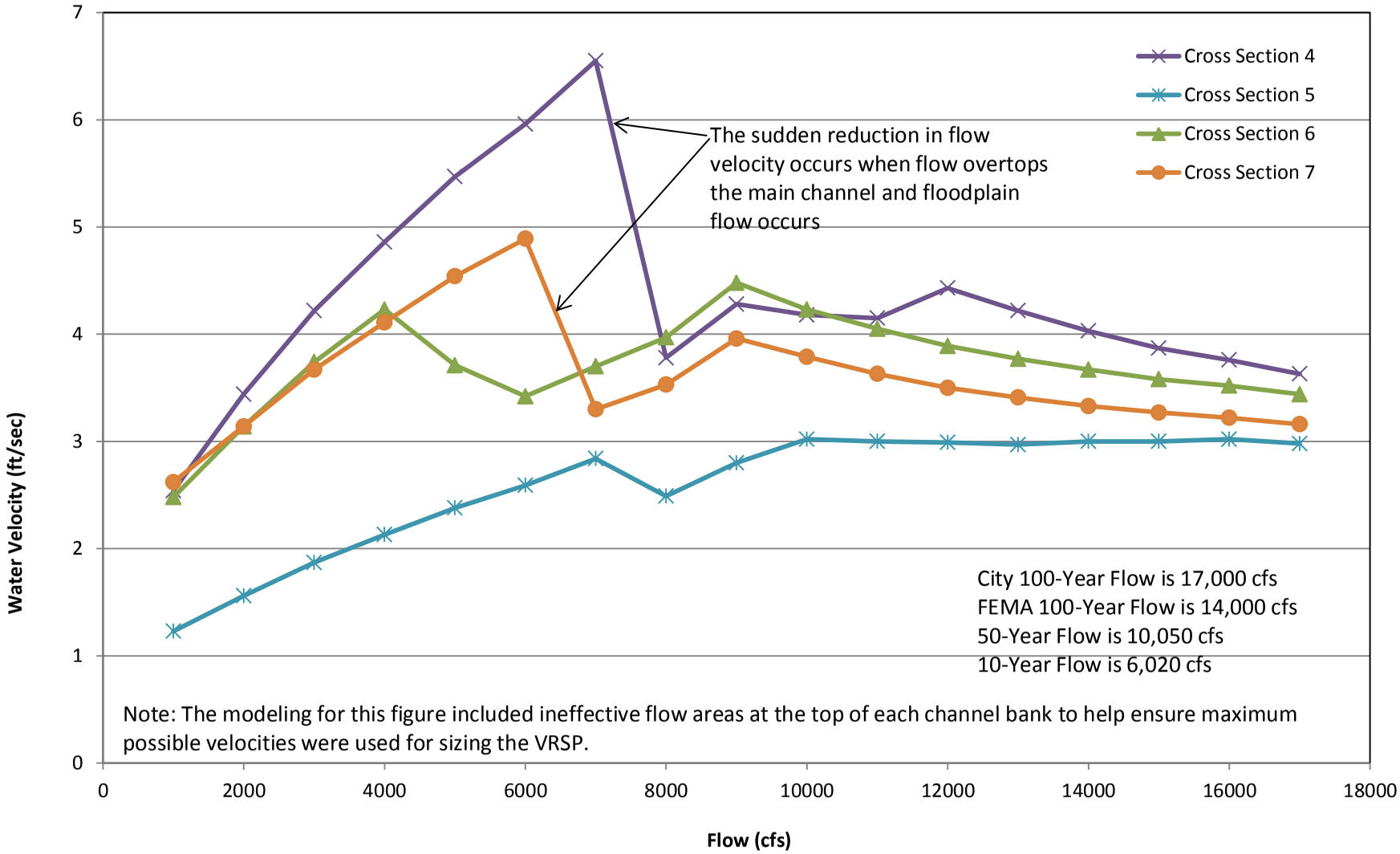


Figure 12. Velocity Versus Flow for the Cross Sections to Receive VRSP



ATTACHMENT 1

cbec Technical Memorandum

cbec eco engineering

Hydrology | Hydraulics | Geomorphology | Design | Field Services

TECHNICAL MEMORANDUM

Date:	8/27/13
To:	Doug Moore, WYA
From:	Melanie Carr, MS, PE; Reviewed by: Chris Campbell, MS, VP
Project:	11-1021 – Triangle Rock Weir Design
Subject:	**Dry Creek Trunk Sewer Bank Stabilization Project – Geomorphic Investigation**

The purpose of this technical memorandum (TM) is to provide a brief geomorphic investigation of Dry Creek in the vicinity of Dry Creek Wastewater Treatment Plant (WWTP) for the Dry Creek Trunk Sewer Bank Stabilization Project. Severe bank erosion has occurred near a trunk sewer line, and alternatives were discussed on how to protect the existing sewer line.

cbec , inc eco engineering (cbec) staff attended a site visit on 5/3/13, and performed a brief geomorphic investigation of Dry Creek from upstream of the Dry Creek WWTP discharge location to the Union Pacific Rail Yard. At this site visit, several alternatives were discussed that involved potential modifications to the creek and/or banks near the existing sewer line, which included:

- Flow Direction: Construct rock vanes in channel
- Ground (Slope) Covers: Place rip rap along the channel (which could require cutting back the bank to 2:1 slopes)
- Ground (Slope) Covers: Place Ercon mats
- Revetment: Construct gabions
- Revetment: Construct a Verdura Block Plantable Retaining Wall
- Revetment: Construct soldier piles and lagging along the bank (no need to cut back banks)
- Revetment: Install stone toe protection and willows
- Revetment: Install crib walls

This TM includes a brief background on biotechnical structures, the results for and recommendations from the brief geomorphic investigation and provides some example concept diagrams for feasible alternatives.

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Biotechnical Structures Background

Biotechnical erosion control measures are comprised of rock, soil, and live vegetation (shrubs or trees such a willow posts or poles) in various combinations to employ natural processes to provide erosion control and bank protection. Biotechnical erosion control measures provide bank stability, and ultimately provide visibly superior site aesthetics and often added riparian and ecological habitat value.

Biotechnical measures can be either resistive (measures that absorb creek energy) or redirective (measures that divert creek energy). Biotechnical erosion control measures include the following types of treatments:

- Flow Directing Structures
- Ground (Slope) Covers
- Revetments

Flow Directing Structures

Flow directing structures are used to influence creek, stream, or river flow. Examples of flow directing structures include:

- Transverse structures: spur dikes, vanes, bendway weirs, large woody debris, and stone weirs
- Longitudinal structures: longitudinal stone toe, coir fiber rolls, vegetated gabion baskets, live cribwalls, vegetated mechanically stabilized earth, live siltation, and live brush layering
- Channel planform measures: vegetated floodways and meander restoration

Ground Covers

Ground covers are used to provide bank stability through the use of their root systems, and to increase creek roughness. Ground covers include vegetation, live staking, willow posts and poles, live fascines, turf reinforcement mats, erosion control blankets, and geocellular containment systems.

Revetments

Revetments are used to absorb creek energy by recovering or armoring the bank with additional structure/support to absorb creek energy. Revetments include: rootwad revetments, live brush mattress, vegetated articulated concrete blocks, vegetated riprap, soil and grass covered rip rap, vegetated gabions, cobble or gravel armor, and

trench fill revetment. It is important to key in the biotechnical measure to reduce or eliminate undercutting or out-flanking during large storm events.

Brief Historical Context and Comparison and Rapid Geomorphic Assessment

Historical Context

Dry Creek begins at the junction of Antelope Creek and Miners Ravine, and flows southwest to Steelhead Creek (Natomas East Main Drainage Canal), about 2.3 miles southwest of Rio Linda (USGS, 1981). The Dry Creek watershed historically had a high sediment load from Pleistocene glaciations and more recently due to hydraulic mining in the mid to late 1800's (Swanson, 2003). The hydraulic mining era sediments, consisting of sand and silt, were deposited several feet thick on the natural floodplains. However, the sediment supply diminished more recently from urbanization. Beginning in the 1940's, urban development slowly began, but became more rapid by the 1970's. Urban development led to floodplain encroachment, channel modifications (i.e., straightening, bridges), levee construction, decreased sediment supply, and increased flows. Consequently, the creek's natural morphology has been constricted by these anthropogenic pressures and has resulted in significant channel incision, where channel forming flows are largely contained within the creek corridor. In addition, the creek still seeks to reestablish a natural meander pattern within its straighter morphology under its current hydrologic and sediment regime, which has sometimes resulted in the potential to compromise existing infrastructure.

Cross Section Comparison

Surveyed cross sections from 2008 were compared with cross sections from May 2013 to determine recent erosion or deposition trends. Unfortunately, due to budget constraints, only one overlapping cross section was resurveyed for comparison purposes. We based our assessment on extremely limited information, as creek characteristics could vary widely along the creek. A comparison of the cross section immediately downstream of the point of interest showed that neither appreciable degradation (erosion) nor aggradation (deposition) occurred at this cross section; elevations at similar locations were the same over the past five years.

Rapid Geomorphic Assessment

A Rapid Geomorphic Assessment was conducted on May 3, 2012 for the 0.6 mile reach of Dry Creek bounded by the WWTP upstream to the Union Pacific Rail Yard. For the 0.36 mile subreach between the WWTP and Atkinson St / SPRR, cbec staff observed that the creek is attempting to meander within its incised and confined channel corridor noted by alternating bank erosion, inset terraces colonized with riparian vegetation, and large bar deposits of sand and coarse gravel. Some of these bars have become vegetated islands that are subsequently experiencing erosion. The eroding banks are

relatively sandy, nearly vertical, and likely composed of erodible hydraulic mining sediments from the mid to late 1800's.

Point of Interest (POI#1) is a large area of bank scour/erosion located on the right bank near the trunk sewer line. At POI#1, the eroding right bank is bounded by geologic and natural vegetative controls and subjected to natural erosive forces as the creek attempts to reestablish a meander pattern under its current hydrologic and sediment regime. Upstream of POI #1, the left bank has been eroded, exposing hardened geologic material in the lower half of the bank, which will continue to deflect flows to the downstream right bank at POI #1. Opposite the exposed geologic control, the right bank terrace is well vegetated. Just downstream of the geologic control, there is a large, stable cottonwood at the downstream end of the right bank terrace. Directly opposite on the left bank, there is a large, stable oak at the head of the vegetated left bank terrace. Immediately downstream of POI #1, there is a large cottonwood at the head of the right bank terrace that is at risk for undermining if the right bank erosion is not controlled or stabilized. In addition to the eroding right bank at POI#1 being in close proximity to the existing sewer line, the sewer line also appears to be within the drip line of this large cottonwood, and if undermined, could pose a hazard to a longer section of sewer line. It is recommended that biotechnical measures (discussed below) be applied to stabilize the right bank from natural erosive forces, which should be keyed into the downstream right bank terrace to minimize the undermining of the large cottonwood.

Modeling Sensitivity Analysis

cbec was provided a 2008 existing conditions one-dimensional HEC-RAS hydrodynamic model that included the subject reach for Dry Creek. An additional five cross sections were added to the model at POI#1 to determine potential effects, if any, that bank protection alternatives might have on local upstream or downstream cross sections. Modeled velocity output in the area of interest was approximately 4 feet per second (fps).

A brief sensitivity analysis was performed at the cross section of main interest. Scenarios were reviewed with extensive creek encroachment and inserting a 2:1 layback bank for erosion protection. Sensitivity output is attached.

Results from this sensitivity analysis conclude that encroachment into the creek of up to 40 feet and a slope of 2:1 did not have measureable effects on upstream water surface elevations (WSE) and velocity at 10-year flood flows, and minimal effects on downstream conditions. No difference was discernable for the 100-year event. Therefore, adding in-creek revetment with a layback slope of 2:1 would likely provide adequate protection and not likely cause issues for other areas.

Recommendations

Based on our brief geomorphic assessment and limited knowledge from our planning level model, we have determined that the following alternatives are feasible:

- Vegetated Rip Rap
- Vegetated Gabions
- Rock Vane Weirs
- Longitudinal Stone Toe Protection with Live Siltation

Concept diagrams for these alternatives are attached. Alternatives are discussed further below. Table 1 provides a table of the velocities and shear stresses that are typically acceptable for various bank stabilization methods (USACE, 2001).

Table 1. Acceptable Velocities and Shear Stresses for Biotechnical Stabilization Methods (values obtained from USACE, 2001)

Category	Boundary Type	Permissible Velocity (fps)	Permissible Shear Stress (lb/sq ft)
Gravel/Cobble	6-inch	4 – 7.5	2.0
	12-inch	5.5 - 12	4.0
Riprap	6-inch d50	5 – 10	2.5
	9-inch d50	7 – 11	3.8
	12-inch d50	10 – 13	5.1
	18-inch d50	12 – 16	7.6
	24-inch d50	14 - 18	10.1
Soil Bioengineering	Coir Roll	8	3 – 5
	Vegetated Coir Mat	9.5	4 – 8
	Brush layering (initial / grown)	12	0.4 – 6.25
	Live Willow Stakes	3 - 10	2.10 – 3.10

Estimated sizing for revetment material is approximately 6-inch d50 to 12-inch d50 for riprap and 24-inch d50 for LTSP and rock vane weirs.

Vegetated Rip Rap

Vegetated (and non-vegetated) Rock Slope Protection consists of placing angular rock along a laid-back slope of approximately 2H:1V slope where the bank is eroded. See attached concept diagram. The rock and slope can also be vegetated, which is recommended in this case due to the sandy nature of the bank. Based on the velocities

of approximately 4 feet per second at this site, a size of 6-inch d50 to 12-inch d50 is appropriate.

Vegetated riprap is the least expensive alterative. However, this alternative would likely require channel encroachment to accommodate revetment placement for bank material that has eroded. The proposed revetment would be placed at approximately a 2:1 slope, with excavation as minimal as possible. One-dimensional hydrodynamic modeling confirmed that a 2:1 slope and in-creek encroachment of 40 feet (if needed) would result in little, if any, nearby increases in water surface elevations or velocity for the 10 and 100-yr storm events.

As a note, recent recommendations from regulatory agencies have indicated that vegetated alternatives are preferred to rock only alternatives. Including vegetation in a design increases the cost slightly, but has the advantage of being more palatable to permitting agencies.

Vegetated Gabions

Vegetated (and non-vegetated) gabions consist of wired baskets of rock that can be stacked almost vertically to provide bank protection at steep slopes in areas with high channel velocities. Gabions do not require a laid-back 2:1 slope. However, the gabions can be constructed in a stair-step fashion on a 1.5 or 2:1 slope to provide additional slope stability, which is recommended at this location.

This alternative is the most robust of the feasible alternatives, and will likely provide the greatest amount of bank protection. However, it is more expensive than a riprap alternative.

As a note, recent recommendations from regulatory agencies have indicated that vegetated alternatives are preferred to rock only alternatives. Including vegetation in a design increases the cost slightly, but has the advantage of being more palatable to permitting agencies.

Rock Vane Weirs

This alternative consists of redirecting flow from existing eroded bank by designing and constructing rock vane weirs in the existing creek to facilitate thalweg redirection. See attached Concept Diagram. Rock vane weirs are similar in cost to the Longitudinal Stone Toe Protection, but would require additional hydrodynamic modeling to design and extensive work in the existing creek. Rock weirs could potentially displace erosion to the opposite bank or other sites upstream or downstream of the site, and in large storms it may not provide sufficient redirection of flow to protect the sewer. For these reasons, this alternative is not discussed further.

Longitudinal Stone Toe Protection and Willow Planting

Longitudinal Stone Toe Protection (LTSP) and Willow Planting (Live Siltation) consists of lining the toe of the slope with larger rocks (24-inch d50) to prevent undercutting of bank and bank stability, which is evident along the creek. See attached concept diagrams. This alternative can function as a low terrace, with the quickly establishing willows that increase bank roughness to promote siltation. Self-sacrificing rock (additional rock) can be added as a feature to address potential future scouring. A slope layback is not required with this alternative, but could ultimately enhance pipe protection if included.

This alternative is more expensive than a riprap alternative, but less expensive than gabions. LSTP requires in-creek work, as the LTSP needs to be keyed into the bank upstream and downstream. Additionally slope protection (ex veg. rip rap) can be installed upslope from the LTSP. As a note, recent recommendations from regulatory agencies have indicated that vegetated alternatives are preferred to rock only alternatives. Including vegetation in a design increases the cost slightly, but has the advantage of being more palatable to permitting agencies.

Table 2 provides a summary of the alternatives.

Table 2. Summary of Feasible Bank Protection Alternatives

Parameter>> Alternative	Expense	Mimics Natural Creek Process	Overall Protection Level	Vegetation Component for Regulatory Approval
Vegetated Riprap	Least Expensive	No	Moderate	Yes
Vegetated Gabions	Most Expensive	No	High	Yes
Rock Vane Weirs	Most Expensive	No	Moderate	No
LSTP with Live Siltation	Moderately Expensive	Yes	Moderate	Yes

VRSP or LSTP with Live Siltation and upslope vegetated riprap are preferred due to their moderate cost and overall level of protection.

References

ESenSS, Environmentally-Sensitive Streambank Stabilization, Salix Applied Earthcare 2009.

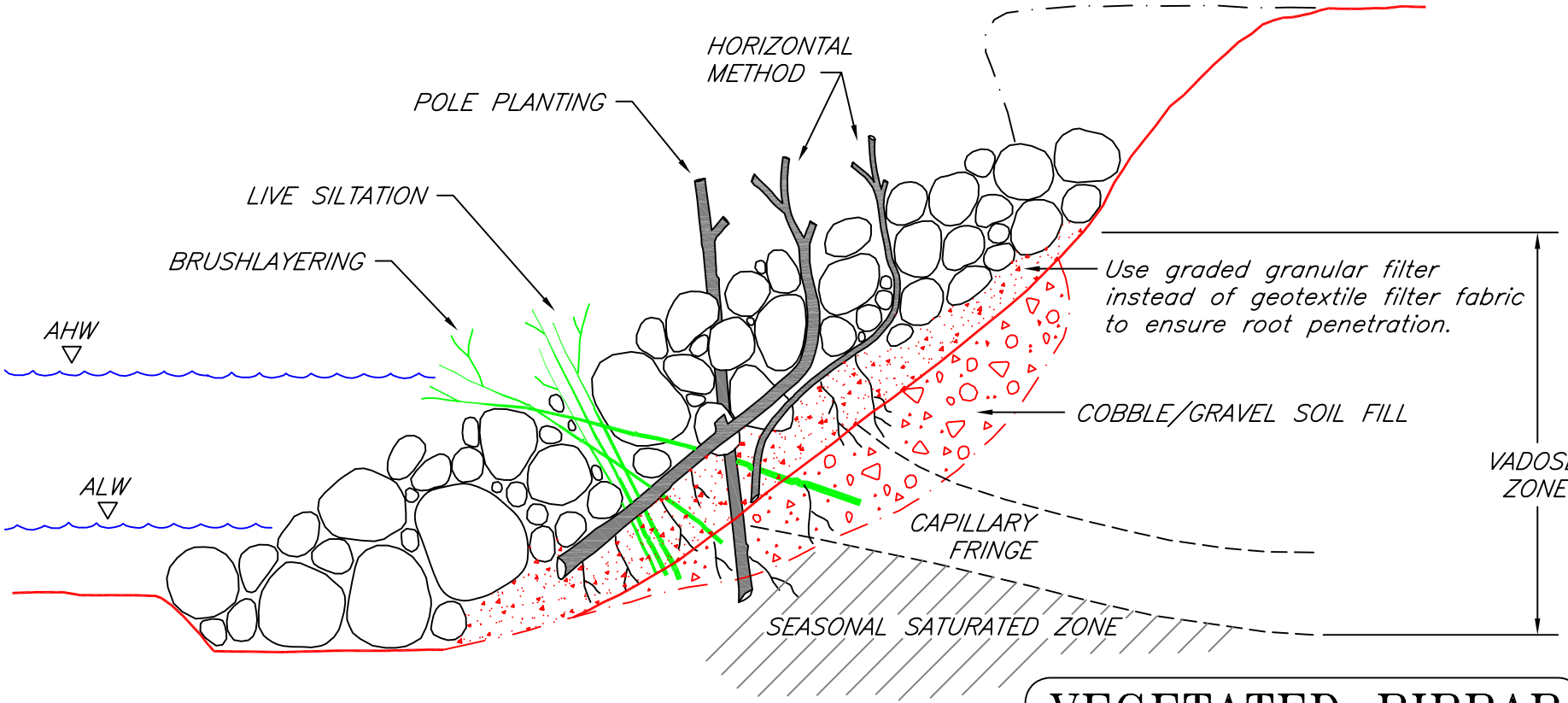
Swanson Hydrology and Geomorphology. 2003. Dry Creek Bank Erosion Management Plan. Roseville, CA. Prepared for Restoration Resources

United States Army Corps of Engineers. 2001. Engineering Research and Development Center. Ecosystem Management & Restoration Research Program. SR-29. Stability Thresholds for Stream Restoration Materials. May.

U.S. Geological Survey Geographic Names Information System: Dry Creek, 1981.

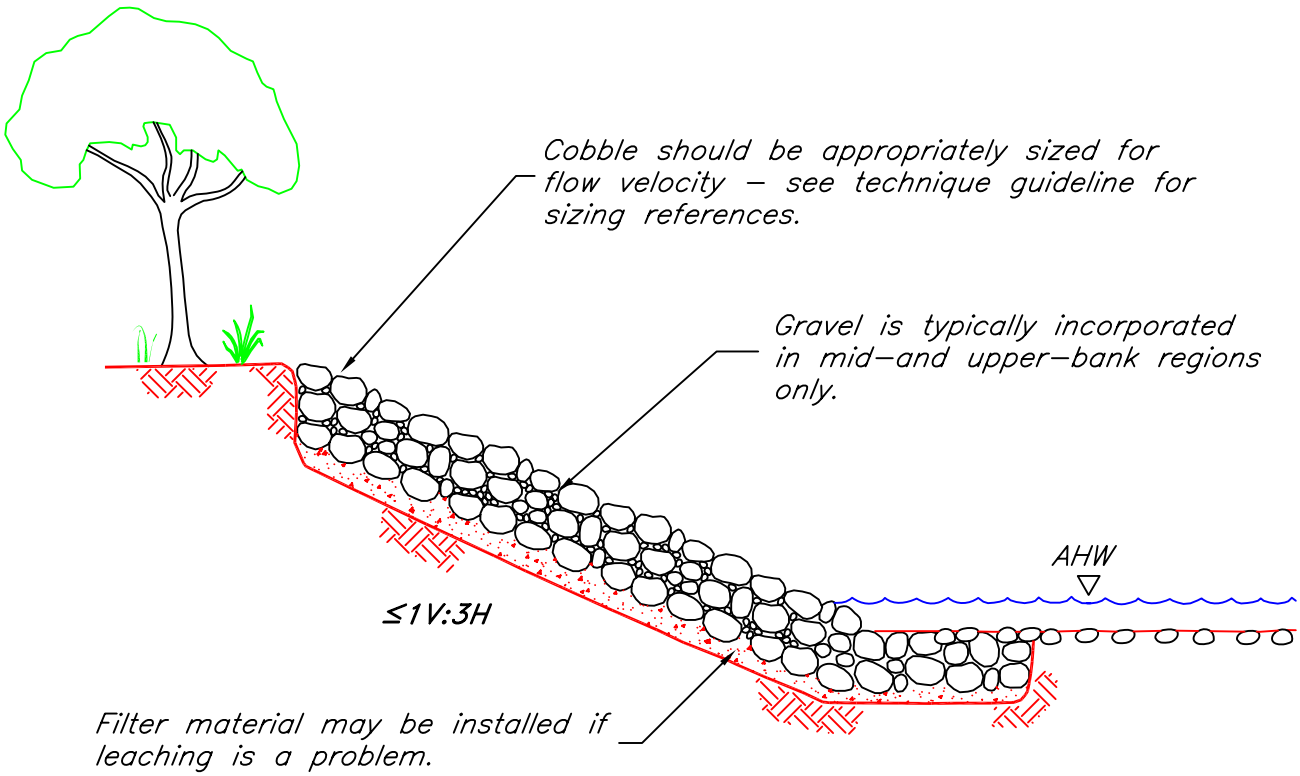
NOTES:

1. Integrate brushlayering, pole planting and live siltation techniques during rock placement to ensure contact with native ground.
2. Plant deeply if possible. Place cuttings deeply into vadose zone, into the capillary fringe or 15 cm (6") into the seasonal saturated zone (water table).
3. Graded, granular filter is preferable to filter fabric to improve root penetration or slip poles through slits cut into fabric.
4. Place soil fill (cobbles, gravel, soil) around cuttings and 'water in' if possible.
5. Place riprap carefully, do not end dump. Some damage to brush layers and willow poles is unavoidable and acceptable. Deeply planted willow material will regenerate.



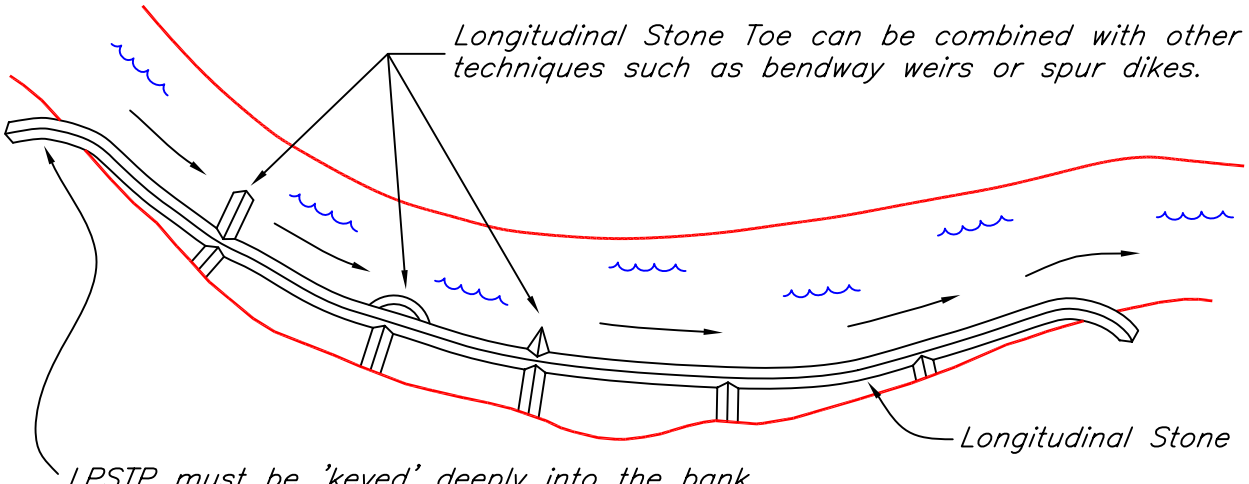
VEGETATED RIPRAP
DURING CONSTRUCTION
SUMMARY OF TECHNIQUES

FILE: VRDC

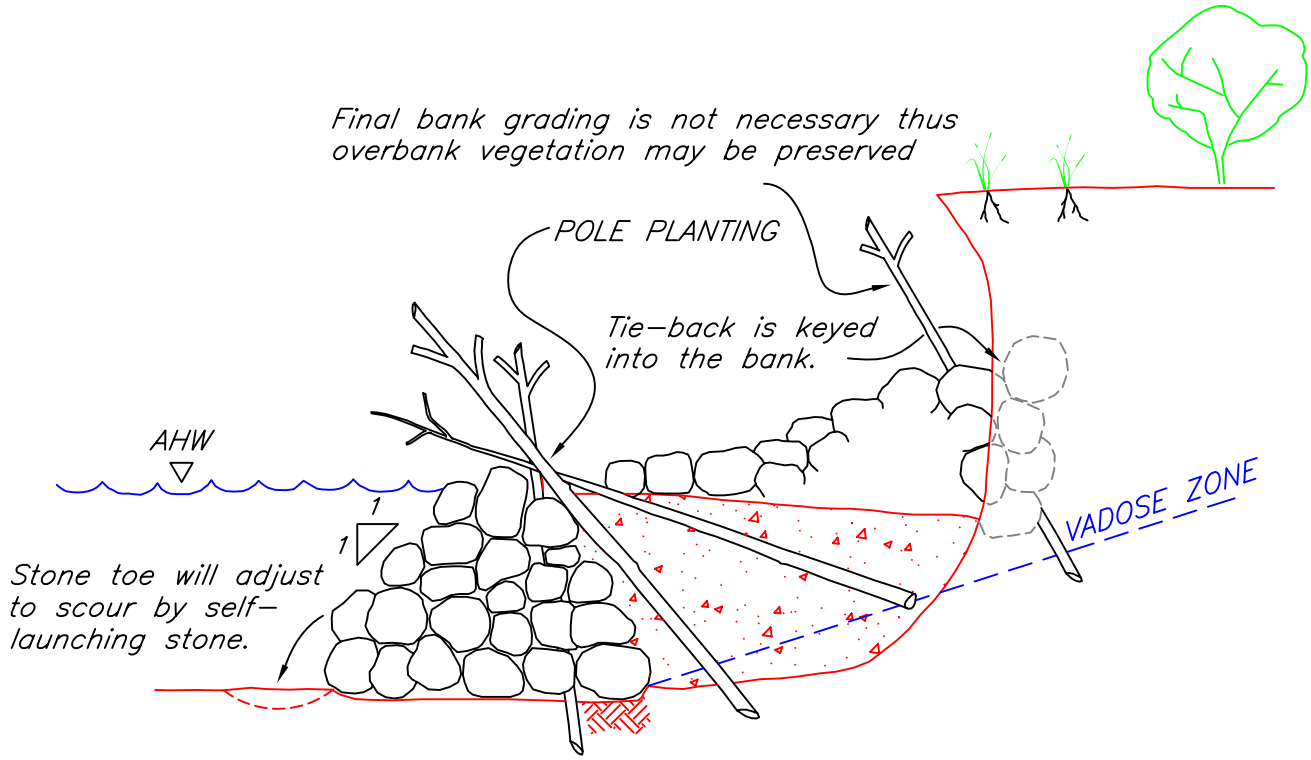


COBBLE OR GRAVEL ARMOR

FILE: CGA



TYPICAL LPSTP CONTINUOUS BANK PROTECTION

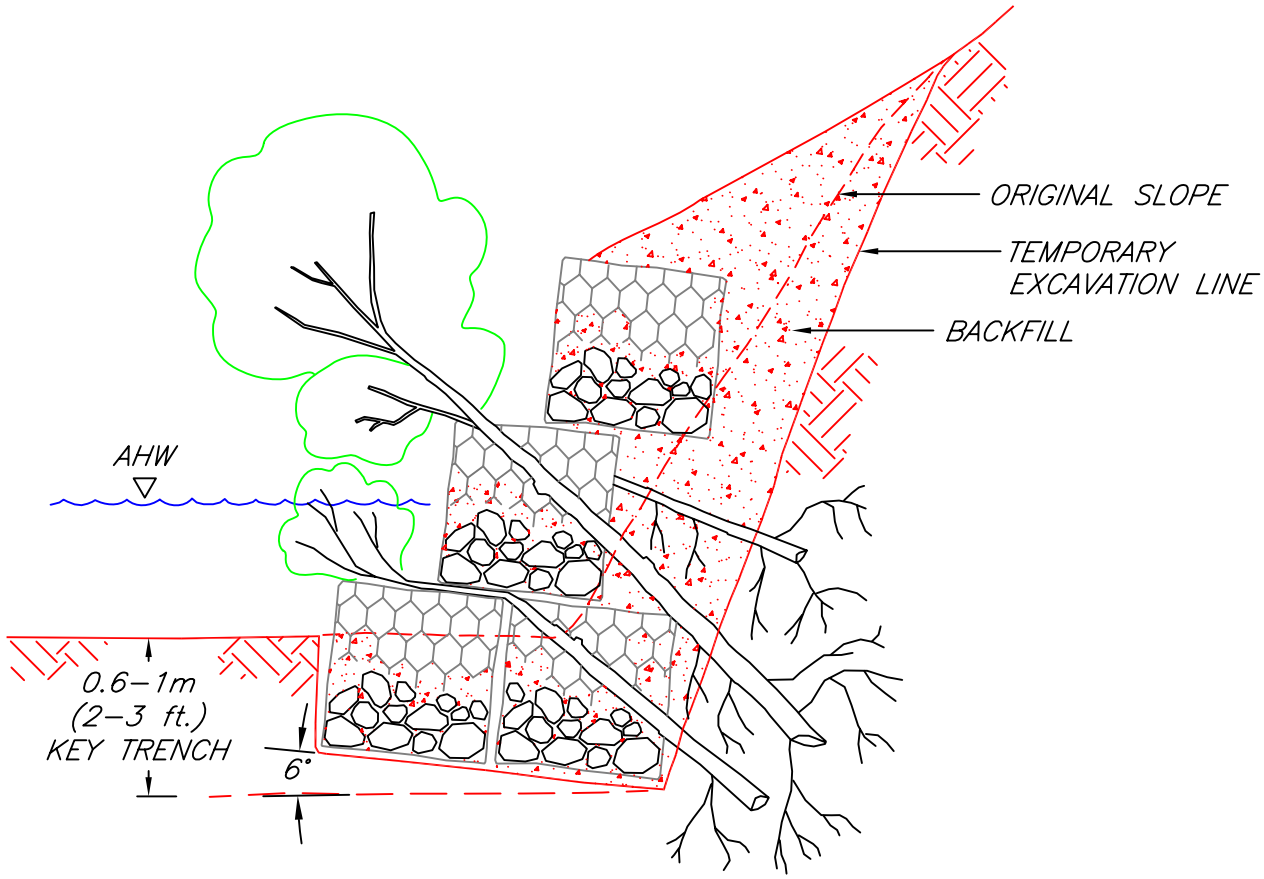


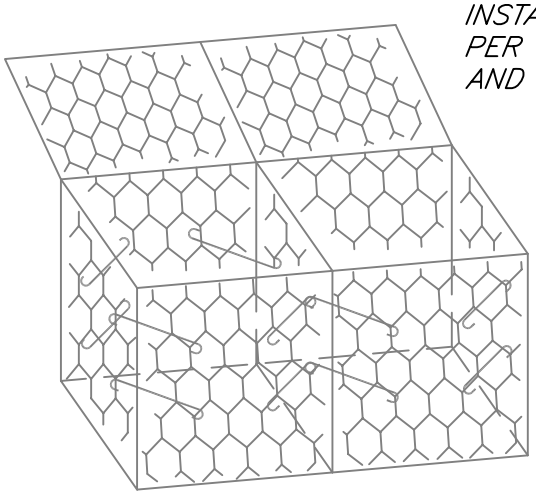
NOTES:

1. Longitudinal stone toe is a good choice when continuous bank protection is needed for the toe, but the mid and upper banks are relatively stable and/or biotechnical practices are suitable.
2. The success of Longitudinal Stone Toe depends on the ability of the well–graded stone to self adjust or "launch" into any scour holes formed on the stream side of the stone toe.

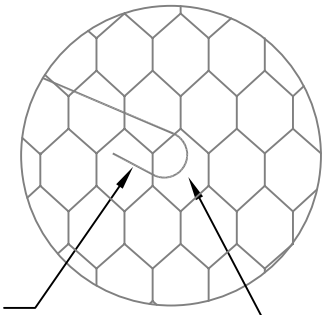
LONGITUDINAL STONE TOE

FILE: LST





INSTALL 4 STIFFENERS PER EXPOSED FACE, AND 2 PER BACK FACE

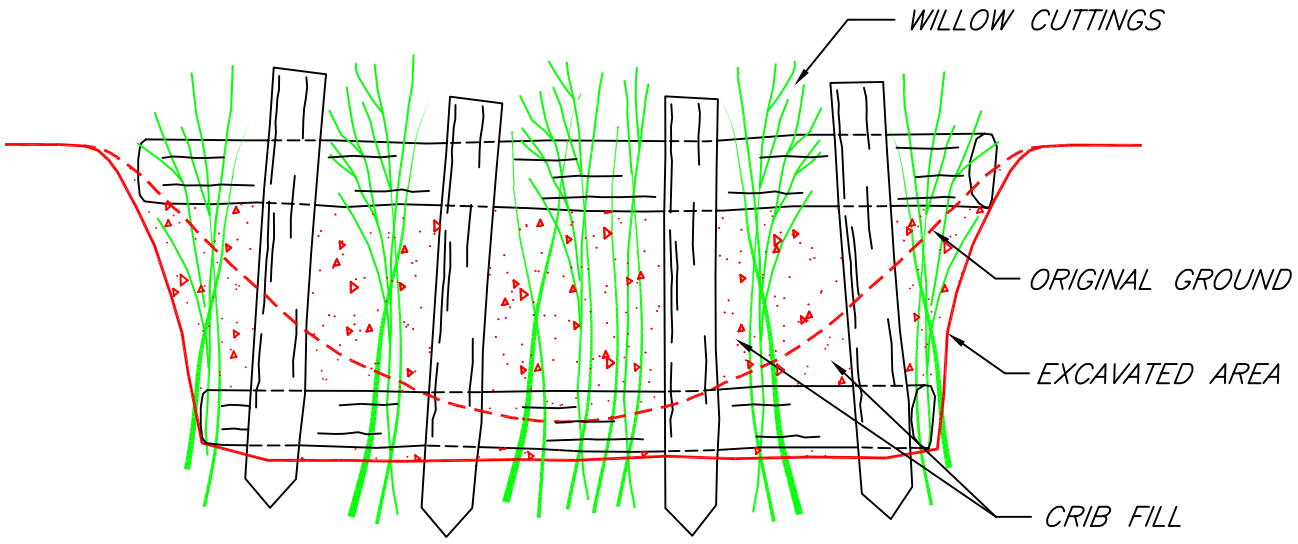


9 GA STIFFENER HOOKED AT THE INTERSECTION OF TWO WIRES

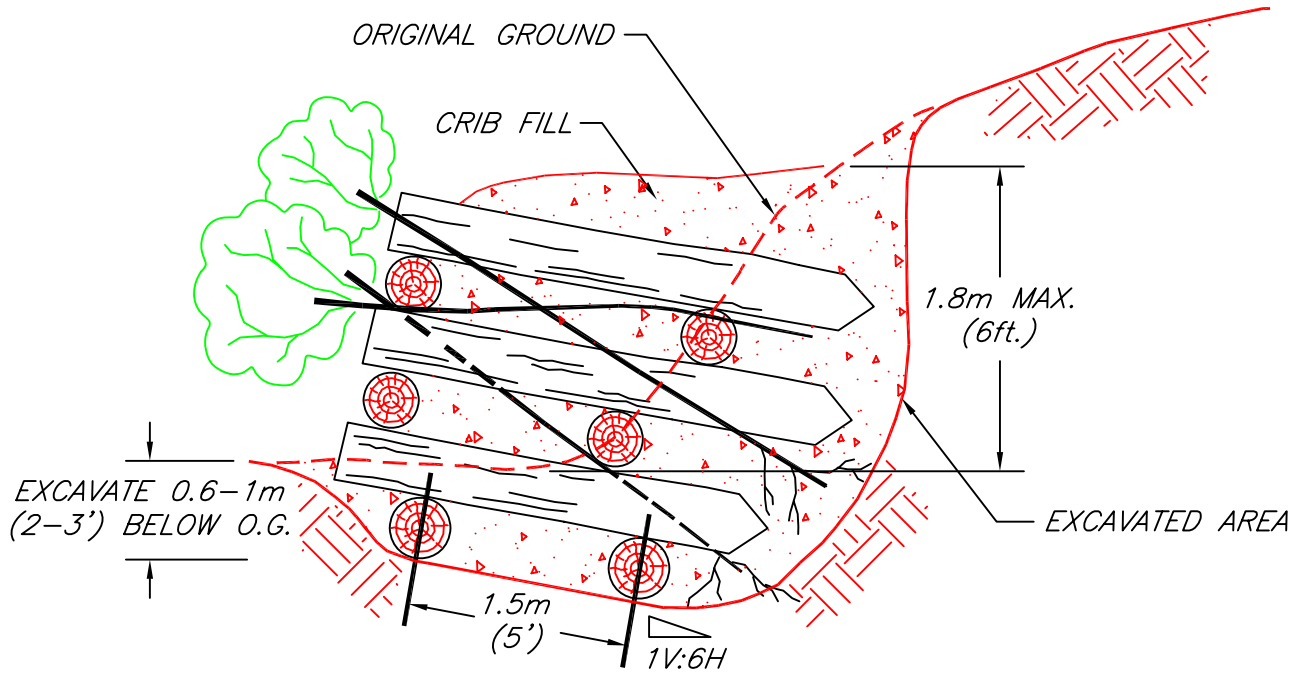
CRIMP HOOK CLOSED

VEGETATED GABION BASKETS

FILE: VGGAB



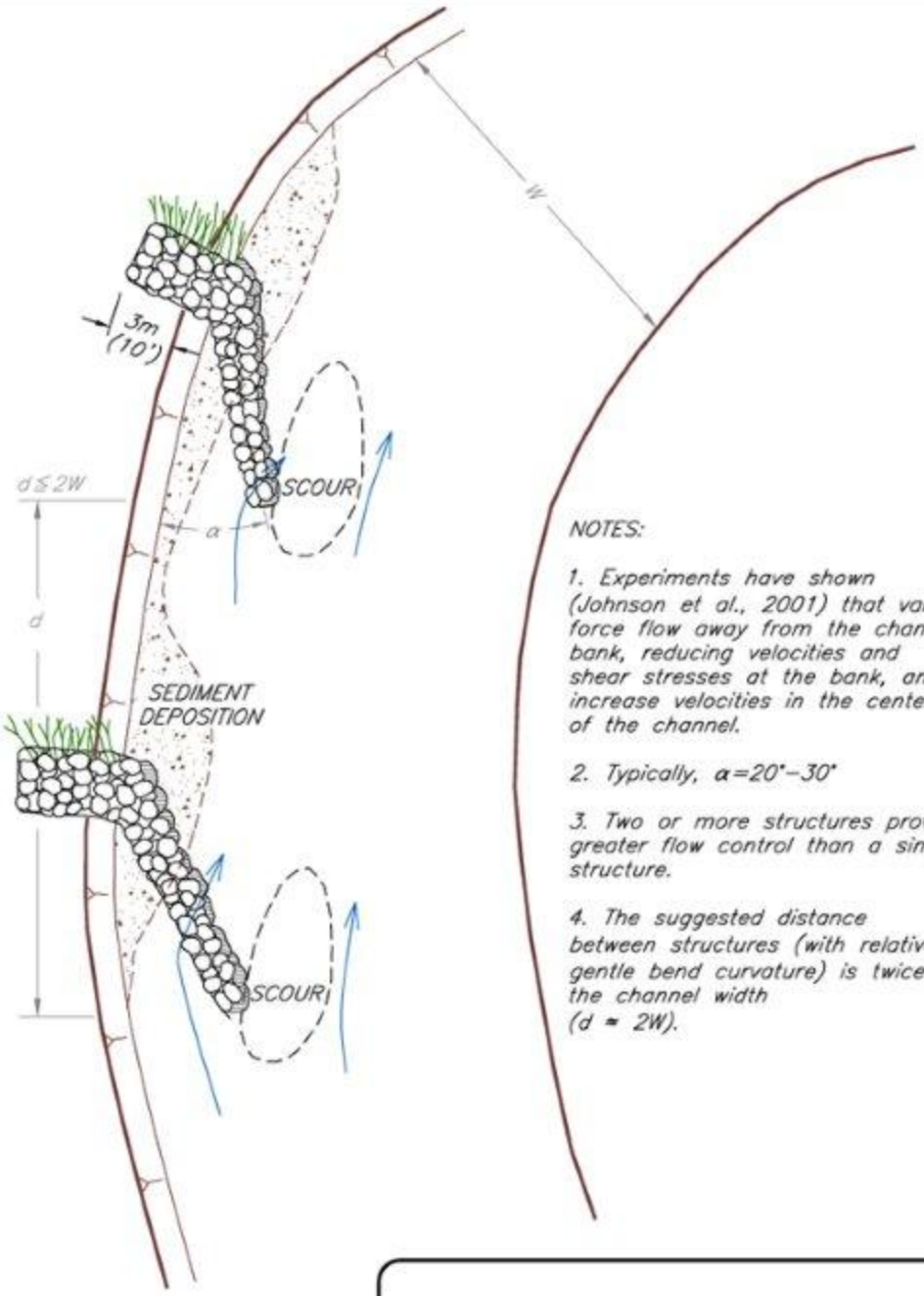
PLAN VIEW AFTER INSTALLATION OF FIRST RANK OF LOGS



CROSS–SECTION

LIVE CRIB WALL

FILE: LVCRIB



NOTES:

1. Experiments have shown (Johnson et al., 2001) that vanes force flow away from the channel bank, reducing velocities and shear stresses at the bank, and increase velocities in the center of the channel.

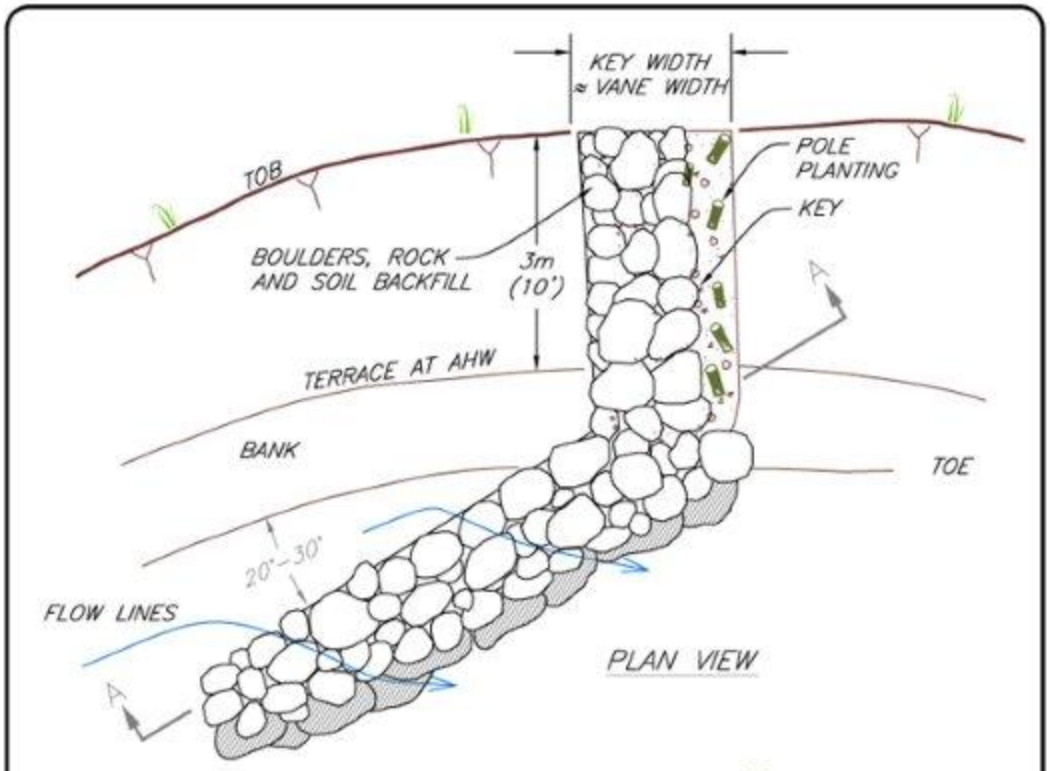
2. Typically, $\alpha = 20° - 30°$

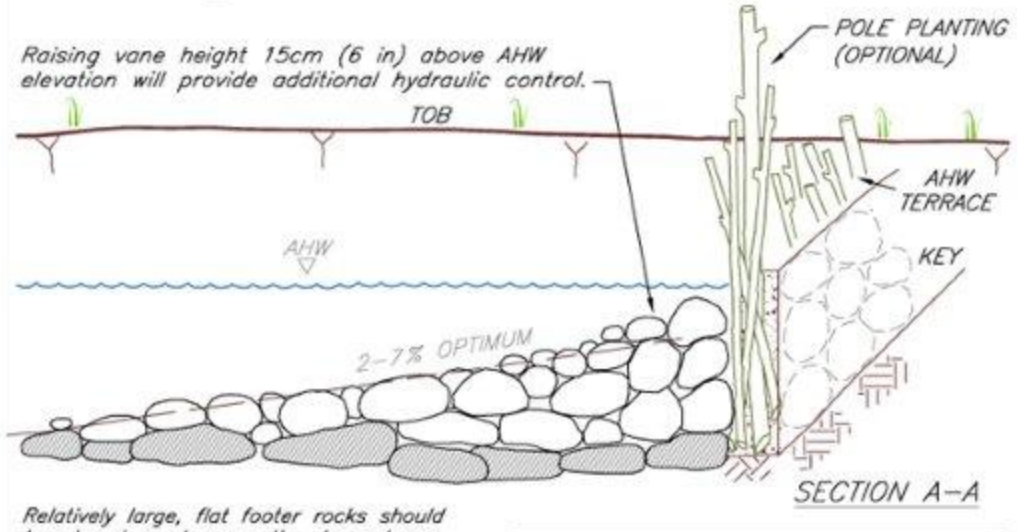
3. Two or more structures provide greater flow control than a single structure.

4. The suggested distance between structures (with relatively gentle bend curvature) is twice the channel width ($d \approx 2W$).

TYPICAL VANE

FILE: VANE





Relatively large, flat footer rocks should be placed as deep as the deepest anticipated scour along the thalweg, or 2 vane rock diameters below the vane rocks, whichever is greater. Inordinate scour can be mitigated by placing a stone or geotextile under layment, or by using self-launching (graded) stone.

TYPICAL VANE BANK KEY DETAIL
(WITH POLE PLANTING)

FILE: VANEKY

Appendix B — Mitigation Monitoring and Reporting Program

Dry Creek Trunk Sewer Bank Stabilization Project Mitigation Monitoring and Reporting Program

Mitigation Measure/Compliance Standard	Implementing Responsibility	Monitoring Responsibility for Implementing Measure	Timing*	Verification of Compliance (Initials/Date)
Mitigation Measure CR — 1 (Previously Unidentified Cultural Resources) The City shall ensure construction specifications include the following information in the grading notes: a) Construction shall stop if potential cultural resources are encountered. It is possible that previous activities have obscured surface evidence of cultural resources. If signs of an archeological site, such as any unusual amounts of stone, bone, or shell, are uncovered during grading or other construction activities, work shall be halted within 100 feet of the find and the Roseville City Manager's Office shall be notified. A Qualified Archeologist shall be consulted for an on-site evaluation. If the site is or appears to be eligible for listing in state or federal registers, additional mitigation, such as further testing for evaluation or data recovery, may be necessary. b) In the event resources are discovered, the City shall request a Qualified Archaeologist assess the find, and determine whether the resource requires further study. Any previously undiscovered resources found during construction should be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and evaluated for significance under all applicable regulatory criteria. c) No further grading shall occur in the area of the discovery until the City approves the measures to protect the resources. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study.	City and Contractor	City	Plan check and during construction	

Mitigation Measure/Compliance Standard	Implementing Responsibility	Monitoring Responsibility for Implementing Measure	Timing*	Verification of Compliance (Initials/Date)
Mitigation Measure CR — 2 (Previously Unidentified Paleontological Resources) The City shall ensure construction specifications shall include the following information in the grading notes: a) If substantial fossil remains (particularly vertebrate remains) are discovered during earth-disturbing activities on the project site, activities will stop immediately until a state-registered Professional Geologist or Qualified Professional Paleontologist can assess the nature and importance of the find and a Qualified Professional Paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The City will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.	City and Contractor	City	Plan check and during construction	
Mitigation Measure CR — 3 (Inadvertent Discovery of Human Remains) The City shall ensure construction specifications include the following in the grading notes: If human remains are discovered during any phase of construction, including disarticulated or cremated remains, the construction contractor shall immediately cease all ground-disturbing activities within 100 feet of the remains and notify Mark Morse, Environmental Coordinator, City of Roseville City Manager's Office. a) In accordance with California State Health and Safety Code Section 7050.5, no further disturbance shall occur until the following steps have been completed:	City and Contractor	City	Plan check and during construction	

Mitigation Measure/Compliance Standard	Implementing Responsibility	Monitoring Responsibility for Implementing Measure	Timing*	Verification of Compliance (Initials/Date)
• The County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code (PRC) § 5097.98. • If the remains are determined by the County Coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. It is further recommended that a professional archaeologist with Native American burial experience conduct a field investigation of the specific site and consult with the Most Likely Descendant (MLD), if any, identified by the NAHC. As necessary and appropriate, a professional archaeologist may provide technical assistance to the MLD, including but not limited to, the excavation and removal of the human remains.				

* Timing is defined as follows:

Plan Check/Prior to Construction: The mitigation activity consists of ensuring that a particular mitigation action has taken place prior to the beginning or any construction or grading and/or at the plan check stage.

During Construction: The mitigation activity consists of active monitoring while grading or construction is occurring on the project site.

Appendix C — Road Construction Emissions Model, March 2014

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Dry Creek Bank Erosion Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.7	9.5	16.4	1.9	0.8	1.2	0.9	0.7	0.2	1,703.4
Grading/Excavation	2.3	14.6	28.0	2.4	1.3	1.2	1.3	1.1	0.2	3,918.7
Drainage/Utilities/Sub-Grade	7.9	36.8	74.6	5.3	4.1	1.2	4.0	3.8	0.2	7,063.2
Paving	3.4	16.8	28.5	1.9	1.9	-	1.8	1.8	-	2,971.7
Maximum (pounds/day)	7.9	36.8	74.6	5.3	4.1	1.2	4.0	3.8	0.2	7,063.2
Total (tons/construction project)	0.1	0.5	1.0	0.1	0.1	0.0	0.1	0.0	0.0	102.4

Notes:

Project Start Year ->	2014
Project Length (months) ->	2
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Total Soil Imported/Exported (yd^3/day)->	1150

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Dry Creek Bank Erosion Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.8	4.3	7.5	0.9	0.3	0.5	0.4	0.3	0.1	774.3
Grading/Excavation	1.1	6.7	12.7	1.1	0.6	0.5	0.6	0.5	0.1	1,781.2
Drainage/Utilities/Sub-Grade	3.6	16.7	33.9	2.4	1.9	0.5	1.8	1.7	0.1	3,210.6
Paving	1.6	7.7	13.0	0.9	0.9	-	0.8	0.8	-	1,350.8
Maximum (kilograms/day)	3.6	16.7	33.9	2.4	1.9	0.5	1.8	1.7	0.1	3,210.6
Total (megagrams/construction project)	0.1	0.4	0.9	0.1	0.0	0.0	0.0	0.0	0.0	92.9

Notes:

Project Start Year ->	2014
Project Length (months) ->	2
Total Project Area (hectares) ->	0
Maximum Area Disturbed/Day (hectares) ->	0
Total Soil Imported/Exported (meters^3/day)->	879

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Appendix D — Biological Resources Assessment [for the] Dry Creek Trunk Sewer Bank Stabilization Project

Biological Resources Assessment

Dry Creek Trunk Sewer Bank Stabilization Project
Placer County, California

Prepared for: The City of Roseville

Date: November 18, 2013

Submitted by:

FOOTHILL ASSOCIATES

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1.0 EXECUTIVE SUMMARY

Foothill Associates' biologists and ISA-certified arborists conducted a biological resources assessment on May 20 and 23, 2013 and October 11 and 25, 2013, for the proposed Dry Creek Trunk Sewer Bank Stabilization Project located at two sites along Dry Creek, within the City of Roseville in Placer County, California. The purpose of this document is to summarize the general biological resources at the two sites, to assess the suitability of the sites to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis that may be required prior to construction activities occurring onsite.

The Dry Creek Trunk Sewer Bank Stabilization Project (Proposed Project) consists of ±0.4 acres south of Booth Road and ±1.5 acres east of Riverside Avenue at the confluence of Dry Creek and Cirby Creek, adjacent to Machado Lane. These sites are composed primarily of riparian forest, annual grassland, and perennial drainage.

There is significant bank erosion along portions of Dry Creek at the Booth Road site as well as by a manhole located adjacent to the creek bank at the Riverside Avenue site. The City of Roseville has proposed measures to stabilize the bank at these two locations, including removing the manhole and installing new sewer facilities at the Riverside Avenue site.

Land uses surrounding the project site include agricultural, industrial, medium density residential, and rural residential. Known or potential biological constraints on the sites include the following:

- Potential habitat for special-status plant species;
- Potential habitat for valley elderberry longhorn beetle;
- Potential habitat for western pond turtle;
- Potential habitat for special-status fish species;
- Potential habitat for nesting and foraging raptor species as well as for other birds covered under the Migratory Bird Treaty Act, including: purple martin, Swainson's hawk, and white-tailed kite;
- Potential roost habitat for special-status bat species;
- Sensitive habitats (riparian habitat regulated by CDFW, perennial drainage, native oak trees protected by the City of Roseville Tree Ordinance, and essential fish habitat and critical habitat for salmonids); and
- Presence of noxious weed species.

2.0 INTRODUCTION

The purpose of this report is to support the Corps' determination that the proposed project "may affect, but is not likely to adversely affect" Central Valley steelhead and other federally-listed species. It is also intended to support a conclusion that the project would not adversely modify steelhead critical habitat and that the avoidance and minimization measures would protect essential fish habitat for Central Valley fall/late fall-run Chinook salmon.

This report summarizes the findings of a biological resources assessment completed for the two planned bank stabilization project sites along Dry Creek, located in Roseville, California. The ±0.4-acre Booth Road site is located approximately 700 feet west of Atkinson Street. The ±1.5-acre Riverside Avenue site is located approximately 250 feet east of Riverside Avenue. This document addresses the onsite physical features, as well as, plant communities present and the common plant and wildlife species occurring, or potentially occurring within the sites. Furthermore, the suitability of habitats onsite to support special-status species are analyzed and recommendations are provided for any regulatory permitting or further analysis required prior to development occurring on the project sites.

2.1 Project Description

The proposed project includes bank stabilization and utility repairs at both the Booth Road and Riverside Avenue sites. At the Booth Road site the north bank of Dry Creek will be cut back to create a 2:1 slope and vegetated rock slope protection will be installed. Work at the Riverside site will include installation of 135 feet of new 21-inch diameter sewer pipe, removal of the cone and riser segments of an existing sewer manhole, and abandonment of 240 feet of an existing 21-inch diameter sewer pipeline. The abandoned pipe will be filled with concrete grout. The creek bank will be restored around the manhole.

3.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below.

3.1 Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 guidelines prohibit the issuance of wetland permits for projects that jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species. The U.S. Army Corps of Engineers (Corps) must consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) when threatened or endangered species under their jurisdiction may be affected by a proposed project. In the context of the proposed project, FESA would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

3.2 Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

3.3 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), formerly the California Department of Fish and Game, when preparing California Environmental Quality Act (CEQA) documents. The purpose is to ensure that the state lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

3.4 CDFW Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened.

3.5 California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- List 1A: Plants presumed Extinct in California
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- List 3: Plants about which we need more information – A Review List
- List 4: Plants of limited distribution – A Watch List

3.6 Jurisdictional Waters of the United States

3.6.1 Federal Jurisdiction

The Corps regulates discharge of dredge or fill material into waters of the United States under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)]. In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

3.6.2 California Fish and Game Code

CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq*. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are

agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

3.7 Essential Fish Habitat

The National Marine Fisheries Service (NMFS) defines essential fish habitat (EFH) as part of the preparation and management of fishery management plans (FMP) in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. Each FMP is required to identify and describe EFH, minimize adverse fishing impacts on the EFH to the extent practicable, and identify other actions to conserve and enhance EFH. Federal agencies must consult with the NMFS on any action that might adversely affect EFH.

3.8 CEQA Review

The California Environmental Quality Act includes 33 classes of exemptions, which are types of projects that the Secretary of the Resources Agency has determined do not usually have a significant effect on the environment. This project is presumed to be exempt as a Class 1 Existing Facilities project. Class 1 projects are defined in Section 15301 of Title 14, Chapter 3, Article 19 of the California Code of Regulations:

> *Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.*

In certain circumstances a class 1 categorical exemption is not applicable, as defined in Section 15300.2 of Title 14, Chapter 3, Article 19 of the California Code of Regulations and in Public Resources Code 21084. These exceptions include:

- Cumulative Impact. Categorical exemptions are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant;

- Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances;

- Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway;

- Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code;

- Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource;

3.9 City of Roseville Tree Ordinance

The City of Roseville regulates the removal of or impact to protected trees under Chapter 19.66 of the Roseville Municipal Code. Protected trees are defined as any native oak tree, valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*), or hybrid of these species, with a trunk diameter equal to or greater than six inches at breast height (DBH), which is at 54" above grade. No work that might impact the tree, including grading, trenching, or irrigation, is allowed within the protected zone of a protected tree, defined as the dripline radius plus 1 foot, without a tree permit. No permit is required for the removal of a protected tree under the following situations:

1) Trees damaged by thunderstorm, windstorm, flood, earthquake, fire or other natural cause and determined by a peace officer, fire fighter, public utility official, civil defense official or city code enforcement officer, acting in his or her official capacity, to present a danger to persons or property. Upon discovery of a condition justifying removal, the officer or official making the determination shall immediately provide written notification of the condition and action taken to the planning director.
2) When removal is determined to be necessary by fire department personnel actively engaged in fighting a fire.
3) When compliance would interfere with activities of a public utility necessary to comply with applicable safety regulations and/or necessary to repair or avoid the interruptions of services provided by such a utility. Unless there is an imminent threat to the public health, safety or welfare, the planning director shall be notified prior to the removal by a public utility of a protected tree.
4) The planning director may allow removal of a protected tree which has been certified by an arborist to be a dead tree. An arborist-certified dead tree may be removed without any replacement or mitigation requirements.
5) A protected tree located on property developed with a single-family or two-family dwelling which has been granted occupancy.
6) When a protected living tree presents a hazard to health and safety or structures due to its structural condition and location, the tree may be removed without any replacement or mitigation requirements. The hazardous condition of the tree must be determined by an arborist. The planning director must review the arborist's determination and consider the location of the protected tree prior to approving removal.

3.10 City of Roseville General Plan

The City of Roseville's General Plan: Open Space and Conservation Element outlines specific goals, policies, and implementation measures pertaining to the protection of vegetation and wildlife (City of Roseville 2004). The three primary goals are:

Goal 1: Preserve, protect, and enhance a significant system of interconnected natural habitat areas, including creek and riparian corridors, oak woodlands, wetlands, and adjacent grassland areas.

Goal 2: Maintain healthy and well-managed habitat areas in conjunction with one-another, maximizing the potential for compatible open space, recreation, and visual experiences.

Goal 3: Protect special-status species and other species that are sensitive to human activities.

4.0 METHODS

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the References section. Site-specific information was reviewed including:

- California Department of Fish and Wildlife. 2013. *California Natural Diversity Data Base*. (CNDDB: *Citrus Heights* quadrangle), Sacramento, CA.;

- California Native Plant Society (CNPS). 2013. *Inventory of Rare and Endangered Plants* (online edition, v8-01a), (CNPS: *Citrus Heights* quadrangle);

- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 1980. *Soil Survey of Placer County, California Western Part*. U.S. Department of Agriculture;

- U.S. Geological Survey. 1992. Citrus Heights, CA. 7.5-minute Series Topographic Quadrangle Map; and

- U.S. Fish and Wildlife Service (USFWS). 2013. *Federal Endangered and Threatened Species that may be affected by Projects in the Citrus Heights 7.5-minute series Quadrangle and in Placer County*. Sacramento, CA.

Foothill Associates' biologists and ISA-Certified arborists conducted a field assessment of the project site on May 20 and 23, 2013, and October 11 and 25, 2013. Each site was systematically surveyed on foot with binoculars to ensure total search coverage, with special attention given to identifying those portions of the site with the potential for supporting special-status species and sensitive habitats. During the field surveys, the biologist recorded plant and animal species observed, characterized biological communities occurring onsite, and recorded data on potentially protected trees. Representative site photographs are included in **Appendix A**. Tree survey data is included in **Appendix B**.

5.0 RESULTS

5.1 Site Location and Description

The Dry Creek Trunk Sewer Bank Stabilization Project sites are located in the City of Roseville in southwest Placer County, immediately north of the Sacramento County line. The ±0.4-acre Booth Road site is located approximately 700 feet west of Atkinson Street. The ±1.5-acre Riverside Avenue site is located approximately 250 feet east of Riverside Avenue. Land uses surrounding the site include agricultural, industrial, medium-density residential, and rural residential. The Booth Road site and Riverside Avenue site are located in Township 10 North, Range 6 East, within portions of Section 10 and 11 of the *Citrus Heights, CA* USGS 7.5-minute topographic quadrangle map (**Figure 1**).

5.2 Physical Features

5.2.1 Topography and Drainage

Topographic variation within the sites occurs along the banks of Dry Creek. Elevations range from approximately 110 to 120 feet above mean sea level (MSL) on the Booth Road site and from 123 to 130 feet above MSL on the Riverside Avenue site. Dry Creek is characterized by steep banks with an average channel width ranging from 50 to 100 feet. Dry Creek flows southwest from the study area and connects with Steelhead Creek, formerly known as the Natomas East Main Drainage Canal, approximately 11.5 miles downstream of the Booth Road site. Steelhead Creek then flows into the Sacramento River.

5.2.2 Soils

The Natural Resources Conservation Service (NRCS) has mapped two soil units in the project area in addition to areas mapped as open water (**Figure 2**). The soil units that occur on the project site include the following: **Xerofluvents, occasionally flooded** and **Xerofluvents, frequently flooded**. General characteristics associated with these soils types are described below (NRCS 2013).

- **Xerofluvents, occasionally flooded**: This soil is found adjacent to stream channels and consists of small areas of moderately well drained loamy alluvium. This soil includes sandy loams, silt loams, and clay loams that typically become gravelly at increasing depth. Permeability of this soil unit is moderate to moderately slow and surface runoff is slow. Areas containing this soil type are occasionally flooded by stream overflow and therefore are not considered suited for urban uses because of their flood potential. Where protected by levees much of the acreage of this soil unit is used for row crop or orchards. Natural vegetation is annual grasses, forbs, or valley oak. This soil is very deep and possesses a slight hazard for erosion. The hydric soils list for Placer County identifies one unnamed hydric inclusion occurring within this soil type, which is found in drainageway landforms.

- **Xerofluvents, frequently flooded**: This soil unit consists of narrow stringers of somewhat poorly drained recent alluvium adjacent to stream channels. This soil is composed of gravelly sandy loam, gravelly loams, and gravelly clay loams. Surface runoff is slow and erosion hazard is high. Permeability is variable and the available water capacity is very low. Based on the frequent flooding, most of this soil type is idle and provides cover and nesting habitat for wildlife. Typically, vegetation on this soil type consists of annual grasses, sedges, herbaceous plants, valley oak, and willow. The hydric soils list for Placer County identifies this soil unit as a hydric soil inclusion which is found in drainageway landforms.

5.3 Biological Communities

The three biological communities occurring within the site are mixed riparian woodland, annual grassland, and perennial drainage. These communities provide habitat to a number of common species of wildlife and may provide potentially suitable habitat for special-status species. Each of the biological communities including associated common plant and wildlife species observed, or that are expected to occur within these communities, are described below.

5.3.1 Mixed Riparian Woodland

Mixed riparian woodland habitat occurs along Dry Creek. Riparian woodland communities occur in association with bodies of water and waterways such as rivers, streams, springs, and ephemeral creeks. This habitat type is typically comprised of three vegetation layers including trees, shrubs, and herbs. The riparian woodland onsite is generally confined to a relatively narrow band along the banks of Dry Creek. A number of dirt trails created by local residents using the site for recreation cut through the Riverside Avenue site. One small elderberry (*Sambucus mexicana*) shrub, with stems less than 1" in diameter and one large elderberry are located on the Riverside Avenue site. Two other large elderberries are located east of the site. No valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) exit holes were found on any of the shrubs.

Tree species occurring within the riparian habitat area include: valley oak, blue oak, interior live oak, California black walnut (*Juglans nigra*), willows (*Salix* sp.), box elder (*Acer negundo*), southern catalpa (*Catalpa bignoniodes*), tree of heaven (*Ailanthus altissima*), silver maple (*Acer saccharinum*), California sycamore (*Platanus racemosa*), and Fremont's cottonwood (*Populus fremontii*). Shrub and herbaceous species that characterize the riparian habitat include: Japanese privet (*Ligustrum japonicum*), California mugwort (*Artemisia douglasiana*), Himalayan blackberry (*Rubus armeniacus*), elderberry, fennel (*Foeniculum vulgare*), ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), spear thistle (*Cirsium vulgare*), curly dock (*Rumex crispus*), tall cyperus (*Cyperus eragrostis*), cattail (*Typha* spp.), California poppy (*Eschscholzia californica*), smilo grass (*Piptatherum miliaceum*), black mustard (*Brassica nigra*), and wild radish (*Raphanus sativus*).

Mixed riparian woodland communities provide substantial breeding, cover, and foraging habitat for a variety of resident and migratory wildlife species. Additionally, this habitat community provides migration and dispersal corridors for wildlife. Wildlife species identified within this community type during the biological assessment include: wild turkey (*Meleagris gallopavo*), house wren (*Troglodytes aedon*), lesser goldfinch (*Carduelis psaltria*), black phoebe (*Sayornis nigricans*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), peacock (*Pavo* sp.), mourning dove (*Zenaida macroura*), and bushtit (*Psaltriparus minimus*).

5.3.2 Annual Grassland

Annual grassland community occurs in open, cleared, or disturbed areas within the project sites, and form part of the understory of the mixed riparian woodland community. The annual grasslands on the site are generally dry and on high banks 5-10 feet above the channel of Dry Creek. A number of dirt trails created by local residents using the site for recreation cut through the Riverside Avenue site.

This community is dominated by native and non-native grasses intermixed with perennial and annual forbs. Species observed include: soft chess (*Bromus hordeaceus*) , ripgut brome, wild oat (*Avena* sp.), Bermuda grass (*Cynodon dactylon*), black mustard, winter vetch (*Vicia villosa*), yellow star-thistle (*Centaurea solstitialis*), ryegrass (*Festuca perennis*), medusahead grass (*Taeniatherum caput-medusae*), field bindweed (*Convolvulus arvensis*), California poppy (*Eschscholzia californica*), milk thistle (*Silybum marianum*), and wild radish (*Raphanus* sp.). There are some scattered oak trees within portions of the grasslands. Oak species within the annual grassland include: interior live oak, blue oak, and valley oak.

Wildlife species commonly associated with annual grasslands within the project sites include: western meadowlark (*Sturnella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*), California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), western fence lizard (*Sceloporus occidentalis*), and gopher snake (*Pituophis catenifer*). In addition, annual grassland provides foraging habitat for raptors that nest in the adjacent woodlands such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), white-tailed kite (*Elanus leucurus*), and American kestrel (*Falco sparverius*). Wildlife species observed in annual grasslands onsite include: yellow-billed magpie (*Pica nuttalli*) and California ground squirrel.

5.3.3 Perennial Drainage

Dry Creek is formed by the confluence of Secret Ravine and Miners Ravine on the northeast side of the City of Roseville and is one of the several small Sacramento River tributaries located between the American and Bear Rivers. Waters of Dry Creek flow from the foothills near Auburn and Folsom Lake through a variety of habitat communities to Steelhead Creek. From Steelhead Creek water flows directly to the Sacramento River at its confluence with the American River.

In the project area, Dry Creek is characterized by steep banks with an average channel width of approximately 70 feet. The substrate is dominated by a sand/silt layer, sometimes overlying gravel, and depths are generally shallow. Although the channel is mostly devoid of vegetation, areas of submerged and overhanging riparian vegetation occur along the shoreline and on sand bars located in the creek.

Dry Creek provides habitat primarily for aquatic species including amphibians such as bullfrog (*Rana catesbeiana*) and Sierra chorus frog (*Pseudacris sierra*); fish such as fall-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley steelhead (*Oncorhynchus mykiss*), which are known to be present seasonally within Dry Creek and its upper tributaries, as well as bass (*Micropterus* sp.) and bluegill (*Lepomis macrochirus*); and insects such as dragonflies, stoneflies, and water striders. Additionally, a number of birds and mammals are expected to use Dry Creek for foraging, resting, and escape including flycatchers (*Empidonax* sp.), swallows (*Tachycineta* sp.), swifts (*Chaetura* sp.), mule deer (*Odocoileus hemionus*), opossum (*Didelphis marsupialis*), and raccoon (*Procyon lotor*). Wildlife species observed in Dry Creek during the field surveys include various fish species, great blue heron (*Ardea herodias*), mallard (*Anas platyrhynchos*), and river otter (*Lutra canadensis*). Non-native, invasive plants observed in large numbers along the banks of Dry Creek include red sesbania (*Sesbania punicea*), and arundo (*Arundo donax*). Species observed in the creek were several unidentified fish and pond slider (*Trachemys scripta*).

5.4 Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Listed and special-status species are defined as:

- Listed or proposed for listing under the State or Federal Endangered Species acts;
- Protected under other regulations (e.g. Migratory Bird Treaty Act and/or Sustainable Fisheries Act);
- Listed by CDFW as a Species of Special Concern;
- Listed on the CNPS Rare and Endangered Plant Inventory; or
- Any other species that would receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on field survey results, review of the CNDDB occurrence records of species, review of the CNPS, CDFW and USFWS lists for special-status species occurring in USGS 7.5-minute *Citrus Heights, CA* topographic quadrangle map and USFWS special-status species lists for Placer County (**Table 1** —). The locations of special-status species occurrences in the project vicinity are shown in **Figure 3**, which is from a search of the CNDDB. **Table 1** — includes, the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence on the project site. The

following set of criteria has been used to determine each species potential for occurrence on the site:

- **Present**: Species known to occur on the site, based on CNDDB records, and/or was observed on the site during the field survey(s).

- **High**: Species known to occur on or near the site (based on CNDDB records within 8 km or 5 mi, and/or based on professional expertise specific to the site or species) and there is suitable habitat on the site.

- **Low**: Species known to occur in the vicinity of the site, and there is marginal habitat onsite.-**OR**-Species is not known to occur in the vicinity of the site, however there is suitable habitat on the site.

- **None**: Species is not known to occur on or in the vicinity of the site and there is marginal habitat for the species on the site. .-**OR**- There is no suitable habitat for the species on the site.-**OR**-Species was surveyed for during the appropriate season with negative results.

Only those species that are known to be present or that have a high or low potential for occurrence will be discussed further following **Table 1**.

Table 1 — Listed and Special-Status Species Potentially Occurring on the Site or in the Vicinity

Common Name	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Plants			
Adobe navarretia *Navarretia nigelliformis nigelliformis*	--;--;--;4.2	Clay soils in moist valley and foothill grasslands, sometimes vernal pools between 320 and 3300 feet above MSL. Sometimes in serpentine soils. Blooms April – June.	**None**; there is marginal habitat for this species onsite but no known occurrences within 5 miles of the site and the site is below the known range of the species.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	--;--;--;1B.2	Found in moist areas in valley and foothill grasslands and on the edge of vernal pools. Blooms March – May	**None**; there is no suitable habitat for this species onsite.
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	--;--;--;1B.2	Chaparral, cismontane woodland, valley and foothill grassland, mixed oak woodland and forest, purple needlegrass grassland, and sometimes in serpentinite soils from 300 to 5,100 feet above MSL. Blooms from March – June.	**Low**; there is suitable habitat for this species on site, but the one known occurrence within 5 miles of the site is from 1957 and the site is outside the current published elevational range of the species.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--;CE;--;1B.2	Clay soils around the margins of marshes and swamps and in vernal pools. Blooms April – August.	**None**; there is no habitat for this species onsite.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	--;--;--;4.2 (Formerly a CNPS List 1B.2 Species.)	Chaparral, foothill woodlands, and conifer forest, often roadcuts from 245 to 3000 feet above MSL. Usually in dry areas. Blooms May – July. Formerly a CNPS List 1B.2 Species.	**None**; there is no suitable habitat for this species onsite.
Dwarf downigia *Downingia pusilla*	--;--;--;2.2	Moist valley and foothill grasslands and vernal pools. Blooms March – May.	**None**; there is no suitable habitat for this species onsite.
Hispid bird's-beak *Chloropyron molle ssp. hispidum*	--;--;--;1B.1	Alkaline meadows, seeps, and grasslands. Blooms June – September.	**None**; there is no suitable habitat for this species onsite.
Legenere *Legenere limosa*	--;CT;--;1B.1	Vernal pools. Blooms April - June	**None**; there is no suitable habitat for this species onsite.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	--;--;--;1B.1	Vernal pools; often acidic. Blooms April - May	**None**; there is no suitable habitat for this species onsite.

Common Name	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Red Bluff dwarf rush *Juncus leiospermus var. leiospermus*	--;--;--;1B.1	Vernal pool margins and wet places in chaparral, woodlands, and grasslands ranging in elevations from approximately 110 to 3,350 feet above MSL. Blooms March – June.	**None**; there is no vernal pool habitat and marginal woodland habitat for this species onsite and the one recorded occurrence within 5 miles is considered erroneous and well outside the known range of the species.
Sacramento orcutt grass *Orcuttia viscida*	FE; CE;--;1B.1	Found in deep vernal pools. Populations known from eastern Sacramento County. Blooms April – September.	**None**; there is no suitable habitat for this species onsite.
Sanford's arrowhead *Sagittaria sanfordii*	--;--;--;1B.2	Shallow freshwater marsh and swamps and slow-moving water with silty or muddy substrate below 2,200 feet. Usually associated with cattails and other emergent vegetation. Blooms May – October	**None**; there no suitable habitat for this species onsite.
Slender orcutt grass *Orcuttia tenuis*	FT;CE;--;1B.1	Vernal pools, often with gravelly bottoms. Blooms May - October	**None**; there is no suitable habitat for this species onsite.
Stinkbells *Fritillaria agrestis*	--;--;--;4.2	Clay soils in chaparral, cismontane woodland, valley and foothill grassland, and pinyon and juniper woodland; sometimes in serpentine soils. Blooms March – June.	**Low**; there is marginal habitat for this species onsite and there is one known occurrence within 5 miles of the site.
Wildlife			
Invertebrates			
California linderiella *Linderiella occidentalis*	--;CSC;--;--	Vernal pools, swales, and ephemeral freshwater habitat.	**None**; there is no suitable habitat for this species onsite.
Conservancy fairy shrimp *Branchinecta conservation*	FE;--;--;--	Large, deep vernal pools and swales and other seasonally inundated aquatic habitats	**None**; there is no suitable habitat for this species onsite.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT;--;--;--	Blue elderberry shrubs usually associated with riparian areas.	**Low**; there is suitable habitat for this species on the Riverside Avenue site but no exit holes were found. There is one known occurrence within 5 miles of the site.

Common Name	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Vernal pool andrenid bee *Andrena blennospermatis*	--;CSC;--;--	Upland habitat near vernal pools, swales, and ephemeral freshwater habitat.	**None**; there is no suitable habitat for this species onsite.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --;--;--	Vernal pools; also sandstone rock outcrop pools.	**None**; there is no suitable habitat for this species onsite.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE;--;--;--	Vernal pools and ephemeral stock ponds.	**None**; there is no suitable habitat for this species onsite.
Amphibians/Reptiles			
California red-legged frog *Rana draytonii*	FT;CSC;--;--	Requires a permanent water source and is typically found along quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation. Believed extirpated from the Central Valley floor since 1970s.	**None**; there is potential dispersal habitat for this species on site, but there is no breeding habitat and there are no known occurrences within 5 miles of the site.
California tiger salamander *Ambystoma californiense*	FT;CT;--;--	Breeds in vernal pools and seasonal ponds in grasslands and oak savannas. Adults spend summer in small mammal burrows.	**None**; there is no suitable habitat for this species onsite.
Giant garter snake *Thamnophis gigas*	FT; CT; --; --	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	**None**; there is marginal habitat for this species onsite but no known occurrences within 5 miles of the site and it is outside the known range of the species.
Western pond turtle *Emys marmorata*	--;CSC;--;--	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland.	**Low**; there is suitable habitat for this species on site but no known occurrences within 5 miles of the site.
Western spadefoot *Spea hammondii*	--;CSC;--;--	Breeding and laying eggs occur in shallow, temporary pools, seasonal wetlands, and vernal pools in annual grasslands and oak woodlands.	**None**; there is no suitable breeding habitat for this species onsite.

Common Name	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Fish			
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT; CT; --; --	Spawn in Mill, Deer, and Butte Creeks and in Yuba River and Feather River watersheds. Juveniles may journey up to 5 miles upstream in Sacramento River tributaries.	**None**; spring-run Chinook salmon are not known to spawn in Dry Creek and the site is located 17 miles from the Sacramento River. There are no known occurrences within 5 miles of the site.
Central Valley winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE;CE;--;--	Spawn in northern Sacramento River (Redding to Red Bluff) and its tributaries. Juveniles may journey up to 5 miles upstream in other tributaries.	**None**; winter-run Chinook salmon are not known to spawn in Dry Creek and the site is located 17 miles from the Sacramento River. There are no known occurrences within 5 miles of the site.
Central Valley steelhead *Oncorhynchus mykiss*	FT;--;--;--	Rivers and streams tributary to the Sacramento-San Joaquin Rivers and Delta ecosystems.	**Low**; Central Valley steelhead are known to occur at least seasonally in Dry Creek but there is no spawning and rearing habitat on site and no known occurrences within 5 miles of the site.
Delta smelt *Hypomesus transpacificus*	FT;CE;--;--	Shallow fresh or brackish water tributary to the Delta ecosystem; spawns in freshwater sloughs and channel edgewaters.	**None**; the site is outside of the known range of this species
Green sturgeon *Pogonichthys macrolepidotus*	FT;CSC;--;-- (Southern Distinct Population Segment)	Coastal bays and estuaries and marine waters. Spawns in Sacramento River; prefers fast, deep water with cobble bottom.	**None**; the site is outside of the known range of this species.
Birds			
Bank swallow *Riparia riparia*	--; CT;--;--	Nests in riverbanks with fine-textured or sandy soil and forages over riparian areas and adjacent uplands.	**None**; there is no suitable habitat for this species on site.
Great blue heron *Ardea herodias*	--;CSC;--;-- (nesting colony)	Variety of habitats close to bodies of water including fresh and saltwater marshes, wet meadows, lake edges and shorelines. Colonial nester in tall trees, cliff sides and sequestered spots on marshes.	**None**; there is no nesting habitat for this species onsite. Individuals may be occasional visitors to site.

Common Name	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
Purple martin *Progne subis*	--;CSC;--;-- (nesting)	Cavities in trees or structures in relatively open environments, typically near water bodies or marshes or at ridge tops where aerial insects congregate.	**Low**; there is suitable nesting habitat onsite and there is one known occurrences within 5 miles of the project site.
Swainson's hawk *Buteo Swainsoni*	--; CT; --;-- (nesting)	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat such as agricultural fields and open grasslands	**Low**; there is suitable nesting habitat onsite and there are five known occurrences within 5 miles of the project site.
Tricolored blackbird *Agelaius tricolor*	--;CSC;--;-- (nesting colony)	Nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley.	**None**; there is no suitable habitat for this species on site.
Western burrowing owl *Athene cunicularia hypugaea*	--;CSC;--;--;-- (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat.	**None**; there is no suitable habitat for this species on site.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FC;CE;--;--	Densely foliaged, deciduous trees and shrubs, especially willows.	**None**; there is marginal habitat for this species onsite but there are no known occurrences within 5 miles of the project site.
White-tailed kite *Elanus leucurus*	--;CFP;--;-- (nesting)	Nests in isolated trees or woodland areas with suitable open foraging habitat.	**Low**; this species has a potential to nest and forage onsite and there are two known occurrences within 5 miles of the project site.
Other Raptors (Hawks, Owls and Vultures)	MBTA and §3503.5 Department of Fish and Game Code	Nests in a variety of communities including cismontane woodland, mixed coniferous forest, chaparral, montane meadow, riparian, and urban communities.	**High**; other raptors have a potential to nest and forage within the trees and riparian areas along Dry Creek.
Mammals			
Special-status bat species	--;CSC;--;--	Typically roost in crevices in rocks, caves, or manmade structures. Occasionally roost in hollow trees or shrubs.	**Low**; there is suitable habitat for some species and no known occurrences within 5 miles of the project site.

Federally Listed Species:	**California State Listed Species:**	**CNPS* List Categories:**
FE = federal endangered	CE = California state endangered	1A = plants presumed extinct in California
FT = federal threatened	CT = California state threatened	1B = plants rare, threatened, or endangered in California and elsewhere

Common Name	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence
FC = candidate		CR = California state rare	2 = plants rare, threatened, or endangered in California, but common elsewhere
PT = proposed threatened		CSC = California Species of Special Concern	3 = plants about which we need more information
FPD = proposed for delisting			4 = plants of limited distribution
FD = delisted			**Other Special-status Listing:**
			SLC = species of local or regional concern or conservation significance
Source: Foothill Associates			

5.4.1 Listed and Special-Status Plants

Based on a records search of the CNDDB (**Figure 3**) and the USFWS list, suitable habitat for two special-status plant species occurs on the site. Based on field observations and literature review specific to the special-status plants listed in **Table 1**, the potential for occurrence has been determined for each species. The species that are considered to have a low potential on the site include the following: big-scale balsamroot (*Balsamorhiza macrolepis var. macrolepis*) and stinkbells (*Fritillaria agrestis*).

Species with a Low Potential for Occurrence

Big-scale Balsam-root

Big-scale balsam-root is an herbaceous perennial member of the sunflower family (Asteraceae). It is categorized as a CNPS List 1B species. This species has large yellow flowering heads and leaves that arise from the ground. It differs, in part, from other balsam-roots by having coarsely serrate leaves. Big-scale balsam-root grows in open woodlands and grasslands at widely scattered locations in northern California, and will tolerate serpentine soil (CNPS 2013). It blooms from March to June. The project site is below the published elevation range of the species; however the one known record for this species occurring within five miles of the project area (**Figure 3**) is at a similar elevation as the project site. This occurrence was recorded in 1957 (CDFW 2013). The woodlands and grasslands on the site are heavily disturbed and this species was not observed onsite during the biological assessment, which took place during the blooming season. Therefore, the potential for this species to occur on the site is *low*.

Stinkbells

Stinkbells, a CNPS list 4 species, is a small perennial lily found in chaparral, cismontane, pinyon, and juniper woodlands, and valley and foothill grasslands that blooms between March and June. It generally grows in clay or heavy soils between 30 and 4,500 feet. There is one CNDDB record of this species within five miles of the project (**Figure 3**) (CDFW 2013). Generally, the soils on site are loams underlain with gravel and sand rather than the clay soils that this species requires. However, there are unnamed hydric

inclusions that may provide appropriate soil conditions. The woodlands and grasslands on the site are heavily disturbed and no stinkbells were observed during the biological assessment, which took place during the blooming season. Therefore, the potential for this species to occur on the site is *low*.

5.4.2 Listed and Special-Status Animals

Based on a records search of the CNDDB and the USFWS list, suitable habitat for eighteen special-status animal species occurs on the site. Based on field observations and literature review specific to the special-status animals listed in **Table 1**, the potential for occurrence has been determined for each species. Species that are considered to have a high potential to occur on the site include other raptor and other avian species protected by MBTA. Species that are considered to have a low potential to occur on the site include: valley elderberry longhorn beetle, western pond turtle (*Emys marmorata*), Central Valley steelhead, purple martin (*Progne subis*), Swainson's hawk (*Buteo swainsonii*), white-tailed kite, and special-status bat species.

Species with a High Potential for Occurrence

Raptor and Other Migratory Bird Species

Raptor species forage and nest in a variety of habitats throughout Placer County. The nests of raptors and most other birds are protected under the MBTA. Raptors are also protected by Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest. The riparian woodlands and annual grasslands on the project site may provide potential nesting and foraging habitat for raptors and other protected bird species. Although no active nests were observed on the site, a variety of avian species were observed. Raptors and other protected migratory birds have a *high* potential to occur on the site.

Species with a Low Potential for Occurrence

Valley Elderberry Longhorn Beetle

The USFWS has determined the range of the beetle to include the watersheds of the American, San Joaquin, and Sacramento Rivers and their tributaries up to approximately 3,000 feet above MSL (USFWS 1980). Typically, the beetles are found on elderberry shrubs within riparian plant communities. Some studies have found that multiple elderberry shrubs clumped together provide superior habitat for the beetle while isolated elderberry shrubs are less likely to support beetle populations. Typical plant species that co-occur with the elderberry shrubs include California sycamore, willows, blackberry, and poison oak (*Toxicodendron diversilobum*) (USFWS 1984). Beetles require elderberry stems with a basal diameter of at least 1 inch in order for the larvae to utilize the stems (USFWS 1999). The valley elderberry longhorn beetle (VELB) depends on elderberry shrubs for its entire lifecycle. Adults are typically active from March through May during the flowering period of the elderberry shrub. The female lays its eggs on the leaves and stems of the elderberry shrub. The larvae emerge within a few days and burrow into the elderberry stem. The larvae feed on the stem pith until they pupate.

When the host shrub begins flowering, the pupa emerges from the stem as an adult (Barr 1991). One shrub suitable for VELB habitation is located on the Riverside Avenue site and another two shrubs are located offsite to the east. A small shrub with multiple stems less than 1" in diameter is located in the center of the site. No exit holes were observed on any stems. There is one CNDDB record of VELB within five miles of the project (**Figure 3**) (CDFW 2013). There is *low* potential for this species to occur on the project site.

Western Pond Turtle

Western pond turtles require slow moving perennial aquatic habitats with suitable basking sites. Pond turtles have sometimes adapted to using irrigation ditches. Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). Although there are no CNDDB records of western pond turtle within five miles of the project (CDFW 2013), there is suitable basking habitat along the creek banks, on the sandbars, and in slower moving portions of the creek and a pond slider was observed on the project site. Therefore, the potential for this species to occur on the site is *low*.

Central Valley Steelhead

Central Valley steelhead (FT) rely on streams, rivers, estuaries and marine habitat during their lifecycle. In freshwater and estuarine habitats, steelhead feed on small crustaceans, insects and small fishes. Eggs are laid in small and medium gravel and need good water flow (to supply oxygen) to survive. After emerging from the redd steelhead remain in streams and rivers for 1 to 4 years before migrating through the estuaries to the ocean. Unlike salmon, steelhead migrate individually rather than in schools. Steelhead spend one to five years at sea before returning to natal streams or rivers. At least two specific storages of steelhead have developed; those that enter fresh water during fall, winter and early spring -- the winter run -- and those that enter in spring, summer and early fall -- the summer run. Steelhead do not always die after spawning, but will migrate downstream through estuaries to the ocean.

There are no CNDDB records of Central Valley steelhead within five miles of the project area (CDFW 2013). However, Dry Creek and its tributaries are known to support habitat for this species. Central Valley steelhead are not expected to spawn within the portion of Dry Creek in the project area; but it may be used as a migration corridor. Therefore, there is *low* potential for Central Valley steelhead to occur on the project site.

Purple Martin

Purple martin is a type of swallow found in riparian woodlands and coniferous forests from March through September. They use existing cavities, such as abandoned woodpecker nests, nest boxes, or under bridges or structures for nesting. Purple martins eat insects, which are usually caught in the air, but they may also forage on the ground. The riparian woodland provides potential foraging and nesting habitat. There is one record in the CNDDB of this species within five miles of the project site (**Figure 3**)

(CDFW 2013). The species was not observed on the site during the biological assessment. There is *low* potential for this species on the project site.

Swainson's hawk

Swainson's hawk is a long-distance migrant with nesting grounds in western North America. The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters in South America (Bradbury *et. al.* in prep.). Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Zeiner *et. al.* 1990). In the Central Valley, Swainson's hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually in close proximity to suitable foraging habitats, which include fallow fields, annual grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and De Water, 1994). There are five records in the CNDDB of this species within five miles of the site (**Figure 3**) (CDFW 2013), and the larger cottonwoods and oaks in the riparian woodland present potential nesting habitat. The species was not observed on the site during the biological assessment. For these reasons, Swainson's hawk has a *low* potential to occur within the site.

White-tailed Kite

The white-tailed kite is a medium-sized raptor that is a year long resident in coastal and valley lowlands in California. White-tailed kites are monogamous and breed from February to October, peaking from May to August (Zeiner *et. al.* 1990). This species nests near the top of dense oaks, willows, or other large trees. There are two CNDDB records of white-tailed kite listed within five miles of the project area (**Figure 3**) (CDFW 2013). The species was not observed on the site during the biological assessment. However, the riparian woodland on the site provides potential nesting habitat for this species, and the annual grassland on the site provides potential foraging habitat. Therefore, the potential for this species to occur on the site is *low*.

Special-Status Bat Species

Several special-status bat species, which are State Species of Concern, may be found within the project vicinity including: pallid bat (*Antrozous pallidus*), fringed myotis (*Myotis thysanodes*), Yuma myotis (*Myotis yumaensis*), long-legged myotis (*Myotis volans*), long-eared myotis (*Myotis evotis*), western small-footed myotis (*Myotis ciliolabrum*), hoary bat (*Lasiurus cinereus*), western red bat (*Lasiurus blossevillii*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

Five of the above species roost primarily in caves, rock outcroppings, or buildings. Fringed myotis roost in caves and the attics of old buildings. Yuma myotis roost in caves, tunnels, or buildings in arid areas throughout the State. Long-legged myotis roost

in buildings and small pockets or crevices in rock outcroppings. Western small-footed myotis roost in caves, mine, tunnels, rock crevices or buildings, in or near forested areas. Townsend's big-eared bat roosts in caves, mine tunnels, and buildings. There are no suitable nesting sites for these species.

The remaining four species of bats are known to roost in trees. Long-eared myotis live in thinly forested areas and occasionally caves. Hoary bats live in wooded areas and hang in trees. Western red bat roosts primarily in trees, usually at edges of streams, fields, or urban areas. Pallid bats roost in rock crevices and caves and occasionally hollow trees and buildings.

There are no CNDDB records for any of these nine special-status bat species within five miles of the project site (**Figure 3**) (CDFW 2013) and no bat species were observed onsite during the biological assessment. However, the oak woodlands provide potential roosting habitat for long-eared myotis, pallid bat, hoary bat, and western red bat. Therefore, the potential is *low* for special-status bat species to occur on the site.

5.5 Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Sensitive habitats within the site include: perennial drainage (Dry Creek), riparian woodlands, and native oak trees (**Figure 4**). Dry Creek is also designated as essential fish habitat for Chinook salmon and as critical habitat for Central Valley steelhead. **Section 6.0** discusses recommendations to avoid or mitigate impacts to sensitive habitats.

5.5.1 Waters of the United States

The project site is located along Dry Creek, a perennial drainage that is a water of the United States, and is therefore subject to the jurisdiction of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Jurisdictional waters of the U.S. include jurisdictional wetlands, as well as, all other waters of the U.S. such as creeks, ponds, and intermittent drainages. Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Corps 1987). Jurisdictional waters of the U.S. can be defined by exhibiting a defined bed and bank and ordinary high-water mark (OHWM). As discussed in **Section 3.6**, jurisdictional waters of the U.S. are subject to Section 404 of CWA and are regulated by the Corps.

5.5.2 Riparian Woodland

Riparian woodland vegetation occurs adjacent to Dry Creek. Riparian woodland habitat is not recognized under State or federal law as critical habitat; however, this habitat is considered a locally important resource under the City of Roseville General Plan (City of

Roseville 2004). Additionally, riparian habitat is of concern to the CDFW and protected under Section 1602 of the California Fish and Game Code. Any removal or impacts to the bed or bank of Dry Creek, and/or any riparian vegetation would require consultation with CDFW on the issuance of a Section 1602 Lake or Streambed Alteration Agreement (SAA).

5.5.3 Native Oak Trees

The study area supports several native trees of varying sizes including: blue oak, valley oak, interior live oak, willows, box elder, Fremont's cottonwoods, and California sycamore, and California black walnut. The loss of oak trees and oak woodlands is a concern to CDFW, CNPS, and several local conservation groups because of their continued decline throughout California. Native oak trees with a DBH equal to or greater than six inches are protected under the City of Roseville's *Tree Preservation Ordinance*.

There are 3 large, protected valley oaks in and around the project area at the Riverside Avenue site, one of which will be removed by the project. Other riparian trees that may be impacted but are not protected by the City tree ordinance include a sandbar willow (*Salix exigua*), Oregon ash (*Fraxinus latifolia*), interior live oak, and valley oaks. The project will remove three protected valley oak trees at the Booth Road site as well as an almond (*Prunus dulcis*), and interior live oak, and 11 small valley oaks. A large Fremont's cottonwood may be impacted by the project.

5.5.4 Essential Fish Habitat

Chinook Salmon

Chinook salmon is the largest of the Pacific salmon and has a distribution historically ranging from the Ventura River in California to Point Hope, Alaska in North America, and in northeastern Asia from Hokkaido, Japan to the Anadyr River in Russia.

The "runs" of chinook salmon in California are differentiated by the maturity of fish entering freshwater, time of spawning migrations, spawning areas, incubation times, incubation temperature requirements, and migration timing of juveniles. The differences in life histories effectively isolate the various runs (Moyle *et. al*, 1995). Spring-run chinook salmon tend to enter freshwater as immature or "bright" fish, migrate far upriver, and finally spawn in the late summer and early autumn. Known spawning populations of spring-run Chinook salmon are generally in creeks north of the project area. Fall-run chinook salmon spawn in large and medium-sized tributaries, and do not show the extensive delay in maturation exhibited by spring-run chinook salmon. Late fall-run chinook salmon enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the mainstem or lower tributaries of the rivers, and spawn within a few days or weeks of freshwater entry (Healey 1991). Winter-run chinook salmon begin their freshwater migration at an immature stage and travel to the upper portions of the Sacramento River watershed near Red Bluff and Redding to spawn in the spring.

Dry Creek and its tributaries are known to support breeding populations only of fall-run chinook salmon, which have no special-status under state or federal laws. Dry Creek is designated as essential fish habitat for Chinook salmon in the Pacific Coast Salmon Plan.

Central Valley Steelhead

Critical habitat for the Central Valley Steelhead population was published in the Federal Register Volume 70, Number 170. The reach of Dry Creek that includes the project area is included in the Critical Habitat designation.

5.6 Noxious Weeds

Noxious weeds include species designated as federal noxious weeds by the U.S. Department of Agriculture, species listed by the California Department of Food and Agriculture, and other exotic pest plants designated by California Invasive Plant Council. Roads, highways, and related construction projects are some of the principal dispersal pathways for noxious weeds. The introduction and spread of exotic pest plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Noxious weeds observed in the project area include tree-of-heaven, giant reed (*Arundo donax*), southern catalpa, fig (*Ficus carica*), and red sesbania (*Sesbania punicea*). Red sesbania, a Cal-IPC "red alert" species (Cal-IPC 2006) is of particular concern in the Dry Creek watershed and the Sacramento Area Flood Control Agency along with its partners is conducting a project to remove this species from the watershed in Placer County. This species spreads rapidly down waterways via floating pods containing seeds that may be viable for many years. This species is prevalent in and around the Booth Road site, and should be removed during construction, with care being taken not to release seed pods. More specific information on removal of the species from Dry Creek is outlined in the *Dry Creek Watershed Red Sesbania Long Term Management and Maintenance Plan* (SAFCA 2007).

6.0 DISCUSSION AND RECOMMENDATIONS

As discussed, the project area consists of two sites, the ±0.4-acre Booth Road site and the ±1.5-acre Riverside Avenue site, both of which support primarily riparian woodland and annual grassland habitats. Known or potential biological constraints on the site include:

- Potential habitat for special-status plant species;
- Potential habitat for valley elderberry longhorn beetle;
- Potential habitat for western pond turtle;
- Potential habitat for special-status fish species;
- Potential habitat for nesting and foraging raptor species as well as for other birds covered under the Migratory Bird Treaty Act, including: purple martin, Swainson's hawk, and white-tailed kite;
- Potential roost habitat for special-status bat species;
- Sensitive habitats (riparian habitat regulated by CDFW, perennial drainage, native oak trees protected by the City of Roseville Tree Ordinance, and essential fish habitat and critical habitat for salmonids); and
- Presence of noxious weed species.

6.1 Special-Status Plant Species

As discussed previously, portions of the project area contain suitable habitat for special-status plant species that are known to occur in the vicinity, including big-scale balsamroot and stinkbells. The biological assessment was conducted during the typical blooming period for both of these special-status plant species, and neither of the species were observed. Therefore, focused surveys are not recommended at this time. If any of these species are observed during construction, coordination with CDFW may be required prior to disturbance.

6.2 Valley Elderberry Longhorn Beetle

Although no VELB were observed, there is a low potential for VELB to be present on the Riverside Avenue site due to one large elderberry shrub on the on the eastern edge of the site. There are also two large shrubs to the east within 100 feet of the project area. Though no exit holes were observed in any of the shrubs, one shrub was approximately 18 inches across at the base. No direct impacts to the elderberries are expected from the proposed project, although work will occur within 100 feet of 2 of the shrubs. The USFWS recommends maintaining a 100-foot buffer around elderberry shrubs. High-visibility fencing should be installed 100 feet from the shrubs or at the project boundary to prevent accidental impact to potential VELB habitat.

If the Proposed Project cannot avoid impacts to elderberry shrubs, coordination with USFWS will be required and mitigation planting should be implemented in accordance

with USFWS guidelines. Currently, the USFWS suggests mitigation for impacts to any elderberry shrub with stems of greater than 1 inch diameter at ground level. Mitigation typically includes transplanting the elderberry shrub to a suitable designated mitigation area and planting additional elderberry shrubs and associated riparian plant species in the designated mitigation area. The number of additional elderberry shrubs and associated vegetation varies depending on the number and diameter of elderberry stems suitable for use by VELB that are impacted by the project. The USFWS requests that transplantation occur between the beginning of November and the first two weeks of February when elderberries are typically dormant and the chance of transplantation success is higher. These mitigation measures would only be required if the elderberry shrub within the project area was impacted.

6.3 Western Pond Turtle

Within the project area, Dry Creek and its banks contain suitable habitat for western pond turtle. Therefore, it is recommended that a pre-construction survey for western pond turtle be conducted for any construction activity that would directly impact habitat or occur within 300 feet of the perennial drainage. If western pond turtles are found during the pre-construction survey, CDFW and USFWS should be contacted regarding additional mitigation measures that may be required. Additional mitigation measures would only be considered in the event that western pond turtles were located during the pre-construction survey.

6.4 Special-Status Fish Species

As previously discussed, although the reach of Dry Creek within the project area is not suitable spawning habitat for special-status fish species, it may be used as a migration corridor for the federally-listed Central Valley steelhead as well as fall-run Chinook salmon. Additionally, juveniles of winter-run and spring-run Chinook salmon may utilize Dry Creek downstream of the project site. Consequently, activities that could potentially affect these species by increasing turbidity levels in Dry Creek during project construction or through direct mortality by in-stream work should be avoided. Erosion control Best Management Practices (BMPs) should be implemented during and post-construction to reduce sediment loads into Dry Creek. If BMPs are properly implemented, the project is expected to have minimal temporary direct impacts on special-status fish species and no significant long-term impacts. Coordination with the CDFW, NMFS, and USFWS would be required in conjunction with the Corps Section 404 permit process and the Section 1600 Streambed Alteration Agreement permitting to determine appropriate measures to avoid adverse affects on special-status fish species at the Booth Road site.

6.5 Raptors and Other Avian Species

As discussed earlier, several species of raptors and other birds may forage and nest on the site including the special-status species purple martin, Swainson's hawk, and white-tailed kite. Active raptor nests are protected by the California Fish and Game code Section 3503.5 and the MBTA. For this reason, if development activities are expected to occur

within the site during the nesting season (February 1-August 31), a pre-construction survey is recommended to identify any active nests on the site or within 500 feet of the site and any active Swainson's hawk nests within 0.5 miles of the site. The survey should be conducted by a qualified biologist no more than 30 days prior to the onset of construction activities.

If active raptor nests are found on or within 500 feet of the site, construction activities should not occur within 500 feet of the nests, or up to ¼-mile of the nest if it is an active Swainson's hawk nest, until the young have fledged or until the biologist has determined that the nest is no longer active. Typically, a buffer zone of 50-100 feet is required around active nests of non-raptor species. If active nests are found the CDFW should be consulted for mitigation measures that may be required. If construction activities are proposed to occur during non-breeding season (September-January), a survey is not required and no further studies are necessary.

6.6 Special-Status Bat Species

The existing large trees could provide potential roosting habitat for various bat species that occur in the vicinity of the study area. Prior to the initiation of construction activities, it is recommended that a pre-construction survey be performed by a qualified biologist to determine if special-status bat species are roosting in tree crevices in the oak woodlands onsite. If special-status bat species are present and roosting on the project site, then CDFW should be consulted regarding potential additional mitigation measures. Adoption of mitigation measures for roosting bat species would be considered only if special-status bat species are found to be roosting within the project area.

6.7 Sensitive Habitats

Dry Creek, a perennial drainage, flows through the project site, and is subject to the jurisdiction of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act, the Regional Water Quality Control Board under Section 401 of the Clean Water Act, and CDFW under the California Fish and Game Code. Permits will be required from all of these agencies prior to starting work within the channel of Dry Creek.

The project is anticipated to remove 24 riparian trees, most of which are less than 6" in diameter at breast height (DBH), and potentially impact an additional 6 riparian trees including valley oaks, interior live oak, Fremont cottonwood, Oregon ash, and sandbar willow (**Appendix B**). Impacts to riparian woodland habitat may be regulated by the CDFW. CDFW will determine whether to assert jurisdiction over riparian woodlands after the submittal of a Streambed Alteration Notification. Mitigation may be required for impacts to riparian woodland habitat. Mitigation typically includes development and implementation of a habitat restoration plan and completion of 5 years of post-construction monitoring.

Although the project is expected to remove a total of 4 protected valley oak trees, no tree permit is expected to be required due to exemption #3 and #5 of the City of Roseville's *Tree Protection Ordinance*. However, the planning director should be notified prior to the removal of any protected tree, per the ordinance. Additionally, to minimize impacts

to protected trees to remain, high-visibility fencing should be installed at the perimeter of the work area. No vehicle parking or storage of materials should be allowed outside the perimeter fence. The relevant tree protection procedures defined in Section 19.66.060 of the Tree Ordinance should be integrated into the construction documents.

Dry Creek is designated essential fish habitat for Chinook salmon and critical habitat for Central Valley steelhead. Juvenile spring and winter-run Chinook salmon, both federally listed, may utilize Dry Creek downstream of the project area. Since the project site is over 17 miles from the Sacramento River, the project is expected to have no adverse effect on these runs of Chinook salmon. The project may temporarily impact Central Valley steelhead and fall-run Chinook salmon, but is not expected to have any measurable long-term adverse affects on the populations. Coordination with the NMFS may be required as part of the 404-permit process with the Corps.

A Storm Water Pollution Prevention Program (SWPPP) would also be required during construction activities. SWPPPs are required in issuance of a National Pollutant Discharge Elimination System (NPDES) construction discharge permit by the U.S. Environmental Protection Agency. Implementation of Best Management Practices (BMPs) during construction is standard in most SWPPPs and water quality certifications. Examples of BMPs include stockpiling of debris away from regulated waterways; immediate removal of debris piles from the site during the rainy season; use of silt fencing and construction fencing around regulated waterways; and use of drip pans under work vehicles and containment of fuel waste throughout the site during construction.

6.8 Noxious Weeds

The work on Dry Creek bank will likely result in the uprooting or disturbance of a number of noxious weeds including: red sesbania and tree of heaven. Seeds and cuttings of noxious weeds should be removed and disposed of properly off site. Care should be taken to prevent noxious weed seeds or cutting from entering Dry Creek to prevent spread of the species downstream.

7.0 CONCLUSION

The proposed project will have minor temporary and permanent impacts to Dry Creek and the surrounding habitat. Temporary impacts will include clearing and disturbance for construction access. Permanent impacts at the Booth Road site will consist of grading of the north bank, removal of riparian vegetation, including three mature valley oaks, and installation of vegetated rock slope protection. This will ultimately result in an increase in the width of Dry Creek and will require Section 404, 401 and 1602 permits for proposed fill of jurisdictional aquatic features and work within the riparian zone. Permanent impacts at the Riverside Avenue site will include removal of an existing manhole, installation of a new sewer line in uplands, and removal of one mature valley oak. The area around the existing manhole will be restored and stabilized following its removal, but no work is anticipated within the channel at the Riverside Avenue site. Consequently, Section 404 and 401 permits are not anticipated for the Riverside Avenue site, although a 1602 permit may be required.

As shown in this report, no significant impacts are anticipated to any special-status species with the implementation of the conservation measures summarized below. All of which the City has made the commitment to implement as proposed "Project Elements." Based on the assessment of existing habitat and the potential for project-related impacts, this BRA supports the following findings:

- The impact analysis supports a "may effect, not likely to adversely affect" determination for Central Valley steelhead;
- The proposed project will not adversely modify critical habitat for steelhead; and
- Project Elements proposed by the City address avoidance and minimization of potential effects to EFH and would sufficiently protect EFH for Chinook salmon.

7.1 Summary of Recommended Conservation Measures

- Obtain necessary permits for work done within Dry Creek (Section 404 Clean Water Act permit, Section 401 Water Quality Certification, and 1600 Streambed Alteration Agreement) and the riparian woodland (1600 Streambed Alteration Agreement).
- Notify City of Roseville Planning Director prior to removing or doing work within the dripline of any protected oak trees.
- Conduct pre-construction survey for western pond turtle, active bird nests and bat roosts.
- Conduct pre-construction Worker Environmental Awareness Training regarding identification of and protection for special-status species and sensitive habitats on the project site.

- Install high-visibility fencing at edge of work area to prevent impacts to protected trees or elderberry shrubs.

- Implement BMPs in accordance with project SWPPP to prevent sediment and runoff from entering Dry Creek.

- Remove noxious weed tree species in the project area and dispose of off-site and implement construction procedures to prevent the spread of noxious weed species.

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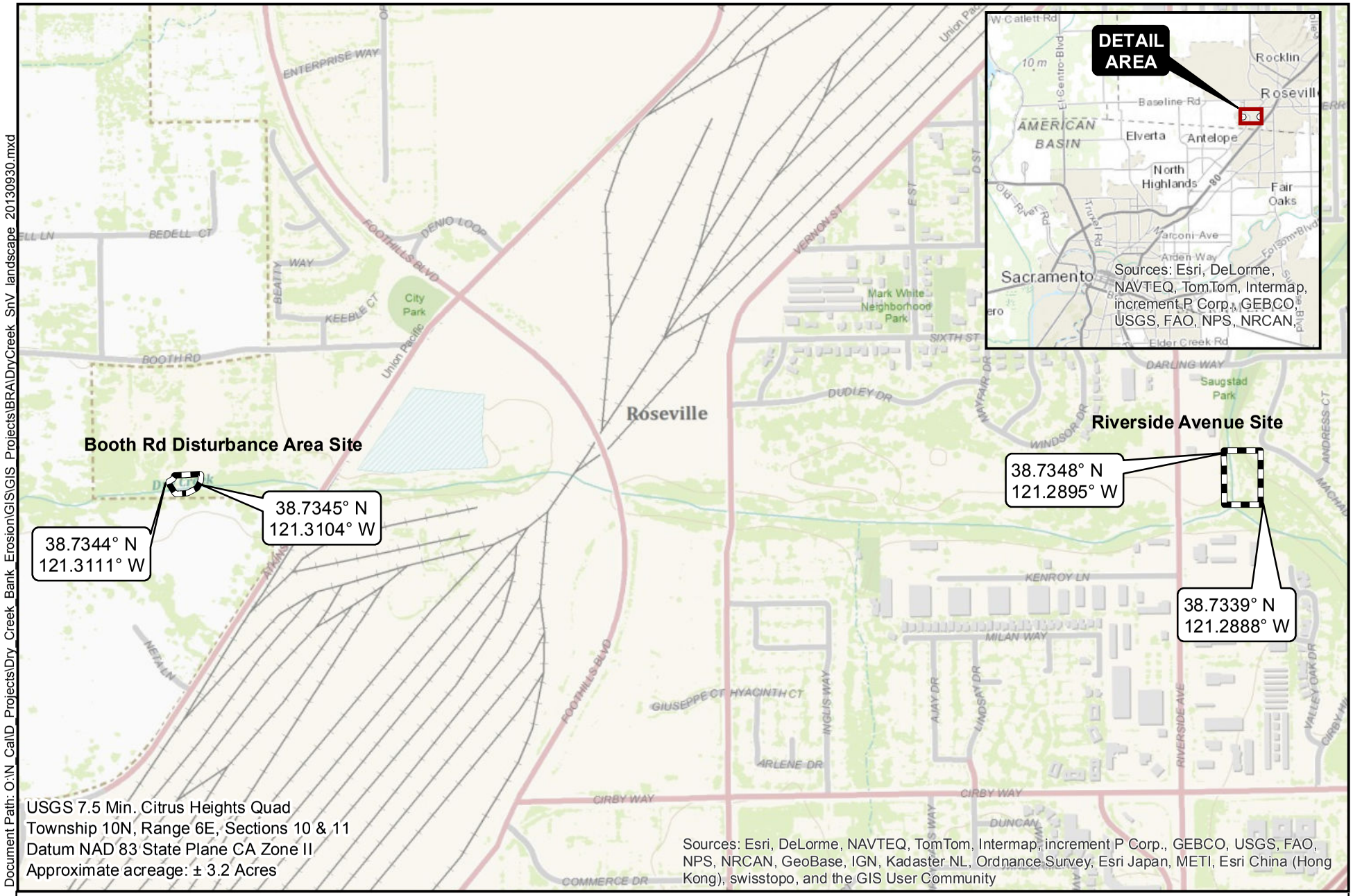

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SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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0 600 1200
SCALE IN FEET

Drawn By: MUB
Date: 10/23/2013

FIGURE 1

DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT

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FOOTHILL ASSOCIATES
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SOILS

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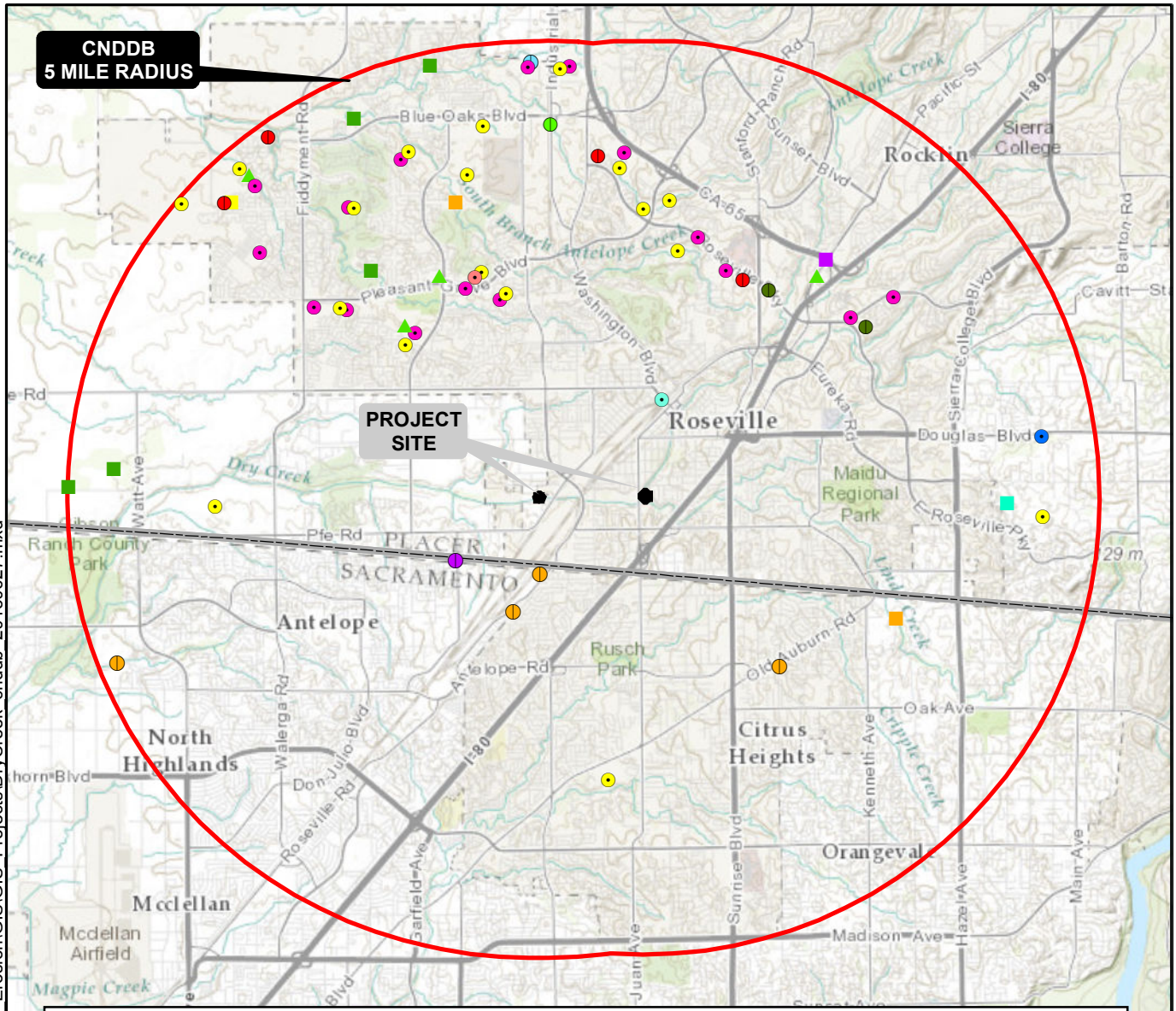
Drawn By: MUB
Date: 10/23/2013

FIGURE 2

DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT

Document Name: DryCreek_Soils_20130930



CNDDB

big-scale balsamroot	California linderiella	burrowing owl
Boggs Lake hedge-hyssop	vernal pool fairy shrimp	purple martin
dwarf downingia	vernal pool tadpole shrimp	Swainson's hawk
Red Bluff dwarf rush	valley elderberry longhorn beetle	tricolored blackbird
Sanford's arrowhead	vernal pool andrenid bee	white-tailed kite
stinkbells	western spadefoot	

SOURCE: Department of Fish and Wildlife, CA Natural Diversity Database (CNDDB), 09/05/2013. CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

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CNDDB

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SCALE IN MILES

Drawn By: MUB
Date: 10/23/2013

FIGURE 3

DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT

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BIOLOGICAL CONSTRAINTS

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N

Elderberry 100' Buffer
Disturbance Area
Study Area

Drawn By: MUB
Date: 11/07/2013

FIGURE 4

DRY CREEK TRUNK SEWER BANK STABILIZATION PROJECT

Document Name: DryCreek_BioCons_20131010

Appendix A — Representative Site Photographs

Description: Bank erosion at Dry Creek WWTP, E aspect

Date: 5/20/2013 Photographer: S. Deichsel

Description: Bank erosion at Dry Creek WWTP, W aspect

Date: 5/20/2013 Photographer: S. Deichsel

Description: Bank erosion at Dry Creek WWTP, E aspect

Date: 5/20/2013 Photographer: S. Deichsel

Description: Bank erosion at Dry Creek WWTP, N aspect (note Red Sesbania growing on both banks).

Date: 5/20/2013 Photographer: S. Deichsel

Description: OHWM delineated along Dry Creek in the WWTP, NE aspect.

Date: 5/20/2013 Photographer: S. Deichsel

Description: OHWM delineated on along Dry Creek, adjacent to man hole (upper left side of photo) at Site 2, S aspect.

Date: 5/23/2013 Photographer: S. Deichsel

REPRESENTATIVE SITE PHOTGRAPHS

Description: View from manhole at Site 2, N aspect.

Date: 6/3/2013 Photographer: S. Deichsel

Description: Large elderberries at Site 2, SE aspect.

Date: 6/3/2013 Photographer: S. Deichsel

REPRESENTATIVE SITE PHOTGRAPHS

Appendix B — Tree Survey Data

Booth Road Site

Species	DBH (Inches)	Health	Structure	Notes
Valley Oak	11	Fair-Good	Good	Removed
Valley Oak	24	Good	Good	Removed
Valley Oak	19	Fair-Good	Good	Removed
Almond	24	Fair-Good	Good	Removed
Fremont Cottonwood	48	Good	Good	Root system may be impacted

Other riparian trees to be removed:

Interior live oak, 3" DBH: 1
Valley oak, 4" DBH: 2
Valley oak, 3" DBH: 4
Valley oak, 2: DBH: 1
Valley oak, <1" DBH: 4

Riverside Avenue Site

Species	DBH (Inches)	Health	Structure	Notes
Valley Oak	7, 11	Good	Good	Removed for work on existing manhole
Valley Oak	46	Good	Good	Root system may be impacted
Valley Oak	19, 20	Good	Good	Root system may be impacted

Other riparian trees to be removed:

Valley oak, <1" DBH: 8

Other riparian trees to be impacted:

Oregon ash, 4" DBH: 1
Sandbar willow, 6" DBH: 1
Interior live oak, 2" DBH: 1

Appendix E — Dry Creek Bank Erosion Project Booth Road Segment Cultural Resources Inventory and Evaluation

Appendix E is available for review by qualified individuals on an as needed basis. Contact the City's Environmental Coordinator with the Roseville City Manager's office to request a copy.