YOLO COUNTY
COMMUNITY SERVICES DEPARTMENT

Final Initial Study/
Mitigated Negative Declaration
File #PW 2021-4589

County Road 98 Bike and Safety
Improvement Project, Phase II

County Work Order 4589
Federal Project Number STPL-5922(102)
August 2021 Recirculation

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Figures

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Appendix

1. Introduction

The Yolo County Department of Community Services, Public Works Division (County), and the California Department of Transportation (Caltrans) Division of Local Assistance is proposing to construct Phase II of the County Road (CR) 98 Bike and Safety Improvement Project, which will extend improvements from the first phase of the CR 98 project (from the City of Woodland to the CR 29 / CR 98 intersection) completed in 2014, which included adding paved shoulders, clear recovery zones, and improved major intersections. The extent of Phase II will be 4.1 miles, starting from approximately 1300± feet south of the CR 98/CR 29 intersection to the Solano County Line, serving the needs of many diverse users, including farmers, aggregate suppliers and other inter-region truckers, rural residents, commuters, and bicyclists.

1.1 **Regulatory Framework**

The Yolo County Department of Community Services has determined that the CR 98 Bike and Safety Improvement Project, Phase II, meets the California Environmental Quality Act (CEQA) Guidelines Section 15378 definition of a project. CEQA Guidelines Section 15378 defines a project as the following:

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

In accordance with the CEQA (Public Resources Code Sections 21000-21177), this Initial Study has been prepared to identify potentially significant impacts upon the environment resulting from the construction, operation, and maintenance of the CR 98 Bike and Safety Improvement Project, Phase II (Project or proposed Project). In accordance with Section 15063 of the State CEQA Guidelines, this Initial Study is a preliminary analysis prepared by the Yolo County Department of Community Services as Lead Agency to inform the Lead Agency decision makers, other affected agencies, and the public, of potential environmental impacts associated with the implementation of the Project.

2. Environmental Checklist Form

Project Title	County Road 98 Bike and Safety Improvement Project, Phase II (Project)
Lead Agency Name and Address	Yolo County Department of Community Services 292 West Beamer Street Woodland, CA, 95695-2598
Contact Person and Phone Number	Lilia Razo, Senior Civil Engineer 530-666-8845
Project Location	The Project is located on County Road 98, west of the City of Davis, in Yolo County, California.
Project Sponsor's Name and Address	Nicholas Burton, Director Public Works Division Yolo County Department of Community Services 292 W. Beamer St. Woodland, CA 95695
General Plan Designation	Agriculture (AG) Public and Quasi-Public (PQ) Residential Rural (RR)
Zoning	County Road Right of Way Agricultural Commercial (A-C): Assessor's Parcel Number (APN) 037 050 07 Cities Jurisdiction (City): 036 430 46 Agricultural Intensive (A-N): 036 010 04; 036 010 05; 036 010 07; 036 010 08; 036 450 01; 036 450 02; 037 040 01; 037 040 05; 037 050 04; 037 050 05; 037 050 06; 037 050 08; 037 050 09; 037 140 06; 037 140 08; 037 140 10; 037 140 13; 037 140 14; 037 140 16; 037 140 19; 037 140 024; 037 140 25; 040 200 15; 040-200-016; 040 200 31; 040 200 32; 041 120 02; 041 120 52; 041 120 53 Public and Quasi-Public (PQP): 036 160 08; 036 160 38; 036 170 01; 036 170 02; 036 170 12; 037 190 09 Rural Residential – 2 Acre (RR-2)/Planned Development 67 (Patwin Road) (PD 67): 036 160 01; 036 160 02; 036 160 05; 036 160 06; 036 160 25; 036 160 28; 036 160 32; 036 160 33
Project Description Summary: The Yolo County Department of Community Services, Public Works Division (County), and the California Department of Transportation (Caltrans) Division of Local Assistance are proposing to implement the second phase of County Road (CR) 98 Bike and Safety	

Improvement Project, which will widen and improve shoulders along CR 98. Roundabouts will be constructed at the intersections with CR 31 (Covell Boulevard), CR 32 (Russell Boulevard), and Hutchison Drive. Implementation of the Project will require the relocation of drainage ditches and utilities outside the clear recovery zone, which will include extension, replacement, and/or relocation of existing drainage structures to accommodate the widened road. All construction staging will occur within the existing right-of-way. The purpose of the Project is to improve public safety while traveling on the County road. Construction of this Project is planned to commence in spring 2025 or later and to be completed within two construction seasons. A more detailed project description is provided in Section 4 of this document.

Surrounding Land Uses and Setting: Land uses/types surrounding (within 5 miles) the Project area consist of oak-foothill pine, valley foothill riparian, undeveloped grazing land, orchards, agricultural facilities, hiking trails, other park uses, open space, and a few rural residences.

Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, or participation agreement.):

- Caltrans — National Environmental Policy Act (NEPA) Categorical Exclusion
- U.S. Fish and Wildlife Service – Section 7 Endangered Species Act Consultation
- U.S. Army Corps of Engineers — Section 404 Clean Water Act Nationwide Permit
- Central Valley Regional Water Quality Control Board — Section 401 Water Quality Certification
- State Water Resources Control Board – Section 402 NPDES Construction General Permit
- California Department of Fish and Wildlife — Section 1602 Streambed Alteration Agreement
- Yolo Habitat Conservancy

Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?:

The Native American Heritage Commission (NAHC) was contacted to request sacred lands file search and contact list. On April 11, 2019, the NAHC returned a negative result for sacred lands within the Project's Area of Potential Effects (APE). Additionally, the NAHC listed five Native American Tribes who may have knowledge of sites or traditionally cultural properties that may be affected by Project-related activities. All tribes listed, and including those Tribes requesting notification in Yolo County, were delivered a letter via email on September 27, 2019, giving formal notice and invitation by Yolo County to initiate SB 18/AB 52 consultation on the proposed Project and to request participation of interested parties.

The Yocha Dehe Wintun Nation responded via letter dated October 7, 2019, indicating a cultural interest and authority in the proposed Project area. The Yocha Dehe Wintun Nation indicated they were not aware of any known cultural resources near the Project site but recommends cultural sensitivity training for any pre-project personnel.

As of the date of developing this document, no additional responses from Native American Tribes have been received.

2.1 **Project Description**

Location

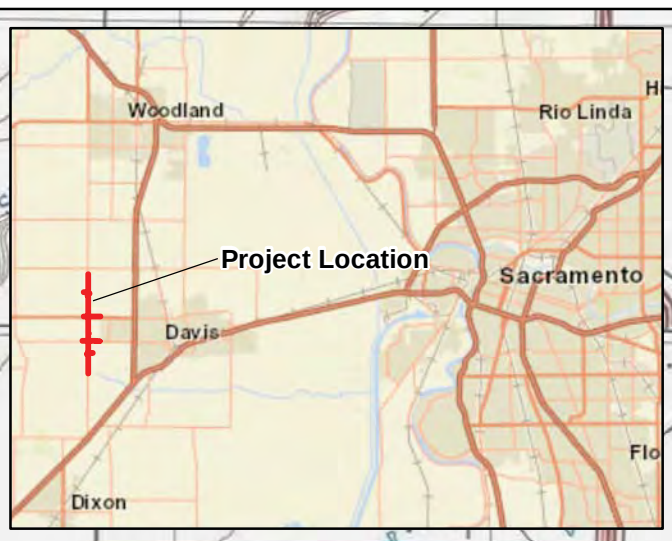
The Project is located within unincorporated Yolo County, California on County Road (CR) 98 from approximately 1300 feet south of CR 29 to the Solano County Line (Figures 1 and 2). The Project is located within the US Geological Survey (USGS) "Merritt" Quadrangle, Sections 1, 12, 13 and 24, Township 08N, Range 01E, Sections 6, 7, 18, and 19, Township 08N, Range 02E, Section 31, Township 09N, Range 02E, and Section 36, Township 09N, Range 01E.

History

The first phase of the CR 98 Bike and Safety Improvement Project was completed in 2014 and consisted of widening and improving shoulders between the City of Woodland boundary and the CR 98 and CR 29 intersection in an effort to provide safer access and improved visibility for vehicles and bicyclists. Three years following the completion of Phase I of the project, the improved roadway saw a 70% reduction in non-intersection accidents. The second proposed phase of this project will continue southward toward the Yolo County line. Phase II will implement shoulder widening as well as intersection improvements in an effort to reduce intersection-related accidents and injuries.

Project Purpose and Need

The purpose of the Project is to improve safety along the County Road (CR) 98 corridor for automobiles, farm equipment, farm-to-market trucking, aggregate product suppliers, commuters, residents, and bicyclists. The Project is the second phase of the overall CR 98 Bike and Safety Improvement Project, and will rehabilitate the entire width of the cross roads as part of the intersection improvements from CR 98 to an approximate length of 1,000 feet on either direction, except on the eastern segments of CR 31 and CR 32, which will extend to the City of Davis limits.



Dry Slough
Putah Creek
County Road 30
County Road 98
County Road 31
Russell Blvd
Hutchison Blvd
Plainfield
Footbridge
Water Tank
Beacon
UNIVERSITY AIRPORT
CANAL
GRANT
LEVEE

Project Boundary - (106.7 acres)

USGS 7.5' Quad: Merritt
T08N, R01E, Sections 1, 12,13,24,
T09N, R02E, Section 31,
T08N, R02E, Sections 6, 7,18,19,
T09N, R01E, Section 36
UTM Zone 10

NORTH

1:24,000
0 0.25 0.5 Miles

Data Sources: ESRI, USGS, Yolo County

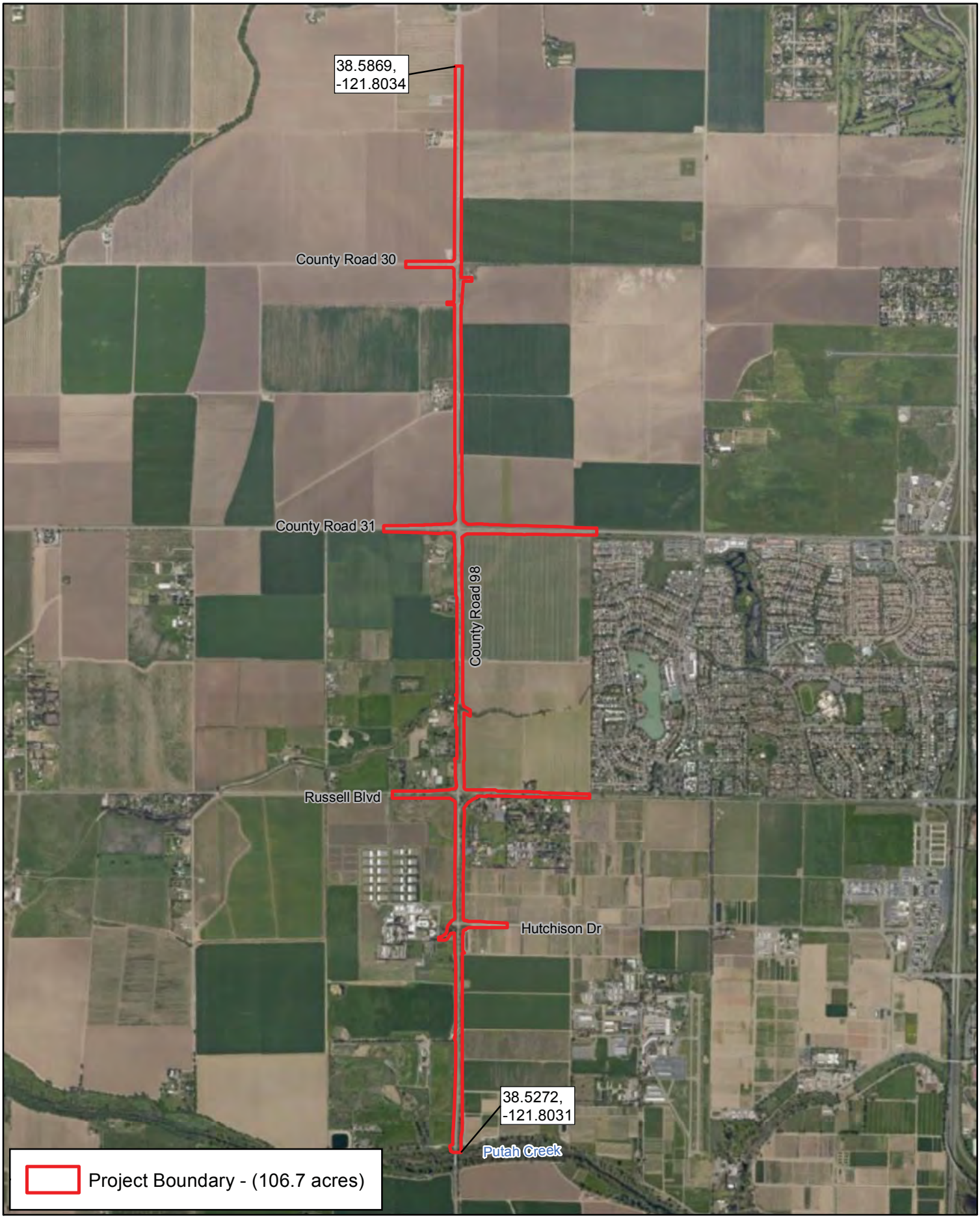
County Road 98 Bike and Safety Improvements Phase II

Project Location Map

Figure 1

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020



NORTH

1:30,000

0 1,000 2,000 Feet

Data Sources: ESRI, Yolo County, Maxar 07/13/2017

County Road 98 Bike and Safety Improvements Phase II
Aerial Photograph
Figure 2

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020

Project Description

Yolo County (County) is proposing to construct Phase II of the CR 98 Bike and Safety Improvement Project, which will extend improvements from the first phase of the CR 98 project completed in 2014, which included adding paved shoulders, clear recovery zones, and improved major intersections between the City of Woodland and CR 29/CR98 intersection. The extent of Phase II will be 4.1 miles, starting from approximately 1300± feet south of the CR 98/CR 29 intersection to the Solano County Line serving the needs of many diverse users, including farmers, aggregate suppliers, and other inter-region truckers, rural residents, commuters, and bicyclists.

Construction of the proposed Project will result in the addition of eight-foot paved shoulders as shared bike lanes, and an additional twelve-foot clear recovery zone along the entire length of both sides of the existing two-lane arterial road. The Project also proposes to construct a Class 1 shared path to close the gap between the existing Class 1 bike paths on Russell Blvd and the Class 2 bike lanes on Hutchison Drive on the University of California, Davis campus. The Project will reconstruct and improve the road structure throughout the extent of the Project. Roundabouts will be constructed at the intersections with CR 31, CR 32, and Hutchison Drive, calming entering speeds at the intersections and improving safety for all users. Implementation of the Project will require the relocation of drainage ditches and above-ground utilities outside the clear recovery zone, which will include extension, replacement, and/or relocation of existing drainage structures to accommodate the widened road. This will also include relocation and/or abandonment of underground utilities, where they are in conflict with the Project. The Project may include the installation of high-speed internet as well as relocation of AT&T, PG&E (electric & gas), Wave, UC Davis facilities, and Slawson gas facilities.

All construction staging will occur within County right of way (ROW). Acquisition of ROW and Temporary Construction Easements (TCE) will necessitate coordination with affected property owners, restoration of temporarily impacted infrastructure, and compensation to landowners and easement holders to replace losses. Acquisition of property under a farmland conservation easement will necessitate coordination with the property owners as well as Yolo Land Trust.

The drainage slough/ditch on the east side of CR 98 north of CR 32 will be reconstructed and relocated to the east. Native trees will be planted along the corridor, and off-site to replace trees that will be removed by the Project.

Site Restoration

The construction documents will identify the locations of sensitive natural communities, roadside trees, shrubs, and other plants that are not to be removed or damaged, and all other improvements or facilities within or adjacent to the roadway. Suitable safeguards would be installed to protect existing features from injury or damage. Environmentally Sensitive Area (ESA) fencing will be used to delimit work areas in the vicinity of protected resources. Areas temporarily disturbed by construction will be restored and revegetated with native plant species. If an object or facility is damaged as a result of construction activities, the contractor or other Project-related responsible party will provide restoration that meets the equal or above quality conditions of the damaged property before the onset of work or degrading incident.

Yolo HCP/NCCP Avoidance and Minimization Measures

The proposed Project is required to follow the conditions of the Yolo HCP/NCCP with the incorporation of Avoidance and Minimization Measures (AMMs) that are applicable to the proposed Project activities. The following AMMs were identified during the development of the Natural Environment Study prepared for the Project. See Appendix A: Natural Environment Study.

- **AMM1 - Establish Buffers**
- **AMM2 - Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces**
- **AMM3 - Confine and Delineate Work Area**
- **AMM4 - Cover Trenches and Holes during Construction and Maintenance**
- **AMM5 - Control Fugitive Dust**
- **AMM6 - Conduct Worker Training**
- **AMM7 - Control Nighttime Lighting of Project Construction Sites**)
- **AMM8 - Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas**
- **AMM9 - Establish Buffers around Sensitive Natural Communities**
- **AMM10 - Avoid and Minimize Effects on Wetlands and Waters**
- **AMM12 - Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle**
- **AMM14 - Minimize Take and Adverse Effects on Habitat of Western Pond Turtle**
- **AMM16 - Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite**
- **AMM21 - Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird**

The application of the aforementioned AMMs and integration within specific Mitigation Measures is described in detail in the Biological Resources section of this document.

3. Environmental Factors Potentially Affected

This Initial Study has determined that, in the absence of mitigation, the proposed Project could have the potential to result in significant impacts associated with the factors checked below. Mitigation measures are identified in this Initial Study that would reduce all potentially significant impacts to less-than-significant levels.

___	Aesthetics	___	Land Use and Planning
___	Agricultural Resources	___	Mineral Resources
___	Air Quality	___	Noise
✓	Biological Resources	___	Population and Housing
___	Cultural Resources	___	Public Services
✓	Tribal Cultural Resources	___	Recreation
___	Energy	___	Transportation/Traffic
___	Geology and Soils	___	Utilities and Service Systems
___	Greenhouse Gas Emissions	___	Wildfire
___	Hazards and Hazardous Materials	✓	Mandatory Findings of Significance
___	Hydrology and Water Quality	___	None Identified

4. Determination

On the basis of this initial evaluation:

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

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the Project-specific mitigation measures described in Section III have been added to the Project. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the 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 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.

Signature: Stephanie Cormier Digitally signed by Stephanie Cormier DN: cn=Stephanie Cormier, o=Yolo County Department of Community Services, ou=Planning, email=stephanie.cormier@yolocounty.org, c=US Date: 2021.10.25 16:14:46 -07'00' **Date:** 10.25.2021

Name and Title: Stephanie Cormier, Principal Planner

5. Evaluation of Environmental Impacts

- Responses to the following questions and related discussion indicate if the proposed Project will have or potentially have a significant adverse impact on the environment.

- A brief explanation is required for all answers except "No Impact" answers that are adequately supported by referenced information sources. A "No Impact' answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors or general standards.

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

- Once it has been determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there is at least one "Potentially Significant Impact" entry when the determination is made an EIR is required.

- Negative Declaration: "Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study will describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 4, "Earlier Analysis," may be cross-referenced).

- Earlier analyses may be used where, pursuant to tiering, a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)].

- Initial studies may incorporate references to information sources for potential impacts (e.g. the general plan or zoning ordinances, etc.). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list attached, and other sources used or individuals contacted are cited in the discussion.

- The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

5.1 **Aesthetics**

Except as provided in Public Resources Code Section 21099 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?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

The following information is from the 2009 County General Plan CEQA Environmental Impact Report (EIR, Yolo County 2009b). The General Plan EIR characterizes the unincorporated area of the County as having seven separate subareas of distinct natural resources, geographic, or developed qualities in order to describe the varying visual and scenic resources found within the County.

Yolo County is predominantly rural, having an agricultural character throughout most of the eastern portion of the County and a more topographically varied foothill/mountain character in the western portion of the County.

The Valley Floor subarea where the proposed Project is located generally includes those lands south of the Cache Creek subarea and north of the Putah Creek/Lake Berryessa subarea as well as lands east of the Dunnigan Hills subarea and west of the Sacramento River subarea. The area includes the City of Woodland and the City of Davis, as well as the towns of Esparto and Madison and the Monument Hills community. These lands are almost entirely agricultural in land use and include vast stretches of alfalfa, rice, and tomato fields as well as other varieties of field crops and tree crops. The landscape within this subarea is predominantly flat, with expansive views of cultivated fields uninterrupted by natural or constructed landforms or significant development. Adding to the visual character of this subarea are intermittent farm implement storage and agricultural industrial buildings, including barns, processing facilities, and storage areas, which give the Valley Floor subarea a truly rural character.

Yolo County has no designated federal or State Scenic Highways. There are no local scenic highways designated by Yolo County within the Project area (Yolo County 2009a).

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The landscapes and visual features of the County are of predominantly local importance and the County does not host significant numbers of viewers (Yolo County 2009a). The County's scenic areas, vistas, and views are predominantly accessible by the County's locally designated scenic highways. The Project is not located on or near a County designated scenic highway. Views form the Project location include Putah Creek at the southernmost end and open views of agricultural fields. Construction of roadway improvements is anticipated to require the removal of native and non-native trees. The final tree removal will be determined by the County during final design.

The proposed vegetation removal will result in a minor change to the views of the Project site. Upon completion of the Project, existing views will be maintained. The proposed improvements are consistent with the existing land use and aesthetic features of the area. Proposed roadway improvements will not result in a substantial adverse impact to any scenic vistas. Project impacts are less than significant.

b) ***Less Than Significant Impact.*** Yolo County has no designated federal or State Scenic Highways. See also discussion under item a) above.

c) ***Less Than Significant Impact.*** See discussion of a) and b) above.

d) ***Less Than Significant Impact.*** The Project may include the use of pole mounted lighting to provide safety and security for those using the roadway corridor. Any lighting installed would be downward facing with read cut-off panels to prevent light spillage. Project impacts are less than significant.

Mitigation Measures: None required.

5.2 **Agricultural and Forestry Resources**

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:	*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?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The Project is located in an agricultural area of County jurisdiction. There is farmland designated as Prime farmland in the Project area as defined by the Farmland Mapping and Monitoring Program (FMMP). There are also parcels within the Project area that have Williamson Act contracts. See Appendix B: Farmlands Study Report for details.

It is anticipated that no Williamson Act contracts will be terminated, although parcels currently under contract may require minor contract revisions, due to the changes to access for adjacent property owners, temporary construction easements, and minor loss of farmland resulting from right of way acquisitions. The remaining acreage from each parcel under contract will continue to meet Yolo County's criteria for eligibility to remain enrolled in the Williamson Act.

Government Code §51295 states that when a public improvement project acquires or modifies only a portion of a parcel of land subject to a Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland taken. The remaining land continues to be subject to the contract unless it

is adversely affected with property acquired by eminent domain or in lieu of eminent domain. Section 15206(b)(3) of the California Environmental Quality Act Guidelines identifies the cancellation of 100 acres or more of an open space contract under the Williamson Act by a project as constituting a project of statewide, regional, or areawide significance. Although the Project bisects land that is enrolled in the Williamson Act, the Project only affects 10.18 acres of Williamson Act contract land. These impacts to lands enrolled in the Williamson Act affect 15 parcels with impacts ranging from 0.14 acres to 1.99 acres. As stated above, it is anticipated that no Williamson Act contracts will be terminated, although parcels currently enrolled will require minor revisions to their contracts due to the new right of way acquisitions resulting from fill slope intrusions onto adjoining properties.

The project will not result in any impacts to agricultural improvements that might be needed for the cultivation of the affected parcels, such as wells or canals. Title 49 of the Code of Federal Regulation Part 24 Uniform Relocation Assistance and Real Property Acquisition Act (URA) for Federal and Federally-assisted Programs (section 24.102 Basic Acquisitions policies or section 24.103 Criteria for appraisals) would apply to the compensation for improvements and the need to pay for salvage value. These sections would apply to the compensation to landowners for any right of way acquisition as a result of project activities. Accordingly, the landowners would be compensated to replace any affected improvements.

When farmland is affected on State-funded projects, Caltrans consults with the U.S. Department of Agriculture's Natural Resources Conservation Service. Caltrans uses the U.S. Department of Agriculture's Farmland Conversion Impact Rating Form NRCS-CPA-106 to determine impacts to farmland. The evaluation form is submitted to the U.S. Department of Agriculture's Natural Resources Conservation Service, which assigns a score for a site's relative value. The Natural Resources Conservation Service returns the evaluation form, and Caltrans completes a site assessment with the score assigned from the Natural Resources Conservation Service. A combined score in part V and part VI under 160 indicates no further consideration for protection. A total score of between 160 and 220 requires two alternative corridors to be evaluated. The proposed Project will permanently impact 16.97 acres of prime farmland, which includes 3.19 acres containing Farmland Conservation Easements. A Farmland Conversion Impact Rating Form was submitted to Caltrans to utilize and consult with the Natural Resource Conservation Service. Based on the amount of impacts to farmlands, the U.S. Department of Agriculture's Farmland Conversion Impact Rating was 175, above the 160 score threshold for minimal impacts. The Farmland Protection Policy Act (Title 7 Code of Federal Regulation 658.4(c)(3)), states that "sites receiving scores totaling 160 or more be given increasingly higher levels of consideration for protection," and therefore a review of alternatives was required to evaluate impacts to farmlands.

The alternatives analysis for farmland impacts included the review of two alternatives and a no-project alternative. The first alternative (Proposal/Alternative B) considered for this plan, but dropped from consideration, was to utilize standard drainage ditch slopes which resulted in a larger impact to farmlands and associated resources. Proposal/Alternative B resulted in 25.63 acres of impacts to farmlands as shown on Exhibit B. Alternative A was developed to increase the slope of the drainages with the intended goal of reducing the total impact on the surrounding farmland. Implementing this alternative would not have a negative impact on the purpose of this project to improve public safety by widening and improving the shoulders along County Road (CR) 98. Increasing the slope of the drainages reduces the impacts to FMMP farmland by 8.66 acres. The third alternative is a no project alternative. The no project alternative does not meet the operational and safety goals established in the County's General Plan or SACOG's Metropolitan

Transportation Plan, to provide a corridor that meets the travel demand model and vehicle miles travelled (VMT) reduction and therefore does not meet the project purpose and is removed from consideration.

After review of the alternatives analysis for impacts to farmlands, NRCS determined that no further evaluation is required and no further steps were needed to mitigate or reduce impacts to agricultural lands.

The Yolo County Agricultural Conversion and Mitigation Program (Yolo County Ordinance §8-2404) requires mitigation for conversion of agricultural lands to predominately non-agricultural use. Section 8-2404 (c)(2)(ii) of the ordinance allow for facilities and infrastructure that do not generate revenue, such as this project, to be exempt from farmland conversion mitigation requirements.

In determining whether an impact is considered substantial or not, the County has discretion in choosing a threshold of significance. Yolo County does not have a specific threshold of significance to assess potentially significant impacts to farmland for purposes of analysis under CEQA. However, the County has established different criteria for protecting farmland in different contexts. First, the County's Agricultural Conservation and Mitigation Program (County Code Sec. 8-2.404 & 405) sets an impact threshold of 20 acres for projects that require the acquisition of a permanent conservation easement, rather than the payment of in-lieu fees. Second, the County's Agricultural Zoning Regulations (County Code Sec. 8-2.302) sets forth minimum parcel size for new parcels in the agricultural zones of 40 acres for irrigated parcels in permanent crops, 80 acres for irrigated parcels, and 160 acres for uncultivated and not irrigated. Similarly, the County does not allow new Williamson Act contracts that are less than 40 acres of irrigated farmland; 80 gross acres where the soils are capable of cultivation but are not irrigated; and 160 acres where the soils are not capable of cultivation. These thresholds show that parcels typically require a certain minimum size to contain viable farming operations. Finally, the County's Williamson Act Guidelines determine a project's compatibility with agriculture based on the principles of compatibility in Government Code section 51238.1:

> (1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
>
> (2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.
>
> (3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Accordingly, significance under CEQA can be evaluated through a three-step evaluation: 1) does the Project remove more than 20 acres of farmland, 2) does the Project reduce the irrigated farmland of any given parcel to less than 40 acres, or 3) are there aspects of the project that are incompatible with agriculture on the affected parcel(s) or neighboring farmland?

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The proposed Project will permanently impact 16.97 acres of land designated as Prime Farmland by the California Department of Conservation Farmland Mapping & Monitoring Program (FMMP) which includes 10.18 acres of land that falls under the Williamson Act and 3.19 acres of Farmland Conservation Easements. There is no farmland designated as "Unique" or "Of Statewide Significance." The permanent impacts to farmland do not remove more than 20 acres of farmland, do not reduce the size of a parcel to the 40 acres applicable to irrigated farmland, and will not significantly compromise the long-term productive agricultural capability of any parcel, displace any current or foreseeable farming operations, or remove adjacent agricultural or open space land. Due to the relatively minor amount of farmland conversion, this impact is considered to be less than significant.

b) ***Less Than Significant Impact.*** The affected parcels within the Project area are zoned by Yolo County as Agricultural Intensive (A-N) and are designated for Agriculture (AG) in the Yolo County General Plan. Roads are not separately zoned and are included in any zone without the need for a special designation. Construction activities are expected to permanently impact approximately 16.97 acres of agricultural land, which includes 10.18 acres of land enrolled in the Williamson Act and 3.19 acres of farmland protected under conservation easement(s). Based on data from the California Department of Conservation, the proposed Project will permanently impact 10.18 acres of Prime Farmland with Williamson Act contracts. The removal of Williamson Act contracted land to accommodate the Project is authorized by the California Land Conservation Act, and therefore does not conflict with the Williamson Act (California Department of Conservation 2020).

c) ***No Impact.*** The proposed Project consists solely of roadway improvements and does not include any rezoning activities.

d) ***No Impact.*** The proposed Project will not result in the loss of conversion of forest land.

e) ***No Impact.*** The Project does not include other activities that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

Mitigation Measures: None required

5.3 **Air Quality**

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. 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?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

The Project area is located in the Sacramento Valley Air Basin (SVAB). The air quality of a region is determined by the air pollutant emissions (quantities and type of pollutants measured by weight) and by ambient air quality (the concentration of pollutants within a specified volume of air). Air pollutants are characterized as primary and secondary pollutants. Primary pollutants are those emitted directly into the air, for example carbon monoxide (CO), and can be traced to a single pollutant source. Secondary pollutants are those pollutants that form through chemical reactions in the atmosphere, for example reactive organic gasses (ROG) and nitrogen oxides (NO_X) combine to form ground level ozone, or smog.

Congress established much of the basic structure of the Clean Air Act in 1970, and made major revisions in 1977 and 1990. The Federal Clean Air Act established national ambient air quality standards (NAAQS). These standards are divided into primary and secondary standards. Primary standards are designed to protect public health and secondary standards are designed to protect other values. Because of the health-based criteria identified in setting the NAAQS, the air pollutants are termed "criteria" pollutants. California has adopted its own, more stringent, ambient air quality standards (CAAQS). Table 2 lists the SVAB attainment status for federal and state criteria pollutants.

Table 1. Attainment Status for SVAB in Yolo County

Pollutant	National Designation	State Designation
Ozone	Nonattainment (8 hr.)	Nonattainment-Transitional
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Nonattainment	Unclassified
CO	Unclassified/ Attainment	Attainment
NO_2	Unclassified/ Attainment	Attainment
SO_2	Unclassified/ Attainment	Attainment
Sulfates	NA	Attainment
Lead	Unclassified/ Attainment	Attainment
Hydrogen Sulfide	NA	Unclassified
Visibility Reducing Particles	NA	Unclassified

(Source: CARB 2020)

Yolo County is currently in nonattainment status for the 8-hour ozone NAAQS. The County is in nonattainment-transitional status for the ozone and nonattainment status for the PM10 CAAQS.

The Yolo-Solano Air Quality Management District (YSAQMD) administers the state and federal Clean Air Acts in accordance with state and federal guidelines. The YSAQMD regulates air quality through its district rules and permit authority. It also participates in planning review of discretionary project applications and provides recommendations. The following YSAQMD rules may apply to the Project:

- **Rule 2.3 Visible Emissions:** The purpose of this rule is to limit the emissions of visible air contaminants to the atmosphere.
- **Rule 2.5 Nuisance:** Prohibits the discharge of air containments which cause injury, detriment, nuisance, or annoyance.
- **Rule 2.11 Particulate Matter:** The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard.
- **Rule 2.28 Cutback and Emulsified Asphalts:** The purpose of this Rule is to limit the emissions of organic compounds from the use of cutback and emulsified asphalts in paving materials, paving, and maintenance operations.
- **Rule 2.32 Stationary Internal Combustion Engines:** The purpose of this Rule is to limit the emission of oxides of nitrogen (NOx) and carbon monoxide (CO) from stationary internal combustion engines.
- **Rule 9.8 Asbestos – Serpentine Rock:** The purpose of this Rule is to limit asbestos emissions to the atmosphere from serpentine rock by prohibiting the use or sale of serpentine rock containing more than one percent (1%) asbestos for surfacing applications.

The YSAQMD sets threshold levels for use in evaluating the significance of criteria air pollutant emissions from project-related mobile and area sources in the *Handbook for Assessing and Mitigating Air Quality Impacts* (the Handbook, YSAQMD 2007). The Handbook identifies the following significance thresholds for use in evaluating criteria air pollutant emissions from project-related activities.

- Reactive Organic Gases (ROG) 10 tons per year (approx. 54.8 pounds per day)
- Oxides of Nitrogen (NOx) 10 tons per year (approx. 54.8 pounds per day)
- Particulate Matter (PM10) 80 pounds per day
- Carbon Monoxide (CO) Violation of State ambient air quality standard

The Project will not increase the capacity of CR 98. Since the Project does not increase the capacity of CR 98, the Project will not result in increased operational vehicular emissions. The air quality analysis below is focused on potential construction related impacts.

Construction emissions were estimated for the Project using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM), Version 9.0.0 (Appendix C). The RCEM was developed to estimate emissions from linear projects types including road and bridge construction. The RCEM divides the Project into four 'Construction Periods':

- Grubbing/Land Clearing
- Grading/Excavation
- Drainage/Utilities/Sub-Grade
- Paving

Based on similar road projects, the assumptions presented in Table 2 regarding type of construction equipment and use duration were used in the RCEM. Other project assumptions used in the RCEM include a total ten-month construction schedule starting in 2025, and equipment assumed to run eight hours per day Results of the RCEM based on the Project assumptions are in Table 3.

Table 2. Construction Equipment and Use Assumptions.

Construction Period	Equipment	
	Quantity (Assumed Running Hrs Per Day)	**Type**
Grubbing/ Land Clearing	1(8) 2(8) 9(8)	Crawler Tractors Excavators Signal board
Grading/Excavation	1(8) 3 (8) 2(8) 2(8) 1(8) 2(8) 9(8) 4(8)	Crawler Tractors Excavators Graders Roller Rubber Tired Loader Scrapers Signal board Tractor/Loader
Drainage/Utilities/Sub-Grade	1(8) 1(8) 1(8) 1(8) 1(8) 1(8) 1(8) 9(8) 3(8)	Air Compressor Generator Set Grader Plate Compactor Pump Rough Terrain Forklift Scrapers Signal Board Backhoe
Paving	1(8) 1(8) 2(8) 9(8) 3(8)	Paver Paving Equipment Roller Signal Board Tractor/Loader

Table 3. Estimated Construction Emissions with Mitigation Options

Project Phases	ROG lbs/day	NOx lbs/day	PM10 Total lbs/day	CO lbs/day
Grubbing/ Land Clearing	1.3	10.04	10.47	12.56
Grading/excavation	4.54	41.10	11.74	45.05
Drainage/utilities/sub-grade	2.94	25.41	11.07	30.06
Paving	1.61	13.41	0.66	20.16
Maximum lbs/day	4.54	25.41	11.74	45.05
Significance Threshold (tons/year)	*10*	*10*	*--*	*--*
Significance Threshold lbs/day	*54.8*	*54.8*	*80*	*--*
Significant?	**No**	**No**	**No**	***N/A***

Notes: Data entered to emissions model: Project Start Year: 2025; Project Length (months): 10; Total Project Area (acres): 106.7; Total Soil Imported/Exported (yd^3/day): 20. PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures. Total PM10 emissions are the sum of *exhaust* and *fugitive dust* emissions.

Potential Environmental Effects

a) ***No Impact.*** A project is inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. The proposed Project does not include development of new housing or employment centers and would not induce population or employment growth; therefore, the proposed Project would not conflict with or obstruct the implementation of any air quality plan.

b) ***Less Than Significant Impact.*** In the Project area, Yolo County is currently in nonattainment status for the 8-hour ozone NAAQS as well as the ozone and PM10 CAAQS. Project construction would create short-term increases in ROG, NOx, and PM10 emissions from vehicle and equipment operation. The RCEM estimates are below the Yolo County CEQA significance threshold of 10 tons per year (54.8 lbs per day) each for ROG and NOx and 80 lbs/day PM_{10}. The Project would not generate additional traffic on CR 98, would not affect intersection operations, and would not result in a potential violation of the CO standard. This impact is considered less than significant

c) ***Less Than Significant Impact.*** Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Sensitive land uses occur where sensitive individuals are most likely to spend time (e.g. schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities). Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution.

The Project is located west of the City of Davis. The site abuts small residential communities, especially along Russell Boulevard, and is located about a half-mile west of the Stonegate subdivision. Within the Stonegate subdivision, there is a small park, Stonegate Country Club, and a daycare center. The Project area abuts the UC Davis Putah Creek Riparian Reserve and its Pedrick Road Trailhead at the southern end of the Project. No other potential sensitive land uses occur within one mile. Sensitive individuals who utilize these facilities have the potential to be exposed to PM10, PM2.5, CO, ROG, and NOx during construction. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential air quality impacts on sensitive receptors. These impacts are considered less than significant.

d) ***Less Than Significant Impact.*** Construction activities would involve the use of construction equipment, which have distinctive odors. Odors from construction activities are considered less than significant because of the limited number of the public affected and the short-term nature of the emissions. The proposed Project would not result in increased production of odors causing compounds beyond the construction period.

Mitigation Measures: None required.

5.4 **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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

Potential impacts to biological and wetlands resources were evaluated in the following Project documents:

- **Natural Environment Study (NES):** The NES is a standard Caltrans report format for documenting and evaluating the potential Project impacts to biological resources (Gallaway Enterprises 2020a).
- **Biological Assessment (BA):** The BA is a standard United States Fish and Wildlife (USFWS) report format for documenting and evaluating the potential Project impacts to federally listed species (Gallaway Enterprises 2020b).
- **Draft Delineation of Waters of the United States**: This report evaluates and delineates wetland and other waters of the U.S. in the Project area (Gallaway Enterprises 2020c).

The documents conclude the following regarding biological resources:

- The Project area contains one (1) elderberry shrub that potentially contains suitable habitat for the federally listed valley elderberry longhorn beetle (VELB). The Project will have no effect on any other federally listed species or designated critical habitat.

- Potentially suitable habitat for other special-status wildlife species and wildlife species covered under the Yolo HCP/NCCP including western pond turtle (*Emys marmorata*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), tricolored blackbird (*Agelaius tricolor*), northern harrier (*Circus hudsonius*), and nesting migratory birds and raptors, occurs within or adjacent to the Project area.
- The Project area does not provide suitable habitat for special-status plant species.
- The Project will result in impacts to jurisdictional Waters of the United States (WOTUS) under §404 of the Clean Water Act (CWA).
- Permits and authorizations required for the Project include a §404 CWA Nationwide Permit from the U.S. Army Corps of Engineers (Corps), a §401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), a National Pollutant Discharge Elimination System (NPDES) Permit from the RWQCB, and a Fish and Game Code §1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW). The Project will seek coverage under the Yolo County Habitat Conservation Plan & Natural Community Conservation Plan (Yolo HCP/NCCP).

Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP)

The Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP) is a comprehensive, county-wide plan to provide for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Yolo HCP/NCCP refers to the range of future anticipated activities as *covered activities* and the 12 sensitive species covered by this HCP/NCCP as *covered species*. The Yolo HCP/NCCP will improve habitat conservation efforts in Yolo County; encourage sustainable economic activity; and maintain and enhance agricultural production.

The Yolo County HCP/NCCP Section 4.3, Avoidance and Minimization Measures (AMMs), describes conditions that project proponents must adopt to receive coverage under the Yolo HCP/NCCP. These avoidance and minimization measures specify how project proponents will avoid and minimize take of covered species during implementation of covered activities and are referred to herein as AMMs. Section 4.3.1, General Project Design, describes AMMs that apply to the design of all development projects. Section 4.3.2, General Construction and Operations and Maintenance, describes AMMs that apply to all construction and operations, and maintenance activities. Section 4.3.3, Sensitive Natural Communities, describes AMMs that are specific to rare or sensitive natural communities, such as the fresh emergent wetland natural community and other natural communities associated with aquatic features, and therefore warrant specific avoidance and minimization measures. Section 4.3.4, Covered Species, describes AMMs that are specific to each covered species.

Physical Conditions

The Project area is located within the Sacramento Valley, west of Davis in unincorporated Yolo County, California. The Project area is composed primarily of existing asphalt roadway and gravel road shoulders. Land within the Project area that occurs outside of the gravel road shoulders is primarily composed of agricultural land and rural residences with associated planted trees and landscape plants. Soils within the Project area consist of silty clay loam. The average annual precipitation for the area is 17.55 inches and the

average temperature is 60.4° F (Western Regional Climate Center 2020). The Project area occurs at an elevation of approximately 70 feet above sea level and is sloped between 0 and 2 percent.

There are several drainages present within the Project area (See Appendix D: Draft Delineation of Waters of the U.S. Map). The Project limits terminate just before Putah Creek at the south end of the Project area. All of the drainages present within the Project area are man-made or man-altered and their hydrology is influenced by agriculture. There is one (1) wetland feature, a pond, present within the Project area.

Biological Conditions

Land cover types delineated by the Yolo HCP/NCCP within the Project area are Lacustrine and Riverine, Deciduous Fruits/Nuts, Field Crops, Grain and Hay Crops, Grassland Alliance, Great Valley Oak Riparian, Semi agricultural, Urban, and Vegetated Corridor. The Project area is also located within 100 feet of designated Lacustrine and Riverine land cover type at the southern end of the Project, where the Project terminates within 100 feet of Putah Creek. The existing roadway is not considered habitat.

Per the Project NES, the Project has the potential to affect five (5) HCP/NCCP covered species:

- Valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus*), federally listed as threatened
- Western pond turtle (*Emys marmorata*), California Species of Special Concern
- Swainson's hawk (*Buteo swainsoni*), California listed as threatened
- White-tailed kite (*Elanus leucurus*), California Fully Protected species
- Tricolored blackbird (*Agelaius tricolor*), California listed as threatened

The Project also has the potential to affect nesting migratory birds and raptors protected by the Migratory Bird Treaty Act (MBTA) and northern harrier (*Circus hudsonius*), a California Species of Special Concern.

A comprehensive list of species that are known to occur in the region and were evaluated for their potential to occur in the Project area is included in the NES (Appendix A). Field surveys conducted by Conservancy-approved qualified biologists identified the presence of habitat that could support the wildlife listed above.

Yolo HCP/NCCP Designated Land Cover Types within the Project Area

Fresh Emergent Wetland Sensitive Natural Community: Freshwater Marsh Alliance

Freshwater Marsh Alliance is a subset of the Fresh Emergent Wetland Sensitive Natural Community (SNC) as defined by the Yolo HCP/NCCP. Freshwater emergent wetland vegetation occurs along streams and rivers and at the margins of ponds with some areas of open water, dominated by bulrushes and cattails. There is one (1) wetland feature present near the western boundary of the Project area, south of CR 32, which is considered Freshwater Marsh Alliance per the Yolo HCP/NCCP. This wetland area is heavily vegetated with freshwater emergent wetland vegetation, including cattails (*Typha* sp.). This area is a man-made detention pond, built by U.C. Davis, with water diverted from the existing canal to the north. The Freshwater Marsh Alliance land cover type within the Project area could potentially support the Yolo HCP/NCCP-covered tricolored blackbird and western pond turtle.

Lacustrine and Riverine

The Lacustrine and Riverine SNC is defined by the Yolo HCP/NCCP as the open water portions of lakes, rivers, and streams. Within the Project area, there are six (6) drainages and one (1) wetland feature that qualify as Lacustrine and Riverine habitat. All drainages present within the Project area contained mud substrate and

exhibited evidence of either ephemeral or intermittent flows. These drainages were dry during the April site visit and likely convey precipitation and agricultural runoff during the wet season.

Other Agriculture: Deciduous Fruits/Nuts

The Other Agriculture: Deciduous Fruits/Nuts land cover type consists of orchards composed of nuts or fruits that are not citrus or subtropical. Deciduous orchards are dominated by tree species that lose their leaves during the winter months. The understory between the rows is typically composed of a variety of grasses and other herbaceous plants including mustards (*Brassica* sp.) or are managed to prevent growth totally or in part through the use of herbicides to facilitate harvest. Some species of birds and mammals have adapted to orchard habitats for foraging, nesting, and cover (Mayer and Laudenslayer 1988). Due to the monoculture and maintenance of most orchards, this environment does not support an abundance of breeding wildlife.

Cultivated Lands: Field Crops

The Cultivated Lands: Field Crops land cover type consists of agricultural fields planted in corn, dry beans, grain sorghum, safflower, sudan, sugar beets, sunflowers, or other crops grown in fields on a large scale that do not fit into other Cultivated Lands Semi Natural Community categories. Row and field crops do not conform to normal habitat stages and are regulated by the crop cycle in California. Rodents, birds, and some mammals have adapted to field crops and are controlled by fencing, trapping, and poisoning (Mayer and Laudenslayer 1988).

Cultivated Lands: Grain and Hay Crops

The Cultivated Lands: Grain and Hay Crops land cover type consists of irrigated and dryland grain and hay crops; predominantly wheat, barley, rye, and oat hay. Grain and hay crops do not conform to normal habitat stages and are regulated by the crop cycle in California. Rodents, birds, and some mammals have adapted to field crops and are controlled by fencing, trapping, and poisoning (Mayer and Laudenslayer 1988).

Grassland Natural Community: Grassland Alliance

The California Annual Grassland Alliance land cover type is a subset of the Grassland Natural Community and is dominated by annual grasses and forbs. Common species include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), yellow star-thistle (*Centaurea solstitialis*), broadleaf filaree (*Erodium botrys*), cutleaf filaree (*Erodium cicutarium*), Italian ryegrass (*Festuca perennis*), medusahead (*Elymus caput-medusae*), various introduced clovers (*Trifolium* spp.), and Zorro fescue (*Vulpia myuros*). Associated native herbaceous species may also occur. Annual grasslands occur on open flat to gently rolling lands and are dominated by grasses and annual plants, with the dominant species varying depending on the climate and soils.

Valley Foothill Riparian Natural Community: Great Valley Oak Riparian

The Great Valley Oak Riparian land cover type is a subset of the Valley Foothill Riparian Natural Community, which is designated as a SNC by the Yolo HCP/NCCP. The Great Valley Oak Riparian land cover type consists of deciduous trees along streams and rivers, dominated by cottonwoods and willows, and areas dominated by herbaceous or shrubby riparian vegetation if less than 1 acre in size. Within the Project area, Great Valley Oak Riparian land cover occurs in association with the unnamed drainage north of CR 32 (Russell Boulevard) and Putah Creek in the southeast corner of the Project area.

Semi-agricultural/Incidental to Agriculture

Semi agricultural areas include livestock feedlots, farmsteads, and miscellaneous semi agricultural features such as small roads, ditches, and unplanted areas of cropped fields (e.g., field edges).

Developed: Urban

The Developed: Urban land cover type consists of areas dominated by pavement and building structures, including barren lands graded for development. This environment can present a mosaic of vegetation, including primarily ornamental landscaping, but can also incorporate native tree species. Generalist and invasive species often occupy urban habitat such as common raven (*Corvus corax*), house sparrow (*Passer domesticus*), and Brewer's blackbirds (*Euphagus cyanocephalus*) as well as small to medium mammals (e.g., raccoon, opossum, striped skunk) (Mayer and Laudenslayer 1988).

Developed: Vegetated Corridor

The Developed: Vegetated Corridor land cover type consists of areas planted in ornamental vegetation maintained adjacent to highways or in association with houses and developed areas, or other vegetated corridors associated with developed areas and isolated from intact stream channels. The vegetated corridor land cover type occurs along the sides of CR 98, primarily in the southern portion of the Project area, where ornamental black walnut (*Juglans nigra*) have been planted along the corridor.

Impacts to Yolo HCP/NCCP land cover types that occur within the Project area have been quantified below.

Table 4. Impacts to Land Cover Types within the CR 98 Bike and Safety Improvement Project

Impacts to Land Cover Types		
Land Cover Types	**Permanent Impacts Acres**	**Fee Buffer Acres**
Other Ag - Deciduous Fruits/Nuts	7.73	2.66
Cultivated Land - Field Crops	8.44	2.64
Cultivated Land - Grain and Hay Crops	3.76	1.94
Grassland Natural Community - Grassland Alliance	0.75	0.68
Valley Foothill Riparian - Great Valley Oak Riparian	0.71	0.18
Semi agriculture Incidental to Ag - Semi agricultural	4.59	1.06
Developed - Urban	36.97	1.44
Lacustrine and Riverine - Open Water	0.44	0.03
Fresh Emergent Wetland - Freshwater Marsh Alliance	0.00	0.00
Developed - Vegetated Corridor	10.57	8.38
Totals =	**73.96**	**19.03**

Yolo HCP/NCCP Avoidance and Minimization Measures

The Project will implement the following required Yolo County HCP/NCCP AMMs into the Project design and the mitigation measures (MM) presented in this document:

- **AMM1: Establish Buffers:** Addressed in MM BIO-6 (Wetlands and Waters)
- **AMM2: Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces**

- **AMM3: Confine and Delineate Work Area:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Establish Buffers around Sensitive Natural Communities),
- **AMM4: Cover Trenches and Holes during Construction and Maintenance:** Addressed in MM BIO-2 (Western Pond Turtle).
- **AMM5: Control Fugitive Dust:** This Yolo HCP/NCCP AMM is addressed through adhering to YSAQMD Rules in section 5.3 above.
- **AMM6: Conduct Worker Training:** Addressed in MM BIO-8 (Worker Environmental Training Program).
- **AMM7: Control Nighttime Lighting of Project Construction Sites:** Addressed in MM BIO-10 (Control Nighttime Lighting)).
- **AMM8: Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Establish Buffers around Sensitive Natural Communities).
- **AMM9: Establish Buffers around Sensitive Natural Communities:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Establish Buffers around Sensitive Natural Communities).
- **AMM10: Avoid and Minimize Effects on Wetlands and Waters:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Establish Buffers around Sensitive Natural Communities)
- **AMM12: Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle:** Addressed in BIO-1 (Valley Elderberry Longhorn Beetle).
- **AMM14: Minimize Take and Adverse Effects on Habitat of Western Pond Turtle:** Addressed in MM BIO-2 (Western Pond Turtle).
- **AMM16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite:** Addressed in MM BIO-3 (Swainson's Hawk and White-Tailed Kite).
- **AMM19: Minimize Take and Adverse Effects on Least Bell's Vireo:** Addressed through planning surveys already conducted and documented in the NES.
- **AMM21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird:** Addressed in MM BIO-4 (Tricolored Blackbird).

Potential Environmental Effects

a) ***Less Than Significant with Mitigation Incorporated***

Special-Status Wildlife Species:

Valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus*): The VELB is listed as threatened under the federal ESA and is a covered species under the Yolo HCP/NCCP. The beetle is found only in association with its host plant, elderberry (*Sambucus* spp.). One (1) elderberry shrub was identified within the Project area during the planning level survey. It is located in the southern portion of the Project area, on the west side of CR 98. The shrub present within the Project

area contains stems of sufficient size (i.e., 1.0 inches or greater) to provide habitat for VELB. As a result of the protocol-level VELB survey, a total of 30 stems 1.0 inch or greater in diameter at ground level were recorded. Potential VELB exit holes were identified. Because of the potential for the proposed Project to affect a federally listed species, a biological assessment (BA) will be prepared for Caltrans to initiate consultation with the USFWS under Section 7 of the ESA.

Implementation of MM BIO-1 (Valley Elderberry Longhorn Beetle), which incorporates Yolo HCP/NCCP AMM12 (Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle), will transplant the elderberry shrub and pay fees for compensatory mitigation credits, thereby reducing potential impacts to less than significant.

Western pond turtle (*Emys marmorata*): The western pond turtle is a Species of Special Concern (SSC) in California and is a covered species under the Yolo HCP/NCCP. There is suitable habitat for western pond turtle present within the Lacustrine and Riverine habitat types within the Project area. The Project area is also located within 100 feet of Putah Creek, which provides suitable habitat for western pond turtle.

Implementation of MM BIO-2 (Western Pond Turtle), which incorporates Yolo HCP/NCCP AMMs 4 and 14 (Cover Trenches and Holes during Construction and Maintenance; Minimize Take and Adverse Effects on Habitat of Western Pond Turtle), will reduce potential impacts to western pond turtle by minimizing potential entrapment to less than significant. Implementation of MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities), and MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to western pond turtle by avoiding environmentally sensitive areas and sensitive natural communities, and requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

Nesting Migratory Birds and Raptors: The Project area provides potential nesting sites for birds listed under the federal Migratory Bird Treaty Act (MBTA) of 1918, the State Migratory Bird Policy Act (MBPA) of 2019, and regulated by the Yolo HCP/NCCP and the California Fish and Game Code. Depending on the species, birds may nest in trees, shrubs, in or on the ground, and on artificial structures such as buildings, culverts, headwalls, poles, and signs.

The planning level surveys determined that potentially suitable habitat for Yolo HCP/NCCP-covered bird species including Swainson's hawk, white-tailed kite, and tricolored blackbird occurs within or adjacent to the Project area. The removal of trees in the Project site has the potential to impact nesting sites.

There is modeled habitat for least Bell's vireo, a covered species under the Yolo HCP/NCCP, within 500 feet of the BSA. Modeled habitat represents land areas for which the Yolo HCP/NCCP expects to provide habitat for covered species based on modeled habitat parameters (e.g. land cover type, distance from aquatic areas, topography, species occurrences). Planning level surveys for least Bell's vireo were conducted consistent with the Yolo HCP/NCCP. No observations were made for least Bell's vireo and no suitable habitat will be removed by the proposed Project. The Project will have no impact on least Bell's vireo.

Implementation of MM BIO-3 (Swainson's Hawk and White-Tailed Kite) and MM BIO-4 (Tricolored Blackbird) will reduce potential impacts to Swainson's hawk, white-tailed kite, and tricolored

blackbird by requiring preconstruction surveys to identify active nests and/or presence of species. Impacts will be reduced to a less than significant level.

MM BIO-5 below provides for preconstruction surveys for other birds protected by the MBTA or California Fish and Game Code. Implementation of MM BIO-5 will reduce potential impacts to nesting migratory birds and raptors by restricting project activities and vegetation removal, thereby reducing impacts to a less than significant level.

Implementation of MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities), and MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to Swainson's hawk, white-tailed kite, tricolored blackbird, and nesting migratory birds and raptors by avoiding environmentally sensitive areas and sensitive natural communities, and requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

b) ***Less Than Significant with Mitigation Incorporated.*** The Project area contains Sensitive Natural Communities designated by the Yolo HCP/NCCP: Fresh Emergent Wetland, Lacustrine and Riverine, and Valley Foothill Riparian. Drainages and wetlands within the Project area are potential waters of the United States (WOTUS) and State. Impacts to Wetlands and Waters are discussed under Item c) below.

Fresh Emergent Wetland: There is one (1) wetland within the Project area that is considered Freshwater Marsh Alliance. It is located on the western end of the Project area on CR 32. This wetland is man-altered and is fed hydrologically by agricultural canals and storm water. This Fresh Emergent Wetland SNC falls within the Project boundary but will not be directly impacted by project activities.

Valley Foothill Riparian: The Project area is located within 100 feet of the Valley Foothill Riparian SNC associated with Putah Creek and this SNC occurs marginally along the unnamed irrigation canal within the Project area.

Project implementation will result in 0.71 acre of permanent impact to Valley Foothill Riparian SNC in the Project area resulting from installation of the roadway improvements. Several trees will be removed as part of the proposed Project. Healthy trees will be retained and avoided to the extent practicable while maintaining safe design considerations for the proposed facilities. In order to ensure impacts to tree resources are maintained as a less than significant level implementation of MM BIO-9 (Tree Removal Documentation and Replacement) is required.

Yolo HCP/NCCP AMM9 (Establish Buffers around Sensitive Natural Communities, Valley foothill riparian) states that a 100 ft. buffer will be provided from the canopy drip-line of Valley Foothill Riparian habitat. AMM9 then goes on to state that '*Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.*' This roadway improvement project cannot completely avoid impacts to Valley Foothill Riparian in the Project area. The Project will implement all applicable Yolo HCP/NCCP AMMs as listed above and below.

Lacustrine and Riverine: The Project area contains Lacustrine and Riverine SNCs within the unnamed drainages present within the site, and the Project area is located within 100 feet of Putah Creek. There are six (6) intermittent or ephemeral drainages within the Project area. They have been altered for agricultural use and surrounding urbanization of the area; however, they are considered

open water land cover types within the Lacustrine and Riverine SNC when water is present. The proposed Project will be limited to roadwork within the Project area; however, the drainages present in the Project area fall within the area of anticipated impact. Approximately 0.27 acres of Lacustrine and Riverine SNC may be impacted by project activities.

Implementation of MM BIO-6 (Wetlands and Waters) and MM BIO-7 (Sensitive Natural Communities) will reduce potential impacts to valley foothill riparian, lacustrine and riverine habitats through avoidance and minimization of impacts, payment of Yolo HCP/NCCP fees, acquiring applicable permits and fulfilling compensatory mitigation requirements to less than significant level. Implementation of MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to Sensitive Natural Communities by requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

c) ***Less Than Significant with Mitigation Incorporated.*** The Project area contains 0.49 acres of potential waters of the U.S. and State and the Project proposes to directly impact 0.27 acres of potentially jurisdiction waters with the installation of roadway improvements.

Construction has the potential to temporarily impact water quality and fill state and federally protected wetlands. During construction, water quality will be protected by implementation of best management practices. Implementation of MM BIO-6 (Wetlands and Waters) will reduce potential impacts to State and federally protected waters and wetlands through avoidance and minimization of impacts, payment of Yolo HCP/NCCP fees, acquiring applicable permits and fulfilling compensatory mitigation requirements to less than significant level. Implementation of MM BIO-7 (Sensitive Natural Communities) and MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to State and federally protected waters and wetlands by requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

d) ***Less Than Significant Impact with Mitigation Incorporated.*** Construction of the Project could temporarily disrupt movement of native wildlife species that occur in or adjacent to the Project area. In the event that lighting is required for either nighttime work or security reasons, lighting may be detrimental to native species. Both short- and long-term light exposure could affect wildlife. Short-term exposure to bright lights could temporarily reduce visual capacity in some species, making them vulnerable to predation. Longer-term night lighting could disorient wildlife, alter foraging and reproductive behaviors, increase predation risk, and inhibit movement to and from breeding areas by stimulating light-seeking behavior During project construction, wildlife will be able to move around the Project area or move through it at night. Additionally, once construction is complete the Project area will be restored and wildlife will continue to be able to move around the Project area, similar to existing conditions. Therefore, the Project would not interfere substantially with the movement of native fish and wildlife, resulting in a less than significant impact. Although construction disturbance may temporarily hinder wildlife movements within the Project area, the impact is less than significant due to its short-term nature and its alignment on the existing roadway. Due to the potential use of nighttime lighting there may be interference with wildlife species visual capacity, foraging and reproductive behaviors resulting in a potential impact. With the implementation of MM BIO-10 Control Nighttime Lighting which implements Yolo HCP/NCCP AMM7 (Control Nighttime Lighting

of Project Construction Sites) potential impacts from nighttime lighting on species and adjacent habitats will be minimize. impacts would be reduced to a less than significant level.

e) ***Less Than Significant Impact with Mitigation Incorporated.*** The 2030 Countywide General Plan contains Conservation policies that protect biological resources, including Policy CO-2.3, which encourages the preservation and enhancement of biological communities such as heritage valley oaks, remnant valley oak groves and roadside tree rows. A heritage tree preservation ordinance has not yet been adopted by the County. Several trees in the Project corridor that are planned for removal as part of the proposed Project are not of composition to be considered a remnant valley oak grove. Some of the oak trees are situated in a row configuration along CR 98 and meet the definition of an oak woodland as defined by the Oak Woodland Conservation Act (Fish and Game Code §1361). Some of the trees that are planned for removal are in a roadside tree row configuration, but do not embody the size or linear continuity characteristic of high value roadside tree rows found in other parts of the County. The final tree removal will be determined by the County during final design. In order to document the number of trees removed and to ensure that impacts to tree resources are minimized and mitigated, MM BIO-9 Tree Removal Documentation and Replacement is required. There will be no conflicts with local policies or ordinances that regulate or protect biological resources in the Project area; therefore, the Project would not conflict with any local policies or ordinances protecting biological resources. The Project does not conflict with any local policies or ordinances protecting biological resources. See also discussion below regarding the Yolo HCP/NCCP. With the implementation of MM BIO-9 Tree Removal Documentation and Replacement, the County will ensure that all trees proposed for removal will be documented, a plan for replacement will be developed and implemented and trees retained will receive adequate avoidance and minimization measures during construction activities. Thus, impacts would be reduced to a less than significant level.

f) ***No Impact.*** The Yolo HCP/NCCP addresses public and private activities and the protection of 12 covered species and the land on which these species depend within Yolo County. The Yolo HCP/NCCP ensures compliance with the federal Endangered Species Act (ESA), Natural Communities Conservation Planning Act (NCCPA), and CESA for covered activities that may affect the covered species. Pursuant to Section 10(a)(1)(B) of ESA and Section 2835 of the NCCPA chapter of the California Fish and Game Code (Fish & Game Code), the Yolo HCP/NCCP provides Permittees (i.e., Yolo County, the four incorporated cities, and the Conservancy) with incidental take permits for the 12 covered species.

The Project is a rural infrastructure project and is a "covered activity" under the HCP/NCCP. The Project will be implemented in compliance with permit requirements and conditions as well as avoidance and minimization measures that are listed in the HCP/NCCP. As applicable, the Project will pay mitigation fees for the acreage of land-cover types that are impacted by the Project and implement project-specific AMMs. The Project-specific Yolo HCP/NCCP AMMs that apply to the Project are AMMs 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14, 16, 19, and 21 which are described above and noted with the associated mitigation measures as applicable. Through adherence to the terms of the HCP/NCCP, which include payment of mitigation fees and implementation of the listed AMMs, there will be no conflict with the HCP/NCCP and therefore no impact as it relates to this topic.

Mitigation Measures

MM BIO-1 – Valley Elderberry Longhorn Beetle

Implements Yolo HCP/NCCP AMM12: Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on VELB to the maximum extent possible:

- The elderberry shrub will be transplanted to a USFWS- and Conservancy-approved beetle conservation bank in accordance with the guidelines set forth in AMM12.
- Impacts to 0.71 acres of Great Valley Oak Riparian habitat, which is designated as VELB habitat, will be mitigated for in accordance with the Yolo HCP/NCCP. The specific acreage of compensatory mitigation credits are subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-2 – Western Pond Turtle

Implements Yolo HCP/NCCP AMMs 4 and 14: Cover Trenches and Holes during Construction and Maintenance; Minimize Take and Adverse Effects on Habitat of Western Pond Turtle

The following measures will reduce potential impacts to western pond turtles:

- A pre-construction survey for western pond turtle shall be conducted by a qualified biologist. If a western pond turtle nest is identified during the survey, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. The County will inform CDFW if the nest cannot be avoided and such an activity must occur.
- If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground-disturbing activity for nests that may be unearthed during the disturbance, and will move out of harm's way any turtles or hatchlings found.
- To prevent injury and mortality of western pond turtle, workers will cover open trenches and holes associated with implementation of covered activities that affect habitat for these species or design the trenches and holes with escape ramps that can be used during non-working hours. The construction contractor will inspect open trenches and holes prior to filling and contact a qualified biologist to remove or release any trapped wildlife found in the trenches or holes.

MM BIO-3 – Swainson's Hawk and White-Tailed Kite

Implements Yolo HCP/NCCP AMM16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on Swainson's hawk and white-tailed kite to the maximum extent possible:

- The Project proponent will retain a qualified biologist to conduct preconstruction surveys for active nests consistent with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 1 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the Project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

MM BIO-4 – Tricolored Blackbird

Implements Yolo HCP/NCCP AMM21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on tricolored blackbird to the maximum extent possible:

- The qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).
- If active colony is present or has been present within the last 5 years, implement a species protection buffer within 1,300 feet of the colony site(s) from March 1 to July 30, unless a shorter distance is approved, based on site-specific conditions, by the Conservancy and CDFW.
- Per the Yolo HCP/NCCP, there is 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as tricolored blackbird nesting and foraging habitat. Impacts to tricolored blackbird suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP. The specific acreage of compensatory mitigation credits are subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-5 – Special-Status Bird Species, Migratory Birds, and Raptors

The following measures will be implemented to further reduce the potential for impacts on special-status and migratory birds and raptors that may nest in or near the Project area, including northern harrier:

- Project activities and vegetation removal within the Project area shall be initiated outside of the bird nesting season (February 1 – August 31).

- If project activities and vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days prior to the initiation of project activities.
    - If an active avian nest (i.e., with egg[s] or young) is observed within 250 feet of the Project area during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

MM BIO-6 – Wetlands and Waters

Implements Yolo HCP/NCCP AMMs 1, 2, 3, 8, 9, and 10: Establish Buffers around Sensitive Natural Communities; Confine and Delineate Work Area to Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas; Avoid and Minimize Effects on Wetlands and Waters

The following measures shall be implemented to avoid or minimize the potential for project-related impacts on wetlands and waters:

- The County will comply with the terms of a Clean Water Act Section 404 permit issued by the Corps and Section 401 water quality certification issued by the RWQCB for activities involving the discharge of fill material into jurisdictional drainages. The County will also comply with terms of a Streambed Alteration Agreement with the CDFW (if determined necessary by the CDFW). Prior to any discharge into drainages, the required permits and authorizations will be obtained from the respective agencies. All terms and conditions of the required permits and authorizations will be implemented.
- The County will designate all wetlands outside the area of permanent impact as Environmentally Sensitive Areas (refer to MM BIO-8). These areas will be identified on construction drawings and demarcated in the field with flagging and/or signs identifying the area as off limits to all personnel, equipment, and ground-disturbing activities. In addition, water quality BMPs will be installed around the wetlands (outside the wetland boundaries) in a manner that prevents water, sediment, and chemicals from draining into the features, and all staging, storage, stockpile areas, and off-road travel routes will be located as far as practicable away from the wetlands.
- Mitigation for in 0.27 acres (1,483 linear feet) of permanent impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.
- Impacts to Lacustrine and Riverine and Fresh Emergent Wetland Sensitive Natural Communities will be mitigated for through the Yolo HCP/NCCP Natural Community and Land Cover Impacts Mitigation Fees. The specific acreage of compensatory mitigation credits are subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-7 – Sensitive Natural Communities

Implements Yolo HCP/NCCP AMM9, Establish Buffers around Sensitive Natural Communities

Environmentally Sensitive Area (ESA) fencing will be established around the following Sensitive Natural Communities where they occur within or adjacent to the Project area, when feasible. These areas will be identified on construction drawings and demarcated in the field with flagging and/or signs identifying the area as off limits to all personnel, equipment, and ground-disturbing activities.

Per Yolo HCP/NCCP AMM9, the buffers for each Sensitive Natural Community are as follows:

- Valley foothill riparian: 100 feet from canopy drip-line. If avoidance is infeasible, a lesser buffer than is stipulated in the AMMs may be approved by the Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the Project purpose (e.g., if the purpose of the Project is to provide a stream crossing or replace a bridge, the Project may encroach into the buffer and the natural community or species habitat to the extent that is necessary to fulfill the Project purpose). Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.
- Lacustrine and riverine: Outside urban planning units, 100 feet from the top of banks. Within urban planning units, 25 feet from the top of the banks.
- Fresh emergent wetland: 50 feet from the edge of the natural community.

MM BIO-8 – Worker Environmental Training Program

Implements Yolo HCP/NCCP AMM6: Conduct Worker Training

- All construction personnel will participate in a worker environmental training program approved/authorized by the Conservancy and administered by a qualified biologist. The training will provide education regarding sensitive natural communities and covered species and their habitats, the need to avoid adverse effects, state and federal protection, and the legal implications of violating the FESA and NCCPA Permits. A pre-recorded video presentation by a qualified biologist shown to construction personnel may fulfill the training requirement.

MM BIO-9 – Tree Removal Documentation and Replacement

The following measures shall be implemented to compensate for the removal of protected trees and to avoid or minimize the potential for Project-related impacts on tree resources.

- Final plans will identify the number, size and species of protected trees to be removed and include a planting plan, to ensure replacement of trees in a manner consistent with County and Resource Agencies policies. If replanting cannot completely compensate for the number of trees removed within the project site or on County managed land, purchase of compensatory mitigation credits will be required for the remainder of trees. The replanting plan must be approved by the County and any compensatory mitigation credits for tree resources must be purchased prior to vegetation clearing activities.

- A plan for avoidance and minimization of trees that are in the area of direct impact, but not removed shall be developed by an International Society of Arboriculture (ISA) Arborist and implemented by the County prior to vegetation clearing activities and throughout the construction of the Project.

MM BIO-10 Control Nighttime Lighting

Implements Yolo HCP/NCCP AMM7: (Control Nighttime Lighting of Project Construction Sites

- Workers will direct all lights for nighttime lighting of project construction sites into the project construction area and minimize the lighting of natural habitat areas adjacent to the project construction area.

5.5 **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 pursuant to§15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Environmental Setting

Record Search

An Archeological Survey Report (ASR) (Gallaway Enterprises 2020d), a Historical Property Survey Report (HPSR) (Gallaway Enterprises 2020d) and a Historic Resource Evaluation Report (HRER) (JRP Historical Consulting, LLC), 2020) were prepared for the Project.

Gallaway Enterprises conducted a cultural resources study of project area (2020d). Gallaway Enterprises requested a records search from the Northwest Information Center (NWIC) of the California Historical Resources Information System on March 21, 2019. The search included all previously recorded cultural resources and reports within a half mile radius of the APE. The record search was conducted to determine if any portion of the Project has been previously surveyed and if any cultural resources have been previously recorded within the Project APE. Additional archival research included the California Register of Historic Resources, the National Register of Historic Places, historic topographic maps, historical documentation, and BLM GLO records.

Results of the record search indicate 11 previous cultural resource assessments occur within a half mile of the APE and five reports with surveys that intersect portions of the APE. One archaeological resource is recorded within the APE and one resource is recorded within a half mile radius of the APE. The archaeological resource recorded within the Project boundary consists of a portion of the Lincoln Highway, a historic transcontinental highway. Four other resources, historic resource inventory properties, fall within the Project boundary. Portions of the APNs for the Adolph Oeste Home, Lynn N. Irwin Dairy Farm, James E. Doeherty House, and the Kunze Family home fall within the Project boundary where they meet County Road 98. None of the historic properties are placed close to the road or project APE. Per Caltrans direction through communication with Gail St. John (Caltrans District 3 Senior Environmental Planner, PAH), no further assessment is required for the Adolph Oeste Home, Lynn N. Irwin Dairy Farm, or the Kunze family home. The Doeherty House (Yol-HRI-6/183) contains a fence line close to County Road 98 that will be impacted, and the property requires further evaluation.

Archival Research

In addition to the record search, various historical maps, topographic quadrangles, land grants, and patents, Gallaway Enterprises reviewed the following resources:

- National Register of Historic Places (NRHP)

- California Register of Historic Resources (CRHR)
- General Land Office Plat maps and land patents
- Historic United States Geological Survey (USGS) topographic maps
- Yolo Historical Society
- Hattie Weber Museum
- Yolo County Library

As a result of archival research, one resource, Cactus Corner, was identified. Cactus Corner is a collection of planted cacti on the southeast corner of the junction of Russell Blvd. and CR 98. This resource does not appear to meet the criteria for listing in the NRHP. It has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and it is not a historical resource for the purposes of CEQA.

The entire APE has been heavily modified and disturbed by construction related activities in the development and maintenance of paved roads, graded shoulders and roadside ditches and culverts. Commercial and residential developments abut the entire APE. Ongoing disturbance and development within the APE greatly reduce the likelihood of intact cultural deposits. The Project area appears to contain lands with low to moderate sensitivity for intact prehistoric and historic period sites and/or features.

Native American Consultation
Gallaway Enterprises contacted the Native American Heritage Commission (NAHC) to request sacred lands file search and contact list. On April 11, 2019, the NAHC returned a negative result for sacred lands within the Project APE. Additionally, the NAHC listed three Native American tribes who may have knowledge of sites or traditionally cultural properties that may be affected by project-related activities. All tribes listed were contacted via letter on May 16, 2019 informing them of the proposed Project and to request participation of interested parties.

One response was received by Leland Kinter, Tribal Historic Preservation Officer of the Yocha Dehe Wintun Nation. Mr. Kinter stated the Project falls within the aboriginal territories of the Yocha Dehe Nation establishing the tribe as the authority in the proposed Project area. Mr. Kinter expressed concerned that the Project could impact known cultural resources and has requested detailed project information. Robert Geary was named the point of contact for the Yocha Dehe Tribe and a letter containing the detailed project description and project location was sent to Mr. Geary on October 7, 2020.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Research and evaluation of historical resources were conducted as part of the ASR, HPSR, and HRER documents. The research and findings contained within the aforementioned documents concluded that one resource (Cactus Corner) required evaluation. The HPSR and HRER concluded that Cactus Corner does not appear to meet the criteria for listing in the NRHP and no built environment or cultural landscape resources in the APE are historical for the purposes of CEQA. Due to the developed character of the site, the potential to encounter surface-level historical resources is considered low. However, there is the potential for accidental discovery of historical resources. In the event that resources are inadvertently discovered, California Public

Resources Code Sections 5097.5 prohibits further excavation, removal, or destruction of any historic or prehistoric ruins, burial grounds, archaeological or historical feature and requires the County to follow the professional standards for determining commercial and archaeological value, in accordance with those procedures established in the federal Archaeological Resources Protection Act of 1979 (Public Law 96-95), as amended, and in compliance with the Uniform Regulations set forth in Subpart A (commencing with Section 7.1) of Part 7 of Title 43 of the Code of Federal Regulations. Reliance on California Public Resources Code Sections 5097.5 will ensure that inadvertent discoveries will remain at a less than significant level.

b) ***Less Than Significant Impact.*** Research and evaluation of archaeological resources were conducted as part of the ASR document. The research and findings contained within the aforementioned document concluded that one resource (Cactus Corner) required evaluation. The ASR concluded that Cactus Corner does not appear to meet the criteria for listing in the NRHP or CRHR for the purposes of CEQA. Due to the developed character of the site, the potential to encounter surface-level archaeological resources is considered low. However, there is the potential for accidental discovery of archaeological resources. In the event that resources are inadvertently discovered, California Public Resources Code Sections 5097.5 prohibits further excavation, removal, or destruction of any historic or prehistoric ruins, burial grounds, archaeological or historical feature and requires the County to follow the professional standards for determining commercial and archaeological value, in accordance with those procedures established in the federal Archaeological Resources Protection Act of 1979 (Public Law 96-95), as amended, and in compliance with the Uniform Regulations set forth in Subpart A (commencing with Section 7.1) of Part 7 of Title 43 of the Code of Federal Regulations. Reliance on California Public Resources Code Sections 5097.5 will ensure that inadvertent discoveries will remain at a less than significant level.

c) ***Less Than Significant Impact.*** The ASR and HPSR documents show that that no known cemeteries or burials occur within the Project area of direct impact. In the event of discovery or recognition of any human remains within the project site, California Health and Safety Code Section 7050.5 requires excavation to cease in the vicinity of the discovery until the coroner of the County has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Reliance on California Health and Safety Code Section 7050.5 and Section 5097.98 of the Public Resources Code will ensure that inadvertent discoveries will remain at a less than significant level.

Mitigation Measures: None Required

5.7 **Energy**

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

a) ***Less Than Significant Impact.*** All construction equipment would be regulated per the California Air Resources Board (CARB) In-Use Off-Road Diesel Vehicle Regulation. CARB standards for construction equipment includes measures to reduce emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements and imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles.

Project construction would also be required to comply with all applicable YSAQMD rules and regulations. Future maintenance activities (e.g. vegetation control) would likely involve the use of electric or gas-powered equipment.

The Project would be required to comply with all applicable standards and regulations regarding energy conservation and fuel efficiency, which would ensure that the future activities would be energy efficient to the maximum extent practicable. The Project would not be considered to result in a wasteful, inefficient, or unnecessary use of energy, and impacts related to construction and operational energy would be considered less than significant.

b) ***Less Than Significant Impact.*** Yolo County has taken steps to reduce overall emissions in the County in an effort to reduce GHG emissions and address economic and social adaptation to the effects of climate change. The County's General Plan policies and their Climate Action Plan (CAP) address these issues. In order to demonstrate project-level compliance with CEQA relevant to GHG emissions and climate change impacts, applications for discretionary projects must demonstrate consistency with the General Plan and CAP. Implementation of the proposed Project will establish and improve bicycle and pedestrian facilities in the Project site, which will have a secondary effect of encouraging non-automobile trips instead of vehicular trips. Implementation of the proposed Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential construction related GHG impacts. These impacts are considered less than significant.

Mitigation Measures: None required.

5.8 **Geology and Soils**

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

Environmental Setting

The Project area is located on the floor of the Central Valley, where the topography is relatively flat and level and there are no nearby active faults.

According to the 2030 Countywide General Plan, the only fault in Yolo County that has been identified by the California Division of Mines and Geology (1997) to be subject to surface rupture (within an Alquist-Priolo Earthquake Fault Zone) is the Hunting Creek Fault, which is partly located in a sparsely inhabited area of the extreme northwest corner of the County. Most of the fault extends through Lake and Napa Counties. The other potentially active faults in the County are the Dunnigan Hills Fault, which extends west of I-5 between Dunnigan and northwest of Yolo, and the newly identified West Valley and East Valley Faults (Fault Activity Map of California, California Geological Survey, 2010), which are also not in the vicinity of the proposed Project. These faults are not within an Alquist-Priolo Earthquake Fault Zone and are therefore not subject to surface rupture.

Potential Environmental Effects

a) ***a-i) Less Than Significant Impact.*** The site does not lie within an Alquist-Priolo Earthquake Fault Zone and no known active faults are mapped within or through the Project area. The Hunting Creek Fault is the only fault in the County that has been identified by the CGS to be active and subject to surface rupture (i.e., is delineated as an Alquist-Priolo Earthquake Fault zone) (Yolo County 2009b). Given the nature of the Project and the distance to the known active fault location, impacts are considered less than significant.

a-ii) Less Than Significant Impact. Earthquake shaking hazards are calculated by projecting earthquake rates based on earthquake history and fault slip rates, the same data used for calculating earthquake probabilities (California Department of Conservation 2020a). Calculations of earthquake shaking hazard for California are part of a cooperative project between USGS and California Geologic Survey (CGS) and are part of the National Seismic Hazard Maps. Yolo County General Plan DEIR Figure IV.L-4 (Regional Ground Shaking Hazard) shows potential seismic shaking based on National Seismic Hazard Map calculations plus amplification of seismic shaking due to the near surface soils. Per Figure IV.L-4 the Project is located in a region where shaking hazards that are '*distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here.*' The Project is not in a seismic hazard zone, and impacts are considered less than significant.

a-iii) Less Than Significant Impact. The proposed Project involved the development of bicycle facilities along an existing roadway. The proposed Project will not directly or indirectly cause potential adverse effects including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction. Impacts are considered less than significant.

a-iv) Less Than Significant Impact. The Project is located on relatively flat ground. No over-riding geologic hazards, including landslides were identified by either published geologic mapping or observations made at the site. Impacts are considered less than significant.

b) ***Less Than Significant Impact.*** Construction of the proposed Project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. The SWRCB is responsible for implementing the Clean Water Act and has issued a statewide General Permit (Water Quality Order 2009-0009-DWQ) for construction activities. In the Project area, the Construction General Permit is implemented and enforced by the Central Valley Regional Water Quality Control Board (CVRWQCB). Projects resulting in disturbance of one acre or more are required to obtain coverage under the Construction General Permit. The proposed Project will require coverage under the SWRCB Construction General Permit.

In accordance with the requirements of the Construction General Permit, prior to construction of the proposed Project, a risk assessment must be prepared and submitted to the CVRWQCB to determine the Project's risk level and associated water quality control requirements. These requirements will, at a minimum, include the preparation and implementation of a SWPPP identifying specific best management practices (BMPs) to be implemented and maintained on the site in order to comply with the applicable effluent standards.

Overall soil erosion and loss would be minimal with implementation of standard construction practices for dust control, erosion and stormwater pollution prevention. Erosion and sediment control measures

include the required Caltrans Standard Specifications (§13 Water Pollution Control and §21 Erosion Control) and a stormwater pollution prevention plan (SWPPP) that will be implemented during construction to minimize the potential for erosion. Post-project, the potential for erosion to occur in the Project area would be like current conditions; therefore, the Project would result in less than significant impacts relating to soil erosion and loss of topsoil.

c) ***Less Than Significant Impact.*** The Project does not include activities that would result in soil units onsite becoming unstable, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse. Impacts are considered less than significant.

d) ***Less Than Significant Impact.*** Expansive soils that may swell enough to cause problems with paved surfaces are generally clays falling into the AASHTO A-6 or A-7 groups, or classified as CH, MH, or OH by the Unified Soil Classification System (USCS), and with a Plasticity Index greater than about 25 as determined by ASTM D4318. Chapter 610 of the Caltrans Highway Design Manual (2012) defines an expansive subgrade to include soils with a Plasticity Index greater than 12 (Caltrans 2012).

The Project is being designed in accordance with the special engineering or construction considerations outlined in Chapter 610 *"Engineering Considerations"* of the Highway Design Manual, California Transportation Department. Because the Project is being designed in accordance with the Caltrans Highway Design Manual and will consider and address expansive soils, impacts are considered less than significant.

e) ***No Impact.*** The proposed Project does not include the use of septic tanks or alternative waste water disposal systems. No impact will occur.

d) ***Less Than Significant*:** Paleontological resources are known to occur in Yolo County, and the geological formations that underlie Yolo County are generally paleontologically sensitive. The Project would not likely impact paleontological features due to the general disturbed conditions at the site. There is the possibility of accidental paleontological discoveries during construction-related ground-disturbing activities. Caltrans Standard Specification 14-7.03, which requires that if unanticipated paleontological resources are discovered, work shall halt within 60 feet of the discovery and the engineer shall be notified will ensure that inadvertent discoveries of paleontological resources will remain at a less than significant level.

Mitigation Measures: None required.

5.9 **Greenhouse Gas Emissions**

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

Environmental Setting

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The major GHGs that are released from human activity include carbon dioxide, methane, and nitrous oxide. The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (such as dairies and hog farms).

Greenhouse gas emissions for transportation projects can be divided into those produced during operations and those produced during construction. The proposed Project does not increase the capacity of CR 98 and would not increase operational GHG levels. The existing intersections of CR98 with CR31 (Covell Boulevard, CR32 (Russel Boulevard) are four-way stop controlled intersections and the intersection of CR98 and Hutchinson Drive is a two-way stop-controlled intersection. Cars generally emit more pollutants, including GHG gasses, when they travel at lower average speeds. It therefore follows that if delays are minimized (and average speed therefore raised), emissions would be reduced. Highway corridors where roundabouts have been installed have been observed to have lower operating speeds, but also significantly lower stopped delay time than stop controlled intersections, therefore the average speed is observed to be greater with roundabouts. The incorporation of roundabouts at the intersection of CR98 with CR31 (Covell Boulevard, CR32 (Russel Boulevard) and Hutchinson Drive would reduce GHG emissions associated with the existing traffic through the reduction in stopped delay time at intersections. The discussion below therefore focuses on construction related GHG emissions of the Project.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Off-site production of construction materials and onsite construction of the proposed Project would generate short-term emissions of greenhouse gases. Emissions of GHGs resulting from off-road heavy-duty diesel engines during construction activities would be short-term and minor. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential air quality impacts. These impacts are considered less than significant.

b) ***Less Than Significant Impact.*** Yolo County has taken steps to reduce overall emissions in the county in an effort to reduce GHG emissions and address economic and social adaptation to the effects of climate change. The County's General Plan policies and their Climate Action Plan (CAP) address these issues. In order to demonstrate project-level compliance with CEQA relevant to GHG emissions and climate change impacts, applications for discretionary projects must demonstrate consistency with the General Plan and CAP. In addition, the County established a working group to implement the

County's Climate Change Initiative, aimed at reducing transportation emissions by encouraging the use of electric vehicles, reducing County vehicle trips and purchasing low-polluting construction equipment. Implementation of the proposed Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential construction related GHG impacts. These impacts are considered less than significant.

Mitigation Measures: None required.

5.10 Hazards and Hazardous Materials

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Environmental Setting

A hazardous material is defined by the California EPA, Department of Toxic Substances Control (DTSC), as a material that poses a significant present or potential hazard to human health and safety or the environment if released because of its quantity, concentration, or physical or chemical characteristics (26 California Code of Regulations (CCR) 25501).

According to Title 22 of the CCR (22 CCR) Section 66261.20, the term "hazardous substance" refers to both hazardous materials and hazardous wastes; both are classified according to four properties: toxicity, ignitability, corrosiveness, and reactivity.

A hazardous material is defined by 22 CCR Section 66261.10 as a substance or combination of substances that may cause or significantly contribute to an increase in serious, irreversible, or incapacitating illness or may pose a substantial presence or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

While public health and safety is potentially at risk whenever hazardous materials are or will be used, the risk is determined by the probability of exposure and to the inherent toxicity of a material. Factors that can influence health effects when human beings are exposed to hazardous materials include the dose the person

is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (22 CCR Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific 22 CCR criteria.

Hazardous materials transport within California is subject to various federal, state, and local regulations including the California Vehicle Code California and Occupational Health and Safety Administration (CalOSHA) requirements. The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Transportation of hazardous materials is generally restricted to these routes.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Small amounts of hazardous materials would be used during construction and operation activities (i.e., equipment maintenance, fuel, and solvents). Implementation of the proposed Project would continue the use, transport, and disposal of potentially hazardous materials on and in the vicinity of the Project site, similar to existing conditions. The Project is required to comply with federal, state, and local regulations regarding the storage, handling, transportation, disposal, and cleanup of hazardous materials. Use of hazardous materials in accordance with applicable standards ensures that any exposure of the public to hazard materials would have a less than significant impact.

b) ***Less Than Significant Impact.*** Project construction and operation would not routinely generate any hazardous materials. Project operation would not involve the use or storage of any hazardous materials. Although construction would not generate any hazardous materials, a potential hazard to the public and the environment would be posed by using diesel or gasoline powered construction equipment (trucks, excavators, etc.) and lubricants such as oil and hydraulic fluids. The potential for such a hazard would be temporary and avoidable through the implementation of AMM3 (Confine and Delineate Work Area), AMM8 (Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas) as required by the Yolo HCP/NCCP. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements. Adherence to the applicable federal, state and local laws and the application of AMMs from the Yolo HCP/NCCP would maintain the potential impacts at a less than significant level.

c) ***No Impact.*** No schools occur within 0.25 mile of the Project site.

d) ***No Impact.*** The Project area is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e) ***Less Than Significant Impact.*** The UC Davis Airport, which is operated as a general aviation airport and is open to the public, is located approximately 0.5 miles east of the Project site. The University Airport does not have an airport land use plan that would identify noise contours or other safety hazards. However, University Airport Rules and Regulations have been established to protect health, safety, and peace and to provide for the orderly conduct of activities on the Airport site. The runways at the UC Davis airport are oriented in a north-south direction. The arrangement of the runways are

parallel to the direction of CR 98 and therefore it is not expected that airplane approaches and departures would be at low elevations over the Project site. Due to these conditions it is not expected that the Project will result in a safety hazard or excessive noise for people working in the Project site during construction activities. The proposed Project does not conflict with the Yolo County Airport Comprehensive Land Use Plan. There will be a less than significant impact.

f) ***Less Than Significant Impact.*** County Road 98 will remain open during construction. Although temporary, short duration disruptions to normal traffic operations would occur during construction, the impact would be less than significant. The Project is not anticipated to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan because vehicular access would be maintained through the Project area during construction.

g) ***No Impact.*** The completed project will not expose people or structures to a new or increased significant risk of loss, injury or death involving wildland fires.

Mitigation Measures: None required.

5.11 **Hydrology and Water Quality**

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation??	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Pacific Hydrologic Incorporated (PHI) performed an evaluation of flood hydraulic conditions to determine the final centerline grade elevations of County Road 98 along with replacing and adding culverts (Hydraulics Report). The complete report is included as Appendix E. This study consists of a flood hydrologic analysis using a rainfall-runoff model to identify runoff approaching the County Road 98 corridor from six sub-basins to the west followed by a two dimensional (2D) backwater model identifying existing and proposed condition flood hydraulic characteristics through the study area. The 2D study area consists of a corridor approximately one mile wide extending the full reach of anticipated improvements. The County has modified the proposed road centerline elevations and removed and or replaced the culverts identified in the hydraulic report to negate any increase in the extent of inundation and flood impacts to structures. The Changes to the design are sufficient to meet FEMA's "no increase" requirement and will ensure there are less than significant impacts as they pertain to hydraulic conditions, potential flooding and stormwater issues.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Construction of the proposed Project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. Stormwater flowing over the Project features during construction could carry various pollutants downstream such as sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, and

miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed. In the case of the proposed Project, it is primarily grading and excavation associated with the roadway improvements.

As discussed in Section 5.8.b above, compliance with the various requirements of the SWRCB statewide general permit for construction (which include water pollution control, erosion control and the development of a SWPPP) will ensure that water quality impacts during the construction phase of the proposed Project would be less than significant.

b) ***No Impact.*** Construction and operation of the Project would have no effect on groundwater supplies. There would be no net change in local aquifers or the local groundwater table because of the Project.

c) ***i Less Than Significant Impact.*** The proposed project's grading and excavation are not anticipated to results in substantial erosion or siltation, on or off-site. Through the implementation and compliance with the various requirements of the SWRCB statewide general permit for construction (which include water pollution control, erosion control and the development of a SWPPP) will ensure that erosion or siltation on- or off-site during the construction phase of the proposed Project would be less than significant.

ii Less Than Significant Impact. The proposed Project includes widening the paved section of CR98 to include bicycle lanes and improved roadway infrastructure which will result in an increase in impervious surfaces. These increases in impervious surfaces are not a substantial increase when compared to existing conditions. The recontouring and re-establishment of roadway drainage facilities are designed to accommodate the predicted runoff from the proposed Project. The Project will not contribute to a substantial increase in water runoff from the site. Project impacts are less than significant.

iii Less Than Significant Impact. As mentioned above the proposed Project would include minor increases in runoff water, however the runoff water would not exceed the capacity of existing or planned stormwater drainage systems. The propose Project includes the widening of an existing road to include improved bicycle facilities and roadway conditions and will not introduce a substantial additional source of polluted runoff, since the exiting use is similar to the proposed used of the project site. Project impacts are less than significant.

iv Less Than Significant Impact. The proposed Project has been designed to avoid obstructions or redirection of flood flows. The proposed project design has gone through several revisions based on the results of third-party reviews conducted by PHI to ensure there are less than significant impacts as they pertain to hydraulic conditions, impediments, potential flooding and stormwater issues. The Federal Emergency Management Agency (FEMA) has a "no increase" requirement in relation to inundation, floodplain limits and water surface elevations as a result of the project. Through the standard process of design, peer review and meeting the requirements of FEMA, there will be a less than significant impact in regards to this topic.

d) ***Less Than Significant Impact***. The Project traverses FEMA/FIRM panels 06113C0583G, 06113C0591G, and 06113C0593G. The Project crosses through areas that are designated as Zone X (areas of 0.2% annual chance flood; areas of 1% annual change flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood), Zone AE (base flood elevations determined), and Zone A (special flood hazard areas subject to inundation by the 1% annual chance flood). The completed project would not include

components that risk release of pollutants due to inundation, the Project is not located within a tsunami or seiche zones, and impacts would be considered less than significant.

e) ***No Impact.*** The proposed Project is the improvement of existing roadway infrastructure and does not include activities that would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Mitigation Measures: None required.

5.12 **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?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Environmental Setting

The 2009 Yolo County General Plan is the relevant land use plan for the Project area.

Potential Environmental Effects

a) ***No Impact.*** The Project does not include activities that would result in physically dividing an established community.

b) ***No Impact.*** The proposed Project is consistent with the County General Plan.

Mitigation Measures: None required.

5.13 **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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Environmental Setting

Per the County General Plan, Yolo County contains important mineral resources. A variety of minerals are mined in the County. The chief minerals presently mined are aggregate and natural gas (Yolo County 2009b). The Project is located outside the Cache Creek Area Plan (CCAP) project area, a rivershed management plan that includes approximately 14.5 miles of lower Cache Creek, between the Capay Dam and the town or Yolo. Components of the CCAP establish goals to assist in the overall management and include the Off-Channel Mining Plan (OCMP).

Potential Environmental Effects

a) ***No Impact.*** The Project area is not in an important mineral resource zone or site, as depicted in the County's General Plan DEIR Figure IV.L-2 (Yolo County 2009b). The Project would have no impact on mineral resources.

b) ***No Impact.*** No locally important mineral resource recovery sites are located within the Project area.

Mitigation Measures: None required.

5.14 **Noise**

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) For a project located within -the vicinity of a private airstrip or-an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting

The 2009 Yolo County General Plan (GP), Chapter 8-Health and Safety Element, Section D (Noise) establishes policies and standards associated with noise producing sources.

Yolo County GP Action HS-A61 states:

"Adopt a comprehensive Noise Ordinance that includes the following components:

- Standards for acceptable exterior and interior noise levels, their applicability and any specific exceptions to those standards.
- Guidelines and technical requirements for noise measurements and acoustical studies to determine conformance with provisions of the ordinance.
- Standards for construction equipment and noise-emitting construction activities.
- Regulations for the noise generated by events, including truck loading and unloading, operation of construction equipment, and amplified music."

To date a County noise ordinance addressing construction noise has not been adopted; however, the County relies on the State Office of Noise Control Guidelines when considering new outdoor noise sources. No new stationary sources of noise will be established as part of the proposed Project; therefore the following discussion is focused on potential construction related noise impacts. Section 14-8.10 (Noise and Vibration) of the Caltrans Standard Specifications includes requirements for the control and monitoring of noise resulting from construction activities. The Caltrans Standard Specifics require construction noise to no exceed 86 dBa Lmax at 0 feet from the job site from 9:00p.m. to 6:00 a.am.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Construction activities would temporarily increase noise levels in the vicinity of the Project area. Actual noise levels would vary throughout the day depending on the type

of construction equipment involved, activities being implemented, and distance between the source of the noise and receptors. The contractor would comply with noise standards outlined in Caltrans Standard Specifications, and applicable construction equipment will be equipped with appropriate mufflers pursuant to the Standard Specifications and the YSAQMD rules. Long-term noise associated with use of CR 98 would be similar to current conditions. Temporary noise generated by construction would be less than significant.

b) ***Less Than Significant Impact.*** Project construction includes activities, such as operation of large pieces of equipment (e.g., heavy trucks), which may result in the periodic, temporary generation of ground-borne vibration. The Project does not introduce new sources of ground-borne vibration. Given the nature of any potential ground-borne vibration and given that any impacts would be temporary and periodic, potential impacts are less than significant.

c) ***Less Than Significant Impact.*** The UC Davis Airport, which is operated as a general aviation airport and is open to the public, is located approximately 0.5 miles east of the Project site. The University Airport does not have an airport land use plan that would identify noise contours or other safety hazards. However, University Airport Rules and Regulations have been established to protect health, safety, and peace and to provide for the orderly conduct of activities on the Airport site. The runways at the UC Davis airport are oriented in a north-south direction. The arrangement of the runways are parallel to the direction of CR 98 and therefore it is not expected that airplane approaches and departures would be at low elevations over the Project site. Due to these conditions it is not expected that the Project will result in a safety hazard or excessive noise for people working in the Project site during construction activities.

Mitigation Measures: None required.

5.15 **Population and Housing**

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Potential Environmental Effects

a) ***No Impact.*** The Project does not include activities that would result in substantial unplanned population growth either directly or indirectly.

b) ***No Impact.*** The Project does not include any activities that would result in the displacement of housing or people.

Mitigation Measures: None required.

5.16 **Public Services**

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Environmental Setting

Project construction activities would be coordinated with local law enforcement and emergency services providers as applicable. The roadway will remain open during construction; however periodic and temporary delays may occur during construction activities. Priority will be given to emergency vehicles to traverse the Project site if and when necessary.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The Project makes improvements to existing public infrastructure. County Road 98 is not used to access any parks, or other public facilities. County Road 98 i does provide access to public/quasi-public uses, i.e., church, day care, and private school associated with Grace Valley Christian No adverse effects on service ratios, response times, or service objectives for any of the public services are anticipated. The Project would have a less than significant impact on fire and police protection and no impacts on schools, parks or other public facilities.

Mitigation Measures: None required.

5.17 **Recreation**

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

Environmental Setting

The Project is adjacent to the UC Davis Arboretum and Public Garden's Putah Creek Riparian Reserve.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The Putah Creek Riparian Reserve can be accessed on CR 98 just south of the Project at the Pedrick Road Trailhead. The proposed safety improvements on CR 98, including the installation of bike lanes, could lead to an increase in recreational users of the Reserve; however, this increase is not anticipated to result in accelerated substantial physical deterioration of the Reserve or its facilities. Project impacts are less than significant.

b) ***No Impact***. The Project would not require the construction or expansion of recreational facilities.

Mitigation Measures None required.

5.18 **Transportation**

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

Potential Environmental Effects

a) ***No Impact.*** The proposed Project does not include activities that would cause a permanent negative impact to the circulation system (roads), including transit, roadway, bicycle, and pedestrian facilities. The proposed Project is identified in the SACOG Metropolitan Transportation Plan / Sustainable Communities Strategy (MTP/SCS). The roadway improvements will occur on the same alignment as the existing CR 98 and are designed to improve circulation for transit, roadway, bicycle and pedestrian facilities.

Once constructed, the Project would not result in an increase in traffic in the area and will not conflict with the Yolo County General Plan, MTP/SCS, or any ordinance, policy, or congestion management program. The Project will have no impact on traffic circulation plans or policies.

b) ***Less Than Significant Impact.*** The Project would not have an impact on vehicle miles traveled. During the 10-month construction period, worker commute and equipment hauling vehicles would be traveling to and from the Project site causing a minor temporary increase in localized traffic; however, this would be temporary and would cease once construction is complete. There may be a minor increase in regional commuting times during construction activities, which is estimated to be between 4 – 6 minutes longer than normal when using alternative routes, however upon completion of the project, regional commuting times will return to pre-project conditions. Once completed, the Project would not result in any changes to vehicle miles travelled. The impact associated with temporary increases in Project-related traffic would be less than significant.

c) ***No Impact.*** The Project rehabilitates the existing roadway to improve public safety. The Project does not include features that introduce or exacerbate any transportation or traffic hazards due to a design feature. The proposed roadway improvements have been designed to accommodate automobiles as well as farm equipment, while providing improvements to the safety of bicycle facilities.

d) ***Less Than Significant Impact.*** The completed Project will have no impact on emergency access. The Project construction activities would be coordinated with local law enforcement and emergency

services providers as applicable. Priority will be given to emergency vehicles to traverse the Project site if and when necessary during construction. Impacts would be considered less than significant.

e) ***No Impact.*** The Project would not result in an increase in demand for parking in the vicinity of the Project.

Mitigation Measures: None required.

5.19 Tribal Cultural Resources

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental Setting

The ASR and HPSR studies did not identify any archaeological resources resource within the Project site.

The Native American Heritage Commission (NAHC) was contacted to request sacred lands file search and contact list. On April 11, 2019, the NAHC returned a negative result for sacred lands within the Project's Area of Potential Effects (APE). Additionally, the NAHC listed five Native American Tribes who may have knowledge of sites or traditionally cultural properties that may be affected by Project-related activities. All tribes listed, and including those Tribes requesting notification in Yolo County, were delivered a letter via email on September 27, 2019, giving formal notice and invitation by Yolo County to initiate SB 18/AB 52 consultation on the proposed Project and to request participation of interested parties.

See Section 2 (Environmental Checklist) above for a summary of Project related consultation and coordination with Native American tribes.

Potential Environmental Effects

a) ***i- Less Than Significant Impact.*** Based on the results of the ASR and HPSR documents prepared for the Project and the AB 52 consultation there are no sites, features, places, or cultural landscapes that are geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k) in the Project site. Therefore, impacts are considered less than significant.

ii- Less Than Significant Impact with Mitigation. The County sent AB 52 consultation letters to five Native American Tribes who may have knowledge of sites or traditionally cultural properties that may be affected by Project-related activities. All tribes listed by the NAHC, including those Tribes requesting notification in Yolo County, were contacted via email that included a letter on September 27, 2019, informing them of the proposed Project and to request participation of interested parties. The Yocha Dehe Wintun Nation responded via letter dated October 7, 2019, indicating a cultural interest and authority in the proposed Project area. The Yocha Dehe Wintun Nation indicated they were not aware of any known cultural resources near the Project site but recommends cultural sensitivity training for any pre-project personnel. Implementation of MM TCR-1: Cultural Sensitivity Training will reduce potential impacts to inadvertent discoveries of Tribal Cultural Resources to a less than significant level through educating project personnel on the importance and value of Tribal Cultural Resources. Impacts are considered less than significant with mitigation incorporated.

Mitigation Measures

MM TCR-1: (Sensitivity Training)

Prior to the start of the Project, Project personnel will attend cultural sensitivity training from the Yocha Dehe Wintun Nation. Contact Yocha Dehe Wintun Nation Tribal Monitor Supervisor, Office: (530) 215-6180.

5.20 Utilities/ Service Systems

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Require or result in the relocation or construction of new water or expanded waste water treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the waste water treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting

There are several utilities in the Project area. AT&T, PG&E (Electric and Gas), high-speed internet (Wave), and gas (Slawson) utilities will be relocated as a result of the proposed Project. New utility services will not be required to serve the proposed Project after completion.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The Project involves the development of bicycle and pedestrian facilities along an existing roadway and will not require new water or expanded waste water treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities to serve the Project. Utility relocation and realignment will be required, none of which, on their own, would involve environmental impacts. Implementation of the Project will require the relocation of drainage ditches and above-ground utilities outside the clear recovery zone, which will include extension, replacement, and/or relocation of existing drainage structures to accommodate the widened road. This will also include relocation and/or abandonment of underground utilities, where they are in conflict with the Project. The Project may include the installation of high-speed internet as well as relocation of AT&T, PG&E (electric & gas), Wave, UC Davis facilities, and Slawson gas facilities. The installation and relocation of these utilities and infrastructure will occur within the footprint of the disturbance roadway disturbance area and will no cause significant environmental effects. This is considered a less than significant impact.

b) ***Less Than Significant Impact.*** The Project would not involve any actions that would require a new water supply or generate wastewater. There may be the need for minor landscaping irrigation to establish vegetation and replanting along the proposed facilities, however this water need is not expected to be in perpetuity, nor is it expected to impact existing service levels regarding water use. No new water or wastewater facilities would be constructed or needed as part of the Project.

c) ***No Impact.*** The Project would not produce wastewater.

d) ***Less Than Significant Impact.*** Solid waste generated by the Project would be limited to construction debris. Solid waste disposal would occur in accordance with federal, state, and local regulations. Disposal would occur at permitted landfills; likely the Yolo County Central Landfill located approximately 8 miles east of the Project. The Project would not generate solid waste in amounts that would substantially affect the existing capacity of the Yolo County Central Landfill and impacts would be less than significant.

e) ***No Impact.*** The Project would conform to all applicable state and federal solid waste regulations.

Mitigation Measures: None required

5.21 **Wildfire**

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

Environmental Setting

In accordance with California Public Resource Code Section 4201-4204 and Government Code Section 51175-51189, the CalFire has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), represent the risks associated with wildland fires.

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas (FRA). The State of California has determined that non-federal lands in unincorporated areas with watershed value are of Statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by CalFire. All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA). Most of the western third of Yolo County has been classified as SRA, with FRA near the northwest and west County boundaries (Figure IV.M-2).

The Project is not located in any Fire Hazard Severity Zone per the 2018 CalFire Fire Hazard Severity Zones map (CalFire 2020).

Under State regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

Potential Environmental Effects

a) ***No Impact.*** The Project is being implemented to improve safety along CR 98. During construction traffic would be routed through the Project site, maintaining traffic flow in the area and providing adequate access for emergency responders. The Project would not impair an adopted emergency response plan or emergency evacuation plan.

b) ***No Impact.*** The proposed Project would not exacerbate wildfire risks or expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) ***Less than Significant Impact.*** The Project involves improvement of existing roadway infrastructure. The completed Project would not exacerbate fire risk. The completed Project will improve public safety/fire prevention by better facilitating transportation of fire-fighting equipment. Project impacts are less than significant.

d) ***No Impact.*** The Project does not include activities that would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Mitigation Measures None required.

5.22 **Mandatory Findings of Significance**

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

a) ***Less Than Significant with Mitigation Incorporated.*** The proposed Project does not have the potential to significantly 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. Based on the preceding environmental analysis, the application of existing regulations and the incorporation of , BMPs, Yolo HCP/ NCCP AMMs, and mitigation measures all potentially significant impacts associated with the Project, including those related to air quality, biological resources, cultural resources, Tribal cultural resources, noise, geology and soils would be avoided, minimized or mitigated to maintain a level that is considered less than significant with mitigation incorporated.

b) ***Less Than Significant Impact.*** The Project is consistent with the General Plan and would not result in individually limited but collectively significant impacts; therefore, the Project would not cause any additional environmental effects or significantly contribute to a cumulative impact.

c) ***Less Than Significant Impact.*** The Project would not result in substantial direct or indirect adverse effects from noise, either during Project construction or operation, nor would it result in impacts to air quality, water quality or utilities and public services; additionally, measures have been identified to maintain the Project's effects to air quality, water quality, and noise levels at less than significant levels. Therefore, the Project would not cause substantial adverse effects on human beings.

6. Summary of Mitigation Measures

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

BIOLOGICAL RESOURCES

MM BIO-1: Valley Elderberry Longhorn Beetle

(Yolo HCP/NCCP AMM12: Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle)

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on VELB to the maximum extent possible:

- The elderberry shrub will be transplanted to a USFWS- and Conservancy-approved beetle conservation bank in accordance with the guidelines set forth in AMM12.
- Impacts to 0.71 acres of Great Valley Oak Riparian habitat, which is designated as VELB habitat, will be mitigated for in accordance with the Yolo HCP/NCCP. The specific acreage of compensatory mitigation credits are subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-2: Western Pond Turtle (Yolo HCP/NCCP AMMs 4 and 14: Cover Trenches and Holes during Construction and Maintenance; Minimize Take and Adverse Effects on Habitat of Western Pond Turtle)

The following measures will reduce potential impacts to western pond turtles:

- A pre-construction survey for western pond turtle shall be conducted by a qualified biologist. If a western pond turtle nest is identified during the survey, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. The County will inform CDFW if the nest cannot be avoided and such an activity must occur.
- If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground-disturbing activity for nests that may be unearthed during the disturbance, and will move out of harm's way any turtles or hatchlings found.
- To prevent injury and mortality of western pond turtle, workers will cover open trenches and holes associated with implementation of covered activities that affect habitat for these species or design the trenches and holes with escape ramps that can be used during non-working hours. The construction contractor will inspect open trenches and holes prior to filling and contact a qualified biologist to remove or release any trapped wildlife found in the trenches or holes.

MM BIO-3: Swainson's Hawk and White-Tailed Kite (Yolo HCP/NCCP AMM16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite)

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on Swainson's hawk and white-tailed kite to the maximum extent possible:

- The Project proponent will retain a qualified biologist to conduct preconstruction surveys for active nests consistent with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 1 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If Project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the Project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

MM BIO-4: Tricolored Blackbird (Yolo HCP/NCCP AMM21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird)

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on tricolored blackbird to the maximum extent possible:

- The qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).
- If active colony is present or has been present within the last 5 years, implement a species protection buffer within 1,300 feet of the colony site(s) from March 1 to July 30, unless a shorter distance is approved, based on site-specific conditions, by the Conservancy and CDFW.
- Per the Yolo HCP/NCCP, there is 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as tricolored blackbird nesting and foraging habitat. Impacts to tricolored blackbird suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP. The specific acreage of compensatory mitigation credits are subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-5: Special-Status Bird Species, Migratory Birds, and Raptors

The following measures will be implemented to further reduce the potential for impacts on special-status and migratory birds and raptors that may nest in or near the Project area, including northern harrier:

- Project activities and vegetation removal within the Project area shall be initiated outside of the bird nesting season (February 1 – August 31).

- If Project activities and vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days prior to the initiation of Project activities.
    - If an active avian nest (i.e., with egg[s] or young) is observed within 250 feet of the Project area during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

MM BIO-6: Wetlands and Waters (Yolo HCP/NCCP AMMs 1, 2, 3, 8, 9, and 10: Establish Buffers around Sensitive Natural Communities; Confine and Delineate Work Area to Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas; Avoid and Minimize Effects on Wetlands and Waters)

The following measures shall be implemented to avoid or minimize the potential for Project-related impacts on wetlands and waters:

- The County will comply with the terms of a Clean Water Act Section 404 permit issued by the Corps and Section 401 water quality certification issued by the RWQCB for activities involving the discharge of fill material into jurisdictional drainages. The County will also comply with terms of a Streambed Alteration Agreement with the CDFW (if determined necessary by the CDFW). Prior to any discharge into drainages, the required permits and authorizations will be obtained from the respective agencies. All terms and conditions of the required permits and authorizations will be implemented.
- The County will designate all wetlands outside the area of permanent impact as Environmentally Sensitive Areas (refer to MM BIO-8). These areas will be identified on construction drawings and demarcated in the field with flagging and/or signs identifying the area as off limits to all personnel, equipment, and ground-disturbing activities. In addition, water quality BMPs will be installed around the wetlands (outside the wetland boundaries) in a manner that prevents water, sediment, and chemicals from draining into the features, and all staging, storage, stockpile areas, and off-road travel routes will be located as far as practicable away from the wetlands.
- Mitigation for in 0.27 acres (1,483 linear feet) of permanent impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.
- Impacts to Lacustrine and Riverine and Fresh Emergent Wetland Sensitive Natural Communities will be mitigated for through the Yolo HCP/NCCP Natural Community and Land Cover Impacts Mitigation Fees. The specific acreage of compensatory mitigation credits are subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-7: Sensitive Natural Communities (Yolo HCP/NCCP AMM9, Establish Buffers around Sensitive Natural Communities)

Environmentally Sensitive Area (ESA) fencing will be established around the following Sensitive Natural Communities where they occur within or adjacent to the Project area, when feasible. These areas will be identified on construction drawings and demarcated in the field with flagging and/or signs identifying the area as off limits to all personnel, equipment, and ground-disturbing activities.

Per Yolo HCP/NCCP AMM9, the buffers for each Sensitive Natural Community are as follows:

- Valley foothill riparian: 100 feet from canopy drip-line. If avoidance is infeasible, a lesser buffer than is stipulated in the AMMs may be approved by the Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the Project purpose (e.g., if the purpose of the Project is to provide a stream crossing or replace a bridge, the Project may encroach into the buffer and the natural community or species habitat to the extent that is necessary to fulfill the Project purpose). Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.
- Lacustrine and riverine: Outside urban planning units, 100 feet from the top of banks. Within urban planning units, 25 feet from the top of the banks.
- Fresh emergent wetland: 50 feet from the edge of the natural community.

MM BIO-8: Worker Environmental Training Program (Yolo HCP/NCCP AMM6: Conduct Worker Training)

- All construction personnel will participate in a worker environmental training program approved/authorized by the Conservancy and administered by a qualified biologist. The training will provide education regarding sensitive natural communities and covered species and their habitats, the need to avoid adverse effects, state and federal protection, and the legal implications of violating the FESA and NCCPA Permits. A pre-recorded video presentation by a qualified biologist shown to construction personnel may fulfill the training requirement.

MM BIO-9 – Tree Removal Documentation and Replacement

The following measures shall be implemented to compensate for the removal of protected trees and to avoid or minimize the potential for Project-related impacts on tree resources.

- Final plans will identify the number, size and species of protected trees to be removed and include a planting plan, to ensure replacement of trees in a manner consistent with County and Resource Agencies policies. If replanting cannot completely compensate for the number of trees removed within the project site or on County managed land, purchase of compensatory mitigation credits will be required for the remainder of trees. The replanting plan must be approved by the County and any compensatory mitigation credits for tree resources must be purchased prior to vegetation clearing activities.
- A plan for avoidance and minimization of trees that are in the area of direct impact, but not removed shall be developed by an International Society of Arboriculture (ISA) Arborist and implemented by the County prior to vegetation clearing activities and throughout the construction of the Project.

MM BIO-10 Control Nighttime Lighting

Implements Yolo HCP/NCCP AMM7: (Control Nighttime Lighting of Project Construction Sites)

- Workers will direct all lights for nighttime lighting of project construction sites into the project construction area and minimize the lighting of natural habitat areas adjacent to the project construction area.

MM TCR-1: Sensitivity Training

- Prior to the start of the Project, Project personnel will attend cultural sensitivity training from the Yocha Dehe Wintun Nation. Contact Yocha Dehe Wintun Nation Tribal Monitor Supervisor, Office: (530) 215-6180.

7. Supporting Information Sources

7.1 Report Preparation

Yolo County Department of Community Services, CEQA Lead Agency

Stephanie Cormier	Principal Planner
Lilia Razo	Project Engineer, Senior Civil Engineer

Gallaway Enterprises

Kevin Sevier	Senior Planner
Brittany Reaves	Biologist

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Appendix A

Natural Environment Study

County Road 98 Bike and Safety Improvement Project, Phase II

Natural Environment Study

Yolo County, California

Sections 36, 31, 1, 6, 12, 7, 13, 18, 24, 19
Townships 8N, 9N, Range 1E, 2E

Merritt Quadrangle

District 3-YOL-CR 98
Federal Project No. STPL 5922 (102)

September 2020

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

STATE OF CALIFORNIA
Department of Transportation
District 3-YOL-CR 98

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Summary

The Yolo County is proposing to implement the second phase of County Road (CR) 98 Bike and Safety Improvement Project (project), which will widen and improve shoulders along CR 98. Roundabouts will be constructed at the intersections with CR 31 (Covell Boulevard), CR 32 (Russell Boulevard), and Hutchison Drive. Implementation of the project will require the relocation of drainage ditches and utilities outside the clear recovery zone, which will include extension, replacement, and/or relocation of existing drainage structures to accommodate the widened road. All construction staging will occur within the existing right-of-way. The purpose of the project is to improve public safety while traveling on the County road. The project is located on CR 98, west of the City of Davis, in Yolo County, California. Construction of this project is anticipated to be completed within a two construction seasons.

Gallaway Enterprises conducted assessments required to comply with the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP). The assessments included a Land Cover Mapping and Covered Species Habitat Assessment and a Planning Level Survey for Land Cover Types and Covered Species Habitat. The purpose of the assessments was to determine the presence of special-status species, quantify land cover types, and define impacts within the Biological Study Area (BSA). The BSA for the project is confined to the County right-of-way (ROW), including areas of proposed ROW acquisition along CR 98 and its intersections with CR 30, CR 31, CR 32, and Hutchison Drive. Land cover types designated by the Yolo HCP/NCCP as Sensitive Natural Communities (SNC) occur within the BSA. Freshwater Marsh Alliance, Lacustrine and Riverine, and Great Valley Oak Riparian are SNCs that occur within the BSA. Other land cover types delineated by the Yolo HCP/NCCP within the BSA consist of Deciduous Fruits/Nuts, Field Crops, Grain and Hay Crops, Grassland Alliance, Semiagricultural, Urban, and Vegetated Corridor.

There is no suitable habitat for special-status plant species within the BSA. There is suitable habitat within the BSA for valley elderberry longhorn beetle (VELB), Swainson's hawk, white-tailed kite, tricolored blackbird, and western pond turtle, which are covered species under the Yolo HCP/NCCP. There is modeled habitat for least Bell's vireo, a covered species under the Yolo HCP/NCCP, within 500 feet of the BSA. Modeled habitat represents land areas for which the Yolo HCP/NCCP expects to provide habitat for covered species based on modeled habitat parameters (e.g. land cover type, distance from aquatic areas, topography, species occurrences). There is also suitable habitat within the BSA for northern harrier and migratory birds and raptors protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC).

Consistent with the Yolo HCP/NCCP protocol level surveys were conducted for the federally listed least Bell's vireo. No observations were made for least Bell's vireo and no suitable habitat will be removed by the proposed project. The project will have no effect on least Bell's vireo.

There is one blue elderberry shrub that will be removed, therefore impacts to the federally listed VELB are assumed. Compensatory mitigation will be satisfied through payment of fees to the Yolo HCP/NCCP. In addition, the shrub will be transplanted during the non-growing season (November-February 15) in accordance with Avoidance and Minimization Measure (AMM) 12 in the Yolo HCP/NCCP. The project may affect but is not likely to adversely affect VELB.

There will be no impacts to Swainson's hawk, white-tailed kite, tricolored blackbird, and migratory birds with the implementation of avoidance and minimization measures in accordance with the Yolo HCP/NCCP.

There will be impacts to 0.27 (1,483 linear feet) acres of drainages and/or jurisdictional ditches. Mitigation for impacts to jurisdictional Waters of the United States (WOTUS) will be addressed through the purchase of credits at a U.S. Army Corps of Engineers (Corps)-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Table of Contents

List of Figures Tables and Appendices

List of Abbreviated Terms

BSA	Biological Study Area
BMP	Best Management Practices
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
County	Yolo County
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DBH	Diameter at Breast Height
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
GIS	Geographic Information System
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Quality Act

NES	Natural Environmental Study
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SSC	State Species of Special Concern
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VELB	Valley elderberry longhorn beetle
WOTUS	Waters of the United States

Chapter 1 – Introduction

The purpose of the project is to improve safety along the County Road (CR) 98 corridor for automobiles, farm equipment, farm-to-market trucking, aggregate product suppliers, commuters, residents, and bicyclists. The project is the second phase of the overall CR 98 Bike and Safety Improvement Project (project) and will rehabilitate the entire width of the cross roads as part of the intersection improvements from CR 98 to an approximate length of 1,000 feet on either direction, except on the eastern segments of CR 31 and CR 32, which will extend to the City of Davis limits (**Figure 1: Regional Location Map, Figure 2: Project Location Map**).

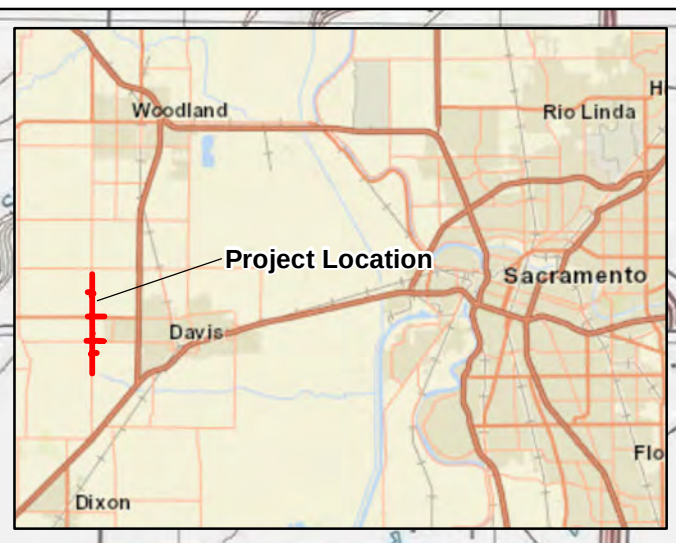
The purpose of this Natural Environment Study (NES) is to evaluate potential project impacts to special-status species and their habitats within the project vicinity. In addition, the NES complies with the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP) planning survey and reporting requirements.

Project History

The first phase of the CR 98 Bike and Safety Improvement Project was completed in 2014 and consisted of widening and improving shoulders between the City of Woodland boundary and the CR 98 and CR 29 intersection in an effort to provide safer access and improved visibility for vehicles and bicyclists. Three years following the completion of Phase I of the project, the improved roadway saw a 70% reduction in non-intersection accidents (Omni-Means 2017). The second proposed phase of this project addressed in this NES will continue southward toward the Yolo County line. Phase II will implement shoulder widening as well as intersection improvements in an effort to reduce intersection-related accidents and injuries.

Project Description

Yolo County (County) is proposing to construct Phase II of the CR 98 Bike and Safety Improvement Project, which will extend improvements from the first phase of the CR 98 project completed in 2014, which included adding paved shoulders, clear recovery zones, and improved major intersections. The extent of Phase II will be 4.1 miles, starting from approximately 1300± feet south of the CR 98/CR 29 intersection to the Solano County Line serving the needs of many diverse users, including farmers, aggregate suppliers, and other inter-region truckers, rural residents, commuters, and bicyclists.



Dry Slough

Putah Creek

County Road 30

County Road 98

County Road 31

Russell Blvd

Hutchison Blvd

Plainfield

UNIVERSITY AIRPORT

Beacon

Footbridge

Water Tank

CANAL

LEVEE

Project Boundary - (106.7 acres)

USGS 7.5' Quad: Merritt
T08N, R01E, Sections 1, 12,13,24,
T09N, R02E, Section 31,
T08N, R02E, Sections 6, 7,18,19,
T09N, R01E, Section 36
UTM Zone 10

NORTH

1:24,000
0 0.25 0.5 Miles

Data Sources: ESRI, USGS, Yolo County

County Road 98 Bike and Safety Improvements Phase II
Regional Location
Figure 1

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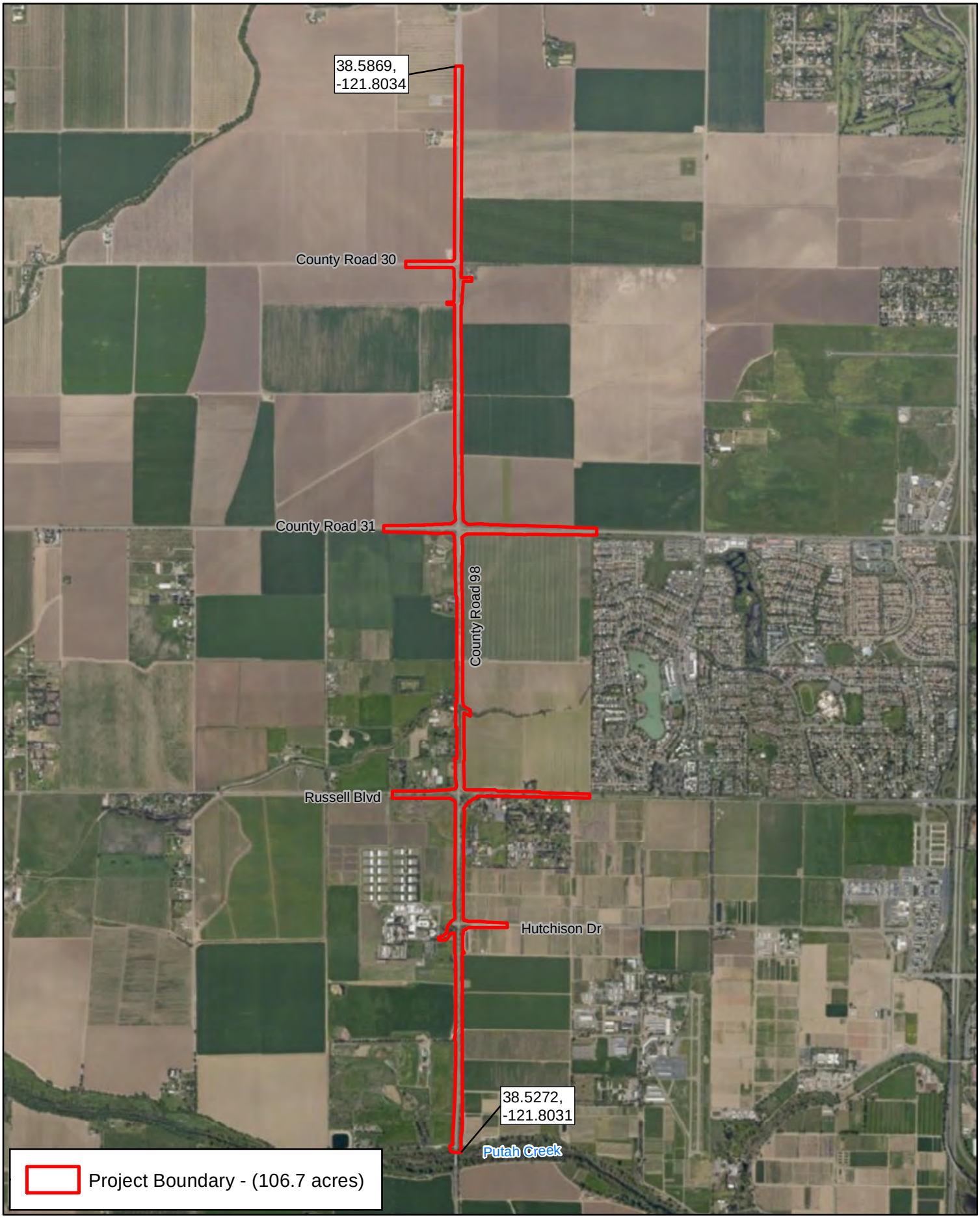
GE: #18-119 Map Date: 08/20/2020



NORTH

1:30,000

0 1,000 2,000 Feet

Data Sources: ESRI, Yolo County, Maxar 07/13/2017

County Road 98 Bike and Safety Improvements Phase II
Biological Survey Area
Figure 2

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020

Construction of the proposed project will result in the addition of eight-foot paved shoulders as shared bike lanes, and an additional twelve-foot clear recovery zone along the entire length of both sides of the existing two-lane arterial road. The project also proposes to construct a Class 1 shared path to close the gap between the existing Class 1 bike paths on Russell Blvd and the Class 2 bike lanes on Hutchison Drive on the University of California, Davis campus. The project will reconstruct and improve the road structure throughout the extent of the project. Roundabouts will be constructed at the intersections with CR 31, CR 32, and Hutchison Drive; calming entering speeds at the intersections and improving safety for all users. Implementation of the project will require the relocation of drainage ditches and above-ground utilities outside the clear recovery zone, which will include extension, replacement, and/or relocation of existing drainage structures to accommodate the widened road. This will also include relocation and/or abandonment of underground utilities, where they are in conflict with the project. The project may include the installation of high-speed internet. All construction staging will occur on paved portions of the existing roadways. The drainage slough/ditch on the east side of CR 98 north of CR 32 will be reconstructed. Native trees will be planted along the corridor to replace trees that will be removed by the project. Environmental impacts of the project will be addressed in the appropriate National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) documents. This project is included in the Sacramento Area Council of Governments' 2019 Metropolitan Transportation Improvement Program. The project is also a covered project under the Yolo HCP/NCCP.

Chapter 2 – Study Methods

The biological and botanical surveys were conducted by Gallaway Enterprises after consulting the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list, National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) official species list, NOAA NMFS Essential Fish Habitat (EFH) mapper database, California Natural Diversity Database (CNDDB) search, and the California Native Plant Society's (CNPS) list of rare and endangered plants gathered for the Biological Study Area (BSA) (**Appendix A: Species Lists, Figure 3: Biological Study Area**). Additionally, a map was obtained from the CNDDB Geographic Information System (GIS) database, which provided general locations of species that had recorded CNDDB occurrences within a quarter-mile radius of the project location (**Figure 4: CNDDB Occurrences**). This quarter-mile buffer was utilized based on project proximity requirements implemented in the Yolo HCP/NCCP. Based on the results of the species lists and CNDDB map, appropriate biological and botanical surveys were conducted.

Regulatory Requirements

The following describes federal, state, and local environmental laws and policies that are relevant to the NEPA and CEQA review processes and documents compliance with the Yolo HCP/NCCP Implementation Handbook: Permitting Guide (November 2019).

Federal

Federal Endangered Species Act

The United States Congress passed the federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA 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. The ESA makes it unlawful to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

NORTH

1:30,000

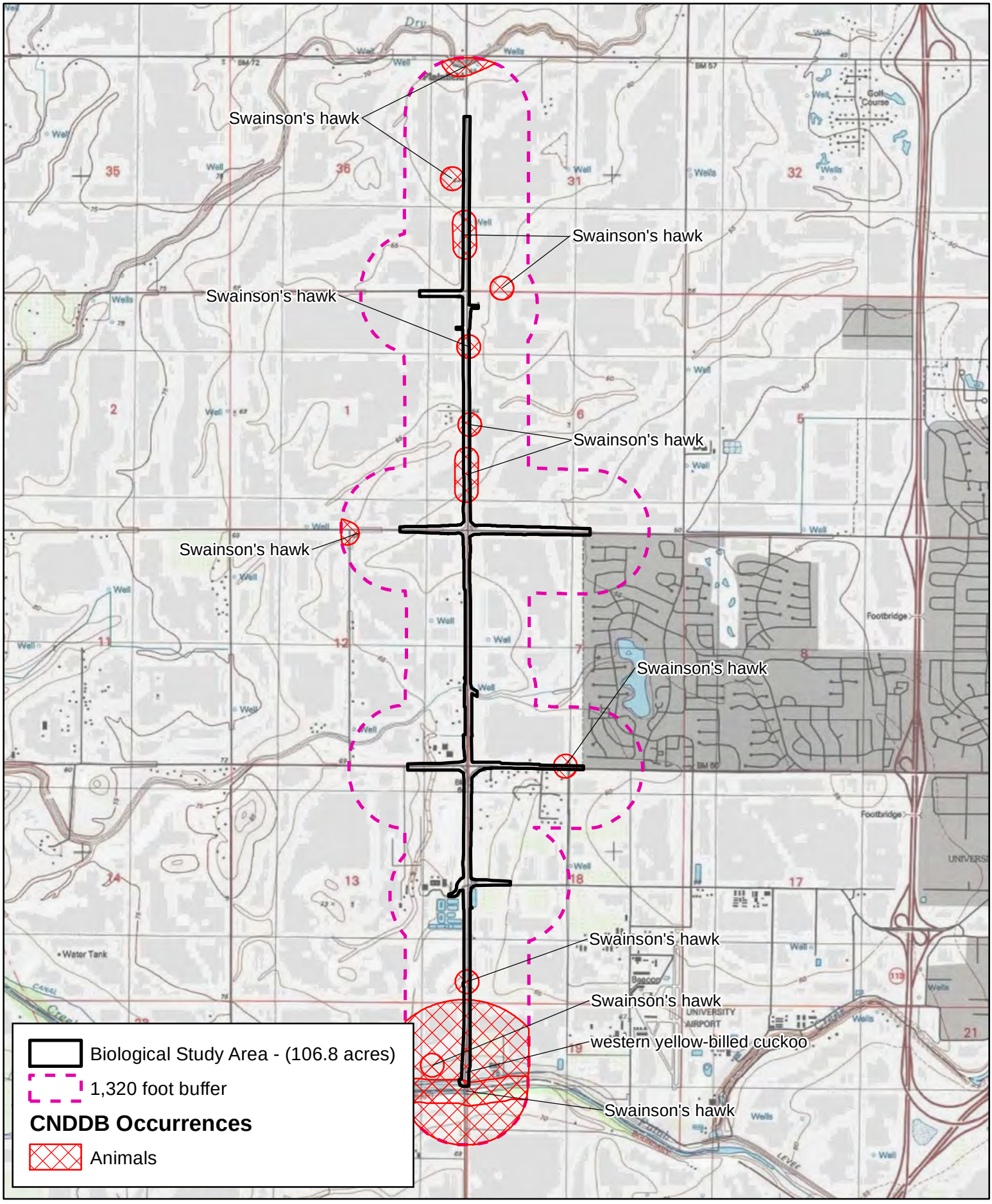
0 1,000 2,000 Feet

Data Sources: ESRI, Yolo County, Maxar 07/13/2017

County Road 98 Bike and Safety Improvements Phase II
Biological Study Area
Figure 3

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020



NORTH

1:33,200
0 600 1,200 Feet

Data Sources: ESRI, Yolo County, USGS, CNDDB

County Road 98 Bike and Safety Improvements Phase II
CNDDB Occurrences
Figure 4

gallaway ENTERPRISES

GEP: #18-119 Map Date: 08/20/2020

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA. Thus, vegetation removal and ground disturbance in areas with breeding birds should be conducted outside of the breeding season (approximately March 1 through August 31 in the Central Valley). If vegetation removal or ground disturbance activities are conducted during the breeding season, then a qualified biologist must determine if there are any nests of bird species protected under the MBTA present in the construction area prior to commencement of construction. If active nests are located or presumed present, then appropriate avoidance measures (e.g. spatial or temporal buffers) must be implemented.

Waters of the United States, Clean Water Act, Section 404

The US Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under the Clean Water Act (§404). The term "waters of the United States" is an encompassing term that includes "wetlands" and "other waters". Wetlands have been defined for regulatory purposes as follows: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas." other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e. hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4).

The Corps may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each nationwide permit.

Executive Orders 13112; Prevention and Control of Invasive Species

On Feb 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. Executive Order 11312 directs all federal agencies to prevent and control introductions of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The Invasive Species Council and Advisory Committee oversees and facilitates implementation of the Executive Order, including preparation of a National Invasive Species Management Plan.

Section two (2) of the Executive Order states:

(a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, (1) identify such actions; (2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

(b) Federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

State of California

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the California Environmental Quality Act (CEQA). The purpose is to ensure that the actions of the lead agency 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. In addition to formal listing under the federal and state endangered species acts, "species of special concern" receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Game Code

The California Fish and Game Code (CFGC) (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) 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". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

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Clean Water Act, Section 401

The Clean Water Act (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and Other Waters of the United States. In accordance with the Clean Water Act (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are

obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (§402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

Streambed Alteration Agreement

The CDFW is a trustee agency that has jurisdiction under the CFGC (§1600 et seq.). The CFGC (§1602), requires that a state or local government agency, public utility, or private entity 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.

Rare and Endangered Plants

The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or 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 CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGC §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and

presumably replant) the plants before they are destroyed. Fish and Game Code §1913 exempts from the 'take' prohibition 'the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way."

California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provide that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Streambed Alteration Agreement

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Yolo County

Yolo Habitat Conservation Plan/Natural Community Conservation Plan

The Yolo HCP/NCCP is a 50-year regional plan that proposes to protect endangered species and natural resources while allowing for orderly development in Yolo County consistent with local General Plans. The plan covers 12 wildlife and plant species and implements guidelines for identifying and minimizing potential impacts to species that are covered under the plan. The NES has been prepared in accordance with the Yolo HCP/NCCP Implementation Handbook: Permitting Guide (February 2020).

Studies Required

Gallaway Enterprises conducted biological and botanical habitat assessments within the BSA. Gallaway Enterprises' qualified biologist Brittany Reaves, senior biologist Melissa Murphy, and senior botanist Elena Gregg conducted planning level surveys and field verified Yolo HCP/NCCP mapped land cover types. Planning level surveys are conducted during the project planning and permitting process. There are two types of planning level surveys: 1) surveys conducted to assess land cover types and covered species habitat, and 2) surveys to determine the presence/absence of covered species through species-specific protocol surveys. Information collected during planning level surveys is used to determine land cover impacts, mitigation fees, and applicable avoidance and minimization measures.

Planning level surveys were conducted following review of the Yolo HCP/NCCP, USFWS IPaC report, CNDDB Rarefind 5 report, CNPS list, and the CNDDB occurrence map (**Figure 4: CNDDB Occurrences**). The United States Geological Survey (USGS) "Merritt" 7.5 minute quadrangle in which the project is located was used to derive the agency species lists **(Appendix A: Species Lists)**. Based on the results of these inquiries, Gallaway Enterprises conducted planning level surveys and protocol-level surveys to identify any Yolo HCP/NCCP covered, rare, endangered, threatened, or sensitive species and their habitats that may have the potential to occur within the BSA or within proximity distances as described in Table 2-3 of the Yolo HCP/NCCP *Permitting Guide*. The Yolo HCP/NCCP covers 12 species and their habitats; however Gallaway biologists conducted habitat assessments and pre-screening surveys for all wildlife and plants that could be impacted by the project.

On April 30, 2019, biologists approved by the Yolo HCP/NCCP conducted planning level surveys for land cover types, covered species habitat, and when applicable, species specific surveys were completed. Mrs. Reaves and Mrs. Gregg verified the location of the BSA within the Yolo HCP/NCCP designated planning units and the acreage of land cover types present (**Figure 2: Project Location**).

A delineation of Waters of the United States (WOTUS) was completed for the BSA. The BSA was surveyed on-foot by Gallaway Enterprises staff on April 30, 2019 to identify potentially jurisdictional features. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the United States Army Corps of Engineers Wetlands Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation

Manual: Arid West Region (2008). The boundaries of non-tidal, non-wetland waters, when present, were delineated at the OHWM as defined in 33 Code of Federal Regulations (CFR) 328.3 and further described in the U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (2008). The OHWM represents the limit of Corps jurisdiction over non-tidal waters (e.g., streams and ponds) in the absence of adjacent wetlands (33 CFR 328.04) (Curtis et al. 2011).

Personnel and Survey Dates

Gallaway Enterprises visited the BSA on April 30 and May 15, 2019. During the visit, biologist Brittany Reaves, senior biologist Melissa Murphy, and senior botanist Elena Gregg conducted planning level surveys as prescribed by the Yolo HCP/NCCP. (**Appendix B: Project Site Photos**).

Mrs. Reaves has over 3 years of professional experience surveying at the protocol and general level for nesting birds and raptors and other special-status wildlife species. Mrs. Reaves has experience surveying for Swainson's hawk (*Buteo swainsoni*), western pond turtle (*Emys marmorata*), foothill yellow-legged frog (*Rana boylii*), and tricolored blackbird (*Agelaius tricolor*), assisting in dewatering activities including fish relocation, and conducting habitat assessments for listed species. Mrs. Reaves has installed bird and bat exclusion for a variety of public works projects. Mrs. Reaves is approved by the Yolo Conservancy to conduct surveys in the Yolo HCP/NCCP.

Ms. Murphy has over 8 years of experience surveying at the protocol and general level for listed reptiles and amphibians including giant garter snake, California red-legged frog, foothill yellow-legged frog, and western pond turtle. Ms. Murphy has extensive experience PIT tagging reptiles, assisting in de-watering activities including fish relocation, surveying for nesting birds and raptors, capturing and banding waterfowl, and conducting habitat assessments for listed species. She regularly conducts habitat assessments and develops and implements mitigation measures for a variety of private and public works projects throughout northern California. Ms. Murphy is approved by the Yolo Conservancy to conduct surveys in the Yolo HCP/NCCP.

Mrs. Gregg has over 15 years of experience conducting rare plant surveys, wetland delineations, and habitat assessments in California. She has a working knowledge of CNPS, CDFW, and USFWS survey protocols and holds a CDFW collection permit for listed plant species. Through her extensive field experience in a wide array of habitats and eco-regions in northern California, Mrs. Gregg has gained knowledge of locally invasive

plants species and noxious weeds. Mrs. Gregg is approved by the Yolo Conservancy to conduct surveys in the Yolo HCP/NCCP.

Land Cover Mapping and Covered Species Habitat Assessment Verification

The Land Cover Mapping and Covered Species Habitat Assessment and a Planning Level Survey for Land Cover Types and Covered Species Habitat were conducted by walking the entire BSA and identifying specific habitat types and elements. Land within 1,320 feet of the project limits was evaluated for land cover types and the presence of suitable habitat for species covered under the Yolo HCP/NCCP. If suitable habitat was observed for special-status species it was then evaluated for quality based on vegetation composition and structure, physical features (e.g. water, soils), micro-climate, surrounding area, presence of predatory species and available resources (e.g. prey items, nesting substrates).

Botanical Habitat Assessment

A botanical habitat assessment was conducted on April 30, 2019 by senior botanist Elena Gregg to assess potential for special-status plant species to occur within the BSA. The assessment was conducted by walking in all accessible areas of the BSA and noting the habitat elements present (e.g. soils, geology, hydrology, topography, aspect, elevation, etc.) and vegetation communities present. If present, natural and man-made disturbance patches were noted as well as the successional stage of vegetation within the BSA. Botanical species observed within the BSA during this field visit are listed in **Appendix A**.

Limitations That May Influence Results

Only lands where Yolo County secured a right of entry were surveyed. Lands outside of the BSA that required analysis by the Yolo HCP/NCCP were done so remotely. There were no limitations that may influence results of the Land Cover Mapping and Covered Species Habitat Assessment and planning level surveys within the BSA.

Chapter 3 – Results: Environmental Setting

Description of the Existing Biological and Physical Conditions

Study Area

The BSA is the area where the focus of biological surveys is conducted and where all construction and staging will occur (**Figure 3: Biological Survey Area**). The BSA includes all anticipated right of way acquisition areas. As this project is a linear transportation improvement project, the BSA for the project is confined to the right-of-way along CR 98, CR 30, CR 31 (Covell Boulevard), CR 32 (Russell Boulevard), and Hutchison Drive. The total area of the BSA is 106.8 acres. In accordance with the Yolo HCP/NCCP, land within 1,320 feet of the project limits was evaluated for land cover types and the presence of suitable habitat for species covered under the plan.

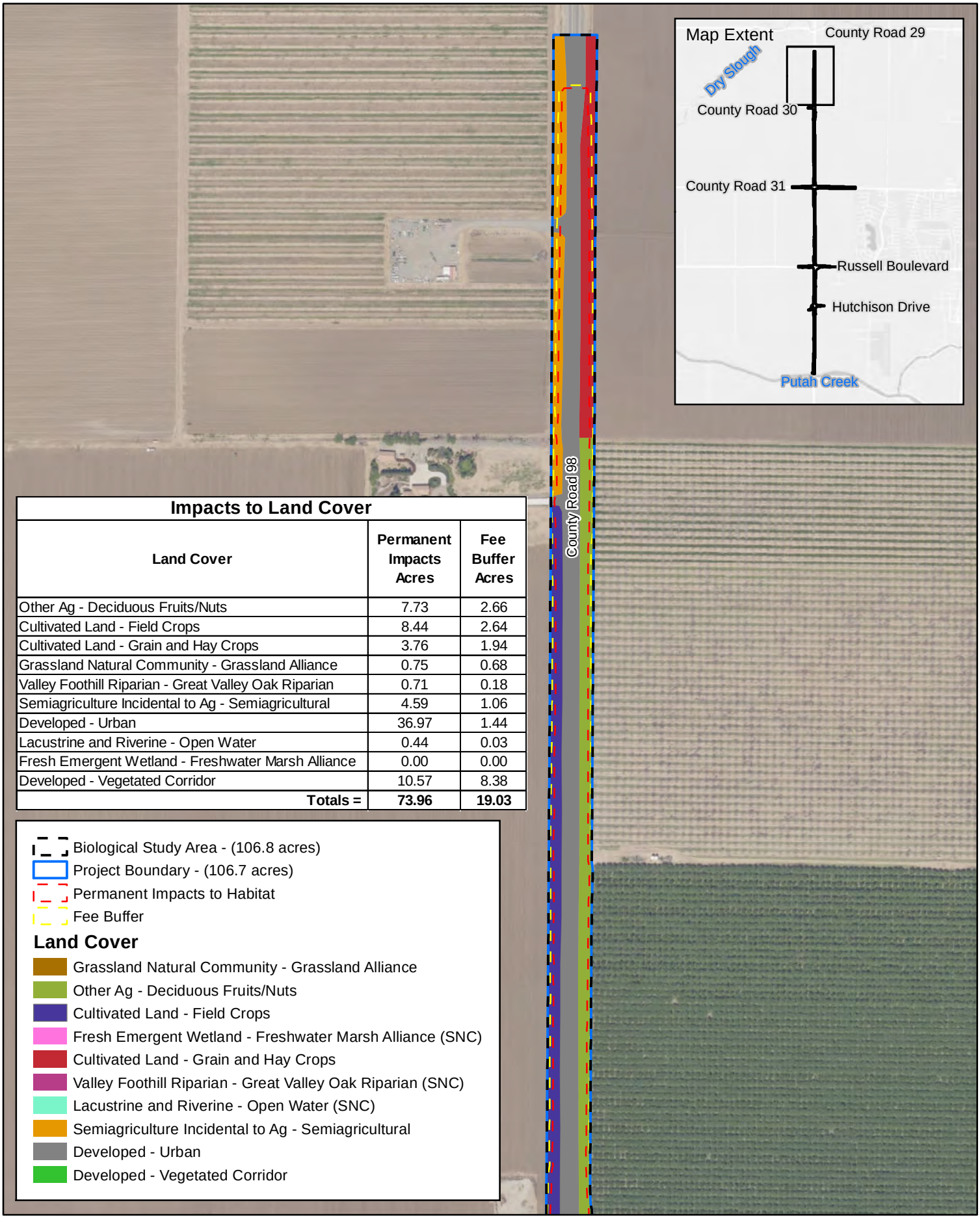
Physical Conditions

The BSA is located within the Sacramento Valley, west of Davis in unincorporated Yolo County, California. The BSA is composed primarily of existing asphalt roadway and gravel road shoulders. Land within the BSA that occurs outside of the gravel road shoulders is primarily composed of agricultural land and rural residences with associated planted trees and landscape plants. Soils within the BSA consist of silty clay loam. The average annual precipitation for the area is 17.55 inches and the average temperature is 60.4° F (Western Regional Climate Center 2020). The BSA occurs at an elevation of approximately 70 feet above sea level and is sloped between 0 and 2 percent.

There are several drainages present within the BSA (See **Appendix C: Draft Delineation of Waters of the US Map**). The project limits terminate just before Putah Creek at the south end of the BSA. All of the drainages present within the BSA are man-made or man-altered and their hydrology is influenced by agriculture. There is one (1) wetland feature, a pond, present within the BSA.

Biological Conditions in the Biological Survey Area

Land cover types delineated by the Yolo HCP/NCCP within the BSA are Lacustrine and Riverine, Deciduous Fruits/Nuts, Field Crops, Grain and Hay Crops, Grassland Alliance, Great Valley Oak Riparian, Semiagricultural, Urban, and Vegetated Corridor (**Figure 5: Impacts to Land Cover**). The BSA is also located within 100 feet of designated Lacustrine and Riverine land cover type at the southern end of the project, where the project terminates within 100 feet of Putah Creek.



Impacts to Land Cover

Land Cover	Permanent Impacts Acres	Fee Buffer Acres
Other Ag - Deciduous Fruits/Nuts	7.73	2.66
Cultivated Land - Field Crops	8.44	2.64
Cultivated Land - Grain and Hay Crops	3.76	1.94
Grassland Natural Community - Grassland Alliance	0.75	0.68
Valley Foothill Riparian - Great Valley Oak Riparian	0.71	0.18
Semiagriculture Incidental to Ag - Semiagricultural	4.59	1.06
Developed - Urban	36.97	1.44
Lacustrine and Riverine - Open Water	0.44	0.03
Fresh Emergent Wetland - Freshwater Marsh Alliance	0.00	0.00
Developed - Vegetated Corridor	10.57	8.38
Totals =	**73.96**	**19.03**

Biological Study Area - (106.8 acres)
Project Boundary - (106.7 acres)
Permanent Impacts to Habitat
Fee Buffer

Land Cover

Grassland Natural Community - Grassland Alliance
Other Ag - Deciduous Fruits/Nuts
Cultivated Land - Field Crops
Fresh Emergent Wetland - Freshwater Marsh Alliance (SNC)
Cultivated Land - Grain and Hay Crops
Valley Foothill Riparian - Great Valley Oak Riparian (SNC)
Lacustrine and Riverine - Open Water (SNC)
Semiagriculture Incidental to Ag - Semiagricultural
Developed - Urban
Developed - Vegetated Corridor

NORTH

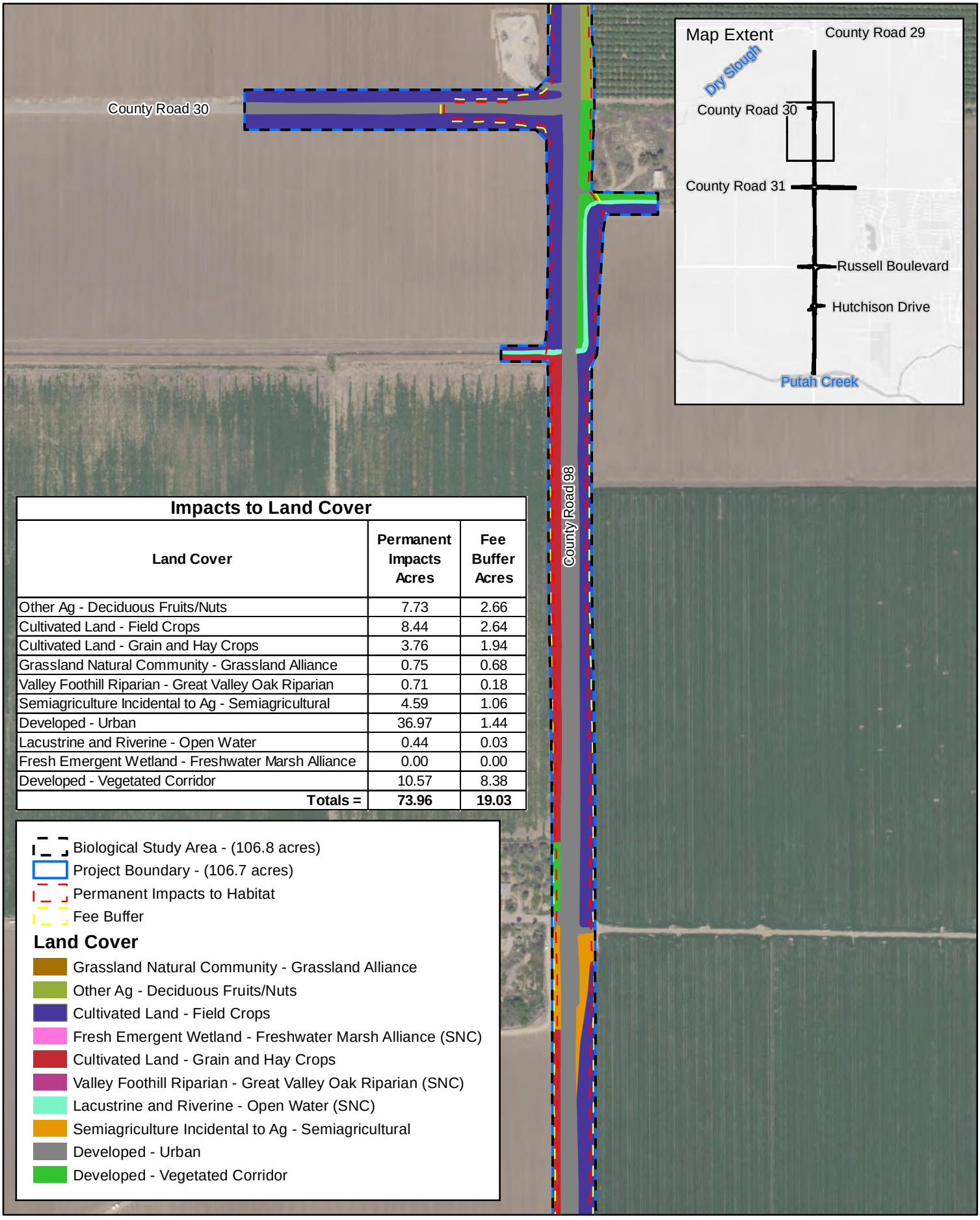
1:4,800
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 1)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020



Impacts to Land Cover

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Valley Foothill Riparian - Great Valley Oak Riparian	0.71	0.18
Semiagriculture Incidental to Ag - Semiagricultural	4.59	1.06
Developed - Urban	36.97	1.44
Lacustrine and Riverine - Open Water	0.44	0.03
Fresh Emergent Wetland - Freshwater Marsh Alliance	0.00	0.00
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Totals =	**73.96**	**19.03**

Biological Study Area - (106.8 acres)
Project Boundary - (106.7 acres)
Permanent Impacts to Habitat
Fee Buffer

Land Cover

Grassland Natural Community - Grassland Alliance
Other Ag - Deciduous Fruits/Nuts
Cultivated Land - Field Crops
Fresh Emergent Wetland - Freshwater Marsh Alliance (SNC)
Cultivated Land - Grain and Hay Crops
Valley Foothill Riparian - Great Valley Oak Riparian (SNC)
Lacustrine and Riverine - Open Water (SNC)
Semiagriculture Incidental to Ag - Semiagricultural
Developed - Urban
Developed - Vegetated Corridor

NORTH

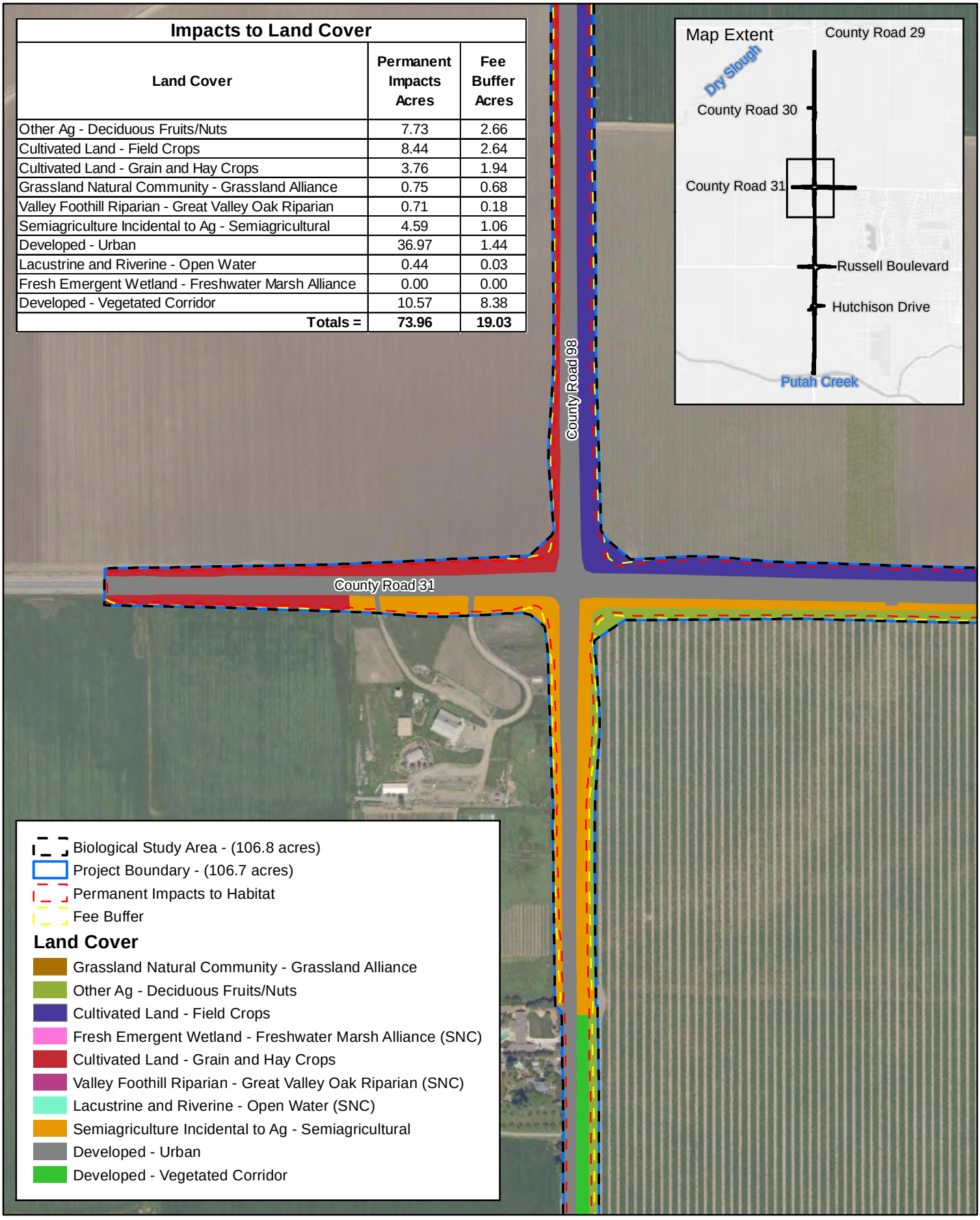
1:4,800
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 2)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020



NORTH

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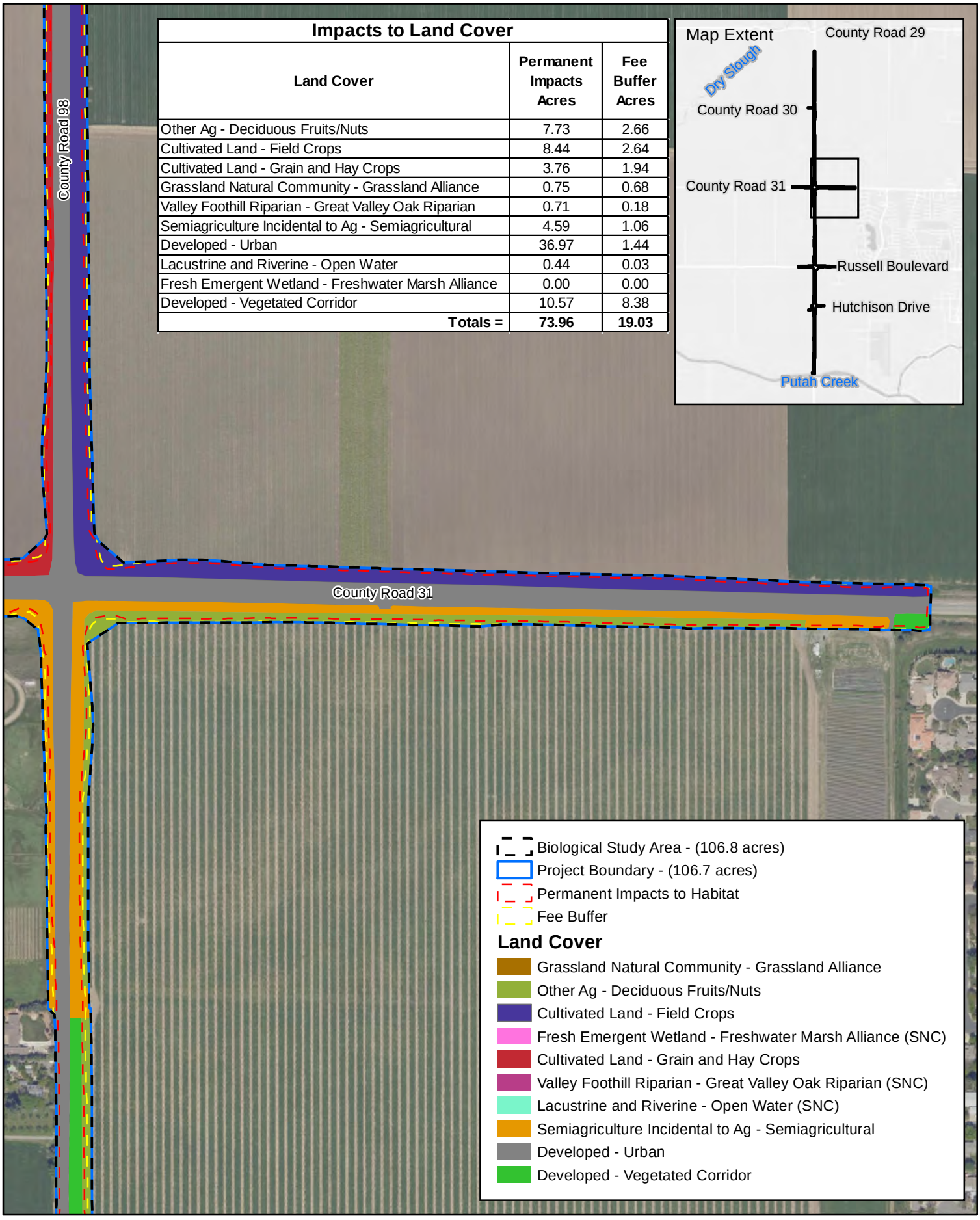
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 3)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020



NORTH

1:4,800
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

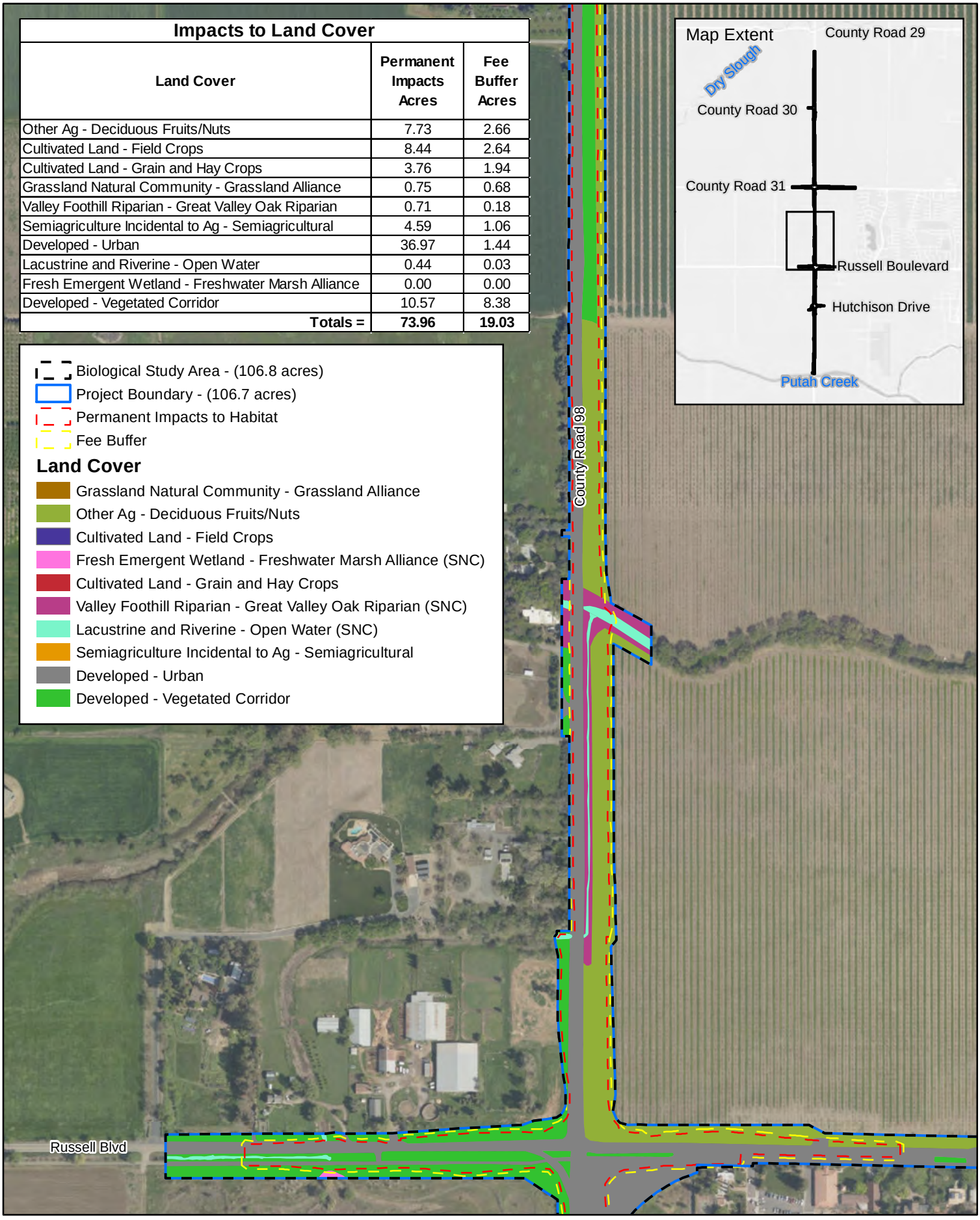
County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 4)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020

Impacts to Land Cover

Land Cover	Permanent Impacts Acres	Fee Buffer Acres
Other Ag - Deciduous Fruits/Nuts	7.73	2.66
Cultivated Land - Field Crops	8.44	2.64
Cultivated Land - Grain and Hay Crops	3.76	1.94
Grassland Natural Community - Grassland Alliance	0.75	0.68
Valley Foothill Riparian - Great Valley Oak Riparian	0.71	0.18
Semiagriculture Incidental to Ag - Semiagricultural	4.59	1.06
Developed - Urban	36.97	1.44
Lacustrine and Riverine - Open Water	0.44	0.03
Fresh Emergent Wetland - Freshwater Marsh Alliance	0.00	0.00
Developed - Vegetated Corridor	10.57	8.38
Totals =	**73.96**	**19.03**



NORTH

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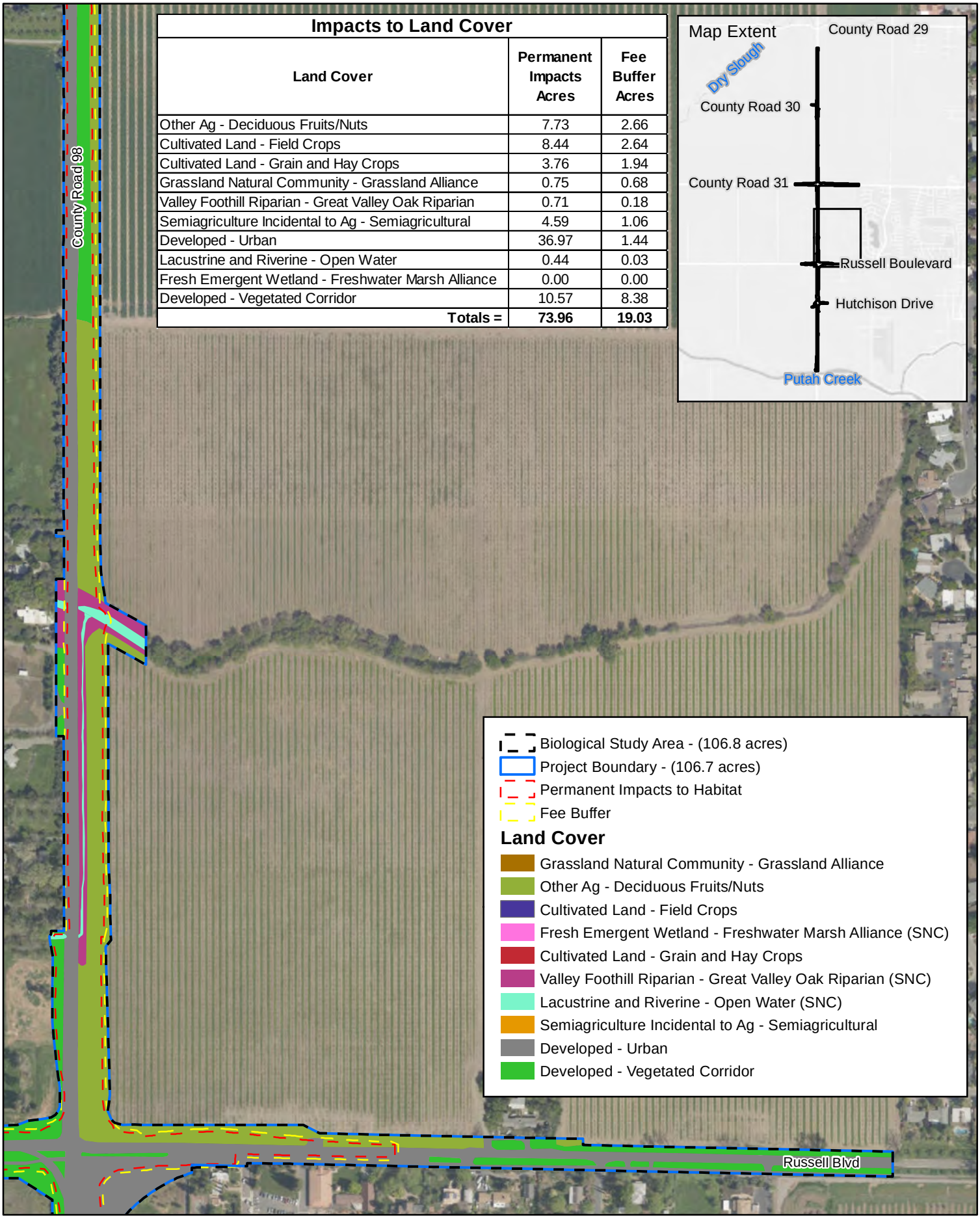
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 5)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020



NORTH

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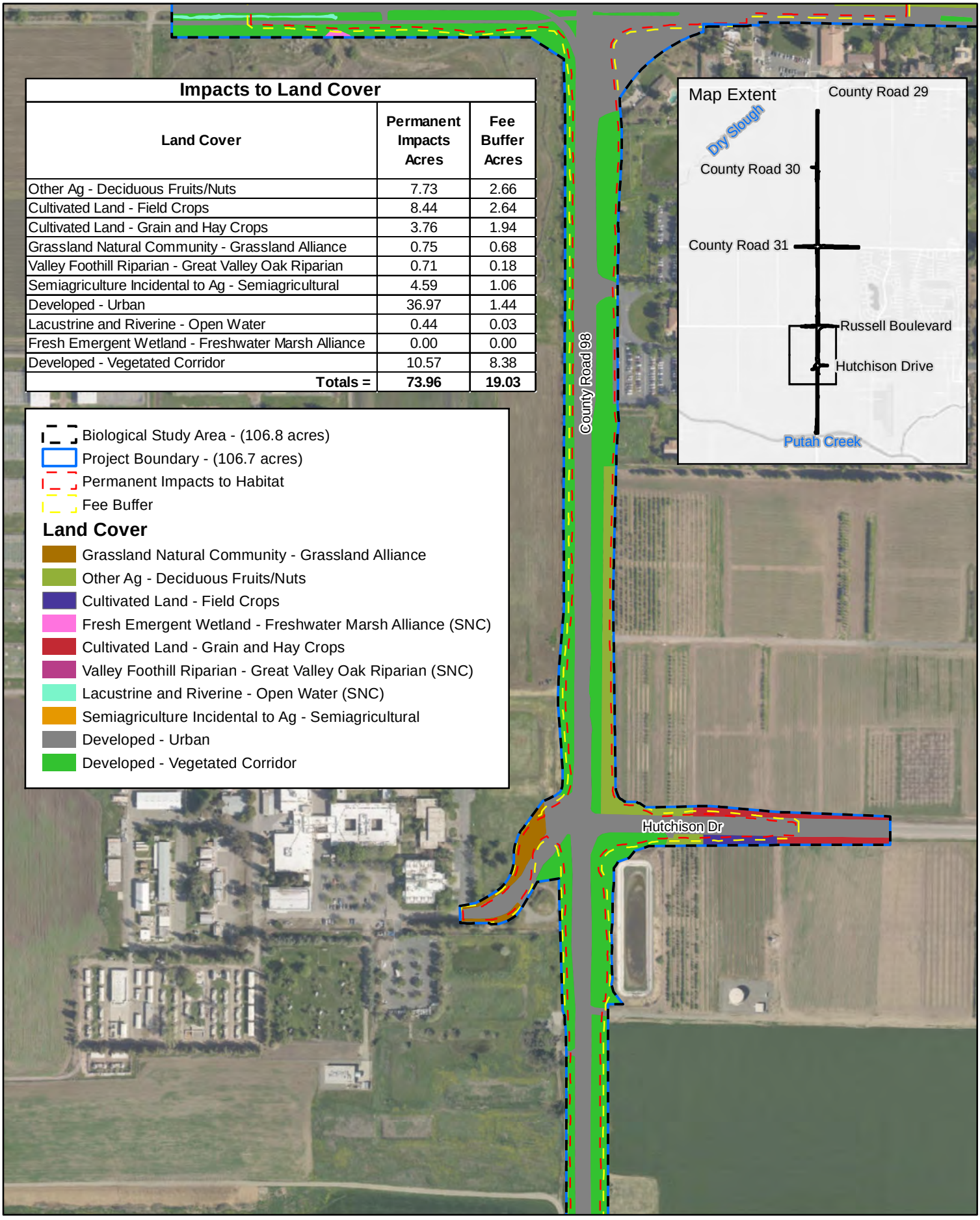
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 6)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020



NORTH

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0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 7)

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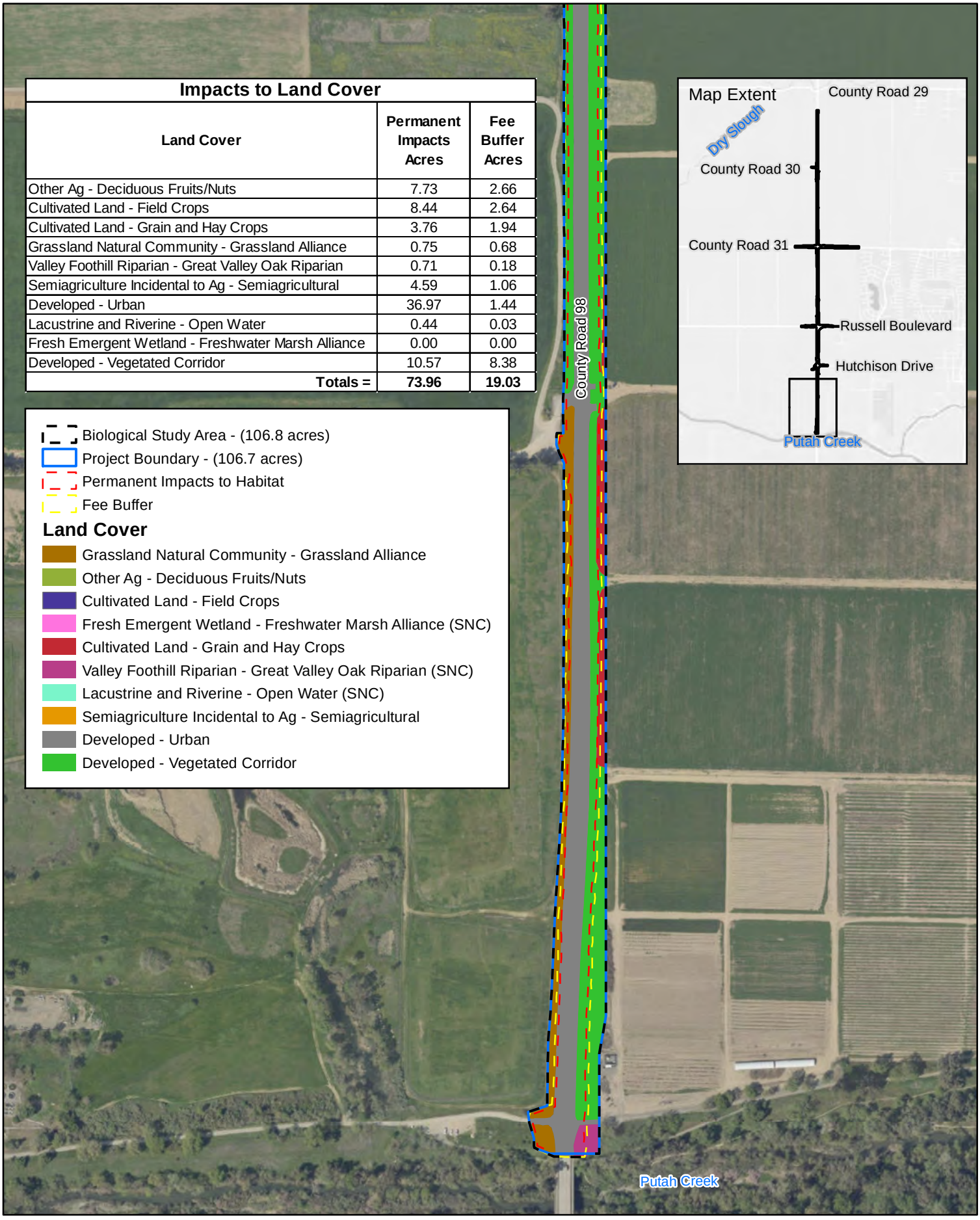
GE: #18-119 Map Date: 08/25/2020



NORTH

1:4,800
0 100 200 Feet

Data Sources: ESRI, Yolo County, Yolo County 04/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Land Cover
Figure 5 (Panel 8)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/25/2020

The existing roadway is not considered habitat. Land cover types were mapped within the BSA which includes the area where construction will occur and a 10-foot buffer which is referred to as the "fee buffer". The Yolo HCP/NCCP requires that permanent impacts to land cover types and the fee buffer areas be calculated and entered into the application form for coverage under the Yolo HCP/NCCP; thus, **Figure 5** includes a column that depicts the permanent impacts to land cover types, as well as the fee buffer areas.

Yolo HCP/NCCP Land Cover Types

Fresh Emergent Wetland Sensitive Natural Community: Freshwater Marsh Alliance

Freshwater Marsh Alliance is a subset of the Fresh Emergent Wetland Sensitive Natural Community as defined by the Yolo HCP/NCCP. Freshwater emergent wetland vegetation occurs along streams and rivers and at the margins of ponds with some areas of open water, dominated by bulrushes and cattails. There is one (1) wetland feature present near the western boundary of the BSA, south of CR 32, that is considered Freshwater Marsh Alliance per the Yolo HCP/NCCP (**Figure 5: Impacts to Land Cover**). This wetland area is heavily vegetated with freshwater emergent wetland vegetation, including cattails (*Typha* sp.). It appears to be a man-made detention pond, with water diverted from the existing canal to the north. The Freshwater Marsh Alliance land cover type within the BSA could potentially support the Yolo HCP/NCCP-covered tricolored blackbird and western pond turtle.

Lacustrine and Riverine

The Lacustrine and Riverine SNC is defined by the Yolo HCP/NCCP as the open water portions of lakes, rivers, and streams. Within the BSA, there are six (6) drainages and one (1) wetland feature that qualify as Lacustrine and Riverine habitat (**Figure 5**). All drainages present within the BSA contained mud substrate and exhibited evidence of either ephemeral or intermittent flows. These drainages were dry during the April site visit and likely convey precipitation and agricultural runoff during the wet season. Riverine habitat provides food for waterfowl, herons (*Ardeidae* sp.), and many species of insectivorous birds, hawks, and their prey. The wetland feature present within the BSA is considered Lacustrine habitat and is discussed under the Freshwater Marsh Alliance habitat section. The relatively calm waters of lakes and ponds offer unique environmental conditions that contrast with that of running water. Lacustrine habitat provides breeding and foraging habitat for a number of amphibians, reptiles, and birds.

Other Agriculture: Deciduous Fruits/Nuts

The Other Agriculture: Deciduous Fruits/Nuts land cover type consists of orchards composed of nuts or fruits that are not citrus or subtropical. Deciduous orchards are dominated by tree species that lose their leaves during the winter months. The

understory between the rows is typically composed of a variety of grasses and other herbaceous plants including mustards (*Brassica* sp.) or are managed to prevent growth totally or in part through the use of herbicides to facilitate harvest. Some species of birds and mammals have adapted to orchard habitats for foraging, nesting, and cover (Mayer and Laudenslayer 1988). Due to the monoculture and maintenance of most orchards, this environment does not support an abundance of breeding wildlife. Species that forage in orchards include a variety of resident and migratory birds such as scrub jays (*Aphelocoma californica*), American crows (*Corvus brachyrhynchos*), and northern mocking birds (*Mimus polyglottos*), and small mammals including California ground squirrels (*Otospermophilus beecheyi*) and western gray squirrels (*Sciurus griseus*).

Cultivated Lands: Field Crops

The Cultivated Lands: Field Crops land cover type consists of agricultural fields planted in corn, dry beans, grain sorghum, safflower, sudan, sugar beets, sunflowers, or other crops grown in fields on a large scale that do not fit into other Cultivated Lands Seminatural Community categories. Row and field crops do not conform to normal habitat stages and are regulated by the crop cycle in California. Rodents, birds, and some mammals have adapted to field crops and are controlled by fencing, trapping, and poisoning (Mayer and Laudenslayer 1988). Field crops may have low-growing vegetation that can facilitate foraging opportunities for hawks and raptors such as the Yolo HCP/NCCP-covered Swainson's hawk and white-tailed kite (*Elanus leucurus*).

Cultivated Lands : Grain and Hay Crops

The Cultivated Lands: Grain and Hay Crops land cover type consists of irrigated and dryland grain and hay crops; predominantly wheat, barley, rye, and oat hay. Grain and hay crops do not conform to normal habitat stages and are regulated by the crop cycle in California. Rodents, birds, and some mammals have adapted to field crops and are controlled by fencing, trapping, and poisoning (Mayer and Laudenslayer 1988). Grain and hay crops may support foraging habitat for Swainson's hawk, white-tailed kite, and tricolored blackbird per the Yolo HCP/NCCP.

Grassland Natural Community: Grassland Alliance

The California Annual Grassland Alliance land cover type is a subset of the Grassland Natural Community and is dominated by annual grasses and forbs. Common species include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), yellow star-thistle (*Centaurea solstitialis*), broadleaf filaree (*Erodium botrys*), cutleaf filaree (*Erodium cicutarium*), Italian ryegrass (*Festuca perennis*), medusahead (*Elymus caput-medusae*), various introduced clovers (*Trifolium* spp.), and Zorro fescue (*Vulpia myuros*). Associated native herbaceous species may also occur. Annual grasslands occur on open flat to gently rolling lands and are dominated by grasses and

annual plants, with the dominant species varying depending on the climate and soils. A variety of ground-nesting avian species, reptiles, and small mammals use grassland habitat for breeding, while many other wildlife species only use it for foraging and require other habitat characteristics such as rocky outcroppings, cliffs, caves, or ponds in order to find shelter and cover for escapement (Mayer and Laudenslayer 1988). Common species found in this habitat type include western fence lizards (*Sceloporus occidentalis*), Northern Pacific rattlesnakes (*Crotalus oreganus*), common garter snakes (*Thamnophis elegans*), California ground squirrels, jackrabbits (*Lepus californicus*), western meadowlark (*Sturnella neglecta*), and a variety of raptor and owl species. Per the Yolo HCP/NCCP, the Grassland Alliance land cover type is suitable foraging habitat for Swainson's hawk, white-tailed kite, and tricolored blackbird.

Valley Foothill Riparian Natural Community: Great Valley Oak Riparian

The Great Valley Oak Riparian land cover type is a subset of the Valley Foothill Riparian Natural Community, which is designated as a SNC by the Yolo HCP/NCCP. The Great Valley Oak Riparian land cover type consists of deciduous trees along streams and rivers, dominated by cottonwoods and willows, and areas dominated by herbaceous or shrubby riparian vegetation if less than 1 acre in size. Valley foothill riparian habitats provide food, water, migration, and dispersal corridors for fish species, and escape, nesting, and thermal cover for an abundance of other wildlife species. Within the BSA, Great Valley Oak Riparian land cover occurs in association with the unnamed drainage north of CR 32 (Russell Boulevard) and Putah Creek in the southeast corner of the BSA.

Semiagricultural/Incidental to Agriculture

Semiagricultural areas include livestock feedlots, farmsteads, and miscellaneous semiagricultural features such as small roads, ditches, and unplanted areas of cropped fields (e.g. field edges).

Developed: Urban

The Developed: Urban land cover type consists of areas dominated by pavement and building structures, including barren lands graded for development. This environment can present a mosaic of vegetation, including primarily ornamental landscaping, but can also incorporate native tree species. Generalist and invasive species often occupy urban habitat such as common raven (*Corvus corax*), house sparrow (*Passer domesticus*), scrub jays, and Brewer's blackbirds (*Euphagus cyanocephalus*) as well as small to medium mammals (e.g. raccoon, opossum, striped skunk) (Mayer and Laudenslayer 1988).

Developed : Vegetated Corridor

The Developed: Vegetated Corridor land cover type consists of areas planted in ornamental vegetation maintained adjacent to highways or in association with houses and developed areas, or other vegetated corridors associated with developed areas and

isolated from intact stream channels. The vegetated corridor land cover type occurs along the sides of CR 98, primarily in the southern portion of the BSA, where ornamental black walnut (*Juglans nigra*) have been planted along the corridor. These trees are mature, and trees over 20 feet in height can support nesting by the Yolo HCP/NCCP-covered Swainson's hawk and white-tailed kite.

Regional Species and Habitats and Natural Communities of Concern

The following special-status species were identified by the Yolo HCP/NCCP, USFWS IPaC species list, NOAA-NMFS official species list, CNDDB Rarefind 5, and the CNPS list of rare and endangered plants as having potential to occur within the vicinity of the BSA and/or having recorded observations within or within close proximity of the BSA. Not all special-status species listed under federal and state species lists have potential to occur within the BSA due to unsuitable habitat or lack of observations in the area. A summary of special-status species listed in the Yolo HCP/NCCP, USFWS IPaC species list, CNDDB, and the CNPS list of rare and endangered plants within the "Merritt" USGS 7.5 minute quadrangle and their potential to occur within the BSA is described in Table 1.

Table 1: Listed and Proposed Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the CR 98 Bike and Safety Improvement Project BSA

Common Name	Scientific Name	Status Fed, State, CNPS, HCP	General Habitat Description	Habitat Present/ Absent	Rationale
SENSITIVE NATURAL COMMUNITIES					
Fresh Emergent Wetland		HCP	Land that is seasonally or perennially saturated or flooded with fresh water.	HP	There is Fresh Emergent Wetland Natural Community present within the BSA.
Lacustrine and Riverine		HCP	The open water portions of lakes, rivers, and streams.	HP	There is Lacustrine and Riverine Natural Community present within the BSA.
Valley Foothill Riparian		HCP	Scrubby vegetation, deciduous trees, and alder, willow, and oak forests associated with streams and riparian areas.	HP	There is Valley Foothill Riparian Natural Community present within the BSA.
PLANTS					
Ferris' milk-vetch	*Astragalus tener var. ferrisiae*	1B.1	Meadow & seep, Valley & foothill grassland, Wetland. (Blooming Period [BP]: Apr–May)	A	There is no suitable wetland habitat present in the BSA.

Heartscale	*Atriplex cordulata var. cordulata*	1B.2	Chenopod scrub, meadows and seeps, valley/foothill grassland (sandy), in saline or alkaline soils. (BP: April - October)	A	There is no suitable habitat within the BSA due to intensive agricultural disturbance. Surrounding agricultural practices have extirpated past CNDDB occurrences from the area (CNDDB 2016).
Palmate-bracted bird's beak	*Chloropyron palmatum*	FE/SE/1.B1/HCP	Alkali prairie land cover type. (BP: May - October)	A	There is no suitable habitat within 250 feet of the BSA. No effect.
California alkali grass	*Puccinellia simplex*	1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. (BP: March - May)	A	There is no suitable habitat within the BSA due to intensive agricultural disturbance. Surrounding agricultural practices have extirpated past CNDDB occurrences from the area (CNDDB 2016).
INVERTEBRATES					
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/HCP	Blue elderberry shrubs usually associated with riparian areas.	HP	There is one elderberry shrub located in the southernmost portion of the BSA. May effect but not likely to adversely effect.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Moderately turbid, deep, cool-water vernal pool.	A	There are no vernal pools within the BSA. No effect.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Vernal pools, swales, and ephemeral freshwater habitat.	A	There are no vernal pools within the BSA. No effect.
AMPHIBIANS AND REPTILES					
California tiger salamander *Central California DPS*	*Ambystoma californiense*	FT/ST/HCP	Vernal pools, alkali sinks, ponds, grasslands, blue oak woodlands, blue oak-foothill pine, valley oak alliance, and pastures occurring within Planning Units 4, 5, 13, 16, or 18.	A	There is no suitable breeding habitat within 500 feet of the BSA and the surrounding agricultural practices preclude suitable upland burrows. California tiger salamander are not expected to occur within the BSA's Planning Unit (11). No effect.
Western pond turtle	*Emys marmorata*	SSC/HCP	Ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft. elevation.	HP	The BSA is contains Riverine habitat and is located within 100 feet of Putah Creek, which provides suitable aquatic habitat for this species.
California red-legged frog	*Rana draytonii*	FT/ SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds.	A	None. California red-legged frogs have been extirpated from the valley floor since the 1960s (USFWS 2002). There are no CNDDB occurrences within 20 miles of the BSA. No effect.

Giant garter snake	*Thamnophis gigas*	FT/ST/HCP	Agricultural wetlands and ricelands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and their associated uplands located east of Highway 113 and Interstate 5.	A	Per the HCP/NCCP, there is no suitable habitat for giant garter snake west of Highway 113 and Interstate 5 where the BSA is located. There is no suitable habitat within 500 feet of the BSA. No effect.
FISH					
Delta smelt	*Hypomesus transpacificus*	FT/SE	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay.	A	There are no perennial streams that support anadromous fish species within the BSA. No effect.
Chinook salmon *Central Valley spring-run ESU*	*Oncorhynchus tshawytscha*	FT/ST	Sacramento River and its tributaries.	A	There are no perennial streams that support anadromous fish species within the BSA. No effect.
Chinook salmon *Sacramento River winter-run ESU*	*Oncorhynchus tshawytscha*	FE/SE	Sacramento River and its tributaries.	A	There are no perennial streams that support anadromous fish species within the BSA. No effect.
Steelhead *California Central Valley DPS*	*Oncorhynchus mykiss irideus*	FT	Sacramento and San Joaquin rivers and their tributaries.	A	There are no perennial streams that support anadromous fish species within the BSA. No effect.
BIRDS					
Tricolored blackbird	*Agelaius tricolor*	ST/HCP	Fresh emergent wetlands, blackberry brambles, willow thickets, agricultural fields and grasslands.	HP	Freshwater Marsh Alliance, Blackberry and willow vegetation and dryland crops within and adjacent to the BSA provide suitable nesting and foraging habitat.

Burrowing owl	*Athene cunicularia*	SSC/HCP	California annual grassland alliance and barren-anthropogenic land cover types, cultivated lands/pasture, alfalfa.	A	The surrounding agricultural practices eliminate the potential establishment of nesting burrows. There is no suitable habitat within 500 feet of the BSA.
Swainson's hawk	*Buteo swainsoni*	ST/HCP	Open grasslands, shrublands and agricultural fields, often near riparian forests.	HP	There are suitable nesting trees within the BSA and adjacent foraging habitat.
Northern harrier	*Circus hudsonius*	SSC	Coastal salt & freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.	HP	The nearest CNDDB occurrence (#51) is located approximately 2.7 miles east of the BSA within a wheat field. There are suitable agricultural fields that could support nesting and foraging activity for this species within the BSA.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/SE/HCP	Fremont Cottonwood-valley oak-willow (ash-sycamore) riparian forest association, mixed Fremont cottonwood-willow alliance, and white alder (mixed willow) riparian forest land cover types that occur in patch sizes of 25 acres or greater with a width of at least 330 feet.	A	The BSA is not located within 500 feet of what is modeled as western yellow-billed cuckoo habitat within the Yolo HCP/NCCP. No effect.
White-tailed kite	*Elanus leucurus*	FP/HCP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes often next to deciduous woodlands.	HP	There are suitable nesting trees within the BSA and adjacent foraging habitat.
Bank swallow	*Riparia riparia*	ST/HCP	Barren- gravel and sand bars land cover types in Planning Units 6, 7, 12, 14, or 17.	A	There is no suitable habitat within 500 feet of the BSA. The BSA is located in Planning Unit 11, which does not contain suitable habitat for this species.

Least Bell's vireo	*Vireo bellii pusillus*	FE/SE/HCP	Blackberry alliance, coyote brush, Fremont Cottonwood-valley oak-willow riparian forest association, Mixed Fremont cottonwood-willow, mixed willow alliance, and white alder (mixed willow) riparian forest land cover types located within Planning Units 7, 9, 12, 14, 17, or 18.	HP	The BSA is located within 500 feet of Yolo HCP/NCCP modeled habitat within Planning Unit 9. No observations following protocol level surveys, no loss of modeled habitat as a result of the project. No effect.
MAMMALS					
Pallid bat	*Antrozous pallidus*	SSC	Deserts, grasslands, shrubland, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	A	There is no suitable roosting habitat within the BSA.
American badger	*Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	A	The surrounding agricultural practices and urban development eliminate the potential establishment of badger dens within the BSA.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Candidate (SC); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1B = Rare or Endangered in California or elsewhere; CRPR 2 = Rare or Endangered in California, more common elsewhere; CRPR 3 = More information is needed; CRPR 4 = Plants with limited distribution; 0.1=Seriously Threatened; 0.2= Fairly Threatened; 0.3= Not very Threatened; Covered under the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP).

Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation

Waters of the United States

A delineation of WOTUS was performed for the entire project boundary (**Appendix C: Draft Delineation of Waters of the US Map**). Project impacts to potentially jurisdictional WOTUS were determined by overlaying the project plans over the delineation map. **Figure 6** depicts the anticipated impacts to WOTUS. There will impacts to 0.27 acres of drainages and/or jurisdictional ditches. There will be no impacts to wetland features.

Impacts to WOTUS may be mitigated in part by paying land over impact fees required by the Yolo HCP/NCCP (see **Appendix D: Yolo HCP/NCCP Application Form 4).** Additionally, mitigation for impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Habitats and Natural Communities of Special Concern

All land cover types that occur within the BSA, except Urban and Vegetated Corridor, require mitigation fees for impacts. In this section, only land cover types designated as Sensitive Natural Communities by the Yolo HCP/NCCP are discussed.

Fresh Emergent Wetland

The Fresh Emergent Wetland Natural Community includes the Freshwater Marsh Alliance land cover type per the Yolo HCP/NCCP. The Fresh Emergent Wetland Natural Community is most commonly found on level to gently rolling landscapes along rivers, lakes, and creeks but can be found anywhere the topography allows perennial or seasonal soil saturation or flooding by fresh water. Perennially flooded areas are typically dominated by cattails, tule (*Schoenoplectus* spp.), and California bulrush (*Schoenoplectus californicus*) that can reach up to 12 feet in height. Seasonally saturated or inundated areas contain much shorter vegetation and are more variable in the composition of their plant species. The Fresh Emergent Wetland Natural Community supports a number of common wildlife species, including the great blue heron (*Ardea herodias*), marsh wren (*Cistothorus palustris*), song sparrow (*Melospiza melodia*), red-winged blackbird (*Agelaius phoeniceus*), and many species of wintering waterfowl.

Impacts to Waters of the U.S.								
Impacts to Other Waters								
Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
T01	R4	Intermittent	38.547042	-121.8061	2.0	10.6	20.9	0.0005
T02	R4	Intermittent	38.546865	-121.807	7.7	277.5	2143.5	0.0492
T03	R4	Intermittent	38.548794	-121.8034	8.8	45.6	402.3	0.0092
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	106.5	2502.6	0.0575
T06	R4SB	Intermittent	38.550226	-121.8031	7.0	1043.1	6623.1	0.1520
Impacts to Other Waters Totals =						**1483.2**	**11692.4**	**0.27**
Total Impacts to Waters of the U.S. =						**1483.2**	**11692.4**	**0.27**
*Widths are represented as averages								

The features represented on this graphic are considered preliminary until written verification by the USACE.

38.5869, -121.8034

County Rd 98

County Rd 30

P01 EX02 C06 P02 P03 EX01 C07

- Project Boundary - (106.7 acres)
- Site Plan
- 1 foot contours
- OHWM Transect - 'X-X'
- Culvert - C#
- Flow Direction
- Photo Points - P#*

Data Points

- Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

- Pond

Other Waters - T# - (0.46 acres)

- Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

- Irrigation Ditch

Permanent Impacts to Waters of the U.S.

- Permanent Impacts to Other Waters - (0.27 acres)

Panel 1
Panel 2

1:4,800 1 inch = 400 feet
0 200 400 Feet

NORTH

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Waters of the U.S.
Figure 6 (Panel 1)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Panel 1

Panel 2

Impacts to Waters of the U.S.								
Impacts to Other Waters								
Label	**Cowardin**	**Description**	**Location (Lat/Long)**		**Width (ft)***	**Length (ft)**	**Area (sq ft)**	**Acres**
T01	R4	Intermittent	38.547042	-121.8061	2.0	10.6	20.9	0.0005
T02	R4	Intermittent	38.546865	-121.807	7.7	277.5	2143.5	0.0492
T03	R4	Intermittent	38.548794	-121.8034	8.8	45.6	402.3	0.0092
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	106.5	2502.6	0.0575
T06	R4SB	Intermittent	38.550226	-121.8031	7.0	1043.1	6623.1	0.1520
					Impacts to Other Waters Totals =	**1483.2**	**11692.4**	**0.27**
					Total Impacts to Waters of the U.S. =	**1483.2**	**11692.4**	**0.27**
*Widths are represented as averages								

The features represented on this graphic are considered preliminary until written verification by the USACE.

County Rd 98

County Rd 31

P04

TP01

P11

P04

TP01

Project Boundary - (106.7 acres)

Site Plan

1 foot contours

OHWM Transect - 'X-X'

Culvert - C#

Flow Direction

Photo Points - P#*

Data Points

Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

Pond

Other Waters - T# - (0.46 acres)

Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

Irrigation Ditch

Permanent Impacts to Waters of the U.S.

Permanent Impacts to Other Waters - (0.27 acres)

Panel 2

Panel 3

NORTH

1:4,800 1 inch = 400 feet

0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Waters of the U.S.
Figure 6 (Panel 2)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Impacts to Waters of the U.S.								
Impacts to Other Waters								
Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
T01	R4	Intermittent	38.547042	-121.8061	2.0	10.6	20.9	0.0005
T02	R4	Intermittent	38.546865	-121.807	7.7	277.5	2143.5	0.0492
T03	R4	Intermittent	38.548794	-121.8034	8.8	45.6	402.3	0.0092
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	106.5	2502.6	0.0575
T06	R4SB	Intermittent	38.550226	-121.8031	7.0	1043.1	6623.1	0.1520
					Impacts to Other Waters Totals =	1483.2	11692.4	0.27
					Total Impacts to Waters of the U.S. =	1483.2	11692.4	0.27
*Widths are represented as averages								

The features represented on this graphic are considered preliminary until written verification by the USACE.

Panel 2

Panel 3

C05 P09 T05 'D-D' 'C-C' "7 feet" T04 '19 feet' T06 C03 T03 P07 C04 '9 Feet' P08 'A-A' T02 T01 P06 C02 P05 WF01 C01

Russell Blvd

County Rd 98

Hutchinson Dr

P10

Panel 3

Panel 4

- Project Boundary - (106.7 acres)
- Site Plan
- 1 foot contours
- OHWM Transect - 'X-X'
- Culvert - C#
- Flow Direction
- Photo Points - P#*

Data Points

- Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

- Pond

Other Waters - T# - (0.46 acres)

- Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

- Irrigation Ditch

Permanent Impacts to Waters of the U.S.

- Permanent Impacts to Other Waters - (0.27 acres)

NORTH

1:4,800 1 inch = 400 feet

0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Waters of the U.S.
Figure 6 (Panel 3)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Impacts to Waters of the U.S.								
Impacts to Other Waters								
Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
T01	R4	Intermittent	38.547042	-121.8061	2.0	10.6	20.9	0.0005
T02	R4	Intermittent	38.546865	-121.807	7.7	277.5	2143.5	0.0492
T03	R4	Intermittent	38.548794	-121.8034	8.8	45.6	402.3	0.0092
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	106.5	2502.6	0.0575
T06	R4SB	Intermittent	38.550226	-121.8031	7.0	1043.1	6623.1	0.1520
					Impacts to Other Waters Totals =	1483.2	11692.4	0.27
					Total Impacts to Waters of the U.S. =	1483.2	11692.4	0.27
*Widths are represented as averages								

The features represented on this graphic are considered preliminary until written verification by the USACE.

Hutchinson Dr

P10

Panel 3

Panel 4

County Rd 98

38.5272,
-121.8031

Putah Creek

- Project Boundary - (106.7 acres)
- Site Plan
- 1 foot contours
- OHWM Transect - 'X-X'
- Culvert - C#
- Flow Direction
- Photo Points - P#*

Data Points

- Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

- Pond

Other Waters - T# - (0.46 acres)

- Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

- Irrigation Ditch

Permanent Impacts to Waters of the U.S.

- Permanent Impacts to Other Waters - (0.27 acres)

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Impacts to Waters of the U.S.
Figure 6 (Panel 4)

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Survey Results

There is one (1) wetland within the BSA that is considered Freshwater Marsh Alliance. It is located on the western end of the BSA on CR 32. This wetland is man-altered and is fed hydrologically by agricultural canals and storm water.

Project Impacts

The proposed project will be limited to roadwork within the BSA. There will be no impacts to the Freshwater Marsh Alliance land cover type within the Fresh Emergent Wetland SNC.

Avoidance and Minimization Efforts

Avoidance and Minimization Measures (AMMs) for SNCs are designated by the Yolo HCP/NCCP.

AMM1, Establish Buffers. Project proponents will design projects to avoid and minimize direct and indirect effects of permanent development on the sensitive natural communities and covered species habitat by providing buffers, as stipulated in the relevant sensitive natural community AMMs and covered species AMMs. On lands owned by the project proponent, the project proponent will establish a conservation easement, consistent with Yolo HCP/NCCP Section 6.4.1.3, Land Protection Mechanisms, to protect the buffer permanently if that land is being offered in lieu of development fees, as described in Yolo HCP/NCCP Section 4.2.2.6, Item 6: HCP/NCCP Fees or Equivalent Mitigation. The project proponent will design buffer zones adjacent to permanent residential development projects to control access by humans and pets (AMM2, Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces).

Where existing development is already within the stipulated buffer distance (i.e., existing uses prevent establishment of the full buffer), the development will not encroach farther into the space between the development and the SNC.

This AMM does not apply to seasonal construction buffers for covered species, which are detailed for each species in Yolo HCP/NCCP Section 4.3.4, Covered Species.

A lesser buffer than is stipulated in the AMMs may be approved by the Yolo Conservancy, USFWS, and CDFW if they determine that the SNC or covered species is avoided to an extent that is consistent with the project purpose (e.g., if the purpose of the project is to provide a stream crossing or replace a bridge, the project may encroach into the buffer and the SNC or species habitat to the extent that is necessary to fulfill the project purpose).

AMM8, Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas. Project proponents should locate construction staging and other temporary work areas for covered activities in areas that will ultimately be a part of the permanent project development footprint. If construction staging and other temporary work areas must be located outside of permanent project footprints, they will be located either in areas that do not support habitat for covered species or are easily restored to prior or improved ecological functions (e.g., grassland and agricultural land). Construction staging and other temporary work areas located outside of project footprints will be sited in areas that avoid adverse effects on the fresh emergent wetland land cover type.

Project proponents will follow specific AMMs for SNC (Section 4.3.3, Sensitive Natural Communities) and covered species (Section 4.3.4, Covered Species) in temporary staging and work areas. For establishment of temporary work areas outside of the project footprint, project proponents will conduct surveys to determine if any of the biological resources listed above are present.

Within one year following removal of land cover, project proponents will restore temporary work and staging areas to a condition equal to or greater than the covered species habitat function of the affected habitat.

Restoration of vegetation in temporary work and staging areas will use clean, native seed mixes approved by the Yolo Conservancy that are free of noxious plant species seeds.

AMM9, Establish Buffers around Sensitive Natural Communities

Fresh emergent wetland: Fifty feet from the edge of the SNC.

AMM10, Avoid and Minimize Effects on Wetlands and Waters. Project proponents will comply with stormwater management plans that regulate development as part of compliance with regulations under National Pollutant Discharge Elimination System (NPDES) permit requirements. Covered activities that result in any fill of waters or wetlands will also comply with requirements under Section 404 of the Clean Water Act, State Water Resources Control Board (State Board), Fish and Game Code Section 1602, and Regional Board regulations. Other than requirements for buffers, minimizing project footprint, and species-specific measures for wetland-dependent covered species, this HCP/NCCP does not include specific best management practices for protecting wetlands and waters because they may conflict with measures required by the USACE, State Board, Regional Board, and CDFW.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on Freshwater Marsh Alliance habitat within the project or adjacent to the BSA.

Compensatory Mitigation

There will no impacts to the Freshwater Marsh Alliance habitat. No compensatory mitigation is proposed.

Lacustrine and Riverine

The Lacustrine and Riverine land type cover is identified as a SNC by the Yolo HCP/NCCP and is defined as the open water portions of lakes, rivers, and streams. The BSA contains riverine habitat within the unnamed drainages present within the site, and the BSA is located within 100 feet of Putah Creek, which qualifies as a Lacustrine and Riverine Sensitive Natural Community. There are six (6) intermittent or ephemeral drainages within the BSA. They have been altered for agricultural use and surrounding urbanization of the area; however, they are considered open water land cover types within the lacustrine and riverine natural community when water is present.

The Lacustrine and Riverine Natural Community includes a variety of lakes, reservoirs, and ponds (Lacustrine); rivers and streams (Riverine); and other open-water land cover types, such as stock ponds, stormwater detention ponds, and wastewater treatment ponds. The Lacustrine and Riverine Natural Community is designated as open water in the land cover database. Perennially aquatic natural communities usually support fish, which may affect suitability for invertebrates, amphibians, and some reptiles, while seasonal riverine natural communities may contain unique assemblages of fish (Moyle 2002). Lacustrine and riverine natural communities support algae, mosses, and aquatic plants such as duckweed. Turbidity, water temperature, and oxygen content affect the quality of habitat for many plant and animal species, including covered species. The concentration and characteristics of the particles that cause turbidity within the water column affect the quantity and quality of light penetration, which affects plant and algal growth rates. Water temperature varies by season and depth within the water column. The Lacustrine and Riverine Sensitive Natural Community supports a number of common wildlife species. Local species of concern that use the Lacustrine and Riverine Natural Community include the foothill yellow-legged frog and bald eagle (*Haliaeetus leucocephalus*).

Artificial ponds in or adjacent to urban areas often support nonnative species, such as red-eared sliders (*Trachemys scripta elegans*) and American bullfrogs (*Lithobates catesbeianus*), that out-compete or are predators of native species such as western

pond turtle.

Survey Results

The southern end of the BSA terminates within 100 feet of Putah Creek, which is considered Riverine habitat. The unnamed ephemeral and intermittent drainages present within the BSA are man-altered and influenced by agriculture, but provide riverine habitat during winter months when water is present or when agricultural runoff provides hydrological input.

Project Impacts

The proposed project will be limited to roadwork within the BSA; however, the drainages present in the BSA fall within the area of anticipated impact. Approximately 0.27 acres of Riverine land cover type within the Lacustrine and Riverine SNC may be impacted by project activities and avoidance and minimization measures will be implemented to ensure effects are minimized.

Avoidance and Minimization Efforts

Avoidance and minimization measures (AMMs) for Sensitive Natural Communities are designated by the HCP/NCCP.

AMM1, Establish Buffers. Project proponents will design projects to avoid and minimize direct and indirect effects of permanent development on the sensitive natural communities and covered species habitat by providing buffers, as stipulated in the relevant sensitive natural community AMMs and covered species AMMs. On lands owned by the project proponent, the project proponent will establish a conservation easement, consistent with Yolo HCP/NCCP Section 6.4.1.3, Land Protection Mechanisms, to protect the buffer permanently if that land is being offered in lieu of development fees, as described in Yolo HCP/NCCP Section 4.2.2.6, Item 6: HCP/NCCP Fees or Equivalent Mitigation. The project proponent will design buffer zones adjacent to permanent residential development projects to control access by humans and pets (AMM2, Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces).

Where existing development is already within the stipulated buffer distance (i.e., existing uses prevent establishment of the full buffer), the development will not encroach farther into the space between the development and the sensitive natural community.

This AMM does not apply to seasonal construction buffers for covered species, which are detailed for each species in Yolo HCP/NCCP Section 4.3.4, Covered Species.

A lesser buffer than is stipulated in the AMMs may be approved by the Yolo Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the project purpose (e.g., if the purpose of the project is to provide a stream crossing or replace a bridge, the project may encroach into the buffer and the natural community or species habitat to the extent that is necessary to fulfill the project purpose).

AMM9, Establish Buffers around Sensitive Natural Communities

Lacustrine and Riverine: Outside urban planning units, 100 feet from the top of banks (defined as the area within which water is contained in a channel). Within urban planning units, 25 feet from the top of the banks.

AMM10, Avoid and Minimize Effects on Wetlands and Waters. Project proponents will comply with stormwater management plans that regulate development as part of compliance with regulations under National Pollutant Discharge Elimination System (NPDES) permit requirements. Covered activities that result in any fill of waters or wetlands will also comply with requirements under Section 404 of the Clean Water Act, State Water Resources Control Board (State Board), Fish and Game Code Section 1602, and Regional Board regulations. Other than requirements for buffers, minimizing project footprint, and species-specific measures for wetland-dependent covered species, this HCP/NCCP does not include specific best management practices for protecting wetlands and waters because they may conflict with measures required by the Corps, State Board, Regional Board, and CDFW.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on Lacustrine and Riverine habitat within the project BSA.

Compensatory Mitigation

Impacts to 0.27 acres of Riverine habitat will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix D: Yolo HCP/NCCP Application Form 4**). Additionally, mitigation for impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Valley Foothill Riparian

The Valley Foothill Riparian Natural Community includes the Great Valley Oak Riparian land cover type and is identified as a SNC by the Yolo HCP/NCCP. The BSA is located within 100 feet of the Valley Foothill Riparian Sensitive Natural Community associated with Putah Creek and occurs marginally along the unnamed irrigation canal within the

BSA. The Valley Foothill Riparian Sensitive Natural Community consists of a multilayered woodland plant community with a tree overstory and diverse shrub layer. Canopy species include mature valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), ash (*Fraxinus* sp.), and willows (*Salix* spp.). In a mature riparian forest, canopy heights reach approximately 100 feet, and canopy cover ranges from 20 to 80 percent. Blue elderberry (*Sambucus cerulea*), California rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), and blackberry (*Rubus* sp.) may form dense thickets in the understory of mature riparian forests. California grape (*Vitis californica*) creates a dense network of vines in the canopy. In areas that are disturbed by frequent flooding, fire, or human activity, this natural community often consists of smaller trees, more shrubs, and more invasive nonnative species.

The Valley Foothill Riparian Natural Community supports a diversity of plant and animal species and a variety of specialized plant and animal species that are restricted to this natural community for all or important parts of their life cycle. It provides nesting habitat and cover for many wildlife species. It also provides continuous corridors and isolated matrix stopover habitat that facilitates movement between habitat areas for many wildlife species. Riparian natural communities are the most productive among California's natural communities because they receive abundant water during the hot, dry summers of California's Mediterranean climate.

Some of the common wildlife species found in the Valley Foothill Riparian Sensitvie Natural Community include the red-shouldered hawk (*Buteo lineatus*), western scrub-jay, downy woodpecker (*Picoides pubescens*), American crow, bushtit (*Psaltriparus minimus*), oak titmouse (*Baeolophus inornatus*), and various rodents.

Survey Results

The proposed project will be limited to roadwork within the BSA; however, valley foothill riparian occurs within the area of potential impact in association with the unnamed drainage located north of Russell Boulevard, as well as a very small portion at the bottom right corner of the BSA that is associated with Putah Creek.

Project Impacts

Impacts to 0.71 acres of Great Valley Oak Riparian land cover type within the Valley Foothill Riparian SNC will be mitigated for in accordance with the Yolo HCP/NCCP, and avoidance and minimization measures will be implemented to ensure effects are minimized.

Avoidance and Minimization Efforts

Avoidance and Minimization Measures (AMMs) for Sensitive Natural Communities are designated by the HCP/NCCP.

AMM8, Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas. Project proponents should locate construction staging and other temporary work areas for covered activities in areas that will ultimately be a part of the permanent project development footprint. If construction staging and other temporary work areas must be located outside of permanent project footprints, they will be located either in areas that do not support habitat for covered species or are easily restored to prior or improved ecological functions (e.g., grassland and agricultural land). Construction staging and other temporary work areas located outside of project footprints will be sited in areas that avoid adverse effects on the valley foothill riparian land cover type.

Project proponents will follow specific AMMs for sensitive natural communities (Section 4.3.3, Sensitive Natural Communities) and covered species (Section 4.3.4, Covered Species) in temporary staging and work areas. For establishment of temporary work areas outside of the project footprint, project proponents will conduct surveys to determine if any of the biological resources listed above are present.

Within one year following removal of land cover, project proponents will restore temporary work and staging areas to a condition equal to or greater than the covered species habitat function of the affected habitat.

Restoration of vegetation in temporary work and staging areas will use clean, native seed mixes approved by the Conservancy that are free of noxious plant species seeds.

AMM9, Establish Buffers around Sensitive Natural Communities

Valley Foothill Riparian: One hundred feet from canopy dripline. If avoidance is infeasible, a lesser buffer or encroachment into the sensitive natural community may be allowed if approved by the Conservancy and the wildlife agencies, based on the criteria listed in AMM1. Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on Valley Foothill Riparian SNC within the project BSA.

Compensatory Mitigation

Impacts to 0.71 acres of Great Valley Oak Riparian land cover type within the Valley Foothill Riparian SNC will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix D: Yolo HCP/NCCP Application Form 4**).

Special Status Plant Species

There is no suitable habitat for special-status plant species within the BSA. All of the plant species from the federal and state species lists and the Yolo HCP/NCCP do not have potential to occur within the BSA due to either the lack of suitable habitat elements or due to the extensive farming and agricultural activities occurring within the BSA. All of the historic CNDDB occurrences of special-status plant species within the vicinity of the BSA have been extirpated from the area due to agricultural practices and urban development. There are no further botanical surveys recommended.

Special Status Animal Species Occurrences

There is suitable habitat within the BSA for valley elderberry longhorn beetle (VELB), Swainson's hawk, white-tailed kite, tricolored blackbird, western pond turtle, northern harrier (*Circus hudsonius*), and migratory birds and raptors protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC). The BSA is within 500 feet of modeled habitat for least Bell's vireo.

Valley Elderberry Longhorn Beetle (VELB)

The VELB is listed as threatened under the federal ESA and is a covered species under the Yolo HCP/NCCP. The VELB is a small (0.5 - 0.8 inch long) wood-boring beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry (*Sambucus* spp.). Adults feed on the foliage and flowers of elderberry shrubs and are present from March through early June. During this period the beetles mate and females lay eggs on living elderberry plants. The first instar larvae bore to the center of elderberry stems where they feed on the pith of the plant for one to two years as they develop. Prior to forming their pupae, the elderberry wood-boring larvae chew through the bark and then plug the holes with wood shavings. In the pupal chamber, the larvae metamorphose into their pupae and then into adults where upon they emerge between mid-March through June (USFWS 1991). Current threats to VELB consist primarily of riparian habitat destruction which causes extirpation, fragmentation, and isolation of beetle populations (USFWS 1991).

Survey Results

One (1) elderberry shrub was identified within the BSA during the planning level survey. It is located in the southern portion of the BSA on the west side of CR 98. The protocol-level survey consisted of quantifying the number of elderberry stems that will be impacted and the presence of exit holes. **Table 2** provides the results of the VELB survey and **Figure 7** depicts the location of the elderberry shrub.

Table 2. Number of elderberry stems and presence of exit holes.

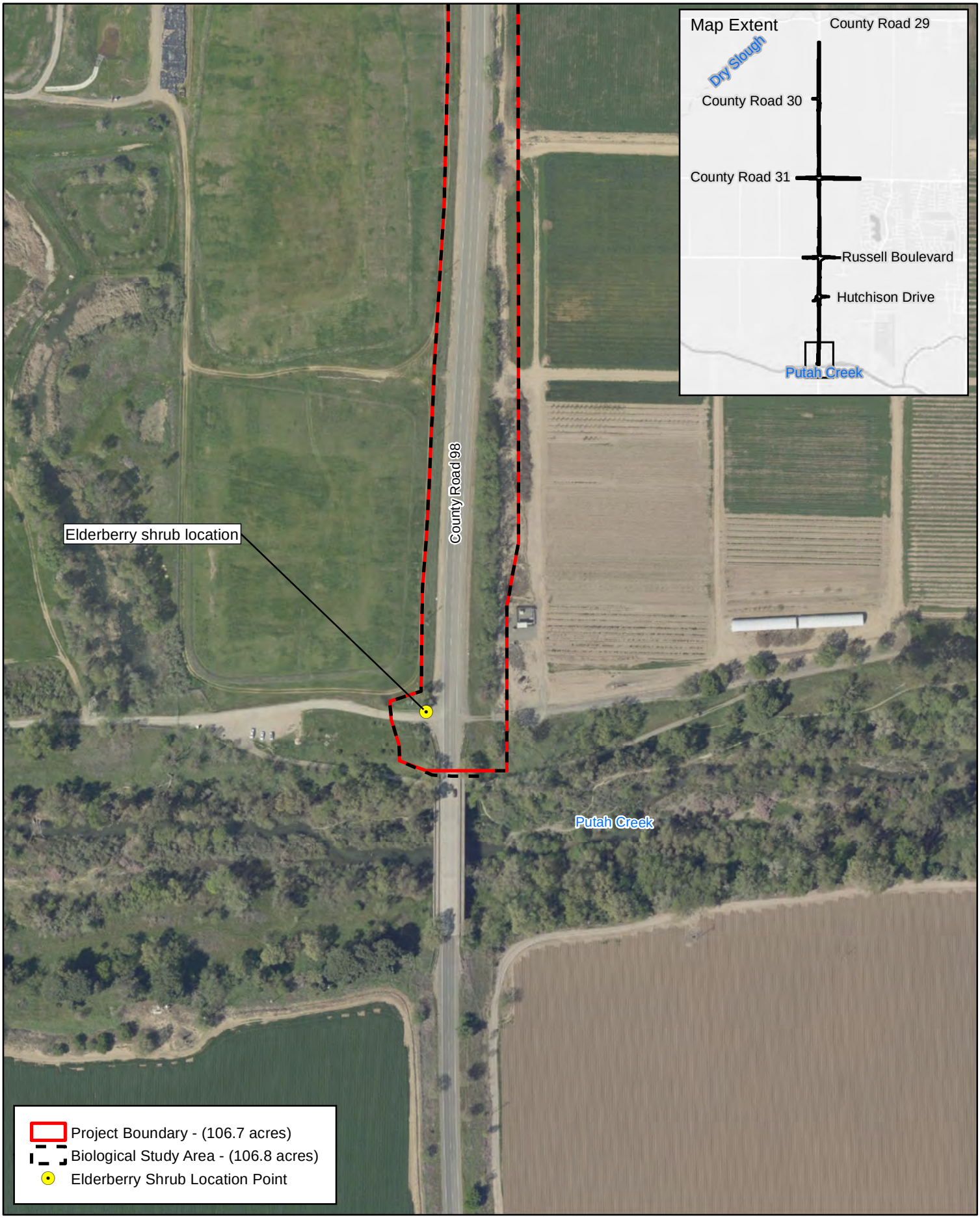
Location	Stems (Maximum diameter at ground level)	Exit Holes	# of Stems
Riparian	Stems > = 1" & < 3"	Yes	18
Riparian	Stems > = 3" & < 5"	Yes	8
Riparian	Stems > = 5"	Yes	4

Project Impacts

As the elderberry shrub is located within the area of potential impact within the BSA, there is potential for impacts to VELB. Avoidance and minimization measures addressing VELB, including guidance for elderberry shrub transplantation, are designated by the Yolo HCP/NNCP. The project may affect but is not likely to adversely affect VELB.

Avoidance and Minimization Efforts

AMM12, Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle. The project proponent will retain a qualified biologist who is familiar with VELB and evidence of its presence (i.e. exit holes in elderberry shrubs) to map all elderberry shrubs in and within 100 feet of the project footprint with stems that are greater than 1 inch in diameter at ground level. To fully avoid take of VELB, the project proponent will maintain a buffer of at least



NORTH

1:2,900

0 100 200 Feet

Data Sources: ESRI, Yolo County
4/13/2018, Yolo County

County Road 98 Bike and Safety Improvements Phase II
Elderberry Shrub Location
Figure 7

gallaway ENTERPRISES

GE: #18-119 Map Date: 09/08/2020

100 feet from any elderberry shrubs with stems greater than 1 inch in diameter at ground level. *AMM1, Establish Buffers,* above, describes circumstances in which a lesser buffer may be applied. For elderberry shrubs that cannot be avoided with a designated buffer distance as described above, the qualified biologist will quantify the number of stems 1 inch or greater in diameter to be affected, and the presence or absence of exit holes. The conservancy will use this information to determine the number of plants or cuttings to plant on a riparian restoration site to help offset the loss, consistent with Yolo HCP/NCCP Section 6.4.2.4.1, *Valley Elderberry Longhorn Beetle*.

Additionally, prior to construction, the project proponent will transplant elderberry shrubs identified within the project footprint that cannot be avoided.

Transplantation will only occur if a shrub cannot be avoided and, if indirectly affected, the indirect effects would otherwise result in the death of stems or the entire shrub. If the project proponent chooses, in coordination with a qualified biologist, not to transplant the shrub because the activity would not likely result in death of stems of the shrub, then the qualified biologist will monitor the shrub annually for a five-year monitoring period. The monitoring period may be reduced with concurrence from the wildlife agencies if the latest research and best available information at the time indicates that a shorter monitoring period is warranted.

If death of stems at least 1 inch in diameter occurs within the monitoring period, and the qualified biologist determines that the shrub is sufficiently healthy to transplant, the project proponent will transplant the shrub as described in the following paragraph, in coordination with the qualified biologist. If the shrub dies during the monitoring period, or the qualified biologist determines that the shrub is no longer healthy enough to survive transplanting, then the Conservancy will offset the shrub loss consistent with the preceding paragraph.

The project proponent will transplant the shrubs into a location in the HCP/NCCP reserve system that has been approved by the Conservancy. Elderberry shrubs outside the project footprint but within the 100-foot buffer will not be transplanted.

Transplanting will follow the following measures:

1. Monitor: A qualified biologist will be on-site for the duration of the transplanting of the elderberry shrubs to ensure the effects on elderberry shrubs are minimized.
2. Timing: The project proponent will transplant elderberry plants when the plants are dormant, approximately November through the first two weeks of February,

after they have lost their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.

3. Transplantation procedure:
    a. Cut the plant back three to six feet from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. Replant the trunk and stems measuring one inch or greater in diameter. Remove leaves that remain on the plants.
    b. Relocate plant to approved location in the reserve system, and replant as described in Yolo HCP/NCCP Section 6.4.2.4.1, *Valley Elderberry Longhorn Beetle.*

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on VELB or VELB habitat within the project BSA.

Compensatory Mitigation

Impacts to 0.71 acres of Great Valley Oak Riparian habitat, which is designated as VELB habitat, will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix D: Yolo HCP/NCCP Application Form 4**). In addition, if the shrub cannot be completely avoided it will be transplanted as described in AMM 12.

Western Pond Turtle

The western pond turtle is a Species of Special Concern (SSC) in California and is a covered species under the Yolo HCP/NCCP. Western pond turtles are drab, darkish colored turtles with a yellowish to cream colored head. They range from the Washington Puget Sound to the California Sacramento Valley. Suitable aquatic habitats include slow moving to stagnant water, such as backwaters and ponded areas of rivers and creeks, semi-permanent to permanent ponds, and irrigation ditches. Preferred habitats include features such as hydrophytic vegetation for foraging and cover and basking areas to regulate body temperature. In early spring through early summer, female turtles begin to move over land in search for nesting sites. Eggs are laid on the banks of slow-moving streams. The female digs a hole approximately four inches deep and lays up to eleven eggs. Afterwards the eggs are covered with sediment and are left to incubate under the warm soils. Eggs are typically laid between March and August (Zeiner et al. 1990). Current threats facing the western pond turtle include loss of suitable aquatic habitats due to rapid changes in water regimes and removal of hydrophytic vegetation.

Survey Results

There is suitable habitat for western pond turtle present within the Lacustrine and Riverine habitat types within the BSA. The BSA is also located within 100 feet of Putah Creek, which is suitable habitat for western pond turtle.

Project Impacts

The project will impact 0.44 acres of Lacustrine and Riverine SNC that could potentially serve as western pond turtle habitat. The BSA contains and is within 100 feet of Lacustrine and Riverine SNC land cover types, which triggers avoidance and minimization Measures per the Yolo HCP/NCCP that adequately protect western pond turtles. There will be no impacts to western pond turtle individuals with the implementation of avoidance and minimization measures that protect Lacustrine and Riverine SNC, wetlands and western pond turtles.

Avoidance and Minimization Efforts

AMM14, Minimize Take and Adverse Effects on Habitat of Western Pond Turtle. There are no specific design requirements for western pond turtle habitat, however, project proponents must follow design requirements for the valley foothill riparian and lacustrine and riverine natural communities described in AMMs 9 and 10, which require a 100-foot (minimum) permanent buffer zone from the canopy drip-line (the farthest edge on the ground where water will drip from the tree canopy, based on the outer boundary of the tree canopy). If modeled upland habitat will be impacted, a qualified biologist must be present and will assess the likelihood of western pond turtle nests occurring in the disturbance area (based on sun exposure, soil conditions, and other species habitat requirements).

If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground disturbing activity for nests that may be unearthed during the disturbance, and will move out of harm's way any turtles or hatchlings found.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on western pond turtle within the project BSA.

Compensatory Mitigation

The project may potentially impact 0.44 acres of Lacustrine and Riverine SNC that could potentially serve as western pond turtle habitat. Impacts to western pond turtle nesting and wintering habitat will be mitigated by paying fees for impacts to land cover types (**Appendix D: Yolo HCP/NCCP Application Form 4**).

Swainson's Hawk

Swainson's hawks are threatened in the State of California and are a covered species under the Yolo HCP/NCCP. They are found throughout the western part of the United States and from Canada to Mexico. Swainson's hawks are fairly large, slender hawks with three different color morph displays. The most common morph in northern California is the dark morph which demonstrates black to dark brown under coverts and flight feathers. Suitable habitat includes open grasslands or agricultural fields that are adjacent to a riparian forest or oak woodland. Swainson's hawks primarily nest in riparian forests next to open fields that provide foraging opportunities. Nesting and courtship begin in April. Current threats facing the Swainson's hawk are loss of nesting and foraging habitat, change in agricultural regimes, pesticides, poaching and human disturbances (CDFW 1994).

Survey Results

There are suitable nesting trees within the BSA and suitable foraging habitat adjacent to the BSA in the form of open agricultural fields. There were no active Swainson's hawk nests observed during the biological evaluation; however, based on the size of the trees within the BSA, there is potential for future nest establishment. Swainson's hawks were observed foraging in fields adjacent to the BSA during the field visit. Furthermore, there are CNDDB records of Swainson's hawks nesting within (#433, #1287, #445, #444, #1951) and immediately adjacent (#213, #436) to the BSA. None of these nesting occurrences are active (i.e. nesting activity observed within the last 5 years); however, there are multiple active nesting occurrences within 10 miles of the BSA (#29, #210, #1085, #1709, #415, #1255, #1995, #2688). There are other CNDDB occurrences of Swainson's hawks within the last 5 years and within 10 miles of the BSA (#98, #871, #2677, #2678, #614), but none of these occurrences indicate confirmed nesting activity within the last 5 years.

There is potential for Swainson's hawk to occur within the BSA due to the presence of suitable nesting habitat within the BSA and adjacent foraging habitat, as well as past CNDDB records of nesting Swainson's hawk within and adjacent to the BSA.

Project Impacts

The project will impact 0.71 acres of Great Valley Oak Riparian land cover type that could potentially serve as Swainson's hawk nesting habitat and 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as Swainson's hawk foraging habitat as defined by the Yolo HCP/NCCP. The BSA contains Swainson's hawk foraging habitat and nest trees, which triggers Avoidance and Minimization

Measures per the Yolo HCP/NCCP. There will be no impacts to Swainson's hawk individuals with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts for Swainson's Hawk and White-tailed Kite

The following are recommended avoidance and minimization measures for Swainson's hawk and white-tailed kite as specified by the Yolo HCP/NCCP:

AMM16, Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-tailed Kite. The project proponent will retain a qualified biologist to conduct planning-level surveys and identify any nesting habitat present within 1,320 feet of the project footprint.

Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If a construction project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, the project proponent will retain a qualified biologist to conduct preconstruction surveys for active nests consistent, with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If project related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawks or white-tailed kites are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. Up to 20 Swainson's hawk nest trees (documented nesting within the last 5 years) may be removed during the permit term, but they must be removed when not occupied by Swainson's hawks.

For covered activities that involve pruning or removal of a potential Swainson's hawk or white-tailed kite nest tree, the project proponent will conduct preconstruction surveys that are consistent with the guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000). If active nests are found during preconstruction surveys, no

tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active**.**

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on Swainson's hawk or Swainson's hawk foraging habitat within the project BSA.

Compensatory Mitigation

Per the Yolo HCP/NCCP, there is 0.71 acres of Great Valley Oak Riparian land cover type that could potentially serve as Swainson's hawk nesting habitat and 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as Swainson's hawk foraging habitat. Impacts to Swainson's hawk suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix D: Yolo HCP/NCCP Application Form 4**).

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) was listed as Fully Protected by the State of California in 1957. White-tailed kites are also protected under the MBTA (16 USC §703) and CFGC §3503, and are a covered species under the Yolo HCP/NCCP. They are yearlong residents in coastal and valley lowlands; frequently found near agricultural areas. White-tailed kites also inhabit herbaceous and open stages of most habitats in cismontane California. They forage in undisturbed, open grasslands, meadows, farmlands and emergent wetlands; however, they will rarely dive into tall cover. They use a variety of tree species to perch and roost, preferring to place their nests near tops of dense oak, willow, or other tree stands. Nests are usually located near an open foraging area that supports dense vole populations.

Survey Results

There are suitable nesting trees within the BSA and suitable foraging habitat adjacent to the BSA. There are large trees that line CR 98 that provide suitable nesting habitat. Dryland grain crops adjacent to the BSA provide nearby foraging habitat. There were no active white-tailed kite nests observed during the biological evaluation; however, based on the presence of suitable trees within the BSA, there is potential for future nest establishment. There are four (4) CNDDB occurrences indicating nesting within 5 miles of the BSA (#43, #44, #50, #64). The most recent of these occurrences (#64) was recorded in 2003.

Project Impacts

The project will impact 0.71 acres of Great Valley Oak Riparian land cover type that could potentially serve as white-tailed kite nesting habitat and 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as white-tailed kite foraging habitat as defined by the Yolo HCP/NCCP. The BSA contains white-tailed kite foraging habitat and nest trees, which triggers Avoidance and Minimization Measures per the Yolo HCP/NCCP. There will be no impacts to white-tailed kite individuals with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts for Swainson's Hawk and White-tailed Kite

The following are recommended avoidance and minimization measures for Swainson's hawk and white-tailed kite as specified by the Yolo HCP/NCCP:

AMM16, Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-tailed Kite. The project proponent will retain a qualified biologist to conduct planning-level surveys and identify any nesting habitat present within 1,320 feet of the project footprint.

Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If a construction project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, the project proponent will retain a qualified biologist to conduct preconstruction surveys for active nests consistent, with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If project related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. Up to 20 Swainson's hawk nest trees

(documented nesting within the last 5 years) may be removed during the permit term, but they must be removed when not occupied by Swainson's hawks.

For covered activities that involve pruning or removal of a potential Swainson's hawk or white-tailed kite nest tree, the project proponent will conduct preconstruction surveys that are consistent with the guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000). If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on white-tailed kite or white-tailed kite habitat within the project BSA

Compensatory Mitigation

Per the Yolo HCP/NCCP, there is 0.71 acres of Great Valley Oak Riparian land cover type that could potentially serve as white-tailed kite nesting habitat and 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as white-tailed kite foraging habitat. Impacts to white-tailed kite suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix D: Yolo HCP/NCCP Application Form 4**).

Tricolored Blackbird

Tricolored blackbirds are listed as threatened under the CESA, are also protected under the MBTA (16 USC §703) and CFGC §3503, and are a covered species under the Yolo HCP/NCCP. They range from southern Oregon through the Central Valley, and coastal regions of California into the northern part of Mexico. Tricolored blackbirds are medium-size birds with black plumage and distinctive red marginal coverts, bordered by whitish feathers. Tricolored blackbirds nest in large colonies within agricultural fields, marshes with thick herbaceous vegetation, or in clusters of large blackberry bushes near a source of water and suitable foraging habitat. They are nomadic migrators, so documenting occurrence at any location does not mean that they will necessarily return to that area. Current threats facing tricolored blackbirds include colonial breeding in regards to small population size, habitat loss, overexploitation, predation, contaminants, extreme weather events, and drought, water availability, and climate change (CDFW 2018).

Survey Results

There is suitable nesting habitat within 1,300 feet of the BSA. There are blackberry brambles that line the banks of Dry Slough, north of the BSA, and Putah Creek, south of the BSA, which provide suitable nesting habitat within 1,300 feet of the BSA. In 1991, tricolored blackbirds were recorded nesting in the blackberry brambles north of the BSA (CNDDB Occurrence #404). Dryland grain crops (i.e. wheat) that occur within and adjacent to the BSA may also provide nesting habitat. Dryland grain crops have become an alternative nesting location for large colonies of tricolored blackbirds as most of the species' natural nesting habitat has been converted into other land uses (CDFW 2018). Tricolored blackbirds often forage in agricultural fields, which occur within and adjacent to the BSA.

There is potential for tricolored blackbird to occur within the BSA due to the presence of suitable nesting habitat within and within 1,300 feet of the BSA, as well as the presence of suitable foraging habitat within the BSA. No tricolored blackbirds or tricolored blackbird colonies were observed during protocol level surveys.

Project Impacts

Per the Yolo HCP/NCCP, the project may impact 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as tricolored blackbird nesting and foraging habitat. The BSA contains and is within 1,300 feet of suitable tricolored blackbird nesting and foraging habitat, which triggers Avoidance and Minimization Measures per the Yolo HCP/NCCP. There will be no impacts to tricolored blackbird individuals with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

AMM21, Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird. The project proponent will retain a qualified biologist to identify and quantify (in acres) tricolored blackbird nesting and foraging habitat (as defined in Yolo HCP/NCCP Appendix A, *Covered Species Accounts*) within 1,300 feet of the footprint of the covered activity. If a 1,300-foot buffer from nesting habitat cannot be maintained, the qualified biologist will check records maintained by the Conservancy (which will include CNDDB data, and data from the tricolored blackbird portal) to determine if tricolored blackbird nesting colonies have been active in or within 1,300 feet of the project footprint during the previous 5 years. If there are no records of nesting tricolored blackbirds on the site, the qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).

Operations and maintenance activities or other temporary activities that do not remove nesting habitat and occur outside the nesting season (March 1 to July 30) do not need to conduct planning or construction surveys or implement any additional avoidance measures.

If an active tricolored blackbird colony is present or has been present within the last five years within the planning-level survey area, the project proponent will design the project to avoid adverse effects within 1,300 feet of the colony site(s), unless a shorter distance is approved by the Conservancy, USFWS, and CDFW. If a shorter distance is approved, the project proponent will still maintain a 1,300-foot buffer around active nesting colonies during the nesting season but may apply the approved lesser distance outside the nesting season. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on tricolored blackbird habitat within the project BSA.

Compensatory Mitigation

Per the Yolo HCP/NCCP, there is 12.95 acres of Cultivated Land and Grassland Alliance land cover types that could potentially serve as tricolored blackbird nesting and foraging habitat. Impacts to tricolored blackbird suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix D: Yolo HCP/NCCP Application Form 4**).

Least Bell's Vireo

The least Bell's vireo is federally and State listed as endangered, is protected under the MBTA (16 USC §703) and CFGC §3503, and is a covered species under the Yolo HCP/NCCP. It is a riparian forest nester, nesting in extensive riparian forests of willow, cottonwood, and blackberry. Least Bell's vireo has been considered to be extirpated from northern California since the early 1980s (USFWS 1998); however, wildlife biologists detected least Bell's vireo individuals at South Fork Putah Creek in 2010, 2011, and 2013 (CNDDB 2019). Breeding behavior was observed, but no confirmed evidence of nesting was found. There is one (1) CNDDB occurrence (#328) of least Bell's vireo located 10 miles east of the southernmost portion of the BSA. All other occurrences within 60 miles of the BSA are occurrences from the late 1800s that are believed to be extirpated.

The Yolo HCP/NCCP requires that if construction activity will encroach within 500 feet of suitable habitat and there are no breeding season records for the species within one-quarter mile of the covered activity within the previous three years, a qualified biologist

will conduct planning-level surveys for active territories, consistent with USFWS (2001) guidelines, during the breeding season (April 1 to July 15). Protocol level surveys were conducted by approved senior biologist Melissa Murphy in May 2019 and no observations were recorded of least Bell's vireo.

Survey Results

The BSA is located within 500 feet of Putah Creek within Planning Unit 9, but construction activities will occur further than 500 feet from least Bell's vireo modeled habitat. Therefore, no planning level or preconstruction surveys are required.

Project Impacts

No impacts to least Bell's vireo and no loss of modeled habitat are expected. The project will have no effect on least Bells' vireo.

Avoidance and Minimization Efforts

AMM19, Minimize Take and Adverse Effects on Least Bell's Vireo. The project proponent will retain a qualified biologist to conduct planning-level surveys and determine if habitat for least Bell's vireo (as defined in Yolo HCP/NCCP Appendix A, Covered Species Accounts) is present within 500 feet of covered activities. If habitat is present, the project proponent will redesign the project to avoid or minimize activities within 500 feet of least Bell's vireo habitat. If the activity will encroach within 500 feet of habitat and there are no breeding season records for the species within one-quarter mile of the covered activity within the previous three years, the qualified biologist will conduct planning-level surveys for active territories, consistent with USFWS (2001) guidelines, during the breeding season (April 1 to July 15).

- If an occupied territory is discovered during planning-level surveys, or there is a record of the species occurring within one-quarter mile of the covered activity within the previous three years, the project proponent will design the project to avoid activities within 500 feet of suitable habitat, unless the Conservancy, USFWS, and CDFW approve a shorter distance.
- If an activity occurs within 500 feet of suitable habitat during the breeding season, regardless of whether or not the species was detected during planning-level surveys or there are records for the species in the area, a qualified biologist will conduct preconstruction surveys, consistent with USFWS (2001) guidelines, during the same season when the activity will occur. If active territories are found, the project proponent will avoid activity within 500 feet of the habitat from April 1 to July 15. This buffer may be reduced with approval from the Conservancy, USFWS, and CDFW.

- The project proponent will avoid disturbance of previous least Bell's vireo territories (up to three years since known nest activity) during the breeding season, unless the disturbance is to maintain public safety. Least Bell's vireo uses previous territories; disturbance during the breeding season may preclude birds from using existing unoccupied territories.
- The required buffer may be reduced in areas where barriers or topographic relief features are adequate for protecting the nest from excessive noise or other disturbance.

  Conservancy staff members will coordinate with the wildlife agencies and evaluate exceptions to the minimum non-disturbance buffer distance on a case-by-case basis. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.
- If occupied territories are identified, a qualified biologist will monitor construction activities in the vicinity of all active territories to ensure that covered activities do not affect nest success.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects least Bell's vireo habitat within the project BSA.

Compensatory Mitigation

As there will be no impacts to least Bell's vireo or least Bell's vireo habitat, no compensatory mitigation will be required.

Northern Harrier

The northern harrier is a SSC in the state of California. They range throughout California in low elevation areas such the Central Valley, desert and coastal regions. Northern harriers are dimorphic. Males have grey tones, while females and juveniles display a rusty brown coloring. Suitable habitat for foraging and breeding include fresh water and coastal marshes, annual and perennial grasslands, pastures and low growing crops, sagebrush scrub, and desert sinks. Northern harriers nest on the ground among tall grasses or shrubs. Current threats facing northern harriers include loss of foraging and nesting habitat, small mammal control, and human disturbances (Shuford and Gardali 2008).

Survey Results

There is suitable foraging and nesting habitat present immediately adjacent to the BSA. There is one (1) CNDDB occurrence (#51) located about 2.7 miles east of the BSA, where

a pair of northern harriers was observed nesting in a wheat field in 2015. There are no other CNDDB occurrences within 30 miles of the BSA.

Project Impacts

There will be no impacts to northern harrier with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

The following are recommended avoidance and minimization measures for northern harrier:

- Project activities and vegetation removal within the BSA shall be initiated outside of the bird nesting season (February 1 – August 31).
- If project activities and vegetation removal cannot be initiated outside of the bird nesting season, then the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days prior to the initiation of project activities.
    - If an active northern harrier nest (i.e. with egg(s) or young) is observed within 250 feet of the BSA during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects northern harrier within the project BSA.

Compensatory Mitigation

As there will be no impacts to northern harrier, no compensatory mitigation will be required.

Migratory Birds and Raptors

Nesting birds are protected under the MBTA (16 USC 703) and the CFGC (3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in

North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls) 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". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

Survey Results

There is suitable nesting habitat within the BSA for migratory birds and raptors protected under the MBTA and CFGC. There are suitable trees, shrubs, and structures that offer nesting habitat for a variety of avian species.

There is potential for a variety of migratory birds and raptors to occur within the BSA due to the presence of suitable nesting habitat.

Project Impacts

There will be no impacts to migratory birds and raptors with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

The following are recommended avoidance and minimization measures for migratory birds and raptors:

- Project activities and vegetation removal within the BSA shall be initiated outside of the bird nesting season (February 1 – August 31).
- If project activities and vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days prior to the initiation of project activities.
    - If an active northern harrier nest (i.e. with egg(s) or young) is observed within 250 feet of the BSA during the pre-construction survey, then a species protection buffer will be established. The species protection

buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on migratory birds and raptors within the project BSA.

Compensatory Mitigation

As there will be no impacts to nesting migratory birds and raptors, no compensatory mitigation will be required.

Chapter 5 – Conclusions and Regulatory Determinations

Federal Endangered Species Act Consultation Summary

The USFWS was consulted on March 19, 2019 and the NMFS was consulted on March 20, 2019 for lists of endangered, threatened, sensitive, and rare species and their habitats with potential to occur within the BSA. The lists were later referenced to determine appropriate biological and botanical surveys and potential species occurrence.

Essential Fish Habitat Consultation Summary

As there are no perennial drainages that could support anadromous fish species, there is no Essential Fish Habitat present within the BSA.

California Endangered Species Act Consultation Summary

The CDFW and CNPS were consulted on March 19, 2019 for lists of State endangered, threatened, sensitive, and rare species and their habitats with potential to occur within the BSA. The list was later referenced to determine appropriate biological and botanical surveys and potential species occurrence.

Wetlands and Other Waters Coordination Summary

A delineation of WOTUS was conducted by Gallaway Enterprises on April 30, 2019. The results of the delineation will be summarized in a Draft Delineation of Waters of the United States report, which will be submitted to the Corps as part of the permitting process (**Appendix C**).

One (1) wetland feature and six (6) potentially jurisdictional drainages were identified within the BSA. Five (5) drainages are anticipated to be impacted by project activities. As there are jurisdictional waters that will be impacted by project activities, a CDFW §1602 Streambed Alteration Agreement, RWQCB §401 Water Quality Certification permit, and a Corps Nationwide §404 14 permit are necessary. The project will result in 0.27 acres (1,483 linear feet) of permanent impacts to drainages (**Figure 6: Anticipated Impacts to Waters of the U.S.**). Mitigation for impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Invasive Species

Several invasive species such as yellow star-thistle, mustard, and fennel (*Foeniculum vulgare*) were observed within the BSA during the biological evaluation. Yellow star-thistle is a non-native species recognized by the California Invasive Plant Council (CAL-IPC) as a species of high concern which could pose severe ecological impacts.

It is recommended that general best management practices (BMP) be implemented prior and during construction activities as recommended under the CAL-IPC Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors (2012). The following are the recommended general BMP's under CAL-IPC.

- Provide prevention training to staff and contractors prior to starting work.
- Schedule activities to minimize potential for introduction and spread of invasive plants.
- Designate specific areas for cleaning tools, vehicles, equipment, clothing and gear.
- Plan travel routes to avoid areas infested with invasive plants.
- Clean tools, equipment, vehicles and animals before transporting materials and before entering and leaving worksites.
- Clean clothing, footwear and gear before leaving infested areas.
- Prepare worksites to limit the introduction and spread of invasive plants.
- Minimize soil and vegetation disturbance.

Chapter 6 – References

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USFWS. 1998. Draft Recovery Plan for the Least Bell's Vireo (*Vireo bellii pusillus*). U.S. Fish and Wildlife Service, Portland, Oregon. 139 pp.

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Appendix A – Species Lists

United States Department of the Interior

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

In Reply Refer To:
Consultation Code: 08ESMF00-2020-SLI-2781
Event Code: 08ESMF00-2020-E-08513
Project Name: CR 98

September 01, 2020

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2781

Event Code: 08ESMF00-2020-E-08513

Project Name: CR 98

Project Type: TRANSPORTATION

Project Description: Road widening and rehabilitation

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.55707030728996N121.80312558983957W

Counties: Yolo, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

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

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

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

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

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891
Species survey guidelines:
https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf

California Tiger Salamander *Ambystoma californiense*	Threatened

Population: U.S.A. (Central CA DPS)
There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7850
Habitat assessment guidelines:
https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2246

Critical habitats

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

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

1 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 3812157

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 01 September 2020].

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Merritt (3812157))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Antioch multilid wasp *Myrmosula pacifica*	IIHYM15010	None	None	GH	SH	
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G3	S2	1B.2
California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	PDFAB0F8R3	None	None	G2T1	S1	1B.1
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	
Keck's checkerbloom *Sidalcea keckii*	PDMAL110D0	Endangered	None	G2	S2	1B.1
northern harrier *Circus hudsonius*	ABNKC11011	None	None	G5	S3	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
Sacramento Valley tiger beetle *Cicindela hirticollis abrupta*	IICOL02106	None	None	G5TH	SH	
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G5	S3S4	
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
western bumble bee *Bombus occidentalis*	IIHYM24250	None	Candidate Endangered	G2G3	S1	
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP

Record Count: 25

Appendix B – Project Site Photos

Project Site Photos

Taken April 30, 2019

Looking southeast at County Road 98.

Looking south at typical agricultural habitat adjacent to County Road 98.

Looking south at annual grassland habitat adjacent to County Road 98.

Looking northeast at vegetated corridor adjacent to County Road 98.

Looking west at dry riverine habitat under County Road 98.

Looking west at the elderberry shrub present near the southern boundary of the project.

Appendix C – Draft Delineation of Waters of the U.S. Map

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

Label	Cowardin	Type	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	POW	Pond	38.546708	-121.806	NA	NA	1362.2	0.03
					Adjacent Weltand Features Totals =	**NA**	**1362.2**	**0.03**

Other Waters

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
T01	R4	Intermittent	38.547042	-121.8061	13.7	26.7	365.7	0.01
T02	R4	Intermittent	38.546865	-121.807	8.6	531.3	4592.1	0.11
T03	R4	Intermittent	38.548794	-121.8034	9.0	55.0	492.8	0.01
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	438.1	7010.4	0.16
T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
T06	R4	Intermittent	38.550226	-121.8031	7.0	946.2	6623.1	0.15
					Tributary Totals =	**2033.8**	**19830.2**	**0.46**
					Total Waters of the U.S. =	**2033.8**	**21192.4**	**0.49**

*Widths are represented as averages

Non-Jurisdictional by Rule

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
EX01	R4	Irrigation Ditch	38.573899	-121.8036	13.4	194.0	2600.5	0.06
EX02	R4	Irrigation Ditch	38.574678	-121.8029	18.0	491.2	8841.1	0.20
					Excluded Features Totals =	**685.2**	**11441.6**	**0.26**

Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

38.5869, -121.8034

County Rd 98

County Rd 30

P01 EX02 C06 P02 P03 EX01 C07

Panel 1
Panel 2

Project Boundary - (106.7 acres)
1 foot contours
OHWM Transect - 'X-X'
Culvert - C#
Flow Direction
Photo Points - P#*

Data Points

Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

Pond

Other Waters - T# - (0.46 acres)

Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

Irrigation Ditch

***See Figure 3, Ground Photographs Map, for additional information on Photo Points.**

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 1 of 4)

Delineation by: E. Gregg
Map by: C. Davis
GE: #18-119

gallaway ENTERPRISES

Map Date: 08/31/2020

Panel 1

Panel 2

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

Label	Cowardin	Type	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	POW	Pond	38.546708	-121.806	NA	NA	1362.2	0.03
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Other Waters

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T03	R4	Intermittent	38.548794	-121.8034	9.0	55.0	492.8	0.01
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T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
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Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

County Rd 98

County Rd 31

P04

TP01

P11

P04

TP01

Project Boundary - (106.7 acres)

1 foot contours

OHWM Transect - 'X-X'

Culvert - C#

Flow Direction

Photo Points - P#*

Data Points

Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

Pond

Other Waters - T# - (0.46 acres)

Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

Irrigation Ditch

*See Figure 3, Ground Photographs Map, for additional information on Photo Points.

Panel 2

Panel 3

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 2 of 4)

Delineation by: E. Gregg
Map by: C. Davis

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

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Other Waters

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T03	R4	Intermittent	38.548794	-121.8034	9.0	55.0	492.8	0.01
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	438.1	7010.4	0.16
T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
T06	R4	Intermittent	38.550226	-121.8031	7.0	946.2	6623.1	0.15
					Tributary Totals =	**2033.8**	**19830.2**	**0.46**
					Total Waters of the U.S. =	**2033.8**	**21192.4**	**0.49**

*Widths are represented as averages

Non-Jurisdictional by Rule

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
EX01	R4	Irrigation Ditch	38.573899	-121.8036	13.4	194.0	2600.5	0.06
EX02	R4	Irrigation Ditch	38.574678	-121.8029	18.0	491.2	8841.1	0.20
					Excluded Features Totals =	**685.2**	**11441.6**	**0.26**

Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

Panel 2
Panel 3
C05
P09
T05
'D-D'
'C-C'
"7 feet'
T04
'19 feet'
T06
C03
T03
P07
C04
'9 Feet'
P08
'A-A'
T02
T01
P06
C02
P05
WF01
C01
Russell Blvd
County Rd 98
P10
Hutchinson Dr
Panel 3
Panel 4

- Project Boundary - (106.7 acres)
- 1 foot contours
- OHWM Transect - 'X-X'
- Culvert - C#
- Flow Direction
- Photo Points - P#*

Data Points

- Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

- Pond

Other Waters - T# - (0.46 acres)

- Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

- Irrigation Ditch

***See Figure 3, Ground Photographs Map, for additional information on Photo Points.**

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 3 of 4)

Delineation by: E. Gregg
Map by: C. Davis
GE: #18-119

gallaway ENTERPRISES

Map Date: 08/31/2020

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

Label	Cowardin	Type	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	POW	Pond	38.546708	-121.806	NA	NA	1362.2	0.03
					Adjacent Weltand Features Totals =	**NA**	**1362.2**	**0.03**

Other Waters

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
T01	R4	Intermittent	38.547042	-121.8061	13.7	26.7	365.7	0.01
T02	R4	Intermittent	38.546865	-121.807	8.6	531.3	4592.1	0.11
T03	R4	Intermittent	38.548794	-121.8034	9.0	55.0	492.8	0.01
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	438.1	7010.4	0.16
T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
T06	R4	Intermittent	38.550226	-121.8031	7.0	946.2	6623.1	0.15
					Tributary Totals =	**2033.8**	**19830.2**	**0.46**
					Total Waters of the U.S. =	**2033.8**	**21192.4**	**0.49**

*Widths are represented as averages

Non-Jurisdictional by Rule

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
EX01	R4	Irrigation Ditch	38.573899	-121.8036	13.4	194.0	2600.5	0.06
EX02	R4	Irrigation Ditch	38.574678	-121.8029	18.0	491.2	8841.1	0.20
					Excluded Features Totals =	**685.2**	**11441.6**	**0.26**

Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

Hutchinson Dr
P10
Panel 3
Panel 4
County Rd 98
38.5272, -121.8031
Putah Creek

Project Boundary - (106.7 acres)
1 foot contours
OHWM Transect - 'X-X'
Culvert - C#
Flow Direction
Photo Points - P#*

Data Points
Test Pit - TP#

Wetland Features - WF# - (0.03 acres)
Pond

Other Waters - T# - (0.46 acres)
Intermittent

Non-Jurisdictional by Rule - (0.26 acres)
Irrigation Ditch

***See Figure 3, Ground Photographs Map, for additional information on Photo Points.**

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 4 of 4)

Delineation by: E. Gregg
Map by: C. Davis
gallaway ENTERPRISES
GE: #18-119
Map Date: 08/31/2020

Appendix D – Yolo HCP/NCCP Application Form 4

REPORTING FORM

PURPOSE

Complete this form to report coverage under the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP) as a Permittee. Chapter 4 of the Permitting Guide, available on the Yolo Habitat Conservancy's ("Conservancy") web site under the "Permitting" tab, provides instructions for form completion. The form requirements are minimum requirements; the Conservancy may request more information to clarify or complete the form. Submittal of a preliminary reporting form to the Conservancy is encouraged to ensure timely and accurate completion, until such time that member agency applicants have become familiarized with the reporting form process and requirements. If an application fee is required (see Screening Form, Box Y), the Permittee should submit this fee to the Conservancy early in the application process. The Permitting Guide and additional resources are available on the Conservancy's web site under the "Permitting" tab.

BOX A: Preliminary/Final Application Form	
Check one box.	
☐ Preliminary Form (signature not required)	☒ Final Form (complete form and signature required)

BOX B: APPLICATION DETAILS	
1 Project name	County Road 98 Bike and Safety Improvement Project, Phase II
2 Submittal date	TBD
3 Member agency internal tracking number	Federal Project Number STPL 5922(102)
4 Member agency	☒ Yolo County ☐ City of Davis ☐ City of Woodland ☐ City of West Sacramento ☐ City of Winters

BOX C: MEMBER AGENCY CONTACT INFORMATION			
1 Member agency			
1.a Member agency name	Yolo County Community Services Department		
1.b Mailing address	292 West Beamer Street, Woodland, CA 95695		
1.c Phone (home/office)	(530) 666-8775	1.d Phone (Cellular)	
1.e Email	lilia.razo@yolocounty.org		

BOX D: PROJECT INFORMATION

1	Project address and location	CR 98 (see attached map)
2	Assessor parcel number(s) APNs and acreage by parcel (not applicable for linear projects)	N/A
3	Total acreage of parcel(s) (not applicable for linear projects)	Project acreage: 106 acres
4	Using the GeoMapper's Spatially Defined Planning Unit Map, find your proposed project site. Check the Planning Unit in which your project lies.	Yolo County Planning Units ☐ 1 – Little Blue Ridge ☐ 2 – North Blue Ridge ☐ 3 – South Blue Ridge ☐ 4 – Capay Hills ☐ 5 – Dunnigan Hills ☐ 6 – Upper Cache Creek ☐ 7 – Lower Cache Creek ☐ 8 – Upper Putah Creek ☒ 9 – Lower Putah Creek ☐ 10 – Hungry Hollow Basin ☒ 11 – Willow Slough Basin ☐ 12 – Colusa Basin ☐ 13 – Colusa Basin Plains ☐ 14 – North Yolo Basin ☐ 15 – South Yolo Basin ☐ 16 – Yolo Basin Plains ☐ 17 – North Yolo Bypass ☐ 18 – South Yolo Bypass Cities ☐ 19 – City of Woodland ☒ 20 – City of Davis ☐ 21 – City of West Sacramento ☐ 22 – City of Winters

5 ☒ Provide a project description. Please refer to the Permitting Guide for details to include in the project description. Label as Attachment 1 or indicate in this box the document name and page numbers of the report where this information can be found, and attach report or relevant excerpts.

Page 1 in Natural Environment Study

6 ☐ Provide a legible vicinity map of the project site and surrounding area (PDF). Refer to the Permitting Guide for more information about details to include on the vicinity map. Label as Attachment 2. Rather than a separate PDF, applicant may include the site plan in the Planning-Level survey report or other report.

If so, provide report name and page number here, and attach report or relevant excerpts:

Page 2

7 ☒ Provide a site plan that shows the proposed project site and surrounding area. (PDF and CAD or GIS-compatible). Refer to the Permitting Guide (Page 7-2) for more information about details to include in the site plan. Label as Attachment 3. Rather than a separate PDF, applicant may include the site plan in the Planning-Level survey report or other report. if so, provide report name and page number here, and attach report or relevant excerpt:

Pages 3, 6

BOX E: NATURAL COMMUNITY AND LAND COVER IMPACTS AND MITIGATION FEES

Complete Items 1-26 below, referring to the Permitting Guide for calculation methods.

- Total fee amount for each land cover type will be auto-generated based on acreage amount (and for recurring temporary impacts, number of years out of the 50-year permit term the impact will occur).
- Temporary impact fee formula = land cover fee x area of temporary effect in acres x (F/50) where F = the number of years in which the activity will occur during the rest of the permit term (until 2069).
- Must include required land cover fee buffer area associated with the project. This is generally 10 feet for linear projects (e.g. roads, utility cooridors, pipelines) and 50 feet for all other projects. See Chapter 4 of the Permitting Guide under Box E instructions regarding the option of lumping land cover categories for the fee buffer calculations for linear projects.
- Fees will be updated annually, typically in March.
- Wetland fees are in addition to land cover fees.

Submit a planning-level survey, including a field-verified land cover map and the name and qualifications of the qualified biologist(s) responsible for preparation of the report. Label as Attachment 4. Mapped areas shown on the site plan (Attachment 3 in Box D, Item 7) should be consistent with the acreages entered below. Include photographs of temporary impact areas. Label photos as Attachment 5.

Land Cover Types	Land Cover Permanently Impacted by Project (in acres)			Land Cover Temporarily Impacted by Project (in acres)	Years of Recurring Temporary Impact	Fees (Auto Generated)				
	Permanent Impact (acs)	Fee Buffer (acs)	TOTAL			Land Cover Fee (per acre)	Wetland Fee (per acre)	Permanent Impact, Land Cover Fee	Temporary Impact, Land Cover Fee	Wetland Fee
1 ☒ Developed (including ruderal with no covered species habitat)[a]	47.54	9.82	57.36	0	0	$0	$0	$0	$0	$0
2 ☐ Ruderal with covered species habitat[b]	0	0	0	0	0	$14,950	$0	$0	$0	$0
3 ☐ Barren, No Covered Species Habitat	0	0	0	0	0	$0	$0	$0	$0	$0
4 ☐ Barren, With Covered Species Habitat	0	0	0	0	0	$14,950	$0	$0	$0	$0
5 ☐ Vegetated Corridor with Giant Garter Snake Habitat	0	0	0	0	0	$14,950	$0	$0	$0	$0
6 ☒ Grassland (all types)	0.75	0.68	1.4300000000000002	0	0	$14,950	$0	$21528	$0	$0
7 ☐ Serpentine (all types)	0	0	0	0	0	$14,950	$0	$0	$0	$0
8 ☐ Chamise (all types)	0	0	0	0	0	$14,950	$0	$0	$0	$0

Land Cover Types	Land Cover Permanently Impacted by Project (in acres)			Land Cover Temporarily Impacted by Project (in acres)	Years of Recurring Temporary Impact	Fees (Auto Generated)				
	Permanent Impact (acs)	Fee Buffer (acs)	TOTAL			Land Cover Fee (per acre)	Wetland Fee (per acre)	Permanent Impact, Land Cover Fee	Temporary Impact, Land Cover Fee	Wetland Fee
9 ☐ Mixed Chaparral	0	0	0	0	0	$14,950	$0	$0	$0	$0
10 ☐ Oak-Foothill Pine (all types)	0	0	0	0	0	$14,950	$0	$0	$0	$0
11 ☐ Blue Oak Woodland	0	0	0	0	0	$14,950	$0	$0	$0	$0
12 ☐ Closed-Cone Pine-Cypress (all types)	0	0	0	0	0	$14,950	$0	$0	$0	$0
13 ☐ Montane Hardwood (all types)	0	0	0	0	0	$14,950	$0	$0	$0	$0
14 ☐ Valley Oak Woodland	0	0	0	0	0	$14,950	$0	$0	$0	$0
15 ☐ Alkali Prairie	0	0	0	0	0	$14,950	$0	$0	$0	$0
16 ☐ Vernal Pool Complex	0	0	0	0	0	$14,950	$0	$0	$0	$0
17 ☐ Fresh Emergent Wetland (all types)	0	0	0	0	0	$14,950	$76,042	$0	$0	$0
18 ■ Valley Foothill Riparian	0.71	.18	0.8899999999999999	0	0	$14,950	$84,217	$13305.4999	$0	$74953.1299
19 ■ Lacustrine and Riverine	.44	.03	0.47	0	0	$14,950	$60,986	$7026.5	$0	$28663.42
20 ■ Cultivated Land (all types)	12.2	4.58	16.78	0	0	$14,950	$0	$250861.000	$0	$0
21 ☐ Citrus/Subtropical	0	0	0	0	0	$14,950	$0	$0	$0	$0
22 ■ Deciduous Fruits/Nuts	7.73	2.66	10.39	0	0	$14,950	$0	$155330.5	$0	$0
23 ☐ Vineyards	0	0	0	0	0	$14,950	$0	$0	$0	$0
24 ☐ Turf Farm	0	0	0	0	0	$14,950	$0	$0	$0	$0
25 ☐ Flowers/Nursery/Tree Farms	0	0	0	0	0	$14,950	$0	$0	$0	$0
26 ■ Semiag/Incidental to Agriculture	4.59	1.06	5.65	0	0	$14,950	$0	$84467.5	$0	$0
27 ☐ Eucalyptus	0	0	0	0	0	$14,950	$0	$0	$0	$0

Land Cover Types	Land Cover Permanently Impacted by Project (in acres)			Land Cover Temporarily Impacted by Project (in acres)	Years of Recurring Temporary Impact	Fees (Auto Generated)				
	Permanent Impact (acs)	Fee Buffer (acs)	TOTAL			Land Cover Fee (per acre)	Wetland Fee (per acre)	Permanent Impact, Land Cover Fee	Temporary Impact, Land Cover Fee	Wetland Fee
28 ☐ Linear buffers – combine non-fee-paying land cover types	N/A	0	0	N/A	N/A	$0	$0	$ 0	$ 0	$ 0
29 ☐ Linear buffers – combine fee-paying land cover types [a]	N/A	0	0	N/A	N/A	$14,950	$0	$ 0	$ 0	$ 0
							TOTAL	$ 532,519	$ 0	$ 103,617
30							TOTAL LAND COVER IMPACTS AND MITIGATION FEES	$ 636135.55		
31							APPLICATION FEE CREDIT (Application fee paid prior to submittal of complete application. The 2019 and 2020 application fee amount is $1,981.	$ 0		
32							OTHER CREDITS (Advanced fee payment or in lieu fee credit – must be verified by Conservancy). Add Attachment 6	$ 0		
33							TOTAL LAND COVER IMPACTS AND MITIGATION FEES DUE	$ 636135.55		

[a] Fresh Emergent Wetland, Valley Foothill Riparian, and Lacustrine and Riverine land cover types cannot be lumped with other land cover types and need to be entered in the fee buffer column for Items 17, 18, and 19, respectively.

BOX F: CONDITIONS OF APPROVAL: PLANNING-LEVEL AND SPECIES-SPECIFIC PLANNING-LEVEL SURVEYS

Based on a Planning-Level Survey conducted by a qualified biologist using the land cover definitions described in the Permitting Guide in Table 2-1, indicate which sensitive natural communities and covered species are relevant to your project. Indicate below whether suitable covered species habitats are present (Column A) and, where applicable, if there is a need to conduct a Pre-Construction Survey, a more focused survey(s) for covered species (Column B) to confirm presence. Complete Species-Specific Planning-Level Survey as needed consistent with protocols provided in Appendix A of the Permitting Guide. Alternatively, covered species presence can be assumed, which would requires adherence to applicable AMMs and implementation of avoidance measures or Pre-Construction Surveys. Attach all Species-Specific Planning-Level Surveys as Attachment 6. Describe, map, and tabulate impacts the project will have on each natural community and each species for which habitat is present. Impact calculations must correspond to the permanent and temporary impact calculations in Box E. Label as Attachment 7. Alternatively, the impact assessment can be incorporated into the Planning-Level Survey. Important: Be aware of the timing requirements for conducting a species-specific planning-level survey (Table 6-1 in the Permitting Guide) to avoid project delays.

	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning-Level Survey Results	C. Documentation
Sensitive Natural Communities			
1 Alkali prairie and vernal pool complex	Are vernal pools or alkali seasonal wetlands present within 250 feet of project footprint? ☐ Yes. *Design project to avoid vernal pools or alkali seasonal wetlands by 250 feet or lesser buffer if approved by wildlife agencies. Check Box G, AMMs 9 and 10. Go to Column C.* ☒ No	N/A	Map attached? (Attachment 4 or 6?) ☐ Yes ☐ No If vernal pools or alkali seasonal wetlands are present on or near the site, provide map showing how project avoids these wetlands.
2 Valley foothill riparian	Is valley foothill riparian present within 100 feet of the project site boundary? ☒ Yes. *Design project to avoid valley foothill riparian by 100 feet or count all portions within 100 feet in the impact acreage (see Permitting Guide Table 2-1). Check Box G, AMMs 9 and 10. Go to Column C and provide map.* ☐ No	N/A	Map attached? (Attachment 4 or 6?) ☒ Yes ☐ No Provide map showing the valley foothill riparian in relation to the project footprint.
3 Lacustrine and riverine	Are any streams, rivers, lakes, or ponds within 25 feet of project footprint inside urban planning units, or within 100 feet of project footprint outside urban planning units? ☒ Yes. *Design project to avoid these resources by 25 feet inside urban planning units or 100 feet outside urban planning units, or count all portions within these distances in the impact acreage, unless a variance is allowed. Check Box G, AMMs 9 and 10. Go to Column C and provide map.* ☐ No	N/A	Map attached? (Attachment 4 or 6?) ☒ Yes ☐ No Provide map showing any streams, rivers, lakes, or ponds in relation to the project footprint.

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING-LEVEL SURVEYS			
	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning-Level Survey Results	C. Documentation
Sensitive Natural Communities			
4 Fresh emergent wetlands	Are there any fresh emergent wetlands within 50 feet of project footprint outside urban planning units? ☒ Yes. *Design project to avoid these resources by 50 feet, or count all portions within 50 feet in the impact acreage. Check Box G, AMMs 9 and 10. Go to Column C and provide map). Survey period: May 31–September 30* ☐ No	N/A	Map attached? (Attachment 4 or 6?) ☒ Yes ☐ No Provide map of fresh emergent wetlands in relation to the project footprint.
Plants			
5 Palmate-bracted bird's beak	Is suitable habitat present within 250 feet of the project site boundary? ☐ Yes. *Survey for palmate-bracted bird's beak consistent with Permitting Guide Appendix A. Check Box G, AMM 11. Go to Column B. Survey period: May 31–September 30* ☒ No	Is palmate-bracted bird's beak present? ☐ Yes. *Design project to avoid occupied habitat as described in AMM 11. Go to Column C.* ☐ No. *Go to Column C.*	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ Yes ☐ No *Include Species-Specific Planning-Level Survey and map of habitat and any plants found in relation to project footprint.*
Invertebrates			
6 Valley elderberry longhorn beetle	Is there presence of elderberry shrubs in the project site or within 100 feet outside of the project site boundary that could be impacted by the project? ☒ Yes. *Identify and map all elderberry shrubs in and within 100 feet of project footprint with stems greater than one inch in diameter at ground level. For mapped shrubs that cannot be avoided, quantify the number of stems greater than one inch in diameter at ground level, and identify any such stems with valley elderberry longhorn beetle exit holes. Check Box G, AMM 12. Go to Column C and provide survey report. Survey period: Year-round* ☐ No	N/A	Species-Specific Planning-Level Survey attached? (Attachment 6) ☒ Yes ☐ No

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING-LEVEL SURVEYS

	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning-Level Survey Results	C. Documentation
Amphibians			
7 California tiger salamander	Is there presence of California tiger salamander aquatic or upland habitat in the project footprint, or aquatic habitat within 500 feet of the project footprint? ☐ Yes. *Check box G, AMM 13. Is the habitat within designated critical habitat for California tiger salamander, as determined using the GeoMapper?* ☐ Yes. Design project to avoid designated critical habitat. ☐ No. *If aquatic habitat cannot be avoided by 500 feet, either conduct surveys as described in the Permitting Guide Appendix A, or assume species presence. Survey period: After rainfall, November 1 to May 15. Go to Column B.* ☒ No	Are California tiger salamanders present or assumed to be present in aquatic habitat? ☐ Yes. *If the species is present or assumed to be present, the Yolo HCP/NCCP will not allow any loss of occupied aquatic habitat until at least four new occupied breeding pools are discovered or established and protected in the Plan Area. Contact Yolo Habitat Conservancy. Go to Column C.* ☒ No	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ Yes ☐ No
Reptiles			
8 Western pond turtle	Is western pond turtle habitat present in the project footprint? ☒ Yes. Check Box G, AMM 14. A qualified biologist is required to evaluate whether there is moderate to high likelihood of western pond turtle presence. G*o to Columns B and C.* ☐ No	Moderate to high likelihood of western pond turtle presence? ☒ Yes: Check Box F for western pond turtle Pre-construction surveys. ☐ No	Habitat evaluation attached? (Attachment 6) ☒ Yes ☐ No
9 Giant garter snake	Is there any giant garter snake habitat within the project footprint? ☐ Yes. *Design project to avoid or minimize impact on giant garter snake habitat to the extent practicable. If habitat cannot be avoided, see AMM 15. Check Box F for giant garter snake Pre-construction surveys, and check Box G, AMM 15.* ☒ No	N/A	N/A

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING-LEVEL SURVEYS			
	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning-Level Survey Results	C. Documentation
Birds			
10 Swainson's hawk and white-tailed kite	Are there suitable Swainson's hawk or white-tailed kite nest trees within 1,320 feet of the project footprint? ☒ Yes. *If nest trees cannot be avoided by 1,320 feet, check Box F for hawk and kite Pre-construction surveys, and Box G, AMM 16.* ☐ No	N/A	N/A
11 Western yellow-billed cuckoo	Is suitable habitat present within 500 feet of the project site boundary? ☐ Yes. *If there are breeding records for the western yellow-billed cuckoo within ¼ mile of the project site from the previous three years (as determined by GeoMapper), then assume species is present. If there are no breeding records with ¼ mile, then either assume species is present or survey consistent with Chapter 6 of the Permitting Guide. See columns B and C. Check Box F for western yellow-billed cuckoo Pre-construction surveys and Check Box G, AMM 17.* *Survey period: June 1–August 30.* ☒ No	Is western yellow-billed cuckoo present or assumed to be present? ☐ Yes. *If project cannot avoid occupied habitat by 500 feet, avoid take of nesting birds as described in AMM 17.* ☐ No.	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ Yes ☐ No
12 Western burrowing owl	Is western burrowing owl habitat present on the project site, or within 500 feet of the project site? ☐ Yes. *Conduct planning-level surveys for occupied habitat as described in Permitting Guide Appendix A. Go to Columns B and C. Survey period: February 1–August 31 during the breeding season; September 1–January 31 during nonbreeding season.* ☒ No	Are burrowing owls present? ☐ Yes. *Check Box G, AMM18. If burrows cannot be avoided, consistent with Permitting Guide Chapter 5, Check Box F for western burrowing owl Pre-construction surveys.* ☒ No	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ Yes ☐ No

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING-LEVEL SURVEYS

	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning-Level Survey Results	C. Documentation
13 Least Bell's vireo	Is least Bell's vireo habitat present in and within 500 feet of project footprint? ☒ Yes. *Check Box G, AMM 19. Are there nesting records for the species within ¼ mile of the site from the previous three years (determined using the GeoMapper)?* ☐ Yes. *Assume species is present. See Column B.* ☐ No. *Conduct planning-level surveys, as described in Permitting Guide Appendix A. See Columns B and C. Survey period: April 1–July 15* ☐ No	Are least Bell's vireo nests present or assumed to be present? ☒ Yes. *Check Box F for least Bell's vireo Pre-construction surveys. Avoid take of birds as described in AMM 19.* ☐ No.	Species –Specific Planning-Level Survey attached? (Attachment 6) ☒ Yes ☐ No
14 Bank swallow	Is bank swallow nesting habitat present on the project site, or within 500 feet of the project site? ☐ Yes. *Check Box G, AMM 20. Conduct planning-level surveys as described in Permitting Guide Appendix A. Go to Columns B and C. Survey period: March 1–August 15* ☒ No	Are nesting bank swallows present? ☐ Yes. *Check Box F for bank swallow Pre-construction surveys. Avoid take of birds as described in AMM 19.* ☐ No.	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ Yes ☐ No
15 Tricolored blackbird	Is tricolored blackbird nesting habitat present on the project site, or within 1,300 feet of the project site? ☒ Yes. *Conduct planning-level surveys as described in Permitting Guide Appendix A. Check Box G, AMM 21. Go to Column C. Survey period: March 1–July 30* ☐ No	N/A	Species-Specific Planning-Level Survey attached? (Attachment 6) ☒ Yes ☐ No

BOX G: CONDITIONS OF APPROVAL: CONDUCT PRE-CONSTRUCTION SURVEYS

Indicate which species in Items 1-7 are relevant to your project. Important: Refer to Chapter 4 of the Permitting Guide for information about survey purpose, the land cover types and site conditions requiring Pre-construction surveys, survey area size, and survey timing.

Birds			
1	☒ Swainson's hawk	4	☐ Western burrowing owl
2	☒ White-tailed kite	5	☒ Least Bell's vireo
3	☐ Western yellow-billed cuckoo		
Reptiles			
6	☐ Giant garter snake	7	☒ Western pond turtle

BOX H: CONDITIONS OF APPROVAL: AVOIDANCE AND MINIMIZATION MEASURES (AMMs)

Check the avoidance and minimization measures below that apply to your project. Refer to the Permitting Guide for assistance. Describe how you will fulfill the requirements of each required condition. Plan your construction carefully around the translocation or other dates required by the AMMs. Label as Attachment 8.

1	☑	AMM1: *Establish Resource Protection Buffers*
2	☐	AMM 2: *Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces (this AMM does not apply to new development where it is immediately adjacent to existing developed lands*)
3	☑	AMM 3: *Confine and Delineate Work Area*
4	☐	AMM 4: *Cover Trenches and Holes during Construction and Maintenance*
5	☐	AMM 5: *Control Fugitive Dust*
6	☑	AMM 6: *Conduct Worker Training*
7	☐	AMM 7: *Control Nighttime Lighting of Project Construction Sites*
8	☐	AMM 8: *Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas*
9	☑	AMM 9: *Establish Resource Protection Buffers around Sensitive Natural Communities*
10	☐	AMM 10: *Avoid and Minimize Effects on Wetlands and Waters*
11	☐	AMM 11: *Minimize Take and Adverse Effects on Palmate-Bracted Bird's Beak*
12	☑	AMM 12: *Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle*
13	☐	AMM 13: *Minimize Take and Adverse Effects on Habitat of California Tiger Salamander*
14	☑	AMM 14: Minimize Take and Adverse Effects on Habitat of Western Pond Turtle
15	☐	AMM 15: *Minimize Take and Adverse Effects on Habitat of Giant Garter Snake*
16	☑	AMM 16: *Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite*
17	☐	AMM 17: *Minimize Take and Adverse Effects on Habitat of Western Yellow-Billed Cuckoo*
18	☐	AMM 18: *Minimize Take and Adverse Effects on Western Burrowing Owl*
19	☑	AMM 19: *Minimize Take and Adverse Effects on Least Bell's Vireo*
20	☐	AMM 20: *Minimize Take and Adverse Effects on Habitat of Bank Swallow*
21	☑	AMM 21: *Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird*

BOX I: ATTACHMENT CHECKLIST

Indicate which attachments are provided below. Note: Attachments must meet the requirements described in Permitting Guide. If these requirements are not met, your application may be delayed.

All Projects

☑ Attachment 1. Project Description (Box C). Attach separately or indicate attached report page #s here: 1

☑ Attachment 2. Vicinity map PDF (Box C). Attach separately or indicate report page # here: 2 & 3

☑ Attachment 3. Site Plan (Box C). Attach separately or indicate report page # here: 3 & 6

BOX I: ATTACHMENT CHECKLIST
Projects with Impacts
☑ Attachment 4. Planning-Level Survey (Box D)
☐ Attachment 5. Photos of Temporary Impact Areas Attach separately or indicate report page #s here:
☑ Attachment 6. Species-Specific Planning-Level Survey(s) (Box E). Attach separately or indicate report page #s here:
☑ Attachment 7. Unavoidable Impacts on Covered species. Attach separately or indicate report page #s here:
☑ Attachment 8. Description of Compliance with Avoidance and Minimization Measures (Box G). Attach separately or indicate report page #s here:

BOX **J**: SIGNATURES				
☑ By checking the box and signing below I certify all information in the application is true and correct to the best of my knowledge. I also certify I understand the requirements of the AMMs, including dates for elderberry translocation or other dates that may affect construction timing.				
1 Member agency contact name and contact information	Name			
	Phone		Email	
2 Member agency signature			Date	

FORM SUBMITTAL INSTRUCTIONS
Submit this form to the Yolo Habitat Conservancy, 611 North Street Woodland, CA 95695 Phone: 530-723-5504 Provide a copy to the applicable planning office contact below, for informational purposes.

LOCAL AGENCY PLANNING OFFICE CONTACT INFORMATION				
Yolo County Stephanie Cormier Charlie Tschudin Planning Division PO Box 9, Woodland (530) 666-8041 (530) 666-8850	City of West Sacramento David Tilley Community Development Department 1110 West Capitol Ave., 2nd Floor, West Sacramento (916) 617-4645	City of Davis Sherri Metzker Community Development & Sustainability 23 Russell Blvd., Suite 2, Davis (530) 757-5610 ext. 7239	City of Woodland Cindy Norris Planning Division 300 First Street, Woodland (530) 661-5911	City of Winters Dagoberto Fierros Community Development Department 318 First Street, Winters (530) 794-6760

YOLO HABITAT CONSERVANCY CONTACT INFORMATION
Address: PO Box 2202, Woodland, CA 95776 Email: info@yolohabitatconservancy.org

Appendix B

Farmland Study Report

gallaway ENTERPRISES

117 Meyers Street • Suite 120 • Chico CA 95928 • 530-332-9909

January 19, 2020 **(Revised June 9, 2021 to incorporate Form CPA-106, and June 29,2021 to include alternatives)**

Caltrans District 3 – North Region Local Assistance
ATTN: Chris Carroll, Associate Environmental Planner
703 B Street
Marysville, CA 95901

RE: Farmlands Study for the County Road 98 Bike and Safety and Improvement Project Phase II

Mr. Carroll;

Yolo County has reviewed the County Road 98 Bike and Safety Improvement Project Phase II (Project) to determine if there is potential for impact to adjacent agricultural lands from the Project's proposed construction activity. Specifically, this study focused on farmland of prime, unique, and local importance within the proposed Project boundary.

The purpose of the Project is to improve public safety by widen and improve shoulders along County Road (CR) 98. The extent of Phase II spans 4.1 miles, starting from approximately 1300± feet south of the CR 98/CR 29 intersection to the Solano County line (see attached **Figure 1** and **Figure 2**). Roundabouts will be constructed at the intersections with CR 31 (Covell Boulevard), CR 32 (Russell Boulevard), and Hutchison Drive; calming entering speeds at the intersections and improving safety for all users. The addition of eight-foot paved shoulders as shared bike lanes, and an additional twelve-foot clear recovery zone will be constructed along the entire length of both sides of the existing two-lane arterial road. The Project also proposes to construct a Class 1 shared path to close the gap between the existing Class 1 bike paths on Russell Blvd and the Class 2 bike lanes on Hutchison Drive on the University of California, Davis campus. The road structure will be reconstructed and improved throughout the entire length of Project. Project related activity will result in permanent impacts to farmland. The following are the justifications for the evaluations in Part VI of the CPA-106 form wherein a larger numeric score reflects a higher potential impact to farmland resources. Impacts to designated farmlands present within the proposed Project boundary are broken down by farmland type, type of impact, and parcel in Table 1.

Evaluation 1: How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
The Project is located on a portion of CR 98 outside of Davis that is primarily rural agricultural/residential in setting. Approximately 90 percent of the land surrounding the Project boundary is considered non-urban; therefore, it is valued at 13 of 15 points.

Evaluation 2: How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent of the Project perimeter borders agricultural land; therefore it is valued at the maximum of 10 points.

Evaluation 3: How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than 5 of the last 10 years?
More than 90 percent of farmland within the site has been farmed more than 5 of the last 10 years; therefore, this criterion is rated at the maximum 20 out of a possible 20.

Evaluation 4: Is the site subject to State or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
The parcels in the northern half of the Project site are enrolled under a Williamson Act contract. The total amount of land enrolled under the Williamson Act that fall within the Project is 20.3 acres. The Project will permanently impact 10.1 acres of the land that falls under the Williamson Act. Additionally, 2.93 acres of permanently impacted farmlands enrolled under Williamson Act contracts are also under Farmland Conservation Easements funded by the Natural Resource Conservation Service, California Department of Conservation, and the City of Davis. The maximum of 20 points is given for this criterion.

Evaluation 5: How close is the site to an urban built-up area?/ Evaluation 6: How close is the site to water lines, sewer lines and/or other local facilities and services whose capacities and design would promote nonagricultural use?
According to §658.5 of the Farmland Protection Policy Act, for projects that have a linear or corridor-type site configuration, Criteria 5 and 6 will not be considered. A corridor-type site configuration is defined as a linear or corridor-type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. The proposed Project meets the definition of a corridor-type project and therefore both criterion 5 and 6 are rated 0 out 15.

Evaluation 7: Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the county?
According to the 2017 Census of Agriculture, Acreage of Farm Units in Operation for Yolo County, California, the average size of a farm is 484 acres. The two largest parcels containing the site, APN 037-040-05 and APN 036-170-12, consist of 484 acres and 513 acres respectively. The largest parcel, 513 acres, is 105% of 484 acres, therefore the farm units containing the site is above average by 5%. This criterion is rated at a 10 out of a possible 10.

Evaluation 8: If this site is chosen for the project, how much of the remaining land on the farm will become nonfarmable because of interference with land patterns?
The proposed Project will directly convert 16.97 acres of farmland; however the remaining farmland will not be affected, and therefore will not become non-farmable because of interference with land patterns. As a result, this criterion is rated at 0 out of 10.

Evaluation 9: Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
It is assumed that the site has an adequate supply of farm support services and markets; therefore this criterion is rated at a 5 out of a possible 5.

Evaluation 10: Does the site have substantial and well-maintained on-farm investments such as barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
The parcels containing the Project site appear to contain substantial and well-maintained on-farm investments. Conservatively, this criterion is rated 20 out of 20 possible points.

Evaluation 11: Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
The proposed Project would not reduce the demand for farm support services so as to jeopardize the continued existence of these support services and the viability of the farms remaining in the area. This criterion is rated at a 0 out of a possible 10.

Evaluation 12: Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural uses?

The proposed Project involves the improvement of the roadway and adjoining bike paths and is not considered to be an incompatible use that would lead to the eventual conversion of surrounding farmland to nonagricultural use. This criterion is rated at a 0 out of a possible 10.

Table 4. Breakdown of Impacts to Farmland Type

Parcel Number		Prime Farmland (acres)	Williamson Act (acres)	Farmland Conservation Easements (acres)
APN 036-010-04				
Permanent Impacts	Designated Farmland	0.07	0.14	NA
APN 036-010-05				
Permanent Impacts	Designated Farmland	2.91	1.99	NA
APN 036-010-07				
Permanent Impacts	Designated Farmland	0.82	0.37	NA
APN 036-010-08				
Permanent Impacts	Designated Farmland	0.44	0.05	NA
APN 036-170-01				
Permanent Impacts	Designated Farmland	1.94	NA	NA
APN 036-170-02				
Permanent Impacts	Designated Farmland	0.03	NA	NA
APN 036-450-01				
Permanent Impacts	Designated Farmland	3.23	NA	NA
APN 036-450-02				
Permanent Impacts	Designated Farmland	2.56	NA	NA
APN 037-040-01				
Permanent Impacts	Designated Farmland	1.25	1.68	NA
APN 037-040-05				
Permanent Impacts	Designated Farmland	0.73	1.98	NA
APN 037-050-07				
Permanent Impacts	Designated Farmland	0.36	1.01	NA
APN 037-050-08				
Permanent Impacts	Designated Farmland	0.30	0.26	NA
APN 037-050-09				
Permanent Impacts	Designated Farmland	0.09	0.03	NA
APN 040-200-15				
Permanent Impacts	Designated Farmland	NA	0.27	NA
APN 040-200-31				
Permanent Impacts	Designated Farmland	0.08	0.37	0.42
APN 040-200-32				
Permanent Impacts	Designated Farmland	0.47	0.78	1.57
APN 041-120-02				
Permanent Impacts	Designated Farmland	0.52	0.31	NA
APN 041-120-52				
Permanent Impacts	Designated Farmland	0.43	0.59	0.59
APN 041-120-53				
Permanent Impacts	Designated Farmland	0.76	0.36	0.36
Total Permanent Impacts	**Designated Farmland**	**16.97**	**10.19**	**2.93**

Please find attached a U.S. Department of Agriculture Form CPA-106 that shows this preferred project earning a score of 98 Assessment Points in Part VI. When the scores in Part VI exceed 60 points the Caltrans District Environmental Branch submits the appropriate forms to NRCS. Part IV "Land Evaluation Information" must be completed by NRCS prior to determining the final score. Projects with a score of less than 160 (Site Assessment Criteria and Land Evaluation Information combined) need not be given further consideration for protection and no additional sites need to be evaluated. When the final scores from Part V and Part VI is between 160 and 220, at least two other alternatives need to be evaluated and the one with the lowest number of points selected unless there are other overriding considerations. NRCS determined the preferred project (now referred to as proposal A) to have a combined score from Part V and Part VI of 175 points (Part VII), necessitating the evaluation of two alternatives. In addition to the preferred project (Proposal A), we have included an evaluation of alternative Proposal B and a no project alternative.

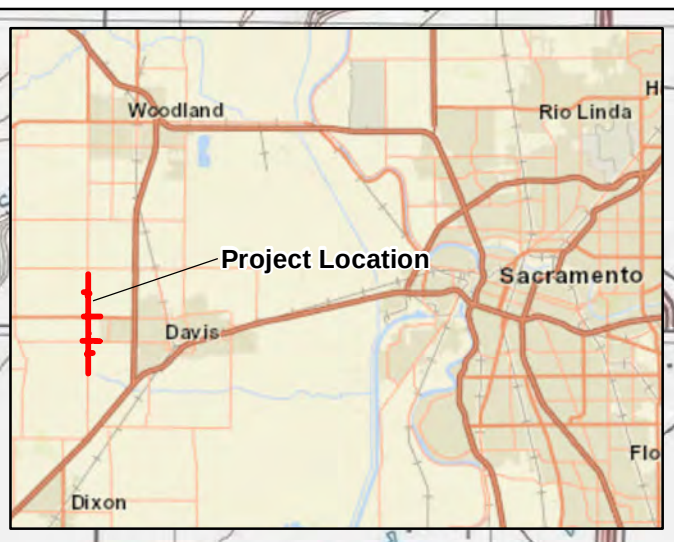
Please let me know if there is any additional information that you may need.

Regards,

Kevin Sevier
Vice President and Senior Planner
kevin@gallawayenterprises.com

Enclosed:
Attachment A: Figure 1. Regional Location Map and Figure 2. Location Map
Attachment B: Form CPA-106
Attachment C: Reason for Selection
Attachment D: Exhibit A, Proposal A
Attachment E: Williamson Act Parcels
Attachment F: Exhibit B, Proposal B

Attachment A: Figure 1. Regional Location Map and Figure 2. Location Map



Dry Slough

Putah Creek

County Road 30

County Road 98

County Road 31

Russell Blvd

Hutchison Blvd

Plainfield

UNIVERSITY AIRPORT

Beacon

Footbridge

Water Tank

CANAL

LEVEE

Project Boundary - (106.7 acres)

USGS 7.5' Quad: Merritt
T08N, R01E, Sections 1, 12,13,24,
T09N, R02E, Section 31,
T08N, R02E, Sections 6, 7,18,19,
T09N, R01E, Section 36
UTM Zone 10

NORTH

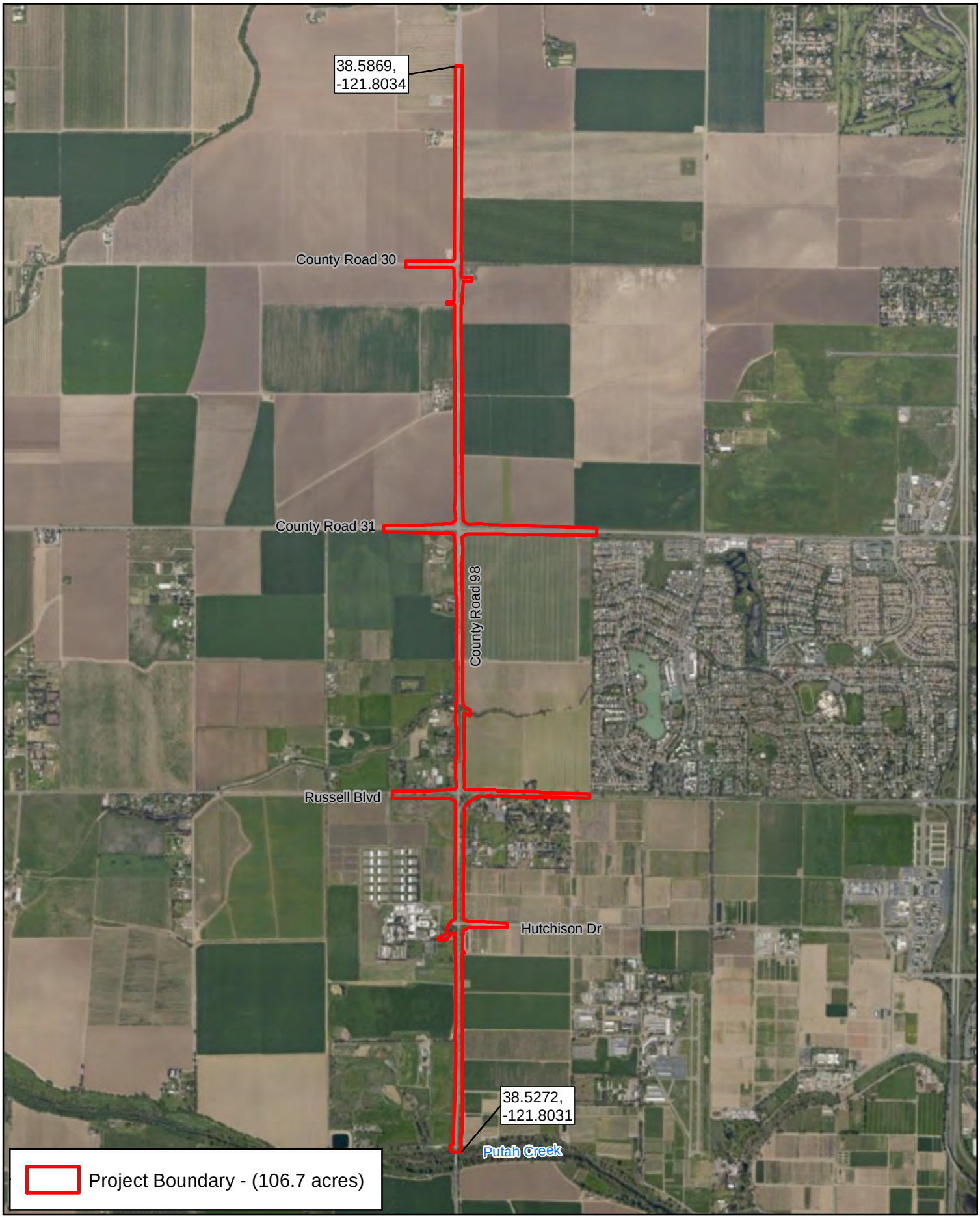
1:24,000
0 0.25 0.5 Miles

Data Sources: ESRI, USGS, Yolo County

County Road 98 Bike and Safety Improvements Phase II
Regional Location
Figure 1

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020



NORTH

1:30,000

0 1,000 2,000 Feet

Data Sources: ESRI, Yolo County, Maxar 07/13/2017

County Road 98 Bike and Safety Improvements Phase II
Project Location
Figure 2

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020

Attachment B: Form CPA-106

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*		3. Date of Land Evaluation Request: 11/13/20	4. Sheet 1 of 1
1. Name of Project: County Road 98 Bike and Safety Improvemen		5. Federal Agency Involved: Caltrans (FHWA)	
2. Type of Project: Safety Project - Roadway ROW		6. County and State: Yolo County, California	
PART II *(To be completed by NRCS)*		1. Date Request Received by NRCS: 6/16/21	2. Person Completing Form: Jacqueline Vega-NRCS, CA
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐			4. Acres Irrigated: 234,703 ac; Average Farm Size: 484 ac
5. Major Crop(s): Almonds, Tomatoes, and Grapes/Wine	6. Farmable Land in Government Jurisdiction: Acres: 482,645 ac % 73.9		7. Amount of Farmland As Defined in FPPA: Acres: 352,555 ac % 54.
8. Name Of Land Evaluation System Used: CA Revised Storie Index	9. Name of Local Site Assessment System: None		10. Date Land Evaluation Returned by NRCS: 6/21/21

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	16.97	25.63		
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0		
C. Total Acres In Corridor	16.97			
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	16.97	25.63		
B. Total Acres Statewide And Local Important Farmland	0	0		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.00048	0.00072		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	19.91	19.91		
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	77			

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points	Corridor A	Corridor B	Corridor C	Corridor D
1. Area in Nonurban Use	15	13	13		
2. Perimeter in Nonurban Use	10	10	10		
3. Percent Of Corridor Being Farmed	20	20	20		
4. Protection Provided By State And Local Government	20	20	20		
5. Size of Present Farm Unit Compared To Average	10	10	10		
6. Creation Of Nonfarmable Farmland	25	0	0		
7. Availablility Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	20	20		
9. Effects Of Conversion On Farm Support Services	25	0	0		
10. Compatibility With Existing Agricultural Use	10	0	0		
TOTAL CORRIDOR ASSESSMENT POINTS	160	98	98	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	77	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	98	98	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	175	98	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
proposed project	16.97	11/13/20	YES ☐ NO ☑

5. Reason For Selection:

See Attatchment C: Reason for Selection

Signature of Person Completing this Part:

DATE: 7/7/21

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

Attachment C: Reason for Selection

A total score of between 160 and 220 in part V and part VI requires two alternative corridors to be evaluated. The preferred alternative scored a 175, and therefore a review of alternatives is required. The first alternative (Proposal/Alternative B) considered for this plan but dropped from consideration was to utilize standard drainage ditch slopes which resulted in a larger impact to farmlands and associated resources. Proposal/Alternative B resulted in 25.63 acres impacts to farmlands as shown on Exhibit B. Alternative A was developed to increase the slope of the drainages with the intended goal of reducing the total impact on the surrounding farmland. Implementing this alternative would not have a negative impact on the purpose of this project to improve public safety by widening and improving the shoulders along county road (CR) 98. Increasing the slope of the drainages reduces the impacts to FMMP farmland by 8.66 acres. The third alternative is a no project alternative. The no project alternative does not meet the operational and safety goals established in County's general Plan or SACOG's Metropolitan Transportation Plan, to provide a corridor that meets the travel demand model and VMT reduction and therefore does not meet the project purpose and is removed from consideration.

Attachment D: Exhibit A, Proposal A

Acres Impacted	
	Permanent Impacts
Prime Farmland	16.97
Total Impacts	**16.97**

38.5869,
-121.8034

County Rd 98

County Rd 30

Panel 1

Panel 2

Project Boundary - (106.7 acres)

Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland

Farmland of Local Importance

Farmland of Local Potential

Prime Farmland

Unique Farmland

Impacts to FMMP Farmland - (16.97 acres)

Prime Farmland

NORTH

1:5,000

0 200 400 Feet

Panel 1 of 4

Data Sources: ESRI, Yolo County 4/13/2018, FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal A
Exhibit A

gallaway ENTERPRISES

GE: #18-119 Map Date: 6/28/2021

Acres Impacted	
	Permanent Impacts
Prime Farmland	16.97
Total Impacts	**16.97**

Panel 1
Panel 2

County Rd 98

County Rd 31

Panel 2
Panel 3

Project Boundary - (106.7 acres)
Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland
Farmland of Local Importance
Farmland of Local Potential
Prime Farmland
Unique Farmland

Impacts to FMMP Farmland - (16.97 acres)

Prime Farmland

NORTH

1:5,000
0 200 400 Feet

Panel 2 of 4

Data Sources: ESRI, Yolo County 4/13/2018, FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal A
Exhibit A

gallaway ENTERPRISES

GE: #18-119 Map Date: 6/28/2021

Acres Impacted	
	Permanent Impacts
Prime Farmland	16.97
Total Impacts	**16.97**

Panel 2

Panel 3

Russell Blvd

County Rd 98

Hutchinson Dr

Panel 3

Panel 4

Project Boundary - (106.7 acres)

Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland

Farmland of Local Importance

Farmland of Local Potential

Prime Farmland

Unique Farmland

Impacts to FMMP Farmland - (16.97 acres)

Prime Farmland

NORTH

1:5,000

0 200 400 Feet

Panel 3 of 4

Data Sources: ESRI, Yolo County 4/13/2018, FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal A
Exhibit A

gallaway ENTERPRISES

GE: #18-119 Map Date: 6/28/2021

Acres Impacted	
	Permanent Impacts
Prime Farmland	16.97
Total Impacts	**16.97**

Hutchinson Dr

Panel 3

Panel 4

County Rd 98

38.5272,
-121.8031

Putah Creek

Project Boundary - (106.7 acres)

Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland

Farmland of Local Importance

Farmland of Local Potential

Prime Farmland

Unique Farmland

Impacts to FMMP Farmland - (16.97 acres)

Prime Farmland

NORTH

1:5,000

0 200 400 Feet

Panel 4 of 4

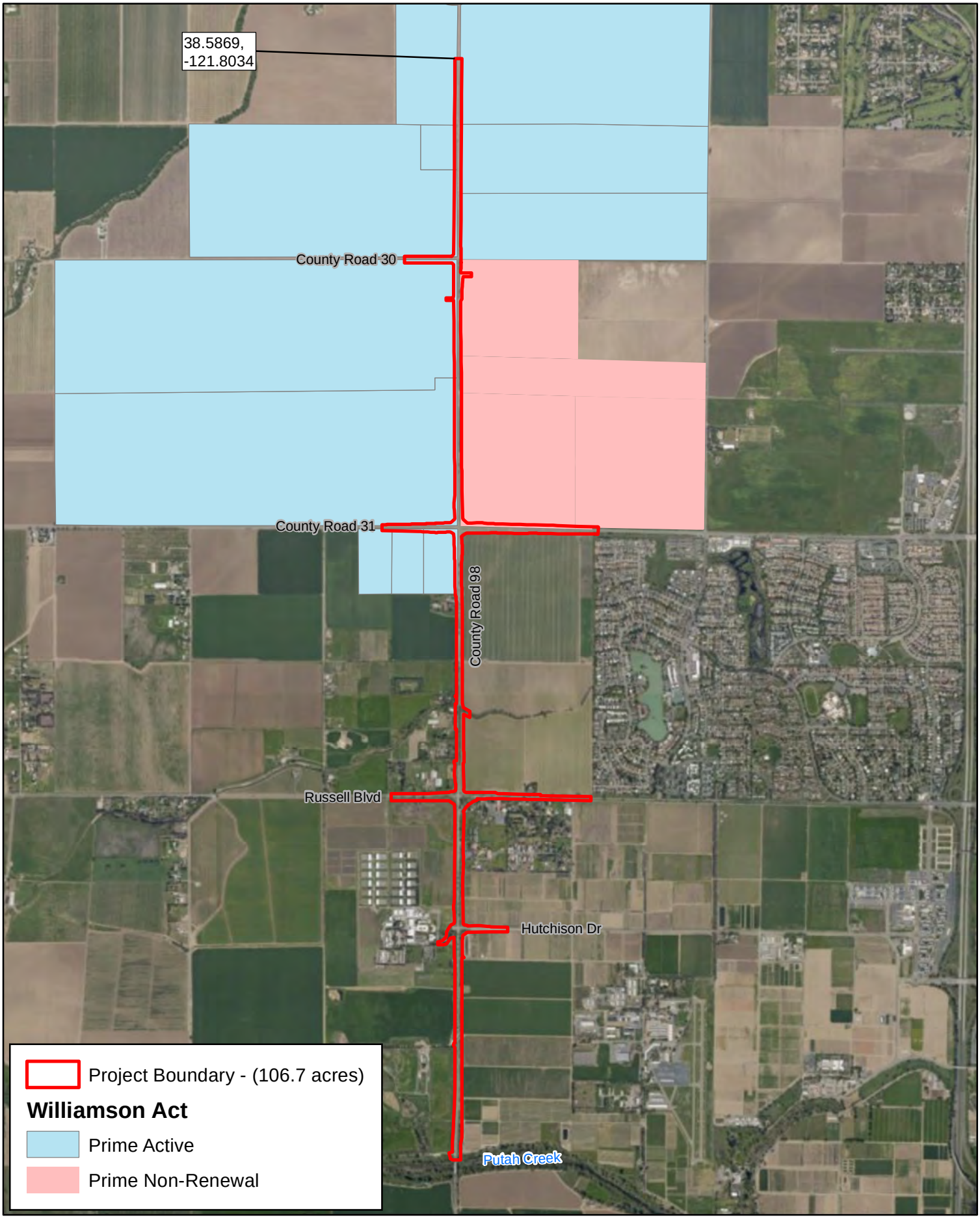
Data Sources: ESRI, Yolo County 4/13/2018,
FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal A
Exhibit A

gallaway ENTERPRISES

GE: #18-119 Map Date: 6/28/2021

Attachment E: Williamson Act Parcels



NORTH

1:29,586

0 1,000 2,000 Feet

Data Sources: ESRI, Yolo County, Maxar 07/13/2017

County Road 98 Bike and Safety Improvements Phase II
Williamson Act Parcels

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/20/2020

Attachment F: Exhibit B, Proposal B

Acres Impacted	
	Permanent Impacts
Prime Farmland	25.63
Total Impacts	**25.63**

38.5869,
-121.8034

County Rd 98

County Rd 30

Panel 1

Panel 2

Project Boundary - (106.7 acres)

Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland

Farmland of Local Importance

Farmland of Local Potential

Prime Farmland

Unique Farmland

Impacts to FMMP Farmland - (25.63 acres)

Prime Farmland

NORTH

1:5,000

0 200 400 Feet

Panel 1 of 4

Data Sources: ESRI, Yolo County 4/13/2018,
FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal B
Exhibit B

gallaway ENTERPRISES

GE: #18-119 Map Date: 06/28/2021

Acres Impacted	
	Permanent Impacts
Prime Farmland	25.63
Total Impacts	**25.63**

Panel 1
Panel 2

County Rd 98

County Rd 31

Panel 2
Panel 3

Project Boundary - (106.7 acres)
Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland
Farmland of Local Importance
Farmland of Local Potential
Prime Farmland
Unique Farmland

Impacts to FMMP Farmland - (25.63 acres)

Prime Farmland

NORTH

1:5,000
0 200 400 Feet

Panel 2 of 4

Data Sources: ESRI, Yolo County 4/13/2018, FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal B
Exhibit B

gallaway ENTERPRISES

GE: #18-119 Map Date: 06/28/2021

Acres Impacted	
	Permanent Impacts
Prime Farmland	25.63
Total Impacts	**25.63**

Panel 2

Panel 3

Russell Blvd

County Rd 98

Hutchinson Dr

Panel 3

Panel 4

Project Boundary - (106.7 acres)

Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland

Farmland of Local Importance

Farmland of Local Potential

Prime Farmland

Unique Farmland

Impacts to FMMP Farmland - (25.63 acres)

Prime Farmland

NORTH

1:5,000

0 200 400 Feet

Panel 3 of 4

Data Sources: ESRI, Yolo County 4/13/2018, FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal B
Exhibit B

gallaway ENTERPRISES

GE: #18-119 Map Date: 06/28/2021

Acres Impacted	
	Permanent Impacts
Prime Farmland	25.63
Total Impacts	**25.63**

Hutchinson Dr

Panel 3

Panel 4

County Rd 98

38.5272,
-121.8031

Putah Creek

Project Boundary - (106.7 acres)

Site Plan

FMMP Farmland Type - (106.7 acres)

Not Farmland

Farmland of Local Importance

Farmland of Local Potential

Prime Farmland

Unique Farmland

Impacts to FMMP Farmland - (25.63 acres)

Prime Farmland

NORTH

1:5,000

0 200 400 Feet

Panel 4 of 4

Data Sources: ESRI, Yolo County 4/13/2018,
FMMP 2016 Farmland Data

County Road 98 Bike and Safety Improvements Phase II
Farmland Impacts Assessment Proposal B
Exhibit B

gallaway ENTERPRISES

GE: #18-119 Map Date: 06/28/2021

Appendix C

Road Construction Emissions Model Output

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> CR98 PHII Yolo

Project Phases (Pounds)	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)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.30	12.56	10.04	10.47	0.47	10.00	2.49	0.41	2.08	0.03	2,745.83	0.62	0.05	2,776.86
Grading/Excavation	4.54	45.05	41.10	11.74	1.74	10.00	3.62	1.54	2.08	0.11	10,180.46	2.91	0.12	10,290.23
Drainage/Utilities/Sub-Grade	2.94	30.60	25.41	11.07	1.07	10.00	3.04	0.96	2.08	0.07	6,228.30	1.21	0.08	6,283.69
Paving	1.61	20.16	13.41	0.66	0.66	0.00	0.57	0.57	0.00	0.04	3,382.34	0.79	0.06	3,419.75
Maximum (pounds/day)	4.54	45.05	41.10	11.74	1.74	10.00	3.62	1.54	2.08	0.11	10,180.46	2.91	0.12	10,290.23
Total (tons/construction project)	0.35	3.63	3.12	1.07	0.13	0.94	0.31	0.12	0.19	0.01	773.74	0.19	0.01	781.66

Notes:

Project Start Year ->	2025
Project Length (months) ->	10
Total Project Area (acres) ->	107
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	600	40
Grading/Excavation	0	0	0	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	960	40
Paving	0	0	0	0	800	40

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

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> CR98 PHII Yolo

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.14	0.11	0.12	0.01	0.11	0.03	0.00	0.02	0.00	30.20	0.01	0.00	27.71
Grading/Excavation	0.20	1.98	1.81	0.52	0.08	0.44	0.16	0.07	0.09	0.00	447.94	0.13	0.01	410.75
Drainage/Utilities/Sub-Grade	0.11	1.18	0.98	0.43	0.04	0.39	0.12	0.04	0.08	0.00	239.79	0.05	0.00	219.47
Paving	0.03	0.33	0.22	0.01	0.01	0.00	0.01	0.01	0.00	0.00	55.81	0.01	0.00	51.19
Maximum (tons/phase)	0.20	1.98	1.81	0.52	0.08	0.44	0.16	0.07	0.09	0.00	447.94	0.13	0.01	410.75
Total (tons/construction project)	0.35	3.63	3.12	1.07	0.13	0.94	0.31	0.12	0.19	0.01	773.74	0.19	0.01	709.12

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

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix D

Draft Delineation of Waters of the U.S. Map

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

Label	Cowardin	Type	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	POW	Pond	38.546708	-121.806	NA	NA	1362.2	0.03
					Adjacent Weltand Features Totals =	**NA**	**1362.2**	**0.03**

Other Waters

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
T01	R4	Intermittent	38.547042	-121.8061	13.7	26.7	365.7	0.01
T02	R4	Intermittent	38.546865	-121.807	8.6	531.3	4592.1	0.11
T03	R4	Intermittent	38.548794	-121.8034	9.0	55.0	492.8	0.01
T04	R4SB	Intermittent	38.551535	-121.8028	16.0	438.1	7010.4	0.16
T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
T06	R4	Intermittent	38.550226	-121.8031	7.0	946.2	6623.1	0.15
					Tributary Totals =	**2033.8**	**19830.2**	**0.46**
					Total Waters of the U.S. =	**2033.8**	**21192.4**	**0.49**

*Widths are represented as averages

Non-Jurisdictional by Rule

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
EX01	R4	Irrigation Ditch	38.573899	-121.8036	13.4	194.0	2600.5	0.06
EX02	R4	Irrigation Ditch	38.574678	-121.8029	18.0	491.2	8841.1	0.20
					Excluded Features Totals =	**685.2**	**11441.6**	**0.26**

Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

38.5869, -121.8034

County Rd 98

County Rd 30

P01 EX02 C06 P02 P03 EX01 C07

Panel 1
Panel 2

- Project Boundary - (106.7 acres)
- 1 foot contours
- OHWM Transect - 'X-X'
- Culvert - C#
- Flow Direction
- Photo Points - P#*

Data Points

- Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

- Pond

Other Waters - T# - (0.46 acres)

- Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

- Irrigation Ditch

***See Figure 3, Ground Photographs Map, for additional information on Photo Points.**

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 1 of 4)

Delineation by: E. Gregg
Map by: C. Davis

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Panel 1

Panel 2

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

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T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
T06	R4	Intermittent	38.550226	-121.8031	7.0	946.2	6623.1	0.15
					Tributary Totals =	**2033.8**	**19830.2**	**0.46**
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*Widths are represented as averages

Non-Jurisdictional by Rule

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Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

County Rd 98

County Rd 31

P04

TP01

P11

P04

TP01

Project Boundary - (106.7 acres)
1 foot contours
OHWM Transect - 'X-X'
Culvert - C#
Flow Direction
Photo Points - P#*

Data Points

Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

Pond

Other Waters - T# - (0.46 acres)

Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

Irrigation Ditch

*See Figure 3, Ground Photographs Map, for additional information on Photo Points.

Panel 2

Panel 3

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 2 of 4)

Delineation by: E. Gregg
Map by: C. Davis

gallaway ENTERPRISES

GE: #18-119

Map Date: 08/31/2020

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

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Other Waters

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T03	R4	Intermittent	38.548794	-121.8034	9.0	55.0	492.8	0.01
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T05	R4SB	Intermittent	38.551721	-121.8034	20.4	36.5	746.1	0.02
T06	R4	Intermittent	38.550226	-121.8031	7.0	946.2	6623.1	0.15
					Tributary Totals =	**2033.8**	**19830.2**	**0.46**
					Total Waters of the U.S. =	**2033.8**	**21192.4**	**0.49**

*Widths are represented as averages

Non-Jurisdictional by Rule

Label	Cowardin	Description	Location (Lat/Long)		Width (ft)*	Length (ft)	Area (sq ft)	Acres
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Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

Panel 2
Panel 3
C05
P09
T05
'D-D'
'C-C'
"7 feet'
T04
'19 feet'
T06
C03
T03
P07
C04
'9 Feet'
P08
'A-A'
T02
T01
P06
C02
P05
WF01
C01
Russell Blvd
County Rd 98
P10
Hutchinson Dr
Panel 3
Panel 4

Project Boundary - (106.7 acres)
1 foot contours
OHWM Transect - 'X-X'
Culvert - C#
Flow Direction
Photo Points - P#*

Data Points

Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

Pond

Other Waters - T# - (0.46 acres)

Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

Irrigation Ditch

*See Figure 3, Ground Photographs Map, for additional information on Photo Points.

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 3 of 4)

Delineation by: E. Gregg
Map by: C. Davis

gallaway ENTERPRISES

GE: #18-119

Map Date: 12/11/2020

Draft Delineation of Waters of the U.S.

Adjacent Wetland Features

Label	Cowardin	Type	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	POW	Pond	38.546708	-121.806	NA	NA	1362.2	0.03
					Adjacent Weltand Features Totals =	**NA**	**1362.2**	**0.03**

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					Excluded Features Totals =	**685.2**	**11441.6**	**0.26**

Coordinate System: NAD 1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

P10

Hutchinson Dr

Panel 3

Panel 4

County Rd 98

38.5272, -121.8031

Putah Creek

- Project Boundary - (106.7 acres)
- 1 foot contours
- OHWM Transect - 'X-X'
- Culvert - C#
- Flow Direction
- Photo Points - P#*

Data Points

- Test Pit - TP#

Wetland Features - WF# - (0.03 acres)

- Pond

Other Waters - T# - (0.46 acres)

- Intermittent

Non-Jurisdictional by Rule - (0.26 acres)

- Irrigation Ditch

***See Figure 3, Ground Photographs Map, for additional information on Photo Points.**

NORTH

1:4,800 1 inch = 400 feet
0 200 400 Feet

Data Sources: ESRI, Yolo County 4/13/2018

County Road 98 Bike and Safety Improvements Phase II
Draft Delineation of Waters of the U.S.
Exhibit A (Panel 4 of 4)

Delineation by: E. Gregg
Map by: C. Davis

gallaway ENTERPRISES

GE: #18-119 Map Date: 08/31/2020

Appendix E

Hydraulics Report

PACIFIC HYDROLOGIC INCORPORATED
1062 MARKET STREET, REDDING, CA 96001
530-245-0864
PACIFIC_HYDROLOGIC@SBCGLOBAL.NET

July 29, 2021
Revised August 4, 2021

Lilia Razo
Yolo County Department of Public Works
292 West Beamer Street
Woodland, CA 95834

Re: CR-98 Improvement Project, Phase II, Flood Hydraulics

Dear Ms. Razo:

Pacific Hydrologic Incorporated (PHI) has completed an evaluation of flood hydraulic conditions associated with revising the grade of County Road 98 along with replacing and adding culverts. Background, data, analysis, and conclusions are described in the following paragraphs.

Background:

Yolo County anticipates improvements to County Road 98 from the Solano County Line to Yolo County Road 29 for the purpose of accommodating bicycle traffic and improving corridor safety. The improvements include raising the elevation of County Road 98 at locations where the road is overtopped during infrequent flood events. At and south of County Road 31 overflow during the FEMA Base Flood (FEMA estimate of the most probable 100-year flood) has been mapped by FEMA using approximate study methods without 100-year flood water surface elevations determined. North Davis Drain, an overflow swale of Dry Slough, however has flood risk mapped by FEMA using detailed study methods. As such, new encroachments in the North Davis Drain floodplain are not allowed to increase the water surface elevation or extent of inundation during the FEMA Base Flood (FEMA estimate of the most probable 100-year flood event) unless risks of flood damage are mitigated and a FEMA Conditional Letter of Map Revision (CLOMR) has been issued. The cost and time required for mitigation of flood risk on private properties and for obtaining a FEMA CLOMR are often prohibitive hence the preferred approach to deal with new encroachments is to provide accommodation for conveyance of the FEMA Base Flood without increasing the water surface elevation or the extent of inundation. The current effective FEMA Flood Insurance Rate Map (FIRM) along the County Road 98 corridor is shown in Figure 1.

Study Approach:

This study consists of a flood hydrologic analysis using a rainfall-runoff model to identify runoff approaching the County Road 98 corridor from six subbasins to the west followed by a two dimensional (2D) backwater model identifying existing and proposed condition flood hydraulic characteristics through the study area. The 2D study area consists of a corridor approximately one mile wide extending the full reach of anticipated improvements.

Site Conditions and Basins:

The reach of County Road 98 subject to Phase II improvements is located in an agricultural area with very low gradient land sloping to the east and northeast. A topographic map of the areas directly contributing to County Road 98 cross drainage was developed from CVFED LiDAR terrain data. Topographic data indicates six basins contributing to cross-drainage at County Road 98. The basins are identified in Figure 2. In addition to local drainage, Basin 2 containing North Davis Drain conveys substantial overflow from Dry Slough during the most probable 100-year flood in Dry Slough.

Flood Hydrologic Analysis:

The US Army Corps of Engineers' HEC-HMS v4.2.1 rainfall-runoff program was employed for identifying peak flows of recurrent flood events. The model was run to estimate peak flow during the most probable 100-year normal probability (50% confidence) storm events considering AMC-II conditions. Subbasin areas are summarized in Table 1.

Table 1: Subbasin Areas

Basin	Area (sq mi)
1	0.40
2 (North Davis Drain)	2.89
3	0.98
4a (unnamed channel, upper)	2.36
4b (unnamed channel, lower)	4.48
5	1.24
6	0.63

SCS curve numbers used to estimate losses were from the Yolo County City/County Drainage Manual, Volume 1 (Yolo County Drainage Manual). Initial losses were estimated from curve numbers using TR-55 Table 4-1. Impervious percent within subbasins were estimated to be 1- to 3-percent loosely based on level of development. Curve number computations are included in Appendix A.

Subbasin lag was estimated using the USBR lag equation based on length of main channel to the basin boundary, length across the basin from the point of concentration through the basin centroid (USBR definition), average basin slope, and overland flow roughness coefficient. The first three parameters were scaled and calculated from the topographic map and the overland flow roughness coefficient was estimated to be 0.115 from Table 12 of the Yolo County Drainage Manual for grassland/agricultural, undeveloped conditions. Lag time calculations are included in Appendix A.

Runoff from subbasin 4a was routed to County Road 98 assuming a channel velocity of 4-feet per second and combined with runoff from subbasin 4b to create a hydrograph for Basin 4 at County Road 98.

Subbasin loss and lag data are summarized in Table 2. Peak flows at County Road 98 determined by the rainfall-runoff model during the most probable 100-year storm are identified in Table 3.

Table 2: Summary of Subbasin Loss and Lag Data

Subbasin	Curve Number	Initial Abstraction (inches)	Impervious Area (percent)	Lag (minutes)
1	80	.50	1	104
2	81	.47	1	233
3	82	.44	2	125
4a	71	.82	2	276
4b	81	.47	2	359
5	81	.47	3	217
6	78	.56	3	221

Table 3: Peak Flows at County Road 98 during Most Probable 100-year Storm

Subbasin	100-year Storm Peak Flow (CFS)
1	126
2	613
3	298
4	2019
5	276
6	127

Dry Creek Overflow:

Flood Risk mapped by FEMA along North Davis Drain represents overflow from Dry Slough during the most probable 100-year flood. The FEMA Flood Insurance Study Report (FIS Report) identifies a 100-year flood peak flow of 3359 CFS in Dry Slough upstream of North Davis Drain and of 714 CFS downstream of North Davis Drain. The difference represents overflow to North Davis Drain. The 2D backwater model, however, requires a flood hydrograph rather than a peak flow. Therefore the flood hydrograph for Basin 4 was scaled up to match the peak flow in Dry Creek upstream of North Davis Drain, was delayed to separate it from the local flood peak associated with the direct contributing area, was added to the recession flow from the direct contributing area, and was reduced by the 714 CFS continuing down Dry Slough. Considering overflow from Dry Slough, the peak flow entering Basin 2 is 2705 CFS. The resulting flood hydrograph for Basin 2 at County Road 98 is shown in Figure 3.

Flood Hydraulic Analysis:

The US Army Corps of Engineers' HEC-RAS v6.0 backwater program was employed for identifying flood flow patterns, peak water surface elevations, and the extent of inundation for existing and proposed conditions. The model was based on terrain data collected by the CVFED program in the period 2003 to 2005. The area of interest (2D domain) was defined as a corridor approximately one mile wide extending for the entire reach of proposed project. Overland flow roughness coefficients were based on land cover data from the National Land Cover Database using Manning's overland flow roughness coefficients identified in the HEC-RAS 2D users manual. Hydrographs representing runoff during the most probable 100-year storm for each of the six basins were entered along the west basin boundaries of the 2D domain. Normal depth was specified for the downstream boundaries at locations where flood flow exited the 2D domain. Hydraulic slope at the downstream boundaries was estimated from the topographic map. "2D area breaklines" and internal boundaries were defined to represent existing and proposed fill prisms of significance to the direction of overflow and pattern of flooding. Existing and proposed culverts of potential significance to flood patterns were defined through internal boundaries. The 2D domain is shown in Figure 4 along with upstream and downstream boundary conditions, 2D area breaklines, and internal boundaries.

Flood Risk Evaluation Criteria:

The study area includes watercourses having flood risk mapped by FEMA using detailed study methods and by approximate study methods. In areas having flood risk mapped by FEMA using detailed study methods, FEMA requires mitigation of any increased risk of damage to structures and approval of a Conditional Letter of Map Revision (CLOMR) prior to construction of any new encroachment resulting in an increase in Base Flood (FEMA estimate of the most probable 100-year flood) water surface elevation or extent of inundation. For this reason most new encroachments within the floodplain are designed to avoid any increase in Base Flood water surface elevation. The North Davis Drain has flood risk mapped by FEMA and is subject to this level of compliance.

At and south of CR-31 watercourses have flood risk mapped by approximate study methods. FEMA allows increases in 100-year flood water surface elevations in these areas provided that the increase in water surface elevation does not increase the risk of damage to structures. If the new encroachment results in changes to the extent of inundation during the most probable 100-year flood, a Letter of Map Revision may be required by FEMA.

Of specific concern for this project is potential flood risk impacts to structures located to the west of CR-98 and to structures within the Stonegate Subdivision in the City of Davis. Under existing conditions, considerable flow overtops CR-98 during the most probable 100-year flood. Raising the grade of CR-98 will increase the elevation of approaching flood water prior to and during overtopping events unless provision is made to preserve the overtopping flow or convey the flow through culverts or bridges. Although not identified on the FEMA FIRM, the existing condition 2D backwater model indicates overflow entering the Stonegate subdivision at two locations. Revising the grade of CR-98, CR-31, and CR-32 has the potential to change the pattern of flooding including at Stonegate Subdivision. In addition to avoiding increasing flood water surface elevations west of CR-98 (upstream), grade revisions must be designed in a manner that does not increase overflow entering the Stonegate subdivision.

Existing Flood Hydraulic Conditions:

Flood conditions at CR-98 are straightforward for Basins 1 and 2. Direct runoff from Basin 1 overtops CR-98 and exits the 2D domain substantially separate from flow in other basins. Dry Slough overflow thorough Basin 2 is substantially as identified on the FEMA FIRM as North Davis Drain. Flood conditions at CR-98 related to runoff from the other basins is not straightforward or as identified on the FEMA FIRM. The most significant difference being the fact that considerable flow in the unnamed channel during the 100-year flood peak exits the channel west of CR-98, flows to the north, and crosses CR-98 in the vicinity of CR-31. This overflow path is not identified on the FEMA FIRM. Runoff from Basin 3 combines with overflow from the unnamed channel before overtopping CR-98. Runoff from Basins 5 and 6 combine with additional overflow from the unnamed channel west of CR-98 before being conveyed past CR-98 as overflow and through culverts.

Proposed Condition Flood Hydraulic Analysis:

A proposed condition backwater model run was conducted by replacing existing road crown elevation data in a copy of the existing condition backwater model dataset with initial proposed crown elevation data and replacing or adding culvert data for replaced and added culverts. The backwater program was then run for the initial proposed condition dataset. The initial proposed condition backwater model run indicated significant potential flood risk impacts to structures and increased water surface elevations in North Davis Drain west of CR-98. Road crown grade revisions were recommended and evaluated several times. At such point in time that flood risk impacts were minor requiring only minor adjustments in road crown elevations, road crown elevations and the size of the unnamed channel culvert were adjusted by trial and error until finding a combination of road crown elevations and culvert size that avoided increases in water surface elevation at all structures, along the west side of Stonegate Subdivision, and in North Davis Drain.

Results:

Peak water surface elevations for existing and proposed conditions are identified on Figure 5. The difference in peak water surface elevations is identified on Figure 6. Maximum depths and velocities of flow are shown on Figures 7 and 8 respectively. Existing and proposed road crown elevation data employed in the backwater models for CR-98, CR-31, and CR-32 are identified in Figures 9 through 11 respectively. Tables identifying existing and proposed road crown data employed in the backwater model are presented in Appendix B.

Conclusions:

Revision of road crown grades as indicated in Figures 9 through 11 and replacing the existing culvert conveying the unnamed channel with a new 12’x5’ culvert will avoid any increase in peak water surface elevations at structures and along the west boundary of the Stonegate Subdivision.

Although the water surface elevation within the bounds of the North Davis Drain floodplain is higher for the proposed condition than for the existing condition at one location, given that there is no increase in the water surface elevation at the floodplain limits, no increase in the extent of inundation, and no structures impacted, the evaluation should be considered sufficient to meet

FEMA's "no increase" requirement. The variation in water surface elevation across a cross-section of North Davis Drain is associated with the more precise 2D modeling approach whereas FEMA relied upon a linear backwater model incapable of representing variation in water surface elevation across a cross-section. The use of more detailed backwater models to demonstrate no impact related to public improvements (primarily bridge replacement projects) rather than relying on the FEMA backwater model is a common practice (the FEMA backwater model for North Davis Drain had been requested but not included in the package of North Davis Drain backwater models provided by FEMA).

Shallow flow over road prisms is very efficient and often difficult or impossible to convey in culverts through the road prism especially in areas of low relief. Consequently, flood risk is closely coupled with flow over road prisms and minor differences in the road crown profiles can have significant impacts to flood risk.

The initial and some subsequent proposed condition backwater model runs indicated new areas of inundation east of CR-98 approximately 1400-feet south of CR-32. This new inundation was found to be due to a new culvert proposed at road station 61+00. The culvert was removed from the final proposed condition backwater model.

Recommendations:

Avoid installation of a new culvert in the greater vicinity of road station 61+00 and replace the existing culvert conveying the unnamed channel with a new 12'x5' culvert.

It has been presumed that the proposed project can be constructed to meet the road crown grades in the final proposed condition backwater. If changes to the proposed road crown grades are necessary for the project to be constructed, the changes should be re-evaluated using the backwater model to assure no increase in flood risk.

Sincerely,

Norman S. Braithwaite, P.E., President
Pacific Hydrologic Incorporated

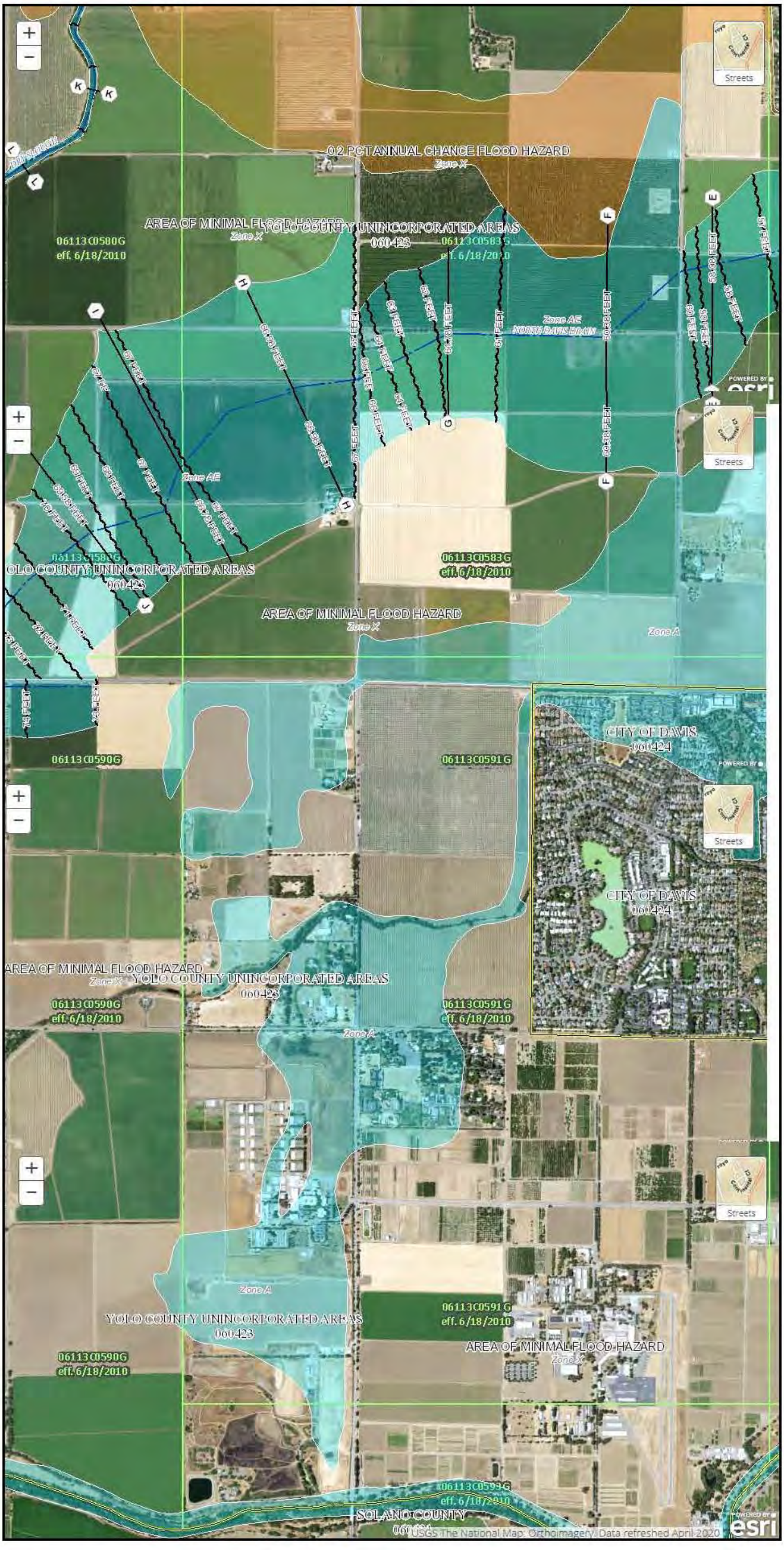

Figure 1: FEMA Flood Insurance Rate Map

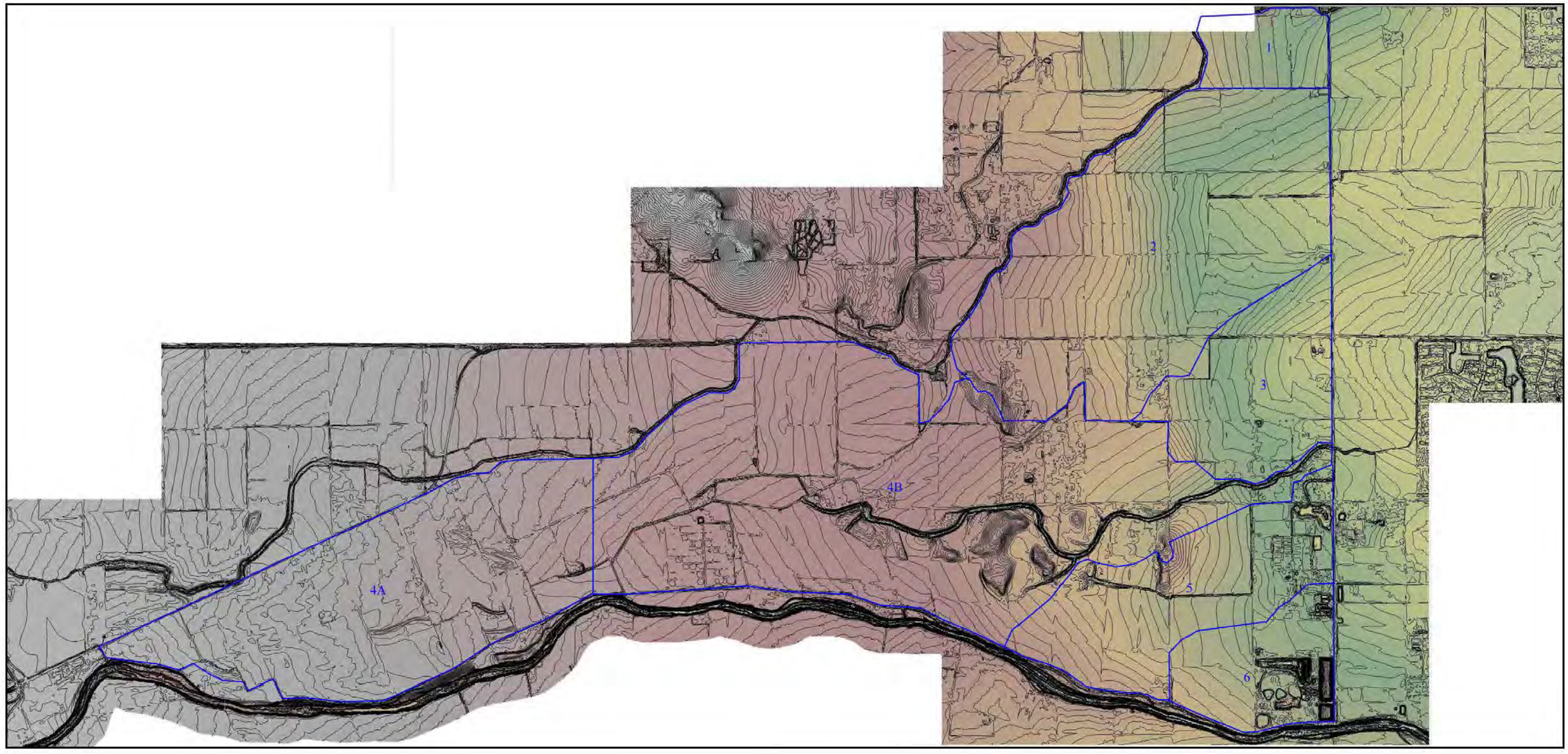

Figure 2: Direct Contributing Basins

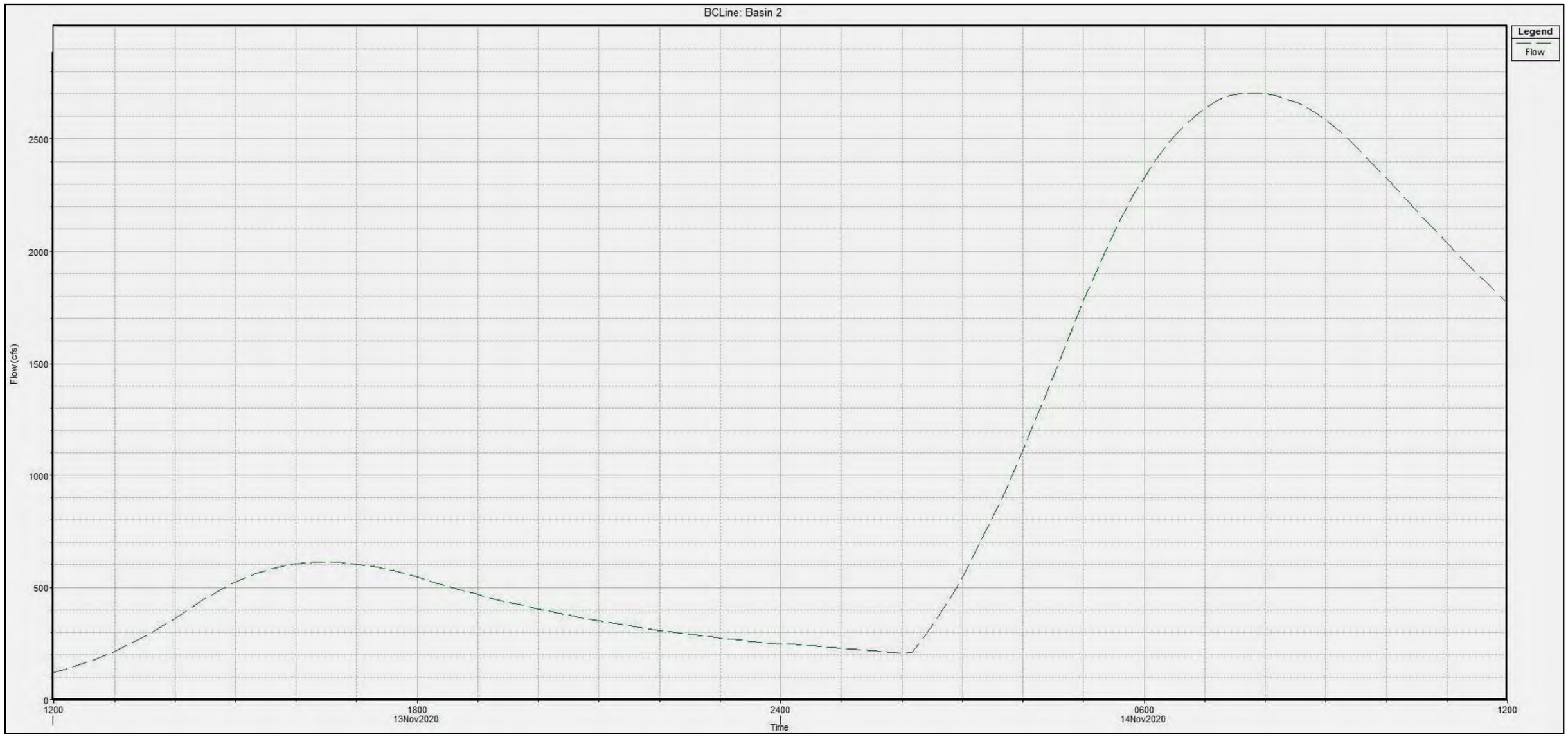

Figure 3: Flood Hydrograph for Basin 2
Peak at 13NOV2020 1630 is from direct contributing basin
Peak at 14NOV2020 0800 is Dry Slough overflow
Delay between peaks is assumed

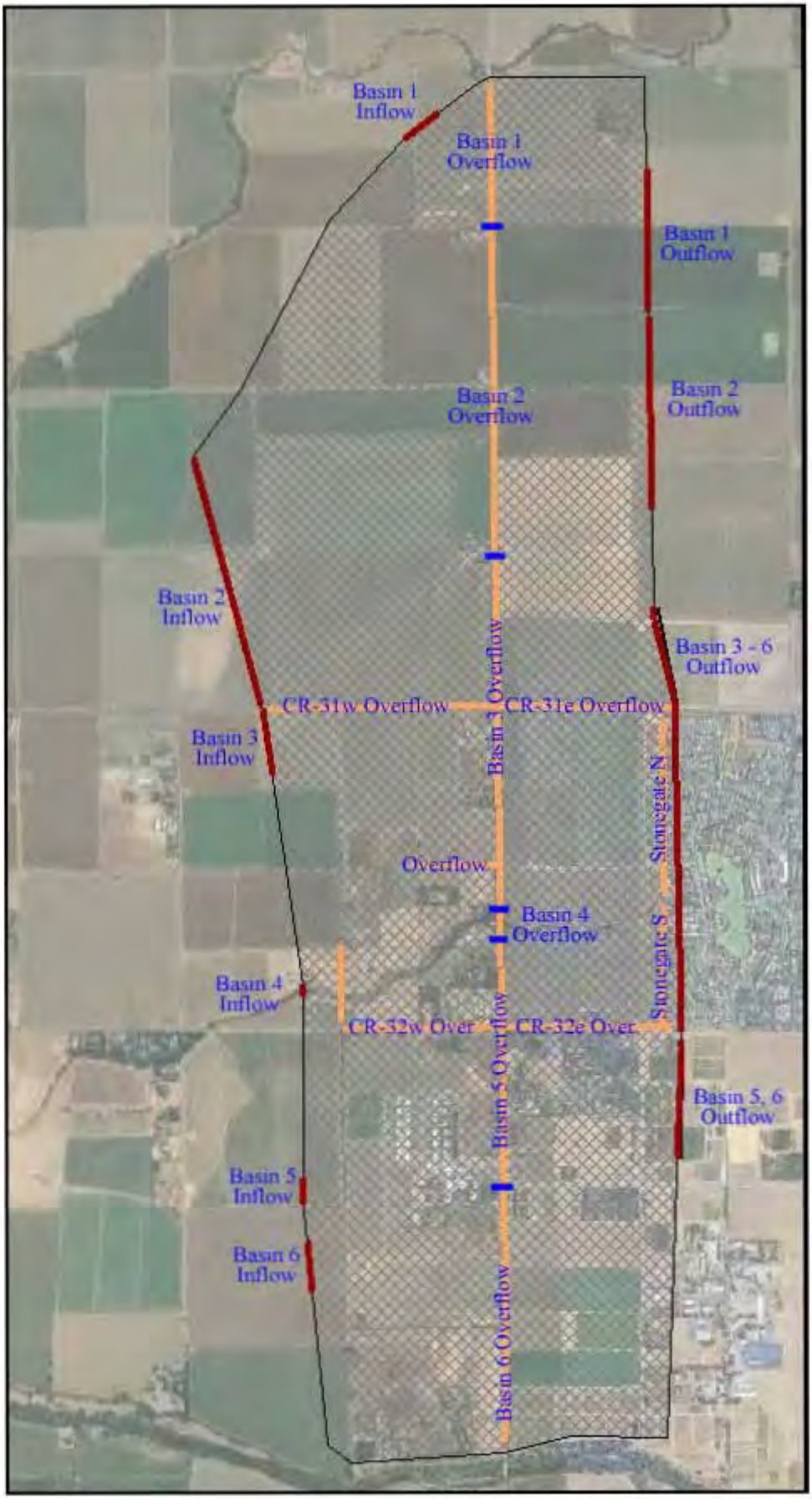

Figure 4: 2D Domain and Boundaries

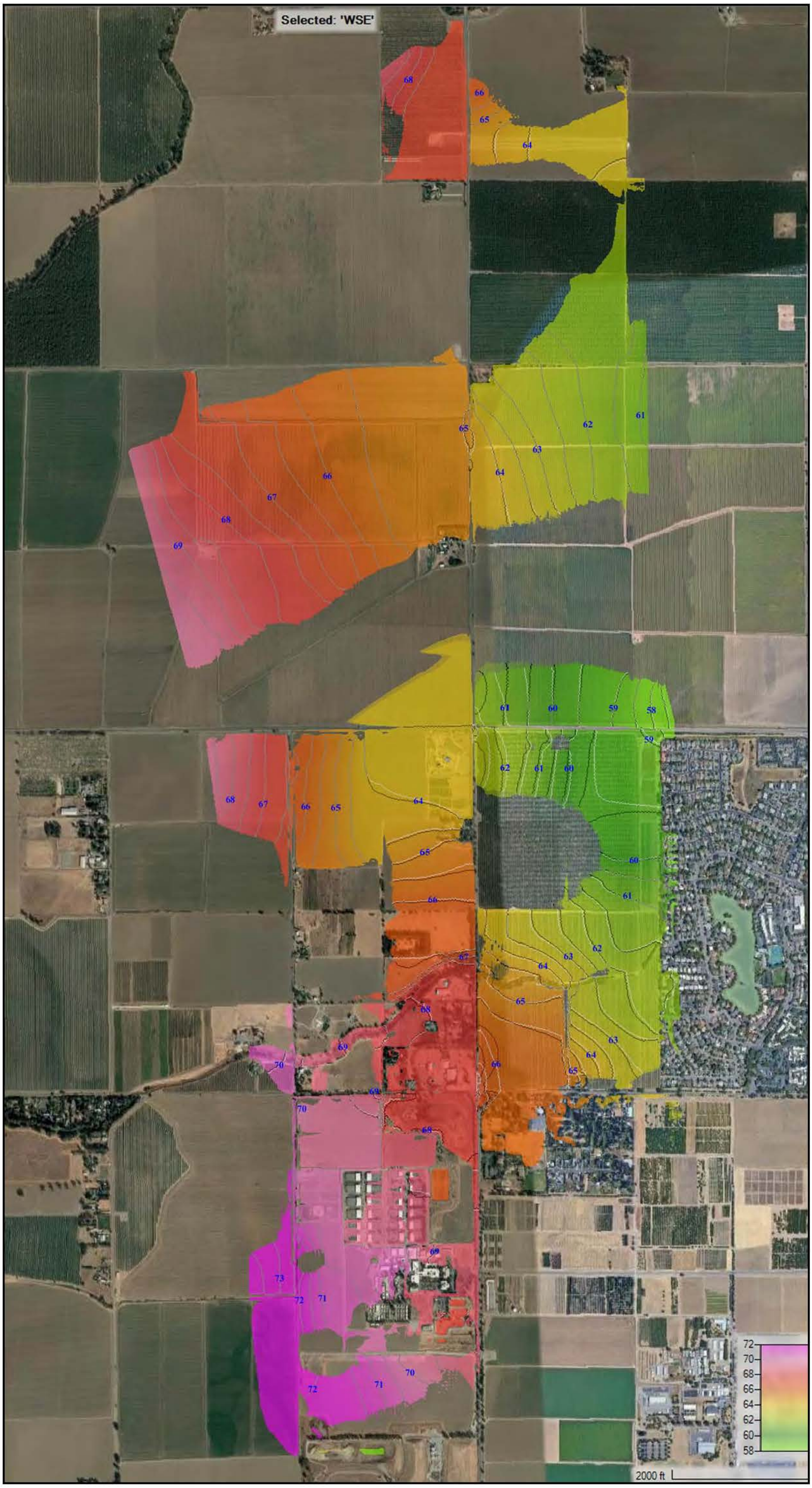

Figure 5: Existing and Proposed Condition Water Surface Elevations, Contour Interval = 0.5-foot
White = Existing, Black = Proposed, Gray = Coincident, Black uphill of White = Lower Water Surface Elevation

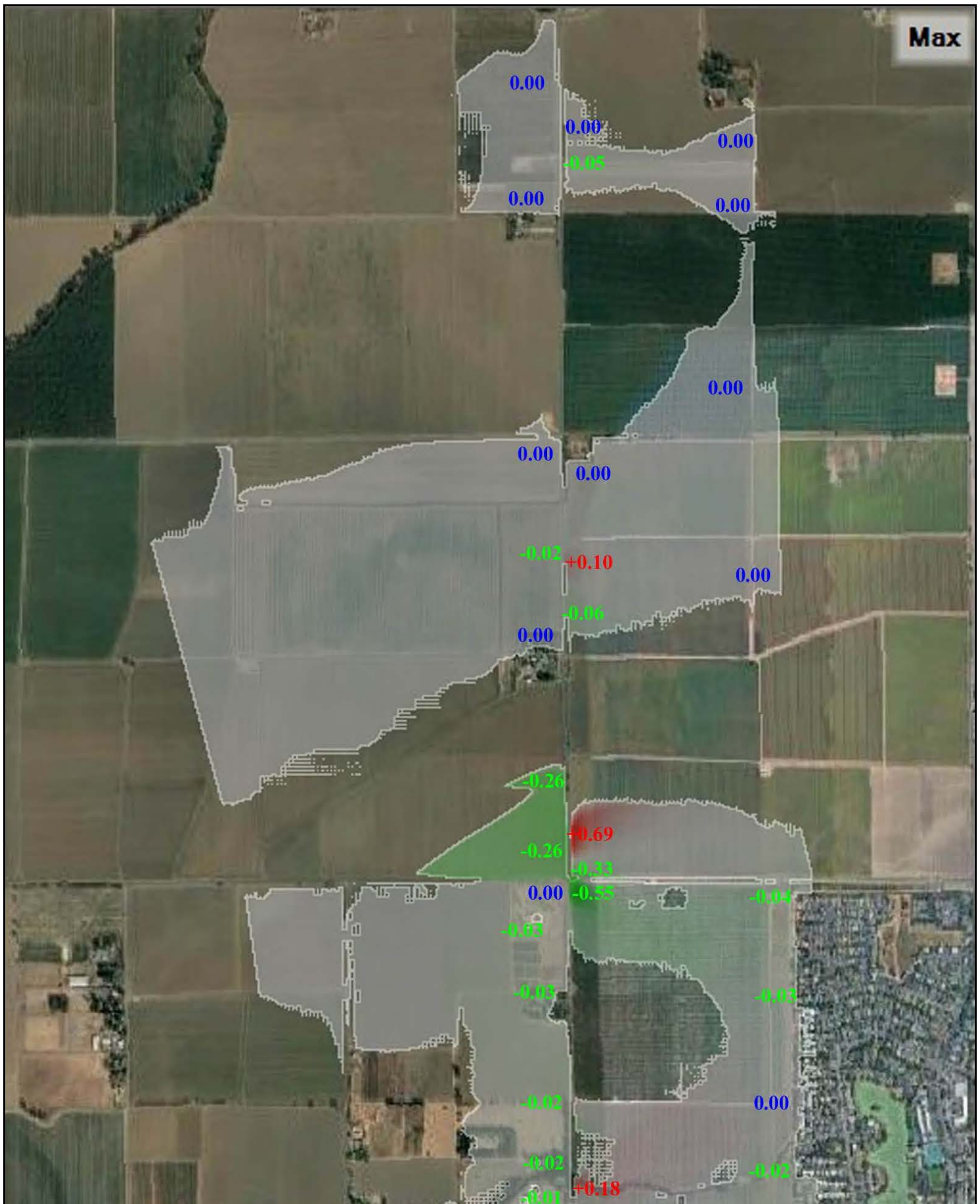

Figure 6: Water Surface Elevation Impact "Heat Map" (Change in Water Surface Elevation) – Feet

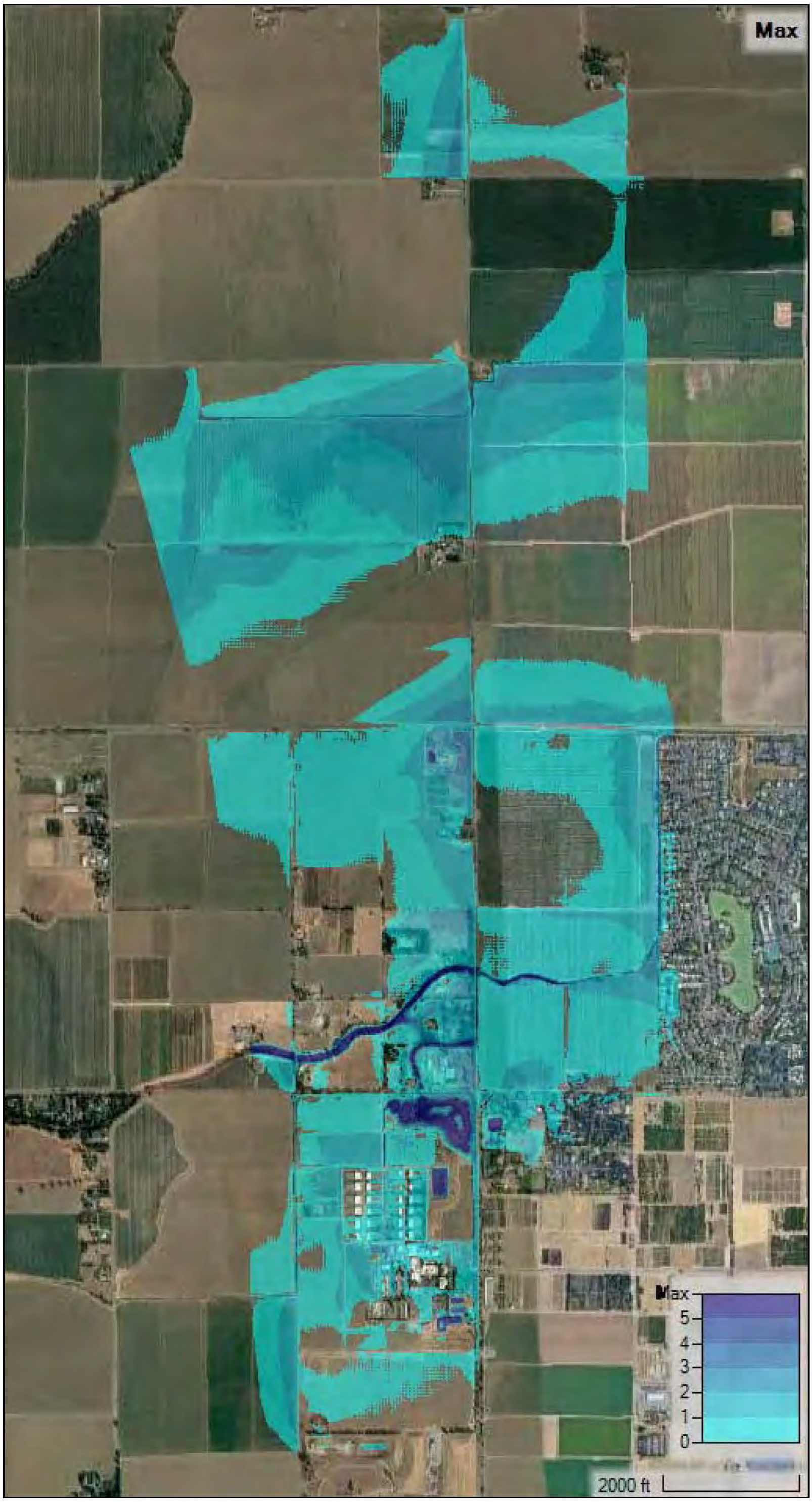

Figure 7: Proposed Condition Maximum Depth – Feet (Existing Condition near Identical)

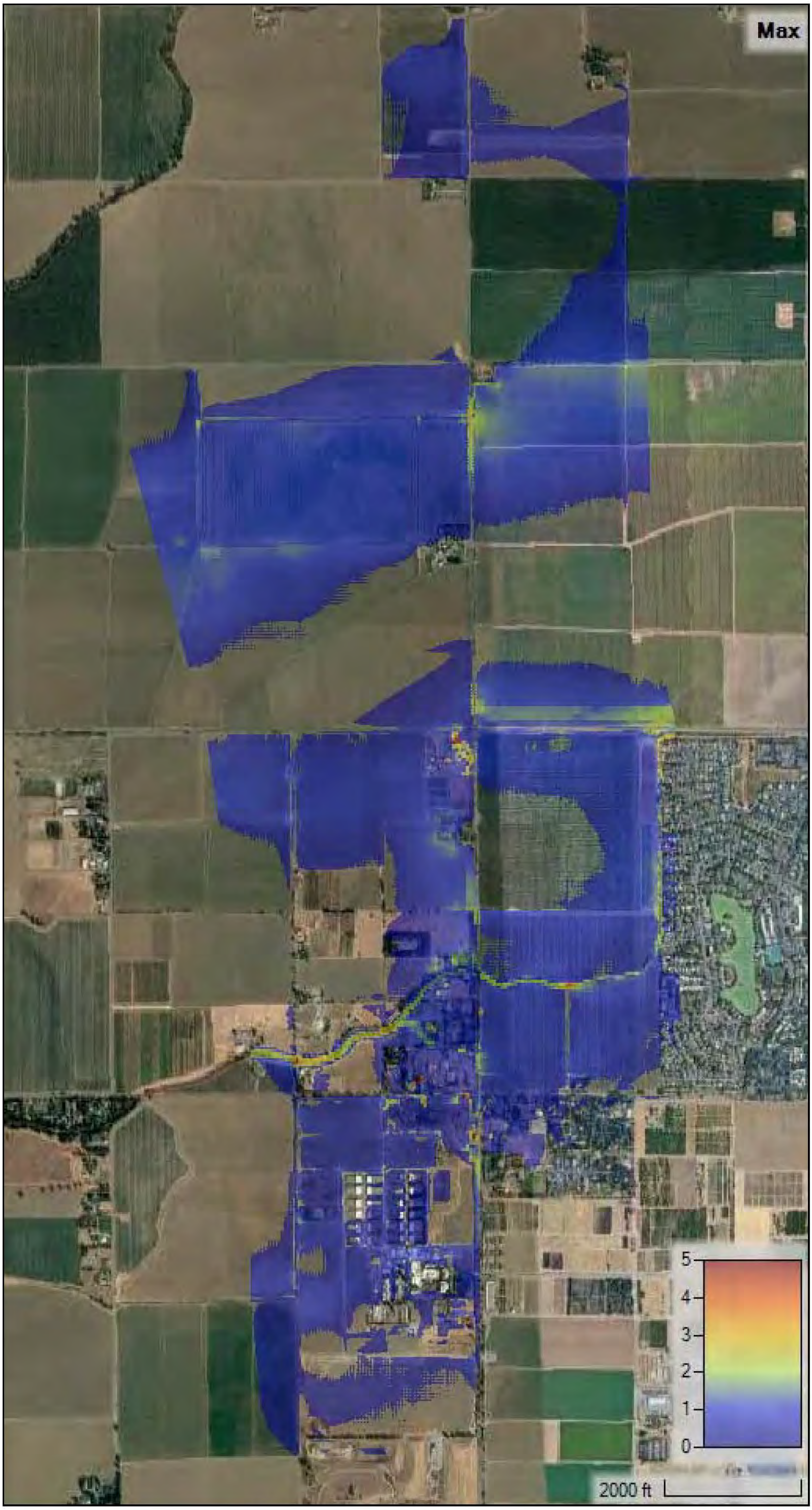

Figure 8: Proposed Condition Maximum Velocity – Feet per Second (Existing Condition near Identical)

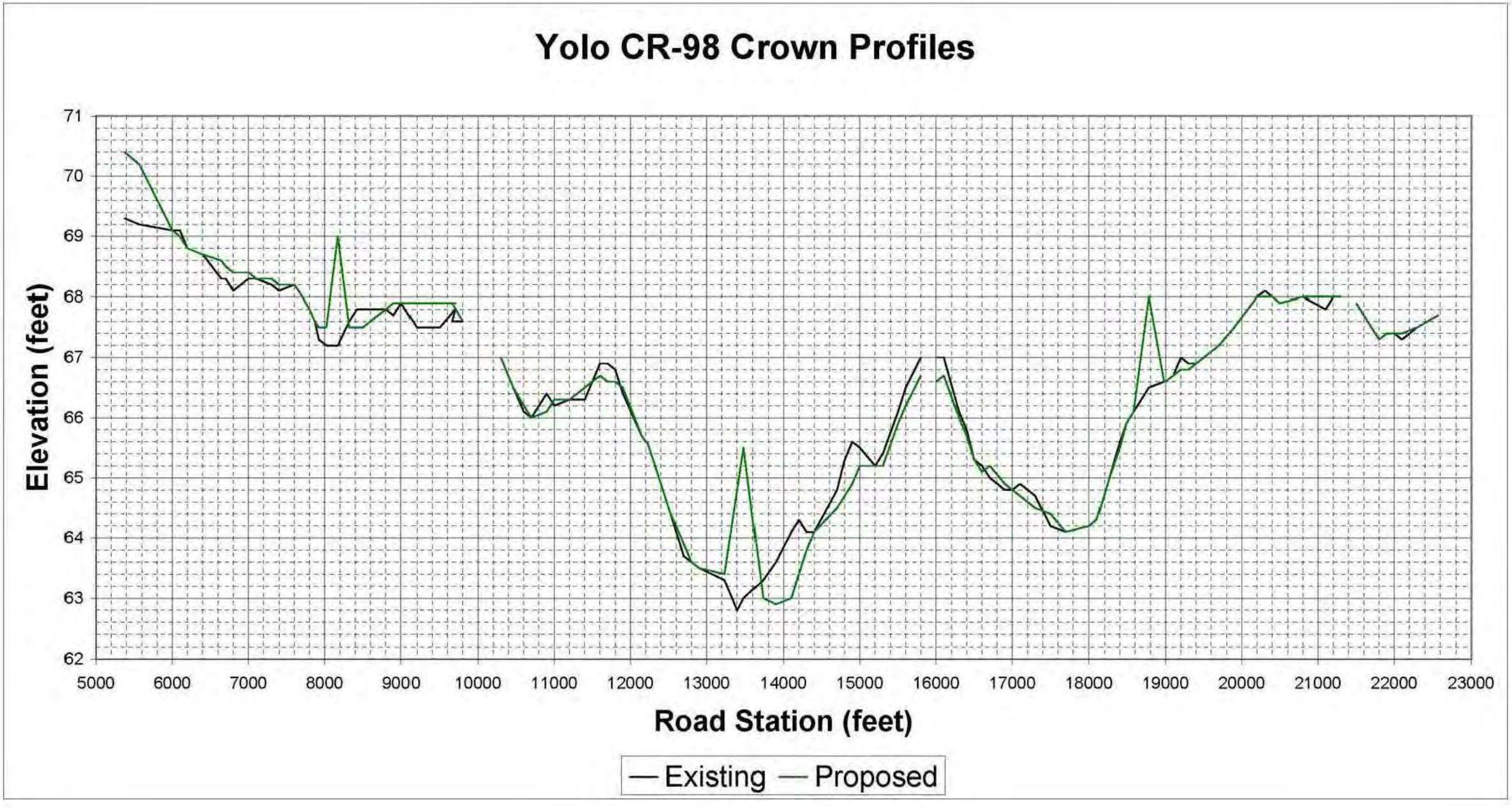

Figure 9: Existing and Proposed Road Crown Profile, County Road 98

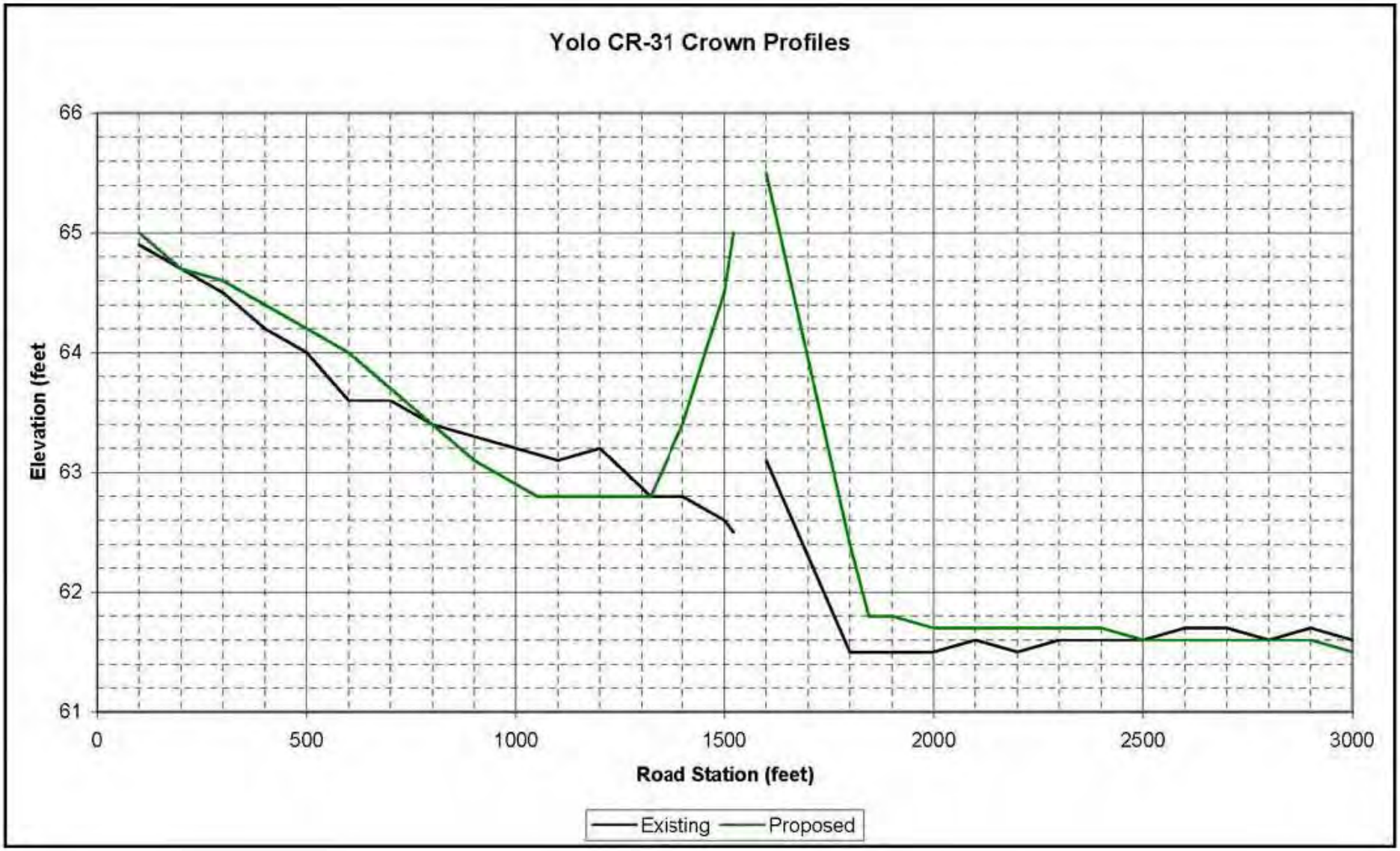

Figure 10: Existing and Proposed Condition Road Crown Profile, County Road 31

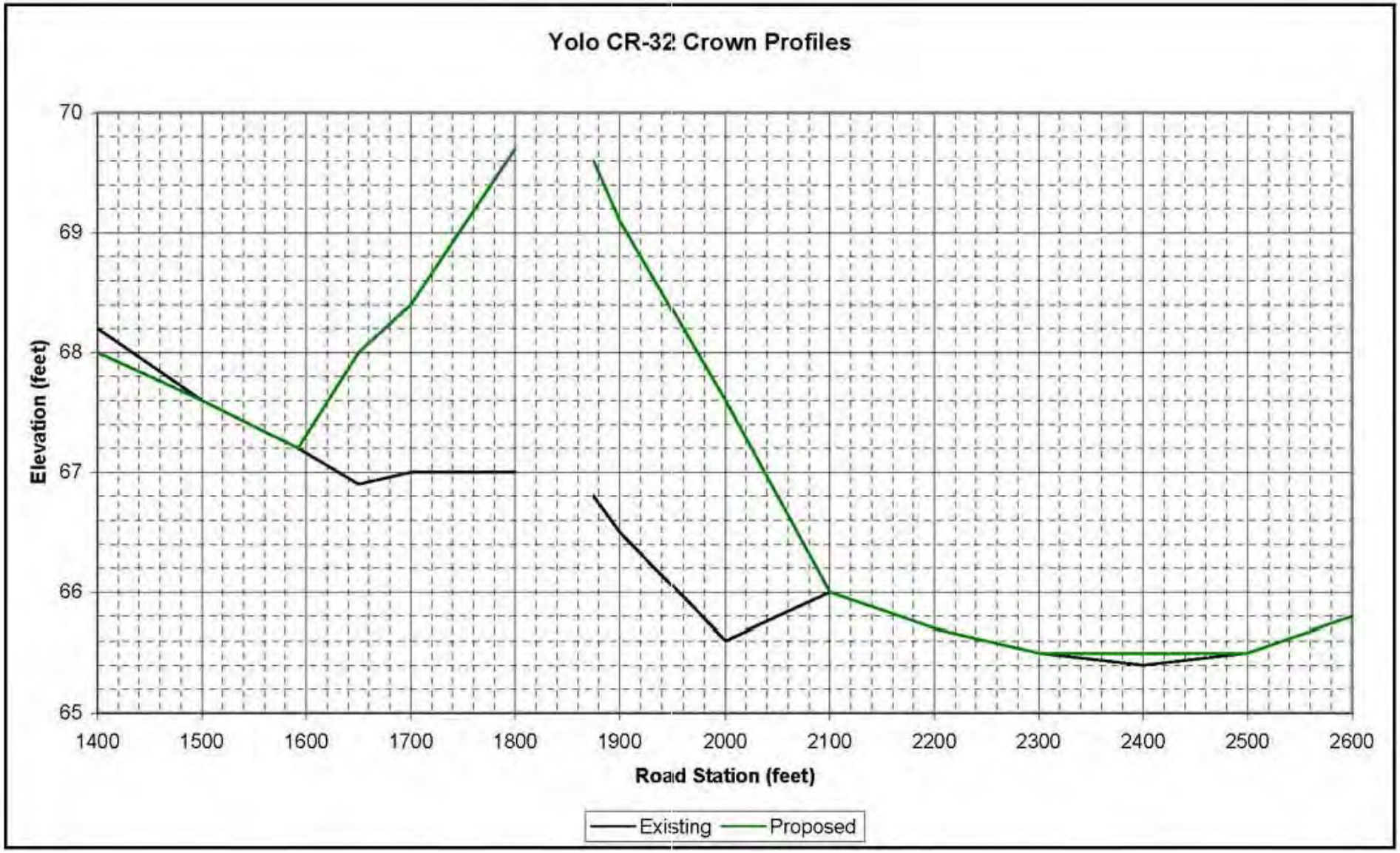

Figure 11: Existing and Proposed Condition Road Crown Profiles, County Road 32

Appendix A

Curve Number and Lag Computations

Yolo County Road 98 culvert study

Curve number calculation

Location	Area (sq mi)	Land Use	Hyd Soil Group	Percent of area	Curve Number		Weighted CN
Basin 1	0.4	Grain	B	12	73	876	
		Grain	C	88	81	7128	80.04
Basin 2	2.89	Grain	B	5	73	365	
		Grain	C	91	81	7371	
		Grain	D	4	84	336	80.72
Basin 3	0.98	Grain	B	2	73	146	
		Grain	C	68	81	5508	
		Grain	D	30	84	2520	81.74
Basin 4A	2.36	Grain	B	15	73	1095	
		Grain	C	30	81	2430	
		Orchard	B	30	58	1740	
		Orchard	C	25	72	1800	70.65
Basin 4B	4.48	Grain	B	5	73	365	
		Grain	C	70	81	5670	
		Grain	D	25	84	2100	81.35
Basin 5	1.24	Grain	B	18	73	1314	
		Grain	C	60	81	4860	
		Grain	D	12	84	1008	
		Industrial	D	10	93	930	81.12
Basin 6	0.63	Grain	B	45	73	3285	
		Grain	C	40	81	3240	
		Grain	D	15	84	1260	77.85

Lag calculation

Location	L (miles)	Lc (miles)	Divide Elev (ft)	Exit Elev (ft)	Slope	n	Lag (m)
Basin 1	0.83	0.83	76	65	13.3	0.115	104
Basin 2	2.8	2.4	89	63	9.3	0.115	233
Basin 3	1	1	70	61	9.0	0.115	125
Basin 4A	3	3	124	106	6.0	0.115	276
Basin 4B	5.3	4.4	106	63	8.1	0.115	359
Basin 5	2.5	2	83	63	8.0	0.115	217
Basin 6	2	2	78	69	4.5	0.115	221

Appendix B

Existing and Proposed Condition Road Crown Profiles

County Road 98

Road Station (feet)	Existing Crown Elev (feet)	Proposed Crown Elev (feet)
5375	69.3	70.4
5565	69.2	70.2
6000	69.1	69.1
6100	69.1	69
6200	68.8	68.8
6400	68.7	68.7
6642	68.3	68.6
6700	68.3	68.5
6800	68.1	68.4
7000	68.3	68.4
7100	68.3	68.3
7300	68.2	68.3
7400	68.1	68.2
7600	68.2	68.2
7658	68.1	68.1
7800	67.8	67.8
7870	67.6	67.6
7922	67.3	67.5
8022	67.2	67.5
8172	67.2	69
8322	67.6	67.5
8422	67.8	67.5
8500	67.8	67.5
8600	67.8	67.6
8800	67.8	67.8
8900	67.7	67.9
9000	67.9	67.9
9100	67.7	67.9
9200	67.5	67.9
9500	67.5	67.9
9663	67.6	67.9
9700	67.8	67.9
9800	67.6	67.6

Road Station (feet)	Existing Crown Elev (feet)	Proposed Crown Elev (feet)
10300	67	67
10462	66.5	66.5
10600	66.1	66.2
10700	66	66
10900	66.4	66.1
11000	66.2	66.3
11200	66.3	66.3
11400	66.3	66.5
11500	66.6	66.6
11600	66.9	66.7
11700	66.9	66.6
11800	66.8	66.6
11900	66.4	66.5
12146	65.7	65.7
12200	65.6	65.6
12220	65.6	65.6
12400	64.9	64.9
12525	64.4	64.4
12600	64.1	64.2
12700	63.7	63.9
12800	63.6	63.6
12900	63.5	63.5
13233	63.3	63.4
13400	62.8	64.8
13483	63	65.5
13733	63.3	63.0
13900	63.6	62.9
14100	64.1	63.0
14200	64.3	63.4
14300	64.1	63.8
14400	64.1	64.1
14700	64.8	64.5
14800	65.3	64.7
14900	65.6	64.9
15000	65.5	65.2
15200	65.2	65.2
15300	65.4	65.2
15500	66.1	65.9
15600	66.5	66.2
15800	67	66.7

Road Station (feet)	Existing Crown Elev (feet)	Proposed Crown Elev (feet)
16000	67	66.6
16100	67	66.7
16300	66.1	66
16400	65.8	65.7
16500	65.3	65.3
16600	65.2	65.1
16705	65	65.2
16900	64.8	64.9
17000	64.8	64.8
17100	64.9	64.7
17300	64.7	64.5
17500	64.2	64.4
17700	64.1	64.1
18000	64.2	64.2
18100	64.3	64.3
18263	65	65
18400	65.6	65.5
18484	65.9	65.9
18580	66.1	66.1
18780	66.5	68
18980	66.6	66.6
19000	66.6	66.6
19100	66.7	66.7
19200	67	66.8
19300	66.9	66.8
19400	66.9	66.9
19600	67.1	67.1
19700	67.2	67.2
19900	67.5	67.5
20200	68	68
20300	68.1	68
20400	68	68
20500	67.9	67.9
20800	68	68
21100	67.8	68
21200	68	68
21300	68	68
21500	67.9	67.9
21600	67.7	67.7
21800	67.3	67.3
21900	67.4	67.4
22000	67.4	67.4
22100	67.3	67.4
22300	67.5	67.5
22575	67.7	67.7

Appendix B (contd)

Existing and Proposed Condition Road Crown Profiles

County Road 31

Road Station (feet)	Existing Crown Elev (feet)	Proposed Crown Elev (feet)
100	64.9	65
200	64.7	64.7
300	64.5	64.6
400	64.2	64.4
500	64	64.2
600	63.6	64
700	63.6	63.7
800	63.4	63.4
900	63.3	63.1
1000	63.2	62.9
1050	63.15	62.8
1100	63.1	62.8
1200	63.2	62.8
1321.6	62.8	62.8
1400	62.8	63.4
1500	62.6	64.5
1522	62.5	65
1600	63.1	65.5
1800	61.5	62.4
1845	61.5	61.8
1900	61.5	61.8
2000	61.5	61.7
2100	61.6	61.7
2200	61.5	61.7
2300	61.6	61.7
2400	61.6	61.7
2500	61.6	61.6
2600	61.7	61.6
2700	61.7	61.6
2800	61.6	61.6
2900	61.7	61.6
3000	61.6	61.5

County Road 32

Road Station (feet)	Existing Crown Elev (feet)	Proposed Crown Elev (feet)
1400	68.2	68
1500	67.6	67.6
1592	67.2	67.2
1650	66.9	68
1700	67	68.4
1800	67	69.7
1875	66.8	69.6
1900	66.5	69.1
2000	65.6	67.6
2100	66	66
2200	65.7	65.7
2300	65.5	65.5
2400	65.4	65.5
2500	65.5	65.5
2600	65.8	65.8