SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

YOLO FLYWAY FARMS RESTORATION PROJECT

DECEMBER 2015

SCH #: 2011032001

YOLO COUNTY PLANNING, PUBLIC WORKS AND ENVIRONMENTAL SERVICES DEPARTMENT

NOTICE OF AVAILABILITY AND PUBLIC HEARING
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT for the YOLO FLYWAY FARMS RESTORATION PROJECT

DATE: December 11, 2015

TO: Interested Agencies and Individuals

FROM: Yolo County Planning, Public Works, and Environmental Services Department

The Draft Supplemental Environmental Impact Report (Draft SEIR) (SCH #2011032001) for the above project is now available for review. Public comment on this document is invited for a 45-day period extending from December 14, 2015 through January 29, 2016. Information about the proposed project is provided below.

The Yolo Flyway Farms Restoration Project is one component part of the larger Lower Yolo Restoration Project proposed by the State and Federal Contractors Water Agency (SFCWA) on behalf of the California Department of Water Resources and the U.S. Bureau of Reclamation. The Lower Yolo Restoration Project has been approved but not yet implemented. The primary purpose of the Lower Yolo Restoration Project is to restore tidal interaction and associated wetland habitats to enhance and create habitat on 1,770 acres for special-status fish in the lower Yolo Bypass.

As a part of the larger project, the proposed Yolo Flyway Farms Restoration Project is a habitat restoration project that would restore and enhance approximately 278 acres of tidal freshwater wetlands on a 362-acre parcel. The project is designed to support delta smelt recovery; provide rearing habitats for out-migrating salmonids; and support other aquatic and wetland-dependent species, including Sacramento splittail.

The Yolo Flyway Farms Restoration Project was previously analyzed as a portion of Phase 2 in the Environmental Impact Report certified for the Lower Yolo Restoration Project (State Clearinghouse No. 2011032001) pursuant to CEQA and the CEQA Guidelines (14 Cal. Code Regs. §§ 15000 et seq.). Yolo Flyway Farms is the northeastern-most parcel within the Lower Yolo Restoration Project. SFCWA determined in 2011 that Yolo Flyway Farms would not be included within the initial work plan and was included within a proposed Phase 2 of the project. Flyway Farms was included and analyzed as part of the overall project in the Final Environmental Impact Report (Final EIR) (SFCWA 2013). However because of the interest on the part of the landowner in undertaking restoration activities on the 362 acre Yolo Flyway Farms now and the uncertainty of future implementation of Phase 2 of the Lower Yolo Restoration Project, the landowner is pursuing an independent course with Yolo County.

As a result, Yolo County has prepared this separate Draft Supplemental Environmental Impact Report (Draft Supplemental EIR), pursuant to CEQA, which addresses the impacts of the Yolo Flyway Farms Restoration Project. In doing so, Yolo County has incorporated by reference major sections of the adopted Lower Yolo Restoration Project Final EIR and has modified the analysis as needed for the Yolo Flyway Farms Restoration Project. A Final Supplemental EIR responding to comments will be prepared following public review and comment. The County will consider this information when deliberating the project. Following certification of the Final SEIR, the County may take action to adopt the proposed project.

The Draft Supplemental EIR analyzes impacts in the areas of Agricultural Resources, Air Quality and Greenhouse Gases, Terrestrial Biological Resources, Aquatic Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology, Water Quality, and Energy.

The Draft Supplemental EIR is now available for public review on the County website at http://www.yolocounty.org/community-services/planning-public-works/planning-division/current-projects and at the public counter of the County Planning Division at 292 West Beamer Street, Woodland, CA 95696. The document is available for purchase in hard copy or in electronic format (CD ROM). Please contact Eric Parfrey, Principal Planner, at (530) 666-8043 or Eric.Parfrey@yolocounty.org for more information or should you wish to purchase a copy.

You may submit comments on the Draft SEIR during the 45-day public review period which begins December 14, 2015 and ends January 29, 2016 at 5:00pm. All comments on the Draft Supplemental EIR will be responded to in writing in the Final Supplemental EIR. Comments must be directed to:

Eric Parfrey, Principal Planner
Yolo County Planning, Public Works, and Environmental Services Department
292 West Beamer Street
Woodland, CA 95695
Eric.Parfrey@yolocounty.org
(530) 666-8043

A public hearing at the Yolo County Planning Commission is tentatively scheduled for January 14, 2015 in the Board of Supervisors Chambers (Room 206) at 625 Court Street, Woodland, to accept oral comments on the Draft Supplemental EIR. A public hearing on the project itself will be scheduled at the Planning Commission later in February or March, 2016. Following Planning Commission action to approve a recommendation to the Board of Supervisors, the Board of Supervisors will schedule one or more hearings to take final action on the project and the SEIR.

There will be no transcription of oral comments at these meetings. Comments received will be summarized by staff for inclusion in the Final Supplemental EIR. Those who wish to have their verbatim comments incorporated in the Final Supplemental EIR must submit their comments in writing.

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in these hearings, please contact the County Planning, Public Works, and Environmental Services Department at (530) 666-8811. Please make your request as early as possible and at least one-full business day before the start of the meeting.

For more specific questions about the project please contact Eric Parfrey, Principal Planner at (530) 666-8043 or Eric.Parfrey@yolocounty.org.

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1 INTRODUCTION

1.1 BACKGROUND AND NATURE OF THE PROJECT

The Yolo Flyway Farms Restoration Project is a part of the larger 3,795-acre Lower Yolo Restoration Project proposed by the State and Federal Contractors Water Agency (SFCWA) on behalf of the California Department of Water Resources and the U.S. Bureau of Reclamation. The primary purpose of the Lower Yolo Restoration Project is to restore tidal interaction and associated wetland habitats to enhance and create habitat for special-status fish. A Final Environmental Impact Report (Final EIR) was prepared and adopted by the water contractors (SFCWA) in 2013. (The Final EIR for the Lower Yolo Restoration Project is available for public review on the County website at http://www.yolocounty.org/community-services/planning-public-works/planning-division/current-projects, along with this Supplemental EIR, and at the public counter of the County Planning Division at 292 West Beamer Street, Woodland, CA 95696).

The Final EIR for the Lower Yolo Restoration Project studied environmental issues of the entire 3,795-acre site, including Flyway Farms, and considered Flyway Farms to be a future Phase 2 of the project. The portion of the Lower Yolo Restoration Project that is under the ownership of the SFCWA has not yet begun construction.

Yolo Flyway Farms, owned by the Reynier Fund, LLC of Davis, California consists of approximately 440 acres in the northeastern portion of the Lower Yolo Restoration Project. Because of the interest on the part of the landowner in undertaking restoration activities on the 362 acre Yolo Flyway Farms and the uncertainty of future implementation of Phase 2 of the Lower Yolo Restoration Project, the landowner is pursuing an independent course with Yolo County to proceed with this portion of the larger project.

As a result, Yolo County has prepared this separate Supplemental Environmental Impact Report (Supplemental EIR) that addresses the impacts of the Yolo Flyway Farms Restoration Project. In doing so, Yolo County intends to use and modify as needed the Final EIR prepared for the Lower Yolo Restoration Project but tailored specifically to the Yolo Flyway Farms Restoration Project. The Yolo County Planning, Public Works and Environmental Services Department is the lead agency overseeing the preparation of the Supplemental EIR. The project will need the approval of several other State and federal agencies.

1.2 PURPOSE AND SCOPE OF THE SEIR

This project Draft Supplemental EIR was prepared in compliance with CEQA (Public Resources Code Sections 21000, et seq.) and Title 14 of the California Code of Regulations Sections 15000, et seq. (the CEQA Guidelines). As described in Section 15121(a) of the CEQA Guidelines, an Environmental Impact Report is a public information document that assesses potential environmental impacts of a proposed project and identifies mitigation measures and

alternatives to the project that could reduce or avoid adverse environmental impacts. CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. It is not the purpose of this Draft Supplemental EIR to recommend either approval or denial of a project; rather, this Draft Supplemental EIR provides full disclosure of potential environmental impacts of the proposed project for review and consideration.

This EIR has been prepared as a Supplemental EIR pursuant to Section 15163(a)(2)of the State CEQA Guidelines. A Supplemental EIR is prepared when minor additions or changes are necessary to make a previously certified EIR adequately apply to the project in the changed situation. This Supplemental EIR and the Final EIR for the Lower Yolo Restoration Project comprise the environmental review documentation for the proposed project. As already noted above, a copy of the 2013 Final EIR for the Lower Yolo Restoration Project is available for review at the Yolo County Planning, Public Works and Environmental Services Department, 292 West Beamer Street, Woodland, California and is posted online at http://www.yolocounty.org/community-services/planning-public-works/planning-division/current-projects.

Section 15163(b) of the CEQA Guidelines states that "the supplemental EIR need contain only the information necessary to make the previous EIR adequate for the project as revised." One of the revisions to the proposed project (the addition of the 80-acre soil disposal site) was not previously addressed in the 2013 Final EIR. This Supplemental EIR focuses on that issue, but also incorporates much of the environmental impact analysis and mitigation measures for key topics that were adopted by the original FEIR. Although a Supplemental EIR is not required to repeat and include much of the previous analysis and mitigation measures of the Final EIR, Yolo County has chosen to include the previous analysis and measures to ensure that members of the public can read the pertinent impacts sections without having to go back to the original Final EIR.

This Draft Supplemental EIR is public information for use by governmental agencies and the public to identify and evaluate the potential physical environmental impacts associated with implementation of the proposed project.

This Draft Supplemental EIR will be available for a 45-day public review period, during which one public hearing will be held to receive oral comments at the Yolo County Planning Commission in Woodland, California. The purpose of the public hearing is to solicit comments from the public and from governmental agencies on the adequacy of the environmental analysis in this Draft Supplemental EIR. During the public review period, comments on the accuracy and completeness of the information presented in this document will be accepted. Following the public review period, responses will be prepared to written and oral comments from the public and governmental agencies. The Draft Supplemental EIR will be revised, as appropriate, and a Final Supplemental EIR (Response to Comments document) will be distributed to all commenters and individuals requesting a copy.

The Yolo County Planning Commission will then consider the project and provide a recommendation to the Board of Supervisors whether the Final Supplemental EIR should be approved or not. Following action by the Planning Commission, the Board of Supervisors will take final action on the project.

1.3 ENVIRONMENTAL IMPACT REPORT REVIEW PROCESS

Notice of Preparation and Public Scoping Meeting

A Notice of Preparation/Initial Study (NOP/IS) was prepared and processed for the Lower Yolo Restoration Project, in compliance with Section 15082 of the State CEQA Guidelines. The NOP/IS was distributed for a 30-day agency review, that also included distribution to the public and affected stakeholders, beginning on March 1, 2011 (Appendix A). The availability of the NOP/IS was publicized locally (*Sacramento Bee*) and distributed to a wide array of government agencies both directly by SFCWA and through the Governor's Office of Planning and Research, State Clearinghouse. It was also posted with the County of Yolo Recorder's Office. The NOP and Initial Study, plus responses to the NOP/IS, are included in Appendix A.

A public scoping meeting was held for the Lower Yolo Restoration Project on March 15, 2011, in West Sacramento. Oral comments made at the public scoping meeting are also presented in Appendix A.

A Notice of Preparation and Scoping Session has not been prepared and held for the individual Flyway Farms project, since almost all of the potential impacts and adopted mitigation measures identified in the original Final EIR for the Lower Yolo Restoration Project apply to the smaller Flyway Farms project, and the Flyway Farms project does not raise any additional environmental issues.

SUPPLEMENTAL EIR Review and Preparation of Final SUPPLEMENTAL EIR

This Draft Supplemental EIR was publicly circulated on the date listed in the Notice of Availability, for a minimum 45-day period of review and comment by the public and other interested parties, agencies, and organizations. A Yolo County Planning Commission hearing on the Draft SEIR will be held at the Board of Supervisors Chambers at 625 Court Street, Woodland, CA 95695, for the purpose of obtaining public comments on this Draft Supplemental EIR. The public review period for the Draft Supplemental EIR concludes on the date listed in the Notice of Availability. All comments or questions about the Draft Supplemental EIR should be addressed to:

Yolo County Planning, Public Works and Environmental Services Department
Attention: Eric Parfrey, Principal Planner
292 West Beamer Street
Woodland, CA 95695
eric.parfrey@yolocounty.org

Following receipt of comments on the Draft Supplemental EIR, responses will be prepared and made available for public review a minimum of 10 days prior to consideration for final action. The Planning Commission will make a recommendation to the Board of Supervisors regarding the certification of the Final Supplemental EIR, as adequate, and action on the project application.

Final Action on the Project

The Board of Supervisors will make the final decision regarding certification of the Final Supplemental EIR. Upon review and consideration of the Final Supplemental EIR, the Board of Supervisors will determine whether to approve or reject the proposed project.

Approval of the project, as proposed or revised, would be accompanied by written findings for each significant environmental impact identified in the Final Supplemental EIR. Findings must be accompanied by a brief explanation of the rationale for each finding and will indicate that: 1) mitigation measures to reduce significant impacts to less-than-significant levels have been adopted; 2) mitigation measures to reduce significant impacts to less-than-significant levels are within the jurisdiction of another public agency and either have been or should be adopted by that public agency; or 3) specific effects are unavoidable and substantially unmitigable but are considered acceptable because overriding considerations indicate that the benefits of the project outweigh the adverse effects.

Mitigation Monitoring

This Draft Supplemental EIR presents mitigation measures for significant environmental impacts associated with the proposed project. CEQA requires that any state or local agency that imposes mitigation measures on a project adopt a monitoring program to ensure compliance with those measures (Public Resources Code Section 21081.6). The Mitigation Monitoring Program will specify the party responsible for implementation and monitoring of each mitigation measure.

Organization of Document

This Draft Supplemental EIR consists of seven chapters. A summary of each chapter is provided below:

- Chapter 1.0 provides background and nature of the project, discusses the scope of the Draft Supplemental EIR, an introduction and overview describing the intended use of the Draft Supplemental EIR (including required approvals), and the review and certification process.

- Chapter 2.0 summarizes the Draft Supplemental EIR findings, identifying potential impacts and proposed mitigation measures.

- Chapter 3.0 provides a description of the proposed project, its location, a site history, and details of the proposed restoration plan.

- Chapter 4.0 presents a discussion of the environmental effects of the project, summarized or repeated verbatim from the Final EIR for the Lower Yolo Restoration Project. Each section (e.g., Hydrology, Biological Resources) incorporates by reference the environmental setting prepared for the Final EIR, or amends the previous setting description to add updated information for the Flyway Farms project. Each section then summarizes or repeats the evaluation of potential impacts from the Final EIR, and repeats, and amends as necessary, the mitigation measures adopted for the original project which apply to the Flyway Farms project. Chapter 4.0 also includes the CEQA-required discussion regarding cumulative effects and growth-inducing effects from the Final EIR and amends the discussion related to the Flyway Farms project.

- Chapter 5.0 analyzes the "No Project" alternative and a new "Increased Excavation/ Restoration Footprint" alternative.

- Chapter 6.0 includes the CEQA-required discussion regarding growth-inducing effects and other topics from the Final EIR and amends the discussion related to the Flyway Farms project.

- Chapter 7.0 lists the authors of the Final EIR and the Draft Supplemental EIR.

2 SUMMARY OF IMPACTS AND MITIGATION MEASURES

2.1 PROJECT UNDER REVIEW

The project that is the subject of review by this Supplemental EIR is the Flyway Farms Restoration Project.

2.2 AREAS OF CONTROVERSY

CEQA Guidelines Section 15123(b)(2) requires a discussion of areas of controversy known to the lead agency, including issues raised by agencies and the public. The following areas of controversy have been identified and are addressed in Chapter 4.0, Environmental Analysis, of the Draft SEIR:

- **Loss of agricultural land.** The project could convert some agricultural land to non-agricultural (managed wetlands) uses. The analysis included in this SEIR found that implementation of the project would affect only a very small portion of land identified as farmed wetlands (about 0.4 acre) the loss of which could be mitigated by requiring the applicant to purchase an agricultural easement on land of at least equal quality and size, or by paying an in-lieu fee, as compensation for the direct loss of agricultural land, which is a small portion of the overall project. The remainder of the main 362-acre parcel consists of wetlands of some type and would not require mitigation. The 80-acre soil deposit site would also not require mitigation since the land would be reclaimed for farming.

- **Impacts to biological resources.** The project would be considered to have a generally beneficial impact on biological resources, since it is creating significant new wetlands for fish habitat. However, construction of the project could cause potentially significant impacts to various biological resources (terrestrial and aquatic species). The analysis included in the original Final EIR for the Lower Yolo Restoration Project and this Supplemental EIR found that implementation of the project impacts could be mitigated through various measures.

2.3 ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123(b)(3) requires a discussion of issues to be resolved, including a choice of alternatives and whether or how to mitigate the significant effects of the proposed action. The primary issues to be resolved for this project include the issues raised above, whether or not to approve the project, consideration of identified mitigation measures, and identification of appropriate conditions of operation.

2.4 SUMMARY OF REGULATORY/POLICY CONSISTENCY

CEQA Guidelines Section 15125(d) requires an EIR to discuss any inconsistencies between the proposed action and applicable general plans and regional plans. There are a number of plans and regulations that apply to the proposed action, including the 2030 Countywide General Plan and the County Code (Zoning Ordinance and other regulations) for Yolo County. A discussion of the consistency of the larger Lower Yolo Restoration Project (including the Flyway Farms component) with applicable federal, State, regional, and local regulations and plans was included in each of the resource sections of the certified Final EIR for the Lower Yolo Restoration Project. All of this regulatory and policy consistency discussion and analysis has been incorporated by reference in this Supplemental EIR for the Flyway Farms project, with the exception of the Agricultural Resources section. This latter discussion and analysis of policy consistency has been revised and updated in this Supplemental EIR.

2.5 SUMMARY OF IMPACTS

Summary of Initial Study/Notice of Preparation Conclusions: Issues Found Not To Be Significant

Section 15128 of the CEQA Guidelines requires an EIR to contain a statement briefly indicating the reasons why various possibly significant effects of a project were determined not to be significant and were therefore not discussed in detail.

For the original Lower Yolo Restoration Project, a Notice of Preparation and an Initial Study were prepared to identify environmental issues associated with the proposed project. No significant impacts were identified for the following topics:

- Aesthetics
- Geology Soils and Seismicity
- Land Use
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities and Energy

The following issue summaries explain why various potential effects of the project were found not to be significant. The issue summaries rely largely on information and analysis included in the Final EIR for the Lower Yolo Restoration Project, augmented by additional analysis of potential impacts related to the adjacent 80-acre soil deposit site.

Aesthetics

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential aesthetic impacts of the project (pages 25 to 27). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference. The site is not prominent in any designated "scenic vistas." The site is not visible from any designated Scenic Highway and therefore would not affect views from any such route. No visually prominent trees or rock outcrops would be removed. During construction, grading and earth-moving activities would result in substantial areas of bare soil on the site. This would result in a temporary change in the site's visual quality, but would be visually compatible with the existing appearance of agricultural activities. These soils would be minimally visible from off-site locations (roadways). Construction work would be limited to the late spring and summer months, mostly during daylight savings time, in order to avoid working in the floodway during the rainy season. The project would have lights only in the staging areas where equipment maintenance and refueling could occur during non-work hours. This lighting would be similar to existing ranch lighting. In addition, the site is low-lying, surrounded by levees, and distant from other residences.

The Initial Study concluded that impacts to aesthetics would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential aesthetic or scenic resources, as the 80-acre property shares the same aesthetic values as the 362-acre main parcel of Flyway Farms and other properties within the larger Lower Yolo Restoration Project.

Geology, Soils, and Seismicity

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential geologic impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference. The site is not located within an Alquist-Priolo earthquake fault rupture hazard zone. An analysis of statewide earthquake shaking potential for California (Branum et al. 2008) indicates that the project site has a relatively low potential for structural damage due to an earthquake. The site likely has a relatively high potential for liquefaction and lateral spreading, which is common for floodplain and deltaic ecosystems. The exceptions are the constructed levees on site, which are engineered specifically to avoid such soil movements. The project would return a portion of the site to tidal wetlands and associated transitional habitats, similar to those that existed on the site prior to conversion to agriculture. Any liquefaction or lateral spreading occurring in these habitats would be associated with the physical processes that govern these ecosystems and would not constitute a significant negative impact. The site is not located within a landslide hazard zone.

The project would involve the excavation of tidal channels and expanded intertidal marsh areas and removal and modification of existing water control structures. The construction of these

project elements would involve extensive excavation and earthmoving activities that would involve substantial soil disturbance. Any material not utilized in this levee would be stockpiled within restricted height levee near the ranch compound or removed from the project site altogether. The proposed construction methods for this project would be specifically designed to reduce soil erosion and loss to a less-than-significant level and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which is required as a standard condition of approval for any component of the project. The primary potential for impact would therefore be limited to severe rain storms during the late spring to early fall construction window that could lead to short-duration soil erosion during disturbed site conditions; such storms occur very infrequently during the planned construction time of year. However, there is the possibility of such an event and therefore the impact was identified and discussed as a "potentially significant" impact in the Hydrology and Water Quality chapter of the Final EIR for the Lower Yolo Restoration Project. Following further analysis, that Final EIR concluded that there would be no potential impact of soil erosion due to storms.

The Initial Study and the Final EIR concluded that impacts to geologic issues would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential geologic impacts, as the 80-acre property shares the same geologic characteristics as the 362-acre main parcel of Flyway Farms and other properties within the larger Lower Yolo Restoration Project.

Land Use

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential land use impacts of the project (pages 78 to 80). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference.

The Initial Study and the Final EIR concluded that impacts related to land use issues, excluding agricultural land use issues, would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential land use impacts, as the 80-acre property shares the same land use characteristics as the 362-acre main parcel of Flyway Farms and other properties within the larger Lower Yolo Restoration Project. Agricultural land use issues, including loss of agricultural land, are discussed separately in the "Agricultural Resources" section of this Supplemental EIR.

Mineral Resources

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential mineral resource impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference.

There is a mapped gas field in the northwest corner of the Lower Yolo project site (not on the Flyway Farms site). However, due to the history of gas mining on the Lower Yolo project site, as evidenced by the large number of abandoned wells, the gas reserves within the project site are presumed to be minimal. The applicant purchased the mineral rights to the Yolo Ranch property at the time they purchased the property itself. Therefore there would be no potential conflict of the project with any potential mineral extraction project.

The Initial Study and the Final EIR concluded that impacts to mineral resource issues would be "less than significant" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential mineral resource impacts, as the 80-acre property has no identified gas field or other mineral resources.

Noise

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential geologic impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference.

Construction of the project would temporarily increase noise in the vicinity of the project site. Scrapers typically generate 83 to 91 decibels (dBA) at 50 feet, while haul trucks generate 83-94 dBA and loaders generate about 80 to 85 dBA at this distance (Bolt et al. 1987). Potential sensitive receptors could include a very few individuals who may reside on the ranch compound in the northwest corner of the Lower Yolo project site and at the three or fewer farm residences that are located within one mile west of the Yolo Bypass levee (not on or near the Flyway Farms site). The proposed earthmoving activities would not involve pile driving, blasting, or other vibration generating activities.

The Initial Study and the Final EIR concluded that noise impacts would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential noise impacts, as the 80-acre property shares the same characteristics as the 362-acre main parcel of Flyway Farms and other properties within the larger Lower Yolo Restoration Project, and any existing residences are further away from the Flyway Farms parcels than the Lower Yolo parcels.

Population and Housing

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential population and housing impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference. The project would not induce population growth, either directly or indirectly. The existing ranch house on the Lower Yolo Ranch site (not on Flyway Farms) would be retained

with the larger Lower Yolo Restoration project, but will not be affected by the Yolo Flyway Farms Project.

The Initial Study and the Final EIR concluded that impacts to population and housing issues would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential population and housing impacts, as the 80-acre property does not contain any residences.

Public Services

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential public service impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference. The proposed project is a habitat restoration project; it would not result in any new or physically altered government facilities, nor would it result in an increased demand for public services because it would not add population or utilize County services other than vector control.

The Initial Study and the Final EIR concluded that impacts to public service issues would be "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential public services impacts, as the project proposes no use that would result in the need for new or physically altered public services or other government facilities.

Recreation

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential recreation impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference. The project would neither include recreational facilities nor would require their construction or expansion. Barge traffic, potentially on the order of 500 round trips of multiple barge "trains" during the construction phase of the larger Lower Yolo Restoration project, could disrupt normal recreational boat use in waters along the barge route, and the presence of a barge at the proposed loading location in the Toe Drain could potentially obstruct navigation in this area during loading operations. However, the Flyway Farms project does not propose any barge traffic.

Transportation and Circulation

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential transportation impacts of the project (pages 54 to 59). The analysis

of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference.

During construction, the movement of crews and equipment would result in temporary increases in traffic on the surrounding roadways. Construction equipment and employee trips would generate a temporary increase in traffic during construction. The amount of traffic anticipated to be generated by the proposed project on a daily basis is relatively minor (10-30 cars/day), and the increase in truck traffic is not expected to be great enough to reduce levels of service (LOS) on local roadways. Truck traffic would be similar to that which occurs during peak agricultural operations at farms and ranches in the area. Long-term traffic to the site would consist of occasional monitoring or maintenance vehicles (up to five trips/day).

The Initial Study and the Final EIR concluded that impacts to transportation issues would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The Flyway Farms project and the addition of the 80-acre soil deposit site would not change this assessment of potential transportation impacts, since fewer trips would be generated than the much larger Lower Yolo project.

Utilities and Service Systems

The Notice of Preparation/Initial Study included in the Final EIR for the Lower Yolo Restoration Project discussed potential utility service impacts of the project (pages 54 to 59). The analysis of the Notice of Preparation/Initial Study is incorporated into this Supplemental EIR by reference. The proposed project would not create any new demand for utilities or public service systems.

The Initial Study and the Final EIR concluded that impacts to utility service issues would be "less than significant" or "no impact" and therefore no further analysis was included in the Final EIR for the Lower Yolo Restoration Project. The addition of the 80-acre soil deposit site to the Flyway Farms project would not change this assessment of potential service impacts, as the 80-acre property shares the same geologic characteristics as the 362-acre main parcel of Flyway Farms and other properties within the larger Lower Yolo Restoration Project.

Mitigation Measures to Avoid or Reduce Identified Significant Impacts

This Draft Supplemental EIR presents an analysis of impacts determined to be potentially significant in the areas of Agricultural Resources, Air Quality and Greenhouse Gases, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology, and Water Quality. Significant impacts identified for each resource area are summarized in Table 2-1 of the following chapter. Most of these impacts and measures apply to the Flyway Farms. Those few measures that do not apply to the current project are noted.

This Draft Supplemental EIR includes all of the mitigation measures that were included in the adopted Final EIR for the Lower Yolo Restoration Project and applies them to the Flyway Farms project, including the additional 80-acre deposit site, as applicable and as required, to reduce

significant impacts to a less-than-significant level. This Supplemental EIR also includes one additional agricultural mitigation measure and two additional mitigation measures related to terrestrial biological resources, which are more extensive or detailed than the previously approved mitigation measures. These mitigation measures are specific to the Flyway Farms project. All of the combined mitigation measures presented form the basis of the proposed Mitigation Monitoring Program.

Effects Found To Be Significant and Avoidable

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any physical conditions within the area affected by the project. This includes both natural and man-made conditions. An environmental effect found to be significant and avoidable is a potentially substantial impact that can be reduced to a less-than-significant-level by the application one or more mitigation measures.

Project implementation would generate environmental impacts in several areas, as described in Chapter 4 and summarized in Table 2-1 at the end of this chapter. Mitigation measures have been identified for each impact to reduce the effect to significant and avoidable.

Effects Found to Be Significant and Unavoidable

Under CEQA, a significant and unavoidable effect of a project is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level if the project is approved.

No significant and unavoidable impacts were identified in the Final EIR for the Lower Yolo Restoration Project and no significant and unavoidable impacts are identified in this Draft Supplemental EIR for the Flyway Farms project.

Cumulative Impacts

CEQA Guidelines require an analysis of cumulative impacts for a project which are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may require additional mitigation measures, if project-specific mitigation would not reduce cumulative impacts. These impacts are discussed in Section 4.10 of this Draft SEIR.

Growth Inducing Impacts

CEQA requires that the growth-inducing impacts of a project be addressed in an EIR. Specifically, an EIR must discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. These impacts are discussed in Section 6.1 of this Draft SEIR.

2.6 SUMMARY OF ALTERNATIVES

Pursuant to CEQA Guidelines Section 15126(f) and 15126.6, an analysis of a reasonable range of project alternatives, including the "no project" alternative, were included in the Final EIR for the Lower Yolo Restoration Project. Four alternatives were analyzed in the Final EIR for the Lower Yolo Restoration Project: the No Project Alternative; a "Reduced Restoration Footprint" Alternative; an"Offsite Soil Disposal/Reduced-size" Alternative; and a "Tidal Marsh Complex" Alternative.

Two of the four alternatives (the Offsite Soil Disposal/Reduced-size Alternative and the Tidal Marsh Complex Alternative) do not include the Flyway Farms property and are not incorporated into, or analyzed, in this document. The No Project alternative is included in this Draft Supplemental EIR, as well as a new alternative called the "Increased Excavation/Increased Restoration Footprint alternative, described below, and analyzed fully in Section 6.0.

No Project Alternative

The No Project alternative represents a fact-based forecast of the environmental effects of maintaining the status quo. Accordingly, under the No Project alternative, the proposed project described in Chapter 3, Project Description, would not be constructed. Duck club and other agricultural operations would continue onsite at the Yolo Flyway Farms.

Increased Excavation/Restoration Footprint Alternative

Alternative No. 2 would be a somewhat larger habitat restoration version of the proposed project. This alternative is based on the original design plans for the Lower Yolo Restoration Project, including Flyway Farms. This alternative requires an increase amount of earth-moving and soil disturbance to construct the wetlands. This alternative would result in more tidal wetland habitat created and less seasonal wetland and riparian enhancements than the project.

2.7 SUMMARY TABLE

The following table (Table 2-1) has been organized to correspond with environmental issues discussed in Chapter 4.0 of this Draft Supplemental EIR. The summary table is arranged in four columns:

- Environmental Impacts
- Level of Significance before Mitigation
- Mitigation Measures
- Level of Significance after Mitigation

A series of mitigation measures is recommended to reduce an impact to a less-than-significant level in some instances; in those cases, all mitigation measures would be required to reduce the impact to a level of less than significant. Refer to Chapter 4.0 for a complete impact analysis.

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Project Specific Impacts: Section 4.1, Hydrology			
Impact 4.1-1: Effects to Agricultural Irrigation			
Availability of water supplies for irrigation purposes during construction and post-construction phases	No impact	None required	Not applicable
Modifications to irrigation patterns onsite and offsite during construction and post construction phases	Less than significant		
Impact 4.1-2: Effects to Agricultural Drainage			
Changes to agricultural drainage volume and patterns during construction and post-construction phases	Less than significant	None required	Not applicable
Impact 4.1-3: Effects to Winter Storm-water Drainage			
Alteration of drainage patterns of winter storm and flood flows within and from the project site during construction and post-construction phases	Less than significant	None required	Not applicable
Impact 4.1-4: Impacts on Flood Conveyance			
Changes in water surface elevations	Less than significant	None required	Not applicable
Changes in water surface elevations during the post-construction phase	No impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.1-5: Impacts on Local Groundwater			
Depletion of local groundwater supplies or alteration of groundwater movement during construction and post construction	No impact	None required	Not applicable
Project Specific Impacts: Section 4.2, Water Quality			
Impact 4.2-1: Temporary Impacts to Water Quality from Pollutants or Soil Erosion			
Temporary construction impacts from increased suspended sediments, sediments in waterways, runoff from construction sites, toxic chemicals from construction sites, or trash and debris; post-construction of additional tidal connection	Less than significant	None required	Not applicable
Temporary impacts to water quality from pollutants or soil erosion during the post-construction phase	No impact		
Impact 4.2-2: Increase in Methylmercury Loading			
Local methylmercury production and transport during construction and post-construction phases	No impact **Beneficial effect**	None required	Not applicable
Changes in water quality standards related to Delta mercury total maximum daily loads during the post-construction phase	Less than significant		

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.2-3: Potential Increases in Project Dissolved Organic Carbon/Total Organic Carbon Levels at the Barker Slough Pumping Plant			
Degraded water quality at the Barker Slough Pumping Plant intake during the construction phase	Less than significant	None required	Not applicable
Degraded water quality at the Barker Slough Pumping Plant intake during the post-construction phase	No impact		
Impact 4.2-4: Contribution of Low Dissolved Oxygen Plumes or Excessive Biological Oxygen Demand			
Construction-related dissolved oxygen (DO) or biological oxygen demand (BOD) during the construction phase and general maintenance actions	No impact	None required	Not applicable
Post-construction conditions (i.e., newly restored wetlands) contributing to DO/BOD and exported to the adjacent Delta via Cache Slough Complex	Less than significant		
Impact 4.2-5: Effect on Domestic Supply Well Onsite			
Effect to groundwater quality and the domestic supply well at Yolo Ranch during construction and post-construction phases	No impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Project Specific Impacts: Section 4.3, Terrestrial Biological Resources			
Impact 4.3-1: Effects to Wetland Communities			
Temporary effects from ground-disturbing activities to wetland communities during construction and post-construction phases, as applicable	**Significant**	**Mitigation Measure 4.3-1:** (Prior to or during ground-disturbing activities in sensitive wetland communities) •Locate construction staging areas outside of sensitive wetland habitats, by having their perimeters be as small as possible, and/or within the excavation/trenching limits. All staging areas shall be clearly flagged to define the limits of the work area. No construction access, parking, or storage of equipment or materials shall be permitted outside of the established limits. This shall be achieved by limiting machinery and vehicle access to temporary tracks or pads, as necessary and direct removal of soils to temporary stockpiles, located away from sensitive areas, for transportation to the selected soils reuse site. These areas shall be identified on work plans, specifications, and other applicable engineering/ contractor documents. •Define clearly on maps the boundaries of sensitive habitats not within the restoration footprint (ground-disturbing areas of the Project site), and demarcated as avoidance areas. •Limit construction and post-construction actions involving ground-disturbing activities to the dry weather season (generally between April and November, but varies each year), thereby reducing the potential for export of contaminants and/or sediments. •Require contractors to sign documentation stating that they have read, agree to, and understand the required avoidance measures. •Require construction crew members to participate in training sessions, which clearly identify and describe sensitive communities and other biological resources. •Utilize the services of a qualified biologist onsite to observe ground-disturbing activities when such activities occur within or adjacent to sensitive habitats, and/or to monitor sensitive special-status species' locations.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Permanent conversion of agricultural wetlands and other seasonal/marginal wetlands on the Project site to tidal wetlands of higher ecological value	Less than significant **Beneficial effect**	None required	Not applicable
Impact 4.3-2: Loss of or Disturbance to Riparian Woodland and Scrub			
Permanent loss or trimming of some riparian woodland and scrub for tidal connections related to adjacent waterways to the Stair Step and Toe Drain during the construction phase and minor/emergency repairs during the post-construction phase	Less than significant	None required	Not applicable
Potential loss of some riparian woodland and scrub during the post-construction phase (except for possible related minor/emergency repairs)	No impact		
Impact 4.3-3: Effects to Special-status Plants			
Loss or disturbance of habitat for special-status plants: Delta tule pea, Mason's lilaeopsis, and Suisun marsh aster	**Significant**	**Mitigation Measure 4.3-2:** Prior to initiation of ground-disturbing activities, a qualified botanist shall conduct appropriately timed, focused botanical surveys of the Project site targeting known and potentially occurring special-status plant species, including Mason's lilaeopsis, Suisun Marsh aster, and Delta tule pea.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
		Dependent on the project's final design and conditions onsite, the following mitigation shall be undertaken to avoid, minimize, or reduce loss or disturbance to identified special-status plants: •Adjust design to avoid or minimize impacts to special-status plants to the extent feasible. •Enumerate, photograph, and flag conspicuously or mark with temporary drift fencing or other physical barriers the areas supporting individual plants or populations of special-status plants that have the potential to be impacted, prior to construction. •Limit work areas including access and staging areas to the minimum area practical. •Notify the California Department of Fish and Wildlife (CDFW) at least ten days in advance of any ground-disturbing activity that could impact special-status plants to allow CDFW the opportunity to salvage affected individual plants for transplanting to a suitable location outside of the disturbed area. •Require construction workers to inspect their clothing, including shoes, all vehicles, and equipment for invasive plant seeds or plant material, prior to entering and leaving the Project area. Appropriate cleaning measures shall be taken to prevent the spread of invasive species into restored areas.	
Potential threat of noxious weed populations to special-status plants during construction and post-construction phases	Less than significant	None required	Not applicable
Impact 4.3-4: Loss of Vernal Pools and Habitat for Invertebrates			
Construction-related impacts to vernal pools, such as trampling and grading, or accidental release of fuels and construction fluids	No impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.3-5: Impacts to Giant Garter Snake or Giant Garter Snake Habitat			
Loss of habitat for giant garter snake; injury or mortality of individual giant garter snake	**Significant**	**Mitigation Measure 4.3-4:** •Require construction personnel shall receive U.S. Fish and Wildlife Service (USFWS)-approved worker environmental awareness training to recognize the giant garter snake (GGS) and its habitat. •Confine clearing of vegetation to only those areas necessary to facilitate construction activities and no greater. Areas designated as GGS and/or other sensitive-species habitat within or adjacent to the Project site shall be flagged as Environmentally Sensitive Areas and shall be avoided by all construction personnel. •Survey the site at least 24 hours prior to the initiation of ground-disturbing activities in suitable GGS habitat. This survey shall be conducted by a USFWS-approved biologist in suitable GGS habitat. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a GGS is encountered during ground-disturbing activities, activities at that specific location shall cease until appropriate corrective measures, in concurrence with USFWS coordination, have been completed or it has been determined that the GGS will not be harmed. Sightings shall be reported to USFWS. •Implement construction activity within GGS habitat between May 1 and October 1. This is the active period for GGS and direct mortality is lessened, because GGS are expected to actively move and avoid danger. Consultation with the USFWS is required for construction activities scheduled to occur in potential GGS habitat between October 2 and April 30.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
		•Ensure that any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15, and prior to excavating or filling of the dewatered GGS habitat. •Require when working near flooded canals during the summer months, vehicle speeds shall not exceed 15 miles per hour (MPH) in areas where the line-of-site is obstructed and 25 MPH in other areas to avoid hitting the GGS and other special-status wildlife. •Remove temporary fill and construction debris after construction completion, and, wherever feasible, restore disturbed areas to pre-project conditions.	
Stranding and trapping of individual giant garter snakes in restored tidal channels	Less than significant Beneficial effect	None required	Not applicable
Long-term conversion of giant garter snake habitat to a higher ecological value	Less than significant Beneficial effect		
Impact 4.3-6: Impacts on Western Pond Turtle or Western Pond Turtle Habitat			
Injury or mortality of individual western pond turtles	**Significant**	**Mitigation Measure 4.3-5:** •Survey areas prior to implementing restoration activities and/or dewatering scheduled in or adjacent to suitable aquatic habitat for the western pond turtle, by a qualified biologist. •Remove western pond turtles found by a qualified biologist to a safe location outside of the work area in a manner consistent with applicable CDFW regulations. •Conduct periodic monitoring by a qualified biologist of suitable aquatic habitat for the western pond turtle until ground-disturbing/ dewatering activities have ceased in those areas.	Less than significant
Long-term conversion of western pond turtle habitat to a higher ecological value	Less than significant **Beneficial effect**	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.3-7: Impacts to Nesting Habitat and to Nesting Special-status and Migratory Birds			
Vegetation removal or tree trimming in nesting habitat, for Swainson's hawk and other sensitive bird species, during Project excavation and creation of tidal connections in conjunction with the construction phase and post-construction phase	**Significant**	**Mitigation Measure 4.3-6:** •Remove or trim a minimal number of trees that would satisfy the Project design and allow for minimal access by construction equipment within the construction footprint in advance of nesting season, i.e., August 16 to February 14. Should nesting by sensitive bird species occur prior to February 15, proceed with the remaining steps in this mitigation measure. •Conduct preconstruction nesting bird surveys during the bird breeding season (February 15 to August 15) within the construction footprint including a 300-ft buffer, by a qualified biologist, within two weeks prior to equipment or material staging, pruning/grubbing or surface-disturbing activities, including soils grading or excavation. If no active nests are found, no further mitigation shall be required. •Establish a buffer area if active nests (i.e., nests in the egg laying, incubating, nestling or fledgling stages) are found within 300 ft of the Project footprint for raptors (birds of prey), within a 0.5-mile radius for Swainson's hawk, or 100 feet of the construction footprint for all other bird species. Non-disturbance buffers shall be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance and the type/duration of potential disturbance. The size of the buffers may be adjusted provided a qualified biologist, in consultation with CDFW and USFWS, monitors the behavior of the nesting birds and determines that impacts of Project-related activities are not affecting the birds' reproductive or rearing efforts. •Ensure that if rescheduling of work is infeasible and non-disturbance buffers cannot be maintained, a qualified biologist shall be onsite to monitor active nests for signs of disturbance for the duration of the construction activity. If it is determined that Project-related activities are resulting in nest disturbance, then work in those sensitive areas shall cease immediately and CDFW and USFWS shall be contacted for further guidance.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
		• Repeat nest surveys by a qualified biologist, if post-construction activities continue beyond one year.	
Vegetation removal or tree trimming outside of nesting season	No impact	None required	Not applicable
Impact 4.3-8: Loss of Foraging Habitat for Swainson's Hawk			
Loss of low-to moderate-quality foraging habitat to inundated tidal wetlands	**Significant**	**Mitigation Measure 4.3-7:** •Ensure that suitable Swainson's hawk foraging habitat is preserved or enhanced at a ratio of 1:1 for approximately 0.4 acres, based on final engineering designs, presence of Swainson's hawk, and consultation with CDFW. Preservation/enhancement may occur through one or more actions: ○ Preservation and enhancement of habitat onsite with equal or greater quality than existing foraging habitat. ○ Payment of a mitigation fee to a CDFW-approved mitigation bank for the preservation of Swainson's hawk foraging habitat. ○ Purchase of conservation easements or fee title to suitable Swainson's hawk foraging habitat to protect the habitat from urban development. ○ Participation in the Yolo County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) should it be adopted prior to the Project's start of construction. ○ Other measures, as needed, through consultation with CDFW.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.3-9: Loss of Habitat for Other Foraging Raptors and Other Special-status Birds			
Temporary, short-term disturbance from construction; loss of riparian woodlands from tidal connections;	Less than significant	None required	Not applicable
Loss of riparian woodlands with implementation of the post-construction phase	No impact		
Impact 4.3-10: Effects to Special-Status Species on the Flyway Farms 80-acre Soil Deposit Site			
There is a remote possibility that individual giant garter snakes could be affected during periods when giant garter snakes potentially inhabit the adjacent channels. There is potential for northern harriers to nest within the dense, tall agricultural weeds and invasive grasses and soil deposition activities could affect active nests. If nesting of Burrowing Owl, Tricolored Blackbird, Grasshopper Sparrow, Short-eared Owl does occur, project activities could impact active nest sites, which could be considered a significant impact.	**Significant**	**Mitigation Measure 4.3-8:** The following measures are recommended to avoid and minimize the potential for impacts and ensure that all potential impacts are reduced to a level of less than significant. 1. Conduct Preconstruction Surveys and Avoid Impacts to Special-status Species To ensure that special-status ground-nesting raptors, including burrowing owl, short-eared owl, and northern harrier, or breeding tricolored blackbirds or grasshopper sparrows are not inadvertently affected by project activities, a qualified biologist should conduct a pre-construction survey in areas where soils are expected to be deposited in any given year. If active nests of these species or active burrowing owl winter burrows are found, select an alternative location for soil deposition within the 80-acre field, maintaining a minimum of 200 feet (including truck routes) from all occupied sites; or if necessary, postpone deposition activities until the site is no longer occupied.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
	Significant	2. Avoid Take of Giant Garter Snake If the adjacent water conveyance channels support consistent flowing water prior to project activities, the potential for giant garter snakes to occur in the channels and in adjacent uplands increases. To avoid take of giant garter snakes under these possible future conditions, apply the avoidance measures described for the Yolo Flyway Farms Restoration Project site, which are derived from the Lower Yolo Restoration Project DEIR (SFCWA 2013), to the soil deposition project site. These measures include: • Require construction personnel to receive U.S. Fish and Wildlife Service (USFWS)-approved worker environmental awareness training to recognize the GGS and its habitat. • Confine clearing of vegetation to only those areas necessary to facilitate construction activities and no greater. Areas designated as GGS and/or other sensitive-species habitat within or adjacent to the Project site shall be flagged as Environmentally Sensitive Areas and shall be avoided by all construction personnel. • Survey the site at least 24 hours prior to the initiation of ground-disturbing activities in suitable GGS habitat. This survey shall be conducted by a USFWS-approved biologist in suitable GGS habitat. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a GGS is encountered during ground-disturbing activities, activities at that specific location shall cease until appropriate corrective measures, in concurrence with USFWS coordination, have been completed or it has been determined that the GGS will not be harmed. Sightings shall be reported to USFWS. • Implement construction activity within GGS habitat between May 1 and October 1. This is the active period for GGS and direct mortality is lessened, because GGS are expected to actively move and avoid danger. Consultation with the USFWS is required for construction activities scheduled to occur in potential GGS habitat between October 2 and April 30.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
		• Ensure that any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15, and prior to excavating or filling of the dewatered GGS habitat. • Require when working near flooded canals during the summer months, vehicle speeds shall not exceed 15 miles per hour (MPH) in areas where the line-of-site is obstructed and 25 MPH in other areas to avoid hitting the GGS and other special-status wildlife. • Remove temporary fill and construction debris after construction completion, and, wherever feasible, restore disturbed areas to pre-project conditions.	
Project Specific Impacts: Section 4.4, Aquatic Biological Resources			
Impact 4.4-1: Effects to Aquatic and Riparian Habitats			
Temporary alteration of near-shore, instream and bank habitats for fish and other aquatic resources during construction	Less than significant	None required	Not applicable
Long-term substantial increase in shallow-water and tidal marsh habitats for native fish	No impact **Beneficial effect**	None required	Not applicable
Alterations in habitat leading to increased predation on native fish	Less than significant	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Effects from ground-disturbing activities to aquatic and riparian habitats during construction, as well as with post construction (i.e., additional tidal connection)	Less than significant	None required	Not applicable
Effects from ground-disturbing activities to aquatic and riparian habitats during construction, as well as with post construction (e.g., project verification monitoring)	No impact		
Impact 4.4-2: Direct Fish Lethality or Injury			
Temporary impacts on direct fish lethality or injury from tidal connections either during construction or post construction	Less than significant	None required	Not applicable
Temporary impacts on direct fish lethality or injury from project with implementing irrigation/drainage improvements	**Significant**	**Mitigation Measure 4.4-1:** •Conduct biological surveys to determine if there are any fishes present. •Recover fishes, if present, using appropriate techniques such as beach seining; retain the captured fishes in cooled, aerated containers; and release fishes the same day as captured into the waters of Stair Step or Toe Drain.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Temporary impacts on direct fish lethality or injury from project	No impact	None required	Not applicable
Potential stranding risk of fish on the project site during construction and post construction (e.g., additional tidal connection, monitoring, removal of invasive plants)	Less than significant	None required	Not applicable
Impact 4.4-3: Temporary Noise Impacts Impeding or Delaying Fish Migration			
Potential noise from construction of tidal connections that would affect the movement or migration of special-status fish species	Less than significant	None required	Not applicable
Potential noise from post-construction (e.g., monitoring, sampling, removal of invasive plants, etc.) that would affect the movement or migration of special-status fish species	No impact		
Impact 4.4-4: Water Quality Impacts on Fish and Aquatic Resources			
Effects of suspended solids/turbidity on fishes and habitat resources during the construction phase and during the post construction phase for an additional tidal connection	Less than significant	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Effects of suspended solids/turbidity on fishes and habitat resources during the post construction phase (e.g., project verification monitoring, sampling, removal of invasive plants)	No impact	None required	Not applicable
Short-term and long-term effects of methylmercury exposure to and uptake by aquatic organisms and wildlife consuming aquatic organisms during construction and post-construction phases	Less than significant **Beneficial effect**	None required	Not applicable
Short-term and long-term effects of pesticide exposure to and uptake by aquatic organisms and wildlife consuming aquatic organisms with construction and post construction	Less than significant	None required	Not applicable
Long-term water temperature impacts to fish(e.g., Chinook salmon and steelhead tolerances) and other aquatic resources at construction and post construction	Less than significant **Potentially beneficial effect**	None required	Not applicable
Long-term low dissolved oxygen impacts to fish (e.g., Chinook salmon and steelhead tolerance) at construction and post construction	Less than significant	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Project Specific Impacts: Section 4.5, Agricultural Resources			
Impact 4.5-1: Loss of Important Farmland and Productivity			
Permanent loss of 0.43 acres of farmed wetlands	**Significant**	**Mitigation Measure 4.4-1:** The project shall mitigate for the loss of approximately 0.43 acres of farmed wetlands by complying with the requirements of the Agricultural Conservation and Mitigation Program (Section 8-2.404 of the Yolo County Code).	Less than significant
Increase in soil elevation on 80-acre spoils site	No impact **Beneficial effect**	None required	Not applicable
Impact 4.5-2: Consistency with Existing Zoning and Williamson Act Contracts			
The Habitat Mitigation Ordinance requires that the project must seek approval of an amended Williamson Act contract to authorize open space use. Thus, the applicant will be required to rescind and replace the existing two Williamson Act contracts.	No impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Project Specific Impacts: Section 4.6, Air Quality and Greenhouse Gases			
Impact 4.6-1: Short-term Construction Emissions of Criteria Pollutants that May Contribute to Existing Air Quality Violations			
Short-term construction nitrogen oxides (NO_x) and particulate matter (PM_{10}) emissions of criteria pollutants that may contribute to existing air quality violations	**Potentially significant**	**Mitigation Measure 4.6-1:** The mitigation measure shall be implemented to minimize emissions of NO_x and PM_{10}: •Limit construction on those days where Yolo County is predicted to exceed the "Spare the Air" Air Quality Index (AQI) for ozone >127 by the Sacramento Metropolitan Air Quality Management District (summer downwind area). Examples of limiting construction could range from stopping work that day to reducing construction to a half day or relying on electrical equipment solely. Once the AQI level of unhealthy is reached, i.e., 151 to 200 or beyond, all construction work shall cease for that day. •Require haul trucks and off-road diesel equipment operators to shut down their engines instead of idling for more than five minutes, unless such idling is necessary for proper operation of the equipment. Provide clear signage that posts this requirement for workers at the entrances to the site. •Require contractors' construction equipment to be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked and determined to be running in proper condition prior to operations. •Limit vehicle speeds on unpaved roads to 15 MPH. •Cover or maintain at least two feet of freeboard space on haul trucks transporting soil, sand, or loose materials onsite. Any haul trucks that would be traveling along freeways or major roadways shall be covered. •All active construction sites shall be watered at least twice daily. Frequency shall be based on the type of operation, soil, wind exposure, and the ability to eliminate visible fugitive dust.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
		•Between the time of completing construction and prior to the onset of winter rains, encourage the property owner and/or property manager to reinstate typical agricultural irrigation practices as a means to wet soils so they do not generate dust, as feasible. •Cover or water inactive storage piles. •If Soils Reuse Option #1 or #3 is selected, then re-establish vegetation on the toe berm and buffer areas, i.e., use native grassland species seed mix on the toe berm and apply native wetland-upland transition mix in the buffer areas. •Develop an emissions reduction plan that demonstrates that off-road equipment of more than 50 horsepower to be used during construction of all project-and program-level elements shall achieve a project-wide fleet-average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent California Air Resources Board fleet average. Acceptable options for reducing emissions shall include using late model engines, low-emissions diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or add-on devices such as particulate filters, with specifics dependent on contractor's ability to secure such equipment in a timely fashion.	
NO_x and PM_{10} emissions of criteria pollutants that may contribute to existing air quality violations during post-construction (e.g., monitoring, sampling)	No impact	None required	Not applicable
Release of toxic air contaminants during construction and post construction	Less than significant	None required	Not applicable
Impact 4.6-2: Conflict with or Obstruction of Applicable Air Quality Plan			
Conflict with or obstruction of applicable air quality plan implementation during construction and post construction	No conflict or impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.6-3: Greenhouse Gases and Global Climate Change Contributions			
Release of greenhouse gases and impacts associated with global climate change during construction and post construction	Less than significant	None required	Not applicable
Long-term sequestration of carbon	No impact **Potentially beneficial effect**	None required	Not applicable
Project Specific Impacts: Section 4.7, Cultural Resources			
Impact 4.7-1: Loss of, or Damage to, Unknown Archaeological Resources			
Effects to unknown(i.e., buried) archaeological resources	**Potentially significant**	**Mitigation Measure 4.7-1:** Where ground-disturbing activities may occur: •Conduct an environmental awareness training concerning cultural resources management utilizing the services of a qualified archaeologist for contractors and their staff prior to the start of construction. •Cease ground-disturbing work in the vicinity of the area should buried archaeological resources be uncovered during construction, operation, and/or routine maintenance, until a qualified archaeologist can visit the site of discovery and assess the significance of the resource. After the assessment is completed, the archaeologist shall submit a report describing the significance of the discovery and its origin with cultural resources management recommendations if the archaeological resources are significant. •Comply with Public Resources Code § 21083.2, as applicable, should buried archaeological resources be found. Avoidance or preservation in an undisturbed state is the preferable course of action. Preservation methods may include: o Planning construction to avoid archaeological sites.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
		○ Deeding sites into permanent conservation easements. ○ Capping or covering sites with a layer of soil before building on the sites. ○ Planning parks, greenspace, or other open space to incorporate archaeological sites.	
Impact 4.7-2: Impacts to Historic Resources			
Impacts to historic resources or cultural landscapes	Less than significant	None required	Not applicable
Impact 4.7-3: Impacts to Unknown Human Burial Resources			
Effects related to accidental encounter with unknown human burial resources during ground-disturbing activities	**Potentially significant**	**Mitigation Measure 4.7-2:** Where ground-disturbing activities may occur: •Notify the Yolo County coroner, Yolo County Department of Public Works, and designated Most Likely Descendant (as identified by the Native American Heritage Commission) in the event of discovering human remains during construction, operation, and/or routine maintenance of the Project. The notification protocol and process shall proceed in accordance with the *State CEQA Guidelines,* California Code of Regulations (CCR) § 15064.5(e); Public Resources Code § 5097.98; and Health and Safety Code § 7050.5, as applicable.	Less than significant
Project Specific Impacts: Section 4.8, Hazards and Hazardous Materials			
Impact 4.8-1: Effects of Soils and Materials Contamination			
Effects from known hazardous waste contamination sites	No impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Removal of infrastructure that may release hazardous waste (e.g., treated wood); discovery of an unknown contaminated site; or leaking polychlorinated biphenyls (PCB) transformers	**Potentially significant**	**Mitigation Measure 4.8-1:** Based on final design and environmental/physical conditions onsite, one or more of the following elements of this mitigation measure shall be undertaken if evidence indicates that soil sites and/or materials are contaminated per applicable hazardous waste laws and regulations: •Develop and implement a monitoring and treatment/disposal plan in accordance with all applicable hazardous waste laws and regulations. •Examine soil below any pole-mounted transformers on the portion of the Project site to be graded. If there is evidence (such as discoloration of the soil) that PCBs have leaked from the transformers, then Pacific Gas & Electric (PG&E) shall be contacted. It is the responsibility of PG&E to perform a soils investigation and cleanup if any of the pole-mounted transformers are determined to have leaked PCBs. •Test or assume that the wood demolished and removed from the existing irrigation system contains potentially hazardous waste (e.g., lead paint, creosote, arsenic, etc.) and then have it treated, recycled, or disposed of in accordance with applicable regulations concerning hazardous waste.	Less than significant
Impact 4.8-2: Hazards with Natural Gas Wells and Related Pipelines			
Accidental exposure to hazardous conditions (potential explosion and fire) associated with plugged wells and related, distribution natural gas pipelines during construction of tidal connections and related excavations	**Potentially significant**	**Mitigation Measure 4.8-2:** •Develop and implement actions in coordination and concurrence with the Yolo County Fire and Emergency Services Department and California Division of Oil, Gas, and Geothermal Resources to comply with applicable requirements of the Well Review Program (DOGGR 2007) and other applicable public safety requirements. Such measures include contacting the California Underground Service Alert in a timely manner prior to excavation, inspecting site to look for physical evidence of underground facilities, marking off excavated areas, having an emergency plan in place, etc.	Less than significant

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Impact 4.8-3: Impacts related to Mosquito Control			
Physical impacts from new or altered facilities for the Sacramento-Yolo Mosquito Vector Control District	No physical impact	None required	Not applicable
Environmental health effects from mosquito production	Less than significant **Beneficial effect**		
Project Specific Impacts: Section 4.9, Energy Consumption			
Impact 4.9-1:-Impacts related to Natural Gas Usage			
Consumption of natural gas during construction or post-construction; or modifications to active natural gas wells/fields	No impact	None required	Not applicable
Impact 4.9-2: Impacts related to Electricity Usage			
Usage of electricity during construction and post-construction phases, requirement for new facilities or wasteful energy practices	No impact	None required	Not applicable
Impact 4.9-3: Impacts from Transportation Fuel Consumption			
Consumption of diesel and gasoline during construction	Less than significant	None required	Not applicable
Consumption of transportation fuel during post-construction; or requirement for new or modified fuel facilities for storing, processing, or distributing transportation fuels	No impact		

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Cumulative Impacts: Section 4.10.1, Hydrology			
Flood Conveyance Cumulative Impacts			
Increase in surface water elevation	Less-than-significant cumulative impact	None required	Not applicable
Other Hydrological Cumulative Impacts			
Impact to agricultural irrigation and drainage onsite or indirectly to adjacent properties; impediment to winter flood conveyance; stormwater drainage; and contributing effects to sea level rise	No cumulative impact	None required	Not applicable
Cumulative Impacts: Section 4.10.2, Water Quality			
Methylmercury Loading Cumulative Impacts			
Increase in methylmercury loading both locally and regionally	Less-than-significant cumulative impact	None required	Not applicable
Dissolved Organic Carbon Levels Cumulative Impacts			
Increase dissolved organic carbon loading to facilities operated by municipal water purveyors	Less-than-significant cumulative impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Dissolved Oxygen and Biological Oxygen Demand Levels Cumulative Impacts			
Seasonal decline in dissolved oxygen; increase in biological oxygen demand	Less-than-significant cumulative impact	None required	Not applicable
Other Water Quality Issues Cumulative Impacts			
Impacts from sediment, trash, and accidental spills; change in tidal prism; and impact to one onsite domestic well	Impacts from none to less than significant	None required	Not applicable
Cumulative Impacts: Section 4.10.3, Terrestrial Biological Resources			
Wetlands Cumulative Impacts			
Temporary disturbance of seasonal wetlands, and jurisdictional waters	**Significant cumulative impact**	**See Mitigation Measures 4.3-1 and 4.3-3**	Less-than-significant cumulative impact
Permanent conversion of currently degraded wetlands to higher wetland functions and values	**Long-term beneficial effect**	None required	Not applicable
Riparian Woodland and Scrub Cumulative Impacts			
Removal of some riparian woodland and scrub for tidal connections	No cumulative impact	None required	Not applicable
Special-status Plants Cumulative impacts			
Potential effects on Delta tule pea, Mason's lilaeopsis, and Suisun during construction	**Significant cumulative impact**	**See Mitigation Measure 4.3-2**	Less-than-significant cumulative impact

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Giant Garter Snake Cumulative Impacts			
Temporary disturbance of the habitat used by GGS, along with potential of injury or mortality of individuals	**Significant cumulative impact**	**See Mitigation Measures 4.3-4 and 4.3-8**	Less-than-significant cumulative impact
Permanent conversion of currently degraded habitat to additional habitat for GGS	**Long-term beneficial effect**	None required	Not applicable
Western Pond Turtle Cumulative Impacts			
Temporary disturbance of the habitat used by the western pond turtle, along with potential of injury or mortality of individuals	**Significant cumulative impact**	**See Mitigation Measure 4.3-5**	Less-than-significant cumulative impact
Permanent conversion of currently degraded habitat to additional habitat for the western pond turtle	**Long-term beneficial effect**	None required	Not applicable
Nesting by Special-status and Migratory Birds Cumulative Impacts			
Temporary disturbance to nesting habitat used by special-status birds, including Swainson's hawk and migratory birds during construction	**Significant cumulative impact**	**See Mitigation Measures 4.3-6 and 4.3-8**	Less-than-significant cumulative impact
Foraging Habitat for Special-status Raptors Cumulative Impacts			
Permanent loss of foraging habitat used by special-status birds, including Swainson's hawk and other raptors	**Significant cumulative impact**	**See Mitigation Measure 4.3-7**	Less-than-significant cumulative impact

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Cumulative Impacts: Section 4.10.4, Aquatic Biological Resources			
Aquatic Biological Resources Cumulative Impacts			
Effects during construction and post construction: aquatic and riparian habitats, direct fish lethality or injury, temporary noise impacts impeding or delaying fish migration, and water quality impacts on aquatic biological resources	Less-than-significant cumulative impact	None required	Not applicable
Long-term substantial increase in shallow-water and tidal marsh habitats for native fish	Less-than-significant cumulative impact **Beneficial effect**		
Cumulative Impacts: Section 4.10.5, Agricultural Resources			
Important Farmland and Productivity Loss Cumulative Impacts			
Loss of Important Farmlands and productivity in Yolo County	Less-than-significant cumulative impact	None required	Not applicable
Other Cumulative Impacts to Agricultural Resources			
Inconsistencies with Williamson Act and related county, regional, and state planning requirements	No cumulative impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Cumulative Impacts: Section 4.10.6, Air Quality and Greenhouse Gases			
Construction Activities and Consistency with State and Federal Air Quality Plans Cumulative Impacts			
Increases in NO_x and PM_{10} emissions for the Yolo-Solano region contained within the Sacramento Valley Air Basin	**Significant, temporary cumulative impact**	**See Mitigation Measure 4.6-1**	Less-than-significant cumulative impact
Inconsistencies with Yolo-Solano Air Quality Management District's regional plans and other adopted regional air plan	No cumulative impact	None required	Not applicable
Greenhouse Gases and Global Climate Change Cumulative Impacts			
Increases in greenhouse gases and global climate changes	Less-than-significant cumulative impact	None required	Not applicable
Cumulative Impacts: Section 4.10.7, Cultural Resources			
Buried Archaeological Resources and Human Burial Resources Cumulative Impacts			
Contribute to the continued loss of subsurface cultural resources, i.e., unknown archaeological resources and human burial resources	**Significant cumulative impact**	**See Mitigation Measures 4.7-1 and 4.7-2**	Less-than-significant cumulative impact
Historic Resources Cumulative Impacts			
Alterations to potential historic resources, such as levees	Less-than-significant cumulative impact	None required	Not applicable

Table ES-1 Summary Table of the Flyway Farms Potential Environmental Impacts, Mitigation, and Residual Impacts after Mitigation

Environmental Impacts	Significance Determinations Without Mitigation	Proposed Mitigation Measures	Significance Determinations With Mitigation
Cumulative Impacts: Section 4.10.8, Hazards and Hazardous Materials			
Soils and Materials Contamination Cumulative Impacts			
Possible exposure to isolated, contaminated sites yet discovered	**Potentially significant cumulative impact**	**See Mitigation Measure 4.8-1**	Less-than-significant cumulative impact
Hazards with Natural Gas Wells/Pipelines Cumulative Impacts			
Increased risk of upset (explosions and fires) in encountering plugged or unknown natural gas wells and related distributed pipelines	**Significant cumulative impact**	**See Mitigation Measure 4.8-2**	Less-than-significant cumulative impact
Mosquito Control Cumulative Impacts			
Potential increase mosquito production on new tidal wetland areas in the short-term	Less-than-significant cumulative impact	None required	Not applicable
Long-term effect would be a substantial decrease in mosquito production	Less-than-significant cumulative impact **Beneficial effect**		
Cumulative Impacts: Section 4.10.9, Energy Consumption			
Increased consumption of electricity, natural gas, and other transportation fuels during construction in Yolo County	Less-than-significant cumulative impact	None required	Not applicable
Increased consumption of electricity, natural gas, and other transportation fuels post construction in Yolo County	No cumulative impact		

3 PROJECT DESCRIPTION

3.1 INTRODUCTION

The Yolo Flyway Farms Restoration Project is one part of the larger components of the Lower Yolo Restoration Project proposed by the State and Federal Contractors Water Agency (SFCWA) on behalf of the California Department of Water Resources and the U.S. Bureau of Reclamation (Figure 1). The primary purpose of the Lower Yolo Restoration Project is to restore tidal interaction and associated wetland habitats to enhance and create habitat for special-status fish. This would be achieved by implementing a project design within this 3,795-acre managed grassland landscape that promotes enhanced connectivity to tidal fluctuations through swale and wetland terrace excavation and selective agricultural berm leveling to enhance tidal marsh habitat (CBEC Ecological Engineering 2014). The Lower Yolo Restoration Project, which has not yet been implemented, proposes to restore and enhance a total of 1,770 acres of tidal freshwater wetlands at the southern end of the Yolo Bypass in the northwestern Sacramento/San Joaquin River Delta.

The Yolo Flyway Farms Restoration Project was previously analyzed as a portion of Phase 2 in the Environmental Impact Report certified for the Lower Yolo Restoration Project (State Clearinghouse No. 2011032001) pursuant to CEQA and the CEQA Guidelines (14 Cal. Code Regs. §§ 15000 *et seq.*). Yolo Flyway Farms is the northeastern-most parcel within the Lower Yolo Restoration Project. SFCWA determined in 2011 that Yolo Flyway Farms would not be included within the initial work plan and was included within a proposed Phase 2 of the project. Flyway Farms was included and analyzed as part of the overall project in the Final Environmental Impact Report (Final EIR) (SFCWA 2013). However because of the interest on the part of the landowner in undertaking restoration activities on the 362 acre Yolo Flyway Farms now and the uncertainty of future implementation of Phase 2 of the Lower Yolo Restoration Project, the landowner is pursuing an independent course with Yolo County.

As a result, Yolo County has prepared this separate Supplemental Environmental Impact Report (Supplemental EIR) that addresses the impacts of the Yolo Flyway Farms Restoration Project. In doing so, Yolo County has incorporated by reference major "setting" sections of the adopted Lower Yolo Restoration Project Final EIR. In addition, much of "impact analysis and "mitigation measures" of the Final EIR has been reproduced in this Draft Supplemental EIR and has been modified as needed for Yolo Flyway Farms Restoration Project.

The major change to the Flyway Farms Restoration Project involves a soil deposit site. While the 362-acre restoration portion of the Yolo Flyway Farms was included in the Final EIR, the adjacent 80-acre parcel which is now being proposed as a soil deposit site was not included. Therefore, this report is intended to supplement the Final EIR for the Yolo Flyway Farms Restoration Project by assessing the effects of implementing proposed project activities on the

adjacent 80-acre soil deposit site on biological resources, as well as reassessing overall impacts to agricultural resources on the Yolo Flyway Farms restoration site.

3.2 PROPOSED PROJECT

The proposed Yolo Flyway Farms Restoration Project is a habitat restoration project that would restore and enhance approximately 278 acres of tidal freshwater wetlands on a 362-acre parcel in the lower Yolo Bypass. The project is one small component of several larger wetland restoration projects that have been completed or are in the process of being approved for construction in the Cache Slough area located in the northwestern portion of the Sacramento-San Joaquin River Delta (Figure 3-1). Many of these projects are being designed to provide Delta smelt breeding and other endangered species habitat in conjunction with the Bay Delta Conservation Plan, proposed by the State of California.

The Yolo Flyway Farms project can potentially contribute to partial completion of the following regional habitat restoration goals and objectives:

1) Reasonable and Prudent Alternative 4 (RPA 4) included in the U.S. Fish and Wildlife Service Delta Smelt Biological Opinion (BiOp) for Coordinated Long Term Operation of the CVP and SWP (USFWS BiOp), which requires DWR to complete a program to create or restore a minimum of 8,000 acres of intertidal and associated subtidal habitats in the Delta and Suisun Marsh by December 15, 2019.

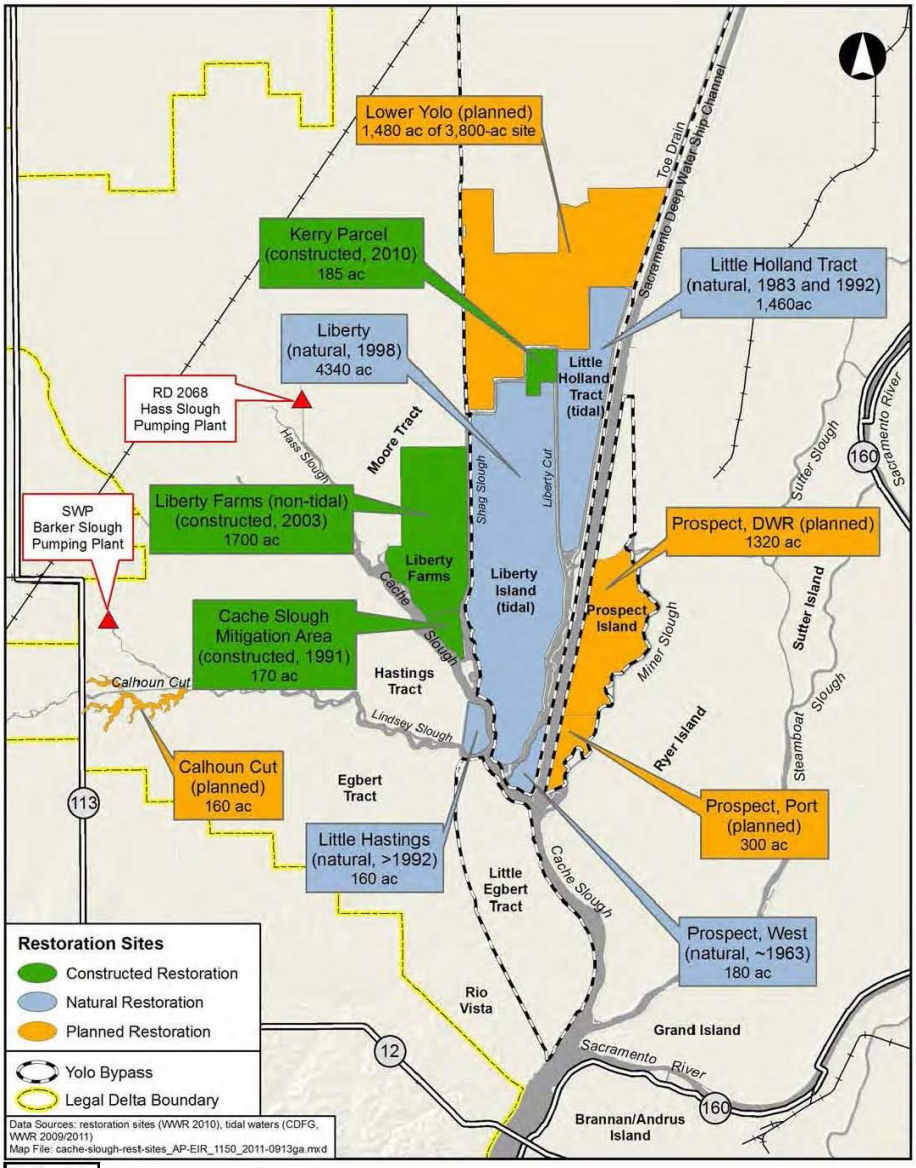
2) Reference to the USFWS RPA 4 in the National Marine Fisheries Service Salmonid Biological Opinion (NMFS BiOp) for coordinated long-term operation of the State Water Project (SWP) and the federal Central Valley Project (CVP) that allows for partial satisfaction of NMFS BiOp RPA I.6.1 for salmonid rearing habitat within tidal and subtidal habitat restoration projects.

3) RPA Suite I.6 and RPA I.7 of the NMFS BiOp for actions on the Yolo Bypass or other suitable areas of the lower Sacramento River and in the Liberty Island/Lower Cache Slough/Lower Yolo Bypass area that provide for improved floodplain rearing habitat and fish passage, including Yolo Bypass actions described in Appendix 2-C of the NMFS BiOp.

Because of its location at the Sacramento-San Joaquin Delta margin, the project site provides an opportunity to restore a small amount of wetland-upland transitional habitats. The project seeks to supplement the credits generated by the proposed Lower Yolo Restoration Project and, if possible, integrate its design with that project in order to provide a larger project that maximizes utilization of the unique landscape setting that both sites occupy.

Figure 3-1

Cache Slough Complex Restoration Projects



As already noted above, the Flyway Farms project is a part of the approved, but not yet constructed, Lower Yolo Restoration Project, which proposes to restore and enhance a total of 1,770 acres of tidal freshwater wetlands of a 3,795-acre site (Figures 3-2 and 3-3). The site is located within the Yolo Bypass, the largest floodwater bypass of the federal Sacramento River Flood Control Project, and often receives substantial flood flows during the winter-spring rainy season (roughly November through May) that can submerge the project site by up to 15 feet of water or more. Before being diked and reclaimed for agriculture in the early and mid-1900s, the site contained a combination of grasslands, seasonal wetlands, open water "backwater lake" features, and tidal marsh. Consequently, the proposed project would restore areas that historically were wetlands prior to the 20th century.

The Yolo Flyway Farms Restoration Project is proposing, as its primary goal, to restore tidal interaction to the property to enhance and create habitat for special status fish. The project is designed to support delta smelt recovery; provide rearing habitats for out-migrating salmonids; and support other aquatic and wetland-dependent species, including Sacramento splittail. In meeting these objectives, a preferred design alternative followed the same approach as was adopted for the Lower Yolo Restoration Project, which was developed collaboratively between the State Federal Contractors Water Agency and its scientific advisory committee. The project design promotes enhanced connectivity to tidal fluctuations through swale and wetland terrace excavation and selective agricultural berm leveling to enhance tidal marsh habitat via conversion from managed grasslands.

Project Site

The Flyway Farms project site consists of two separate parcels that are zoned for agricultural uses, located approximately 9.4 miles southeast of the City of Davis (Figure 3-4). The 362-acre property (APN: 033-390-002) has historically been managed as a duck hunting club and, recently, is used for seasonal pasture. The 80-acre parcel (APN: 033-220-049), proposed for stockpiling excess soils, is in idle agricultural use. The properties are under separate Williamson Act contracts and contain flood easements for the Central Valley Flood Protection Board.

Current land uses on the 362-acre unit are dominated by summertime flood irrigation of reclaimed rice fields used as pasture for cattle grazing. The 362-acre unit contains many historically wet areas (including approximately 27.5 acres of the Toe Drain) and has been managed in winter for waterfowl and duck hunting (Figure 3-5). The 80-acre unit has historically been used for rice production and is currently fallow.

Figure 3-2

Site Geographic Reference Features

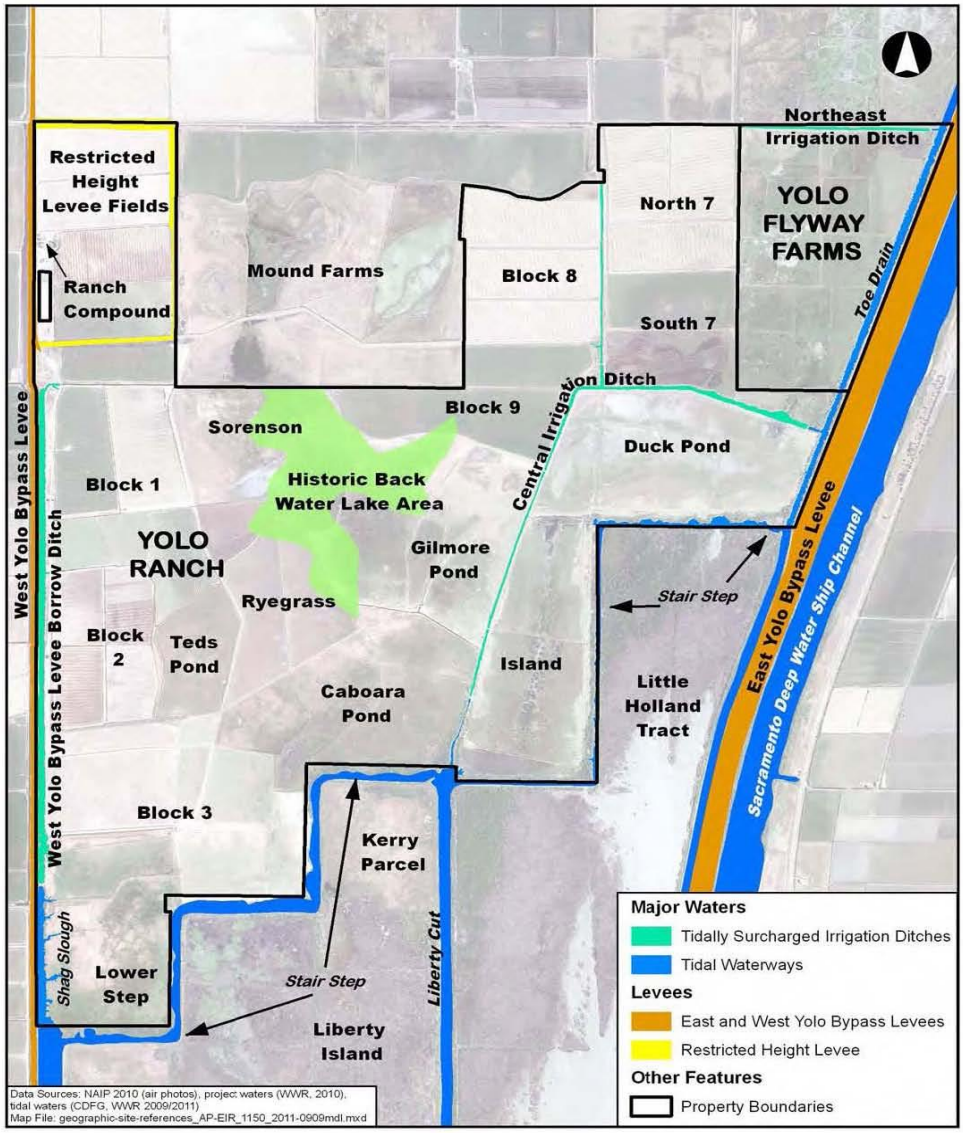


Figure 3-3

Phased Project Detail Restoration Design Feature

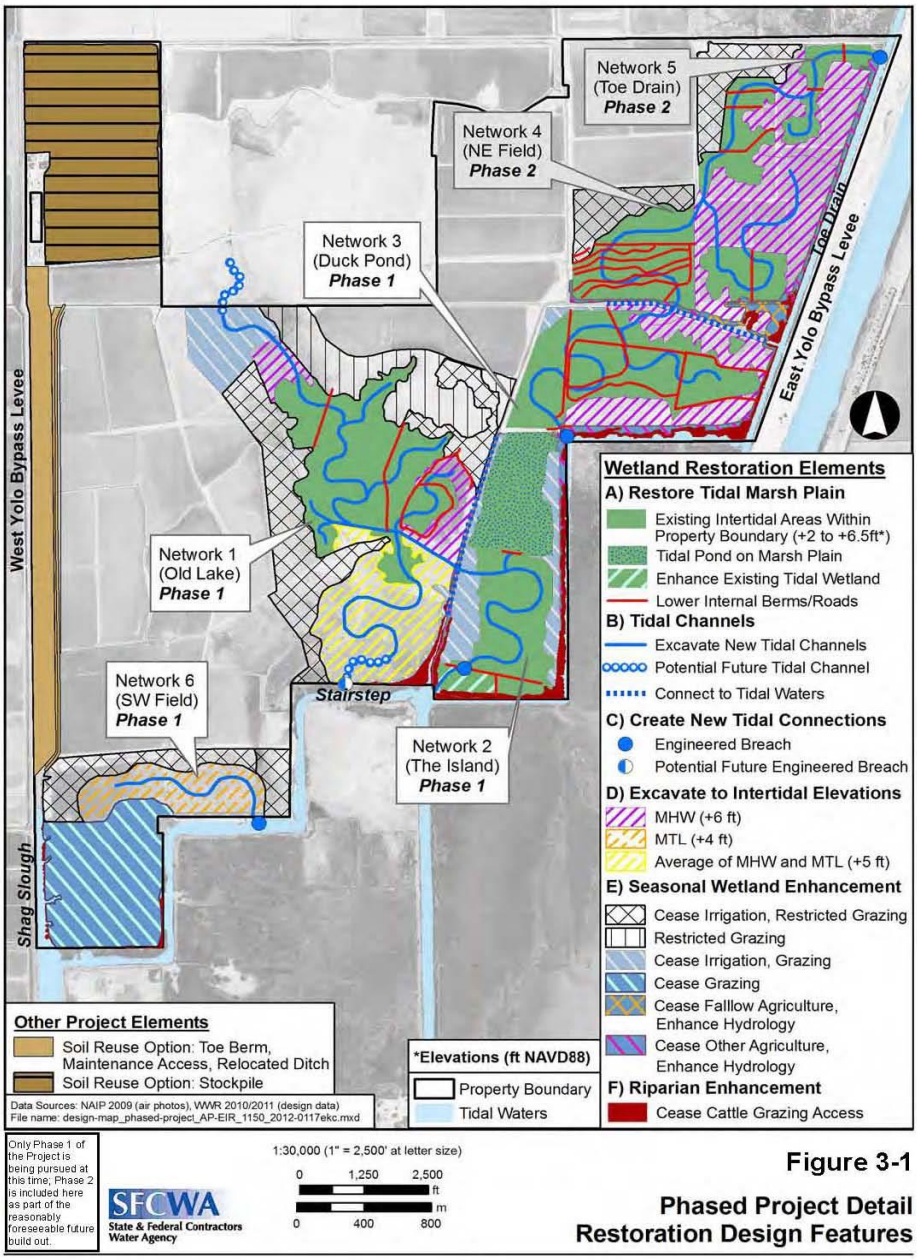


Figure 3-4

Flyway Farms Aerial

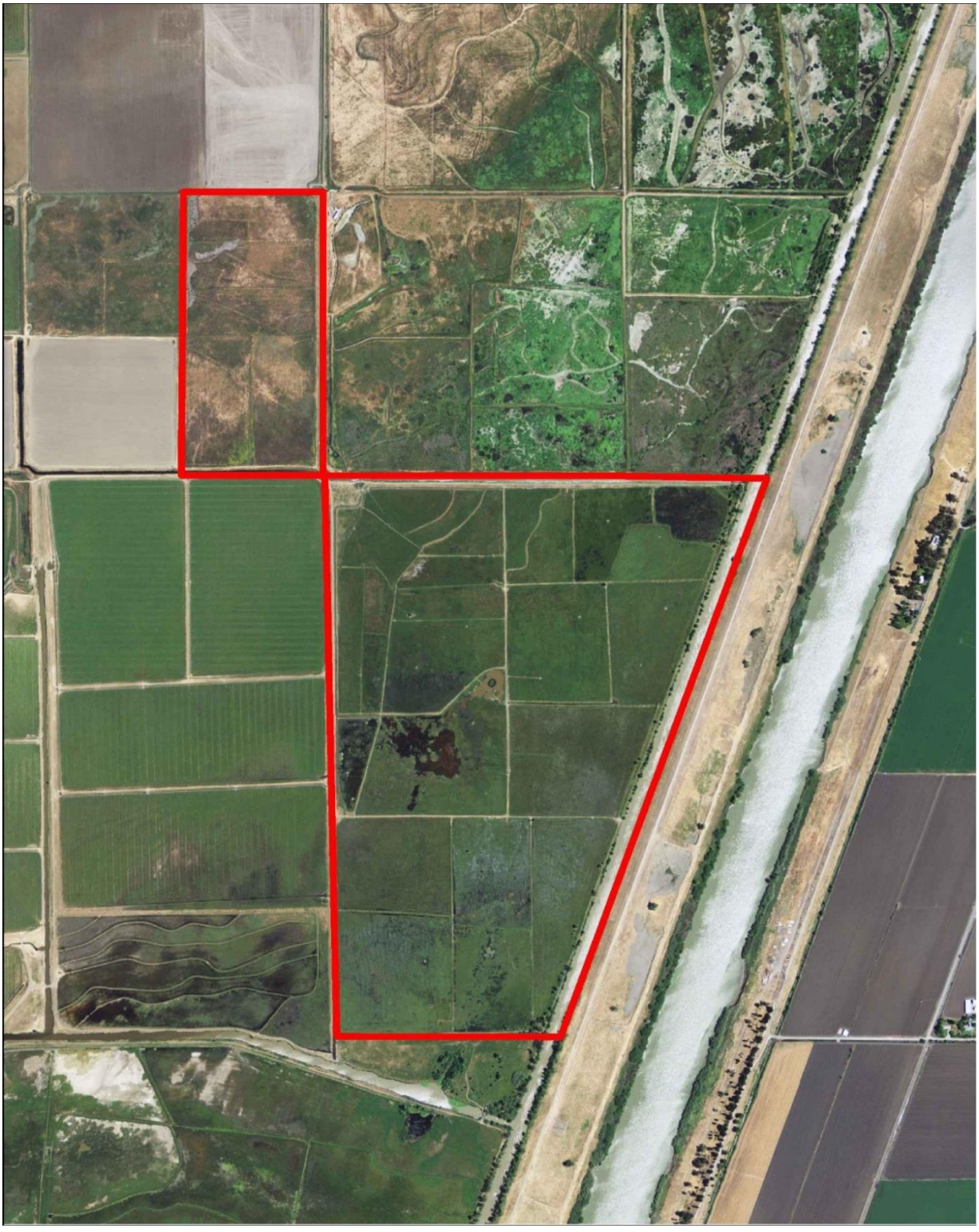


Figure 3-5

Existing Duck Blinds

Changes in the Project Since the Final EIR

The project design for the Yolo Flyway Farms Restoration Project has changed since the adoption of the Final EIR for the Lower Yolo Restoration Project in 2013. Based on guidance and recommendations provided to the applicant by the State and federal agencies, the original design for the Flyway Farms (and for the larger Lower Yolo project) has been modified to reduce a significant portion of the previously planned excavation of land to lower the surface to create tidal habitat (Jensen, 2015).

The modified design plan would restore tidal flows to the portions of the site that are already within the intertidal range (+2.0 to +6.5 feet), but which are currently managed as winter

waterfowl hunting through the use of water control structures (not with excavation). It would maintain existing topography, except that areas excavated to form channel networks would be graded to subtidal elevations. The intent of the new design is to mimic the natural tidal flooding of the land without resorting to major excavation to lower the elevation by a few feet. The revised design is very similar to the "Reduced Restoration Footprint Alternative" that was described and analyzed as Alternative No. 2 in the Final EIR for the Lower Yolo Restoration Project (see Figure 3-6). The Flyway Farms portion on the figure is labeled "Network 5: Toe Drain." The design indicates that a majority of the land would be subject to "decreased irrigation" (not "excavate to intertidal elevations" as depicted in the original design in Figure 3-3).

The original design for the Flyway Farms portion of the larger Lower Yolo project originally called for excavation of approximately 193,000 cubic yards of soil. The revised design now requires the excavation of only approximately 67,000 cubic yards.

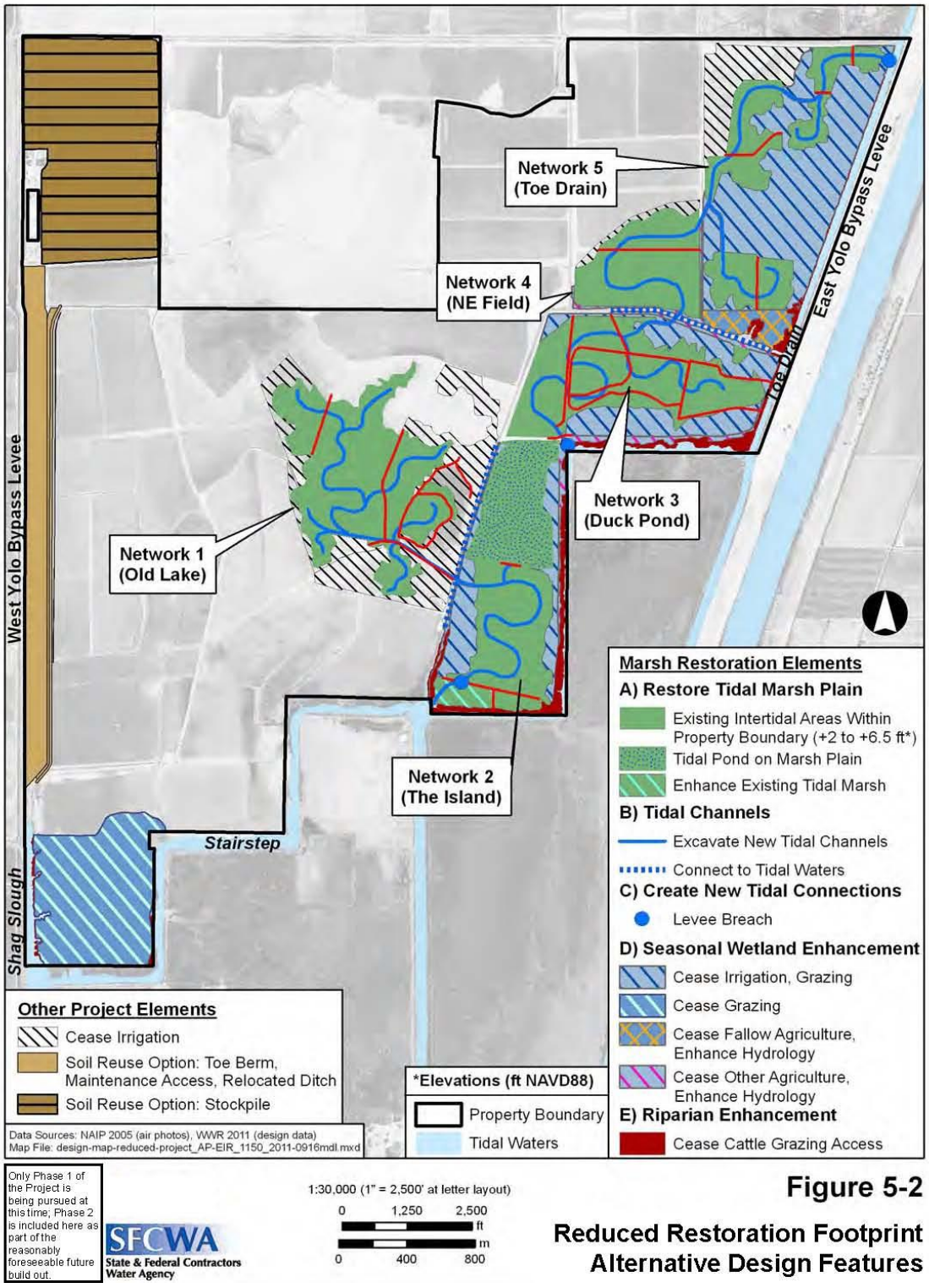
Table 3-1 Changes in Natural Communities with Proposed Project: Estimated Acreage Conversion of Jurisdictional Wetlands and Water

Description	Existing Conditions (acres)	Proposed Conditions (acres)	Change (acres)
Wetlands			
Perennial emergent marsh (tidal)	0	291	291
Perennial emergent marsh (non-tidal)	35	0	(35)
Seasonal marsh	316	38	(278)
Seasonal and farmed wetlands	0.43	0	(0.43)
Riparian	3	3	0
Navigable waters			
Tidal waterways	18	21	3
Tidally surcharged irrigation/drainage	7	4	0
Other waters			
Drainage ditch	.0001	.0001	0
Uplands			
Uplands	113	101	(12)
TOTAL	439	439	0

Source: Revised from Table 4.3-6 in the Lower Yolo Restoration Project Final EIR, based on the most recent wetland delineation for the Flyway Farms properties (ICF, 2014).

Figure 3-6

Reduced Restoration Footprint Alternative Design Features



The soil would be removed from the 362-acre parcel to create a tidal channel network in the interior of the site, and to connect the site to adjacent natural tidal channels (Figure 3-7). The project would increase tidal inundation of the 362-acre unit by creating two breaches on the eastern property berm along the Toe Drain (see grading plans in Figure 3-8). One berm is located at the northern end of the property, the other at the southern end. The northern breach would connect to a short swale that will allow higher high tides and elevated Toe Drain flows to enter the site from the north and gradually drain out to the south. The southern breach would connect to a longer, branching swale that extends to the west and to the north to promote tidal inundation of the 362-acre unit interior.

The westerly branch of the southern swale may potentially be extended to connect to the Lower Yolo Restoration Project should the two projects ultimately be integrated. The bottom elevation of both swales would be 0 feet NAVD88 to allow for continual tidal action on the property and to limit tule colonization. The southern swales include a 100 foot wide terrace at elevation 5.0 feet NAVD88 to enhance tidal inundation and create marsh habitat at a lower elevation that would otherwise not be provided by the limited site grading because a majority of the 362-acre unit is above 6.0 feet NAVD88.

The excavated soils will be placed on the upland areas of the adjacent 80-acre parcel. This excess soil will be trucked to the 80-acre site on existing farm roads and deposited and spread in the idle field, adding approximately 0.5 feet of elevation to the field. It is anticipated that the project site will continue to be dedicated to agriculture upon completion of restoration activities.

Figure 3-7

Revised Flyway Farms Design

R:\Projects\14-1009_Yolo_Flyway_Farms\Reporting\Flood Modeling\

Figure 3-8

Grading Plans (Northern Section)

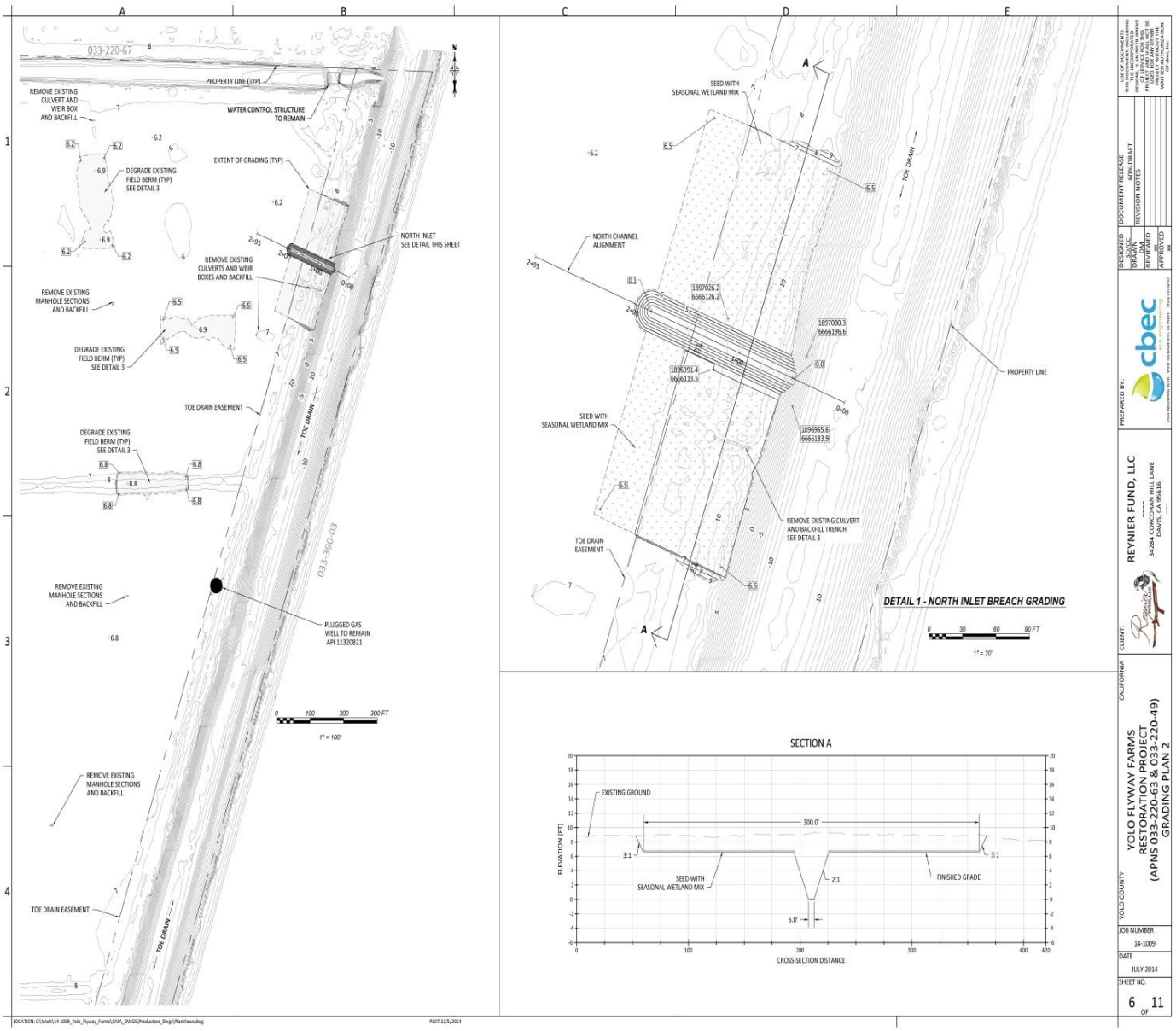
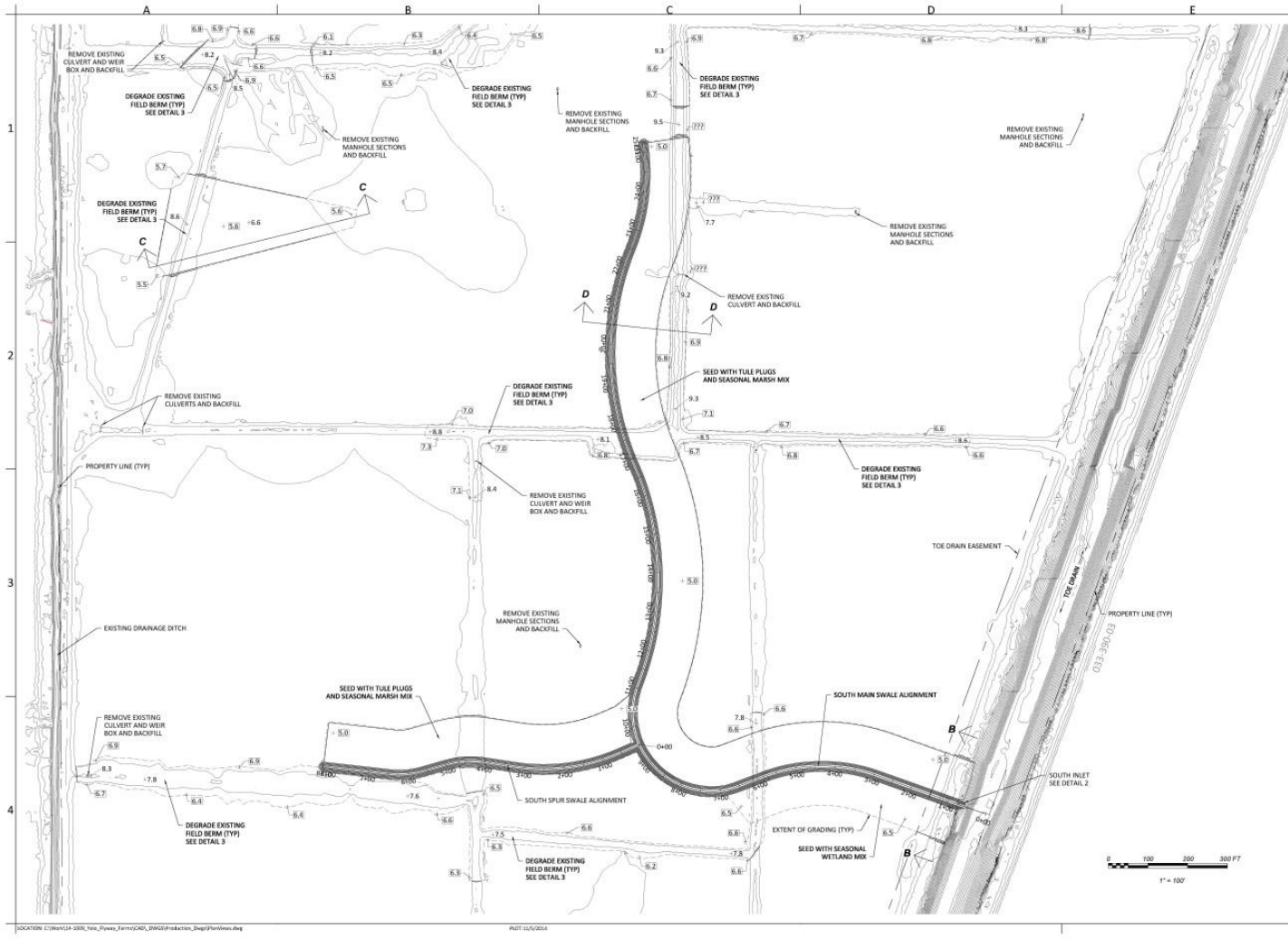


Figure 3-8 (con.)

Grading Plans (Northern Section)



3.3 Long-term Management Plan

The project would be designed to become a naturally, self-functioning system that would not require active management or intervention. Therefore, long-term operations and maintenance aspects of the project would be comparatively minimal. Post-construction activities would fall into two categories: management of ancillary site conditions; and corrective measures to address potential problems.

The applicant for Flyway Farms has not yet prepared and submitted a long term management plan for the project. A management plan was described in the Final EIR for the Lower Yolo Restoration Project, and is briefly summarized below.

The applicant is developing a long term management plan in conjunction with the Tidal Marsh Work Group headed up by biologists at California Department of Fish and Wildlife (CDFW). The goal of the work group is to standardize (as much as possible) monitoring goals and methods across tidal marsh restoration projects throughout the Delta. At the time of this writing (Fall, 2015) the proposed monitoring goals and methods are still in draft form and are not ready for incorporation into a long term management plan for the Flyway Farms project. The applicant states it will be several months before they are ready to develop a plan. The applicant states that the regulatory agencies they are working with on the project (USFWS, NMFS, CDFW) are aware of the timeline and supportive of this approach.

Management of Ancillary Site Conditions and Corrective Measures: Post-construction Activities

The management plan for the Lower Yolo Restoration Project described measures to manage ancillary site conditions such as:

- General management of agricultural activities outside of the restoration footprint;
- Maintenance and management of cattle exclusionary devices (i.e., fencing and signage) around restored areas; and
- Maintenance/replacement and management of water control structures that support ongoing agricultural activities on the remainder of the project site and on adjacent properties.

Long-term, operations and maintenance would also include monitoring for, and taking appropriate action as necessary, to address potential problems that could arise. The most likely potential long-term issues, monitoring parameters, and corrective measures are:

- Controlling and minimizing biological vectors
- Discouraging invasive plant species; and
- Remediating potential slumping of channel banks.

3.4 Environmental Measures Incorporated into the Project

The Project Description of the original Lower Yolo Restoration Project, which was approved by the State and Federal Contractors Water Agency in 2013, includes the following measures to minimize impacts to the water quality onsite. All of the applicable measures have been agreed by the applicant to be incorporated into the Flyway Farms project.

1. Prepare and implement a stormwater pollution prevention plan (SWPPP) and a spill prevention and control plan (SPCP).

2. Repair or replace broken water control structures along adjacent tidal water bodies including installation of additional flap gates to allow effective site drainage and restrict water exchange with adjacent tidal waters during construction.

3. Install a turbidity curtain on the tidal side of all water control structure replacement/repair sites to prevent excessive turbidity.

4. Cease irrigation in all Project work areas to maintain dry conditions during construction and, if needed, pump water out of the site to hasten drawdown.

5. Construct temporary berms to prevent tidal overtopping in low-lying construction areas.

6. Stage construction equipment and other construction infrastructure in upland areas surrounded by appropriate erosion control structures, such as silt fences or other sediment barriers.

7. Conduct all refueling and maintenance of construction equipment within appropriate staging areas (e.g., place staging areas outside sensitive habitats; provide temporary storage of fuels, oils, lubricants, and solvents in proper containers in secured/fenced locations; develop and implement a SPCP; have stationary equipment equipped with drip pans; and do not allow storage of equipment or vehicle storage within natural drainage swales).

8. Connect restored tidal marsh areas to Delta waters only after all grading activities are completed.

9. Excavate tidal connections from the site interior.

3.5 Project Objectives

The Yolo Flyway Farms Restoration Project, which has been independently submitted, is proposing, as its primary goal, to restore tidal interaction to the property to enhance and create habitat for special status fish. Like the Lower Yolo Restoration Project, the Yolo Flyway Farms Restoration Project has the following four objectives:

1. Enhance regional food web productivity in support of delta smelt recovery.
2. Provide rearing habitats for out-migrating salmonids.
3. Support a broad range of other aquatic and wetland-dependent species, including Sacramento spittail.
4. Provide ecosystem functions associated with the combination of Delta freshwater aquatic/tidal marsh/floodplain/seasonal wetland/lowland grassland interfaces that once existed historically.

3.6 Required Approvals

The project approvals that would be required include a Major Use Permit under the Yolo County Habitat Mitigation Ordinance and a Flood Hazard Development Permit under the County's Flood Protection Ordinance. Grading permits would also be issued by Yolo County.

The applicant is seeking approval by several State and Federal agencies including the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, Central Valley Flood Protection Board, etc.

3.7 Relationship to State, Regional, and Local Plans

The original Lower Yolo Restoration Project FEIR included a discussion of the larger project's relationship with various federal, state, regional, and local (Yolo County) plans. This discussion is incorporated by reference, with two exceptions.

The discussion and analysis of the Lower Yolo Restoration Project's consistency with Yolo County plans and regulations related to agricultural resources has been updated and is included within Section 4.5 of this SEIR for Flyway Farms.

In addition, the portion of the discussion in the Lower Yolo Restoration Project FEIR related to the Delta Stewardship Council is updated with the text below.

Delta Stewardship Council

In November 2009, the California Legislature enacted SBX7 1 (Delta Reform Act) which created the Delta Stewardship Council. The mission of the Delta Stewardship Council (DSC) is to achieve the coequal goals outlined in the California Water Code. The goals are to provide a more reliable water supply for California and to protect, restore, and enhance the Delta ecosystem.

The DSC has subsequently adopted the Delta Plan, a comprehensive, long-term management plan for the Delta, which became effective with legally-enforceable regulations on September 1, 2013.

The Delta Reform Act established a self-certification process for demonstrating consistency with the Delta Plan. This means that state and local agencies proposing to undertake a qualifying action, called a "covered action" in the Act, must submit to the DSC a written certification of consistency with detailed findings as to whether the covered action is consistent with the Delta Plan.

Per Water Code section 85057.5 "covered action" means a plan, program, or project as defined pursuant to Section 21065 of the Public Resources Code that meets all of the following conditions:

- Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh
- Will be carried out, approved, or funded by the state or a local public agency
- Is covered by one or more provisions of the Delta Plan
- Will have a significant impact on achievement of one or both of the coequal goals or the implementation of government-sponsored flood control programs to reduce risks to people, property, and state interests in the Delta.

As noted on the DSC Web page, "Only the lead CEQA state or local agency may determine whether that plan, program, or project is a covered action. That determination must be reasonable, made in good faith, and consistent with the Delta Reform Act and relevant provisions of the Delta Plan."

The Council has developed a Covered Actions Checklist to assist state and local agencies in determining whether a plan, program, or project is a "Covered Action" (Delta Plan Chapter 2), as defined in the Delta Reform Act (Water Code section 85057.5(a)).

If the Flyway Farms restoration project is approved, the lead agency will make a determination whether the project, based on all information in the administrative record at the time of approval, is a "Covered Action."

4 ENVIRONMENTAL ANALYSIS

4.1 HYDROLOGY

Introduction

This section incorporates by reference all of the background "Setting" discussion, the analysis of potential impacts, and the recommended mitigation measures that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR is incorporated by reference, and is augmented with the following discussion inserted under "Local Polices."

Yolo County Flood Protection Ordinance

Yolo County has adopted a Yolo County Flood Protection Ordinance (Title 8, Chapter 4 of the Yolo County Code). The ordinance requires that a Flood Hazard Development Permit shall be obtained before any construction or other development begins within any area of special flood hazards.

According to Section 8-4.403(a) of the County Code, the Floodplain Administrator shall review all Flood Hazard Development Permits to determine that:
(1) the permit requirements of the chapter have been satisfied;
(2) all other required state and federal permits have been obtained;
(3) the site is reasonably safe from flooding; and
(4) the proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designated. For purposes of this chapter, "adversely affects" means that the cumulative effect of the proposed development when combined with all other existing and anticipated development will increase the water surface elevation of the base flood more than one foot at any point.

In addition, Section 8-3.404(c) of the County Code requires the Floodplain Administrator, whenever a watercourse is to be altered or relocated, to "assure that the flood carrying capacity of the altered or relocated portion of said watercourse is maintained."

Impacts and Mitigation Measures

Significance Criteria

Potential impacts to hydrology would be significant if the project would exceed any of the following threshold significance criteria per Appendix G of the *State CEQA Guidelines*:

1. Require new or expanded entitlements and water resources to provide sufficient water supplies to the project.

2. Substantial depletion of groundwater supplies or substantial interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

3. Substantial alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, to the extent that the rate or amount of surface runoff is altered in a manner that would result in flooding on- or off-site.

4. Creation or contribution to runoff water that would exceed the capacity of existing or planned storm-water drainage systems or provide substantial additional sources of polluted runoff.

5. Placement of structures within a 100-year flood hazard resulting in impedance or redirection of flood flows.

For Significance Criterion 5, no adopted, formal numerical guidance exists from the Central Valley Flood Protection Board (CVFPB) or the U.S. Army Corps of Engineers (USACE) on what constitutes significance (i.e., flood elevation incremental changes) in the context of impedance or redirection of flood flows within the Yolo Bypass. To conduct the EIR impact analysis on flood flows, the informal guidance from USACE of 0.1 feet based on their RMA2 model for conveyance studies in the Yolo Bypass was applied. This 0.1 feet flood elevation incremental change is consistent with the Yolo County requirements for issuance of a Flood Hazard Development Permit.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential hydrology impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant hydrology impacts except for those identified below.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. All of the hydrology impacts and mitigation measures identified in the Final EIR for the Lower Yolo Restoration Project are applicable to the Flyway Farms project except for Mitigation Measure 4.1-1 (Impacts of Flood Conveyance) , which is not required for the Flyway Farms project as noted below.

Impact 4.1-1: Effects to Agricultural Irrigation

Availability of Water for Irrigation Purposes

Approximately 3,100 acres of the Lower Yolo 3,795-acre project site (which includes the Yolo Flyway Farms restoration site) are currently irrigated with 15,500 acre-feet of irrigation water, from April to October of each year. During irrigation operations, it is estimated that Yolo Ranch and Yolo Flyway Farms irrigate their pastures with an average of 4.4 acre-feet/acre and 9.9 acre-feet/acre, respectively, based on existing water rights and agricultural usage requirements for each site.

The restoration of tidal wetlands onsite and the transition of some pastures from irrigated into non-irrigated pastures would reduce the volumes of water needed to irrigate the site. Implementation of the project would remove approximately 1,420 acres of lands from irrigation. In turn, these lands would be restored to various tidal marsh and wetlands. Existing irrigation rates would be maintained on the remaining onsite agricultural lands, resulting in about 7,980 acre-feet per year less being applied to the overall Lower Yolo restoration site.

The Lower Yolo project (including Flyway Farms) would not result in an increase in water use, modifications to water supply sources, or new entitlements. Based on this analysis, no impact of water availability for irrigation purposes, either onsite or offsite would occur. No mitigation would be required.

Irrigation Patterns Onsite and Offsite

The Lower Yolo project components would alter the existing irrigation network across the site. These modifications would include changing certain diversion points, enlarging some irrigation ditches, and repairing/replacing water control structures. The component of the larger Lower Yolo Restoration Project that applies to Flyway Farms is described below.

Grading plans have been prepared by the applicant of the Flyway Farms portion of the larger project (Figures 4.1-1 and 4.1-2). As noted in the “Project Description,” the project would increase tidal inundation of the 362-acre site by creating two breaches on the eastern property berm along the Toe Drain. One berm is located at the northern end of the property, the other at the southern end. The northern breach would connect to a short swale that will allow higher

high tides and elevated Toe Drain flows to enter the site from the north and gradually drain out to the south. The southern breach would connect to a longer, branching swale that extends to the west and to the north to promote tidal inundation of the 362-acre site interior. The westerly branch of the southern swale may potentially be extended to connect to the Lower Yolo Restoration Project should the two projects ultimately be integrated. The bottom elevation of both swales would be 0 feet NAVD88 to allow for continual tidal action on the property and to limit tule colonization. The southern swales include a 100 foot wide terrace at elevation 5.0 feet NAVD88 to enhance tidal inundation and create marsh habitat at a lower elevation that would otherwise not be provided by the limited site grading because a majority of the 362-acre site is above 6.0 feet NAVD88.

Construction of the project wetland restoration and soils reuse components would require ceasing all irrigation and agricultural activities onsite to maintain dry working conditions. However, irrigation operations on adjacent properties that rely on the ditch and pump networks of the Flyway Farms site would be maintained during construction, by relying on temporary, portable pumps to divert water around construction zones for offsite users, and by upgrading water control structures to maintain adequate water levels and volumes for all users. Accordingly, construction-related impacts to onsite and offsite irrigation would be less than significant and no mitigation would be required. The wetland restoration effort would not rely on the agricultural irrigation system, but would be a self-sustaining, natural ecosystem.

Following construction of the project, new and remaining pre-project irrigation infrastructure elements would be maintained and operated in the same manner as at present, prior to project implementation by maintaining the water delivery capacity and stage (i.e., phases/timing of water distribution) of the current system. Maintaining irrigation ditch capacity would ensure that appropriated water rights would continue to be available under normal operations. Maintaining water distribution stage would ensure that water levels at existing onsite and offsite lift pumps would continue to operate as they have done historically. Therefore, potential impacts resulting from the project's operation and maintenance separately from the onsite and offsite irrigation systems would be less than significant. No mitigation would be required.

Impact 4.1-2: Effects to Agricultural Drainage

The Flyway Farms project would change the existing drainage network across the site. These changes include modifying some existing drainage points, developing new drainage points, and changing water control structures.

Project construction would require cessation of all irrigation and agricultural activities onsite to maintain dry working conditions. However, drainage capabilities on adjacent properties that rely on the ditch and pump networks on the project site would be maintained by providing temporary, portable pumps to divert water around construction zones for offsite users, and by upgrading water control structures to maintain adequate water levels and volumes for all users. The drainage modifications for the wetland restoration and soils reuse elements would retain

existing levels of drainage for both onsite and offsite properties by retaining the needed capacity for irrigation, and hence, recycled drainage. Therefore, this construction impact would be less than significant and no mitigation would be required**.**

Impact 4.1-3: Effects to Winter Storm-water Drainage

The construction of tidal channels and rerouted drainage ditches onsite would permanently alter the way that winter storm and flood flows drain within and from the site. Currently, with the extensive network of ditches and water control structures, large portions of the site drain very slowly to surrounding tidal water bodies, during intense winter storm and flood flows. For example, the March/April 2011 Yolo Bypass flood event inundated the entire Lower Yolo project site, including Yolo Flyway Farms, (except for land within the restricted-height levee) for several weeks, followed by persistent ponding of water on the portions of the site that are at or slightly above intertidal elevations. One reason this event happened was that the areas were not connected to tidal bodies of water that drain at low tide, thus forming small pools of water. The movement of water out of these areas is dependent upon agricultural drainage ditches, many of which have culverts or other water control structures that constrict the movement of water and impede drainage, even when open in the winter.

Implementation of the Flyway Farms project would involve constructing tidal channels specifically designed to move water in and out of the existing and newly created intertidal networks. These channels would facilitate the drainage of flood and storm-water flows from the site, and would likely have little effect upon flood-water drainage outside of the restoration footprint area. The redesigned irrigation and drainage ditch network would provide the same level of storm and flood-water drainage capacity as currently exists, i.e., all existing and new tide gates and exterior flap gates would remain open in the winter to promote efficient drainage of winter storm and flood flows from onsite and offsite sources.

The construction period would be conducted outside of the rainy season and would not affect Yolo Bypass flood inundation. The Flyway Farms restoration project, and the larger Lower Yolo project, would have a less-than-significant impact on onsite and offsite storm-water drainage and localized flood flows. No mitigation would be required.

Impact 4.1-4: Impacts on Flood Conveyance

The project is located within the Yolo Bypass, a major flood conveyance corridor along the Sacramento River. According to FEMA, this corridor is critical to discharge the 100-year-flood flow it receives from upstream without increasing the 100-year elevation more than one foot. The project must be consistent with the CVFPB flood flowage easements and not substantially interfere with the role of the Yolo Bypass' role to convey major flood flows.

A hydrology analysis has been prepared for the Flyway Farms project only (CBEC Ecological Engineering, 2014) and is summarized below. A third party review was also conducted by an engineer under contract with the County (PHI, 2014).

The Yolo Bypass RMA2 model developed by the USACE (2007a) for use in permitting and planning within the Yolo Bypass was used as a basis for assessing the potential flood conveyance impacts of the project. Three simulations were developed to describe the flood impacts of the Project, which include:

- Simulation #1: Existing Condition
- Simulation #2: Proposed Project
- Simulation #3: Proposed Project plus Local Projects

Topography for Simulation #2 was updated to reflect the stockpiling of dirt that would result from excavation of project swales. An estimated stockpile of 64,500 CY was uniformly spread over the 80-acre unit. This stockpile increased the elevations of this area by 0.5 feet. Topography for Simulation #3 was further updated to reflect the cumulative effects of multiple local projects in the region, including SFCWA's Lower Yolo Restoration Project and Wildlands' conservation and mitigation projects (i.e., Liberty Island Conservation Bank and Preserve, and North Delta Fish Conservation Bank). The Liberty Island Conservation Bank and Preserve project was constructed in summer 2010 and included degradation of the northern-most east-west Stair Step levee plus tidal marsh excavation and an onsite stockpile. The North Delta Fish Conservation Bank project, which has not been constructed, includes degradation of the southern and central east-west Stair Step levees plus minor grading activities.

To determine if any scenario resulted in a flood conveyance impact, a level of significance threshold for increases in water surface elevation was set to 0.05 feet. The analysis showed that the project has insignificant impacts to water surface elevation and velocity locally and adjacent to flood infrastructure. The changes in water surface elevation were projected to be less than the level of significance threshold of 0.05 feet.

Similarly, the regional scale effects were found to be insignificant when the Flyway Farms project was considered in combination with local SFCWA and Wildlands projects. A minor increase in water surface elevation downstream of the southern Stair Step was offset by an equally minor decrease in water surface elevation upstream of the same Stair Step. The majority of these changes in water surface elevation are less than the level of significance threshold. There are also local reductions in velocity along the west flood control levee.

A third party review was also conducted by an engineer under contract with Yolo County (PHI, 2014) to ensure that the necessary findings can be made under the County's Flood Protection Ordinance to issue a Flood Hazard Development Permit. The proposed project is located within a FEMA Special Flood Hazard Area and the ordinance includes a requirement that the Floodplain Administrator "assure that the flood carrying capacity of the altered or relocated

portion of said watercourse is maintained." The third party study concluded that the change in land use is not expected to increase runoff from the project site and that information provided in the technical memorandum is sufficient to verify that, to a resolution of 0.05-foot (resolution of reported study results), construction of the proposed project will not increase risks associated with flows emanating off site. The technical memorandum submitted is sufficient to verify that the project maintains the flood carrying capacity of the subject watercourse (the Yolo Bypass). No mitigation would be required.

Post-construction maintenance and monitoring could consist of onsite inspections, visually and through aerial imagery. Tidal channel flows, and tide stage monitoring could be conducted using automated gages. Project maintenance, monitoring and corrective measures would be noninvasive, would not place structural elements into the floodplain, nor would otherwise create flood conveyance heights greater than those existing on the project site, and would be conducted during the dry season. Appropriate vegetation management, along with encroachment permit requirements set by the CVFPB on vegetation plantings, would also maintain or reduce the potential flood conveyance height values. Therefore, maintenance, operations, and corrective measures would have a less-than-significant impact on Yolo Bypass flood conveyance capacity. No mitigation would be required.

Impact 4.1-5: Impacts on Local Groundwater

Only one groundwater well exists on the Lower Yolo project site (west of Flyway Farms). This well serves as a domestic water supply for the ranch compound during the summer agricultural season. In addition, agricultural activities on the project site depend on the ability to effectively manage surface and shallow groundwater levels for forage production and cattle grazing.

The restoration of tidal flows to the overall Lower Yolo project site, including Yolo Flyway Farms, may increase local groundwater elevations in areas that are not underlain by a duripan (dense, cemented, nearly impermeable soil layer) or heavy clays. Based on local soils conditions, any increase in local groundwater elevations resulting from implementation of the Project would be minimal, and would not affect postrestoration agricultural activities across the site. The site's lone groundwater well at the Yolo Ranch compound extracts water from an aquifer much deeper than the shallow surface aquifer that would potentially be affected by tidal flooding, so tidally-driven changes to groundwater would not affect this well (see Section 4.2, Water Quality). No impact on local groundwater would result and no mitigation would be required.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

WATER QUALITY

Introduction

This section incorporates by reference all of the background "Setting" discussion and the analysis of potential impacts that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR is incorporated by reference.

Impacts and Mitigation Measures

Significance Criteria

Potential impacts to water quality would be significant if the Project would exceed any of the following threshold criteria per Appendix G of the *State CEQA Guidelines*:

1. Violate any water quality standards, or waste discharge requirements.

2. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.

3. Create or contribute runoff water which would exceed the capacity of existing or planned storm-water drainage systems or provide substantial additional sources of polluted runoff.

4. Otherwise substantially degrade water quality.

Impacts

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential water quality impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant water quality impacts.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation

numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. All of the water quality impacts and mitigation measures are applicable to the Flyway Farms project, as noted below.

Impact 4.2-1: Temporary Impacts to Water Quality from Pollutants or Soil Erosion

Construction activities would involve site grading, channel excavation, and placement of the selected soils reuse option during the dry season, in and adjacent to water bodies. A variety of construction equipment, vehicles, materials, and maintenance supplies (e.g., fuels and lubricants) would also be present onsite. As described in Chapter 3.0, Project Description, habitat restoration, repairs and installation of water control systems, and the selected soils reuse option would include the following project measures to minimize impacts to the water quality onsite. All of these measures are applicable to the Flyway Farms project.

1. Prepare and implement a stormwater pollution prevention plan (SWPPP) and a spill prevention and control plan (SPCP).

2. Repair or replace broken water control structures along adjacent tidal water bodies including installation of additional flap gates to allow effective site drainage and restrict water exchange with adjacent tidal waters during construction.

3. Install a turbidity curtain on the tidal side of all water control structure replacement/repair sites to prevent excessive turbidity.

4. Cease irrigation in all project work areas to maintain dry conditions during construction and, if needed, pump water out of the site to hasten drawdown.

5. Construct temporary berms to prevent tidal overtopping in low-lying construction areas.

6. Stage construction equipment and other construction infrastructure in upland areas surrounded by appropriate erosion control structures, such as silt fences or other sediment barriers.

7. Conduct all refueling and maintenance of construction equipment within appropriate staging areas (e.g., place staging areas outside sensitive habitats; provide temporary storage of fuels, oils, lubricants, and solvents in proper containers in secured/fenced locations; develop and implement a SPCP; have stationary equipment equipped with drip pans; and do not allow storage of equipment or vehicle storage within natural drainage swales).

8. Connect restored tidal marsh areas to Delta waters only after all grading activities are completed.

9. Excavate tidal connections from the site interior.

Accordingly, construction-related pollutants such as increased suspended sediments from construction activities in waterways, or in runoff from adjacent areas, fuel, oil, grease, and other toxic chemicals from construction equipment maintenance, and trash and debris from construction areas would be minimal, since a SWPPP and a SPCP would be part of the project scope, along with the other project measures listed above. The overall intent would be to not adversely affect the water quality in the Lower Yolo Bypass and the Cache Slough Complex.

Hence, temporary construction impacts to overall water quality from pollutants and soil erosion would be less than significant and no mitigation would be required, since there would be compliance with applicable CVRWQCB water quality requirements, no substantial erosion on the Project site would occur, and no further contribution of polluted runoff from the project site leading to a degradation of local water quality.

Long-term maintenance and the possible construction of another tidal and extended tidal channel, as necessary, would result in similar impacts to water quality with the preparation and implementation of a SWPPP and a SPCP, along with the implementation of the applicable Project measures above. Hence, temporary water quality impacts from routine, long-term maintenance activities and corrective actions as related to constructed-related pollutants and soil erosion would be less than significant and no mitigation would be required.

Ongoing monitoring activities and experiments involving sampling only would not have a temporary impact on water quality, but merely record what the existing water quality conditions were at the time of the sampling effort or experiment. Hence, no impact from ongoing monitoring activities and experiments would occur with project implementation.

Impact 4.2-2: Increase in Methylmercury Loading

Full understanding of the complexity, fate, and effects of Methylmercury (MeHg) in the physical environment still remains a challenge in the Delta (Wood *et al.* 2004). For example, from a regulatory standpoint, CVRWQCB has noted that "it is not possible at present to determine a scientifically defensible sediment mercury concentration that will protect the beneficial uses of Cache Creek" (CVRWQCB 2004). What is known is that the project site currently provides a source and export of MeHg that is likely elevated compared to Cache Slough Complex source waters. Restoration of a portion of the Project site to tidal marsh would alter the production, transport, and biological uptake of MeHg in that immediate area. Recent studies have indicated that rice fields had the highest MeHg concentrations and had the highest exports of MeHg, due to the large discrete exports of water during field drainage (Windham-Myers *et al.* 2010). Managed permanent wetlands had the lowest concentrations of MeHg, as well as the lowest MeHg exports, due to their low export of water. Seasonal wetlands had exports similar to those of the rice fields.

The proposed Lower Yolo project (including Flyway Farms) would restore up to 1,226 acres of tidal marsh from areas currently managed as irrigated pasture including lands that are seasonal and farmed wetlands, seasonal marsh, and perennial marsh, thus reducing net MeHg production within this area. This reduction in MeHg concentration would be beneficial to fish and wildlife that inhabit tidal marshes, as they would be exposed to lower levels of the contaminant than they would be in an irrigated agricultural tailwater canal. Also, this area would provide new habitat. And because tidal marshes are open to adjacent waters, MeHg concentrations within the tidal marshes are constantly diluted by flood tide waters from the adjacent Delta, with aquatic organisms freely moving between these areas.

Although concentrations of MeHg within the proposed tidal marshes would be less than currently generated by the agricultural, seasonal, and perennial wetlands and marshlands on the Project site, the net MeHg load to Delta waters from the project site and the volume of water discharged from the tidal marshes on an annual basis would be much greater than the volume discharged from irrigated pasture and existing wetlands. The volume of water discharged from the site after Project implementation would be approximately four times greater than the existing condition in years when the Yolo Bypass would not be flooded. The net benefit in the decrease in MeHg concentrations coupled with an increase in hydrologic loading to the system could result in either a decrease or no net change in MeHg loading from existing conditions on an annual basis. The proposed restoration of tidal marsh would also lead to a reduction in the severity of high concentration MeHg discharges to the Delta, due to discrete agricultural drainage discharges. During years in which the Yolo Bypass is flood inundated and thus generating floodinduced mercury methylation in addition to the irrigation season methylation, the existing loadings may be similar to or greater than what would occur with the restored tidal marsh.

Based on the above analysis, the restoration of tidal marsh would result in a reduction in MeHg concentrations within the Project site and a reduction in the severity of discrete MeHg loading events to the Delta. Therefore, the proposed Project would have no impact and no mitigation would be required.

With respect to water quality standards, the mercury TMDL for the Delta has been in effect since 2011. Although no established criteria for individual wetland restoration projects exist at this time, CVRWQCB's Delta Mercury Control Program, Phase 1 requires that discharges from identified sources be managed to reduce inorganic (total) mercury by relying on reasonable and feasible controls. Identified sources include managed wetlands and wetland restoration projects that discharge to the Yolo Bypass and Delta subareas requiring MeHg source reduction. The program also requires that either individually or collectively dischargers participate in control studies to find ways to limit and reduce sources of mercury contaminants. The proposed Project would include a number of measures incorporated in the Project scope (see Chapter 3, Project Description) and also listed in the discussion in Impact 4.2-1 that would preclude or minimize MeHg re-suspension during the implementation of the Project. For example, the Project site would be isolated from Delta waters during construction, so that the

contributions of MeHg from the Project site would be lower (essentially zero) than under current conditions.

Overall, implementation of the proposed Yolo Flyway Farms restoration project would result in a net benefit to the health of the adjacent Delta, i.e., trending towards less MeHg production and loading on an annualized basis.

Impact 4.2-3: Project Dissolved Organic Carbon/Total Organic Levels at the Barker Slough Pumping Plant

One of the Lower Yolo Restoration Project's objectives is to enhance regional food web productivity in support of delta smelt recovery, by exporting primary and secondary productivity such as organic matter. By definition, this increase in organic matter exports would increase the levels of Dissolved Organic Carbon (DOC) in Delta waters in the Project vicinity. Organic carbon for food chain enhancement is one of the primary objectives of wetland restoration and it supports a key beneficial use of Delta waters. Conversely, Dissolved Organic Carbon/Total Organic Carbon (DOC/TOC) is a concern for municipal water supplies, due to its contribution to DBP formation during the water treatment process. At the Barker Slough Pumping Plant/NBA intake, additional treatment is necessary due to winter/spring sources of higher than normal TOC and turbidity. Results from DWR studies indicate that there is no single point source that contributes to the Barker Slough watershed's high levels of TOC and turbidity; however, soil geochemistry may be an important piece to the puzzle along with the presence of cattle in the watershed (DWR 2002).

To evaluate how tidal wetland restoration projects within the Cache Slough Complex could contribute excessive levels of DOC/TOC to the Barker Slough intake, potential DOC/TOC impacts from various restoration projects, including the Lower Yolo restoration project, were modeled (SCWA 2010b). The results indicate that restoration activities at the site would not have an adverse effect on water quality impacts, and that the mitigation measures applicable to the Lower Yolo (including Flyway Farms) project site would not cause a substantial increase in DOC/TOC levels at the Barker Slough intake, due to the distance (11.5 miles) to the intake point as influenced by the project vicinity's hydrologic conditions. These model results also indicate that the project would not result in increases to any other water quality constituent at BSPP for the same reasons.

As the project levels of DOC/TOC would not substantially increase within the Delta, the project would not directly or indirectly violate water quality standards at the intake of the BSPP. In particular, project construction activities for the wetland restoration and soils reuse elements would not contribute excessive DOC to the adjacent Delta, because the project site would be blocked from Delta waters during construction. Contributions of DOC from the Project site during construction would be lower (essentially zero) than under current conditions. This impact would be less than significant and no mitigation would be required.

Potential future site maintenance, corrective actions, possible future construction of another tidal connection and tidal channel segment, or removal of invasive vegetation from tidal channels would be aimed at improving tidal circulation and improving connections with the adjacent Delta. These actions would result in a slight increase in organic matter loading to the adjacent Delta to the benefit of target species and the aquatic food web, but the increase would not be substantial enough to impact DOC levels at BSPP, due to the factors described above. Ongoing monitoring activities and experiments involving sampling only would not have a temporary impact on water quality, but merely record what the existing water quality conditions were at the time of the sampling effort or experiment. Hence, no impact to DOC levels at BSPP from the project's ongoing maintenance, corrective actions, monitoring activities, and experiments would occur. No mitigation would be required.

Impact 4.2-4: Contribution of Low Dissolved Oxygen Plumes or Excessive Biological Oxygen Demand

The Lower Yolo project construction activities for the wetland restoration and soils reuse options would not impact dissolved oxygen (DO) levels in the adjacent Delta (via Cache Slough Complex), because the water quality impacts and mitigation measures applicable to the project site would be isolated from Delta waters during construction. Contributions of low DO water and Dissolved Organic Carbon (DOC) from the project site during construction would be lower (essentially zero) than under current conditions. Hence, no impact to DO levels would occur with construction efforts as proposed and no mitigation would be required.

The newly created tidal wetlands on the project site would be designed to drain properly toward newly constructed tidal channels and would therefore not be prone to developing stagnant backwater areas, which can be low-DO hotspots. One of the project's objectives would be to restore tidal marsh habitat for migratory salmonids and other estuarine-dependent aquatic organisms. Tidal marshes are known to be important habitats that help support a healthy estuarine ecosystem and thus a small reduction in DO levels in the adjacent sloughs, due to tidal marsh discharges, would not reduce aquatic habitat beneficial uses. Accordingly, the impact to DO levels, with the restoration of wetlands (i.e., post-construction and operation), would be less than significant. No mitigation would be required.

Another concern is that dissolved organic material (DOM) exported from tidal wetlands could contribute to the overall BOD of the receiving water body, leading to the production of low DO conditions in that water body. The DOM exported from tidal marshes on the Project site would be dispersed throughout the project vicinity, where it would support the local aquatic food web. Hydraulic modeling of the project vicinity has demonstrated adequate tidal circulation and connection between the project site and the Cache Slough Complex, indicating it would be highly unlikely that stagnant areas would form that could become high BOD/low DO hotspots (CBEC Ecological Engineering, 2011).

It is therefore unlikely that exports of DOM from the new tidal wetlands would lead to violation of the water quality standard for BOD and thus reduce habitat quality for aquatic organisms in adjacent waters of the Delta. As such, the impact of contributing excessive BOD to the Delta would be less than significant with project implementation. No mitigation would be required.

Impact 4.2-5: Effect on Domestic Supply Well Onsite

A single domestic water supply well is situated within the ranch compound located at the northwest portion of the Lower Yolo project site and west of Flyway Farms. The domestic supply well draws from an aquifer much deeper (i.e., beyond 104 feet) than the shallow surface aquifer that would potentially be affected by the restored tidal marsh. There are no wells on the Yolo Flyway Farms restoration site or 80-acre disposal site. Therefore, the proposed project (i.e., grading activities within the top 10 feet of the soil profile) would not affect groundwater quality or violate a water quality standard or otherwise substantially degrade water quality.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

4.2 TERRESTRIAL BIOLOGICAL RESOURCES

Introduction

Yolo Flyway Farms is the northeastern-most parcel within the Lower Yolo Restoration Project. Included within Phase 2 of the project, SFCWA determined in 2011 that Yolo Flyway Farms would not be included within the initial work plan. However, because it may be pursued in the future, it was included and analyzed as part of the overall project in the Final EIR for the Lower Yolo Restoration Project (SFCWA 2013).

This section evaluates the potential significant impacts to terrestrial biological resources from implementation of the proposed Flyway Farms project. This section contains two separate analyses. The first is a summary of impacts and mitigation measures from the original Lower Yolo Restoration Project Final EIR which applies to conditions and impacts for the main 362-acre Flyway Farms parcel that would be converted to wetlands and habitat. The second analysis applies to the adjacent 80-acre parcel that would be used for storing soil from the excavated main parcel.

Although the 362-acre restoration portion of the Yolo Flyway Farms was included in the Draft EIR, the adjacent 80-acre soil deposit site was not included. Therefore, this report is intended to supplement information in the Lower Yolo Restoration Project Final EIR by assessing the effects of implementing proposed project activities on the adjacent 80-acre soil deposit site on biological resources. This latter analysis was prepared by Jim Estep, Estep Environmental Consulting.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR is incorporated by reference.

Significance Criteria

Potential impacts to terrestrial biological resources would be significant if the Project would exceed any of the following threshold criteria per Appendix G of the *State CEQA Guidelines*:

1. 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 CDFW or USFWS.

2. 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 CDFW or USFWS.

3. Have a substantial adverse effect on federally-protected wetlands as defined by § 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

4. 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.

Related terrestrial biological resources issues not covered in this section, but that are found elsewhere in the Draft EIR include: changes in water quality (Section 4.2) and crop depredation on nearby agricultural areas due to birds and wildlife at the restoration sites (Section 4.0). Additionally, construction of the proposed project is intended specifically to have long-term, beneficial effects on the recovery of certain federally-listed special-status species. It may also have some short-term, temporary impacts (refer to Section 4.3.3, Impacts).

Impacts and Mitigation Measures in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have significant biological impacts except for those identified below.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. Most of the aquatic biological resource impacts and mitigation measures are applicable to the Flyway Farms project, excluding Mitigation Measure 4.3-3 (loss of vernal pools and habitat for invertebrates) and Mitigation Measure 4.3-8 (loss of foraging habitat for Swanson's hawk), as noted below.

Impacts and Mitigation Measures

Impact 4.3-1: Temporary effects from ground-disturbing activities to wetland communities during construction and post-construction phases, as applicable

Effects from Ground-disturbing Activities to Wetland Communities

Construction activities related to the larger Lower Yolo Restoration project (including Yolo Flyway Farms) could result in the temporary disturbance of up to 44 acres of seasonal wetlands and other waters (i.e., agricultural irrigation and drainage ditches). Other ground disturbing activities associated with post construction (e.g., additional tidal connection and corrective actions) would also cause disruptions and temporary losses within wetland communities. Temporary disturbances to ecological functions could include: temporary loss or degradation of

the existing plant community; decrease in potential foraging or burrowing opportunities for wildlife; reduction in erosion protection; and decline in soil microbial community. Wetlands and waters that would sustain temporary disturbances could lose some or all of their ecological functions during this time, but would begin to function differently and more naturally following the cessation of such ground-disturbing activities. Because construction and other major earth-moving activities during post construction would take place only during the dry summer months, a period when pastures supporting seasonal marsh and wetlands currently are used for cattle grazing, earth-moving alteration of seasonal wetland functions would be minimal to moderate relative to existing grazing pressures.

Temporary impacts on wetland community functions could occur as a result of ground-disturbing activities such as use of staging areas for trailers, equipment, and vehicles; use and movement of construction machinery within wetland communities; and temporary disruptions to the availability of aquatic and wetland habitats associated with the proposed relocation of irrigation features for the soils reuse options. Given that much of the project site supports seasonal and farmed wetlands, some or all construction staging areas would likely be designated within such wetlands, which typically have lower ecological functions and values than the other wetland communities present onsite. To the extent possible, sensitive habitats would be avoided. Any temporary loss of waters associated with the soils reuse options would be temporally limited to the duration of project construction (approximately six months); however, an extensive network of irrigation features would continue to be available (as aquatic habitat) during the project construction period. Additionally, waters (irrigation ditches) temporarily affected as part of the soils reuse activities would be reconstructed and would regain their original ecological functions. Similar impacts would occur during the post-construction phase of the project as it would relate to the additional tidal connection, if needed to be built.

Temporary impacts to wetland communities resulting from project ground-disturbing activities would be significant, as a result of short-term degradation and/or disrupted use of federally protected wetland habitats, fragmentation or isolation of sensitive plant or animal communities and important wildlife habitat, or disruption of natural wildlife movement corridors. Implementation of Mitigation Measure 4.3-1 would reduce temporary, but significant, impacts to wetland communities due to earth-moving activities, to less than significant.

Permanent Conversion of Wetland Communities

The Lower Yolo Restoration Project (including Yolo Flyway Farms) would permanently convert up to 1,480 ac of seasonal and perennial non-tidal emergent marsh and some irrigation and drainage ditches (other waters and tidally surcharged waters) to tidal marsh, including marsh channels and a large intertidal pond, while enhancing seasonal marsh and riparian habitat.

As noted in the Final EIR, a majority of the land within the 362-acre Flyway Farms property has been classified as irrigated pasture and has been used as a duck hunting club/winter fowl

management. The land in the northwest portion of the parcel has also been used for grazing cattle (see Figure 2-7 in the Final EIR, Existing Land Uses). This land is classified by the California FMMP program as Other Land.

However, the most recent wetland delineation prepared for the Flyway Farms project (ICF, 2014) concludes that almost all of the 362-acre main site consists of perennial emergency marsh, seasonal wetlands and riparian woodland (see Table 4.3-1). This preliminary jurisdictional delineation has been accepted by the U.S. Army Corps of Engineers.

Table 4.3-1 Changes in Natural Communities with Proposed Project: Estimated Acreage Conversion of Jurisdictional Wetlands and Water

Description	Existing Conditions (acres)	Proposed Conditions (acres)	Change (acres)
Wetlands			
Perennial emergent marsh (tidal)	0	291	291
Perennial emergent marsh (non-tidal)	35	0	(35)
Seasonal marsh	316	38	(278)
Seasonal and farmed wetlands	0.43	0	(0.43)
Riparian	3	3	0
Navigable waters			
Tidal waterways	18	21	3
Tidally surcharged irrigation/drainage	7	4	0
Other waters			
Drainage ditch	.0001	.0001	0
Uplands			
Uplands	113	101	(12)
TOTAL	439	439	0

Source: Revised from Table 4.3-6 in the Lower Yolo Restoration Project Final EIR, based on the most recent wetland delineation for the Flyway Farms properties (ICF, 2014).

The revised acreage estimates included in the accepted wetland delineation were due to two modifications of the wetland delineations originally prepared in 2010 and 2011 (Vollmar and WWR, 2010 and 2011). The most recent delineation re-characterized as seasonal wetlands

some areas that were originally delineated as seasonal marsh, and some areas delineated as seasonal marsh were changed to perennial emergent wetland.

Based on the most recent wetland delineation for the Flyway Farms properties, implementation of the project would result in the conversion of 35 acres of perennial emergent marsh (non-tidal) and 316 acres of seasonal marsh to 291 acres of perennial emergent marsh (tidal). The project would convert 12 acres of uplands and would affect only a very small portion of land identified as farmed wetlands (about 0.4 acre).

The conversion of waters and wetlands would result from restoration activities including excavation within the tidal marsh plain; dredging of tidal channels; removal of irrigation within existing marsh plain elevations; elimination of irrigation and/or grazing from seasonal marsh enhancement areas; removal of grazing from riparian areas; enhancement of hydrology of fallow areas, roads, and berms; and fill and relocation of waters.

Overall, the permanent conversion of wetland habitats would result in a substantial improvement to the wetland functions and values on the project site for the delta smelt and salmonids. The conversion would also increase the amount of habitat available to these sensitive fish species. Restored areas would result in the increased availability and quality of rearing habitat for Chinook salmon, steelhead, delta smelt, Sacramento splittail, and other delta native fish by providing more shelter, hiding, resting, and feeding areas for the fishes (refer to Section 4.4, Aquatic Biological Resources) that would then be tidally connected to the greater Bay-Delta system. Indeed, this conversion would be a beneficial effect that supports the Project goals and objectives. The resultant mosaic of tidal marsh, seasonal marsh, other wetlands and open water would be of higher ecological function and value, with more frequent tidal inundation to adjacent natural communities.

Hence, the gain of higher value wetlands and other waters of the United States would more than offset the loss of seasonal and perennial wetlands. Accordingly, permanent conversion of wetland communities on the project site would result in a less-than-significant impact. No mitigation would be required.

Mitigation Measure 4.3-1: Effects from ground-disturbing activities to wetland communities

• Locate construction staging areas outside of sensitive wetland habitats, by having their perimeters be as small as possible, and/or within the excavation/trenching limits. All staging areas shall be clearly flagged to define the limits of the work area. No construction access, parking, or storage of equipment or materials shall be permitted outside of the established limits. This shall be achieved by limiting machinery and vehicle access to temporary tracks or pads, as necessary and direct removal of soils to temporary stockpiles, located away from sensitive areas, for transportation to the selected soils reuse site. These areas shall be identified on work plans, specifications, and other applicable engineering/ contractor documents.

• Define clearly on maps the boundaries of sensitive habitats not within the restoration footprint (ground-disturbing areas of the Project site), and demarcated as avoidance areas.

• Limit construction and post-construction actions involving ground-disturbing activities to the dry weather season (generally between April and November, but varies each year), thereby reducing the potential for export of contaminants and/or sediments.

• Require contractors to sign documentation stating that they have read, agree to, and understand the required avoidance measures.

Require construction crew members to participate in training sessions, which clearly identify and describe sensitive communities and other biological resources.

• Utilize the services of a qualified biologist onsite to observe ground disturbing activities when such activities occur within or adjacent to sensitive habitats, and/or to monitor sensitive special-status species' locations.

Impact 4.3-2: Loss of or Disturbance to Riparian Woodland and Scrub

Riparian habitats provide essential habitat for special-status plants, nesting birds, and fish, along with controlling bank erosion, sedimentation, and nutrient releases. Mature riparian forests are limited in the Yolo Bypass as a result of flood control maintenance and agricultural practices. Riparian emergent woodland habitats and riparian scrub on the Lower Yolo project site are restricted to the south along the Stair Step and to the east along the Toe Drain, along the western edge of the west Yolo Bypass levee borrow ditch, and along the central irrigation ditch on Yolo Ranch. The only riparian area that could be affected by the Flyway Farms project is along the Toe Drain, which forms the eastern boundary of the Flyway Farms property.

Construction could result in loss of some riparian woodland or scrub for tidal connections to the adjacent tidal waterways of the Stair Step and Toe Drain. Each tidal connection would be in the range of 70 to 120 feet (feet) in width. For the Flyway Farms project only, there would be two breaches along the Toe Drain. The impacts to riparian woodlands or scrub would be minimized during final design to include the removal only of trees and scrub directly within the confines of the tidal channel transect, and an adjacent buffer large enough to permit passage of construction machinery. Additionally, the location of the tidal connections would be selected such that the minimum number of trees would be impacted or removed. Long-term operations and maintenance, along with other postconstruction activities (i.e., inspections, monitoring, and limited scientific collections) would not further degrade these habitats. Thus, impacts to riparian woodlands would be minimal, and restricted to the narrow tidal connection modification, resulting in a less-than-significant impact. No mitigation would be required.

Impact 4.3-3: Effects to Special-status Plants

Loss or Disturbance of Habitat for Special-status Plants

Construction would consist of site preparation (including hydrologic management, clearing and grubbing, access road construction, and hazardous materials management), and construction of the proposed Project elements, (wetlands, soils reuse, and irrigation and drainage modifications). The hydrologic management elements include repairing or replacing broken water control structures along adjacent tidal water bodies, including along the Stair Step (south of the Flyway Farms site) and Toe Drain. The only area that could be affected by the Flyway Farms project is along the Toe Drain, which forms the eastern boundary of the Flyway Farms property.

Construction of temporary low berms also could occur in topographic depressions, such as along the Stair Step. The Delta tule pea, Mason's lilaeopsis, and Suisun marsh aster are all associated with the edges of tidal waterways or large irrigation ditches on the project site, including the Stair Step. Mason's lilaeopsis and Suisun marsh aster were found at scattered locations along the tidally influenced banks of the southern and eastern edge of the Lower Yolo project site (along the Stair Step channel). Delta tule pea was identified growing among riparian scrub associated with the tidally surcharged central irrigation ditch on the project site. Should construction activities associated with hydrologic management, or other related activities during post construction, occur in the vicinity of these special-status plant species, they could disturb or extirpate individuals or populations, as well as their seed-banks. Additionally, invasive plant species could be introduced or spread through construction equipment, vehicles, and workers' clothing. Once these noxious plant species colonize an area, they can be very difficult to eradicate and can outcompete native plant species.

Overall, with project implementation, direct loss of the special-status plant species from clearing or earth-moving activities, direct and indirect impacts to these plants' habitats, and/or increased competition with invasive plant species would be significant. Project elements regarding the control of invasive plants in Section 3.5, and the implementation of Mitigation Measure 4.3-2 below, would reduce this impact to less than significant.

Potential Threat of Noxious Weed Populations to Special-status Plants

During both construction and certain post-construction activities, ground-disturbing elements of the project have the potential to spread invasive terrestrial plant species. As discussed in the Project Description, Section 3.5, colonization and establishment of invasive wetland and upland plants may present a threat to establishment of native plant species, including special-status plants, into the restored tidal marsh and adjacent enhanced wetland habitats and wetland buffer, particularly around the upper margins.

Common nuisance species known today include yellow star thistle (*Centaurea solstitialis*) and broad-leaf pepperweed (*Lepidium latifolium*); other species may arise in the future that are not

a factor at this time. Perennial pepperweed is of the greatest concern, because this species tolerates moist soils and could invade excavated marsh plain areas. Both species have the potential to invade the wetland buffer, which would be removed from summer irrigation. Invasive plant species have the potential to degrade habitat quality by outcompeting desirable native species.

The project would include a number of measures to discourage such colonization, such as cattle grazing in these areas, physical removal, competitive exclusion plantings, salt application, and limited herbicide application if grazing is not effective. More project specifics can be found in the Project Description, Section 3.5. With the implementation of these methods to control invasive plant species, this impact would be less than significant, and no mitigation would be required.

Mitigation Measure 4.3-2: Loss or Disturbance for Special-status Plants

Prior to initiation of ground-disturbing activities, a qualified botanist shall conduct appropriately timed, focused botanical surveys of the project site targeting known and potentially occurring special-status plant species, including Mason's lilaeopsis, Suisun Marsh aster, and Delta tule pea.

Dependent on the project's final design and conditions onsite, the following mitigation shall be undertaken to avoid, minimize, or reduce loss or disturbance to identified special-status plants:

• Adjust design to avoid or minimize impacts to special-status plants to the extent feasible.

• Enumerate, photograph, and flag conspicuously or mark with temporary drift fencing or other physical barriers the areas supporting individual plants or populations of special-status plants that have the potential to be impacted, prior to construction.

• Limit work areas including access and staging areas to the minimum area practical.

• Notify the California Department of Fish and Wildlife (CDFW) at least ten days in advance of any ground-disturbing activity that could impact special status plants to allow CDFW the opportunity to salvage affected individual plants for transplanting to a suitable location outside of the disturbed area.

• Require construction workers to inspect their clothing, including shoes, all vehicles, and equipment for invasive plant seeds or plant material, prior to entering and leaving the Project area. Appropriate cleaning measures shall be taken to prevent the spread of invasive species into restored areas.

Implementation of Mitigation Measure 4.3-2, above, would reduce the loss or disturbance of habitat for special-status plant species to less than significant.

Impact 4.3-4: Construction-related impacts to vernal pools, such as trampling and grading, or accidental release of fuels and construction fluids

There are two vernal pools that have been identified within the Lower Yolo Restoration Project site, but the two are west and south of the Flyway Farms parcels. Thus, there would be no potential impact to the two vernal pools due to the Flyway Farms project.

Mitigation Measure 4.3-3: Loss of Vernal Pools and Habitat for Invertebrates, included in the Final EIR does not apply to the Flyway Farms project.

Impact 4.3-5: Loss of habitat for giant garter snake; injury or mortality of individual giant garter snake

Loss of Habitat for Giant Garter Snake

The Lower Yolo project site (including Yolo Flyway Farms) may provide suitable aquatic habitat for transient GGS during the active season, but does not offer year-round, high value habitat for GGS due to winter inundation and flooding in the Yolo Bypass (Wetlands and Water Resources 2011). Construction activities (as well as post-construction activities such as the additional tidal connection) could temporarily disturb habitat for GGS, which includes seasonal wetlands, riparian scrub, and upland areas (levees and berms). Aquatic and ephemeral-aquatic habitats with potential to support GGS include tidal wetlands, irrigation ditches, perennial ponds, and perennial wetlands. Excavation of the marsh plains and channels, as well as the three soils reuse options, would result in temporary loss of GGS suitable habitat by temporarily rendering irrigation ditches inaccessible to GGS until relocated ditches were built. Construction (and future post-construction activities, such as the additional tidal connection) would take place only during the dry season (roughly April to November but variable each year) to avoid potential flood flows and associated soil erosion and mobilization of sediment. This schedule roughly coincides with the active season for GGS, when mortality is less likely to occur. The temporary loss of potential habitat would be significant, if not mitigated. Implementation of Mitigation 4.3-4 would reduce this potential impact to less than significant.

Injury or Mortality of Individual Giant Garter Snakes

Construction activities, as well as post-construction events (such as the additional tidal connection) also have the potential to cause injury or mortality of individual GGS. Excavation activities, including marsh plain construction and fill and/or relocation of irrigation ditches could fill or crush burrows or crevices, obstruct GGS movement, decrease prey base, and may result in the direct disturbance, displacement, injury and/or mortality of GGS. Following construction of the soils reuse activities, the toe berm and/or stockpile would be stabilized as needed, using appropriate erosion control measures (such as hydroseeding, ground covering,

and/or appropriate storm-water drainage consistent with supporting the movement of GGS, if present) to prevent damage from Yolo Bypass flood flows or wind erosion (refer to Section 4.1, Hydrology). Additionally, an accidental chemical and/or petroleum spill during construction could enter the aquatic habitat killing individual GGS as well as prey species. Project elements for avoiding accidental spills of chemicals and hazardous materials are discussed and evaluated in Section 4.8, Hazards and Hazardous Materials. Nonetheless, the impacts from the preceding activities would be significant, if not mitigated. Implementation of Mitigation 4.3-4, along with construction best management practices (BMP) measures (see Chapter 3, Project Description) would reduce this impact to less than significant.

Stranding and Trapping of Individual Giant Garter Snakes in Restored Tidal Channels

The tidal channel geometries for the larger Lower Yolo restoration project and the Yolo Flyway Farms project have been designed to promote peak ebb tide flow velocities of approximately three feet per second. In tidal marsh systems, peak velocities typically occur on ebb tide, with peaks occurring as the marsh plain drains (Bayliss-Smith *et al.* 1979). These peak velocities can last for one to two hours with the semi-diurnal tides experienced in the San Francisco Estuary and the Delta.

Although this peak velocity may be somewhat high for GGS, its short duration combined with the sinuosity of restored channels and vegetated channel banks, would not adversely affect GGS. This species can tolerate significant flow pulses in agricultural channel settings (of at least three feet per second) (Eric Hansen, personal communication, May 2011).

In addition, the high degree of tidal channel sinuosity would yield two beneficial aspects for GGS. First, channels would exhibit both low and high velocity areas, thus providing low velocity refugia for snakes during high flow events and preventing GGS from being entrained in high velocity currents and carried off of the project site. Second, the banks of channels would be vegetated with tules and other tidal freshwater wetland plants, and flows on bends would direct GGS to the outside bends, which would serve as catchments for swimming GGS. The project design would address the potential for stranding within channels at low tide with gently sloping banks on the insides of some channel meander bends, which would provide 'ramp'-type escapes from channels during extreme low tides. Because the project would be designed in a manner that minimizes the potential risk of trapping GGS during high tidal flows and stranding of GGS during low tide, impacts would be less than significant, and no mitigation would be required.

Long-term Conversion of Giant Garter Snake Habitat

Under current conditions, the Lower Yolo project site (including Yolo Flyway Farms) provides suitable and marginal aquatic foraging habitat for GGS, mainly in the form of irrigation and drainage ditches, which support varying degrees of prey resources and predatory fish species. Conversion of irrigated agriculture to tidal marsh habitat, including sinuous tidal channels and a large intertidal pond, would alter the current distribution of available habitat for GGS within the

project site. The project would, however, result in a net increase in available suitable aquatic habitat for this species. In the long term, the proposed Project would include a network of tidal channels with a suitable flow regime for GGS foraging and use. Tidal channels would support tidal marsh habitats but would terminate at marsh transition areas, which would provide basking and active season retreats for GGS. The project would also include construction of a tidally-influenced, perennial pond that would function as a perennial aquatic feature supporting a consistent source of prey for GGS. The boundaries and depth of this pond would vary depending on the tidal stage. Overall, restoration would result in a net increase in perennial freshwater marsh – tidal marsh – through the conversion of about 1,480 acres of currently marginal habitat managed as irrigated agriculture. This long-term conversion of habitat would be a beneficial effect on GGS within the Lower Yolo Bypass.

Therefore, the long-term conversion of potential GGS habitat on the project site would result in a less-than-significant impact. No mitigation would be required.

Mitigation Measure 4.3-4: Impacts on Giant Garter Snake or Giant Garter Snake Habitat

The mitigation measure for the giant garter snake (GGS) shall include the following:

• Require construction personnel to receive U.S. Fish and Wildlife Service (USFWS)-approved worker environmental awareness training to recognize the GGS and its habitat.

• Confine clearing of vegetation to only those areas necessary to facilitate construction activities and no greater. Areas designated as GGS and/or other sensitive-species habitat within or adjacent to the Project site shall be flagged as Environmentally Sensitive Areas and shall be avoided by all construction personnel.

• Survey the site at least 24 hours prior to the initiation of ground-disturbing activities in suitable GGS habitat. This survey shall be conducted by a USFWS-approved biologist in suitable GGS habitat. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a GGS is encountered during ground-disturbing activities, activities at that specific location shall cease until appropriate corrective measures, in concurrence with USFWS coordination, have been completed or it has been determined that the GGS will not be harmed. Sightings shall be reported to USFWS.

• Implement construction activity within GGS habitat between May 1 and October 1. This is the active period for GGS and direct mortality is lessened, because GGS are expected to actively move and avoid danger. Consultation with the USFWS is required for construction activities scheduled to occur in potential GGS habitat between October 2 and April 30.

• Ensure that any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15, and prior to excavating or filling of the dewatered GGS habitat.

• Require when working near flooded canals during the summer months, vehicle speeds shall not exceed 15 miles per hour (MPH) in areas where the line-of-site is obstructed and 25 MPH in other areas to avoid hitting the GGS and other special-status wildlife.

• Remove temporary fill and construction debris after construction completion, and, wherever feasible, restore disturbed areas to pre-project conditions.

As required through the federal and state permitting processes, further minimization and avoidance measures shall be developed in coordination with USFWS through §7 of the federal ESA consultation and with CDFW through CESA for this Project.

Implementation of Mitigation Measure 4.3-4, above, would reduce the impact on GGS and its habitat to less than significant.

Impact 4.3-6: Injury or mortality of individual western pond turtles

Injury or Mortality of Individual Western Pond Turtles

Although protocol surveys have not been conducted, western pond turtles could be present on the Lower Yolo project site, including the Yolo Flyway Farms site. In fact, during habitat surveys of the Lower Yolo project site, a single western pond turtle was incidentally observed in the central irrigation ditch on Yolo Ranch (located southwest of Yolo Flyway Farms). Abundant, suitable habitats for escape and refuge already exists onsite and would be available to this species during construction, especially within the retained irrigation and drainage ditches. Irrigation ditches outside of the Project footprint would maintain the current water levels and habitat functions. The potential to injure or kill turtles could occur within the proposed restoration area or within those irrigation ditches relocated as part of the soils reuse options, during construction. Impacts to turtles occurring in aquatic features within the construction footprint would be significant, if not mitigated. Surveys and monitoring for this species within suitable habitat would be the strategy to avoid impacting the turtles. Therefore, implementation of Mitigation Measure 4.3-5 would reduce such impacts to this reptilian species to less than significant.

Long-term Conversion of Western Pond Turtle Habitat

The overall larger Lower Yolo restoration project would, in the long term, provide a net gain of aquatic habitat for the western pond turtle from the restoration of tidal channels with adjacent basking habitat in high marsh areas. The project would also include construction of a tidally influenced perennial pond that would function as a perennial aquatic feature supporting a consistent source of prey for western pond turtles. Restoration (including long-term operation

and maintenance) would result in a net increase in perennial freshwater marsh, including suitable aquatic habitat. Overall, long-term impacts to western pond turtle habitat would be beneficial. Therefore, the long-term conversion of potential western pond turtle habitat on the project site, including Yolo Flyway Farms, would result in a less-than-significant impact. No mitigation would be required.

Mitigation Measure 4.3-5: Impacts on Western Pond Turtle or Western Pond Turtle Habitat

The mitigation measure for the western pond turtle shall be as follows:

• Survey areas prior to implementing restoration activities and/or dewatering scheduled in or adjacent to suitable aquatic habitat for the western pond turtle by a qualified biologist.

• Remove western pond turtles found by a qualified biologist to a safe location outside of the work area in a manner consistent with applicable CDFW regulations.

• Conduct periodic monitoring by a qualified biologist of suitable aquatic habitat for the western pond turtle until ground-disturbing/dewatering activities have ceased in those areas.

Implementation of Mitigation Measure 4.3-5, above, would reduce the impact on the western pond turtle and its habitat to less than significant.

Impact 4.3-7: Impacts to Nesting Habitat and to Nesting Special-status Migratory Birds

Trimming or removal of trees, shrubs, and other vegetation during the bird nesting season may result in direct impacts to potential nesting habitat for special-status birds, including raptors protected under CFG Code § 3503 and other nesting birds protected under the Migratory Bird Treaty Act. Besides vegetation clearance, earth-disturbing activities (e.g., trenching, excavating, dredging, and grading) have the potential to impact ground nests and any associated eggs and/or nestlings either directly or indirectly. Additionally, activities that require mobilizing large equipment have the potential to disturb nesting birds due to excessive noise.

Several bird species use the Lower Yolo project site for nesting. Red-winged and tricolored blackbirds nest in colonies in emergent marsh and scrub vegetation such as blackberry (Beedy and Hamilton 1999). Within the riparian woodlands, suitable nesting habitat exists for the state fully protected white-tailed kite and the state threatened Swainson's hawk. Both short-eared owls and northern harriers nest on the ground in agricultural fields. Common shorebird/wading species, such as American avocet (*Recurvirostra americana*) and killdeer (*Charadrisu vociferous*) have been observed nesting on the Project site. Killdeer have been observed nesting on actively used access roads on the Project site. American bittern usually create a nest that is a platform of matted, emergent aquatics, other herbaceous stems, sticks and/or leaves, usually in shallow

water, but sometimes floating, or on ground – but always concealed in tall, dense, fresh emergent vegetation (CDFG-California Interagency Wildlife Task Group 2008).

Under the current proposed project schedule, excavation, creation of tidal connections, and vegetation removal would be conducted during the bird-nesting season (February 15th through August 15th) and have the potential to temporarily impact nesting migratory birds and/or special status birds and raptors. Such impacts may preclude or disrupt nesting in the project area throughout the duration of the construction period and would be significant, if not mitigated. Implementation of Mitigation Measure 4.3-6 would result in a less-than-significant impact.

Project excavation for tidal connections could also occur in areas that support nesting Swainson's hawks. However, tidal connections would occur late in the construction process, well after nesting season would have concluded. Should construction activities associated with tidal connections extend during active nesting, the Lower Yolo restoration project could result in direct impacts to this species through trimming and/or removal of a few trees, or because of noise generated by construction equipment. This impact would be significant, if not mitigated. Implementation of Mitigation Measure 4.3-6 that involves preconstruction surveys, buffers, and monitoring would result in a less-than-significant impact. Additionally, potential post-construction corrective measures including the placement of cattle exclusion fencing and invasive species management would further reduce this potential impact following completion of restoration activities.

Outside of nesting season (i.e., August 16th to February 14th), tree removal, pruning, grubbing, grading, excavation or other construction activities to discourage pre-nesting activities would have no impact to nesting bird pairs or nesting habitat, and would not require mitigation. Occurrences of sensitive bird species, including nesting by Swainson's hawk, have been observed almost exclusively outside of the Project site, with major occurrences several miles away, either northwest or southeast of the site. The minor vegetation removal that would happen outside of the nesting season would not substantially change the opportunities later on for migratory birds to nest, as they currently do, outside of the project site.

For species that rely on the emergent tidal marsh, such as the American bittern, the restored wetlands would provide additional habitat for foraging and nesting; therefore, resulting in a longterm, beneficial effect.

Mitigation Measure 4.3-6: Impacts to Nesting Habitat/Nesting Special-status and Migratory Birds

To ensure compliance with MBTA (16 USC §§ 703-711) and CFG Code (§§ 3503, 3511, and 3513), the following mitigation measure shall be implemented, as applicable, to special-status birds and migratory birds:

• Remove or trim a minimal number of trees that would satisfy the project design and allow for minimal access by construction equipment within the construction footprint in advance of nesting season, i.e., August 16 to February 14. Should nesting by sensitive bird species occur prior to February 15, proceed with the remaining steps in this mitigation measure.

• Conduct preconstruction nesting bird surveys during the bird breeding season (February 15 to August 15) within the construction footprint including a 300-foot buffer, by a qualified biologist, within two weeks prior to equipment or material staging, pruning/grubbing or surface-disturbing activities, including soils grading or excavation. If no active nests are found, no further mitigation shall be required.

• Establish a buffer area if active nests (i.e., nests in the egg laying, incubating, nestling or fledgling stages) are found within 300 feet of the Project footprint for raptors (birds of prey), within a 0.5-mile radius for Swainson's hawk, or 100 feet of the construction footprint for all other bird species. Non-disturbance buffers shall be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance and the type/duration of potential disturbance.

The size of the buffers may be adjusted provided a qualified biologist, in consultation with CDFW and USFWS, monitors the behavior of the nesting birds and determines that impacts of Project-related activities are not affecting the birds' reproductive or rearing efforts.

• Ensure that if rescheduling of work is infeasible and non-disturbance buffers cannot be maintained, a qualified biologist shall be onsite to monitor active nests for signs of disturbance for the duration of the construction activity. If it is determined that Project related activities are resulting in nest disturbance, then work in those sensitive areas shall cease immediately and CDFW and USFWS shall be contacted for further guidance.

• Repeat nest surveys by a qualified biologist, if post-construction activities continue beyond one year.

Implementation of Mitigation Measure 4.3-6, above, would reduce the impact to nesting habitats and nesting activities by special-status birds and migratory birds to less than significant.

Impact 4.3-8: Loss of Foraging Habitat for Swainson's Hawk

During the short-term construction phase, Swainson's hawk, a state-listed (threatened) species, would continue to depend on a range of natural and artificial habitats for foraging both on the Lower Yolo project site (but outside of the construction footprint) and offsite, including low or open agricultural lands such as alfalfa and certain row crops and grassland habitats. They would also rely on wetlands and other habitats to some extent. Their preferred habitats typically support abundant rodent populations such as voles, but this species also feeds on birds,

reptiles, and insects. Much of the northwestern portion of the Lower Yolo project site would not be converted to tidal wetlands and would retain its importance for providing Swainson's hawk foraging habitat. By the end of construction, i.e., early to mid-October, most Swainson's hawks would migrate out of California to overwinter in Mexico. In the following season, there would be a significant reduction in foraging habitat for these returning summer nesting migrants at the project site. It is important to note that Swainson's hawks can forage up to ten or more miles from their nests. These raptors demonstrate a high degree of nest site fidelity, using the same nests, nest trees, or nesting stands for many years (England *et al.* 1995). Pairs are also monogamous, lasting for many years (England *et al.* 1997). There are at least 11 records for this species within five miles of the overall Lower Yolo project site. Multiple Swainson's hawks have also been observed flying overhead, possibly foraging on the project site (Biosearch Associates 2010).

The Final EIR for the Lower Yolo Restoration Project noted that Implementation of the whole project would result in the loss of approximately 1,585 acres of low- to moderate-quality foraging habitat through the conversion of existing farmlands to tidal marshes and other wetlands. The FEIR concluded that this loss of low- to moderate-quality foraging habitat would be partially offset by creation of a wetland buffer of enhanced seasonal marsh and riparian habitat that would result in a mosaic of habitats of a higher ecological quality and value that would benefit Swainson's hawk. The FEIR concluded that the applicant would be required to mitigate at a ratio of 0.5 to 1.0 for the difference, assuming that the poor quality foraging habitat would not require a full 1:1 mitigation ratio.

Yolo County has historically not allowed development projects to mitigate for the loss of Swainson's hawk foraging habitat at less than 1:1. Accordingly, the Flyway Farms project is required to mitigate for the loss of farmed seasonal wetlands at a ratio of 1:1. The amount of farmed or grazed land that would be lost due to the project is approximately 0.4 acres (see Table 4.3-1).

Mitigation Measure 4.3-7: Loss of Foraging Habitat for Swainson's Hawk (modified for Flyway Farms project only)

The mitigation measure for Swainson's hawk shall be as follows:

• Ensure that suitable Swainson's hawk foraging habitat is preserved or enhanced at a ratio of 1:1 for approximately 0.4 acres, based on final engineering designs, presence of Swainson's hawk, and consultation with CDFW. Preservation/enhancement may occur through one or more actions:

- Preservation and enhancement of habitat onsite with equal or greater quality than existing foraging habitat.
- Payment of a mitigation fee to a CDFW-approved mitigation bank for the preservation of Swainson's hawk foraging habitat.

- Purchase of conservation easements or fee title to suitable Swainson's hawk foraging habitat to protect the habitat from urban development.
- Participation in the Yolo County NCCP/HCP should it be adopted prior to the Project's start of construction.
- Other measures, as needed, through consultation with CDFW.

Implementation of Mitigation Measure 4.3-7, above, would reduce the impact to foraging habitat by Swainson's hawk and other raptors to less than significant.

Impact 4.3-9: Loss of Habitat for Other Foraging Raptors and Other Special Status Birds

Short-term disturbance from construction could deter northern harrier, short-eared owls, and other birds of prey observed onsite from foraging in otherwise suitable habitats. It is important to note that no white-tailed kites, a fully protected species, have been observed onsite, possibly due to the Project's open areas being too wet throughout the year to provide suitable foraging habitat for this species. Additionally, other foraging raptors that have not been observed, but for which suitable habitat may be present (e.g., merlin and western burrowing owl), could also be possibly deterred during the temporary, construction phase if nearby.

Although the project restoration site would be in proximity to agricultural lands that typically offer high forage value, seasonal inundation of these lands already limits the size and extent of small mammal prey populations. Still, alfalfa is raised offsite, is highly productive, and supports large populations of small mammals such as voles and invertebrates that in turn can provide high-quality foraging value for a variety of birds and other wildlife. Alfalfa is of great importance to Swainson's hawk and some of the other raptor species, which take advantage of such high prey densities and population cycles when the fields are irrigated and mowed.
However, such harvesting does not occur within the Project footprint. Additionally, minimal loss of riparian trees and shrubs in areas slated for tidal connections would likewise have a similar, minimal reduction in small mammal and ground-nesting bird prey populations.

Hence, similar to the foraging area impact on Swainson's hawk, the loss of foraging habitat for other special-status foraging raptors would be significant, if not mitigated. Implementation of Mitigation Measure 4.3-7 would reduce this impact to less than significant.

For other special-status birds, such as mountain plover, black tern, western yellow-billed cuckoo, bank swallow, and yellow-headed blackbird, there is either a low or low-to-moderate probability of them occurring onsite because of limited, suitable habitat. Other special-status bird species have been observed onsite and include redhead, loggerhead shrike, grasshopper sparrow, and tricolored blackbird. These species of special concern, along with the bank swallow (California listed), do not occupy the site, or do so in a limited manner. Given the availability of nearby agricultural lands and that the restored areas would result in a mosaic of

habitats that would be beneficial to these bird species, the temporary and permanent impacts on foraging for these species, if found onsite, would be less than significant. No mitigation would be required.

Impacts and Mitigation Measures for the Flyway Farms 80-acre Soil Deposit Site

This second analysis applies to the adjacent 80-acre parcel that would be used for storing soil from the excavated main parcel. As already noted above at the beginning of this section, although the 362-acre restoration portion of the Yolo Flyway Farms was included in the Draft EIR, the adjacent 80-acre soil deposit site was not included. Therefore, this report is intended to supplement information in the Lower Yolo Restoration Project Final EIR by assessing the effects of implementing proposed project activities on the adjacent 80-acre soil deposit site on biological resources. This analysis is summarized from a report prepared by Jim Estep, Estep Environmental Consulting. The entire report is included in Appendix B.

Setting

The project is located at the southern end of the Yolo Bypass near the Cache Slough Complex, approximately 9.4 miles southeast of the City of Davis. The 80-acre soil deposit site (project site) is contiguous on its southeast corner with the 362-acre Yolo Flyway Farms restoration site, which borders Prospect Slough and the Sacramento River Deep Water Ship Channel.

The project site is an 80-acre rectangular unit dedicated to agriculture. The project site has historically been used for rice production and is currently an idle rice field. The project site will be used solely for the purpose of depositing excess soil removed from the adjacent 362-acre Yolo Flyway Farms restoration site. The restoration site will be re-contoured to enhance wetlands and associated upland habitats, activities which will result in an estimated 67,000 cubic yards of excess soil that will need to be deposited offsite. This excess soil will be trucked to the adjacent project site on existing farm roads and deposited and spread in the idle field, adding approximately 0.5 feet of elevation to the field. It is anticipated that the project site will continue to be dedicated to agriculture upon completion of restoration activities.

The project site is contiguous with the northwest corner of the Yolo Flyway Farms restoration site. The 80-acre rectangular parcel is an idle rice field split into five separate cells. The extent and growth of ruderal vegetation suggests that it has not been cultivated for several years. The site is entirely flat with the exception of berms dividing the cells. Vegetation is comprised primarily of non-native pasture grasses and agricultural weed species, which have developed into a dense vegetative carpet from 2 to 5 feet tall throughout the entire parcel. Dominant species throughout the parcel include mustard (*Brassica* sp) and perennial ryegrass (*Lolium perenne* ssp. *multiflorum*). Other common species include Mediterranean barley (*Hordeum marinum*), hooded canarygrass (*Phalaris paradoxa*), rabbitsfoot grass (*Polypogon monspeliensis*), and yellow sweetclover (*Melilotus officinalis*) Mustard is particularly common and dense along the elevated field cell borders. The project site supports no trees, shrubs,

wetlands, or other biological or topographical features. In general, the project site is considered to have low ecological function.

Water conveyance channels border the parcel on the south and east sides. Water availability in the channels is highly variable. Neither supports emergent marsh or other wetland vegetation, and other than providing a source of water and occasional dispersal function for some species, the wildlife value of the channels is low.

Methods

A survey of the 80-acre soil deposit project site was conducted on April 16, 2015. The biologist walked meandering transects throughout the project site to characterize the vegetation community, species composition, and wildlife habitats, document wildlife occurrences, and search for potentially occurring special-status species. The biologist also examined the adjacent and surrounding land uses and conducted a search of the California Natural Diversity Data Base and other data sources for information on special-status species occurrences on and in the vicinity of the project site. Based on the results of the survey, the biologist assessed the potential impacts of depositing soil onto the idle rice field, determined the likelihood of impacting unique biological communities or special-status species, and provided mitigation measures to avoid or reduce the effect of any potentially significant impacts.

General Wildlife Use

The project site supports wildlife typical of idle agricultural fields. The absence of other biological, topographical, or habitat features limits wildlife occurrences to those species that breed, forage, or find cover in flat, dense, weedy landscapes. During the survey relatively few wildlife species were observed on the project site, including great egret (*Ardea alba*), ring-necked pheasant (*Phasianus colchicus*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*), western meadowlark (*Sternella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*) , and red-winged blackbird (*Agelaius phoeniceus*). .

While the project site supports relatively low species diversity and ecological function, the seasonal and permanent wetlands, pastures, riparian areas, and other habitats in the surrounding area support a relative abundance of wildlife and species diversity, particularly avian species. With the proposed restoration on the Yolo Flyway Farms and throughout the entire Lower Yolo Restoration Project, wildlife and fisheries diversity and abundance is expected to be significantly enhanced. However, because the 80-acre deposit site will continue to be farmed following completion of the project, wildlife use of the project site is expected to be typical of active farm fields in the Lower Yolo Bypass. Farmed fields, particularly active rice fields, can however provide substantial wildlife value, especially when interspersed within a larger, more complex and diverse landscape.

Special-Status Species

Table 1 indicates the special-status species that have potential to occur in the project area, along with their habitat association, the availability of habitat on the project site, and whether or not the species has been detected on the project site.

Table 4.3-2

Special-status wildlife species with potential to occur in the vicinity of the Yolo Flyway Farms Soil Deposit Site

Species	Status State/ Federal	Habitat Association	Habitat Availability on the Project Site	Reported Occurrence on Project Site
Conservancy fairy shrimp *Branchinecta conservatio*	-/FE	Vernal pools and other seasonal pools	None	No
Vernal pool fairy shrimp *Branchinecta lynchi*	-/FT	Vernal pools	None	No
Vernal pool tadpole shrimp *Lepidurus packardi*	-FE	Vernal pools and swales	None	No
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	-/T	Elderberry shrubs	None	No
Giant garter snake *Thamnophis gigas*	T/T	Emergent marsh, open water, water conveyance channels, flooded rice fields	Limited potential in adjacent channels due to variable water and no vegetation.	No
Western pond turtle *Actinemys marmorata*	CSC/-	Streams, ponds, water conveyance channels	Limited in adjacent water conveyance channels	No
Redhead *Aythya americana*	CSC/-	Emergent wetlands with cattails and tules interspersed with areas of deep open water.	None	No
White-tailed kite *Elanus leucurus*	FP/-	Nests in trees, forages in grasslands, seasonal wetlands, and fields.	Suitable, but marginal foraging habitat.	No
Swainson's hawk *Buteo swainsoni*	T/-	Nests in trees, forages in grassland and agricultural fields	Potential foraging habitat in the idle field.	No
Northern harrier *Circus cyaneus*	CSC/-	Grasslands, seasonal marshes, some agricultural edges	Potential nesting and foraging habitat in the idle field.	No
Merlin *Falco columbarius*	CSC/-	Wintering habitat includes open forests, grasslands, and	Suitable, but marginal winter foraging habitat.	No

		agricultural fields.		
Mountain plover *Charadrius montanus*	FP,CSC/-	Open plains with short grasses or very sparse vegetation; may use newly plowed or sprouting grain fields.	None	No
Species	**Status State/ Federal**	**Habitat Association**	**Habitat Availability on the Project Site**	**Reported Occurrence on Project Site**
Black tern *Chlidonias niger*	CSC/-	Freshwater lakes, ponds, marshes, and flooded agricultural fields for nesting.	None	No
Short-eared owl *Asio flammeus*	CSC/-	Grasslands, prairies, marshes and agricultural fields. Nests on the ground.	Marginal habitat in idle rice field	No
Burrowing owl *Athene cunicularia*	CSC/-	Grasslands, field edges with ground squirrel activity	Marginal habitat along field edges and berms.	No
Loggerhead shrike *Lanius ludovicianus*	CSC/-	Grasslands, scrub, agricultural areas	Marginal habitat in idle rice field	No
Bank swallow *Riparia riparia*	T/-	Vertical banks with friable soils.	None	No
Tricolored blackbird *Agelaius tricolor*	CSC/-	Emergent marshes, blackberry thickets, silage, grasslands, pastures	No nesting habitat, potential foraging in idle field.	No
Grasshopper sparrow *Ammodramus savannarum*	CSC/.-	Grasslands on rolling hills, lowland plains and valleys, and on lower mountain slopes	Marginal habitat in idle field	No
Palid bat *Antrozous pallidus*	CSC/-	Deserts, grasslands, shrub lands, woodlands, and forests.	None	No
Townsends big-eared bat *Corynorhinus townsendii*	CSC/-	Caves and mines, bridges, buildings, rock crevices and tree hollows	None	No

T=threatened; E=Endangered; CSC=California species of species concern; FP=state fully protected

No special-status species were detected during the survey and none have been reported from the project site. However, Table 1 indicates that suitable habitat for several species occurs on the project site. These species are addressed in greater detail below.

Giant Garter Snake. The giant garter snake is an aquatic species associated with emergent wetland vegetation and open water habitats. Adjacent upland refugia is also required during the active season and upland habitat above the flood zone is required during the winter dormant period. Flooded rice fields also provide surrogate wetland habitat for this species during the active period. Within the agricultural landscape of the Yolo Bypass, the species also uses large irrigation channels. Channels that support consistent water, emergent vegetation, and a food source are particularly important, especially when adjacent to active rice fields or other suitable aquatic or upland habitat. The project site is on the edge of the local range for this species. The nearest reported occurrence is approximately 0.5 miles north of the project site. The project site currently does not support suitable habitat for giant garter snakes, although the idle field may be considered marginal upland refugia during the active season. But the adjacent irrigation canals do not support consistent water, vegetation, or a consistent food source, so occurrence is unlikely. The project site would also not be considered suitable for overwintering upland habitat due to its low elevation and the frequent flooding of the lower Yolo Bypass. The adjacent irrigation channels could potentially be used for dispersal or local movements during periods when they contain sufficient water during the active season. During these times, it is possible that giant garter snakes could occasionally be found in the adjacent idle rice field.

Western Pond Turtle. Western pond turtles are closely associated with permanent water bodies, such as lakes, ponds, slow moving streams, and irrigation canals that include basking sites as down logs or rocks, and that support sufficient aquatic prey. Western pond turtles also require upland habitat that is suitable for building nests and to overwinter. Suitable upland habitat must have the proper thermal and hydric conditions in which to build nests (Jennings and Hayes 1994). Nests are constructed in sandy banks immediately adjacent to aquatic habitat or if necessary, females will climb hillsides and sometimes move considerable distances to find suitable nest sites. Western pond turtle is known to occur in the Yolo Bypass and has been detected within the Lower Yolo Restoration Project area (SFCWA 2013). Sloughs, such as Prospect Slough, and larger irrigation channels provide suitable habitat for this species. There are no suitable wetland habitats for this species on the project site. The idle rice field also does not support suitable upland nesting habitat. The irrigation channels bordering the project site provide marginal and only periodic aquatic habitat for this species. Because they lack vegetation, basking habitat, and do not support permanent water, they are likely to be used only for dispersal or local movement when water is present.

Swainson's Hawk. The Swainson's hawk nests in mature native and nonnative trees and forages in grassland and agricultural habitats. Although a state-threatened species, the Swainson's hawk is relatively common in Yolo County due to the availability of nest trees and the agricultural crop patterns that are compatible with Swainson's hawk foraging. However, fewer nests have been reported from the southern Yolo Bypass due to fewer trees and nesting opportunities and the extent of wetland habitats, which generally provide lower value foraging habitat. The nearest suitable nest tree is approximately 0.7 miles east of the project site along Prospect Slough. The nearest documented nest is approximately 1 mile south of the project

site. At least 12 nests have been documented within 5 miles of the site (Estep 2008, CNDDB 2014). The project site currently supports very limited foraging value to the Swainson's hawk due to the height and density of the vegetation.

White-tailed kite. White-tailed kites nest in native (primarily willow, valley oak, cottonwood, and walnut) and some nonnative trees and forage in grassland, seasonal wetland, and agricultural habitats. The nearest suitable nest tree is approximately 0.7 miles east of the project site and the nearest reported nest is approximately 8 miles north of the project site (Estep 2008). The project site provides marginal foraging habitat for the white-tailed kite. The lack of reported nest sites in the area suggests it occurs infrequently.

Northern harrier. The northern harrier nests on the ground in grassland or marshy areas and forages in grasslands, seasonal wetland, and cultivated habitats. The species is frequently observed throughout most of Yolo County, including the Yolo Bypass. The project site supports suitable, but relatively low value nesting and foraging habitat for this species due to the height and density of the vegetation. Surrounding lands provide higher value habitat. No northern harriers or active nests were observed on the project site during the survey,

Merlin. The merlin is an occasional winter visitor to Yolo County. This small falcon roosts in trees and shrubs and forages in grassland, seasonal wetland, and cultivated habitats. The project site provides marginal habitat for this species due to the height and density of the vegetation.

Short-eared Owl. The short-eared owl is a ground-nesting species that occurs mainly in open grassland, seasonal wetland, and freshwater marsh habitats. The species has been reported to nest in Yolo County, including in the Yolo Bypass, but occurrences have declined in the last couple of decades. None were observed during the survey, and the while the project site may be considered marginally suitable, the height and density of the vegetation would generally preclude presence.

Burrowing Owl. The burrowing owl nests in ground burrows, usually those constructed by ground squirrels. Associated primarily with grassland habitats, this species is also found along roadside and field edges, grassy levees, and in remnant grassland or ruderal patches within cultivated landscapes. Burrowing owls are found in habitats with short vegetation and avoid tall or dense vegetation. Burrowing owls are reported to occur along the western edge of the Yolo Bypass where periodic flooding is less frequent. They are unlikely to occur in or near the project site due to more frequent periodic flooding and because the vegetation on the project is too tall and dense to support nesting or foraging burrowing owls.

Loggerhead Shrike. The loggerhead shrike occurs in open habitats with scattered trees, shrubs, posts, fences, utility lines, or other perches. It nests in small trees and shrubs and forages for small rodents, reptiles, and insects in pastures and agricultural lands. The project site does not support nesting or perching habitat for this species. Foraging habitat on the project site is

considered suitable but marginal due to the height and density of the vegetation. The species has been reported to occur in the Yolo Bypass, but none were observed during the survey.

Tricolored Blackbird. The tricolored blackbird nests in colonies from several dozen to several thousand breeding pairs. They have three basic requirements for selecting their breeding colony sites: open accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony (Beedy and Hamilton 1999). Nesting colonies are found in freshwater emergent marshes, in willows, blackberry bramble, thistles, or nettles, and in silage and grain fields (Beedy and Hamilton 1999). No tricolored blackbirds were observed during the survey and there are no recently reported colonies in the southern Yolo Bypass. The project site supports marginal foraging habitat but does not support nesting habitat for this species.

Grasshopper Sparrow. The grasshopper sparrow is found in a variety of grassland habitats usually with scattered shrubs or patches of taller vegetation that are used as perch sites. It is also found occasionally in wet meadows and pasturelands. Absent from Yolo County for many years, recent occurrences have been documented in the grassland habitats along the western edge of the valley floor and in the grassland and pasture habitats in the Yolo Bypass. This species was detected during surveys conducted for the Lower Yolo Restoration Project DEIR (SFCWA 2013). The project site supports marginally suitable conditions for this species.

Potential Impacts of the Project

Potential impacts of the proposed project can be characterized as hauling and depositing soil onto the 80-acre project site. The soil will originate from the earth-moving activities related to the restoration of marsh and aquatic habitats on the adjacent Yolo Flyway Farms restoration project site. An estimated 64,500 cubic yards of excess soil will be deposited onto the project site. Trucks will haul the excess excavated soil from the restoration site to the adjacent project site on existing farm roads. The soil will be deposited and spread in the idle field, adding a total of approximately 0.5 feet of elevation to the field upon completion of the work. It is anticipated that the project site will continue to be dedicated to agriculture upon completion of restoration activities.

Vegetation. Vegetation on the project site consists entirely of invasive grasses and agricultural weed species. Depositing soil onto the idle rice field will have no impact on native or unique vegetation. The existing vegetation may be cleared in a manner similar to pre-planting field preparation prior to soil deposition.

Water Conveyance Channels. The water conveyance channels on the south and east sides of the project site will not be affected by project activities. The channels will not be disturbed and the conveyance of irrigation water will not be altered by project activities. Trucks depositing soil onto the project site will use existing ranch roads and cross the channel at the existing channel crossing at the southeast corner of the project site.

General Wildlife. The only wildlife habitat that would be affected during soil deposition activities on the project site would be the mixture of invasive species and agricultural weeds that occur in a dense and tall carpet across the project site. The project site is likely to be disked prior to soil deposition. Excavated soil will then be deposited onto the disked field in a uniform manner so that it can then be spread and the field readied for continued cultivation. Because the entire project site is an idle rice field, there are no biologically unique habitats or other features that support wildlife on the project site. Common birds, small mammals, and reptiles that occasionally use these disturbed habitats could be displaced as the field is being disked as they are during typical agricultural field preparation. No important wildlife habitats or natural communities would be disturbed during placement of soils. Project activities do not represent a significant impact on resident or migratory wildlife. Habitat impacts would not impede wildlife movement, reduce populations, restrict the distribution of any species, affect reproductive potential, or reduce habitat availability.

Impact 4.3-10 Effects to Special-Status Species on the Flyway Farms 80-acre Soil Deposit Site

Special-status species with potential to occur on or in the vicinity of the project are addressed below.

Giant Garter Snake. The project site is not considered suitable habitat for giant garter snakes. However, there is limited potential for giant garter snakes to occur in the adjacent water conveyance channels when water is consistently available in the channels. Use of the channels by giant garter snakes would probably be restricted to local movement during the active season. This is because the channels lack vegetation, cover, basking sites, or sufficient food resources, which are essential for longer-term occupancy. In its current idle condition, the potential for giant garter snakes to inhabit the project site is also very low due to lack of water in the field and in the adjacent channels. Occasional use of the field as temporary upland refugia may be possible, however, if giant garter snakes are moving through the irrigation channels. Therefore, while the disking of the field or the depositing of soil onto the field would not affect giant garter snake habitat, there is a remote possibility that individual snakes could be affected during periods when giant garter snakes potentially inhabit the adjacent channels.

Western Pond Turtle. There is no western pond turtle habitat on the project site. Therefore the proposed project would have no impacts on this species.

Swainson's Hawk and White-tailed Kite. There are no trees, and therefore no active Swainson's hawk or white-tailed kite nests on the project site. Further, no active nests of either species were detected within 0.5 miles of the project site. The nearest reported Swainson's hawk nest is approximately 1 mile from the project site and the nearest reported white-tailed kite nest is approximately 8 miles from the project site. Construction noise and other related disturbances during the breeding season would therefore not result in nest abandonment or other disturbances to nesting Swainson's hawks or white-tailed kites.

The project site currently supports marginally suitable foraging habitat; however, the height and density of the vegetation generally precludes foraging access by these species. The initial disking of the idle field will likely attract foraging Swainson's hawks and white-tailed kites. The field will then provide very low foraging value as soil is deposited, but over time will increase as rodent prey re-inhabit the field. Therefore, the proposed project does not represent a significant impact to Swainson's hawk or white-tailed kite foraging habitat.

Northern Harrier**.** No northern harrier nests were detected during the survey. There is potential, however, for northern harriers to nest within the dense, tall agricultural weeds and invasive grasses. If northern harriers nest in the project site in subsequent years prior to project initiation, soil deposition activities could affect active nests.

Burrowing Owl, Tricolored Blackbird, Grasshopper Sparrow, Short-eared Owl. These species were not detected during surveys and there are no records of their occurrence on or in the vicinity of the project site. Habitat conditions are considered marginal for these species on the project site. Each could potentially forage on the site and could be displaced once disking or soil deposition activities begin. This, however, does not represent a significant impact on these species. While the potential for breeding is considered low, if nesting does occur, project activities could impact active nest sites, which could be considered a significant impact.

Conclusions and Recommendations

The proposed project will have no significant impacts on vegetation or wildlife habitat resources. It will not affect animal movement or migratory patterns, will not affect reproductive potential, and will not affect the range, distribution, or abundance of any species. The project will also not affect any sensitive biological communities, such as wetlands, riparian, or oak woodlands. The project is also unlikely to have significant impacts on special-status species. However, several mitigation measures are provided to ensure that all potential impacts to special-status species are avoided.

Mitigation Measure 4.3-8: Effects to Special-Status Species on the Flyway Farms 80-acre Soil Deposit Site

The following measures are recommended to avoid and minimize the potential for impacts and ensure that all potential impacts are reduced to a level of less than significant.

1. Conduct Preconstruction Surveys and Avoid Impacts to Special-status Species

   To ensure that special-status ground-nesting raptors, including burrowing owl, short-eared owl, and northern harrier, or breeding tricolored blackbirds or grasshopper sparrows are not inadvertently affected by project activities, a qualified biologist should conduct a pre-construction survey in areas where soils are expected to be deposited in any given year. If active nests of these species or active burrowing owl winter burrows are found, select an alternative location for soil deposition within the 80-acre field,

maintaining a minimum of 200 feet (including truck routes) from all occupied sites; or if necessary, postpone deposition activities until the site is no longer occupied.

2. Avoid Take of Giant Garter Snake

If the adjacent water conveyance channels support consistent flowing water prior to project activities, the potential for giant garter snakes to occur in the channels and in adjacent uplands increases. To avoid take of giant garter snakes under these possible future conditions, apply the avoidance measures described for the Yolo Flyway Farms Restoration Project site, which are derived from the Lower Yolo Restoration Project DEIR (SFCWA 2013), to the soil deposition project site. These measures include:

- Require construction personnel to receive U.S. Fish and Wildlife Service (USFWS)-approved worker environmental awareness training to recognize the GGS and its habitat.
- Confine clearing of vegetation to only those areas necessary to facilitate construction activities and no greater. Areas designated as GGS and/or other sensitive-species habitat within or adjacent to the Project site shall be flagged as Environmentally Sensitive Areas and shall be avoided by all construction personnel.
- Survey the site at least 24 hours prior to the initiation of ground-disturbing activities in suitable GGS habitat. This survey shall be conducted by a USFWS-approved biologist in suitable GGS habitat. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a GGS is encountered during ground-disturbing activities, activities at that specific location shall cease until appropriate corrective measures, in concurrence with USFWS coordination, have been completed or it has been determined that the GGS will not be harmed. Sightings shall be reported to USFWS.
- Implement construction activity within GGS habitat between May 1 and October 1. This is the active period for GGS and direct mortality is lessened, because GGS are expected to actively move and avoid danger. Consultation with the USFWS is required for construction activities scheduled to occur in potential GGS habitat between October 2 and April 30.
- Ensure that any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15, and prior to excavating or filling of the dewatered GGS habitat.
- Require when working near flooded canals during the summer months, vehicle speeds shall not exceed 15 miles per hour (MPH) in areas where the line-of-site is obstructed and 25 MPH in other areas to avoid hitting the GGS and other special-status wildlife.
- Remove temporary fill and construction debris after construction completion, and, wherever feasible, restore disturbed areas to pre-project conditions.

4.4 AQUATIC BIOLOGICAL RESOURCES

Introduction

Aquatic biological resources include resident and anadromous fish occurring in water bodies within and adjacent to the Project site (in the Yolo Bypass and the Cache Slough Complex), the invertebrate communities in these water bodies, and aquatic and riparian habitat used by these aquatic organisms. This section incorporates by reference all of the background "Setting" discussion for aquatic biological resources, the analysis of potential impacts, and the recommended mitigation measures that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR is incorporated by reference.

Impacts and Mitigation Measures

Significance Criteria

Criteria for determining significant impacts on aquatic biological resources are based upon the *State CEQA Guidelines* (Appendix G). In the evaluation that follows, a potential impact to aquatic biology would be significant if the implementation of the proposed Project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species.

2. 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 CDFW or the USFWS in local or regional plans, policies, or regulations, or by the CDFW or the USFWS.

3. 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.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential aquatic biologic resources impacts of the larger 3,795-acre proposed project, including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo

Restoration Project would not have any significant aquatic biological resources impacts except for those identified below.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. Most of the aquatic biological resource impacts and mitigation measures are applicable to the Flyway Farms project, excluding Mitigation Measure 4.4-1, as noted below.

Impacts

The Lower Yolo project would create up to 1,226 acres (including 278 acres at Flyway Farms) of perennial emergent tidal marsh habitats for several species of fish; would immediately expand critical habitats for winter- and spring-run Chinook salmon, steelhead, and delta smelt; provide more EFH for all four runs of Chinook salmon; and would thereby result in a substantial beneficial effect for these aquatic biological resources. This benefit would be the primary objective of the Project in meeting the federal obligations of the Biological Opinions set forth by USFWS and NMFS. The creation of additional acres of habitat is also consistent with the CALFED and Delta Vision planning process (in particular the Delta Stewardship Council's draft Delta Plan), near term objectives described in the pending Bay Delta Conservation Plan.

Impact 4.4-1: Effects to Aquatic and Riparian Habitats

Changes in aquatic and riparian habitats were evaluated in terms of the type and magnitude of the area affected, the nature and duration of effects, a comparison of the amount and type of habitat lost or altered to the amount and type of habitat created by the project, and how such habitat alterations could affect resident and migratory fish species and other populations and communities of aquatic life.

Alteration of Aquatic and Riparian Habitats

Creation of tidal connections along the Toe Drain (along the east side of Flyway Farms) and the Stair Step would alter near-shore, instream and bank habitats for fish and other aquatic resources. The length of the levees that would be excavated at various sites of the overall Lower Yolo restoration project would be about 75 to 150 feet. This potential disturbance would represent a very minor portion of the many miles of available near-shore aquatic and bank habitats along these channels. The total area of tidal marsh habitat created through the construction of tidal channel networks under the overall Lower Yolo project would substantially exceed the total amount lost at each of the excavation sites; thereby increasing the net amount of available habitat on the project site and in the Yolo Bypass. Thus, the alteration of these habitats, which include designations as critical habitat and essential fish habitats, would result in a less-than-significant impact and no mitigation would be required.

The overall net increase in shallow-water and tidal marsh habitats would provide substantial benefits to native fish, including juvenile anadromous Chinook salmon and Sacramento splittail, by having additional rearing habitat as well as incrementally increasing the available invertebrate food base.

Alterations in Habitat Leading to Increased Predation on Native Fish

The potential for the Lower Yolo project to result in increased predation on native and special-status fish species was evaluated by examining the foraging behavior and habitat preferences for piscivorous fish likely to occur on the project site; design elements of the project that were incorporated to minimize the potential for such habitat conditions to occur; and the nature, timing, and predator avoidance behaviors of fish that would likely to be preyed upon (e.g., juvenile salmonids). Restoration of tidal marshlands and their associated tidal channel networks, along with the creation of tidal connections, as proposed in the project would have the beneficial effect of increasing the amounts of habitats available to aquatic organisms. This could likely be used yearround by a wide variety of piscivorous fish, such as Sacramento pike minnow (*Ptychocheilus grandis*), striped bass (*Morone saxatilis*), largemouth bass (*Micropterus salmoides*) and other non-native Centrarchidae (i.e., basses and sunfish) and Ictaluridae (i.e., catfish and bullheads).

This expanded habitat also may provide the potential for increases in the number of piscivorous wildlife, such as egrets, herons, raccoons, and otters, which may use the site for foraging. The presence of piscivorous fish and wildlife throughout the restored marshlands and channels, but especially in the areas of the tidal connections and channel pools, would create the potential for the restored floodplain habitat to serve as a biological "sink." Small fish not born on the Project site would enter this area on tidal inflows, including delta smelt and juvenile anadromous salmonids, and could be preyed upon by piscivorous fish or wildlife. However, the project would have "built in" aquatic habitat features designed to favor native fish species, while discouraging the establishment and colonization by non-native, piscivorous fish. The tidal channel geometry would be excavated to depths approximately two to six ft below local mean lower low water (MLLW) to minimize the potential for colonization by aquatic vegetation, which can provide habitat for piscivorous fish. Channels also would be sized to promote peak tidal flow velocities of about three ft per second, which would minimize invasive Brazilian waterweed (*Egeria densa*) from becoming established onsite. Brazilian waterweed is known to invade natural waterways and substantially impede water flow, reduce turbidity, harbor invasive predator fish species, and decrease the quality of habitat for native resident and anadromous fish. It is also important to note that the fish subject to predation on the Project site would still be subject to predation, even if they did not enter the Project site but remained in nearby channels or elsewhere.

Another factor involved with potential predation losses would be stranding of fishes (refer to Impact 4.4-2). The project would greatly reduce losses of fish due to predation by excavating

the project site to avoid ponding. The decrease in ponding would lead to a reduction in stranding in the ponds and consequently minimize the losses to predation there. Further offsetting predation losses would be the rearing benefits of the seasonal floodplain habitat demonstrated to benefit juvenile Chinook salmon and Sacramento splittail. An increase in seasonal floodplain wetland habitat and high food productivity provided by the Project would result in robust growth rates and increased production of these fish, thereby further increasing their chances to survive predation.

Due to their life history, green sturgeon would not utilize the tidal marsh plain for any substantial length of time (e.g., these areas would likely be used for limited periods during juvenile rearing and migration). The project would not substantially increase predation that would have population-level effects on special-status or other native fish, due to the offsets and relatively vast distributions of native fish populations represented onsite. Thus, predation impacts would be less than significant. No mitigation would be required.

Alterations in Habitat Composition due to Increases in Colonizing Invasive Plant Species

During its construction and post-construction phases (except for monitoring activities), the Lower Yolo project would create aquatic habitat that has the potential to be colonized by invasive non-native, submersed aquatic vegetation and emergent vegetation. However, the project would incorporate specific design features for discouraging establishment and colonization by invasive aquatic plants, including high flow water velocities in the channels, periodic monitoring, and specific management measures, including a livestock grazing program. Accordingly, this potential impact would be less than significant. No mitigation would be required.

Effects from Ground-disturbing Activities to Aquatic and Riparian Habitats

Construction activities would result in a temporary impact to aquatic and riparian habitats, especially those activities near seasonal ponds located within the boundary of the Project, and tidal connections along the Stair Step Slough and Toe Drain. Fish habitats within the boundaries of the project site are limited to the irrigation and drainage ditches and ponded areas that receive water either from Yolo Bypass inundation events or the irrigation system. These ditches provide low-quality aquatic habitat for fish, and likely only support fish species that are tolerant of high temperatures, low DO levels, and sub-optimum habitat conditions that occur in summer (Nobriga 2008; Siegel *et al.* 2011). Intense solar radiation and ambient air conditions occur at the site during the warmest months, and may cause some, or all of the basins to reach temperatures exceeding the thermal tolerances of most fish species, and/or cause water to evaporate completely.

Excavation of the networks (e.g., intertidal channels) would occur during the summer months, prior to creating the tidal connections. The excavation work would occur on landside during low tides and, therefore, would not adversely affect aquatic habitats (including critical habitat and

essential fish habitats). Given the small area and the absence or low quality of aquatic and riparian habitat that would be affected during excavation and grading, these effects would not reduce the overall aquatic habitat quality by an amount that would have substantial population-level effects on fish or other aquatic organisms occurring on the project site, resulting in a less than significant impact. No mitigation would be required.

Creating the tidal connections would have small short-term effects between 70 to 120 feet of aquatic channel bank and riparian habitat within the immediate vicinity of each of various tidal connection locations along the miles of the Stair Step or Toe Drain, along with a potential final connection, if needed, during the post-construction stage. Riparian habitat at each of these locations consists of scrub and woodland trees, predominantly on the levee tops, and provides lower habitat value for aquatic species. These locations may provide shade and terrestrial insects that fall into the channel below. Further, the stream banks provide benthic invertebrates as food for fish. Excavation for the tidal connections would take place using an excavator, working from the levee crown or at the project site, and no heavy construction equipment would be operated from the water. Construction best management practices (BMP) measures would be implemented to minimize the extent of disturbance to riparian habitat, including removal of riparian vegetation and shaded riparian aquatic (SRA) habitat around each of the excavation sites. Construction may remove a relatively small amount of vegetation (scrub species and small amount of woodland trees) on the channel banks associated with the tidal connections; however, such activities would occur in the fall when few, if any, juvenile anadromous salmonids or green sturgeon would be likely to be present in waters adjacent to the project site. Because the effects would be localized, effects on invertebrates reaching the channel would be small and localized.

Therefore, the tidal connections would have no substantial population-level effects on native or special-species depending on the terrestrial element of the forage base in the project area, and impacts on fish, critical habitat or essential fish habitats, via habitat modification would be less than significant. No mitigation would be required. Further, only a small localized fraction of riparian habitat would be removed, the resultant impact would be less than significant, and no mitigation would be required.

Impact 4.4-2: Direct Fish Lethality or Injury

The potential for aquatic organisms to be directly injured or killed because of construction related activities was evaluated in terms of the timing and duration of construction, the spatial scale of in-channel disturbance, the equipment to be used and construction approach implemented, the nature of disturbance, and the organisms likely to occur at each construction location, and their expected responses to the construction activity.

Temporary Impacts from Tidal Connections Construction

Lethality or direct injury to special-status fish or other native fish, and other aquatic organisms by constructing tidal connections would be minimal for several reasons, and, therefore, would not have long-term population-level effects on fish or invertebrates in the waters adjacent to the excavation sites.

Construction machinery used to build each tidal connection would be operated from the levee crown or from the land side within the project site, so that no heavy machinery would be operated from the water. BMP measures would also be implemented by the contractor to minimize the impact to aquatic plants and fishes.

Due to the construction-related noise, most fish would avoid the immediate construction area. Creating tidal connections would only occur for a few hours to a day at each of the five sites (plus one additional if necessary during post construction), thus the potential times and locations for effects are short, small, and localized. Further, such activities would occur during late summer or early fall months, missing the peak migration periods, so, few of these fish would be expected in waters adjacent to the project site. Another reason for minimal effects is that the approximately 120-foot connections are miniscule portions of the distributions of each of the native or special species, which, depending on the species, extend through much of the Delta, several miles upstream of the Delta and out to the Bay or Pacific Ocean. Accordingly, based on the analysis above, direct fish lethality and injury due to construction of tidal connections would be less than significant and no mitigation would be required.

Temporary Impacts from Filling of the West Yolo Bypass Levee Borrow Ditch

The Lower Yolo Restoration Project FEIR identified two soils reuse options for the portion of the project that does not include Flyway Farms. The FEIR noted that under these two options, construction equipment would be used to fill in the west Yolo Bypass levee borrow ditch with soil and to create another ditch to the east to accommodate the toe berm. Filling the borrow ditch could bury sensitive fish species, if present and result in a significant impact if not mitigated. The FEIR include Mitigation Measure 4.4-1, which addressed temporary impacts related to the temporary filling in of the west Yolo Bypass levee borrow ditch.

However, the Flyway Farms project does not affect this levee borrow ditch and this mitigation measure included in the adopted Lower Yolo FEIR is not, therefore, applied to the Flyway Farms project.

Temporary Impacts from Irrigation/Drainage Improvements

In conjunction with any of the three soils reuse options, construction activity in the basins and irrigation/drainage ditches within the Project boundary would encounter few, if any, special or other native fish species, because the habitat would be nonexistent from being dried up, or warm, small and subject to predation by birds. Any fish present could be killed or injured during this activity through contact with equipment or burial and thereby result in a significant impact if not mitigated. From a population-level perspective, any areas with fish would hold a

miniscule fraction of their overall populations in the Delta. Where practical, i.e., safe and immediately before construction activity so as to minimize reoccupation by fish before construction happens, these waters would be seined once prior to construction to remove fish present, per Mitigation Measure 4.4-2. Thus, these temporary impacts would be avoided or minimized and be less than significant to special-status fishes and native fishes.

Mitigation Measure 4.4-2: Temporary Impacts from Irrigation and Drainage Improvements

The following mitigation measure shall be implemented prior to the onset of excavation on the marsh plain and irrigation ditches:

- Conduct biological surveys to determine if there are any fishes present.
- Recover fishes, if present, using appropriate techniques such as beach seining; retain the captured fishes in cooled, aerated containers; and release fishes the same day as captured into the waters of Stair Step or Toe Drain.

Implementation of Mitigation Measure 4.4-2, above, would reduce the effects from excavating marsh plains and irrigation ditches to less than significant.

Potential Stranding Risk of Fish on the Project Site

Situated in the Yolo Bypass, the Lower Yolo project site is inundated by flood waters during parts of the wet (i.e., winter and spring) season on average two out of every three years. As a result, the project site can pond flood waters, potentially stranding fish when flood flows recede. The project site can also strand fish behind the tidal gate on the Stair Step. Under those circumstances, stranded fish may die from high water temperature, asphyxiate from low DO, be consumed by piscivorous birds, or dried up as water evaporates from the ponded waters in irrigation ditches or marsh areas onsite.

Many fish, however, may leave the seasonal floodplain on the project site before stranding becomes a possibility. Moyle *et al.* (2007) examined stranding phenomena on the restored Cosumnes River floodplain, and found that the majority of fish exited the floodplain approximately five to six weeks following the last seasonal inflow. In this study, the majority of fish that were stranded on the floodplain following disconnection from the river were non-native fish species, particularly inland silversides (*Menidia beryllina*), western mosquitofish (*Gambusia affinis*), golden shiner (*Notemigonus chrysoleucas*), and common carp. A relatively small numbers of native cyprinids, including Sacramento splittail and Sacramento blackfish, as well as Chinook salmon, were temporarily stranded in isolated pools between inundation events in most years. These native fish stranding occurrences were almost always associated with depressions or man-made structures; features that would be eliminated onsite by construction of the project.

The study (Moyle *et al.* 2007) found that native fish were typically the first fish to leave the floodplain and return to the river prior to disconnection. No juvenile salmonids were found to be permanently stranded (i.e., isolated on the floodplain following the final disconnection of the year) during the four-year study; however, a small number of native cyprinids were permanently stranded in some years (Moyle *et al.* 2007).

The Lower Yolo restoration project (and the Yolo Flyway Farms project) would create new open channels within its footprint. This modification to the land would result in the drainage of water off of the newly excavated areas graded to avoid ponding. The runoff would flow out through five new tidal connections into tidal waters of the Toe Drain or Stair Step.

This new drainage system would eliminate post-flooding, ponding potential over much of the project site. The project would be designed so that the daily tidal cycle of flooding and drainage minimizes ponding. Channel geometries would be sized to promote peak-tidal flow velocities of about three feet per second. Sinuous tidal channels that approximate historical floodplain conditions would be incorporated into the design, which would favor gradual drainage over rapid drainage and thereby permit fish sufficient time to swim off the floodplain, if necessary.

The potential for stranding would be minimal in the lowest elevation portions of the restored site, and would minimally increase with higher elevation. In the unlikely event that any fish did become stranded (e.g., in scour holes) in the higher elevation portions of the Project site, those fish would be expected to survive until the next tidal inundation.

Regardless of which soils reuse option is selected, the project would eliminate or reduce the potential for stranding fish onsite by reducing ponding incidents, as explained previously. Because the risk of native fish stranding would be greatly reduced by the project, potential stranding impacts on special-status fish or the movement of native fish would be less than significant. No mitigation would be required.

Similar impacts would be attributed in conjunction with the construction of an additional tidal connection and creation of small ditches to control mosquitoes, if needed, during the post-construction phase.

Impact 4.4-3: Temporary Noise Impacts Impeding or Delaying Fish Migration

Construction activity at the tidal connection locations could generate sufficient noise within the channels to affect the movement or migration of special-status fish species. Adult fall-run Chinook salmon and steelhead may migrate past the project site in the Stair Step or the Toe Drain on their way to upstream spawning reaches in Putah and Cache creeks during the late summer and fall months and, therefore, may coincide with the latter months of the construction period. However, these fish are expected to simply avoid the excavation areas by seeking a zone of passage further away from any noise sources (i.e., along the opposite bank of the slough, which is approximately 120 - 200 feet wide in most places). Excavation of the

connections would occur over a maximum period of a few hours to one day at each location and, therefore, any delays in fish migration would be temporary and brief. However, this short-term construction noise associated with the grading activities would be similar to existing noise associated with ongoing agricultural activities in the adjacent areas. Therefore, construction-related noise would not cause adverse individual or population-level effects on the movements or migrations of migratory fish, or their habitat, including critical habitat and essential fish habitats, to an extent that could cause a reduction in species abundance or long-term population levels. Therefore, this impact would be less than significant and no mitigation would be required.

Impact 4.4-4: Water Quality Impacts on Fish and Aquatic Resources

Assessing the potential effects of water quality conditions within the Project site and in adjacent channels of the lower Yolo Bypass and Cache Slough Complex have been fully analyzed in Chapter 4.2, Water Quality.

Suspended Solids/Turbidity

Impacts were assessed on fish and aquatic habitat resources due to increases in sedimentation and turbidity from construction-related activities, based on the magnitude and areal extent of expected changes in these water quality parameters. Toxicity impacts on aquatic life that could result from chemical spills during construction were assessed based on the potential for accidental spill events, the volumes of various contaminants likely to be spilled in any such event, and their dilution.

Creating tidal connections would occur in very, localized areas of up to 120 feet in width of levees/berms at various locations (with a possible additional location during the post-construction phase) along miles of channels found in the lower Yolo Bypass and Cache Slough Complex. Each location would also involve excavation lasting between a few hours to one day.

These activities would occur in late summer or fall (e.g., September or October), during the period in which adult immigrating fall-run and late fall-run Chinook salmon, adult immigrating steelhead, and juvenile green sturgeon could be present in adjacent water bodies. Uncontrolled re-suspension of sediments through excavation could result in adverse effects on fish such as impairing the ability of sight-feeding fish finding prey, clogging and abrading gill filaments, burying benthic macroinvertebrate prey once sediment has settled out of the water column, and preventing fish avoidance from temporarily turbid areas. However, the potential for such short term, sediment re-suspension and scouring impacts would be minimized by excavating the connections from the landward side, toward tidal waters to create and remove a “plug of soil” in which water (both tidal and groundwater) would then slowly equilibrate on both sides of the berm, avoiding a surge into the work areas. In addition, the heavy machinery required to excavate each connection would be operated from the levee crown or from within the Project site. The excavated soils would be moved by dozers or placed into dump trucks and transported away from the excavation area. This approach, along with other construction BMPs listed in

Chapter 3, would minimize the amount of soil available for re-suspension. Overall, the potential impact of sediment introduction into localized waters adjacent to the Project site, in which special-status fish and critical habitat and essential fish habitats, could occur, would be less than significant. No mitigation would be required.

Development and maturation of wetland vegetation on the restoration site would attenuate and reduce erosion and scour processes. Over the long term, stabilization of site vegetation would result in suspended solids and turbidity levels that are substantially equivalent to those of other inter-tidal areas of the Yolo Bypass. Hence, impacts to aquatic resources from suspended solids/turbidity within the restored and enhanced wetlands would be less than significant. No mitigation would be required.

Methylmercury Uptake

As presented in Section 4.2, Water Quality, a qualitative analysis based on Methylmercury (MeHg) data from similarly managed systems and data collected elsewhere in the Yolo Bypass, including drainage discharges from the project site to the Toe Drain, indicates that concentrations on the project site are likely elevated above those found in Delta (i.e., Cache Slough Complex) source waters. Also, the project site likely serves as a net source of MeHg to the Delta.

As described in Impact 4.2-2, it is projected that project implementation (including both construction and post-construction phases) would result in reduced MeHg loading within the site and reduced severity of discrete MeHg loads to the Delta. The restored tidal marshes are expected to slightly increase the MeHg concentrations in tidal flows out of the marsh relative to inflow concentrations, as observed in San Pablo Bay and Brown's Island marsh studies (Yee *et al.* 2008; Bergamacschi *et al.* 2011), and there may be some build-up of mercury concentrations at the marsh rim from vegetation die-offs after exposure and then re-submergence. However, these potential increases would be countered by decreases in MeHg discharges from the Project site to the Toe Drain.

With respect to impacts to aquatic resources through exposure/uptake of MeHg, evidence indicates that bioaccumulation by invertebrates, fishes, and wildlife consuming aquatic resources would not differ from current exposures in the Delta "Speculation of the possible effects of tidal wetlands on MeHg in the Delta and fish tissue mercury concentrations has been widespread, as it is generally thought that tidal wetlands contribute to MeHg production" (Davis *et al.* 2003). However, empirical studies have shown that there is no localized increase in biotic MeHg concentration (in fish) in wetlands compared with adjacent aquatic habitats like open water channels (Yee *et al.* 2005; Slotton *et al.* 2002). While the project may attract fish to spend a portion of their life cycle within the project's tidal wetlands, their exposure to MeHg would be similar to that of the baseline environment of the Delta's existing tidal wetlands and open channels.

Beyond production and release of MeHg from tidal wetlands, one prevalent general concern is the possibility of bio-accumulation of MeHg in the food chain. However, based on the rationale and studies cited above, MeHg levels found in larger game fish that feed on smaller fish associated with tidal wetland habitat should be comparable to baseline levels and would not be substantially changed by the project. No evidence is known that indicates restoring tidal wetlands would increase concentrations of MeHg in invertebrates, zooplankton, fish, or wildlife to be any greater than what is currently measured in these organisms within the various Delta habitats." (Source: Reclamation District 2093*, Liberty Island Conservation Bank Mitigated Negative Declaration*, 2009).

Overall, the reduced severity of discrete loads and reduced MeHg onsite and in discharges would be beneficial changes in MeHg dynamics on the project site and in the general vicinity of the Delta, thereby decreasing the bioaccumulation of MeHg in fish. Hence, MeHg impacts to aquatic biological resources would be less than significant and no mitigation would be required.

Pesticides

Based on the review of available information, the potential for the proposed Project to expose fish and other aquatic resources to increased toxicity from current-use and legacy pesticides would be unlikely. The Phase 1 environmental site assessments conducted onsite reveal that land uses have been primarily used for pasture and grazing, with pesticide use minimized in recent years. Also, the land is routinely exposed to high flood waters during seasonal inundation in the Yolo Bypass. The stabilization period during construction, when farming activity would cease, would also be expected to allow time for breakdown of any current-use pesticides and lessen the potential for adverse runoff effects. Additional discussion on pesticides is presented in Section 4.8.1, Setting: Agricultural Practices and in Section 4.2, Water Quality.

Overall, the potential project-related exposure of fish, including special-status fish, to pesticides would be no different than at other areas in the Delta receiving runoff from active urban and agricultural land uses. Additionally, chemical use for mosquito control during the postconstruction phase would be employed as a last resort if nothing else worked and would comply with applicable laws and regulations for its use (refer to Impact 4.8-3 in Section 4.8) Therefore, impacts from pesticide exposure to aquatic biological resources would be less than significant and no mitigation would be required.

Long-term Water Temperature Impacts to Fish and Other Aquatic Resources

Assessing this impact focuses at times on Chinook salmon and steelhead, as both species are of resource management concern, and because they have the lowest and narrowest thermal tolerances of all fish species currently occurring in the Project area.

Under existing conditions, the non-tidal irrigation/drainage ditches and basins on the Project site are subject to intense solar radiation and ambient air conditions during the warmest

months (e.g., July and August), which can create water temperatures that exceed upper thermal maximum thresholds, even for many warm-water fish species, or cause the basins to evaporate until dry.

Shallow water habitats are subject to increased water temperatures as a result of direct solar radiation and influence from ambient air temperatures. Of the fish and invertebrate communities potentially occurring on the restored floodplain, anadromous salmonids have the lowest temperature tolerances, and have the potential to occur within the restored wetlands for extended time periods. Therefore, if temperatures on the Project site and adjacent water bodies are suitable for Chinook salmon and steelhead, they would likewise be suitable for warm water resident fish species, as well as other anadromous or migratory fish (e.g., green sturgeon, delta smelt, longfin smelt) and invertebrate communities. Increased temperatures can sub-lethally affect aquatic organisms through reduced growth and/or maturation rates, increased vulnerability to predation, and increased risk of disease, and in the case of extreme temperatures, cause mortality.

The closest water temperature monitoring station in the vicinity of the Project is the DWR Yolo Bypass at Lisbon Weir gauge (CDEC Station ID: LIS), located a short distance northeast of the Project site. The summary statistics of monthly temperatures for this station indicate that temperatures in the Yolo Bypass are well within suitable ranges for growth and survival of anadromous salmonids during the fall to spring months, during which anadromous salmonids would be present in the vicinity of the Project site.

These recorded temperatures indicate that juvenile Chinook salmon would encounter a temperature regime that is conducive to growth during the peak winter-spring emigration and rearing period. Juvenile Chinook salmon show positive growth at temperatures ranging from 46.4 degrees Fahrenheit (°F) (Clarke and Shelbourn 1985) to 77°F (Brett *et al.* 1982), with maximum growth under maximal rations occurring at temperatures in the mid- to upper 60s°F (Cech and Myrick 1999). These temperatures are similar to temperatures recorded in the Yolo Bypass from December through April. However, juvenile Chinook salmon rearing in the Yolo Bypass and on the Project site may begin to encounter daily maximum temperatures that exceed their thermal tolerances beginning in May.

The project would incrementally increase the net amount of shallow water habitat in the Yolo Bypass and also would inundate the existing basins onsite, (currently isolated in the dry season), with cooler tidal waters throughout the summer. Because the tidal waters of the Toe Drain and Stair Step provide suitable temperatures for warm water fish year-round and cold water fish seasonally, re-establishing the tidal connections to water bodies on the Project site would likewise provide suitable habitat and would likely improve the summer thermal regime of the project basins.

Although the project would create shallow water habitat on the floodplain where water temperatures may be incrementally increased above that of the ambient water in the adjacent

tidal waters, any such temperature increases would be minimal, and are unlikely to adversely affect anadromous salmonids or other anadromous and resident fish with higher thermal tolerances for several reasons. First, juvenile salmonids (i.e., the most thermally intolerant life stage expected to utilize the project site) would be present during the winter and spring months, when, as discussed above, average and maximum daily temperatures are well within suitable ranges for growth and survival of these species. Second, ambient air temperatures during this time period are also generally within values for survival of anadromous salmonids, and would, therefore, not increase temperatures of waters on the floodplain to levels that would adversely affect growth or survival of salmonids or other fish with higher thermal tolerances. Third, the daily cycles of tidal exchange and cool nighttime temperatures would ameliorate any increases in temperature that may occur on the floodplain during the day. Fourth, any temperature increases would likely be limited to shallow and/or near-shore margins of the floodplain, and would likely occur only on relatively warm days with little cloud cover (i.e., exposure to direct sunlight).

Finally, if temperatures on the floodplain did reach critical levels, fish would exit the floodplain in search of cooler water as temperatures began to exceed their thermal preferences. The floodplain habitat created by the proposed Project would not be expected to increase water temperatures on the floodplain or in the adjacent and connected water bodies (i.e., Toe Drain and the Stair Step Slough) to levels that would have adverse effects on anadromous salmonids or other resident or migratory fish. Conversely, any short-term incremental increases in floodplain water temperatures may be beneficial to rearing juvenile salmonids, by increasing growth rates and by providing a temporary thermal refuge, should temperatures in the adjacent water bodies become very low.

As described above, temperatures on the project site and in adjacent water bodies would not reach temperatures of sufficient magnitude or frequency as to have any individual or population level effects on any anadromous or resident fish occurring in the Project area, or their invertebrate food base. Under situations in which temperatures in the adjacent water bodies become unfavorably low, the shallow waters on the restored floodplain may provide benefits to anadromous salmonids, by providing thermal refugia and increased growth rates. Therefore, temperature impacts with project implementation (both construction and post construction) would be less than significant and potentially beneficial. No mitigation would be required.

Long-term Dissolved Oxygen Impacts to Fish

The assessment under this impact focuses at times on Chinook salmon and steelhead, as both are species of resource management concern, and because they have the lowest and narrowest DO tolerances of all fish species currently occurring in the project area. Section 4.2, Water Quality, concluded that discrete discharge events from agricultural ditches and managed wetlands on or near the project site presently, could potentially contribute to low DO water, which could have short-term impacts to DO levels in the adjacent tidal sloughs. However, these

discrete events do not appear to have a negative impact upon the long-term water quality of the receiving sloughs, as DO levels in the project area generally exceed five mg/L and thereby are suitable for aquatic life (Kimmerer 2004). Many fish cannot tolerate water when DO concentration is lower than about two to five mg/L (Nobriga 2008).

Compared to the existing site conditions, the proposed project would result in a net additional area of dendritic intertidal channels, exposed to aeration from mixing by the wind, and daily tidal exchange and flushing. The restoration channels would be constructed to drain freely, and thus reduce potential for DO-sag conditions from long water residence times, providing generally stable and suitable DO levels for resident and anadromous fish species. Consequently, the proposed project would not result in DO levels low enough or extensive enough to cause adverse population-level effects on resident or anadromous fish occurring in waters within or adjacent to the Project site or their invertebrate food base. Therefore, DO impacts to fish with project implementation (during both construction and post construction) would be less than significant. No mitigation would be required.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

4.5 Agricultural Resources

This section evaluates the potential impacts of the proposed project on agricultural resources. It includes a description of the current and past agricultural uses at the project site and in the surrounding area. The section also describes the soil and hydrological properties at the site as they relate to agricultural activities.

The 2013 Final EIR for the Lower Yolo Restoration Project included a discussion of California Farmland Mapping Program Productivity Designations, Agricultural Soils, and Regulatory Setting (pages 4.5-1 through 4.5-14). This discussion is incorporated by reference into this Supplemental EIR, with several notable revisions, as noted below. A portion of the Agricultural Soils and Regulatory Setting discussion has been revised and updated. In addition, the original discussion has been augmented with two new sections, Agricultural Productivity and Williamson Act Status.

Agricultural Soils

The Final EIR for the Lower Yolo Restoration Project identified soil types at the 362-acre Flyway Farms site (excluding the 80-acre soil depoist site) with respect to the Natural Resources Conservation Service (NRCS) soils survey from 1972. This 1972 survey revealed that most of the Yolo Flyway Farms restoration site was comprised of Sacramento soils, flooded (Sg) with a Storie Index rating of 30 and a Storie grade of 4 (poor).

However, the NRCS has since revised the Storie index method for soil ratings, which resulted in reduced subjectivity association with this form of land classification. Based on these updated ratings, in effect in Yolo County since 2005, soils that comprise the Yolo Flyway Farms restoration site, which are primarily Sacramento soils, flooded, now have a Storie index rating of 44 and a Storie grade 3 (fair). Grade 3 soils rank between 40 to 59 percent suitability, which are generally of fair quality, with a less wide range of suitability than higher grade soils with good or excellent ratings. Soils in Grade 3 may give good results with certain specialized crops. This Supplemental EIR identifies this change in Storie grade on the Yolo Flyway Farms parcel from grade 4, indicating poor soil quality, to grade 3, soils with fair quality.

Soils on the 80-acre proposed stockpile site consist primarily of Capay soils, flooded, which have a Storie index rating of 42, with a Storie grade 3 (fair). Portions of the 80-acre site, the southeast corner that is adjacent to the 362-acre site, contain the Sacramento soils, flooded (Figure X). The 80-acre site will incorporate approximately 67,000 cubic yards of the Sacramento soils, flooded, after the 362-acre site has been excavated for restoration. It is not anticipated that this soils incorporation will further decrease the 80-acre site's agricultural potential since the Storie ratings and grade are similar in nature.

Agricultural Productivity

Rice production and pasture are two major uses of agricultural fields within the Yolo Bypass, depending on the annual flood season. The Lower Yolo Restoration Project Final EIR makes the argument that unlike other agricultural areas of the County, agricultural production in the Yolo Bypass is secondary to its use as an area for flood control. For instance, grazing within the Yolo Bypass cannot begin until past the annual flood conveyance period, which varies from April to June, depending on climate conditions. This is contrasted by livestock pasturing on lands outside the Bypass that begins in April or May and ends in October or November. As a result, the agricultural productivity of lands within the Yolo Bypass is reduced if the Bypass is flooded into late spring.

Additionally, because of the floodway priority of lands within the Yolo Bypass, lands outside of the Bypass typically have more cropland use options. Any land uses proposed or already managed in the Yolo Bypass must, by Central Valley Flood Protection Board regulations, not inhibit the movement of flood waters through the Yolo Bypass. Historically, duck hunting has taken place on Yolo Flyway Farms as its primary use, and has only recently been used for cattle grazing, which is limited.

In addition, the most recent wetland delineation prepared for the Flyway Farms project concludes that almost all of the 362-acre main site consists of perennial emergency marsh, seasonal wetlands and riparian woodland, not “farmed wetlands.” This preliminary jurisdictional delineation has been accepted by the U.S. Army Corps of Engineers.

However, the Yolo County Agricultural Commissioner’s office has opined that pasture grazing in the Yolo Bypass has become some of the better grazing land in the County due to a drop in dryland pasture acres during the drought. For example, in 2014, nearly 100,000 pasture acres were lost creating a more significant demand for pasture land. Today, according to the Agricultural Commissioner, the area proposed for restoration is considered some of the better grazing land in the County with the ability to support one animal unit per acre as compared to the Dunnigan Hills area which supports one animal unit per 40 acres (John Young, July, 2015).

However, it must be noted that land can’t be grazed year-round in the Bypass and access is limited. In particular, with respect to Yolo Flyway Farms, pasture grazing is not nearly as economically viable as managing the land for duck hunting, which has occurred on the property for decades dating back as early as the late 1920s, according to the applicant and current property owner (Tyson, 2014). The applicant states that the property has not been farmed since he bought the parcels in 2008, although as an interim use and to avoid management of a duck club, the applicant has grazed some portions of the property.

Similarly, the 80-acre parcel appears to have a history of being used for duck hunting and in the 1960s was used to enhance duck hunting on the Yolo Flyway Farms. However, the 80-acre parcel in more recent years has been planted in rice and currently sits idle.

Regulatory Setting

State Law, Plan, and Policies

Williamson Act Status

The project site is under two separate Williamson Act contracts: Yolo Flyway Farms contract for the 362 acres (Land Use Agreement No. 78-37) was signed on January 31, 1978, and the 80-acre parcel's contract (Land Use Agreement No. 71-67) was signed on January 4, 1971.

With respect to the larger Lower Yolo Restoration Project, the Final EIR noted that in addition to the conservation of agricultural land as an economic resource, the Williamson Act also recognizes the importance of preserving land for open space purposes and includes open space uses as compatible uses. In 2008, Assembly Bill 2921 was enacted, providing for a mechanism to rescind Williamson Act agricultural contracts in order to enter into either an open space contract under the Williamson Act, or an open space easement. Under these provisions, the resulting agreement(s) must be at least as restrictive as the contract(s) it replaced, and the affected parcel(s) large enough to provide open space benefits.

Delta Protection Commission's Land Use and Resource Management Plan

The project site is located in the Primary Zone of the Delta, in which the Delta Protection Commission (DPC) has statutory authority. The DPC's Land Use and Resource Management Plan (LURMP), originally prepared and adopted in 1995, was revised and updated in 2010, and sets forth a description and needs for the Delta and a statement of policies, standards, and elements in the LURMP.

Local Policies, Zoning, Programs, and Ordinances

This Draft Supplemental EIR re-examines and updates this part of the Agricultural Resources section to clarify discrepancies in the Final EIR for the Lower Yolo Restoration Project, and to correct interpretations regarding project consistency with the County's Agricultural Conservation and Mitigation Program and Habitat Mitigation Ordinance.

Yolo County 2030 Countywide General Plan

The 2030 Countywide General Plan designates the entire project site as Agriculture, with a Delta Protection Overlay (DPO). The Agriculture land use designation includes the full range of cultivated agriculture, such as row crops, orchards, vineyards, dryland farming, livestock grazing, forest products, horticulture, floriculture, apiaries, confined animal facilities and equestrian facilities. It also includes agricultural industrial uses as well as agricultural commercial uses. Agriculture also includes farmworker housing, surface mining, and incidental habitat.

The Final EIR for the Lower Yolo Restoration Project concluded that, in general, the County considers wetland habitat restoration projects to be consistent with the Countywide General Plan based on a few key Agriculture policies that:

- (AG-2.9) Support the use of effective mechanisms to protect farmers by adjoining habitat enhancement programs;

- (AG-2.10) Encourage habitat protection and management that does not restrict onsite agricultural production;

- (AG-12) Encourage farmers to employ agricultural practices that supplement rather than deplete topsoil and conserve or minimize water use; and

- (AG-13) Promote wildlife-friendly farm practices, such as tailwater ponds, native species/grasslands restoration in field margins, hedgerows, ditch management for riparian habitat, restoration of riparian areas in a manner consistent with ongoing water delivery systems, etc.

While habitat restoration projects are conditionally permitted uses in the Agricultural areas of the County, projects such as the Yolo Flyway Farms Restoration Project are also subject to Yolo County's Habitat Mitigation Ordinance (see separate discussion, below). That ordinance addresses a much broader and far more reaching effort to regulate certain habitat projects taking place within the County in connection with projects and activities occurring largely or entirely outside of the County, including habitat projects undertaken in furtherance of the "coequal goals" and the habitat restoration objectives of the Delta Reform Act. Local preservation and mitigation efforts, such as those identified by the Agriculture Policies identified above do not advocate or necessarily support wetland habitat projects that remove agricultural resources in order to provide for a more reliable water supply for California and protect, restore, and enhance the Delta ecosystem.

Yolo County Zoning

At the time of the preparation, circulation, and adoption of the Final EIR for the Lower Yolo Restoration Project, zoning at the property site was designated A-P (Agricultural Preserve), which was a zoning designation intended to facilitate establishment of agricultural preserves in accordance with the California Land Conservation Act of 1965. Since that time, however, the County has updated its Zoning Code, including the agricultural zoning designations. The Board of Supervisors adopted new zoning regulations in July, 2014. Since that time, the project site has been zoned A-N (Agricultural Intensive), which is applied to preserve lands best suited for intensive agricultural uses typically dependent on higher quality soils, water availability, and relatively flat topography. The purpose of the A-N Zone is to promote those uses, while preventing the encroachment of nonagricultural uses. Uses in the A-N Zone are primarily limited to intensive agricultural production and other activities compatible with agricultural

uses. This includes allowing agriculturally-related support uses, excluding incompatible uses, and protecting the viability of the family farm.

The Final EIR for the Lower Yolo Restoration Project identified "water retention basins with a potential to provide wildlife habitat improvement benefits" as indicative of allowing for wetlands restoration projects as a compatible use in the agricultural zones. Section 8-2.403(j) of the Yolo County Code, which is now obsolete, allowed as an accessory use privately-owned reservoirs and/or water retention basins, with associated onsite water transmission facilities, provided that such reservoir or retention facility is found to have a potential either to provide flood control, fire suppression, water supply, wildlife habitat improvement, groundwater recharge, or tailwater enhancement. As an accessory use, such reservoirs or water retention basins are considered ancillary to an onsite farming operation, and not as a principal use where the primary function is to restore tidal wetlands and further the coequal goals and habitat restoration objectives of the Delta Reform Act. Under the updated zoning, Section 8-2.306(b) of the Zoning Code allows privately-owned reservoirs as accessory to the primary agricultural use of a property.

Agricultural Conservation and Mitigation Program

The County's Agricultural Conservation and Mitigation Program (formerly called the Agricultural Conservation Easement Program) was updated in July, 2014 and again in July, 2015. The program was established in order to implement the agricultural land conservation policies contained in the 2030 Countywide General Plan and was designed to permanently protect agricultural land located within the unincorporated planning area of the County.

The Final EIR for the Lower Yolo Restoration Project erroneously concluded that, as per Yolo County Code Section 8-2.2416.3(a), which has been superseded by Section 8-2.404(c)(1), the proposed restoration project was not applicable to the ordinance because the agricultural mitigation program only applied to "conversion or change from agricultural use to an urban use…". However, at the drafting of the EIR, County Code Section 8-2.2416.2(a) defined agricultural land or farmland as those land areas of unincorporated Yolo County, regardless of current zoning, that are either currently used for agricultural purposes or that are substantially undeveloped and capable of agricultural production. Furthermore subsection 2(c) defined agricultural use as those primary and accessory uses and structures, as defined, and those specific principal, accessory, and conditional uses listed in the A-P (Agricultural Preserve) and A-1 (Agricultural General) Zones, including the restoration or conversion to habitat, so long as the restoration or conversion is incidental to or ancillary to the agricultural uses on the parcel. There is a significant difference between an incidental use that is ancillary to the agricultural use and a habitat restoration project that will remove agricultural uses or capability.

The 2014 updated zoning regulations included amendments to the Agricultural Conservation and Mitigation Program where agricultural use was further defined to include those principal, accessory, and conditional uses and structures defined in the Agricultural Zones, excluding "covered habitat mitigation projects," but including the restoration or conversion to habitat, so

long as the restoration or conversion is incidental to or ancillary to the agricultural uses on the parcel [County Code Section 8-2.404(b)]. A covered habitat mitigation project is defined as any mitigation bank or other project within the County that is undertaken to mitigate impacts to biological resources occurring largely or entirely outside of the County. A covered habitat mitigation project also includes all other habitat restoration, creation, enhancement, or preservation activities (including the sale of a conservation easement or interest therein) carried out within the County in connection with projects or other actions impacting biological resources in locations outside the County. This includes, among other things, any such project that implements actions described in a Habitat Conservation Plan/Natural Communities Conservation Plan or in a biological opinion issued by the United States Fish and Wildlife Service or other federal agency. This term is to be interpreted broadly, consistent with the intent of the Habitat Mitigation Ordinance to include all projects, plans, and activities that are substantially similar to any of the foregoing, regardless of whether they are specifically described herein (County Code Section 8-2.307).

Habitat Mitigation Ordinance

The Final EIR for the Lower Yolo Restoration Project referenced the County's temporary moratorium on habitat conversion, as well as the permanent Habitat Mitigation Ordinance that was adopted in January, 2014. While the EIR appropriately described the ordinance as requiring a Major Use Permit for habitat mitigation projects in excess of 40 acres, it misinterpreted the broader and more far reaching purpose of the ordinance.

The ordinance ensures that habitat projects are undertaken in furtherance of the "coequal goals" and that habitat restoration objectives of the Delta Reform Act proceed in a manner that is faithful to the Act in its entirety, including its basic policy direction that the coequal goals of "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem" are to be achieved in a manner "that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place" (Yolo County Code Section 10-10.102(c)).

The Final EIR also erroneously concluded that the ordinance only applies to those projects designed to mitigate environmental impacts outside of Yolo County, which is not accurate.

Among other requirements, the Habitat Mitigation Ordinance requires that any conversion of farmland to habitat or other non-agricultural uses will be mitigated in accordance with Agricultural Conservation and Mitigation Program or, subject to the approval of the Board of Supervisors, that the applicant will implement an alternative approach to addressing the conversion of farmland that provides an equal or greater level of mitigation. Habitat projects are not necessarily exempt from the Agricultural Conservation and Mitigation Program, as the Final EIR for the Lower Yolo Restoration Project erroneously concluded.

If the project site is subject to a Williamson Act contract, the ordinance requires that the project is an "open space use" under Government Code Section 51201(o) or that it would not

otherwise cause a material breach of the contract. Any project that is an "open space" use under Section 51201(o) shall also require approval of an amended Williamson Act contract or other appropriate action to authorize the open space use.

Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

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 a 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; or

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.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential agricultural impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant agricultural impacts. However, this conclusion was based on an erroneous and outdated interpretation of Yolo County's policies and ordinances that apply to the Lower Yolo Restoration Project, as well as the Flyway farms project.

Impacts and Mitigation Measures Identified in this Supplemental EIR

This Supplemental EIR includes the following updated analysis of agricultural impacts and recommends a mitigation measure to comply with applicable County requirements.

Impact 4.5-1: Loss of Important Farmland and Productivity

Impacts of Lower Yolo Restoration Project

The proposed Lower Yolo Restoration Project would not convert any Prime Farmlands or Farmlands of Statewide Importance. Additionally, approximately 2,210 acre of the 3,795-acre project site would remain in agricultural use (Table 4.5-1 and Figure 4.5-1) upon completion of the enhancement and restoration efforts.

The majority of the project site proposed for permanent wetland restoration (about 1,310 acres out of 1,480 acres) is defined as Grazing Land, Other Land, or Water under the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) classification system. The project would also include the permanent conversion to wetlands of up to about 230 acres of Important Farmland (i.e., Unique Farmland).

The estimates of converted lands contained in Table 4.3-1 in Section 4.3 (Terrestrial Biological Resources) of the Final EIR for the Lower Yolo Restoration Project indicate that Flyway Farms has approximately 88 acres of "seasonal and farmed wetlands" and that the implementation of the project will result in the loss of 30 acres of those farmed wetlands. However, a more recently prepared wetland delineation does not support that assessment (see below).

The Lower Yolo Restoration Project Final EIR concluded that based on the analysis in light of questions posed in the Initial Study prepared for the Notice of Preparation and by employing the Land Evaluation and Site Assessment (LESA) model as an alternative analysis, all impacts to Agricultural Resources from implementation of the project would be less than significant and no mitigation measures were required to lessen any identified impacts. Yolo County did not agree with that analysis and conclusion, and provides a contrasting analysis for the Flyway Farms project below.

Impacts of Flyway Farms

The majority of the Flyway Farms project site proposed for permanent wetland restoration is defined as "Other Land," following the FMMP classification system. Soils on the 362-acre proposed restoration site consist primarily of Sacramento soils, flooded, and would result in the conversion of approximately 278 acres for the restoration of tidal wetlands.

As noted in the Final EIR, a majority of the land within the 362-acre Flyway Farms property has been classified as irrigated pasture and has been used as a duck hunting club/winter fowl management. The land in the northwest portion of the parcel has also been used for grazing cattle (see Figure 2-7 in the Final EIR, Existing Land Uses). This land is classified by the California FMMP program as Unique Farmland.

However, the most recent wetland delineation prepared for the Flyway Farms project (ICF, 2014) concludes that almost all of the 362-acre main site consists of perennial emergency marsh, seasonal wetlands and riparian woodland (see Table 4.3-1 in Section 4.3, Terrestrial Biological Resources). This preliminary jurisdictional delineation has been accepted by the U.S. Army Corps of Engineers.

Based on the revised acreage estimates included in the accepted wetland delineation, implementation of the project would affect only a very small portion of land identified as farmed wetlands (about 0.4 acre), the loss of which could be mitigated by requiring the applicant to purchase an agricultural easement on land of at least equal quality and size, or to pay an in-lieu fee, as compensation for the direct loss of agricultural land. The remainder of the main 362-acre parcel consists of wetlands of some type and would not require mitigation.

Soils on the adjacent 80-acre proposed stockpile site are primarily Capay soils, flooded, with approximately one-quarter of the site in Sacramento soils, flooded. The 80-acre soil deposit site is also designated as Unique Farmland. Although the 80-acre site also has a decades-long history of being used for enhancing duck hunting on the Yolo Flyway Farms, it has also been farmed in rice. It currently sits idle, but is expected to resume agricultural uses once the excess soils have been spread over the balance of the property, increasing the soil elevation by 0.5 to 1.0 feet. Temporary stockpiling and eventual agricultural activity at the 80-acre site will not result in the conversion of any Unique Farmland due to implementation of the project, but may enhance the overall agricultural resource. Thus, the use of the 80-acre would not result in the loss of any agricultural soils or productivity because it will be reclaimed to agriculture and would not require mitigation.

Mitigation Measure 4.4-1: Loss of Agricultural Lands

The project shall mitigate for the loss of approximately 0.43 acres of farmed wetlands by complying with the requirements of the Agricultural Conservation and Mitigation Program (Section 8-2.404 of the Yolo County Code).

Impact 4.5-2: Consistency with Existing Zoning and Williamson Act Contracts

The project site is zoned A-N (Agricultural Intensive), which is applied to preserve lands best suited for intensive agricultural uses typically dependent on higher quality soils, water availability, and relatively flat topography. Creation of habitat is allowed in agricultural zones, provided certain findings can be made. Large habitat restoration projects that are subject to the Habitat Mitigation Ordinance require a Major Use Permit. Habitat projects are not necessarily exempt from the Agricultural Conservation and Mitigation Program, as the Final EIR for the Lower Yolo Restoration Project erroneously concluded.

The project site is currently enrolled in two separate Williamson Act contracts. The contracts by and large restrict use of the properties for any purpose other than agricultural use and those uses determined to be compatible with the agricultural use of the lands within the preserve and subject to the contract(s).

The Final EIR for the Lower Yolo Restoration Project concluded that because the Williamson Act allows for open space/habitat contracts, whether or not the two parties (County and Yolo Flyway Farms) agree to rescind the contracts in order to simultaneously enter into new

contracts is a contractual matter that would be discussed further between the parties, and is not a CEQA matter. The County believes that this is an incorrect interpretation of the applicable County ordinances and State Williamson Act statutes.

The Flyway Farms parcels are both under contract. The Habitat Mitigation Ordinance requires that the project must seek approval of an amended Williamson Act contract or other appropriate action to authorize open space use. Any project that is an "open space" use under Williamson Act statutes (Government Code Section 51201(o)) shall also require approval of an amended Williamson Act contract or other appropriate action to authorize the open space use, as required by Section 51223. Thus, the applicant will be required to rescind the existing two Williamson Act contracts and to enter into an open space contract that is at least as restrictive as the current contracts.

4.6 AIR QUALITY AND GREENHOUSE GASES

Introduction

This section incorporates by reference all of the background "Setting" discussion, the analysis of potential impacts, and the recommended mitigation measures that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR (pages 4.6 through 4.6-13) is incorporated by reference.

Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

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

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

In addition, the project would have a significant impact on GHG emissions if it would:

a) Generate GHG 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 GHG.

Currently, for GHG evaluations, the methodologies and significance thresholds vary throughout the state. YSAQMD has not identified a threshold for GHG emissions for new projects. It is

recognized that for most development reviews, no simple metric is available to determine if a single project would help or hinder meeting the AB 32 emission goals. The air quality analysis for this EIR quantifies the GHG emissions to provide a perspective on the amount of GHG emissions, primarily CO2 and CH4, which would be generated with Project implementation. Although it is possible to generally estimate a project's incremental contribution of CO2 into the atmosphere, it is not possible to determine whether or how a specific project's relatively small incremental contribution might translate into physical effects on the environment (e.g., sea level rise, loss of snowpack, severe weather events, etc.). Given the complex interactions between various global and regional physical, chemical, atmospheric, terrestrial, and aquatic systems that result in the physical expressions of global climate change, it is impossible to discern whether the presence or absence of CO2 emitted by a specific project would result in any altered conditions.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential air quality impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant air quality impacts except for construction related emissions of particulate matter (PM10) and nitrous oxides (NOX).

The impact analysis of air quality and greenhouse gas impacts in the Final EIR (pages 4.6-15 through 4.6-22) and Appendix E, Air Quality Impact Calculations, and the proposed mitigation measures in the adopted Final EIR, are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. All of the air quality impacts and mitigation measures are applicable to the Flyway Farms project, as noted below.

Project Impacts

The project would involve short-term, construction activities that would create emissions during an approximately six-month period spanning May to October (i.e., less than a single year during the dry season). The construction schedule would generally be six days per week and about 10 hours per day within that short, approximately six-month, period. Fugitive dust would be generated by loading/unloading of materials, grading, and excavating on the site, as well as possible wind erosion from stockpiles and re-entrainment of settled dust by vehicle and equipment movement. Exhaust emissions would also be generated by a variety of diesel-powered equipment and construction worker vehicles.

Appendix E, Air Quality Impact Calculations, presents the information pertaining to the construction emissions inventory. Based on final design, contractor requirements, and other factors, transporting of the soils for reuse may be accomplished with haul trucks, scrapers, or a

combination thereof. These scenarios would involve the movement of approximately up to 1.85 million cubic yards (mcy) of material for Phase 1 (the Lower Yolo Restoration Project minus the Flyway Farms project) and 0.65 mcy for Flyway Farms (Phase 2). For this analysis, the reasonably foreseeable future approach was analyzed, i.e., with haul trucks. Utilizing 20-cubic-yard (cy) haul trucks, a total of 110,000 haul truck trips would be required. It is assumed that each haul truck would travel 2.5 (one-way trip) miles during material movement. The use of scrapers would provide only minor decreases of the criteria air pollutant emissions. Additional equipment such as dozers, loaders, backhoes, water trucks, and excavators would be used.

Impact 4.6-1: Short-term Construction Emissions of Criteria Pollutants that May Contribute to Existing Air Quality Violations

The Lower Yolo Restoration project would involve excavation of channels, grading down of wetland areas, and reuse of graded/excavated soils, an onsite storage stockpile. Emissions from site grading and soils reuse options are presented below. The air calculations for the construction-vehicle scenarios (haul only versus scraper only approach) can be found in Appendix E. Combustion emissions (ROG and NO_x) with the scrapers would be slightly lower than the emissions with the haul trucks. Fugitive dust emissions would be essentially the same with the scrapers or the haul trucks.

Table 4.6-1 lists the results from the air quality model used to estimate the air pollutant emissions by the Lower Yolo Restoration project.

Table 4.6-1

Estimated Daily and Average Annual Project Construction Emissions[1]

Construction Emissions (Estimated and Thresholds)	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$
Emissions (pounds per day)					
Daily	82	844	426	166	45.5
YSAQMD Threshold	--	--	--	80	--
Significant?				**Yes**	
Emissions (tons per year)					
Annual	3	24	19	10	3
YSAQMD Threshold	10	See note 2	10	--	--
Significant?	No	No	**Yes**		

ROG = reactive organic gases CO = carbon monoxide NOx = nitrogen oxide PM10 = particulate matter, 10 microns or less PM2.5 = particulate matter, 2.5 microns or less

Notes:
1. PM10 and PM2.5 estimates assume 50 percent control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified. For a detailed analysis of the air calculations, refer to Appendix E of the Draft EIR.
2. The Yolo-Solano Air Quality Management District's threshold of significance for CO is "violation of a state ambient air

quality standard for CO." (Yolo-Solano Air Quality Management 2007)

During construction, emissions of NO_x and PM_{10} emitted at the project site would exceed the recommended YSAQMD thresholds for annual NO_x and daily PM_{10}. Exceeding these thresholds would result in a potentially significant impact, unless mitigated. To reduce these potentially significant air emissions to a level of less than significant, a variety of best management practices and mitigation strategies at the work sites and during the transport of the soils could be employed.

The air quality impacts generated by grading activities at the Flyway Farms project represents only a small portion of the much larger Lower Yolo Restoration grading (65,000 cubic yards out of 2,500,000 cubic yards, or about 3%). Thus, the air quality impacts listed in Table 4.6-1 would be much lower for only the Flyway Farms project. However, the same mitigation measures are applied to the Flyway Farms project.

Mitigation Measure 4.6-1:

The mitigation measure shall be implemented to minimize emissions of NOx and PM10:

• Limit construction on those days where Yolo County is predicted to exceed the "Spare the Air" Air Quality Index (AQI) for ozone >127 by the Sacramento Metropolitan Air Quality Management District (summer downwind area). Examples of limiting construction could range from stopping work that day to reducing construction to a half day or relying on electrical equipment solely. Once the AQI level of unhealthy is reached, i.e., 151 to 200 or beyond, all construction work shall cease for that day.

• Require haul trucks and off-road diesel equipment operators to shut down their engines instead of idling for more than five minutes, unless such idling is necessary for proper operation of the equipment. Provide clear signage that posts this requirement for workers at the entrances to the site.

• Require contractors' construction equipment to be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked and determined to be running in proper condition prior to operations.

• Limit vehicle speeds on unpaved roads to 15 MPH.

• Cover or maintain at least two feet of freeboard space on haul trucks transporting soil, sand, or loose materials onsite. Any haul trucks that would be traveling along freeways or major roadways shall be covered.

• All active construction sites shall be watered at least twice daily. Frequency shall be based on the type of operation, soil, wind exposure, and the ability to eliminate visible fugitive dust.

• Between the time of completing construction and prior to the onset of winter rains, encourage the property owner and/or property manager to reinstate typical agricultural irrigation practices as a means to wet soils so they do not generate dust, as feasible.

• Cover or water inactive storage piles.

• If Soils Reuse Option #1 or #3 is selected, then re-establish vegetation on the toe berm and buffer areas, i.e., use native grassland species seed mix on the toe berm and apply native wetland-upland transition mix in the buffer areas.

• Develop an emissions reduction plan that demonstrates that off-road equipment of more than 50 horsepower to be used during construction of all project- and program-level elements shall achieve a project-wide fleet average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent California Air Resources Board fleet average. Acceptable options for reducing emissions shall include using late model engines, low-emissions diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or add-on devices such as particulate filters, with specifics dependent on contractor's ability to secure such equipment in a timely fashion.

Impact 4.6-2: Conflict with or Obstruction of Applicable Air Quality Plans

A project is deemed inconsistent with air quality plans if it would result in substantial population and/or employment opportunities that exceed growth estimates included in the applicable air quality plan. The project would not result in substantial population growth, as it would only restore, enhance, and preserve native fish habitat in the Sacramento-San Joaquin River Delta. With respect to employment, up to 50 temporary, full-time workers would be employed for the approximate six-month construction phase. These positions would not involve a substantial number of new employees and hence would not conflict with or obstruct applicable air quality plans in Yolo County.

Additionally, the proposed project is consistent with the intent of controlling or minimizing GHG. All applicable plans, i.e., the YSAQMD's AQMD, the County's general plan policies, and the County's *Climate Action Plan* policies, have measures or conditions with which the proposed Project would be in compliance with or would be slated to achieve (e.g., County *Climate Action Plan*, Measure A-6: Sequester carbon in agricultural landscapes). . No mitigation would be required.

Impact 4.6-3: Greenhouse Gases and Global Climate Change Contributions

For an assessment of net long-term GHG emissions associated with the Lower Yolo project, it is important to define the baseline conditions at the Project site. Existing conditions include up to approximately 6,000 cattle seven months per year with the majority of the site irrigated for

cattle grazing. The land is currently irrigated with water pumped onto pastures that result in some energy-related GHG emissions associated with irrigation. Cattle generate direct GHG emissions primarily in the form of methane gas associated with enteric fermentation and passive manure management. Based on emission factors obtained from the Intergovernmental Panel on Climate Change (IPCC), grazing cattle can generate up to 0.055 metric tons methane per head per year, which equals approximately 1.38 metric tons CO_2e per head per year (IPCC 2006). Assuming that the site accommodates approximately 6,000 cows seven months each year, about 4,800 $MTCO_2e$ of GHG emissions are annually generated onsite. It is also reasonable to assume that the cattle would continue to use the portion of the Project site that would remain in agricultural use, or be shifted to other grazing lands after construction of the Project would be completed. Further, inasmuch as grazing of non-dairy cattle is primarily a function of demand for beef, the amount of GHG production from beef cattle is independent of grazing land availability. Therefore, for the purposes of a conservative analysis, it is assumed that the cattle would continue to generate GHG emissions onsite and in California. Hence, no reduction in the GHG emissions would occur as associated with the cattle on the project site (i.e., baseline conditions).

The Lower Yolo project would create a tidal freshwater marsh of approximately 1,226 acres including 278 acres at the Flyway Farms. Freshwater emergent wetlands, like those that would be created in the Project, absorb more carbon per year than any other biome on earth, exceeding even redwood forests in annual net primary production by five times (Schlesinger 1997; Busing and Fujimori 2005). Since 1995, USGS and DWR have studied carbon sequestration and associated subsidence reversal in a similar 15-ac restored freshwater tule wetland on Twitchell Island in the western Delta, referred to as the Twitchell Island Pilot Project (Miller *et al.* 2000, Miller *et al.* 2008, Miller and Fujii in preparation). Experiments and monitoring at this site have demonstrated that wetland restoration, with the rapid re-establishment of dense tule and cattail vegetation, increases net carbon capture in the form of new soil organic matter (Miller *et al.* 2000).

With inundation and the associated low-oxygen conditions needed for new peat formation, come other microbially mediated gas emissions of N_2O (in variably reduced and oxidized conditions) and CH_4 (in more highly reduced conditions). The global warming potentials for CH_4 and N_2O are 25 and 310 times greater than for CO_2, respectively, making even small changes in emissions of these gases potentially important for the net GHG balance of a wetland (IPCC 2007). The Twitchell Island study found that shallow vegetated wetlands, the type most similar to those that would be created under the project, sequester approximately 25.3 $MTCO_2e$ ac-1y-1 of carbon while emitting 13.8 $MTCO_2e$ ac-1y-1 of methane for a net GHG sequestration rate of 11.5 $MTCO_2e$ ac-1y-1 (Merrill *et al.* 2011). N_2O emissions were not measured in this study, but are likely to be negligible in the low redox environment of the wetlands. Low redox conditions will drive denitrification all the way to the most reduced end product, diatomic nitrogen and suppress nitrification (Merrill *et al.* 2011). Therefore, using the net sequestration rate of 11.5 $MTCO_2e$ ac-1y-1 across the 1,226 ac of restored wetlands under the project, the Project would potentially sequester approximately 13,800 $MTCO_2e$/yr.

Several studies of the GHG impacts of the project have been prepared. One study estimated that the net total GHG emissions from the project would be between 1,702 to 2,065 $MTCO_2e$ during the less than single-year construction phase, less than the state threshold of 25,000 $MTCO_2e$ per year. The state's annual limit identifies the large stationary point sources in California that make up approximately 94 percent of the stationary emissions. If a project's total emissions are below this limit, its total emissions are equivalent in size to the smaller projects in California that as a group only make up six percent of all stationary emissions. It is assumed that the activities of these smaller projects generally would not conflict with state's ability to reach AB 32 overall goals. In reaching its goals, CARB will focus upon the largest emitters of GHG emissions. The estimated project emissions of 1,702 to 2,065 $MTCO_2e$ in about a six-month period would be less than ten percent of the state's limit. Therefore, the Project would not be considered a major project by the state from the standpoint of GHG emissions.

Another study focused on energy efficiency by recommending designs to minimize the removal and reuse of soil to the least amount necessary to fulfill restoration strategies within the project site. Replacement of aging agricultural pumps and inefficient water control structures within the project site would also make the movement of water more energy efficient. The project's construction would follow with this recent trend of lower GHG emissions by being inherently energy efficient.

Another study concluded that the project would not be in conflict with any of the identified local or regional air quality plans for reducing GHG emissions and, indeed, the project would result in a long-term net benefit by potentially sequestering approximately 13, 800 $MTCO_2e$ annually.

Due to the temporary nature and relatively minor amount of GHG emissions from construction activities and the long-term net benefit of the project, the project would improve net GHG emissions and therefore impacts associated with global warming would be less than significant. Also, the proposed project would not be conflict with the AB 32 Scoping Plan nor adopted local or regional plans for reducing GHG emissions. No mitigation would be required.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

4.7 CULTURAL RESOURCES

Introduction

This section incorporates by reference all of the background "Setting" discussion, the analysis of potential impacts, and the recommended mitigation measures that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR (pages 4. is incorporated by reference.

Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

1. A substantial adverse change in the significance of a historical resource as defined in CCR § 15064.5.

2. A substantial adverse change in the significance of an archaeological resource pursuant to CCR § 15064.5.

3. Disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential air quality impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant cultural resource impacts except for those identified below.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. All of the cultural resource impacts and mitigation measures are applicable to the Flyway Farms project, as noted below.

Impact 4.7-1: Loss of, or Damage to, Unknown Archaeological Resources

No known prehistoric or historic archaeological resources meeting CRHR or NRHP eligibility criteria as significant or as unique archaeological resources were previously recorded inside the project area. Archaeological resources were also not identified during the pedestrian survey. However, there is some potential for buried archaeological resources to be unearthed during Project construction. The northern parts of the site near the former Mound Ranch would have the highest likelihood of containing cultural resources. No excavation is proposed for that area.

The southern portions of the Lower Yolo restoration site have low potential for containing cultural resources. Earthwork, such as excavating, trenching, dredging, potholing, and digging, may infrequently occur during operations and maintenance activities, corrective actions, and long-term monitoring during the life of the proposed project. Such earthwork may occur in areas that have not been previously disturbed by agricultural operations and flood control maintenance practices; thereby increasing the risk of disturbing soils that may contain unknown archaeological resources.

Mitigation Measure 4.7-1:

Where ground-disturbing activities may occur:

• Conduct an environmental awareness training concerning cultural resources management utilizing the services of a qualified archaeologist for contractors and their staff prior to the start of construction.

• Cease ground-disturbing work in the vicinity of the area should buried archaeological resources be uncovered during construction, operation, and/or routine maintenance, until a qualified archaeologist can visit the site of discovery and assess the significance of the resource. After the assessment is completed, the archaeologist shall submit a report describing the significance of the discovery and its origin with cultural resources management recommendations if the archaeological resources are significant.

• Comply with Public Resources Code § 21083.2, as applicable, should buried archaeological resources be found. Avoidance or preservation in an undisturbed state is the preferable course of action.

Preservation methods may include:

- Planning construction to avoid archaeological sites.
- Deeding sites into permanent conservation easements.
- Capping or covering sites with a layer of soil before building on the sites.
- Planning parks, greenspace, or other open space to incorporate archaeological sites.

Impact 4.7-2: Impacts to Historic Resources

No listed historic structures have been identified on the Lower Yolo project site. However, the historic evaluation noted that features of the Yolo Bypass – the portions of the east and west Yolo Bypass levees, the Stair Step, Shag Slough, and the Toe Drain that are within or bordering the Project Area should be considered to be cultural resources for the purposes of the Project – that is, as potential contributors to any significance of a possible Yolo Bypass historic district under NRHP Criterion A (in association with the post-1944 and post-1944 history of the Yolo Bypass).

The project would modify the eastern slope and base of the west Yolo Bypass levee. However, it would not degrade the historic integrity of the levee. There would be no material impairment, as defined in the California Environmental Quality Act (CEQA), and no adverse effects to the integrity as defined in § 106 of the NHPA from the Project to the larger potential historic district of the Yolo Bypass. Accordingly, the project's impact to this structure would be less than significant. No mitigation would be required.

The project would modify up to six distinct sites at the Stair Step and Toe Drain with construction of connections to restore tidal action to the sites. These features are a fraction (i.e., 70 to 120 feet in width for up to six connections with an overall total of 720 feet: three on Yolo Ranch, two on Yolo Flyway Farms; and a potential additional one during the post-construction phase) of the much larger potential historic district for the Yolo Bypass. By way of comparison, the main flood management facilities in the Delta-Suisun consist of about 1,100 miles of levees in the Delta and about 230 miles in the Suisun Marsh and the Yolo Bypass (Department of Water Resources and California Department of Fish and Game 2008). No material impairment as defined in CEQA would result, and no adverse effects to the integrity as defined in § 106 of the NHPA from the project to the larger potential historic district of the Yolo Bypass. Hence, the project's impact to the structures would be less than significant with no mitigation required.

Impact 4.7-3: Impacts related to accidental encounter with Unknown Human Burial Resources during ground-disturbing activities

No cemeteries, ancient burial grounds, or other sites containing human remains, are known to occur onsite. However, the potential exists for unknown human burial resources to be unearthed during Project construction. The northern parts of the site near the former Mound Ranch would have the highest likelihood of containing such resources. No excavation is proposed for that area. The southern portions of the site have low potential for containing such resources. Earthwork, such as excavating, trenching, dredging, potholing, and digging, may infrequently occur during operations and maintenance activities, corrective actions, and long-term monitoring during the life of the proposed project. Such earthwork may occur in areas that have not been previously disturbed by agricultural operations and flood control

maintenance practices; thereby increasing the risk of disturbing soils that may contain human burial resources.

Mitigation Measure 4.7-2:

Where ground-disturbing activities may occur:

• Notify the Yolo County coroner, Yolo County Department of Public Works, and designated Most Likely Descendant (as identified by the Native American Heritage Commission) in the event of discovering human remains during construction, operation, and/or routine maintenance of the Project. The notification protocol and process shall proceed in accordance with the *State CEQA Guidelines,* California Code of Regulations (CCR) § 15064.5(e); Public Resources Code § 5097.98; and Health and Safety Code § 7050.5, as applicable.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Introduction

This section incorporates by reference all of the background "Setting" discussion, the analysis of potential impacts, and the recommended mitigation measures that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR is incorporated by reference.

Impacts and Mitigation Measures

Significance Criteria

Potential impacts from hazards and hazardous waste would be significant if the Project would exceed any of the following threshold criteria per Appendix G of the *State CEQA Guidelines*:

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

2. 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.

3. Result in substantial adverse physical impact associated with the provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives [i.e., vector control].

4. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential hazards impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant hazards impacts except for those identified below.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact and Mitigation numbering are from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR followed by the mitigation measures. All of the hazards impacts and mitigation measures are applicable to the Flyway Farms project, as noted below.

Impact 4.8-1: Effects of Soils and Materials Contamination

Removal of infrastructure that may release hazardous waste (e.g., treated wood); discovery of an unknown contaminated site; or leaking polychlorinated biphenyls (PCB) transformers residuals of agricultural chemicals in agricultural soils that have been managed properly are not typically classified as hazardous wastes sites. However, through routine environmental assessments, a few, isolated areas on the Lower Yolo project site (not on Flyway Farms) were identified as contaminated. These known sites have been cleaned up. Additionally, no work would occur in the vicinity of leach fields or water wells. Consequently, no impact would occur in areas where soils had been previously excavated from identified contaminated sites.

The removal of irrigation water system facilities (e.g., gates and flaps) during construction or post construction (i.e., addition of tidal connection) would involve metal objects that would not release hazardous waste. However, for those facilities that may also contain treated/painted wood, which could release hazardous waste, this would result in a potentially significant impact, if not mitigated. Mitigation Measure 4.8-1 would reduce this impact to less than significant. This measure would involve monitoring, testing, removal of hazardous wastes, and disposal in accordance with applicable federal and state laws, if such materials were to be found.

Should previously unknown hazardous materials or wastes be encountered during construction at the site or during installation of the additional tidal connection during the post-construction phase, the site contamination would be examined, tested, and discussed with the Yolo County Environmental Health Division (USEPA's designated CUPA). Fulfillment of regulatory requirements is generally imposed on a case-by-case basis and specific to conditions at each affected site.

Effects from Contamination Due to Leaking PCB Transformers

The ages of the various power poles at the project site are not known and whether or not their transformers have been replaced over time. It is suspected that some of the poles were erected in the 1960s, or possibly earlier. USEPA banned the use of PCB in transformers in 1978, so any transformer installed after 1979 should not contain PCB. Due to the uncertainty of the ages of the transformers, this analysis relies on a conservative approach. That is, should electrical power lines that are proposed for relocation include leaking transformers that contain PCB, such relocations would result in a potentially significant impact, if not mitigated.

Mitigation Measure 4.8-1: Effects of Soils and Materials Contamination

Based on final design and environmental/physical conditions onsite, one or more of the following elements of this mitigation measure shall be undertaken if evidence indicates that soil sites and/or materials are contaminated per applicable hazardous waste laws and regulations:

• Develop and implement a monitoring and treatment/disposal plan in accordance with all applicable hazardous waste laws and regulations.

• Examine soil below any pole-mounted transformers on the portion of the Project site to be graded. If there is evidence (such as discoloration of the soil) that PCBs have leaked from the transformers, then Pacific Gas & Electric (PG&E) shall be contacted. It is the responsibility of PG&E to perform a soils investigation and cleanup if any of the pole-mounted transformers are determined to have leaked PCBs.

• Test or assume that the wood demolished and removed from the existing irrigation system contains potentially hazardous waste (e.g., lead paint, creosote, arsenic, etc.) and then have it treated, recycled, or disposed of in accordance with applicable regulations concerning hazardous waste.

Impact 4.8-2: Hazards with Natural Gas Wells and Related Pipelines

Workers on the project site could be exposed to hazardous conditions (e.g., potential explosion and fire) associated with the presence of natural gas wells onsite. Six of approximately 21 mapped (known) plugged gas wells occur in the area that would be converted to tidal wetlands or toe berm (including one well on Flyway Farms). All six wells have been abandoned and plugged with cement plugs within the borehole at several locations; additionally, mud was placed within the borehole between plugs.

If project grading would encounter the plugged wells, it could potentially strike the surface plug and plate, which could damage the upper portion of the surface plug. Such damage may not likely result in the release of natural gas resources or fluids, because gas reserves are located several thousand feet below ground. Furthermore, the placement of cement plugs at depth in addition to the placement of mud within the borehole, prevents the release of gas resources in the event that a surface plug is altered or damaged. None of the six wells within the impact footprint (restoration footprint) were in active production; these exploratory wells were drilled and then abandoned shortly after due to lack of, or low, production. Yet, even with this minimal risk and the uncertainty of encountering other non-mapped natural gas wells during construction and post construction (i.e., additional tidal connection), this conservative analysis concludes that this activity would result in a potentially significant impact**,** if not mitigated.

It is unlikely that related, distribution natural gas pipelines were connected to the production wells within the project footprint, since the wells were not in active production. However, such pipelines connecting other active or formerly active wells within the project vicinity would need to be identified. Damage to distribution gas pipelines could be a significant impact (i.e., explosion and fire) during project implementation (i.e., construction and post construction – additional tidal connection), if not mitigated.

Mitigation Measure 4.8-2: Hazards with Natural Gas Wells and Related Pipelines

• Develop and implement actions in coordination and concurrence with the Yolo County Office of Emergency Services Department and California Division of Oil, Gas, and Geothermal Resources to comply with applicable requirements of the Well Review Program (DOGGR 2007) and other applicable public safety requirements. Such measures include contacting the California Underground Service Alert in a timely manner prior to excavation, inspecting site to look for physical evidence of underground facilities, marking off excavated areas, having an emergency plan in place, etc.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

4.9 ENERGY CONSUMPTION

Introduction

This section incorporates by reference all of the background "Setting" discussion and the analysis of potential impacts that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Setting

The Setting discussion in the Lower Yolo Restoration Project Final EIR is incorporated by reference.

Impacts and Mitigation Measures

Significance Criteria

Potential impacts to energy would be significant if the Project would exceed any of the following threshold criteria per Appendices F and G of the *State CEQA Guidelines*:

1. Substantial effects on local and regional energy supplies and on requirements for additional capacity.

2. Result in substantial adverse physical impacts associated with the provision of new or physically altered facilities, need for new or physically altered facilities, or the construction of which could cause significant environmental impacts, in order to maintain acceptable public services.

3. Create wasteful, inefficient, and unnecessary consumption of energy during construction, operation, maintenance, and/or removal.

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential energy impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). The Final EIR found that the Lower Yolo Restoration Project would not have any significant energy impacts.

The impact analysis and the proposed mitigation measures in the adopted Final EIR are incorporated by reference by this Draft Supplemental EIR. The Impact numbering is from the Lower Yolo Restoration Project Final EIR. The following includes a summary of the impact analysis included in the Final EIR. All of the energy impacts are applicable to the Flyway Farms project, as noted below.

Impact 4.9-1: Impacts related to Natural Gas Usage

It is reasonable to assume that it would be highly unlikely that construction equipment selected by the contractor would be powered by natural gas, because while this type of fuel can be used in trucks, it must be either compressed or liquefied, and vehicles must be equipped to carry and burn it. Natural gas equipment can also be more costly. Based on this information, the project would have no impact on natural gas demand in Yolo County during construction.

Existing natural gas wells onsite have not been in use, if ever, for a long time and do not play a role in the extraction of natural gas in Yolo County. The last well was abandoned in 1995. The project would remove, relocate, or abandon these existing structures as part of the site preparation, based on the final engineering design. Any plans by PG&E and/or the owners to resurrect and restart these structures are not known at this time, are not part of this project, and would require additional environmental compliance review by the applicable lead agency. Therefore, the project would have no impact on active natural gas wells/fields nor would it foster the creation of new wells/fields during the construction phase.

Impact 4.9-2: Impacts related to Electricity Usage

A temporary connection to an existing power line would supply electricity to the contractor's trailer during construction. Electricity use by the trailer would be less than the use of one residential connection (about 4,500 kilo-watts per hour [kWh] total.

For post-construction activities, the possible new tidal connection would have no additional impacts to electricity (demand, facility construction, or wastefulness) than what might occur during the original construction of the Project. Other activities, such as monitoring or sampling, would have minimal, if any, electricity requirements. On this basis, no impact would result to electricity usage from post-construction activities.

Impact 4.9-3: Impacts from Transportation Fuel Consumption

Construction of the Lower Yolo project would involve excavation of channels, grading down of farmlands, and disposal of graded/excavated soils. Two construction equipment scenarios have been considered during this activity, i.e., the use of haul trucks or scrapers to move materials within the project site. Both options would involve the movement of between 2.4 million cubic yards (mcy) and 2.5 mcy of soil, depending on which soil reuse option would be selected.

The energy impacts generated by grading activities at the Flyway Farms project represents only a small portion of the much larger Lower Yolo Restoration grading (67,000 cubic yards out of 2,500,000 cubic yards, or about 3%). Thus, the energy impacts noted below would be much lower for only the Flyway Farms project.

In addition to haul trucks and scrapers, use of other equipment such as dozers, loaders, backhoes, water trucks, and excavators would also be employed. Such equipment would consume refined petroleum fuel products in the form of diesel fuel. Other equipment, such as generators, pumps (for dewatering, if necessary), and power tools may also rely on energy from diesel fuel and related fuel products such as propane.

The volume of diesel fuel that that the project would consume over the approximately six-month construction period has been estimated by comparing the project-related generation of metric tons of carbon dioxide equivalents (MTCO2e) emissions to U.S. Energy Information Administration diesel fuel coefficient data (USEIA, 2011). As described in Section 4.6.3, under Impact 4.6-5: Greenhouse Gases and Global Climate Change Contributions, temporary construction activities would result in the generation of up to 2,065 or 1,702 MTCO2e emissions, depending whether scrapers or trucks, respectively are used to haul soil. Assuming that the vast majority of CO2 emissions would be generated by the combustion of diesel fuel, and the understanding that 10.15 kilograms of CO2 emissions are generated for every gallon of consumed diesel fuel, it is estimated the proposed project would consume up to approximately 200,000 gallons of diesel fuel with haul trucks or approximately 170,000 gallons of diesel fuel with scrapers. This would result in about 1 percent of the overall Yolo County annual consumption for diesel fuel if scrapers would be used, and 1.2 percent of the county's consumption for haul trucks.

Gasoline would also be consumed during the Project, mostly by commuting worker vehicles. In this instance, up to 50 construction workers would be traveling to/from the work site. Even if 50 vehicles were utilized, based on a 40-mile roundtrip and an average fuel consumption rate of 15 miles/gallon, the gasoline consumption would be about 24,300 gallons for the entire construction phase – a small amount of fuel when compared with the overall Yolo County annual consumption (i.e., 0.05 percent).

No new facilities or modifications to existing facilities that store, process, or distribute transportation fuels would be required.

Project construction-related energy demand would represent irreversible consumption of finite fossil fuel energy resources. However, due to high costs of these fuels and the short duration of the construction phase, the contractor would most likely be incentivized to not be wasteful or inefficient with the equipments' energy consumption. The contractor, working with the design team, would develop a number of ways to save fuel and cut down on tail pipe emissions (refer to Section 4.6, Air Quality and Greenhouse Gases; Mitigation Measure 4.6-1).

Based on the above analysis, consumption and potential inefficiencies of using diesel and gasoline during the Project's construction would be less than significant. A limited degree of operations and maintenance activities (e.g., levee improvement) would involve some labor as well as energy usage by equipment and vehicles, but this would represent a minor long-term use of energy. Transportation vehicles would also be used to bring monitors and scientists to

and from the site periodically. Overall, these long-term operational activities would not involve inefficient, wasteful, or unnecessary consumption of energy. The amount of long-term energy requirements associated with the project for these post-construction activities would result in no impact on existing energy resources available to the local area or to Yolo County.

Additional Impacts and Mitigation Measures Identified in this Draft Supplemental EIR

None.

4.10 CUMULATIVE IMPACTS

Introduction

This section incorporates by reference all of the discussion and the analysis of potential cumulative impacts that were adopted in the Final EIR for the Lower Yolo Restoration Project.

Impacts and Mitigation Measures

Significance Criteria

To determine if an impact is cumulative, two determinations must be made:

1. Is the combined impact of the project and other projects significant (*State CEQA Guidelines*, CCR § 15130[a][2])?

2. Is the project's incremental effect cumulatively considerable (*State CEQA Guidelines*, CCR § 15130[b])?

Impacts and Mitigation Measures Identified in the Lower Yolo Restoration Project Final EIR

The Final EIR for the Lower Yolo Restoration Project evaluated the potential cumulative impacts of the larger 3,795-acre proposed project including the 362 acre Yolo Flyway Farms (but excluding the 80-acre soil deposit site). Following a lengthy analysis by topical sections, the Final EIR found that the Lower Yolo Restoration Project would not have any significant cumulative impacts.

Regarding the addition of the 80-acre soil deposit site, this SEIR for the Flyway Farms project finds also that there would be no significant cumulative impacts. As already analyzed and concluded in Section 4.5 (Agricultural resources), the use of the 80-acre site for temporary stockpiling will not result in the conversion of any Unique Farmland due to implementation of the project, but may enhance the overall agricultural resource. Thus, the use of the 80-acre would not result in the loss of any agricultural soils or productivity because it will be reclaimed to agriculture and would not require mitigation. There would be no significant cumulative loss of agricultural resources.

The following discussion of potential cumulative impacts by topic area has been incoporated from the Final EIR for the Lower Yolo Restoration Project and has been revised to apply to Flyway Farms, as needed.

4.10.1 Cumulative Impacts Analysis on Hydrology

Flood Conveyance Cumulative Impacts

Up to 55,000 acres (ac) of tidal wetland restoration projects identified in the Bay Delta Conservation Plan (BDCP) are now under consideration within the project vicinity as well as throughout the Delta (see Table 4.10.2 in the original Final EIR for the Lower Yolo Restoration Project). The primary hydrologic concern of these actions is their potential cumulative impact on tidal heights in the project vicinity and how this could affect flood conveyance within the Yolo Bypass and ultimately the Delta. The California Department of Water Resources (DWR) conducted preliminary modeling of the effects of restoring approximately 7,500 ac of tidal marsh in the Cache Slough region (Enright, personal communication, 2010). This modeling effort indicated that tidal marsh restoration would reduce the Mean Higher High Water (MHHW) elevation by up to 0.3 feet (ft), thus resulting in a net benefit to flood conveyance within the Delta. Other actions resulting from studies generated by the CALFED Delta Risk Management Strategy (DRMS) and from funding through the FloodSAFE Strategic Plan would strengthen the levees and channels in Yolo County and elsewhere in the Delta, thereby also providing a beneficial effect to flood protection and flood conveyance in the Yolo Bypass.

BDCP modeling of its various isolated facilities alternatives with respect to the Yolo Bypass/Fremont Weir indicated that flow would be equal to or less than what is currently occurring. Additionally, it is not anticipated that the isolated facilities themselves, be they surface canals or pipelines contained in tunnels, would affect the hydrology or flood conveyance of the Yolo Bypass, because construction would be outside of the Bypass and hydrologic flow at the Cache Slough Complex is strongly controlled by the local tidal regime. The only exception to location in or adjacent to the Bypass would be the West Option that has a limited stretch of its canal traversing to the east of the Sacramento Deep Water Ship Channel within Prospect Island. Should that alternative be selected, construction would not be permitted until modeling showed that there would be no significant flood conveyance impacts to the Bypass, along with other conditions set by the Central Valley Flood Protection Board (CVFPB) prior to its issuing its encroachment permit. Compliance with an encroachment permit with the U.S. Army Corps of Engineers (USACE) would also be required.

The various Yolo County mitigation bank and habitat conservation projects also would not affect flood flows or capacity, because they would balance grading onsite and/or be required to comply with CVFPB requirements for work within the Yolo Bypass. Projects located in Solano and Sacramento counties that are identified in Table 4.10.2 would be outside of the Yolo Bypass and would have no effect on flooding or flood flow capacity.

The Sacramento River Deep Water Ship Channel (SRDWSC) Project by USACE project would increase flood flow capacity in the ship channel, and thereby aid in flood protection. Impacts of soil disposal on flood capacity are unknown and would depend largely on location and hydrology of the receiving site; if sediments are disposed of within the Yolo Bypass, that

disposal would be required to comply with CVFPB requirements for work within the Yolo Bypass. Additionally, the Southport Sacramento River Early Implementation Project and the West Sacramento Lee Improvements Program would be designed to improve the levee system, thereby reducing flood risk along the Sacramento River.

While the CVFPB Plan has been adopted, specific projects are not yet fully planned or realized as of this time. However, the intent of the plan is to manage flood risk along the Sacramento and San Joaquin rivers system, by developing and implementing a system-wide approach for sustainable, integrated flood management. One proposal under consideration is to widen and improve Fremont Weir in Yolo County. However, this activity is not expected to occur during the construction phase of the Project nor any time soon after completion.

Other recently proposed projects, such as the Conaway Ranch Floodway Corridor and Habitat Enhancement Project, Delta Wetlands Project, Franks Tract Project, Remanded Biological Opinions on the OCAP for the CVP and SWP, and the Sacramento-San Joaquin Delta Islands and Levees Feasibility Study, are still in the conceptual/early planning phase and consequently specific information to evaluate flood conveyance impacts cumulatively is lacking and/or speculative. However, it can be reasonably expected that such activities would also be required to meet the flood control requirements of the CVFPB and USACE in the Yolo Bypass.

The proposed Flyway Farms project would result in limited increases in surface water elevation (see discussion under Impact 4.1-4 Impacts on Flood Conveyance). The project would not be cumulatively considerable and therefore would not contribute in a cumulatively significant manner with the related projects to flood conveyance impacts. No cumulative impacts from flood conveyance would occur. No mitigation measures would be required.

Other Hydrological Cumulative Impacts

The proposed project would not be cumulatively considerable and therefore would not contribute in a cumulatively significant manner to any of the potential hydrology impacts described in Section 4.1. No other planned projects in the vicinity, in conjunction with the proposed Project, would impact agricultural irrigation and drainage on the Project site or adjacent properties within the Bypass that depend upon the project site irrigation and drainage infrastructure. There are no other planned projects within the lower Yolo Bypass that could contribute significantly to the impediment of winter flood conveyance and stormwater drainage. Additionally, no other planned projects are proposed collectively with the project that would contribute significantly to impacts to local groundwater levels.

An additional concern is the cumulative impact of the project on sea level rise. The site can accommodate sea level rise because of its location at the Delta margin. The Project's final design would also accommodate sea level rise, by examining and considering several relevant factors: existing elevation at the site, sedimentation rates and accretion, and projected sea level rise onsite. Studies have found that local wetlands in the Bay-Delta region have been able

to keep pace with recent rates of sea level rise through accretion rates between 2 and 5 mm per year (Orr et al. 2003; Callaway et al. 2012; PRBO Conservation Science 2012). Another action in dealing with sea level rise would be promoting early emergent vegetation to aid in the capture of sediment for marsh accretion. Such vegetation can also enhance the accumulation of organic matter in the developing wetland sediments (U.S. Bureau of Reclamation et al. 2010). Accordingly, it would be advantageous for tidal marsh restoration efforts, such as the proposed project, to be implemented during the first half of the 21st century, enabling onsite marsh elevations to be high enough to continue sustainable accretion rates in response to projected increased sea level rise in the latter part of the 21st century (PRBO Conservation Science 2012). As detailed in Section 4.1, the overall increase in the tidal height/surface water elevation from the project would be minor to less than significant with mitigation (see discussion in Impact 4.1¬4). Therefore, the proposed project would not be cumulatively considerable, and when combined with the related projects (who presumably would also look in design to accommodate exposure to sea level rise), would result in no cumulative impacts relating to other hydrological issues. No mitigation would be required.

4.10.2 Cumulative Impacts Analysis on Water Quality

In general, the related projects listed in Table 4.10-2 would have similar water quality concerns as identified for the proposed project; however, the magnitude of impacts from the related projects in connection with dredging activities in open channels would be greater than that of the Project alone.

Methylmercury Loading Cumulative Impacts

Most of the planned tidal marsh restoration projects, deepening open channel projects, and other related projects in Table 4.10-2 could collectively contribute substantially to the release of mercury and/or the production and distribution of MeHg. These projects may involve one or more of the following activities: construction in the water, discharge into the water, or placement of fill on lands that are currently in agricultural production, in open channel waters, or part of levee improvements. The majority of these related projects, including the proposed Project, would be participants in the CVRWQCB's Delta Mercury Control Program. For Phase 1, the program requires that discharges from identified sources be managed to reduce inorganic (total) mercury by relying on reasonable and feasible controls. The related projects would also be required to mitigate on a project-related basis to the maximum extent feasible. One related project is geared specifically to reduce mercury loads through a combination of actions to clean up mines, sediments, and wetlands. That project is the Cache Creek, Bear Creek, Sulfur Creek, Harley Gulch Mercury Total Maximum Daily Load Plan.

Tidal wetlands are generally known to produce less MeHg than irrigated agriculture and managed wetlands. As described in Section 4.2, the project would not contribute in a substantial way to MeHg production and loading to the Delta, because the restoration of tidal marsh is expected to either reduce loadings from current conditions. From a construction

standpoint, the Project site would be isolated from Delta waters by excavating landside under low tide conditions.

Hence, for the reasons stated above, the project would not be cumulatively considerable in conjunction with the related projects (refer to Table 4.10-2) when combined regarding MeHg loading. Overall, the project would have a less-than-significant cumulative impact on MeHg loading. No mitigation measures would be required.

Dissolved Organic Carbon Levels Cumulative Impacts

Dissolved organic matter (DOC) loads to Delta waters from restored tidal marshes could be a concern to municipal water suppliers, due to the increased potential for disinfection byproduct (DBP) formation. Greatly increased concentrations of DOC could prove to be problematic. The proposed Project lies within the Cache Slough Restoration Opportunity Area (ROA), where two other wetland restoration projects are planned and the draft BDCP has identified the area for 5,000 ac of tidal restoration.

The municipal water diversion of the most concern in this area would be the Barker Slough pumping plant. Hydrologic modeling (SCWA 2010b) was conducted to determine the potential for several proposed wetland restoration projects in the Cache Slough region to impact DOC levels at the Barker Slough intakes. The results indicate that those restoration projects that were closest to the intake, or had direct hydrologic connections to the Lindsey Slough system have the potential to exhibit measurable effects on the DOC concentrations at the intake, resulting in a potentially significant cumulative impact. Conversely, the North Bay Aqueduct Alternative Intake Project proposes to construct an alternative intake structure and pump station to move existing water supplies more efficiently during periods of high demand or to optimize use of water supplies. The new intake would be located above the Sacramento Regional Wastewater Treatment Plant to be upstream of the wastewater discharge point. This related project would be designed to improve water quality, including DOC levels that would benefit downstream the Project area.

Modeling results also indicated that the proposed project would be too distant from the intake for DOC produced within its wetlands to have any measurable impact on DOC concentrations at the Barker Slough intake. Long-term operation and management of the proposed Project also would not affect DOC levels at the intake. Therefore, the proposed Project would not be cumulatively considerable to DOC impacts at any existing municipal water intakes in combination with related projects identified in Table 4.10-2. Accordingly, the project would result in a less-than-significant cumulative impact. No mitigation measures would be required.

Dissolved Oxygen and Biological Oxygen Demand Levels Cumulative Impacts

Seasonal declines in dissolved oxygen (DO) can occur within the Project vicinity, and DO concentrations are negatively affected by increases in water temperature (refer to Section 4.2, Water Quality). Nutrient loading from point and nonpoint sources may also cause excessive algal growth, with a resultant lowering of DO concentrations in water bodies. Activities from related projects (see Table 4.10-2) that disturb sediments and aquatic plants such as dredging and clearing of aquatic plants from ship channels can cause increased decomposition of organic material, resulting in decreases in DO concentrations. Such projects would include the SRDWSC Project, the Southport Sacramento River Early Implementation Project, and the West Sacramento Levee Improvements. However, the removal of aquatic plants, especially invasive plant species, may allow light to better penetrate the water column, increasing photosynthesis and thereby increasing DO concentrations. Such activities would include the Aquatic Weed Control Program and the California Invasive Species Program (including the California Aquatic Invasive Species Management Plan).

Organic matter loads to the Delta from restored tidal marsh also could be a concern, due to the potential for increased biological oxygen demand (BOD) of these waters. Hydraulic modeling results of the tidal sloughs in the vicinity of the Project site indicate that there is adequate tidal circulation and exchange to prevent the formation of stagnant areas, which could become high BOD/low DO hotspots. Overall, it is unlikely that the organic matter exported from restored tidal marsh would cause a decrease in DO levels that could impact beneficial uses within the Delta (cbec 2010). Accordingly, the project would not be cumulatively considerable in combination with related projects listed in Table 4.10-2. Therefore, the Project would result in a less-than¬significant cumulative impact on DO and BOD levels in Delta waters. No mitigation measures would be required.

Other Water Quality Issues Cumulative Impacts

Sediment, trash, and spills from construction activities at the Project site would have a less-than¬significant impact on water quality in the Delta, due to implementing best management practices (BMP) identified as part of the scope of the Project, along with the preparation and implementation of a storm-water pollution prevention plan (SWPPP) and a spill prevention and control plan (SPCP) (see Chapter 3, Project Description). Potential construction impacts would be isolated to on or near the site, and other related projects (refer to Table 4.10-2) in the immediate area of the Project would be subject to the same stringent requirements to avoid affecting the water quality from sediment, trash, and spills. Therefore, construction impacts of the Project would not be cumulatively considerable to these particular water quality concerns. Tidal restoration to meet the federal biological opinions (BiOps) requirements of 8,000 ac and the BDCP targets of 55,000 ac, along with sea level rise projections, have the potential to change the hydrodynamics of the San Francisco Estuary and Delta such that oceanic salinity may extend further inland (see Section 4.1, Hydrology). However, the project would have a small increase in tidal prism (cbec 2010) given its relatively high site elevations. Therefore, the

proposed project would not be cumulatively considerable with the combined impacts of the related projects on salinity levels in the Delta.

Given the above discussion, the project, when combined with the related projects, would have a less-than-significant cumulative impact on other water quality issues. No mitigation measures would be required.

4.10.3 Cumulative Impacts Analysis on Terrestrial Biological Resources

For most of the terrestrial biological resource impacts occurring during the project's construction, they would be temporary, localized, and minor and thus would not be cumulatively considerable with related projects. In other instances during construction, the proposed Project would have the potential to contribute to a potentially significant cumulative impact in combination with other projects in the region, particularly with other restoration projects or projects in similar habitats. Post construction, the project would be beneficial to some special-status species by providing additional habitat.

Wetlands Cumulative Impacts

The proposed project would result in the temporary disturbance of seasonal wetlands, vernal pools, and other waters in combination with related projects in Table 4.10-2 (e.g., restorations, dredging programs, aquatic weed control projects, and flood infrastructure improvements) during construction. The cumulative impact would be significant in the short term, and the proposed project's contribution would be considerable. Mitigation measures proposed in this EIR would reduce the proposed project's contribution to a less-than-significant cumulative impact by avoiding or minimizing impacts through locating activities outside of sensitive habitats where feasible, marking areas to be avoided on maps, limiting construction to the dry season, using an onsite biologist to monitor construction, minimizing the amount of disturbance, and monitoring revegetation of native plants for invasive species (refer to Mitigation Measures 4.3-1 and 4.3-3). Other projects would be required to include similar mitigation measures that would further reduce the cumulative impact.

The proposed project would result in the permanent conservation of currently, degraded wetland communities and would have a beneficial effect from the improvement of wetland functions and values. The other restoration projects or projects with a restoration component also would have beneficial impacts. Projects such as the Putah Creek Wetland Mitigation Bank and Restoring Ecosystem Integrity in the Northwest Delta would include the restoration of vernal pools. As a result, the Project would not be cumulatively considerable in combination with related projects and would result in no cumulative impact on wetland communities, including vernal pools. No mitigation measures are required post construction. The project would be permanently beneficial to wetland communities.

Riparian Woodland and Scrub Cumulative Impacts

As noted in Section 4.3.3 (Impact 4.3-2), riparian habitats such as mature riparian forests, are limited in the Yolo Bypass as a result of flood control maintenance and agricultural practices. Some of the related projects identified in Table 4.10-2 may impact riparian habitat during construction but would either mitigate and/or create new riparian habitat. Those projects would include Calhoun Cut/Lindsey Slough Tidal Habitat Restoration Project, Conaway Ranch Floodway Corridor and Habitat Enhancement Project, BDCP, Bay Delta Conservation Restoration Opportunity Areas, Dutch Slough Tidal Marsh Restoration Project, Fremont Landing Conservation Bank, Yolo Bypass Wildlife Area Land Management Plan, and Yolo County Natural Heritage Program Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP).

The project would involve the removal of some riparian woodland and scrub for up to five tidal connections during construction and possibly one more connection post construction that would involve up to about 720 ft in width of excavation. This impact would be limited to removal of those riparian vegetation within the confines of the tidal channel transect. Hence, the combined effects of the related projects and the project would be negligible or too small to make the project's contribution cumulatively considerable. Hence, the project would have no cumulative impact to riparian woodland and scrubs. No mitigation would be required.

Special-status Plants Cumulative Impacts

Because of the limited range and populations of certain special-status plants and the potential for impacts by the related projects (see Table 4.10-2) within the Yolo Bypass and Cache Slough Complex, projects with even minor effects may be cumulatively considerable and contribute to significant cumulative impacts on special-status plants.

The proposed project would have significant impacts on Delta tule pea, Mason's lilaeopsis, and Suisun marsh aster, if present during construction, which could disturb or extirpate individuals and seedbanks and introduce or spread invasive species. Several of the related projects, including the BDCP; Dutch Slough Tidal Marsh Restoration Project; and Delta Wetlands Project, also would have similar impacts to special-status plants during construction. The cumulative impact would be significant, and the proposed project's contribution would be considerable. A proposed mitigation measure included in this EIR (i.e., Mitigation Measure 4.3-2) would reduce the proposed project's contribution to the cumulative impact by including a variety of methods to control invasive plant species. Corrective actions would also be part of the project and are identified in Section 3.5.1, including periodic monitoring and reliance on limited cattle grazing to control invasive plant species. Hence, the potential for proposed project restoration activities to impact special-status plants would be minimal.

Therefore, the proposed project (incorporating avoidance, minimization, and mitigation) would not contribute in a cumulatively considerable manner to significant cumulative impacts to the Delta tule pea, Mason's lilaeopsis, and Suisun marsh aster. Other related projects with a habitat restoration component also would be required to provide suitable mitigation or avoidance on a project-by-project basis. Therefore, with mitigation, the contribution of the proposed Project to cumulative impacts on special-status plant species would be less than significant.

Giant Garter Snake Cumulative Impacts

The proposed Project would have a significant impact, unless mitigated, on giant garter snake (GGS) during construction from the temporary loss of habitat and injury or mortality of individuals. Other related projects (see Table 4.10-2) that would have similar impacts during construction include the Dutch Slough Tidal Marsh Restoration Project, eradication programs for invasive plants, Delta Wetlands Project (Place of Use), and the BDCP. The cumulative impact from construction by the various projects listed that provide suitable GGS habitat would be significant, unless mitigated, and the proposed Project's contribution would be considerable. A proposed mitigation measure (see Section 4.3.4, Mitigation Measure 4.3-4) included in this EIR would reduce the proposed Project's contribution to a less-than-significant cumulative impact by scheduling construction when GGS would be active and would avoid danger; surveying the area prior to construction, minimizing vegetation clearing and avoiding adjacent areas designated as Environmentally Sensitive Areas; implementing a worker awareness program, and other measures intended to minimize disturbance. Other related projects would also include mitigation measures that would further reduce the cumulative impact.

The proposed project also would have a long-term beneficial effect on GGS through the creation of additional habitat. Projects such as the Dutch Slough Tidal Marsh Restoration Project, Delta Wetlands Project (Place of Use), and BDCP would include measures that would either offset the habitat loss from construction or result in increased habitat for GGS. The Northern Liberty Island Fish Conservation Bank also is intended to preserve, create, restore, protect, and manage 400+ ac of habitat features suitable for GGS, and the Capital Conservation Bank also would establish a GGS conservation bank on 320 ac. The Pope Ranch Conservation Bank Project and the Ridge Cut Giant Garter Snake Conservation Bank already provide 391 ac and 186 ac of suitable habitat for GGS, respectively. Therefore, the long-term, cumulative impact on GGS habitat would be beneficial.

Western Pond Turtle Cumulative Impacts

The proposed project would have a significant impact, unless mitigated, on western pond turtle during construction from injury or mortality of individuals. Related projects in Table 4.10-2 such the BDCP and other restoration projects that support the turtle's habitat would result in similar impacts. The cumulative impact on the turtles from construction activities would be significant, if not mitigated, and the proposed Project's contribution would be cumulatively considerable. A proposed mitigation measure (see Section 4.3.4, Mitigation Measure 4.3-5) included in this EIR

would reduce the project's contribution to a less-than-significant cumulative impact, because preconstruction surveys, along with appropriate actions to relocate the turtles if found, would be implemented to ensure that no turtles would be injured or killed by construction activities. Other related projects would also include mitigation measures that would further reduce this cumulative impact.

Conversely, the project would have a long-term beneficial effect western pond turtle through habitat creation, and other projects such as the Delta Wetlands (Project Place of Use) and BDCP would also be beneficial. These projects would include measures that would either offset the habitat loss from construction or result in increased habitat for western pond turtles. Therefore, the long-term cumulative impact for the western pond turtle habitat would be beneficial.

Nesting by Special-status and Migratory Birds Cumulative Impacts

Impacts on nesting special-status birds, including Swainson's hawk, and migratory birds would occur during construction of the proposed Project, and are likely to occur during construction of most of the related projects in Table 4.10-2. The cumulative impact from construction would be significant, if not mitigated, and the proposed project's contribution would be cumulatively considerable. A proposed mitigation measure included in this EIR (see Section 4.3.4, Mitigation Measure 4.3-6) would reduce the proposed project's contribution to a less-than-significant cumulative impact by requiring preconstruction surveys, appropriate buffers, and specific measures to be implemented if active nests are present. Other related projects would also include mitigation measures that would further reduce the cumulative impact.

Foraging Habitat for Special-status Raptors Cumulative Impacts

The proposed project would result in a long-term loss of foraging habitat for Swainson's hawk, white-tailed kite, and loggerhead shrike as would several other related projects. In the event that all future restoration efforts and conservation banks listed in Table 4.10-2 are realized and the full BDCP restoration targets are met, approximately 55,000 ac of agricultural and wetland habitat would be restored to historic conditions in the Delta, Yolo Bypass, and Suisun Marsh. Dredging activities where stockpiles of soil are placed on agricultural lands would also impact foraging habitat. With respect to Swainson's hawk, whose occurrences and nest locations are depicted in Figure 4.3-9, most of the related sites targeted for restoration would be located in areas that do not support large populations of Swainson's hawks. Projects in the Yolo Bypass (refer to Figure 2-3) would have some impact on this species, but such effects would be lesser than for the larger region in the Delta, due to regular inundation of flood waters during the rainy season and the overall low prey populations.

The loss of foraging habitat for the affected raptors would be a significant cumulative impact if not mitigated, and the proposed project's contribution would not be considerable. The mitigation measure proposed in this EIR would reduce the project's contribution to less than

significant by requiring the preservation or enhancement of the lost habitat (refer to Mitigation Measure 4.3-7). The related projects where raptor foraging habitat would be lost would also have similar mitigation measures that would further reduce the cumulative impact. Restoration projects including the proposed project would result in protection of a variety of habitat types, including tidal marsh, seasonal wetlands, levees, berms and associated uplands. Restoration and protection – in perpetuity – of a mosaic of habitat types that represent historic conditions would benefit Swainson's hawk and other raptors, by increasing biodiversity in an area that has been dominated by agriculture for over a century. Related projects that would provide additional foraging habitat for the Swainson's hawk and other sensitive raptors include the Conaway Ranch Floodway Corridor and Habitat Enhancement Project, Knaggs Ranch Project, Putah Creek Wetland Mitigation Bank, Sacramento River Ranch Conservation Bank, and Yolo County Natural Heritage Program HCP/NCCP. Therefore, with mitigation, the contribution of the proposed project to cumulative impacts on foraging habitats for sensitive raptors, including Swainson's hawk, would be less than significant.

4.10.4 Cumulative Impacts Analysis on Aquatic Biological Resources

The project site lies at the unique hydrologic intersection within the Delta where wetland restoration efforts have taken place and more are contemplated or planned for the future: Putah Creek fan, historic Yolo Basin floodway, and North Delta tidal marshes. The most substantial restorations that have happened in the region (see Figure 3-3) are the natural levee failures of Little Holland Tract (nearly 1,500 ac, 1983 and 1992 breaches) and Liberty Island (more than 4,300 ac, 1998 levee failure), both located immediately south of the project site. East across the SRDWSC is the 1,600-ac Prospect Island tidal restoration, currently in the planning stages by DWR. Immediately south of the site is the 185-ac Kerry Parcel (now known as the Liberty Island Conservation Bank), constructed in 2010 as a wetland mitigation bank. Just southwest of the Project site is the 1,700-ac Liberty Farms diked wetlands enhancement project constructed through the Natural Resources Conservation Service (NRCS) Wetland Reserve Program.

At the western end of Lindsey Slough, the Calhoun Cut tidal wetland enhancement project is currently being planned by the California Department of Fish and Wildlife (CDFW). The forthcoming BDCP has identified a 5,000-ac tidal restoration target for the Cache Slough Complex; the project as well as Prospect Island would likely count toward that target. In addition to specific projects, BDCP has identified six ROAs totaling approximately 200,000 ac within which it has identified minimum restoration targets totaling 22,000 ac. Within some or all of these regions, restoration activities would take place to bring the total restoration area up to the currently identified target of 55,000 ac.

For the project alone, the potential adverse effects on aquatic biological resources would be less than significant, as discussed in Section 4.4.3, Impacts pertaining to Aquatic Biological Resources. The proposed construction and post-construction activities could potentially result in effects to aquatic and riparian habitats, direct fish lethality or injury, temporary noise

impacts impeding or delaying fish migration, and water quality impacts on fish and aquatic resources. The construction-related effects of the proposed project would be limited to the local area of the Yolo Bypass and Cache Slough Complex and have been effectively limited by conservation measures (e.g., construction BMP measures) and by the construction timing and sequencing.

The evaluation for cumulative effects considered whether any of these project-specific impacts would be cumulatively considerable in conjunction with effects by the related projects listed in Table 4.10-2. The project and the related projects would involve changes in habitat conditions within the Lower Yolo Bypass and northwest portion of the Delta resulting in cumulative effects on water quality, ecosystem function, food supply, habitat availability, and hydrology in the Yolo Bypass and Cache Slough Complex.

The cumulative impacts analyses of the project on aquatic biological resources were judged not significant for a number of reasons, as detailed in Table 4.10-3 (in the original FEIR). Overall, the reasons leading to this conclusion included the following attributes of the related projects:

- Though the 8,000-ac restoration obligation under the two BiOps is in place and BDCP, with the presumed 55,000-ac restoration obligation, may be agreed upon in the next year or two, most of the actual projects to meet those obligations are currently not identified or not well defined. CEQA does not require speculation or consideration of projects that are not “probable.”
- Not scheduled for construction within the timeframe of the project’s construction.
- Effects too temporary, localized and mitigated. Thus, the combined effects of the related projects and the Project were negligible or too small to make the project’s contribution cumulatively considerable.
- Not related to aquatic biological resources. Although such project was related due to location, its effects pertained to other environmental resources rather than on aquatic biological resources.
- Provides more habitat for sensitive fish species as well as more riparian and wetland habitat. There is a benefit in such cases, preempting cumulative adverse effects of the project.
- Refuge would not have adverse effects on delta smelt. Here, the refuge is in a facility, out of the Delta waters, and would be beneficial.
- Would reduce or not affect invasive species at the project site.
- Intended to reduce or not affect mercury at the project site.

Over the long term, operations of the proposed project would reduce the amount of water from the Delta used for field irrigation. The increased tidal prism and daily tidal exchange of water in the restored site would incrementally alter tidal exchange in the lower Yolo Bypass and Cache Slough Complex channels (refer to Section 4.1, Hydrology). However, the potential hydrologic effects of the project would be small and localized, and thus, would not contribute

considerably to any future cumulative adverse conditions associated with Delta flow or hydrodynamic conditions important to fisheries habitat.

As noted above, the water quality conditions in the Yolo Bypass and downstream water bodies following implementation of the project would not be measurably different, and may improve, relative to existing conditions, therefore impacts to fisheries would be minimal or beneficial. Because the project would enhance regional food web productivity in support of delta smelt recovery, incrementally increase the amount of available habitat for fish that utilize tidal wetlands and seasonal floodplains for spawning and/or rearing, and would restore natural tidal exchange with the floodplain, the project would increase habitat and lessen other current adverse effects to the delta smelt population.

With mitigation proposed in Section 4.3.4, the project, in conjunction with the related projects, would not be cumulatively considerable and would not contribute to a significant cumulative adverse conditions for delta smelt, salmonids, longfin smelt, green sturgeon, or other fish species within the affected environment. Moreover, the project and those related projects that would contribute to improvements to the quality of the ecosystem and/or provide additional aquatic habitats would, in the long term, be beneficial to the aquatic biological resources. Hence, the project would result in less-than-significant cumulative impacts to aquatic biological resources during the construction phase only.

There would be no cumulative impacts to aquatic biological resources with post construction activities involving monitoring, scientific sampling, and other minor, non-invasive activities. For those scientific activities requiring incidental take of sensitive species, the individuals or entities involved would apply for the appropriate permits and comply with conditions set forth by CDFW and/or USFWS. Those entities involved with the related projects that support scientific and other research activities would also have to comply with applicable environmental regulatory permits prior to the commencement of such activities. No mitigation measures would be required.

4.10.5 Cumulative Impacts Analysis on Agricultural Resources

Important Farmland and Productivity Loss Cumulative Impacts

Much of the Delta lands are in agricultural use. Related projects in Table 4.10.2 have at least one or more of the following attributes: habitat protection and ecosystem restoration, water conveyance and water quality, flood control and levee maintenance, and local and regional land use planning activities. The vast majority of these projects, activities, and programs would have the potential to significantly impact Important Farmland and productivity. Up to 55,000 ac of land in the Delta and Suisun Marsh may be converted to tidal wetlands in order to partially fulfill the two federal BiOps (requiring 8,000 ac of tidal restoration for the delta smelt) and the BDCP, currently under development (potentially requiring 55,000 ac of wetland restoration, including the 8,000 ac required under the BiOps).

Other major activities such as the recently approved 2012 Central Valley Flood Protection Plan, with modifications to existing levees and weirs, could lead to affecting the use of Important Farmlands. The creation and management of Dutch Slough tidal marsh restoration would affect land formerly used for ranchlands and a dairy. Other habitat restoration efforts, including Prospect Island Restoration Project, Restoring Ecosystem Integrity in the Northwest Delta, Yolo Bypass Wildlife Area Land Management Plan, and the proposed Yolo County Natural Heritage Program HCP/NCCP would further contribute to the removal of Important Farmlands. Dredging activities, such as the SRDWSC Project, Southport Sacramento River Early Implementation Project, and West Sacramento Levee Improvements Program may temporarily impact Important Farmland and productivity loss through the use of such sites for stockpiles of dredged soils.

It is expected that each of the proposed or potential projects, programs, or activities in the region would assess impacts of any conversion of agricultural lands to wetlands resulting from that action as it proceeds through CEQA review and to mitigate for significant impacts. However, as discussed below, there would still be a significant cumulative net loss of agricultural lands in the Delta even after mitigation with the combined actions of the related projects.

The proposed Flyway Farms project is one of the first habitat restoration projects designed to meet the two federal BiOps and BDCP tidal restoration targets and, as described above, would contribute about 288 acres to the total acreage converted from agricultural to habitat (wetland) uses. As described in Impact 4.5-1, up to 0.4 acre of this is defined as irrigated farmland. Conversion of this small amount of farmland with project implementation would be a less-than-significant impact to agricultural resources (refer to Section 4.5, Agricultural Resources). Hence, this project would not be cumulatively considerable with the related projects (refer to Table 4.10-2) when combined. Overall, the project would have a less-than-significant cumulative impact to the loss of Important Farmlands and productivity in Yolo County. No mitigation measures would be required.

Other Cumulative Impacts to Agricultural Resources

Inconsistencies with existing Williamson Act contracts were found to yield no impacts with the implementation of the Flyway Farms project (see Section 4.5), since the existing contact would be modified to allow open space uses. While some of the related projects in Table 4.10-2 may be inconsistent with Williamson Act contracts in place, these projects would be required to undergo the appropriate process to either modify, renew or terminate those contracts. Therefore, the proposed project, combined with the related projects, would result in no cumulative impacts relating to inconsistencies with existing Williamson Act contracts. No mitigation measures would be required.

4.10.6 Cumulative Impacts Analysis on Air Quality and Greenhouse Gases

Construction Activities and Consistency with State and Federal Air Quality Plans Cumulative Impacts

Situated in the Sacramento Valley Air Basin (SVAB), those related projects in Table 4.10-2 whose construction schedules overlap with the Project's schedule would collectively release air criteria pollutants, mostly notably nitrogen oxides (NOx) and particulate matter (PM). These projects would include, but not be limited to, the Capital Conservation Bank, the CALFED Ecosystem Restoration Program, the Calhoun Cut/Lindsey Slough Tidal Habitat Restoration Project, the Campbell Ranch Conservation Bank, the Davis-Woodland Water Supply Project, Little Holland Tract Restoration, Putah Creek Wetland Mitigation Bank, Restoring Ecosystem Integrity in the Northwest Delta, SRDWSC Project, and Southport Sacramento River Early Implementation Project.

Currently, the criteria pollutants of most concern in the SVAB are ozone (O3) (NOx is a precursor to O3) and PM (refer to Table 4.6-3). For O3, the Yolo-Solano Air Quality Management District (YSAQMD) prepares and implements the state implementation plan (SIP) that addresses attainment of the state and federal O3 Ambient Air Quality Standards (AAQS). Growth accommodation is recognized in these plans by forecasting growth in O3 precursor emissions, while offsetting such emissions by regional controls on stationary, area, and transportation sources. For O3 emissions above significance thresholds, those projects have not been accommodated in the air quality plans; hence, they are not consistent with air quality plans. Accordingly, construction emissions from such projects occurring during the same timeframe as the SIP would have a significant cumulative impact on regional air quality, unless O3 precursor emissions (i.e., NOx) would be below the YSAQMD significance thresholds.

With respect to PM, the YSAQMD implements regulations from the California Health & Safety Code § 39614 and has developed a subset of control measures to further reduce PM10 emissions from new and existing stationary, mobile, and area sources. The objective is to make progress toward attainment of the California PM10 standard. When PM10 emissions are above those significance thresholds, such projects when combined during the same timeframe have not been accommodated in the plan and therefore the construction emissions would have a significant cumulative impact, if not mitigated, within the SVAB for the Yolo-Solano region. Construction of the related projects (see Table 4.10-2) would emit air criteria pollutants including NOx and PM10, generated from construction equipment and vehicles. In addition, projects involving earth-moving activities would generate fugitive dust emissions. Overall, those related projects could collectively exceed YSAQMD's significance criteria and result in a significant cumulative impact for both construction activities and air quality planning consistency if their construction schedules overlapped and if not mitigated.

Other identified related projects (see Table 4.10-2) are conceptual in nature, in the planning phase with construction beyond the Project's construction schedule, have no funding to

implement the project at this time, or have been completed. Other activities listed include studies, local programs to eradicate invasive species, and small pilot experiments when combined in the same time period would not contribute to or exacerbate ambient air quality problems and result in no cumulative impact.

As noted in Section 4.6.3, Impacts on Air Quality, the proposed project would potentially result in a significant, temporary impact for NOx and PM10 during the construction phase, unless mitigated. The project's proposed mitigation measure (see Section 4.6.4, Mitigation Measure 4.6-1) would reduce this impact to less than significant. With a number of features built in to the mitigation measure to control onsite air pollutant emissions, one aspects would be particularly critical: a reduction in construction activity during "Spare the Air" (Air Quality Index >127) days within the Sacramento Metropolitan Air Quality Management District (summer downwind area) would be instituted. Standard dust control measures, e.g., watering dry lands, would also reduce PM emissions. Additionally, the project would undergo construction for a short duration, approximately six months. The contractor would also prepare and implement an emissions reduction plan to further control emissions. Finally, the project would be consistent with YSAQMD's plans, as the project would not be growth inducing.

Based on the discussion above, the project with mitigation would not be cumulatively considerable and therefore, with the related projects, would result in a less-than-significant cumulative impact for temporary air emissions released during the construction phase.
For the post-construction phase of the project, minor activities such as monitoring and scientific studies would involve few vehicles and possibly a small boat for infrequent inspections. Such activities would result in no cumulative impact in conjunction with other related projects. No mitigation measures would be required.

In addition, the project, combined with the related projects, would have no cumulative impact in connection with YSAQMD's air plans, since the project's contribution would not be cumulatively considerable. No mitigation would be required.

Greenhouse Gases and Global Climate Change Cumulative Impacts

The project's greenhouse gas (GHG) emissions due to construction activities would be temporary and would be less than significant when compared to applicable thresholds (refer to the discussion in Section 4.6.3, Impact 4.6-3, Greenhouse Gases and Global Climate Change Contributions). Construction of the other related projects would contribute to temporary cumulative emissions of GHG in the region. The impacts of these other projects could be cumulatively significant if their construction schedules overlapped. However, because the proposed Project would be constructed prior to construction of most of the related projects that have not already been built, and the project's contribution to GHG would be below applicable standards, the project's contribution would not be cumulatively considerable and, therefore, the project would have a less than significant cumulative impact for GHG and global climate change. No mitigation measures would be required.

4.10.7 Cumulative Impacts Analysis on Cultural Resources

Buried Archaeological Resources and Human Burial Resources Cumulative Impacts

The proposed project would not affect any known archaeological sites. However, prehistoric habitation sites are common in riverbank and floodplain areas, and burial sites are often accidentally discovered during excavations. Project-related impacts on archaeological resources and human burial resources would therefore be limited to possible inadvertent disturbance of unknown buried resources during ground-disturbing activities (refer to Section 4.7).

Other development and government projects in the Project vicinity that require grading and excavation would also have the potential to inadvertently disturb archaeological resources. Local related (active) projects would include but not be limited to: Cache Creek Resources Management Plan and Improvement Program, Calhoun Cut/Lindsey Slough Tidal Habitat Restoration Project, Capital Conservation Bank, Davis-Woodland Water Supply Project, Fremont Landing Conservation Bank, Liberty Island Conservation Bank, Little Holland Tract Restoration, Mayberry Farms Subsidence Reversal and Carbon Sequestration, Northern Liberty Island Fish Conservation Bank, Putah Creek Wetland Mitigation Bank, Restoring Ecosystem Integrity in the Northwest Delta, Ridge Cut GGS Conservation Bank, SRDWSC Project, Southport Sacramento River Early Implementation Project, and Yolo Bypass Wildlife Area Land Management Plan.

The cumulative effect of these related projects would contribute to the continued loss of subsurface cultural resources and result in a significant cumulative impact, if these resources were not properly managed upon discovery. For the project, implementation of mitigation measures proposed (Mitigation Measures 4.7-1 and 4.7-2) would minimize the potential for inadvertent destruction of such important buried resources. These measures would involve conducting environmental awareness training regarding cultural resources by a qualified archaeologist to contractors and vendors prior to the initiation of construction, redirect work when buried archaeological/human burial resources were uncovered, and complying with state law on identifying, removing, and managing historic resources and Native American remains and grave goods. Furthermore, as required by CEQA and the State CEQA Guidelines, other development projects in the area would also implement similar measures to fully document those resources and minimize destruction.

Accordingly, the project, with mitigation, would not be cumulatively considerable, and in conjunction with the related projects, would result in a less-than-significant cumulative impact with respect to buried archaeological and human burial resources.

Historic Resources Cumulative Impacts

No listed historic landmarks have been identified on the project site. The project would result in minor changes to certain levees that contribute to a potential Yolo Bypass historic district (refer to Impact 4.7). As noted in Section 4.7, the project modifications would not materially impact the Toe Drain and there would be a less-than-significant impact to these structures' integrity. Such project changes would not be cumulatively considerable in conjunction with potential cultural resources impacted by other related projects. Other habitat restoration projects, flood control and conveyance projects, and dredging/channel deepening projects each may encounter and affect historic resources, including the levees. Each of those projects would be required to mitigate for any such resources discovered. Therefore, the project would not be cumulatively considerable; in particular, its cumulative impact on historic resources, in combination with the related projects listed in Table 4.10-2 would be less than significant. No mitigation measures would be required.

4.10.8 Cumulative Impacts Analysis on Hazards and Hazardous Materials

Soils and Materials Contamination Cumulative Impacts

Isolated, contaminated areas have been found onsite and have the potential to exist on sites proposed for development as described in Table 4.10-2, due to a variety of land use activities. Agricultural production, conducted on sites of applicable related projects, utilizes storage facilities and agricultural ponds or pits contaminated with fertilizers, pesticides, herbicides, or insecticides. Petroleum products and other substances may be present in the soil and groundwater near leaking underground tanks used to store such materials. Leaking polychlorinated biphenyls (PCB) from aging electrical transformers may also be present. Contamination from metals and polycyclic aromatic hydrocarbons (PAH) could result from existing and defunct railroad operations. Metals such as cadmium, zinc, and mercury are present in inactive and abandoned mines, and in streams in the Delta. Hence, implementing the related projects collectively could result in a potentially significant cumulative impact.

The proposed project identified potential sources of contamination, such as unknown hazardous materials or wastes in the sediments encountered during ground-disturbing activities, salvaged wood from repairs of the irrigation system that may have been treated or painted and contain creosote or other hazardous chemicals, and possible leaking of PCBs from Pacific Gas & Electric (PG&E)'s electrical transformers. Mitigation Measure 4.8-1 would ensure that such discoveries would be mitigated to less than significant by developing plans to treat or remove such contaminants in accordance with federal and state hazardous waste laws and regulations.

Hazards and hazardous materials associated with any of the related projects (see Table 4.10-2) would need to be evaluated for potential risks to public safety on a project-by-project basis. Furthermore, as required by CEQA and the State CEQA Guidelines, the related projects would

also implement similar measures to ensure that humans, biological resources, and the environment would not be subjected to dangerous materials. Section 4.8.1 describes in detail the array of federal, state, and local laws, regulations, and ordinances that all projects must comply with to reduce the likelihood of accidental release of hazardous materials or how to handle an unknown source of existing contamination.

Therefore, based on the above discussion, the project, with mitigation, would not be cumulatively considerable, and in conjunction with the related projects listed in Table 4.10-2, would result in a less-than-significant cumulative impact with respect to soils and materials contamination.

Hazards with Natural Gas Wells/Pipelines Cumulative Impacts

Natural gas was discovered in the Delta in 1935 and has since been developed into a substantial source supply and depot for underground storage41. Gas fields, pipelines, underground storage areas, and its infrastructure are located throughout the region. Infrastructure consists of pipelines and storage facilities owned by oil and gas companies, public and private utilities, and a multitude of independent leaseholders.

It is likely that gas wells exist on several of the sites proposed for conversion to wetland habitats and conservation banks listed in Table 4.10-2 that could lead to a significant cumulative impact concerning the risk of upset. Each related project would be responsible for mitigating impacts from gas well hazards (e.g., potential explosion and fire) on the specific site. As described in Section 4.8, the Project's mitigation (Mitigation Measure 4.8-2) would reduce its contribution to less than significant. The related projects would be required to fully mitigate their impacts to any onsite wells too.

Therefore, the project, with mitigation, would not be cumulatively considerable and the cumulative impact on gas well/pipeline hazards by related projects with the contribution of the proposed Project would be less than significant.

Mosquito Control Cumulative Impacts

Mosquitoes are the primary biological vectors for disease in the region. Certain agricultural infrastructure and practices (for example, irrigation ditches and post-harvest flooding in fields to provide habitat for wintering waterfowl and other wildlife) may create suitable breeding conditions for mosquitoes. Open-water habitats include permanently inundated wetlands, ditches, sloughs, and ponds that may in part sustain stagnant or standing waters, which are also ideal for mosquito breeding.

Mosquito control by Sacramento-Yolo Mosquito Vector Control District (SYMVCD) includes:

- Biological agents, such as mosquito fish, which consume mosquito larvae.
- Source reductions, such as draining the water bodies that produce mosquitoes.

- Pesticides.
- Ecological manipulations of mosquito breeding habitat.

The restoration of 55,000 ac of tidal wetlands in the Delta and Suisun Bay (the preliminarily identified BDCP target) could reduce impacts associated with mosquito production in existing ponds and ditches on those sites, but increase mosquito production on new tidal wetland areas. Similarly the mitigation bank and habitat restoration related projects listed in Table 4.10-2 could result in increased mosquito production. A potential indirect benefit of improved water quality by projects such as the North Bay Aqueduct Alternative Intake Project could include controlling the mosquito population. Decreased amounts of organic material in the water could discourage mosquitoes from breeding, thereby decreasing the mosquito population. The SRDWSC Project, the Southport Sacramento River Early Implementation Project, and the West Sacramento Levee Improvements Program may re-suspend organic matter in the water temporarily during dredging activities and thereby contribute to an increased risk in mosquito production. However, conversely, by widening the channels, there would be less likelihood of adjacent flooding resulting in less standing water in the fields, thereby reducing mosquito production. Overall, each related project would be responsible for mitigating its contribution to mosquito production.

As described in Section 4.8, the proposed project would reduce levels of mosquito generation, because it would substantially reduce the area of seasonal and perennial wetlands and irrigated pastures -habitat with vegetation and hydrologic characteristics that can promote mosquito production -in favor of tidal wetlands, which are far less suitable for mosquito production. Additionally, in the Project Description (Chapter 3), there are corrective actions included as part of the project that detail a plan to follow if mosquito production fails to decrease after the completion of the construction phase. Such measures would include habitat management, biological controls, physical controls, and appropriate chemical treatment (but only as a last resort and in consultation with SYMVCD). Overall, after project implementation, mosquito production would be expected to decrease substantially, resulting in a beneficial effect. Consequently, the proposed Project would not be cumulatively considerable and in conjunction with the related projects would result in a less-than-significant cumulative impact on mosquito production. No mitigation measures would be required.

4.10.9 Cumulative Impacts Analysis on Energy Consumption

The project would result in a one-time energy demand (i.e., natural gas, electricity, and transportation fuels) associated with construction and a very small ongoing demand for energy associated with post construction (e.g., maintenance and monitoring). As described in Section 4.9, that demand would not represent a wasteful or inefficient use of energy. Calculations reveal that less than 0.6 percent of the entire Yolo County consumption of diesel fuel would be required to construct the project. Demand for electricity, natural gas and other transportation fuels would also be minor during both construction and post construction.

Of the related projects listed in Table 4.10-2 that might conceivably be constructed during the project's construction phase, all would represent short-term, but moderate energy consumption. These projects would include, but not be limited to, the Capital Conservation Bank, the Davis-Woodland Water Supply Project, Little Holland Tract Restoration, Putah Creek Wetland Mitigation Bank, Restoring Ecosystem Integrity in the Northwest Delta, SRDWSC Project, and Southport Sacramento River Early Implementation Project. Additionally, some project elements may actually result in energy efficiency during their operational phases such as the repairs and replacements of older pumps and motors with newer equipment for irrigation systems and flood control infrastructure.

Other programs, plans, and projects have a longer planning phase and their construction activities would not overlap with the project's construction schedule including the BDCP, Central Valley Flood Protection Plan, the Dutch Slough Tidal Marsh Restoration Project, and Remanded Biological Opinions on the Coordinated Long-term Operation of the Central Valley Project and State Water Project. Still other activities have no known construction date as of this writing, such as the Prospect Island Restoration Project and the Yolo Bypass Salmonid Habitat Restoration and Fish Passage. Ongoing programs, such as CALFED's Ecosystem Restoration Program Conservation Strategy/Delta Regional Ecosystem Restoration Implementation Plan and the BiOps for delta smelt and salmonids provide the justification for several of the identified projects in Table 4.10-2 and no other applicable projects related to these programs are identified at this time. For small ongoing programs, such as AFSP and invasive plant control, energy consumption would be extremely minor, as would be the small development projects near the project vicinity in Sacramento, Solano, and Yolo counties.

While the specific construction details of the combined related projects are not known at this time, it is not likely that the overlapping construction activities for these projects would result in the substantial and inefficient waste of energy (i.e., natural gas, electricity, or transportation fuels) region wide. Based on the project's short construction period (i.e., about six months) and the small usage of energy required, the incremental effect of the project with the related projects would not be cumulatively considerable. Therefore, the cumulative impact on energy consumption by the project in conjunction with the related projects during construction would be less than significant. For post construction, all of the related projects would require minimal energy levels. Hence, the Project with its minimal contribution during post construction (see Section 4.9) for energy usage would not be cumulatively considerable and with the related projects would result in no cumulative impact. No mitigation measures would be required.

5 ALTERNATIVES

5.1 Alternatives

Pursuant to CEQA Guidelines Section 15126(f) and 15126.6, an analysis of a reasonable range of project alternatives, including the "no project" alternative, was included in the Final EIR for the Lower Yolo Restoration Project. Four alternatives were analyzed in the Final EIR for the Lower Yolo Restoration Project: the No Project Alternative; a "Reduced Restoration Footprint" Alternative; an "Offsite Soil Disposal/Reduced-size" Alternative; and a "Tidal Marsh Complex" Alternative.

Two of the four alternatives (the Offsite Soil Disposal/Reduced-size Alternative and the Tidal Marsh Complex Alternative) do not include the Flyway Farms property and are not incorporated into, or analyzed, in this document. The No Project alternative is included in this Draft Supplemental EIR, as well as a new alternative called the "Increased Excavation/Increased Restoration Footprint" alternative, described below.

The No Project alternative represents a fact-based forecast of the environmental effects of maintaining the status quo. Accordingly, under the No Project alternative, the proposed project described in Chapter 3, Project Description, would not be constructed. Duck club and other agricultural operations would continue onsite at the Yolo Flyway Farms.

The "Increased Excavation/Increased Restoration Footprint" Alternative would be a somewhat larger habitat restoration version of the proposed project. This alternative is based on the original design plans for the Lower Yolo Restoration Project, including Flyway Farms. This alternative requires an increase amount of earth-moving and soil disturbance to construct the wetlands. This alternative would result in more tidal wetland habitat created and less seasonal wetland and riparian enhancements than the project.

5.2 Description of No Project Alternative

The No Project alternative represents a fact-based forecast of the environmental effects of maintaining the status quo. Accordingly, under the No Project alternative, the proposed project described in Chapter 3, Project Description, would not be constructed. Duck club and other agricultural operations would continue onsite at the Yolo Flyway Farms.

Changes made to levees, tide gates, or other irrigation/drainage infrastructure would occur because of emergencies or routine maintenance associated with agricultural operations and flood control management.

The *State CEQA Guidelines* (CCR § 15125[e]) require that EIRs include a description of the baseline conditions that exist at the time of the Notice of Preparation/Initial Study, i.e., March

1, 2011. *State CEQA Guidelines* (CCR § 15126.6[e][2]) indicate that the No Project alternative may include some reasonably foreseeable changes in existing conditions and changes that would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and public services.

For this analysis, the No Action alternative assumptions are limited to existing conditions, programs and policies adopted by governmental and nonprofit entities during the early stages of development of the Final EIR, public and private facilities that would be permitted or under construction during the early stages of development of the Final EIR, and projections related to climate change that would occur with or without the proposed project or alternatives. Hence, these assumptions represent the continuation of the existing plans, policies, and operations and conditions that represent continuation of trends in nature. For example, over a longer period of time, lower portions of the Project site may become tidally flooded and thus unusable for agricultural production due to sea level rise or levee failure from a major seismic or storm event.

It is probable, based on observations subsequent to levee failures at Liberty Island and Little Holland Tract, that such flooded areas would revert naturally to wetland habitat, unless levees would be raised and/or repaired (pending regulatory approvals and permits) to prevent further tidal inundation and strengthened to withstand a major seismic or storm event.

5.3 Impacts Associated with Alternative No. 1

Hydrology Impacts: No Project Alternative

No changes in agricultural irrigation and drainage, flood flows, groundwater levels, or geomorphology (either onsite or offsite) would occur under the No Project alternative. None of the small levees or berms onsite would be affected, since no tidal connections would be constructed. No long-term operations and management impacts from the project would occur. Consequently, the impacts to flood water elevations under the No Project alternative would be less than those impacts attributed to the implementation of the Flyway Farms project and not require mitigation.

Gradual sea level rise may result in Delta waters slowly encroaching onto lower areas of the project site (i.e., providing sea level rise accommodation). For example, with half a foot of local sea level rise (i.e., a mean high higher water (MHHW) of +7 ft North American Vertical Datum of 1988 [NAVD88]), additional tidal inundation could occur on a larger portion of the Flyway Farm site. Depending on the rates of sea level rise, additional wetlands may be achieved. If sedimentation rates/carbon sequestration fail to keep up with increased rates of sea level rise over time, then the marsh plain would probably continue to fall and vegetation, unable to tolerate prolonged inundation, would transition from a marsh plain to a mudflat. In particular,

when suitable uplands are lacking or located behind levees, marshes are not able to migrate landward, resulting in marsh loss (Stralberg *et al*. 2011).

Due to local hydrology and topography of the project site, an average one inch rise in sea level would not necessarily equate to a one inch rise throughout the property, i.e., with a buffering effect occurring to some degree that the rise would be slower. Despite the inability to predict with certainty the precise impact to the Project site by sea level rising, it is fairly certain that without modifications to the existing water control structures such as levees and berms, sea level rise would likely further constrain summertime agricultural operations onsite in the future, under the No Project alternative.

Likewise, another scenario of the Project site becoming inundated by Delta waters could be from levee failure. Two such examples in recent times are the Liberty Island and Little Holland levee failures. Both have demonstrated a return to natural aquatic and wetlands habitats. For more information on these two events, refer to Table 4.10-2 in Section 4.10, Cumulative Impacts. Depending on which one of these future scenarios played out, hydrological impacts would range from no impact to potentially significant impact if not mitigated. Thus, as compared to baseline conditions (see Chapter 2), the No Project alternative may result in potentially significant hydrology impacts due to sea level rise and/or levee failure.

Water Quality Impacts: No Project Alternative

Under the No Project alternative, the project site would remain in its current condition with no restoration of tidal marsh; hence, the impacts to water quality under this alternative would be similar to current conditions. The potential benefits of the proposed project in terms of methylmercury (MeHg) loading reductions and increased organic matter exports to the Delta, which would enhance local food webs and aid in returning the water quality characteristics of the Delta to a more natural state, would not be realized. Discrete discharges of agricultural drain water from the site, which can have short-term temporary impacts on local water quality (e.g., dissolved organic carbon/total organic carbon [DOC/TOC], low dissolved oxygen [DO]/excessive biological oxygen demand [BOD]) in receiving waters, would continue at their present level, thereby resulting in a less-than-significant impact. Since no project operations and maintenance would be implemented under the No Project alternative, no long-term impact to water quality would occur.

Sea level rise would likely extend salinity intrusion from the San Francisco Bay further inland, but tidal marsh restoration in the Delta (including the proposed project) and the Suisun Marsh areas would likely reduce intrusion, because most of the restoration would be done away from the main axis of the estuary.

Terrestrial Biological Resources Impacts: No Project Alternative

With this alternative, the project site would remain in duck hunting and agricultural use and no conversion of irrigated agricultural lands or upland habitat to tidal wetland habitat would occur. Hence, the No Project alternative would result in no impact to terrestrial biological resources, both individually or cumulatively, in the short term. However, it would not result in any of the benefits of the project to such resources, including an increase in high value tidal wetland habitat. Lower value seasonal wetlands and limited perennial wetlands would likely persist on the site but would continue to support lower ecological functions under the current land-use regime. The site would continue to provide marginal foraging habitat for raptors including Swainson's hawk and aquatic areas for GGS and western pond turtle. Suitable habitat for special-status plants would be primarily limited to the tidal slough and channel edges.

Over a longer period of time, lower portions of the project site may become tidally flooded (either due to sea level rise or levee failure) and thus unusable for these sensitive biological species, resulting in a potentially significant impact. The proposed project's minimal long-term operations and management would not occur and would therefore lead to no impact on terrestrial biological resources under the No Project alternative.

Aquatic Biological Resources Impacts: No Project Alternative

The No Project alternative would not result in any physical changes to the aquatic environment, as there would be no new construction (e.g., excavation). Hence, no impacts would occur to aquatic biological resources with the No Project alternative.

However, the benefits of the project to aquatic resources in the Lower Yolo Bypass and Cache Slough Complex, including improving food web dynamics for the delta smelt and incrementally increasing the available aquatic habitat for fishes that utilize floodplains for spawning and rearing, such as Chinook salmon and Sacramento splittail, would not be realized. Potential water quality benefits of the project such as MeHg loading reductions that would aid in returning the water quality characteristics of the Delta to a more natural state, would also not be achieved.

Agricultural Resources: No Project Alternative

Existing agriculture and related uses, i.e., primarily winter waterfowl hunting, would continue onsite, since no conversion of farmlands to wetlands would occur. The No Project alternative would also not result in physical impacts related to consistency with the Williamson Act, or with the plans or policies adopted by the Delta Protection Commission (DPC) or Yolo County.

It is possible that a portion of the agricultural lands would diminish, over time, due to sea level rise or levee failures. Depending on how these future scenarios would play out, physical

impacts to agricultural resources would range from no impact to potentially significant impact if not mitigated under the No Project alternative.

Air Quality and Greenhouse Gas Emissions Impacts: No Project Alternative

Under this alternative, no project emissions, individually or cumulatively, would be emitted, i.e., dust, criteria air pollutants, or greenhouse gases (GHG) emissions. Air emissions would continue to emanate from the site as associated with agricultural use of the land and maintenance of the levees. However, the opportunity to increase sequestration of carbon and GHG from the atmosphere at the site would be lost with the No Project alternative.

Cultural Resources Impacts: No Project Alternative

This alternative would have no impact to cultural resources, including historic and archaeological resources, either individually or cumulatively, because there would be no major construction or operation of the proposed project.

Hazards and Hazardous Materials Impacts: No Project Alternative

No impacts would occur to existing hazards or hazardous materials either individually or cumulatively with the No Project alternative. This scenario would not introduce construction related contaminants, although unknown contaminants associated with past agricultural practices would still be present onsite. Known, isolated contaminated sites have been cleaned up. Potential hazards associated with removing/capping abandoned gas wells and relocating transmission lines that may contain leaking PCB transformers would not occur. This alternative would not affect hazards or contamination associated with active gas or water wells onsite. The proposed project's minimal long-term operations and management impacts would also not occur under the No Project alternative.

Energy Consumption Impacts: No Project Alternative

Energy consumption would continue in support of agricultural operations and flood control maintenance practices with the use of combustible-engine machinery and personal vehicles. No additional, temporary consumption from large-scale construction activities or project operations and maintenance-related consumption would transpire under the No Project alternative.

5.4 Description of Increased Excavation/Increased Restoration Footprint Alternative

Alternative No. 2 would be a somewhat larger habitat restoration version of the proposed project. This alternative is based on the original design plans for the Lower Yolo Restoration Project, including Flyway Farms (see Figure 5-1). This alternative requires an increased amount of earth-moving and soil disturbance to construct the wetlands. This alternative would result in a similar area of tidal wetland habitat restored compared to the proposed project but at a deeper intertidal elevation.

Alternative No. 2 would restore tidal flows to a portion of the site that is already within the intertidal range (+2.0 to +6.5 feet), and which are currently managed as winter waterfowl hunting through the use of water control structures. Increased excavation of this portion of the 362-acre Flyway Farms property (an additional approximately 120 acres) that is currently at an elevation of +6.0 feet or more, would change the tidal hydrodynamics on approximately one-third of the site, compared to the proposed project (Figure 5-1).

The wetland habitat created in this alternative would have a smaller percentage of higher elevation tidal marsh that is inundated less frequently. (In comparison, the project would restore tidal marsh that utilizes existing topography and would be at a higher intertidal elevation and, consequently, would be inundated less frequently.) The more frequently the marsh would be inundated, the more it is expected that direct utilization of the marsh by target aquatic species would take place. This direct utilization of the habitat by target species would benefit different life stages (for example, rearing habitat) when compared to the food web subsidy role fulfilled by the proposed project. Both the project and this alternative will benefit the target aquatic organisms but will do so in different ways.

As already noted, this alternative would require a greater amount of grading, approximately 193,000 cubic years of soil, than the proposed project. As in the project, the excavated soil would be trucked to the adjacent 80-acre disposal site, where it would be applied to the existing agricultural land.

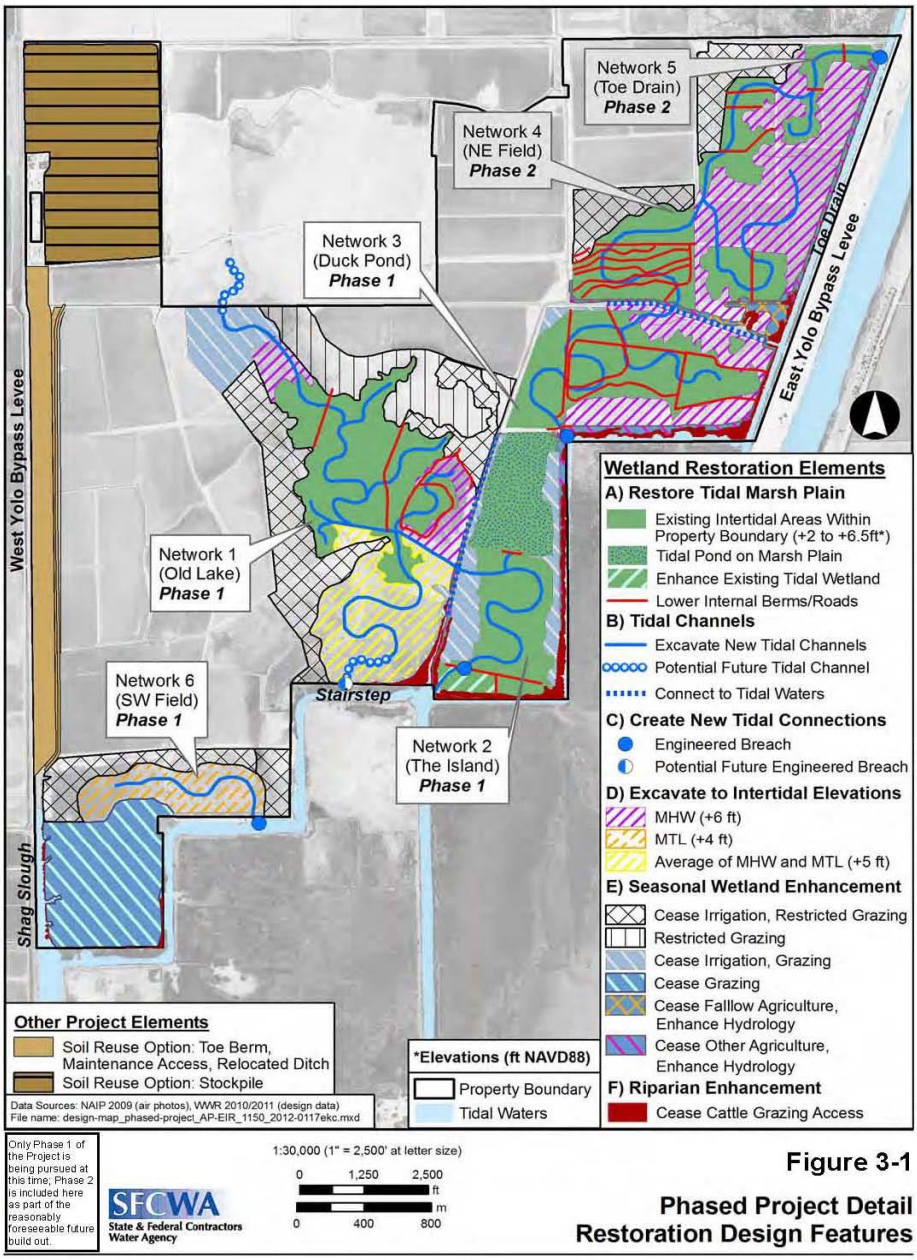
5.5 Impacts Associated with Alternative No. 2

Hydrology Impacts: Increased Excavation/Restoration Footprint Alternative

The potential impacts to hydrology onsite and offsite under the Increased Excavation/Increased Restoration Footprint alternative would be similar to the impacts associated with the project, but on a somewhat larger scale. Similarly, Alternative No. 2 would be designed to maintain agricultural irrigation and drainage capabilities as well as stormwater conveyance capacity on the project site and adjacent parcels to the north. The wetland restoration elements of this alternative would be expected to have similar reductions in Yolo Bypass flood elevations as the

Figure 5-1

Increased Excavation/Increased Restoration Footprint Alternative



project. As with the project, the Increased Excavation/Increased Restoration Footprint alternative would have no impact on local groundwater levels.

Gradual sea level rise may result in Delta waters slowly encroaching onto lower areas of the project site with or without implementing the Increased Excavation/Increased Restoration Footprint alternative. This additional tidal inundation could occur on approximately 120 acres of the project site. Depending on the rates of sea level rise, additional wetlands may be achieved. With the Increased Excavation/Increased Restoration Footprint alternative, it is expected that the wetland habitats restored onsite would be established enough to accommodate this rise, especially in the latter part of the 21st century. Sedimentation rates/carbon sequestration would aid in keeping up with the sea level rise, along with the final, gradually sloped topographic/geologic design of the networks and channels onsite. In addition, due to local hydrology and topography of the project site, an average one inch rise in sea level would not necessarily equate to a one inch rise throughout the property, i.e., with a buffering effect occurring to some degree that the rise would be slower.

It is important to note that the Second Appellate District held that CEQA does not require identification of significant effects of the environment, such as sea level rise, on a proposed project (*Ballona Wetlands Land Trust v. City of Los Angeles* and *Ballona Ecosystem Education Project v. City of Los Angeles*, No. B231965 [Cal. Ct. App. 2d Dist., November 9, 2011]). However, indirect effects by the alternative to accelerate or enhance impacts by sea level rise are relevant to CEQA analysis. The site lies within the Yolo Bypass where it is already inundated by substantial seasonal flooding events during the winter-spring rainy season. Also, most of the site is flat with one quarter of the site within intertidal ranges of +2 to +6.5 ft NAVD88. Whether or not the alternative is implemented onsite, sea level rise will still happen in the near future. The habitat restoration effort would be beneficial in dealing with this phenomenon. Consequently, the Increased Excavation/Increased Restoration Footprint alternative would accommodate the sea level rise within the networks and channels and would not indirectly accelerate sea level rise exposure to the remaining agricultural lands either onsite or offsite. Hence, no indirect impact by the Increased Excavation/Increased Restoration Footprint alternative would result on other agricultural lands onsite or on adjacent farmlands with predicted sea level rise.

Water Quality Impacts: Increased Excavation/Restoration Footprint Alternative

The potential water quality impacts would be the same for this alternative as under the project, but on a larger scale. With more conversion of seasonal marsh and irrigated pasture to tidal marsh, a similar increase in the benefit would be anticipated to the aquatic ecosystem of the Delta through organic matter exports and a return to a more natural state. More tidal marsh restoration could also increase the water quality benefits of the project with respect to MeHg concentration and loading reduction as less of the project site would remain as irrigated

pasture and managed wetland. Construction related impacts to water quality would be more of a concern than under the project, but continue to remain less than significant.

Terrestrial Biological Resources Impacts: Increased Excavation/Restoration Footprint Alternative

Under Alternative No. 2, the larger restoration area would yield a substantial amount of tidal marsh and intertidal channel habitat, providing important ecological functions. However, the wetland habitat created in this alternative would consist of more acreage of lower-elevation tidal marsh and thus on average the frequency and duration of inundation would be somewhat higher. Because this alternative would restore a larger area and excavate a larger volume of soil compared with the project, it would also require a longer duration and longer extent of construction-related activities. This alternative would thereby increase the period of temporary disturbance to multiple sensitive species that may use the site under its existing condition. Hence, temporary but potentially significant construction impacts would occur under this alternative and could affect wetland communities, special-status plants, GGS and their habitat, migratory and special-status birds with respect to their nesting habitats, and foraging habitats for Swainson's hawk and other special-status raptors. The overall impacts, both individually and cumulatively, would be increased slightly in magnitude from those of the project's impacts. As such, the same mitigation measures would be required (refer to Section 4.3, Terrestrial Biological Resources regarding Mitigation Measures 4.3-1 through 4.3-10) for Alternative No. 2.

With implementation of the proposed mitigation measures, construction-related and long-term operation and maintenance impacts by this alternative on terrestrial biological resources would all be less than significant after mitigation. Benefits of restoration under this alternative would also be incrementally increased in scale, and would provide substantial ecosystem functions to the Delta freshwater tidal-marsh-floodplain-seasonal wetland-lowland grassland interfaces.

Aquatic Biological Resources Impacts: Increased Excavation/Restoration Footprint Alternative

Under this alternative, an additional approximately 120 acres of tidal marsh would be restored and a larger amount of soil would be excavated. Though larger in size than the proposed project, Alternative No. 2 would restore a substantial amount of tidal marsh and intertidal channel habitat, providing important ecological functions. However, the wetland habitat created in this alternative would have a smaller percentage of higher elevation tidal marsh that is inundated less frequently. (In comparison, the proposed project would restore tidal marsh at higher elevations, which would be inundated less frequently.) The more frequently the marsh would be inundated, the more productivity from the marsh would be exported to open-water habitats; hence, this alternative would be more supportive for target species than the proposed project.

Since this alternative would restore a larger area and excavate a larger volume of soil, it would also require a longer duration and longer extent of construction-related activities, as well as a longer area inundated on a long-term basis. As a result, the benefits to aquatic organisms would also be incrementally increased in scale, and would provide a slightly increased net benefit in regional food web production and aquatic habitat for fishes that utilize floodplains for spawning and rearing. The Increased Excavation/Increased Restoration Footprint alternative would have potentially significant impacts, unless mitigated, related to potential construction activities– refer to Section 4.4.3 on Impacts to Aquatic Biological Resources and Mitigation Measures 4.4-1 and 4.4-2.

Agricultural Resources Impacts: Increased Excavation/Restoration Footprint Alternative

If the Increased Excavation/Increased Restoration Footprint alternative were to be implemented, the amount of active irrigated agricultural lands lost would be the same (about 0.4 acres) for the project and, with mitigation, would be less than significant. The Increased Excavation/Increased Restoration Footprint alternative would similarly be required to conform with local ordinances and the Williamson Act by seeking approval of an amended Williamson Act contract or other appropriate action to authorize open space use.

Air Quality and Greenhouse Gases Impacts: Increased Excavation/Restoration Footprint Alternative

Alternative No. 2 would involve a much greater amount of soils to be excavated rather than 67,000 cy removed under the proposed project. Thus, the air quality and GHG emissions for this alternative would be somewhat higher than those emissions calculated for the proposed project, resulting in potentially significant impacts from NOx and PM10 air pollutants during the construction phase. With implementation of Mitigation Measure 4.6-1, Alternative No. 2 would result in NOx and PM10 construction emissions that would not exceed the significance criteria established by the YSAQMD, and therefore the impact (both individually and cumulatively) would be less than significant.

For the post-construction phase, Alternative No. 2 would be similar in nature to that of the proposed project, i.e., less than significant. Vehicles and boats used for monitoring, inspections, and scientific sampling would not generate substantial amounts of air criteria pollutant emissions.

Construction activities would result in a small amount of carbon dioxide equivalent (MTCO2e) emissions – the major GHG pollutant, well below the 25,000 MTCO2e per year threshold (refer to threshold discussion in Section 4.6.2 for GHG) and thus construction of this alternative would result in a less-than-significant impact of GHG emissions.

In addition, converting from conventionally managed agricultural lands to emergent wetlands

could reduce long-term net GHG emissions. As described in Section 4.6, Air Quality, emergent tule marshes have the ability to sequester 11.5 MTCO2e per acre per year. This reduction would be greater than with the project, because more wetland acres would be created under this increased alternative.

Cultural Resources Impacts: Increased Excavation/Restoration Footprint Alternative

Cultural resources impacts, both individually and cumulatively, under this alternative would be similar to those associated with the project, i.e., potentially significant impacts for buried archaeological resources and unknown human burial resources. The same mitigations for the project would apply to this alternative (refer to Mitigation Measures 4.7-1 and 4.7-2). The residual impact with mitigation for the Increased Excavation/Increased Restoration Footprint alternative would then be less than significant.

Hazards and Hazardous Materials Impacts: Increased Excavation/Restoration Footprint Alternative

This alternative would have similar potentially significant impacts (both individually and cumulatively) as that of the project with respect to unknown contaminated soil/materials and potential hazards with natural gas wells and related pipelines. The same mitigations would apply, i.e., proposed Mitigation Measures 4.8-1 and 4.8-2 and would result in such impacts being less than significant.

Energy Consumption Impacts: Increased Excavation/Restoration Footprint Alternative

This alternative would require more energy used by the project in construction, due to increased earth-moving activities. Minor ongoing operation and maintenance energy use would be similar to that of the project. As with the project, this alternative's energy consumption would not be wasteful and would be less than significant.

5.6 Comparison of Alternatives

In comparing Alternative No. 1 (No Project alternative) with the project, the No Project alternative would not incur the several short-term, significant project construction impacts. There would be no or little loss of irrigated farmlands, but over time, sea level rise and/or possible levee failure may directly affect low lying farmlands at the project site. Several of the environmental issues examined in Chapter 4 (such as water quality, enhanced food web productivity, rearing habitats for out-migrating salmonids, etc.) would also not be improved over time and theoretically could contribute to a worsening of conditions affecting the overall ecological health of the Cache Slough Complex. Hence, Alternative No. 1 (No Project alternative) would not meet the project goals (enhance regional food web productivity in support of delta smelt recovery; provide rearing habitats for out-migrating salmonids; support a broad range of other aquatic and wetland-dependent species, including Sacramento splittail).

Alternative No. 2 would increase some of the proposed project's significant and potentially significant impacts. The Increased Excavation/Restoration Footprint alternative) would generate a different type of benefits for fish habitat (in terms of different life cycles of key aquatic species) but could cause greater potentially significant impacts to biological resources during construction and could cause greater impacts to air quality relating to NOx emissions (both individually and cumulatively).

However, the Increased Excavation/Increased Restoration Footprint alternative could also generate less significant impacts and more beneficial effects to water quality. More tidal marsh restoration could increase the water quality benefits with respect to MeHg concentration and loading reduction as less of the project site would remain as irrigated pasture and managed wetland.

Alternative No. 2 would impact the same small amount of irrigated wetlands used for agriculture (0.4 acres). Beneficial effects would also occur with the implementation of the proposed project or the Alternative No. 2 to the ecosystem associated with the aquatic and terrestrial habitats and those biological species found at the project site.

5.7 Environmentally Superior Alternative

The *State CEQA Guidelines* (CCR § 15126.6 [e][2]) require that the analysis of alternatives identify the "environmentally superior alternative" among all of those considered.

The proposed project would be a wetlands restoration project with its construction-related impacts mitigated to less than-significant levels with well-established mitigation strategies. The No Project alternative would eliminate these potential short-term impacts. However, this alternative would not meet the project goals and objectives and it would lack the longer-term environmental benefits of the project on water quality, fisheries, marsh and wetland habitat, and vector control. Hence, the No Project alternative would not be the environmentally superior alternative.

The Increased Excavation/Restoration Footprint alternative would increase construction air pollutant emissions, the loss of upland habitat for birds, DOC in receiving waters, and the potential for construction sediment release. However, this alternative would not substantially increase the significance level of any the proposed project's significant impacts except for NOx emissions. The Increased Excavation/Restoration Footprint alternative would generate similar benefits for fish habitat compared to the proposed project, although the beneficial water quality impacts of this alternative, as compared with the project, could be greater.

Accordingly, based on the analysis in this chapter, the proposed project alternative would be the environmentally superior alternative.

6 CEQA TOPICAL ALALYSES

6.1 Growth Inducing Effects

Setting

An environmental impact report (EIR) must describe any growth-inducing impacts of the proposed Project (California Environmental Quality Act [CEQA]: Public Resources Code [PRC], § 21100[b][5]; *State CEQA Guidelines*: California Code of Regulations [CCR] § 15126[d]). Growth inducement occurs when an action encourages growth or removes impediments to growth, ultimately causing either direct or indirect changes to the physical environment.

The project site is located in the unincorporated area of Yolo County. This jurisdiction encourages and directs growth, i.e., urban development, through its land use policies towards incorporated cities and unincorporated communities such as Capay, Clarksburg, Dunnigan, Esparto, Guinda, Knights Landing, Madison, and Yolo (County of Yolo 2009). The highest population and housing densities currently are in the City of Davis and the adjacent University of California at Davis, with its large student population, followed by the City of West Sacramento. Yolo County has a high jobs/housing ratio, with much of the employment located in the cities of Davis and West Sacramento (SACOG 2012).

From a regional perspective, the Sacramento Area Council of Governments (SACOG) provides transportation planning and funding in its six-county jurisdiction (which includes Yolo County). It also serves as a forum for the study and resolution of regional issues, including growth and regional forecasting for population and housing.

In April 2012, SACOG certified its Final Environmental Impact Report (Final EIR) and approved the Metropolitan Transportation Plan/Sustainable Communities Strategy 2035 (MTP/SCS). SACOG's MTP/SCS identifies a growth pattern in the greater Sacramento region that will accommodate forecasted population and employment growth, a transportation system that is appropriate for the growth pattern, and policies and strategies that will support the implementation of this plan (SACOG 2012).

Regional planning efforts also include water supply assessments and urban water management plans. A number of agencies (e.g., municipalities, water districts, county service areas, and community service districts) provide water supplies throughout Yolo County. In particular, the North Delta Water Agency studies and implements programs in parts of Yolo, Sacramento, San Joaquin, and Solano counties. The North Delta Water Agency studies and identifies programs to protect the water supply from salt water intrusion, and assures a dependable and adequate water supply and quality to meet the present and future needs of the lands within the agency's jurisdiction (SACOG 2012).

Additionally, the boundaries of the Solano County Water Agency include not only the entire County of Solano, but also the property of the University of California at Davis in Yolo County and about 2,800 acres of Reclamation District No. 2068 that is also in Yolo County. Both agencies must anticipate for and provide water supply planning in conjunction with the land use agencies, both at the local and regional levels.

Significance Criteria

The CEQA statute requires that an EIR evaluate the ways in which the project could directly or indirectly foster economic or population growth or the construction of new housing in the surrounding environment (*State CEQA Guidelines*: CCR § 15126.2[d]). The Guidelines note that "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." Therefore, the nature of the effects of any induced growth also must be considered to determine, if the impacts of that growth are potentially significant.

Equally important, the *State CEQA Guidelines* (CCR § 15064[d][3]) also declare that an indirect physical change is to be considered only if that change is "a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable."

Pursuant to CCR § 15126.2(d) of the *State CEQA Guidelines*, a project may have a growth-inducing effect (either direct or indirect) if it would:

1. Foster economic or population growth or the construction of additional housing, either directly or indirectly in the surrounding environment.
2. Remove obstacles to population growth.
3. Require the construction of additional community service facilities that could cause significant environmental effects.
4. Encourage and facilitate other activities that would significantly affect the environment, either individually or cumulatively.

Some projects may be considered growth inducing, while others may be growth accommodating (i.e., they are intended to support planned growth identified by local, regional, or state agencies with land use authority, but do not induce that growth). The distinction here is primarily whether or not a project removes an obstacle to growth. If growth is already planned for in a jurisdiction's general plan, then infrastructure supporting that development is growth accommodating rather than growth inducing. When a planned development cannot move forward absent a particular infrastructure project, or the development is substantially encouraged by that infrastructure, then that project is generally considered growth inducing.

Impacts

Impact 6.1-1: Foster Economic or Population Growth or Additional Housing Construction

The regional impacts of growth have been previously addressed in planning documents and related CEQA analyses (e.g., environmental impact reports) by regional and local planning agencies, such as SACOG and Yolo County. In turn, water agencies, such as the North Delta Water Agency and the Solano County Water Agency, use this information for their planning purposes and forecasted demands. Urban water management plans are developed by the local water purveyors that describe strategies for meeting this projected demand. Such strategies are then implemented as appropriate to accommodate the projected demand.

As a wetlands restoration effort, the project would not substantially affect growth, since it would not create new housing or infrastructure. There would be a short-term effect from construction expenditures on the project, because it would employ construction workers. In a preliminary economic study commissioned for the larger Lower Yolo project, between 250 and 304 full-time equivalent (FTE) numbers of labor would be generated by the project; such positions would involve performing biological and water quality monitoring activities onsite, primarily in the first few years of operation, lessening thereafter as monitoring results were evaluated (M.Cubed 2012). The Flyway Farms portion of that projected labo fore would be much less. No long-term loss of employment on the project site would be expected, as it is anticipated that current agricultural labor lost to habitat restoration would be supplanted by habitat land management responsibilities utilizing the same personnel.

Accordingly, a beneficial effect would result in the economic growth within the County of Yolo. Besides the restoration efforts, the project would partially fulfill the biological opinions (BiOps) requirement of 8,000 ac of habitat restoration for the delta smelt and salmonids in conjunction with the continued, existing operations (OCAP) of the Central Valley Project (CVP) and State Water Project (SWP) facilities, and not their expansion. Hence, no impact (either direct or indirect) would result, because the project would not foster new growth into the region (i.e., new housing or related infrastructure).

Impact 6.1-2: Remove Obstacles to Population Growth

The project would not remove obstacles to growth, because development on the project site is already heavily restricted due to flooding constraints and building code requirements in the Yolo Bypass. The proposed project would not include any policies that would increase the development of housing, or that would cause utility services or roadways to be extended into regions that currently lack them. Accordingly, no impact would result in reducing obstacles to population growth with Project implementation.

Impact 6.1-3: Require Additional Community Service Facilities

Where increases in population for the Yolo County area are projected to occur, investments will be needed in new public facilities and infrastructure, including roads and transportation facilities, water and sewer treatment facilities, fire and police stations and schools. Construction of these public facilities and infrastructure would not be dependent on the proposed project, and would in fact proceed regardless with appropriate environmental reviews and regulatory permits.

Water related facilities are planned and constructed by the area's water agencies to meet the forecasted demands, as determined by population growth and other factors (such as restrictions in building within the floodways). Additionally, Yolo County has local land use policies that direct growth away from undeveloped areas. Hence, no impact would result with Project implementation, in connection with the planned construction of additional community service facilities by other agencies within the project's area.

Impact 6.1-4: Encourage and Facilitate Other Activities that Significantly Impact Growth

The project would generate construction jobs, but this would be a short-term, temporary effect (i.e., less than one year), and some permanent jobs for several years related to monitoring and other scientific activities. This positive economic effect by the project would not provide substantial economic growth to the region, requiring the addition of other facilities or endeavors that would favor growth inducement.

The proposed project is one of several wetland restoration projects that have either been constructed or are planned or proposed in the Delta region either through the CALFED Bay-Delta Program, through natural causes, or as in the case of the Project to partially fulfill the BiOps issued by the U.S. Fish and Wildlife Service and National Marine Fisheries Service for the continued operations of the CVP and SWP. Development of the project would not induce development of other similar projects, because each project would be subject to distinct site constraints, permitting challenges, environmental constraints, and economic considerations. Project-specific impacts and cumulative impacts for this project combined with related projects can be found in Section 4.10. Therefore, the project would not individually or cumulatively facilitate growth inducement (either directly or indirectly) and would result in no impact.

Mitigation Measures

Because none of the growth-inducing impacts listed in Section 6.1.3 would be significant or potentially significant, no mitigation measures would be required with Project implementation.

6.2 Unavoidable Significant Adverse Impacts

An EIR must address potentially significant or significant impacts to the physical environment that cannot be avoided if a project would be implemented (CEQA: PRC § 21100[b][2][A]). Under each environmental resource topic, significant adverse impacts identified have been analyzed in detail with proposed mitigation (refer to Chapter 4) per *State CEQA Guidelines*: CCR § 15126.2(b). All such impacts would be mitigated to levels that would be less than significant. Hence, no unavoidable significant adverse impact would occur or persist with Project implementation.

6.3 Effects Not Found to be Significant

The *State CEQA Guidelines* (CCR § 15128) requires that an EIR briefly discuss the reasons why various environmental resource topics were not deemed significant and therefore not discussed in any detail in the EIR. For this subsection, summaries from both the Notice of Preparation/Initial Study (NOP/IS) and the Draft EIR are provided that support the impact determinations of either none or less than significant for the environmental resources/impact topics identified below.

6.4 Effects Described as None in the Notice of Preparation

An NOP/IS for the proposed Project was prepared and processed in March 2011. The NOP/IS identified the following environmental resource topics and subtopics that would not be affected by the proposed project:

Aesthetics. Substantially damage scenic resources (Initial Study, p. 27).
Agriculture and Forestry Resources. Conflict with existing zoning of forest land or result in the loss of forest land (*id.*, pp. 32-33).
Air Quality. Exposure to sensitive noise receptors or create odors (*id.*, pp. 36-37).
Biological Resources. Conflict with local ordinances or with HCPs/NCCPs (*id.*, p. 51).
Geology and Soils. Exposure to earthquakes and landslides, locate on expansive soils, or placement on soils incapable of supporting wastewater systems (*id.*, pp. 55-59).
Greenhouse Gas Emissions. Conflict with adopted greenhouse gas reduction plans (*id.*, p. 60-61).
Hazards and Hazardous Materials. Emit hazardous emissions, cause a safety hazard at either a public use airport or private airstrip, interfere with emergency plans or access, or create potential risk of exposure to wildland fires (*id.*, pp. 66-67).

7 REPORT PREPARATION

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Chapter 5: Alternatives

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