

3 APPROACH TO THE ANALYSIS

3.1 INTRODUCTION

This chapter discusses common terminology used in this EIS/EIR, its organization, the approach taken to define existing conditions and analyze the effects of the alternatives.

3.2 NEPA AND CEQA REQUIREMENTS FOR ENVIRONMENTAL ANALYSES

Both an EIS prepared under the National Environmental Protection Act (NEPA) and an EIR prepared under the California Environmental Quality Act (CEQA) are public disclosure documents to ensure environmental factors are considered during the governmental decision-making process.

The Council on Environmental Quality (CEQ) regulations for implementing NEPA specify that a federal agency preparing an EIS must consider the environmental effects of the proposed action and alternatives, and the significance of those effects. These include effects on ecological, aesthetic, historical, and cultural resources and economic, social, and health effects. Environmental effects include direct, indirect, and cumulative effects. An EIS also must discuss possible conflicts with the objectives of federal, state, regional, and local land use plans, policies, or controls for the area concerned; energy requirements and energy conservation potential; urban quality; the relationship between short-term uses of the environment and long-term productivity; and irreversible or irretrievable commitments of resources. An EIS must identify relevant, reasonable mitigation measures not already included in the proposed action or alternatives that could avoid, minimize, rectify, reduce, eliminate, or compensate for the project's adverse environmental effects (40 CFR 1502.14, 1502.16, 1508.8).

The State CEQA Guidelines for implementing CEQA affirm that the environmental analysis for an EIR must evaluate impacts associated with the project and identify mitigation for any potentially significant impacts. All phases of a proposed project, including construction and operation, are evaluated in the analysis. Section 15126.2 (a) of the State CEQA Guidelines states:

An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR also must discuss inconsistencies between the proposed project and applicable general plans and regional plans (State CEQA Guidelines Section 15125[d]).

An EIR must describe any feasible measures that could minimize significant adverse impacts, and the measures are to be fully enforceable through permit conditions, agreements, or other legally binding

instruments (State CEQA Guidelines Section 15126.4[a]). Mitigation measures are not required for effects that are found to be less than significant.

3.3 APPLICATION OF NEPA AND CEQA PRINCIPLES AND TERMINOLOGY IN THIS EIS/EIR

While many concepts are common to NEPA and CEQA, there are several differences between the two in terminology, procedures, environmental document content, and substantive mandates to protect the environment. For this EIS/EIR, the more rigorous of the two laws was applied in cases in which NEPA and CEQA differ. Table 3-1 compares NEPA and CEQA terminology.

NEPA Term	Correlating CEQA Term
Environmental Impact Statement	Environmental Impact Report
Notice of Intent	Notice of Preparation
EPA Filing/Federal Register Notice and Agency/Public Review (also known as a Notice of Availability)	Notice of Completion/Notice of Availability
Record of Decision	Certification, Findings, Statement of Overriding Considerations, and Notice of Determination
Lead Agency	Lead Agency
Cooperating Agency	Responsible Agency
Purpose and Need Statement	Project Objectives
Action	Project
Proposed Action and Alternatives	Proposed Project and Alternatives
No Action Alternative	No Project Alternative
Affected Environment	Environmental Setting
Effect	Impact
Environmental Consequences	Impact Assessment

This EIS/EIR uses both NEPA and CEQA terminology in certain instances (e.g., in Chapter 1 where the purpose and need statement, and underlying project objectives are discussed). The discussion of environmental consequences, generally a NEPA term, is also known as *environmental impacts* or *environmental effects*. Although these terms are often considered to be synonymous (e.g., 40 CFR 1508.8), this EIS/EIR frequently uses the phrase “environmental effects” (instead of environmental impacts).

There are additional key similarities and differences between NEPA and CEQA that are relevant to this EIS/EIR:

1. Baseline for Impact Analysis – For the purposes of NEPA and CEQA, the baseline is existing conditions.
2. No Action Alternative Analysis – For the purposes of NEPA and CEQA, the No Action Alternative is compared to existing conditions.
3. Proposed Action Analysis – For the purposes of NEPA, the Proposed Action is compared to the No Action Alternative. For the purposes of CEQA, the Proposed Action is compared to existing conditions.

4. Alternatives Analysis – For the purposes of NEPA, the Reduced Take Alternative and the Reduced Development Alternative are compared to the No Action Alternative. For the purposes of CEQA, the Reduced Take Alternative and the Reduced Development Alternative are compared to the Proposed Action.
5. Cumulative Effects Analysis – The cumulative effects analysis will follow the same approach as described above in bullet #3 for the proposed action analysis.

This EIS/EIR is drafted to address the distinct legal requirements of NEPA and CEQA, as set forth above. Issuance of ITPs by the Wildlife Agencies—together with subsequent adoption and implementation of the Yolo HCP/NCCP (or Plan) by the Applicants consistent with the Permits—is the Proposed Action considered in this EIS/EIR. The Applicants developed the Proposed Action in coordination with the Wildlife Agencies. The Proposed Action is intended to address the conservation needs of the Covered Species based on implementation of five categories of Covered Activities: urban projects and activities, rural projects and activities, public and private operations and maintenance, implementation of the conservation strategy and covered activities on reserve lands, and implementation of the neighboring landowner protection program. Chapter 2, *Proposed Action and Alternatives* describes the Covered Activities in more detail. This EIS/EIR is being circulated for review along with the draft Plan. The draft Plan is incorporated by reference into this EIS/EIR.

All Covered Activities are subject to the approval authority of one or more of the Applicants with jurisdiction over such projects. Issuance of permits by the Wildlife Agencies provides compliance only with the Federal Endangered Species Act (FESA) and Natural Community Conservation Planning Act (NCCPA). Approval of the proposed HCP/NCCP does not confer or imply approval to implement the Covered Activities. Rather, as part of the standard approval process, individual projects will be considered for further environmental analysis and generally will receive separate, project-level environmental analysis under CEQA and, in some cases, NEPA for those projects involving federal agencies. This EIS/EIR is intended to provide compliance with CEQA and NEPA for all Covered Activities regarding impacts to covered species and other biological resources that would be authorized by a Section 10(a)(1)(b) permit pursuant to the FESA and Section 2835 of the NCCPA chapter of the Fish & Game Code. As the Proposed Action facilitates the Covered Activities by addressing certain of the various statutory and regulatory requirements tied to project authorization, reasonably foreseeable environmental effects of the Covered Activities are discussed herein to provide context for the analysis of the Proposed Action and various alternatives.

Under the No Action Alternative:

- ▲ Biological resource impacts from take associated with development and other related activities would be considered on a case-by-case basis, with no regional framework for impact avoidance and minimization.
- ▲ Biological resource mitigation would be considered on a case-by-case basis, with various types of mitigation measures including compensatory mitigation in offsite areas. There would be no established regional framework for conservation of natural communities and preservation of habitat linkages.
- ▲ There would be no added conservation values beyond the specific mitigation required for each individual project.

Under the Proposed Action Alternative effects on biological resources from take associated with lawfully undertaken covered activities are examined assuming implementation of the HCP/NCCP.

Under the discussion of the Proposed Action Alternative in each impact analysis chapter, the effects of adoption and implementation of the Plan are compared to No Action Alternative for NEPA purposes and to existing conditions for CEQA purposes.

Under the discussions of the Reduced Take Alternative (Alternative C) and the Reduced Development Alternative (Alternative D) in each impact analysis chapter, the effects of each alternative are compared to

No Action Alternative (Alternative A) for NEPA purposes, and to the Proposed Action Alternative (Alternative B) for CEQA purposes.

3.4 RESOURCE TOPICS CONSIDERED

A key issues analysis was completed early in the EIS/EIR planning process to identify environmental resource topics warranting analysis in the EIS/EIR. The list of potential resources considered was derived from the Council on Environmental Quality regulations for implementing NEPA, Appendix G of the CEQA Guidelines, and input received from the public during the project scoping period. The key issues analysis identified the following resources that could be affected by the proposed action or alternatives or were identified during scoping as resources of concern and will be addressed in the following EIS/EIR chapters:

- ▲ Chapter 4 – Biological Resources
- ▲ Chapter 5 – Land Use
- ▲ Chapter 6 – Agricultural and Forestry Resources
- ▲ Chapter 7 – Public Services and Utilities
- ▲ Chapter 8 – Recreation and Open Space
- ▲ Chapter 9 – Hydrology and Water Quality
- ▲ Chapter 10 – Population and Housing
- ▲ Chapter 11 – Socioeconomics and Environmental Justice
- ▲ Chapter 12 – Cultural and Paleontological Resources
- ▲ Chapter 13 – Transportation
- ▲ Chapter 14 – Noise
- ▲ Chapter 15 – Air Quality
- ▲ Chapter 16 – Climate Change
- ▲ Chapter 17 – Geology, Soils, and Mineral Resources
- ▲ Chapter 18 – Visual Resources
- ▲ Chapter 19 – Hazardous Materials

3.5 CONTENTS OF RESOURCE CHAPTERS

Each resource chapter contains the following information:

- ▲ Affected Environment includes two sections, “Regulatory Setting” and “Environmental Setting.” These sections include the following information.
 - **Environmental Setting.** This section provides an overview of the most current available information on physical environmental conditions in the area at the time of preparation of the publication of the Draft EIS/EIR that could be affected by implementation of the proposed action and alternatives in accordance with NEPA regulations (40 CFR 1502.15) and State CEQA Guidelines Section 15125.
 - **Regulatory Setting.** This section lists and describes applicable laws, regulations, and policies that affect the resource addressed in the particular chapter, or the assessment of effects on the resource.
- ▲ Environmental Consequences describes the analysis and potential effects for each resource topic. This section includes:
 - **Methodology and Significance Criteria.** This section describes the methods, models, process, procedures, data sources, and/or assumptions used to conduct the effect analysis. Where possible, effects are evaluated quantitatively. Where quantification is not possible, effects of each alternative are evaluated qualitatively. This section also provides the criteria used in this document to define the

level at which an effect is considered significant in accordance with CEQA. Significance criteria (sometimes called *thresholds of significance*) used in this EIS/EIR are based on CEQA's mandatory findings of significance (as summarized in State CEQA Guidelines Section 15065); the checklist presented in Appendix G of the State CEQA Guidelines; and where appropriate, factual or scientific data and regulatory standards of federal, state, and local agencies. The significance criteria are applied to each effect to reach a significance conclusion (e.g., significant effect, less than significant effect). While CEQA requires a determination of effect significance for each effect discussed in an EIR based on the significance criteria, NEPA does not necessarily require this for an EIS. Under NEPA, preparation of an EIS is triggered if a federal action has the potential to "significantly affect the quality of the human environment," which is based on the context and intensity of each potential effect. The significance thresholds used in this EIS/EIR also encompass the factors taken into account under NEPA to evaluate the context and the intensity of the effects of an action. If all, or a portion of a significance criteria are not applicable to the Proposed Action and alternatives, this is identified in a subsection titled *Issues Not Evaluated Further*.

- **Effects of Proposed Action and Alternatives.** This section evaluates the effects of each EIS/EIR alternative. For the action alternatives (i.e., the Proposed Action Alternative, Reduced Take Alternative, and Reduced Development Alternative), there are typically separate discussions and effect conclusions for each applicable significance criterion. The discussions are separated by a subheading with a short-name for each effect analysis, such as **Effect VIS-2: Potential Damage to Scenic Resources**. At the end of each discussion, the analysis will include a significance finding in **bolded** text.

For describing the No Action Alternative, the CEQA and NEPA basis of comparison is existing conditions. For the No Action Alternative, in each resource chapter, there is a discussion of the future condition of the resource without the Plan. This is compared to existing conditions to provide a description of the environmental effects of the No Action Alternative.

Under NEPA, the basis of comparison for the Proposed Action Alternative is the No Action Alternative. The No Action Alternative "provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the action alternatives" (40 CFR 1502.14[d]; Forty Questions No. 3). Under CEQA, however, the basis of comparison for the Proposed Action Alternative is existing conditions (i.e., the information presented in the Environmental Setting of that resource chapter). To best satisfy the requirements of both laws, impact conclusions for the Proposed Action Alternative are provided based on both a comparison with the No Action Alternative "benchmark" under a header titled "NEPA Level of Significance" and the existing condition baseline under a header titled "CEQA Level of Significance." For the NEPA analysis of the Reduced Take Alternative and Reduced Development Alternative, effects are identified based on a comparison with the No Action Alternative, per the typical approach used under NEPA, under a header titled "NEPA Level of Significance." For the CEQA analysis of the Reduced Take Alternative and the Reduced Development Alternative, effects are identified based on a comparison to the Proposed Action Alternative, the typical approach under CEQA, under a header titled "CEQA Level of Significance."

The effects of all EIS/EIR alternatives are analyzed over a 50-year study period. This study period was selected primarily because the Proposed Action Alternative includes a 50-year permit term. Although the reserve system established under the Proposed Action Alternative would be managed and monitored in perpetuity, the adverse effects of the Proposed Action Alternative would occur from the Covered Activities implemented during the 50-year permit term. To present a consistent analysis for the No Action Alternative, the Reduced Take Alternative, and the Reduced Development Alternative, the same 50-year study period was used for all alternatives.

Cumulative Effects. The impact analysis for each alternative in each resource chapter (Chapters 4 – 19) includes a discussion of cumulative effects after the discussion of alternative specific effects. The incremental effects of each EIS/EIR alternative is added to the effects of other past, present, and reasonably foreseeable future projects/actions, and a conclusion is presented as to whether

there is a significant contribution to a significant adverse cumulative effect. Refer to Section 3.6, *Cumulative Effects Analysis Methodology*, for a detailed description of how cumulative effects are analyzed throughout the EIS/EIR. When there are specific approaches or assumptions for cumulative effects unique to a specific resource area, they are described under the Methods and Assumptions in that resource area section.

Under NEPA, the cumulative effects of the Proposed Action are compared to the No Action Alternative. Under CEQA, the cumulative effects of the Proposed Action are compared to existing conditions. Also under NEPA, the cumulative effects of the Reduced Take Alternative and the Reduced Development Alternative are compared to the No Action Alternative. Under CEQA, the cumulative effects of the Reduced Take Alternative and the Reduced Development Alternative are compared to the Proposed Action.

Mitigation Measures. Both NEPA and CEQA require presentation of mitigation measures. Mitigation under both CEQ's NEPA Regulations and the State CEQA Guidelines is defined as either avoiding the impact, minimizing the impact rectifying the impact, reducing or eliminating the impact over time, or compensating for the impact (40 CFR 1508.20; State CEQA Guidelines 15370). CEQ's NEPA Regulations require the EIS to specifically include a discussion of a means to mitigate adverse environmental effects (if not covered in the alternatives). CEQA requires the EIR to present all feasible mitigation for significant adverse impacts (Section 15126.4). Therefore, measures to mitigate effects considered adverse or significant are provided, as necessary, with the effect discussions. Each mitigation measure (MM) will be listed numerically and sequentially (e.g., MM BIO-1a, MM BIO-1b, MM BIO-2a, etc.).

Mitigation Measures, where needed, are provided immediately following each effects discussion, if measures are required to address a significant direct, indirect, and/or cumulative effect. The significance of the effect after applying the mitigation measure is then presented.

- ▲ References and sources of information used in preparing each EIS/EIR chapter are provided in Chapter 23, *References*.

3.6 CUMULATIVE EFFECTS ANALYSIS METHODOLOGY

This section describes the cumulative effect analysis methodology common to the evaluation of cumulative effects for resource topics analyzed in Chapters 4 through 19. Any approaches or assumptions for cumulative effects analysis that are specific to one resource area are described in the Methods and Assumptions section in that resource area chapter.

3.6.1 Definition of Cumulative Effects/Impacts

Both NEPA regulations (42 USC 4321 et seq.) and the CEQA statute (CCR 15000 et seq.) require environmental documents consider cumulative effects of a proposed action. NEPA regulations define a "cumulative impact" as an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions; cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (CEQ 2005). NEPA requires that the cumulative analysis assess the direct and indirect effects of the alternative on the affected environment, when added to the total sum of the past, present, and the reasonably foreseeable future actions (CEQ 2005).

The CEQA Guidelines define a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts

can result from individually minor but collectively significant projects taking place over a period of time” (14 CCR 15355). The CEQA Guidelines require environmental documents evaluate whether a project’s incremental effect is cumulatively considerable. Cumulatively considerable, as defined in CEQA Guideline Section 15355, means that the “incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”

This document analyzes cumulative effects in compliance with the requirements of both NEPA and CEQA.

3.6.2 Cumulative Effect Approach

Under NEPA, agencies are encouraged to evaluate proposed actions in context with actions occurring in the same general location or which have relevant similarities (40 CFR 1502.4). The CEQA Guidelines identify two basic methods for establishing the cumulative environment in which a project is considered: (1) the use of a list of past, present, and probable future projects; or (2) the use of projections from an adopted local, regional, or state-wide plan, such as a general plan; another regional planning document; or a certified EIR for such a planning document (14 CCR 15130).

In compliance with both NEPA and CEQA, the cumulative analysis of each action alternative uses a two-pronged approach. Within the Plan Area, the analysis considers reasonably foreseeable past, present, and future projects/actions as described below in Section 3.6.3, *Past, Present, and Reasonably Foreseeable Actions/Projects Considered in the Cumulative Effects/Impacts Analysis*. Where the cumulative analysis must consider more regional effects, this EIS/EIR may use a combination of reasonably foreseeable projects (such as nearby HCPs or NCCPs) as well as SACOG growth projections to estimate the cumulative effects related to projects/actions outside of the Plan Area. For resources where quantitative information is available, a quantitative analysis is provided; otherwise, a qualitative cumulative effect analysis is provided.

The significance criteria used in each resource chapter to determine the significance of an alternative’s effects on the resource are also applied to the evaluation of cumulative effects. When considered in the context of other present and probable future projects, an alternative’s contribution to cumulative effects for some resources could be significant, while the identified direct and indirect effects of the action alone are considered less than significant.

3.6.3 Past, Present, and Reasonably Foreseeable Actions/Projects Considered in the Cumulative Effects/Impacts Analysis

The following discussion describes the past, present, and reasonably foreseeable activities that have occurred or may occur within the Plan Area over the 50-year study period.

PAST AND PRESENT ACTIONS IN THE PLAN AREA

As described in Chapters 4 through 19, the affected environment in the Plan Area (and the region) has been shaped by past and ongoing land uses and other activities that have influenced environmental conditions. This section provides a brief summary of these past and ongoing land uses and activities that have contributed to (and continue to contribute to) cumulative effects.

Agriculture and Urban Development

Land conversion in the Plan Area includes the conversion of natural lands to farmland and the subsequent conversion of farmland to urban and rural residential uses. In addition, land conversion includes the conversion of farmland with high habitat value to farmland with low habitat value (e.g., the conversion of row crops to orchards and vineyards). Land conversion can also include the direct conversion of natural lands to

urban and rural residential uses. The conversion of farmland back into natural lands has also occurred, although this is less common.

Agricultural lands in the Plan Area represent an altered landscape that retains little resemblance to the historical (pre-European settlement) condition. Formerly consisting of extensive grasslands, wetlands, broad riparian systems, and oak woodlands, the conversion to agriculture has removed a large portion of these natural communities. However, while generally supporting less wildlife diversity compared with most natural communities, some agricultural systems, if managed properly, can continue to support abundant wildlife and provide essential breeding, foraging, and roosting habitat for many resident and migrant wildlife species. In the Plan Area, cultivated land provides important habitat value for many special-status species and species of local concern, including Swainson's hawk, white-tailed kite, tricolored blackbird, and giant garter snake. In many locations, growers have enhanced field edges with hedgerows that provide habitat and refugia for common wildlife species that provide prey for Swainson's hawk and other raptors. However, the development of orchards and vineyards has reduced or eliminated habitat for many species whose habitat requirements are not compatible with these agricultural landscapes. In addition, the land disturbances associated with farming have contributed to sedimentation of waterways, and use of fertilizers and pesticides (including rodenticides) also have contributed to water pollution and may have contributed (directly and indirectly) to species mortality.

Similarly, grazing has altered or degraded habitat conditions for many species through conversion of some natural habitats to grassland and savannah, adverse effects on water quality, and promoting conditions for non-native plant species. However, appropriately managed grazing and rangeland can be compatible with the habitat needs many plant and wildlife species.

Since 1984, slightly over 10,000 acres of farmland, and grazing land in the Plan Area has been converted to urban development (California Farmland Conservation Report 2015, California Department of Conservation). This conversion comprises less than 2 percent of the Plan Area, but has contributed to an incremental decrease in available habitat for species that utilize these land covers. Urbanization has also resulted in indirect effects to plants and wildlife such as noise disturbance, disruption of habitat linkages, and degradation of water quality. However, Yolo County and the four cities within the county have a longstanding commitment to the preservation of agricultural lands and open space, encapsulated in both county and city planning documents. These plans limit the geographic expansion of new development by concentrating growth in the urban areas and maintaining large areas of cultivated land and open space between the cities and towns.

Infrastructure Development and Operation

Urban and agricultural development in the Plan Area has been accompanied by the development of infrastructure to support these land uses. Some of the major infrastructure development activities and general effects on species and their habitats are described below.

- ▲ **Water Supply Development.** The domestic water supply in the County is obtained from both surface water and groundwater resources. There are numerous surface water diversions in the Plan Area from the major rivers and creeks, most of which support agricultural irrigation. Agriculture depends on a reliable irrigation water supply from a combination of groundwater and surface water; in most years, surface water is the primary source of irrigation water in Yolo County. Primary sources of surface water in Yolo County are Cache Creek, the Sacramento River, Putah Creek, the Yolo Bypass (including the Tule Canal/Toe Drain), Willow Slough, and the Tehama-Colusa Canal.

There are several major dams upstream of the Plan Area that allow for storage of upstream runoff for use in the Plan Area, including Monticello Dam on Putah Creek and Capay Diversion Dam and Cache Creek Dam on Cache Creek. Portions of Cache Creek and the North Fork of Cache Creek also provide hydroelectric power generation. These dam projects substantially changed flows downstream of the dams.

- ▲ **Restoration Projects.** Several restoration programs, such as the Yolo Bypass Wildlife Area, have worked to restore habitat in Yolo County. These types of restoration projects involve the rehabilitation of natural

processes related to hydrology, stream channels, sediment, floodplains, and ecosystem water quality and develop habitat management and restoration actions, including restoration of river corridors, reconstruction of channel floodplain interaction, and restoration of aquatic habitat.

- ▲ **Flood Control Projects and Planning Efforts.** Levee systems, flood bypasses, and the larger dams have been developed to provide flood protection for farmlands and communities in the Plan Area. Extensive work has been undertaken to bolster flood protection for urban areas, which require a higher level of protection than agricultural areas. Past and present flood control projects and planning efforts within the Plan Area include the following.
 - **Central Valley Flood Protection Plan.** The California Department of Water Resources prepared the Central Valley Flood Protection Plan (CVFPP), which was adopted in June 2012. The CVFPP provides a comprehensive framework for system-wide flood management and flood-risk reduction in the Central Valley. The CVFPP also addresses the standard of 200-year flood protection for urban areas in the Central Valley, originally established in Senate Bill 5 (2007), and describes actions to achieve this standard by 2025. Several recent levee projects, particularly in West Sacramento, are intended to help achieve this 200-year level of flood protection. The Lower Sacramento River/Delta North Regional Flood Management Plan is a more focused regional plan that encompasses the HCP/NCCP Plan Area and supports local implementation of the CVFPP. The CVFPP is updated every 5-years, with a 2017 version currently in preparation.
 - **The Sacramento River Flood Control Project.** This project consists of a system of weirs and flood relief structures that allow high flows in the Sacramento River to flow into adjacent basins. The basins are designed to contain flood waters and channel them downstream, to eventually be conveyed back into the Sacramento River. The Yolo Bypass is a key element of the project and there are over 200-miles of existing levees in Yolo County supporting the project's flood conveyance system.
 - **FloodSAFE Yolo Pilot Program.** This program emerged from the Yolo County Integrated Regional Water Management Plan (IRWMP) in response to citizens' concerns related to public safety and property damage associated with flooding from Cache Creek. The program's main objective is to minimize the threat of damage to property from flooding and to improve preparedness and response in the event of a flood. The floodSAFE Yolo Pilot Program takes a holistic approach; broadly considering policies regarding land use and habitat enhancement as well as building and maintaining physical structures such as levees and bypasses (YCFCWCD 2015).
 - **Sacramento River Bank Protection Project.** The U.S. Army Corps of Engineers (USACE) is responsible for implementation of the Sacramento River Bank Protection Project (SRBPP) in conjunction with its nonfederal partner, Central Valley Flood Protection Bureau (CVFPB). The SRBPP is a continuing construction project to provide existing levee and flood control facilities with protection from erosion. To date, work has been carried out in two phases to protect over 800,000 feet of levees.
 - **Sacramento River Flood Control System Evaluation.** USACE and the State of California, along with local partners, completed a comprehensive evaluation of the Sacramento River Flood Control Program and initiated a flood-risk management program aimed at repairing, raising, and strengthening urban levees, among other activities. This effort, known as the Sacramento River Flood Control System Evaluation (commonly referred to as System Evaluation) resulted in the repair of more than 70 miles of deficient levees by USACE. To date, not all the authorized repairs have been completed, but efforts are continuing.
 - **Sacramento–San Joaquin Rivers Comprehensive Study.** The State of California and USACE formulated comprehensive plans for flood-risk reduction and environmental restoration following the 1997 flood. The study resulted in a new set of engineering criteria for the design and evaluation of urban levees and a greatly expanded scope and cost for the ongoing urban levee improvement efforts on the Sacramento and American Rivers. The Central Valley Integrated Flood Management Study (CVIFMS) is

a continuation of the Sacramento–San Joaquin Rivers Comprehensive Study in which USACE and the State are defining a long-range program for the Sacramento and San Joaquin River Basins and the corresponding level of federal participation. This program will identify opportunities to reduce flood risk by improving the flood capacity of the system while restoring and protecting floodplain and environmental features, including wetlands and other fish and wildlife habitat.

Implementation of the flood control projects described above has generally degraded instream and nearby wetland and riparian communities in the Plan Area but may also have allowed for additional winter water storage in reservoirs that could be used to maintain instream flows in the summer. Efforts have been underway to upgrade flood control systems while restoring natural stream channels to the extent possible along the Sacramento River and area creeks.

Park Acquisition and Management

A substantial amount of open space preservation has occurred along with the urbanization of the Plan Area. In addition to urban parks within the planning limits of urban growth, notable regional park areas and other protected lands are as follows.

- ▲ Bureau of Land Management lands, including
 - ▲ the Cache Creek Natural Area
- ▲ Cache Creek Canyon Regional Park
- ▲ Cache Creek Easements
- ▲ Capay Farm Easement
- ▲ Clarksburg Easements
- ▲ Davis-Woodland Corridor Easements
- ▲ Elkhorn Basin Ranch Easements
- ▲ Elkhorn Regional Park
- ▲ Grasslands Regional Park
- ▲ Hayes Easement
- ▲ Leland Ranch Easement
- ▲ Longview Ranch Easement
- ▲ Martinez Easement
- ▲ Putah Creek Easements
- ▲ Putah Creek Park
- ▲ Sacramento Bypass Wildlife Area
- ▲ South Madison Easement
- ▲ Staib Farm
- ▲ Tule Ranch Easement
- ▲ Valley Vista Regional Park
- ▲ Wild Wings Park
- ▲ Winters-Davis Corridor Easements
- ▲ Yolo Bypass Wildlife Area

These parks and wildlife refuges preserve habitat in the Plan Area and benefit many covered species.

REASONABLY FORESEEABLE PROJECTS IN THE PLAN AREA

Reasonably foreseeable projects in the Plan Area are new projects that are not considered part of the proposed action or action alternatives. Existing ongoing operations or maintenance of facilities in the Plan Area by agencies not participating in the Yolo HCP/NCCP would continue as is and would be considered part of the baseline. The following general categories of projects are considered new and, therefore, are considered reasonably foreseeable projects to be addressed in the analysis of cumulative projects for each relevant resource topic.

- ▲ Construction and widening on State and federal highways. Current known projects include:
 - The California Department of Transportation (Caltrans) is proposing a safety improvement project at three separate locations on State Route 16 in Yolo County between Cadenasso and the I-505 interchange. The project proposes to widen shoulders to 8 feet, install shoulder rumble strips and provide a 20-foot clear recovery zone (which includes the shoulder) at all three locations. In addition, the project would add a left turn pocket, a two-way left turn lane, flatten horizontal curves, and potentially add an additional access to the Madison Migrant Center from Co Rd 89.
- ▲ The California WaterFix project and California EcoRestore, the successor efforts to the Bay Delta Water Conservation Plan. Both infrastructure and habitat conservation elements of these programs could be located in the Plan Area.

- ▲ Potential new and expanding wind energy facilities (turbines and wind farms).
- ▲ Potential new and expanding large-scale solar energy facilities.
- ▲ Projects and activities implemented by agencies that are participants in the HCP/NCCP, but are not included among the covered activities, such as flood control projects protecting the City of Woodland
- ▲ Projects and activities implemented by agencies that are not participants in the HCP/NCCP including U.C. Davis, tribal organizations, the California Department of Water Resources (flood control projects) and the Pacific Gas and Electric Company (PG&E).

REASONABLY FORESEEABLE PROJECTS OUTSIDE THE PLAN AREA WHICH MAY CONTRIBUTE TO CUMULATIVE EFFECTS

A number of habitats, vegetation communities, and covered species that are being addressed by the Yolo HCP/NCCP overlap with other conservation planning areas. As part of an effort to understand the regional effects on species discussed in this EIS/EIR, the following regional conservation planning efforts may be addressed in the cumulative analysis.

- ▲ Solano Multi-Species HCP
- ▲ South Sacramento HCP
- ▲ Natomas Basin Habitat Conservation Plan
- ▲ Yuba-Sutter Regional Conservation Plan
- ▲ Sacramento Municipal Utilities District HCP

More detailed discussions of these related habitat conservation planning efforts are provided in the Biological Resources chapter.

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