Final

Environmental Impact Report for the Consolidated and Conformed Place of Use

(State Clearinghouse Number 97122042)

Prepared for

California State Water Resources Control Board
Division of Water Rights
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Contents

Tables

Figures

Appendixes

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Executive Summary

Introduction

The U.S. Bureau of Reclamation (Reclamation) has filed a petition with the State Water Resources Control Board (Board) to change several conditions to its existing water right permits addressing the operation of the Central Valley Project (CVP) facilities. As part of the Board's evaluation of the petition, the Board must consider the potential consequences that the project may have on the environment pursuant to the California Environmental Quality Act (CEQA).

As lead agency, the Board has determined that the project may have an adverse effect on the environment and therefore concluded that preparation of an Environmental Impact Report (EIR) is needed to comply with CEQA.

The *Draft Program Environmental Impact Report for the Consolidated and Conformed Place of Use* (DEIR) was released in December 1997. The document was made available for a 45-day review period. This document constitutes the Final EIR addressing the Proposed Project.

In the Final EIR, corrections have been made to the authorized place of use (POU) boundary to match the maps on file with the Board. These corrections modify the acreage of land located outside the POU as presented in the DEIR. All values presented in this Final EIR reflect the recent corrections to the authorized POU boundary.

Purpose of the Final Environmental Impact Report

The purpose of this Final EIR is to analyze and disclose the significant environmental effects of Reclamation's petition to consolidate and conform 16 of its Central Valley Project (CVP) water rights permits. Reclamation petitioned the Board to make four changes to 16 of its existing water rights permits issued for the operation of nine CVP facilities, which is known as the Consolidated Place of Use Petition (CPOU). The petitioned changes were to: (1) conform the purposes of use; (2) consolidate the CVP authorized POU; (3) expand the authorized POU and (4) extend the time to complete full beneficial use of water in accordance with the permits. The time extension request will be handled as a separate action by the Board and is not analyzed in this document.

To meet the requirements of CEQA, this Final EIR: (1) identifies and considers the environmental consequences of implementing the pending petition and alternatives; (2) identifies measures to mitigate or avoid potential significant adverse effects on the environment and (3) identifies actions that require additional or subsequent environmental documentation associated with approving future site-specific changes to the POU that are not known at this time to either the Board or Reclamation.

Scope of the Final Environmental Impact Report

This Final Program EIR analyzes the environmental consequences resulting from the Board amending the 16 CVP water rights permits by adopting and incorporating Reclamation's petitioned changes. The changes requested by Reclamation consist of:

Change 1 Conform the purposes of use in the 16 CVP water rights permits so that each permit would correspond to the nine permitted purposes shown in Table ES-1. This change would enable water from Reclamation's CVP facilities to be used for any of these purposes.

TABLE ES-1
Permitted Purposes of Use

Irrigation	Salinity Control
Domestic	Water Quality
Municipal	Stockwatering
Industrial	Recreation
Fish and Wildlife	

Change 2 Consolidate the authorized POU so that water from a particular CVP facility may be delivered consistent with the current integrated operations of the CVP. This change would require new POU maps be prepared to identify all areas where CVP water may be used.

Change 3 Increase the authorized POU, depicted in the individual permits by:

(a) including **encroachment** lands (lands within the boundaries of the 19 CVP water contractor service areas that have already received CVP water but are located outside the authorized POU) and,

(b) including **expansion** lands (lands within the boundaries of the 19 CVP water contractor service areas that have never received CVP water but are entitled to service pursuant to existing water service contracts with Reclamation).

This document is both a programmatic and project-specific environmental document. Two levels of analytical detail are used in this document because of differing levels of information available to characterize impacts to encroachment lands versus expansion lands.

Impacts to encroachment lands are discussed at the project-specific level because they can be readily identified and impacts can be characterized. This document emphasizes the analysis of impacts that occurred on encroachment lands that were served CVP water for agricultural purposes. Encroached lands that are served CVP water for municipal or industrial purposes are not analyzed in detail because projects associated with these land uses have already been evaluated in previously prepared CEQA documents by other local land management authorities.

Potential impacts to expansion lands are discussed at a programmatic level because future deliveries of CVP water cannot be readily determined at this time and would require speculation. Prior to Board authorization to deliver CVP water to expansion lands, more detailed site-specific environmental documentation meeting CEQA requirements may be required.

Opportunities for Public and Agency Comment

The pending petition to change the 16 water rights permits was noticed by the SWRCB on July 29, 1986. Because several protests were received in response to the notice and because five of the affected permits were issued under State Filed Applications, any changes to the permits were determined to require a hearing before the Board.

The SWRCB distributed a Notice of Preparation (NOP) on December 1, 1986. This NOP was distributed to the public and interested agencies for the required time period, in accordance with CEQA.

On December 11, 1997, the SWRCB distributed a DEIR addressing the pending petition. The DEIR was distributed to the public, interested agencies, and was made available on the SWRCB – Division of Water Rights internet web site. The SWRCB provided a 45-day public comment period on the DEIR.

As part of Phase 7 of the Bay-Delta Water Quality Hearings, the Board provided the public an opportunity to submit evidence and testimony regarding the Proposed Project and the DEIR.

Description of Alternatives

This document addresses three alternatives, in addition to the Proposed Project. These alternatives include:

Proposed Project Approving Changes 1, 2, and 3 to the 16 CVP water rights permits, as requested by Reclamation in its CPOU petition.

Alternative 1 Denying Changes 1, 2, and 3 to the 16 CVP water rights permits. This alternative would limit CVP water delivery to the existing authorized uses specified in each water rights permit; limit the location where water from each CVP facility could be used to those areas specified in each water rights permit; and limit CVP water deliveries to within the existing authorized POU boundary. This alternative constitutes the No Project Alternative.

Alternative 2 Approving Changes 1, 2, and 3a of Reclamation's CPOU petition. This alternative would approve Changes 1 and 2 to the 16 CVP water rights permits, as requested by Reclamation in its CPOU petition, but would limit CVP water delivery to lands outside the authorized POU to those lands that have already received CVP water supplies. This alternative constitutes the Existing Conditions Alternative.

Alternative 3 Approving Changes 1 and 2 of Reclamation's CPOU petition and denying Changes 3a and3b. Reclamation would be able to use CVP water for any of the nine purposes of use and be able to continue its integrated CVP operations by delivering water from any CVP facility to any area within the authorized POU. This alternative would limit CVP water deliveries to the existing authorized POU boundary. This alternative constitutes the Permit Consolidation and Conformance Alternative.

Environmentally Superior Alternative

Section 15126(d) of the CEQA Guidelines requires an EIR to identify the environmentally superior alternative if the No Project Alternative is not suitable. Based on the conclusions presented in this Final EIR, the Proposed Project and Alternative 2 are similar in effect and are considered to be environmentally superior to Alternative 1 and Alternative 3.

Alternative 1 is not considered environmentally superior because it may result in numerous changes to the environment including:

- The possible reoperation of CVP water facilities and associated changes to lake levels and stream flows which may impact recreation, aesthetic, and fish and wildlife resources. The potential significance of these impacts is not known at this time.
- The increased reliance upon local alternative water supplies, including groundwater and other surface supplies, that may be subject to depletion.
- The elimination of existing water supplies that support human populations in the cities of Coalinga and Avenal, which may pose a threat to local public health and safety.

In addition, Alternative 1 would result in the denial of expanding the POU to include encroachment lands, thereby eliminating the ability to mitigate historic impacts to vegetation and wildlife that occurred with the past delivery of CVP water supplies to 44,409 acres for agricultural purposes.

Alternative 3 is not considered environmentally superior because it may result in similar changes to the environment as Alternative 1, including:

- The increased reliance upon local alternative water supplies, including groundwater and other surface supplies, that may be subject to depletion.
- The elimination of existing water supplies that support human populations in the cities of Coalinga and Avenal, which may pose a threat to local public health and safety.

Similar to Alternative 1, Alternative 3 would result in the denial of expanding the POU to include encroachment lands, thereby eliminating the ability to mitigate impacts to vegetation and wildlife that occurred with the past delivery of CVP water supplies to 44,409 acres for agricultural purposes.

With the implementation of the Proposed Project or Alternative 2, mitigation for historic use of CVP water supplies outside the authorized POU can be obtained. These alternatives would enable the SWRCB to assign mitigation requirements that would not otherwise be achieved with implementation of Alternatives 1 or 3. Therefore, the Proposed Project and

Alternative 2 provide a mechanism for mitigating/enhancing environmental values that have been adversely affected by past CVP water deliveries. This feature is the basis for determining that the Proposed Project and Alternative 2 are environmentally superior.

Significant Irreversible Environmental Changes

The historic delivery of CVP water to encroachment lands has resulted in significant adverse effects to vegetation and wildlife and is expected to result in potential significant adverse effects to vegetation and wildlife on expansion lands. These impacts can be mitigated, in part, with implementation of offsite habitat restoration and enhancement measures. However, the associated change in land uses is considered a significant irreversible change to the environment.

At present, neither the SWRCB nor Reclamation knows where CVP water may be delivered or for what purposes it would be used on the expansion lands. Therefore, no approval to deliver water to expansions lands can be granted until adequate site-specific environmental documentation on CVP water delivery proposals to expansion lands is completed.

Mitigation Measures

Because the impacts of the encroachment and expansion lands involve a historical impact and a potential future impact, they would require different strategies to mitigate associated adverse effects resulting from the delivery of CVP water. Therefore, mitigation measures for each of these two categories are addressed separately.

Mitigation for Impacts on Encroachment Lands

Of the 85,620 acres of encroachment lands that currently receive CVP water, the development and land use conversion of 45,390 acres was facilitated by delivery of CVP water supplies for agricultural purposes. Habitats that were affected are listed in Table ES-2.

TABLE ES-2
Habitats Affected by CVP Water Delivery to Encroachment Lands

Habitat	Acreage
Valley-foothill hardwood conifer	3
Mixed chaparral	0
Valley-foothill riparian/fresh emergent wetland	4,278
Annual grassland	17,944
Alkali scrub	23,165

The wildlife and vegetation associated with these habitats were directly affected by the delivery of CVP water. The impact to these habitats and associated wildlife species, designated as threatened or endangered in accordance with federal and state endangered species protection mandates, is considered a significant adverse impact.

Mitigation for compensating past impacts to encroachment lands must provide similar environmental/habitat values that were associated with the affected lands. Suitable mitigation for the impact to these 45,390 acres of habitat could consist of several different measures identified to acquire, maintain, and restore the environmental/habitat values needed to support designated species that were previously found on these lands. Measure identified to obtain these habitat values could include, but are not limited to:

- Acquiring lands for habitat restoration
- Implementing management programs to enhance existing habitat values.
- Acquiring development right to control land use activities to be consistent with target species needs and habitat requirements.

Reclamation is currently implementing several programs capable of achieving the mitigation requirements described in this document. These programs consist of ongoing, adaptive management efforts that will restore, create, and maintain targeted environmental habitat values which would mitigate impacts associated with the construction and operation of the CVP. The Board recognizes these programs as appropriate means to obtain mitigation for the impacts to encroachment lands; an appropriate portion of these management efforts are assigned to mitigate the impacts resulting from CVP water delivery to the 45,390 acres outside the authorize POU.

Mitigation for Impacts on Expansion Lands

Potential impacts to the environment resulting from the future delivery of CVP water to expansion lands are discussed at a programmatic level because future CVP water deliveries cannot be determined at this time. For impacts associated with the future delivery of CVP water to municipal and industrial uses located in the expansion areas, local government agencies with primary land management responsibilities would be responsible for identifying suitable mitigation as part of preparing CEQA documents addressing land use plans and other development projects. The SWRCB would be a responsible agency in accordance with CEQA and would make its final decision to expand the POU after the future CEQA document is completed.

Reclamation would not be authorized to deliver water for use in the expansion areas until adequate environmental documentation, prepared in accordance with CEQA, is completed and the Board has approved delivery of CVP water to the specific location.

As part of its evaluation of the future CVP water delivery proposals, the SWRCB would require that habitats of designated plant and animal species be defined in consultation with interested regulatory agencies. Upon definition or delineation of these habitat boundaries, site-specific mitigation measures would be developed to protect and preserve the size and values of these areas. Specific measures that may be implemented include:

- Avoiding the special management zones during land use conversion and prohibiting subsequent land management uses that would degrade the value of the zone for which it is defined.
- Identifying suitable buffer areas and protecting them by deed restrictions to prevent future disturbances of special habitat management zone resources.

- Preparing and implementing plans for offsite mitigation/compensation that would achieve full resource values through reconstruction or enhancement of similar special habitat management zones.

Because future land development in the expansion areas is a local action, Reclamation should not be responsible for implementing mitigation measures identified during the CEQA processes. However, Reclamation will be prevented from delivering CVP water for use in the expansion areas until enforceable measures capable of mitigating the effects of future CVP water delivery are approved by the Board.

Mitigation Monitoring Plan

To effectively reduce, minimize, or avoid significant impacts to environmental resources that were found on the encroachment lands, the SWRCB as lead agency, is responsible for designing a reporting and monitoring program that would ensure that mitigation measures adopted as part of project approval are implemented. Reclamation, as petitioner, would be responsible for implementing any conditions that the SWRCB places on its approval of all or part of the petition. Each CVP water contractor, although directly responsible for allocating CVP water to locations within their respective service areas, is not responsible for implementing mitigation, reporting its success, or monitoring its effectiveness, unless it is performed as part of separate agreement with Reclamation.

This Final EIR describes a process where Reclamation and the SWRCB will jointly develop criteria for evaluating the effectiveness of restoration or mitigation efforts to restore the environmental values needed to mitigate the impact to 45,390 acres of encroachment land.

SECTION 1

Introduction

The U.S. Bureau of Reclamation (Reclamation) has filed a petition with the State Water Resources Control Board (Board) to change several conditions to its existing water rights permits addressing the operation of the Central Valley Project (CVP) facilities. As part of the Board's evaluation of the petition, the Board must consider the potential consequences that the project may have on the environment pursuant to the California Environmental Quality Act (CEQA).

As lead agency, the Board has determined that the project may have an adverse effect on the environment and therefore concluded that preparation of an Environmental Impact Report (EIR) is needed to comply with CEQA.

The Board distributed the *Draft Program Environmental Impact Report for the Consolidated and Conformed Place of Use* (DEIR) in December 1997. The document was made available for a 45-day review period. This document constitutes the Final EIR addressing the Proposed Project.

1.1 Background

Reclamation filed a petition in 1985 to make four changes to its water rights permits issued by the Board for the operation of nine CVP facilities. The petitioned changes were to: (1) consolidate the CVP authorized place of use (POU); (2) expand the POU; (3) conform the purposes of use; and, (4) extend the time to complete full beneficial use of water under the permits. The petition was noticed in July 1986 and a copy is presented in Appendix A of the DEIR.

In 1995, Reclamation amended its petition before the Board to: exclude the Black Butte and New Melones projects that were addressed in three of the permits and (2) reduce the requested (POU) expansion area from about 4,000,000 acres to 851,513 acres. This latter area consisted of lands located outside the authorized POU but were eligible to receive CVP water under existing contracts with Reclamation.

Based on continued evaluation of the POU boundary and development of Reclamation's Geographic Information System (GIS), corrections were made to the land area encompassed in Reclamation's petition. The corrected acreage of land was further reduced from 851,513 acres to 834,667 acres. This latter acreage was addressed in the 1997 DEIR.

The POU boundaries, as depicted in the DEIR, did not accurately depict the POU boundaries on the POU maps on file with the Board. This Final EIR depicts POU boundaries that are consistent with the permit maps on file.

The correction of the maps in this Final EIR results in a recalculation of the acreage of land outside the authorized POU, reducing it from 834,667 acres to 785,658 acres, and the number of affected CVP water contractor service areas was reduced from 26 to 19. Section 2 of this

Final EIR presents a detailed description of the POU, affected CVP water contractors, and associated environmental resources that continue to be relevant to this assessment.

1.2 Purpose and Need for the Project

The purpose of the Proposed Project is to change several terms and conditions in 16 water rights permits issued by the Board for the operation of the CVP facilities. Specifically, the Proposed Project (pending petition) would:

- Conform the purpose of use in the individual permits so that the 16 existing permits authorize use of water for the nine purposes shown in Table 1-1 (at the end of this section).
- Consolidate the authorized POU for water diverted from authorized CVP sources so that new POU maps identify all areas where water from a particular facility may be delivered consistent with the current integrated operation of the CVP.
- Increase the authorized POUs in the appropriate permits by: (1) including encroachment lands, consisting of lands that have already received CVP water within the respective CVP water contractor service areas but are presently outside the authorized POUs; and, (2) including expansion lands, consisting of lands outside the authorized POUs that have never received CVP water but are entitled to service under an existing CVP water contract.

Based on the purpose of the pending petition, the Proposed Project would:

- Allow Reclamation to use, or deliver CVP water for subsequent use, consistent with the nine beneficial uses for which water may be appropriated pursuant to State law. At present, the purposes of use assigned by the various CVP water rights permits are not consistent with the integrated operations of the existing CVP facilities.
- Allow Reclamation to deliver CVP water to all areas where water from a particular facility may be used consistent with the integrated operation of the CVP.
- Allow Reclamation to continue to deliver CVP water supplies contracted in accordance with federal reclamation law, in a manner consistent with state law. At this time, water is delivered to encroachment lands in a manner not consistent with existing state water rights permits. In addition, Reclamation has contracts to deliver CVP water supplies for possible future use on expansion lands that are currently not permitted by existing water rights permits.

1.3 Description of Alternatives

This document addresses three alternatives, in addition to the Proposed Project. These alternatives include:

Proposed Project Approving Changes, 1, 2, and 3 to the 16 CVP water rights permits, as requested by Reclamation in its CPOU petition.

Alternative 1 Denying Changes 1, 2, and 3 to the 16 CVP water rights permits. This alternative would limit CVP water delivery to the existing authorized uses specified in each water rights permit; limit the location where water from each CVP facility could be used to those areas specified in each water rights permit; and, limit CVP water deliveries to within the existing authorized POU boundary. This alternative constitutes the No Project Alternative.

Alternative 2 Approving Changes 1, 2, and 3a of Reclamation's CPOU petition. This alternative would approve Changes 1 and 2 of the 16 CVP water rights permits, as requested by Reclamation in its CPOU petition, but would limit CVP water delivery to lands outside the authorized POU to those lands that have already received CVP water supplies. This alternative constitutes the Existing Conditions Alternative.

Alternative 3 Approving Changes 1 and 2 of Reclamation's CPOU petition and denying Changes 3a and3b. Reclamation would be able to use CVP water for any of the nine purposes of use and be able to continue its integrated CVP operations by delivering water from any CVP facility to any area within the authorized POU. This alternative would limit CVP water deliveries to the existing authorized POU boundary. This alternative constitutes the Permit Consolidation and Conformance Alternative.

1.4 Notices and Public Comment

The pending petition to change the 16 water rights permits was noticed by the Board on July 29, 1986. Because several protests were received in response to the notice and because five of the affected permits were issued under State Filed Applications, any changes to the permits were determined to require a hearing before the Board.

The Board distributed a Notice of Preparation (NOP) on December 1, 1986. This NOP was distributed to the public and interested agencies for the required time period, in accordance with CEQA.

On December 11, 1997, the Board distributed a DEIR addressing the pending petition. The DEIR was distributed to the public, interested agencies, and was made available on the Board — Division of Water Rights internet web site. The Board provided a 45-day public comment period on the DEIR.

As part of Phase 7 of the Bay-Delta Water Quality Hearings, the Board provided the public opportunity to submit evidence and testimony regarding the Proposed Project and the DEIR.

As discussed in Section 3 of this Final EIR, 54 comment letters containing 483 individual comments were received on the DEIR. These comments are identified and presented in Section 3 of this Final EIR.

1.5 Scope of this Environmental Impact Report

As noted in the DEIR, this document addresses the environmental consequences of implementing Change 1 (consolidating the purposes of use of the individual water rights permits) and Change 2 (amending the permits so that water from any CVP facility can be delivered to any CVP water contractor within the authorized overall POU that is capable of receiving such water). This document also addresses the environmental effects of increasing the POU to include the 19 CVP water contractor encroached lands and expansion lands in the authorized POU (Changes 3a and 3b, respectively).

This document is both a programmatic and project-specific EIR prepared in accordance with Sections 15168 and 15160, respectively, of the CEQA Guidelines. Encroached lands are discussed at a project-specific level because environmental impacts associated with delivering CVP water have already occurred and can be readily defined. Potential environmental impacts associated with the expansion areas are discussed on a programmatic level because future land and water uses cannot be readily determined at this time, and would require speculation of future CVP water contractor uses of CVP water and decisions by local land management agencies. Prior to Board authorization for delivery of CVP water to expansion lands, more detailed site-specific environmental analysis and documentation meeting CEQA requirements may be required.

1.6 Revisions to the POU Boundary

As previously noted, the outside boundary of the POUs depicted in the DEIR did not accurately reflect the POU boundaries on the official permit maps on file with the Board. The Final EIR accurately reflects the official boundaries of the POUs.

Section 2 of this Final EIR describes the changes to the POU and the associated environmental resources that continue to be relevant to this assessment.

1.7 Intended Uses of this EIR

This EIR is intended to be used by the Board to evaluate the environmental consequences of approving or denying the pending petition, submitted by Reclamation, to change specific conditions to 16 of its existing water rights permits for the operation CVP.

This EIR may also be used in the future to support the preparation of other project-specific environmental analysis that may be prepared to deliver CVP water to expansion lands. As noted in this document, additional project-specific environmental analyses, prepared in accordance with CEQA, are expected to be needed prior to the delivery of CVP water to these lands.

TABLE 1- 1
Existing Authorized Use of CVP Water Supplies

State Water Right Permit No.	Source and Major CVP Facilities	Place of Use	Permitted Uses								
			Irrigation [a]	Domestic	Municipal	Industrial	Fish and Wildlife Enhancement	Salinity Control	Water Quality Control	Stock-watering	Recreation
11315	American River Folsom Dam	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties	✔					✔			
11316	American River Folsom Dam	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties		✔	✔	✔					✔
11967	Trinity River Trinity Dam Lewiston Dam Spring Creek Tunnel Delta Mendota Canal	Sacramento and Stockton areas, and Delta area	✔	✔				✔			
11968	Trinity River Trinity Dam Lewiston Dam Spring Creek Tunnel Delta Mendota Canal	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties			✔	✔					
11969	Trinity River Trinity Dam Lewiston Dam Spring Creek Tunnel Delta Mendota Canal	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties	✔	✔			✔		✔		✔
11971	Trinity River Trinity Dam Lewiston Dam Spring Creek Tunnel Delta Mendota Canal	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties	✔	✔					✔		
11973	Trinity River Trinity Dam Lewiston Dam Spring Creek Tunnel Delta Mendota Canal	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties	✔	✔	✔	✔	✔	✔			✔
12364	Clear Creek Whiskeytown Dam Delta Mendota Canal Contra Costa Canal	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties	✔	✔					✔		✔

TABLE 1- 1
Existing Authorized Use of CVP Water Supplies

State Water Right Permit No.	Source and Major CVP Facilities	Place of Use	Permitted Uses								
			Irrigation [a]	Domestic	Municipal	Industrial	Fish and Wildlife Enhancement	Salinity Control	Water Quality Control	Stock-watering	Recreation
12721	Sacramento River Shasta Dam Delta Mendota Canal	Sacramento Valley, Delta area, and San Joaquin Valley	✔	✔						✔	✔
12722	Sacramento River Shasta Dam Delta Mendota Canal	Sacramento and Stockton areas; Delta area; San Joaquin Valley; Alameda, Santa Clara, and San Benito Counties			✔	✔					
12723	Sacramento River Shasta Dam Delta Mendota Canal	Sacramento Valley, Delta area, and San Joaquin Valley	✔	✔						✔	✔
12725	Rock Slough (Delta) Contra Costa Canal	Contra Costa County	✔	✔							
12726	Rock Slough (Delta) Contra Costa Canal	Contra Costa County	✔		✔	✔					
12727	Old River (Delta) Delta Mendota Canal	San Joaquin Valley floor	✔	✔							
12860	Old River (Delta) San Luis Dam Offstream storage via Delta Mendota Canal	San Joaquin Valley	✔	✔	✔	✔				✔	✔
15735	Rock Slough (Delta) Contra Loma Dam Offstream storage via Contra Costa Canal	Contra Costa County	✔	✔	✔	✔			✔		✔

[a] Irrigation includes water for frost protection and heat control.

SECTION 2

Changes to the Environmental Setting and Impact Analysis

2.1 Introduction

This section of the Final EIR presents a description of the environmental setting and impact analysis resulting from corrections to the DEIR. The authorized POU boundary presented in the DEIR has been corrected to reflect the official permit maps on file with the SWRCB. The testimony and other information that was presented to the Board during a public hearing held in the spring of 1999 made it obvious that the overall POU boundary that was presented in the DEIR did not accurately depict the outer boundaries of the authorized POUs consistent with the maps that are on file with the SWRCB.

2.2 Changes to the Environmental Setting Resulting from Revisions to the Authorized POU Boundary

The POU boundary depicted in the DEIR is not consistent with the permit maps on file with the SWRCB. Therefore, as discussed above, corrections have been made to the POU boundary that was presented in the DEIR, to that which is presented in this Final EIR.

Correcting the authorized POU boundary resulted in the following:

- The total acreage of land located outside all the authorized POUs has decreased from 834,667 acres to 785,658 acres.
- Seven of the CVP water contractors that were addressed in the DEIR were determined to be located entirely within authorized POUs and are no longer addressed in this document.
- The acreage outside the authorized POUs within the remaining 19 CVP water contractors has shrunk from that presented in the DEIR.
- The land use and habitat acreage within those water contractor boundaries have changed as a result of the corrections to the authorized POU boundaries.

These four changes are discussed below.

Because of the corrections to the authorized POU boundary, Figures 2-1 through 2-5 in the DEIR that presented the Trinity, Shasta, Folsom, Contra Costa, and Delta-Mendota Canal places of use, respectively, have been revised, and are presented as Figures 2-1 through 2-5 in this Final EIR.

As noted above, modifying the authorized POU boundary resulted in seven CVP water contractor service areas being located entirely within the authorized POU boundary. These seven CVP water contractors have, therefore, been eliminated from further discussion in this Final EIR, and Figure 3-1 that was presented in the DEIR has been revised, and is included as Figure 2-6 in this Final EIR. The seven CVP water contractors are:

- Bella Vista Water District
- Mountain Gate Community Services District
- Shasta Community Services District
- Shasta County Service Area – No. 6—Jones Valley
- Shasta County Service Area No. 25—Keswick
- City of Shasta Lake
- Silverthorn Summer Homes, Inc.

Table 2-1 summarizes the acreage within each CVP water contractor service area that would be affected by the proposed project and three alternatives that are addressed in this document. Acreages presented in Table 2-1 are based on available land use data compiled by the California Department of Water Resources (DWR), were calculated using a geographic information system (GIS), and certain areas outside the authorized POU were field verified. Table 2-1, provided below, supercedes Table 2-2 of the Draft EIR.

TABLE 2-1
Acreage of CVP Water Contractor Service Areas to be Added to the POU

CVP Water Contractor	Total Contracted Water Service Area (Acres)	Acreage Outside POU	POU Increase (Acres)				
			Proposed Project		Alt. 1 No Project Alternative	Alt. 2 Existing Conditions Alternative	Alt. 3 Permit Consolidation & Conformance
			Encroachment	Expansion			
Anderson-Cottonwood Irrigation District	33,240	680	0	680	0	0	0
Arvin-Edison Water Storage District	132,848	3,334	1,270	2,064	0	1,270	0
Avenal, City of	46,871	32,737	2,480	30,257	0	2,480	0
Coalinga, City of	106,618	102,963	4,674	98,289	0	4,674	0
Colusa County Water District	45,954	806	384	422	0	384	0
Contra Costa Water District	115,220	359	0	359	0	0	0
Corning Water District	13,049	1,814	1,496	318	0	1,496	0
Del Puerto Water District	34,479	1,307	1,307	0	0	1,307	0
East Bay Municipal Utility District	259,324	1	1	0	0	1	0

TABLE 2-1
Acreage of CVP Water Contractor Service Areas to be Added to the POU

CVP Water Contractor	Total Contracted Water Service Area (Acres)	Acreage Outside POU	POU Increase (Acres)				
			Proposed Project		Alt. 1 No Project Alternative	Alt. 2 Existing Conditions Alternative	Alt. 3 Permit Consolidation & Conformance
			Encroachment	Expansion			
El Dorado Irrigation District [a]	23,578	711	711	0	0	711	0
Glenn Valley Water District	1,965	4	0	4	0	0	0
Kanawha Water District	15,967	653	485	168	0	485	0
Orland-Artois Water District	31,292	65	65	0	0	65	0
Sacramento Municipal Utility District	2,830	2,590	2,590	0	0	2,590	0
San Benito County Water District	47,540	2,098	0	2,098	0	0	0
San Luis Water District	64,668	12,217	12,217	0	0	12,217	0
Santa Clara Valley Water District [b]	835,200	582,111	20,912	561,199	0	20,912	0
Westlands Water District	605,548	40,382	30,718	9,664	0	30,718	0
Westside Water District	17,479	826	122	704	0	122	0
TOTAL[c]	**2,491,293**	**785,658[c]**	**79,432**	**706,226**	**0**	**79,432**	**0**

[a] Acreage of district only includes those lands within the Folsom service area. Other lands within the district served by the Sly Park facilities are not included.

[b] Acreage in "Total" column includes all lands within Santa Clara County (835,200 acres). Although all of these lands are within the CVP water contractor service area, not all lands receive CVP water because of limited water supplies and lack of a feasible means to deliver water. As shown, 582,111 acres of the total 835,200 acres are located outside the authorized POU.

[c]The Acreage Outside POU equals the gross acreage outside the authorized POU for each CVP water contractor service area. Because of overlap between Westlands Water District and the Cities of Avenal and Coalinga, the total net acreage outside the authorized POU equals only 775,856 acres.

Table 2-2 summarizes the existing land uses on encroachment and expansion lands in the 19 CVP water contractor service areas.

TABLE 2-2
Existing Land Use of Areas Outside the POU

		Encroachment Lands				Expansion Lands			
	Total Acreage	**CVP Induced Agriculture**	**Non-CVP Induced Agriculture**	**CVP Induced M&I**	**Non-CVP Induced M&I**	**Irrigated AG**	**Dryland AG**	**M&I**	**Native Vegetation**
Anderson Cottonwood Irrigation District	680	0	0	0	0	680	0	0	0
Arvin-Edison Water Storage District	3,334	321	0	949	0	1,460	0	0	604
City of Avenal	32,737	0	0	2,480	0	1,448[a]	5,155	0	23,654
City of Coalinga	102,963	0	0	0	4,674	29,365[b]	0	0	68,924
Colusa County Water District	806	384	0	0	0	0	0	0	422
Contra Costa Water District	359	0	0	0	0	0	0	0	359
Corning Water District	1,814	1,496	0	0	0	0	0	0	318
Del Puerto Water District	1,307	1,307	0	0	0	0	0	0	0
East Bay Municipal Utility District	1	0	0	0	1	0	0	0	0
El Dorado Irrigation District	711	0	0	711	0	0	0	0	0
Glenn Valley Water District	4	0	0	0	0	0	0	0	4
Kanawha Water District	653	485	0	0	0	0	0	0	168
Orland-Artois Water District	65	0	65	0	0	0	0	0	0
Sacramento Municipal Utility District	2,590	0	0	2,590	0	0	0	0	0
San Benito County Water District	2,098	0	2,098	0	0	0	0	0	0
San Luis Water District	12,217	10,668	0	1,549	0	0	0	0	0
Santa Clara Valley Water District	582,111	0	1,200	0	19,712	0	0	0	561,199
Westlands Water District	40,382	30,607	0	111	0	0	247	0	9,417
Westside Water District	826	122	0	0	0	0	131	0	573
TOTAL	**785,658**	**45,390**	**3,363**	**8,390**	**24,387**	**32,953**	**5,533**	**0**	**665,642**

[a] Value consists of 1,216 acres irrigated by Non-CVP sources and 232 acres irrigated by Westlands Water District CVP supplies.
[b] Value consists of 23,409 acres irrigated by Non-CVP sources and 5,956 acres irrigated by Westlands Water District CVP supplies.

Figure 2-1
Trinity Place of Use

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-1, Map for *Trinity Place of Use*, in JPEG format click on this icon. (88KB)

Figure 2-1.jpg

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Figure 2-1.pdf

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Figure 2-2
Shasta Place of Use

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To download Figure 2-2, Map for *Shasta Place of Use*, in JPEG format click on this icon. (122KB)

Figure 2-2.jpg

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Figure 2-2.pdf

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Figure 2-3
Folsom Place of Use

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To download Figure 2-3, Map for *Folsom Place of Use*, in JPEG format click on this icon. (114 KB)

Figure 2-3.jpg

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Figure 2-3.pdf

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Figure 2-4
Contra Costa Place of Use

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To download Figure 2-4, Map for *Contra Costa Place of Use*, in JPEG format click on this icon. (114 KB)

Figure 2-4.jpg

To download Figure 2-4, Map for *Contra Costa Place of Use*, in Adobe™ PDF format click on this icon (404 KB)

Figure 2-4.pdf

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Figure 2-5
DMC/San Luis Place of Use

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To download Figure 2-5, Map for *DMC/San Luis Place of Use*, in JPEG format click on this icon. (111 KB)

Figure 2-5.jpg

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Figure 2-5.pdf

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Figure 2-6
19 CVP Water Contractors Affected by Reclamation's Consolidated Petition

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the internet version of this document.

To download Figure 2-6, *19 CVP Water Contractors Affected by Reclamation's Consolidated Petition*, in JPEG format click on this icon.
(123 KB)

Figure 2-6.jpg

To download Figure 2-6, *19 CVP Water Contractors Affected by Reclamation's Consolidated Petition*, in Adobe™ PDF format click on this icon.
(384 KB)

Figure 2-6.pdf

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A description of each affected CVP water contractor is presented in the following discussion and reflects the revised acreage values resulting from modifying the POU boundary in accordance with the Board's direction. Acreages presented in the following discussion are based on available land use data compiled by the California Department of Water Resources (DWR), were calculated using a geographic information system (GIS), and certain areas outside the authorized POU were field verified. The acreages presented may be subject to revision if more precise information becomes available. The information presented in this section supercedes the information that was presented in Section 3 of the Draft EIR.

2.2.1 Anderson-Cottonwood Irrigation District

The Anderson-Cottonwood Irrigation District (ACID) service area encompasses 33,240 acres. Of this total, about 680 acres are located outside the authorized POU. These lands are shown in Figure 2-7. All of the lands located outside the authorized POU are expansion lands that are currently in irrigated agriculture**.**

Table 2-3 identifies the native vegetative community / habitat types and their corresponding acreage within the ACID service area that is located outside the authorized POU.

TABLE 2-3
Native Vegetation Types of the Anderson-Cottonwood Irrigation District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non-CVP-Induced Agriculture**	**CVP-Induced M&I**	**Non-CVP-Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Valley-foothill hardwood-conifer	0	0	0	0	138	138
Valley-foothill riparian/ fresh emergent wetland	0	0	0	0	65	65
Oak woodland	0	0	0	0	180	180
Annual grassland	0	0	0	0	297	297
TOTAL	**0**	**0**	**0**	**0**	**680**	**680**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-4 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-4
Threatened and Endangered Species within the ACID Service Area

Habitat	Species	Status
Valley-foothill riparian/fresh emergent wetland	Valley elderberry longhorn beetle	State: -- Federal: Threatened
Valley-foothill riparian/fresh emergent wetland	California red-legged frog	State: Species of Special Concern Federal: Threatened
Annual grassland	Vernal pool fairy shrimp	State: -- Federal: Threatened
Annual grassland	Vernal pool tadpole shrimp	State: -- Federal: Endangered
Annual grassland	Conservancy fairy shrimp	State: -- Federal: Endangered
Fresh emergent wetland	Bogg's Lake hedge-hyssop	State: Endangered Federal: --

Species listed are in accordance with the state and federal Endangered Species Acts.

Based on a review of the California Natural Diversity Database (CNDDB), no special-status species have been observed on lands within the ACID CVP contract service area outside the authorized POU.

2.2.2 Arvin-Edison Water Storage District

The Arvin-Edison Water Storage District (Arvin-Edison) service area encompasses 132,848 acres. Of this total, about 3,334 acres are located outside the authorized POU. These lands are shown in Figure 2-8. Of the 3,334 acres located outside the authorized POU, 1,270 acres are encroachment lands and 2,064 acres are expansion lands. 1,781 acres are in an irrigated agricultural land use; 949 acres correspond to a municipal/industrial (M&I) land use; and the remaining 604 acres are undeveloped and support native vegetation.

Table 2-5 identifies the vegetative community/habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-5
Native Vegetation Types of the Arvin-Edison Water Storage District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	CVP-Induced Agriculture	Non-CVP-Induced Agriculture	CVP-Induced M&I	Non-CVP-Induced M&I	Acres in Expansion Area	Total Acres
Valley-foothill riparian/fresh emergent wetland	4	0	0	0	26	30
Alkali scrub	33	0	0	0	106	139
Annual grassland	284	0	949	0	1,932	3,165
TOTAL	**321**	**0**	**949**	**0**	**2,064**	**3,334**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Figure 2-7
Anderson-Cottonwood Irrigation District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the internet version of this document.

To download Figure 2-7, Anderson-Cottonwood Irrigation District, in JPEG format click on this icon. (140 KB)

Figure 2-7.jpg

To download Figure 2-7, Anderson-Cottonwood Irrigation District, in Adobe™ PDF format click on this icon. (462 KB)

Figure 2-7.pdf

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Figure 2-8
Arvin-Edison Water Storage District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-8, Arvin-Edison Water Storage District, in JPEG format click on this icon. (74 KB)

Figure 2-8.jpg

To download Figure 2-8, Arvin-Edison Water Storage District, in Adobe™ PDF format click on this icon. (247 KB)

Figure 2-8.pdf

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Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-6 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-6
Threatened and Endangered Species within Arvin-Edison Water Storage District

Habitat	Species	Status
Alkali scrub	Blunt-nosed leopard lizard	State: Endangered Federal: Endangered
Alkali scrub	Tipton kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub	San Joaquin kit fox	State: Threatened Federal: Endangered
Alkali scrub Annual grassland	Hoover's eriastrum	State: -- Federal: Threatened
Alkali scrub Annual grassland	San Joaquin woolly-threads	State: -- Federal: Endangered
Alkali scrub Annual grassland	California jewelflower	State: Endangered Federal: Endangered
Annual grassland	San Joaquin adobe sunburst	State: Endangered Federal: Threatened
Valley-foothill riparian/fresh emergent wetland	Striped adobe lily	State: Threatened Federal: Species of Concern
Annual grassland Alkali scrub	Bakersfield cactus	State: Endangered Federal: Endangered
Valley-foothill riparian/fresh emergent wetland	Western yellow-billed cuckoo	State: Endangered Federal: --

Species listed are in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, the San Joaquin woolly-threads, California jewelflower, Vasek's clarkia, and Bakersfield cactus have been observed on lands within the CVP contract service area outside the POU.

2.2.3 City of Avenal

The City of Avenal (Avenal) service area encompasses 46,871 acres. Of this total, about 32,737 acres are located outside the authorized POU. These lands are shown in Figure 2-9. Of the 32,737 acres located outside the authorized POU, 2,480 acres are encroachment lands and 30,257 acres are expansion lands. 6,371 acres are in an irrigated or dryland agricultural land use that do not use CVP water; 2,480 acres correspond to a M&I land use; and 23,654 acres are undeveloped and support native vegetation. 232 acres of land within the Avenal service area are also in the Westlands Water District service area. These lands are in an irrigated agricultural use and are served CVP water by the Westlands Water District.

Table 2-7 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-7
Native Vegetation Types of the City of Avenal Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non-CVP-Induced Agriculture	CVP-Induced M&I	Non-CVP-Induced M&I		
Annual grassland	0	0	2,207	0	24,883	27,090
Alkali scrub	0	0	0	0	476	476
Valley-foothill riparian/fresh emergent wetland	0	0	273	0	4,898	5,171
TOTAL	**0**	**0**	**2,480**	**0**	**30,257[b]**	**32,737**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

[b] This total includes the 232 acres of habitat that overlap with Westlands Water District. Impacts and mitigation for the 232 acres of habitat within Avenal are included in the discussion for Westlands Water District.

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-8 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-8
Threatened and Endangered Species in the City of Avenal Service Area

Habitat	Species	Status
Alkali scrub	Blunt-nosed leopard lizard	State: Endangered Federal: Endangered
Annual grassland Fresh emergent wetland	Giant garter snake	State: Threatened Federal: Threatened
Alkali scrub	Fresno kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	California jewelflower	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	San Joaquin woolly-threads	State: -- Federal: Endangered:
Alkali scrub Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered
Alkali scrub Annual grassland	San Joaquin antelope squirrel	State: Threatened Federal: --

Species listed in accordance with the state and federal Endangered Species Acts.

Figure 2-9
City of Avenal

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-9, City of Avenal, in JPEG format click on this icon. (61 KB)

Figure 2-9.jpg

To download Figure 2-9, City of Avenal, in Adobe™ PDF format click on this icon. (220 KB)

Figure 2-9.pdf

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Based on a review of the CNDDB, the blunt-nosed leopard lizard, San Joaquin antelope squirrel, San Joaquin pocket mouse, burrowing owl, and San Joaquin woolly-threads have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.4 City of Coalinga

The City of Coalinga (Coalinga) service area covers 106,618 acres. Of this total, about 102,963 acres are located outside the authorized POU. These lands are shown in Figure 2-10. Of the 102,963 acres located outside the authorized POU, 4,674 acres are encroachment lands and 98,289 acres are expansion lands. 23,409 acres are in an irrigated agricultural land use that use non-CVP water sources from the Pleasant Valley Water District; 4,674 acres correspond to a M&I land use; and 68,924 acres are undeveloped and support native vegetation. 5,956 acres of land within the Coalinga service area are also in the Westlands Water District service area. These lands are in an irrigated agricultural use and are served CVP water by the Westlands Water District.

Table 2-9 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-9
Native Vegetation Types of the City of Coalinga Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non-CVP-Induced Agriculture**	**CVP-Induced M&I**	**Non-CVP-Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Valley-foothill riparian/fresh emergent wetland	0	0	0	255	16,081	16,336
Annual grassland/alkali scrub	0	0	0	4,419	82,208	86,627
TOTAL	**0**	**0**	**0**	**4,674**	**98,289[b]**	**102,963**

[A] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

[b] This total includes the 5,956 acres of habitat that overlap with Westlands Water District. Impacts and mitigation for the 5,956 acres of habitat within Coalinga are included in the discussion for Westlands Water District.

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-10 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-10
Threatened and Endangered Species within the City of Coalinga Service Area

Habitat	Species	Status
Alkali scrub Annual grassland	California jewelflower	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	Hoover's eriastrum	State: -- Federal: Threatened
Alkali scrub Annual grassland	San Joaquin woolly-threads	State: -- Federal: Endangered
Valley-foothill riparian/fresh emergent wetland	Valley elderberry longhorn beetle	State: -- Federal: Threatened
Valley-foothill riparian/fresh emergent wetland Annual grassland	American peregrine falcon	State: Endangered Federal: Endangered
Annual grassland	Swainson's hawk	State: Threatened Federal: --
Alkali scrub	Blunt-nosed leopard lizard	State: Endangered Federal: Endangered
Annual grassland Fresh emergent wetland	Giant garter snake	State: Threatened Federal: Threatened
Alkali scrub	Fresno kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	San Joaquin antelope squirrel	State: Threatened Federal: --
Alkali scrub Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered

Species listed are in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, the blunt-nosed leopard lizard, San Joaquin antelope squirrel, San Joaquin pocket mouse, burrowing owl, and San Joaquin woolly-threads have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.5 Colusa County Water District

The Colusa County Water District (CCWD) service area covers 45,954 acres. Of this total, about 806 acres are located outside the authorized POU. These lands are shown in Figure 2-11. Of the 806 acres located outside the authorized POU, 384 acres are encroachment lands and 422 acres are expansion lands. 384 acres are in an irrigated agricultural land use, and the remaining 422 acres are undeveloped and support native vegetation.

Table 2-11 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

Figure 2-10
City of Coalinga

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To download Figure 2-10, City of Coalinga, in JPEG format click on this icon. (66 KB)

Figure 2-10.jpg

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Figure 2-11
Colusa County Water District

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Figure 2-11.jpg

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Figure 2-11.pdf

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TABLE 2-11
Native Vegetation Types of the Colusa County Water District Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I		
Valley-foothill hardwood-conifer	3	0	0	0	3	6
Valley-foothill riparian/ fresh emergent wetland	10	0	0	0	8	18
Mixed chaparral	0	0	0	0	21	21
Annual grassland/alkali scrub	371	0	0	0	390	761
TOTAL	**384**	**0**	**0**	**0**	**422**	**806**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-12 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-12
Threatened and Endangered Species in the Colusa County Water District Service Area

Habitat	Species	Status
Valley-foothill riparian/fresh emergent wetland	Valley elderberry longhorn beetle	State: -- Federal: Threatened
Valley-foothill riparian/fresh emergent wetland Annual grassland	American peregrine falcon	State: Endangered Federal: Endangered
Valley-foothill riparian/fresh emergent wetland	Striped adobe lily	State: Threatened Federal: Species of Concern

Species listed are in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, no special-status species have been observed on lands within the CVP contract service area outside the POU.

2.2.6 Contra Costa Water District

The Contra Costa Water District (Contra Costa) service area covers 115,220 acres. Of this total, about 359 acres are located outside the authorized POU. All lands located outside the POU are located in Alameda County. These lands are shown in Figure 2-12. All of the 359 acres located outside the authorized POU are expansion lands, classified as native vegetation. Table 2-13 identifies the vegetative community / habitat types and their

corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-13
Native Vegetation Types of the Contra Costa Water District Service Area Outside the POU[a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I		
Annual grassland	0	0	0	0	270	270
Valley-foothill riparian/ fresh emergent wetland	0	0	0	0	89	89
TOTAL	**0**	**0**	**0**	**0**	**359**	**359**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-14 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-14
Threatened and Endangered Species within the Contra Costa Water District Service Area

Habitat	Species	Status
Valley-foothill riparian/fresh emergent wetland	California red-legged frog	State: Species of Special Concern Federal: Threatened
Fresh emergent wetland Saline emergent wetland	California black rail	State: Threatened Federal: Species of Concern
Fresh emergent wetland Saline emergent wetland	California clapper rail	State: Endangered Federal: Endangered
Valley-foothill riparian/fresh emergent wetland Annual grassland	American peregrine falcon	State: Endangered Federal: Endangered
Saline emergent wetland	Saltmarsh harvest mouse	State: Endangered Federal: Endangered
Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered
Saline emergent wetland Valley-foothill riparian/fresh emergent wetland	Soft bird's beak	State: Rare Federal: Endangered
Annual grassland	Antioch dunes evening primrose	State: Endangered Federal: Endangered

Species listed are in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, the California tiger salamander has been observed on lands within the CVP contract service area outside the authorized POU.

Figure 2-12
Contra Costa Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-12, Contra Costa Water District, in JPEG format click on this icon.(94 KB)

Figure 2-12.jpg

To download Figure 2-12, Contra Costa Water District, in Adobe™ PDF format click on this icon. (314 KB)

Figure 2-12.pdf

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2.2.7 Corning Water District

The Corning Water District (CWD) service area covers 13,049 acres. Of this total, about 1,814 acres are located outside the authorized POU. These lands are shown in Figure 2-13. Of the 1,814 acres located outside the authorized POU, 1,496 acres are encroachment lands and 318 acres are expansion lands. About 1,496 acres currently receive CVP water, and the remaining 318 acres are classified as native vegetation.

Table 2-15 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-15
Native Vegetation Types of the Corning Water District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non-CVP-Induced Agriculture**	**CVP-Induced M&I**	**Non-CVP-Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Annual grassland	1,230	0	0	0	195	1,425
Valley-foothill riparian/fresh emergent wetland	266	0	0	0	123	389
TOTAL	**1,496**	**0**	**0**	**0**	**318**	**1,814**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, Swainson's hawk and the American peregrine falcon are designated as threatened or endangered in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, the Swainson's hawk and burrowing owl have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.8 Del Puerto Water District

The Del Puerto Water District (DPWD) service area covers 34,479 acres. Of this total, about 1,307 acres are located outside the authorized POU. These lands are shown in Figure 2-14. All of the 1,307 acres located outside the authorized POU are encroachment lands, classified as irrigated agriculture. Table 2-16 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-16
Native Vegetation Types of the Del Puerto Water District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non CVP-Induced Agriculture**	**CVP-Induced M&I**	**Non CVP-Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Valley-foothill riparian/fresh emergent wetland	224	0	0	0	0	224
Annual grassland	1,083	0	0	0	0	1,083
TOTAL	**1,307**	**0**	**0**	**0**	**0**	**1,307**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-17 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-17
Threatened and Endangered Species within the Del Puerto Water District Service Area

Habitat	Species	Status
Annual grassland Fresh emergent wetland	Giant garter snake	State: Threatened Federal: Threatened
Valley-foothill riparian/fresh emergent wetland Annual grassland	American peregrine falcon	State: Endangered Federal: Endangered
Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered
Valley-foothill riparian/fresh emergent wetland	Valley elderberry longhorn beetle	State: -- Federal: Threatened
Annual grassland	Swainson's hawk	State: Threatened Federal: --
Annual grassland	San Joaquin antelope squirrel	State: Threatened Federal: --

Species listed are in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, the San Joaquin kit fox and the Great Valley cottonwood riparian forest have been observed on lands within the DPWD contract service area outside the authorized POU.

Figure 2-13
Corning Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-13, Corning Water District, in JPEG format click on this icon.(68 KB)

Figure 2-13.jpg

To download Figure 2-13, Corning Water District, in Adobe™ PDF format click on this icon. (251 KB)

Figure 2-13.pdf

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Figure 2-14
Del Puerto Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-14, Del Puerto Water District, in JPEG format click on this icon. (89 KB)

Figure 2-14.jpg

To download Figure 2-14, Del Puerto Water District, in Adobe™ PDF format click on this icon. (284 KB)

Figure 2-14.pdf

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2.2.9 East Bay Municipal Utility District

The East Bay Municipal Utility District (EBMUD) service area covers 259,324 acres. Of this total, about 1 acre is located outside the authorized POU. These lands are shown in Figure 2-15. The 1 acre located outside the authorized POU is encroachment land, classified as M&I land use.

Table 2-18 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-18
Native Vegetation Types of the East Bay Municipal Utility District Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non-CVP-Induced Agriculture	CVP-Induced M&I	Non-CVP-Induced M&I		
Annual grassland	0	0	0	1	0	1
TOTAL	**0**	**0**	**0**	**1**	**0**	**1**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-19 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-19
Threatened and Endangered Species Within East Bay Municipal Utility District Service Area

Habitat	Species	Status
Valley-foothill riparian/fresh emergent wetland	California red-legged frog	State: Species of Special Concern Federal: Threatened
Fresh emergent wetland Saline emergent wetland	California clapper rail	State: Endangered Federal: Endangered
Saline emergent wetland	Western snowy plover	State: Species of Special Concern Federal: Threatened
Saline emergent wetland	California least tern	State: Endangered Federal: Endangered
Fresh emergent wetland Saline emergent wetland	California black rail	State: Threatened Federal: Species of Concern
Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered
Valley-foothill hardwood-conifer Valley-foothill riparian/fresh emergent wetland Mixed chaparral	Alameda whipsnake	State: Threatened Federal: Threatened
Annual grassland	Showy Indian clover	State: -- Federal: Endangered
Annual grassland Valley-foothill riparian/fresh emergent wetland	Contra Costa goldfields	State: -- Federal: Endangered

Species listed are in accordance with state and federal Endangered Species Acts.

Based on a review of the CNDDB, the golden eagle, sharp-shinned hawk, and California red-legged frog have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.10 El Dorado Irrigation District

Portions of the El Dorado Irrigation District (EID) service area that are served from Folsom Lake cover 23,578 acres. Of this total, about 711 acres are located outside the authorized POU. These lands are shown in Figure 2-16. All of the 711 acres located outside the authorized POU are encroachment lands, classified as M&I use.

Table 2-20 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-20
Native Vegetation Types of the El Dorado Irrigation District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I	Acres in Expansion Area	Total Acres
Valley-foothill hardwood	0	0	711	0	0	711
TOTAL	**0**	**0**	**711**	**0**	**0**	**711**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-21 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-21
Threatened and Endangered Species within the El Dorado Irrigation District Service Area

Habitat	Species	Status
Open water	California red-legged frog	State: Species of Special Concern Federal: Threatened
Valley-foothill hardwood	Bald eagle	State: Endangered Federal: Threatened
Valley-foothill hardwood	American peregrine falcon	State: Endangered Federal: Endangered
Annual grassland	Swainson's hawk	State: Threatened Federal: --
Annual grassland	Layne's butterweed	State: Rare Federal: Threatened
Valley-foothill hardwood	Pine Hill ceanothus	State: Rare Federal: Endangered
Annual grassland	Pine Hill flannelbush	State: Rare Federal: Endangered
Annual grassland	El Dorado bedstraw	State: Rare Federal: Endangered
Annual grassland	Stebbin's morning glory	State: Endangered Federal: Endangered

Species listed are in accordance with state and federal Endangered Species Acts.

Figure 2-15
East Bay Municipal Utility District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-15, East Bay Municipal Utility District, in JPEG format click on this icon. (104 KB)

Figure 2-15.jpg

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Figure 2-15.pdf

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Figure 2-16
El Dorado Irrigation District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-16, El Dorado Irrigation District, in JPEG format click on this icon. (69 KB)

Figure 2-16.jpg

To download Figure 2-16, El Dorado Irrigation District, in Adobe™ PDF format click on this icon. (272 KB)

Figure 2-16.pdf

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Based on a review of the CNDDB, Pine Hill ceanothus, Layne's butterweed, tricolored blackbird, El Dorado bedstraw, bald eagle, Red Hill's soaproot, Stebbin's morning glory, and El Dorado County mule ears have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.11 Glenn Valley Water District

The Glenn Valley Water District (GVWD) service area covers 1,965 acres. Of this total, about 4 acres are located outside the authorized POU. These lands are shown in Figure 2-17. All of the 4 acres located outside the authorized POU are expansion lands, classified as native vegetation.

Table 2-22 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-22
Native Vegetation Types of the Glenn Valley Water District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I	Acres in Expansion Area	Total Acres
Annual grassland	0	0	0	0	4	4
TOTAL	**0**	**0**	**0**	**0**	**4**	**4**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, one species (the American peregrine falcon) is designated as endangered in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, no special-status species have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.12 Kanawha Water District

The Kanawha Water District (KWD) service area covers 15,967 acres. Of this total, about 653 acres are located outside the authorized POU. These lands are shown in Figure 2-18. Of the 653 acres located outside the authorized POU, 485 acres are encroachment lands and 168 acres are expansion lands. About 485 acres are in an irrigated agricultural land use, and the remaining 168 acres are undeveloped and support native vegetation.

Table 2-23 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-23
Native Vegetation Types of the Kanawha Water District Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I		
Annual grassland	354	0	0	0	131	485
Valley-foothill riparian/fresh emergent wetland	131	0	0	0	37	168
TOTAL	**485**	**0**	**0**	**0**	**168**	**653**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, one species (the American peregrine falcon) is designated as endangered in accordance with the state and federal Endangered Species Acts.

Based on a review of the CNDDB, no special-status species have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.13 Orland-Artois Water District

The Orland-Artois Water District (OAWD) service area covers 31,292 acres. Of this total, about 65 acres are located outside the authorized POU. These lands are shown in Figure 2-19. All of the 65 acres located outside the authorized POU are encroachment lands that were irrigated with groundwater prior to receiving CVP water.

Table 2-24 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-24
Native Vegetation Types of the Orland-Artois Water District Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I		
Annual grassland	0	65	0	0	0	65
TOTAL	0	65	0	0	0	65

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, one species (the Swainson's hawk) is designated as threatened in accordance with the state Endangered Species Act.

Figure 2-17
Glenn Valley Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-17, Glenn Valley Water District, in JPEG format click on this icon. (61 KB)

Figure 2-17.jpg

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Figure 2-17.pdf

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Figure 2-18
Kanawha Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-18, Kanawha Water District, in JPEG format click on this icon. (68 KB)

Figure 2-18.jpg

To download Figure 2-18, Kanawha Water District, in Adobe™ PDF format click on this icon. (229 KB)

Figure 2-18.pdf

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Figure 2-19
Orland-Artois Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-19, Orland-Artois Water District, in JPEG format click on this icon. (73 KB)

Figure 2-19.jpg

To download Figure 2-19, Orland-Artois Water District, in Adobe™ PDF format click on this icon. (237 KB)

Figure 2-19.pdf

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Based on a review of the CNDDB, no special-status species have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.14 Sacramento Municipal Utility District

The Sacramento Municipal Utility District (SMUD) service area covers 2,830 acres. Of this total, about 2,590 acres are located outside the authorized POU. These lands are shown in Figure 2-20. All of the 2,590 acres located outside the authorized POU are encroachment lands that correspond to an M&I land use.

Table 2-25 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-25
Native Vegetation Types of the Sacramento Municipal Utility District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I	Acres in Expansion Area	Total Acres
Annual grassland	0	0	2,103	0	0	2,103
Fresh emergent wetland	0	0	318	0	0	318
Open water	0	0	169	0	0	169
TOTAL	**0**	**0**	**2,590**	**0**	**0**	**2,590**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-26 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-26
Threatened and Endangered Species within the Sacramento Municipal Utility District Service Area

Habitat	Species	Status
Annual grassland Fresh emergent wetland	Giant garter snake	State: Threatened Federal: Threatened
Fresh emergent wetland	Vernal pool fairy shrimp	State: -- Federal: Threatened
Annual grassland	Vernal pool tadpole shrimp	State: -- Federal: Endangered
Annual grassland	Swainson's hawk	State: Threatened Federal: --
Annual grassland	Sacramento orcutt grass	State: Endangered Federal: Endangered
Fresh emergent wetland	Bogg's Lake hedge-hyssop	State: Endangered Federal: --

Species listed are in accordance with state and federal Endangered Species Acts.

Based on a review of the CNDDB, northern hardpan vernal pool habitat has been observed on lands within the CVP contract service area outside the authorized POU.

2.2.15 San Benito County Water District

The San Benito County Water District (SBCWD) service area covers 47,540 acres. Of this total, about 2,098 acres are located outside the authorized POU. These lands are shown in Figure 2-21. All of the 2,098 acres located outside the authorized POU are expansion lands, classified as an irrigated agricultural use.

Table 2-27 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-27
Native Vegetation Types of the San Benito County Water District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non CVP-Induced Agriculture**	**CVP-Induced M&I**	**Non CVP-Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Valley-foothill riparian/ fresh emergent wetland	0	376	0	0	0	376
Mixed chaparral	0	542	0	0	0	542
Annual grassland	0	1,180	0	0	0	1,180
TOTAL	**0**	**2,098**	**0**	**0**	**0**	**2,098**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, four species (the California red-legged frog, San Joaquin kit fox, valley elderberry longhorn beetle, and American peregrine falcon) are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

Based on a review of the CNDDB, the California red-legged frog, San Joaquin kit fox, and San Joaquin saltbush have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.16 San Luis Water District

The San Luis Water District (SLWD) service area covers 64,668 acres. Of this total, about 12,217 acres are located outside the authorized POU. These lands are shown in Figure 2-22 All of the 12,217 acres located outside the authorized POU are encroachment lands that were first irrigated using CVP water in 1975. Prior to receiving CVP water, the lands were cultivated in the winter in dryland agriculture and were used for pasture.

Table 2-28 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

Figure 2-20
Sacramento Municipal Utility District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-20, Sacramento Municipal Utility District, in JPEG format click on this icon. (47 KB)

Figure 2-20.jpg

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Figure 2-20.pdf

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Figure 2-21
San Benito County Water District

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To download Figure 2-21, San Benito County Water District, in JPEG format click on this icon. (74 KB)

Figure 2-21.jpg

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Figure 2-21.pdf

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Figure 2-22
San Luis Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-22, San Luis Water District, in JPEG format click on this icon. (78 KB)

Figure 2-22.jpg

To download Figure 2-22, San Luis Water District, in Adobe™ PDF format click on this icon. (273 KB)

Figure 2-22.pdf

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TABLE 2-28
Native Vegetation Types of the San Luis Water District Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I		
Alkali scrub	789	0	0	0	0	789
Annual grassland	7,847	0	0	0	0	7,847
Valley-foothill riparian/ fresh emergent wetland	2,032	0	289	0	0	2,321
Mixed chaparral	0	0	1,260	0	0	1,260
TOTAL	**10,668**	**0**	**1,549**	**0**	**0**	**12,217**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-29 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-29
Threatened and Endangered Species within the San Luis Water District Service Area

Habitat	Species	Status
Alkali scrub Annual grassland	San Joaquin woolly-threads	State: -- Federal: Endangered
Alkali scrub Annual grassland	Hoover's eriastrum	State: -- Federal: Threatened
Alkali scrub	Blunt-nosed leopard lizard	State: Endangered Federal: Endangered
Valley-foothill riparian/fresh emergent wetland	Giant garter snake	State: Threatened Federal: Threatened
Alkali scrub	Fresno kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	Giant kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	San Joaquin antelope squirrel	State: Threatened Federal: Species of Concern
Alkali scrub Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered

Species listed are in accordance with state and federal Endangered Species Acts.

Based on a review of the CNDDB, the tricolored blackbird and blunt-nosed leopard lizard have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.17 Santa Clara Valley Water District

The Santa Clara Valley Water District (SCVWD) service area covers 835,200 acres. Of this total, about 582,111 acres are located outside the authorized POU. These lands are shown in Figure 2-23. Of the 582,111 acres located outside the authorized POU, 20,912 acres are encroachment lands and 561,199 acres are expansion lands. 19,712 acres correspond to an M&I land use, 1,200 acres are in irrigated agricultural uses, and the remaining 561,199 acres are undeveloped and support native vegetation.

Table 2-30 identifies the vegetative community / habitat types and their corresponding acreage within the SCVWD service area that are located outside the authorized POU.

TABLE 2-30
Native Vegetation Types of the Santa Clara Valley Water District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non-CVP Induced Agriculture**	**CVP-Induced M&I**	**Non-CVP Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Annual/perennial grassland	0	1,165	0	17,687	134,592	153,444
Montane hardwood	0	27	0	331	113,371	113,729
Valley-foothill hardwood	0	7	0	995	168,536	169,538
Mixed chaparral	0	1	0	699	139,162	139,862
Valley-foothill riparian/fresh emergent wetland	0	0	0	0	4,239	4,239
Water	0	0	0	0	1,299	1,299
TOTAL	**0**	**1,200**	**0**	**19,712**	**561,199**	**582,111**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-31 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

Figure 2-23
Santa Clara Valley Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-23, Santa Clara Valley Water District, in JPEG format click on this icon. (103 KB)

Figure 2-23.jpg

To download Figure 2-23, Santa Clara Valley Water District, in Adobe™ PDF format click on this icon. (339 KB)

Figure 2-23.pdf

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TABLE 2-31
Threatened and Endangered Species within the Santa Clara Valley Water District Service Area

Habitat	Species	Status
Valley-foothill hardwood	California red-legged frog	State: Species of Special Concern Federal: Threatened
Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered
Annual/perennial grassland	Bay checkerspot butterfly	State: -- Federal: Threatened
Perennial grassland	Coyote ceanothus	State: -- Federal: Endangered
Perennial grassland	Santa Clara Valley dudleya	State: -- Federal: Endangered
Perennial grassland	Fountain thistle	State: Endangered Federal: Endangered
Valley-foothill hardwood	California sea blite	State: -- Federal: Endangered
Annual grassland	Metcalf Canyon jewelflower	State: -- Federal: Endangered
Annual/perennial grassland	Santa Cruz tarplant	State: Endangered Federal: Proposed Threatened
Valley-foothill hardwood	Saltmarsh harvest mouse	State: Endangered Federal: Endangered
Valley-foothill hardwood	California clapper rail	State: Endangered Federal: Endangered
Valley-foothill hardwood	California least tern	State: Endangered Federal: Endangered
Valley-foothill hardwood	California black rail	State: Threatened Federal: Species of Concern

Species listed in accordance with state and federal Endangered Species Acts.

Based on the review of the CNDDB, many special special-status species have been observed on lands within this CVP contractor water service area outside the authorized POU. These include the California tiger salamander, golden eagle, foothill yellow-legged frog, talus fritillary, fragrant fritillary, Sharsmith's harebell, Mt. Hamilton thistle, Mt. Diablo phacelia, Brandegee's eriastrum, California red-legged frog, rock sanicle, Mt. Hamilton coreopsis, long-eared owl, Mt. Hamilton jewelflower, edgewood blind harvestmouse, most beautiful jewelflower, Santa Clara Valley dudleya, San Joaquin kit fox, Metcalf Canyon jewelflower, Bay checkerspot butterfly, black swift, tricolored blackbird, coyote ceanothus, Santa Cruz tarplant, and Congdon's tarplant.

2.2.18 Westlands Water District

The Westlands Water District (Westlands) service area covers 605,548 acres. Of this total, about 40,382 acres are located outside the authorized POU. These lands are shown in Figure 2-24. Of the 40,382 acres located outside the authorized POU, 30,718 acres are encroachment lands and 9,664 acres are expansion lands. 111 acres correspond to an M&I land use, 30,607 acres are in irrigated agricultural uses, 247 acres are dryland agricultural uses, and the remaining 9,417 acres are undeveloped and support native vegetation.

Table 2-32 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-32
Native Vegetation Types of the Westlands Water District Service Area Outside the POU [a]

Habitat Type	Acres in Encroachment Area				Acres in Expansion Area	Total Acres
	CVP-Induced Agriculture	Non CVP-Induced Agriculture	CVP-Induced M&I	Non CVP-Induced M&I		
Alkali scrub	22,343	0	111	0	6,047	28,501
Valley-foothill riparian/ fresh emergent wetland	1,611	0	0	0	1,067	2,678
Annual grassland	6,653	0	0	0	2,550	9,203
TOTAL	**30,607**	**0**	**111**	**0**	**9,664**	**40,382**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table B-1 lists those species designated as special-status species that may have been present on encroachment lands prior to development with irrigation water supplies and may occur on expansion lands. Of the species listed in Table B-1, the species in Table 2-33 are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

TABLE 2-33
Threatened and Endangered Species within the Westlands Water District Service Area

Habitat	Species	Status
Alkali scrub Annual grassland	California jewelflower	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	San Joaquin woolly-threads	State: -- Federal: Endangered
Alkali scrub	Blunt-nosed leopard lizard	State: Endangered Federal: Endangered
Annual grassland Fresh emergent wetland	Giant garter snake	State: Threatened Federal: Threatened
Alkali scrub	Fresno kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	Giant kangaroo rat	State: Endangered Federal: Endangered
Alkali scrub Annual grassland	San Joaquin antelope squirrel	State: Threatened Federal: Species of Concern
Alkali scrub Annual grassland	San Joaquin kit fox	State: Threatened Federal: Endangered

Species listed are in accordance with the state and federal Endangered Species Acts.

Figure 2-24
Westlands Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-24, Westlands Water District, in JPEG format click on this icon. (95 KB)

Figure 2-24.jpg

To download Figure 2-24, Westlands Water District, in Adobe™ PDF format click on this icon. (306 KB)

Figure 2-24.pdf

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Based on a review of the CNDDB, the giant kangaroo rat, San Joaquin dune beetle, San Joaquin woolly-threads, Panoche peppergrass, San Joaquin antelope squirrel, blunt-nosed leopard lizard, and San Joaquin pocket mouse have been observed on lands within the CVP contract service area outside the authorized POU.

2.2.19 Westside Water District

The Westside Water District (Westside) service area covers 17,479 acres. Of this total, about 826 acres are located outside the authorized POU. These lands are shown in Figure 2-25. Of the 826 acres located outside the authorized POU, 122 acres are encroachment lands and 704 acres are expansion lands. 122 acres are in irrigated agricultural land use, 131 acres are dryland agricultural use, and the remaining 573 acres are undeveloped and support native vegetation.

Table 2-34 identifies the vegetative community / habitat types and their corresponding acreage within the CVP contract service area that is located outside the authorized POU.

TABLE 2-34
Native Vegetation Types of the Westside Water District Service Area Outside the POU [a]

	Acres in Encroachment Area					
Habitat Type	**CVP-Induced Agriculture**	**Non-CVP-Induced Agriculture**	**CVP-Induced M&I**	**Non CVP-Induced M&I**	**Acres in Expansion Area**	**Total Acres**
Valley-foothill riparian/fresh emergent wetland	0	0	0	0	114	114
Annual grassland	122	0	0	0	335	457
Mixed chaparral	0	0	0	0	255	255
TOTAL	**122**	**0**	**0**	**0**	**704**	**826**

[a] Vegetation types and habitat communities have been defined according to the Wildlife Habitat Relationships system (Holland and Keil, 1989).

Table D-2 of the DEIR lists those species designated as special-status species that are expected to have been present on encroachment lands prior to development with irrigation water supplies and are expected to be present on expansion lands. Of the species listed in Table D-2, two species (the valley elderberry longhorn beetle and the American peregrine falcon) are designated as threatened or endangered in accordance with the state or federal Endangered Species Acts.

Based on a review of the CNDDB, no special-status species have been observed on lands within the CVP contract service area outside the authorized POU.

2.3 Changes to the Analysis of Impacts Resulting From the POU Boundary Revision

The following discussion addresses the potential impact of implementing the proposed project and alternatives. The values presented in this discussion reflect the corrections to the existing authorized POU boundary.

Certain findings and conclusions presented in the DEIR have not been substantially changed as result of the Board direction, therefore, those analyses are not represented in this Final EIR. The reader is directed to the DEIR for the analyses addressing the following topics:

- Air Quality
- Water Use
- Water Quality
- Groundwater Resources
- Fish Resources
- Cultural Resources
- Recreation and Visual Resources
- Economics
- Cumulative Effects

Because the acreage of lands outside the POU has been revised, the discussion of impacts presented in the DEIR are updated in the following discussion to reflect a more precise analysis of the effects associated with implementing the proposed project and alternatives. Acreages presented in the following discussion are based on available land use data compiled by the California Department of Water Resources (DWR), were calculated using a geographic information system (GIS), and certain areas outside the authorized POU were field verified. The acreages presented may be subject to revision if more precise information becomes available.

As noted in the DEIR, implementation of Alternative 1 (Permitted Conditions) would require Reclamation to operate the CVP in accordance with the terms of the existing 16 water right permits addressing the CVP facilities. If selected, Reclamation would need to reoperate the CVP in a manner consistent with these permits.

It is not known how Reclamation would reoperate the CVP facilities to comply with conditions of the existing water right permits. Consequently, the potential environmental impacts of reoperating the CVP cannot be identified at this time and are not addressed in this document. Reclamation would need to investigate how the CVP could be reoperated to meet permit conditions and a subsequent environmental impact analysis be performed at a future date when possible CVP operating guidance becomes available. Such an action may not warrant preparation of an environmental document in accordance with CEQA, however, the action may warrant consideration in accordance with the National Environmental Policy Act (NEPA).

Figure 2-25
Westside Water District

Maps in Section 2 of *the Final Environmental Impact Report for the Consolidated and Conformed Place of Use* are too large to include in the Internet version of this document.

To download Figure 2-25, Westside Water District, in JPEG format click on this icon. (81 KB)

Figure 2-25.jpg

To download Figure 2-25, Westside Water District, in Adobe™ PDF format click on this icon. (293 KB)

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2.3.1 Proposed Project Impacts

The Proposed Project would expand the authorized POU boundary by about 785,658[1] acres. If CVP water is available to support irrigated agricultural or M&I land uses, then CVP water could be provided to (1) lands outside the authorized POU that currently receive CVP water (encroachment lands); (2) lands outside the authorized POU that receive water from other sources (expansion lands); and (3) dryland agriculture or undeveloped lands (expansion lands).

The availability of CVP water to these lands would not induce a land use change, but its availability could accommodate future planned land use changes.

The total acreage outside the authorized POU is 785,658 acres. Of this total, 85,620 acres are encroachment lands, classified as follows:

- 45,390 acres are CVP-induced agricultural lands
- 3,363 acres are non-CVP-induced agricultural lands
- 8,390 acres are CVP-induced M&I lands
- 24,387 acres are non-CVP-induced M&I lands

Of the remaining 700,038 acres of expansion lands, the Proposed Project could potentially allow the delivery of CVP water to 20,532 acres of land located within 7 CVP water contractor service areas. This estimate is based on the difference between total contracted CVP water supplies and historical uses in each CVP water contractor service area. These seven CVP water service contractors are:

- Coalinga, City of – 1,631 acres
- Colusa County Water District – 210 acres
- Glenn Valley Water District – 7 acres
- Kanawha Water District – 168 acres
- San Benito County Water District – 2,098 acres
- Santa Clara Valley Water District – 15,717 acres
- Westside Water District – 704 acres

2.3.1.1 Land Use Impacts as Compared With Permitted Conditions

When compared to permitted conditions, the Proposed Project would allow the delivery of CVP water to a total of 106,832 acres of the 785,658 acres outside the authorized POU. This would result in: (1) the conversion of 32,777 acres of land to CVP M&I water supplies from non-CVP water supplies (2) the delivery of CVP water to about 18,303 acres of undeveloped lands that could be developed (consisting of 3,485 acres converting into CVP irrigated agricultural use and 14,818 acres converting into CVP M&I use), (3) the delivery of CVP water to about 51,156 acres of dryland agricultural lands, and (4) the conversion of 4,596 acres of irrigated agricultural land that were previously supplied non-CVP water.

[1] The Proposed Project would expand the net acreage of the POU by 775,657 acres. About 9,801 acres outside the POU overlap between Westlands Water District and the cities of Coalinga and Avenal.

As a result, land uses would change on about 69,459 acres because these lands did not have a previous water supply. The remaining 37,373 acres would not be subject to land use changes because they were previously supplied water from a non-CVP source.

2.3.1.2 Wildlife Habitat Impacts as Compared With Permitted Conditions

Of the total 785,658 acres located outside the authorized POU, a total of 85,620 acres have already developed and currently receive CVP water supplies. Of these 85,620 acres, 32,777 acres receive CVP water for M&I purposes, while 52,843 acres receive CVP water for irrigated agricultural purposes.

Of the 85,620 acres that currently receive CVP water supplies, 31,840 acres were originally developed with non-CVP water sources. The development of the remaining 53,780 acres was facilitated with the availability of CVP water. Table 2-35 summarizes the acreage of habitats that have been encroached by the delivery of CVP water supplies.

TABLE 2-35
Habitats Encroached by CVP Water Supplies

Habitat Type	Acreage Encroached by CVP Agricultural Water Delivery	Acreage Affected by CVP-Induced Agricultural Development	Acreage Encroached by CVP M&I Water Delivery	Acreage Affected by CVP-Induced M&I Development
Valley-foothill hardwood-conifer	9	3	996	0
Oak woodland	0	0	711	711
Mixed chaparral	1	0	1,959	1,260
Valley-foothill riparian/fresh emergent wetland	4,278	4,278	1,136	880
Annual grassland	18,009	17,944	9,678	5,239
Alkali scrub	23,165	23,165	111	111
Annual/perennial grassland	1,166	0	17,686	0
Montane hardwood	27	0	331	0
Open water	0	0	169[a]	0
Total	**52,843**	**45,390**	**32,777**	**8,390**

[a] Delivery of CVP water to SMUD resulted in the creation of 169 acres of open water habitat. This habitat was not affected by CVP-induced development.

The delivery of CVP water supplies has altered habitats and their ability to support associated wildlife and vegetation species. Where this has occurred over larger tracts of land, this alteration could have adversely affected the regional importance of the habitat to support viable populations of such species. As shown in Table 2-36, larger tracts of grassland and alkali scrub habitat have been affected by the delivery of CVP water supplies.

TABLE 2-36
Habitats Affected and Associated Threatened and Endangered Species Affected by Agricultural Development on Encroachment Lands

CVP Water Contractor	Habitat Affected		Species	
	Habitat Type	Acres		
Arvin-Edison Water Storage District	Annual Grassland	284	San Joaquin adobe sunburst California jewelflower	Hoover's eriastrum San Joaquin woolly-threads Bakersfield cactus
	Valley Foothill Riparian/Fresh Emergent Wetland	4	Striped adobe lily	Western yellow-billed cuckoo
	Alkali Sink Scrub	33	Blunt-nosed leopard lizard Tipton kangaroo rat San Joaquin kit fox	Hoover's eriastrum San Joaquin woolly-threads California jewelflower Bakersfield cactus
Colusa County Water District	Annual Grassland	371	American peregrine falcon	
	Valley Foothill Riparian/Fresh Emergent Wetland	10	American peregrine falcon Valley elderberry longhorn beetle	Striped adobe lily
	Valley Foothill Hardwood/Conifer	3		
Corning Water District	Annual Grassland	1,230	Swainson's hawk	American peregrine falcon
	Valley Foothill Riparian/Fresh Emergent Wetland	266	None	
Del Puerto Water District	Valley Foothill Riparian/Fresh Emergent Wetland	224	Giant garter snake American peregrine falcon	Valley elderberry longhorn beetle
	Annual Grassland	1,083	Giant garter snake San Joaquin kit fox Swainson's hawk	American peregrine falcon San Joaquin antelope squirrel
Kanawha Water District	Annual Grassland	354	American peregrine falcon	
	Valley Foothill Riparian/Fresh Emergent Wetland	131	None	
Orland-Artois Water District	Annual Grassland	65	Swainson's hawk	
San Luis Water District	Annual Grassland	7,847	San Joaquin woolly-threads Hoover's eriastrum Giant kangaroo rat	San Joaquin antelope squirrel San Joaquin kit fox
	Valley Foothill Riparian/Fresh Emergent Wetland	2,032	Giant garter snake	
	Alkali Scrub	789	San Joaquin woolly-threads Hoover's eriastrum Giant kangaroo rat	San Joaquin antelope squirrel San Joaquin kit fox Blunt-nosed leopard lizard Fresno kangaroo rat
Westlands Water District	Annual Grassland	6,653	California jewelflower San Joaquin woolly-threads Giant garter snake	Giant kangaroo rat San Joaquin antelope squirrel San Joaquin kit fox
	Valley Foothill Riparian/Fresh Emergent Wetland	1,611	Giant garter snake	
	Alkali Scrub	22,343	Blunt-nosed leopard lizard California jewelflower San Joaquin woolly-threads Giant garter snake	Fresno kangaroo rat Giant kangaroo rat San Joaquin antelope squirrel San Joaquin kit fox
Westside Water District	Annual Grassland	122	American peregrine falcon	

In the case of Del Puerto Water District, San Luis Water District, Westlands Water District, and Corning Water District, CVP water facilitated the development of 1,083 acres, 7,847 acres, 6,653 acres, and 1,230 acres of annual grassland habitats, respectively, into irrigated agricultural uses. CVP water supplies also facilitated the development of 789 acres and 22,343 acres of alkali scrub habitat in San Luis Water District and Westlands Water District, respectively, into irrigated agricultural land uses. The delivery of CVP water to these lands is considered a significant impact because of the regional importance these large tracts had on maintaining local populations of species specifically associated with them.

The availability of CVP water supplies also facilitated the development of 2,032 acres of riparian habitat in San Luis Water District and 1,611 acres in Westlands Water District. A combined total of 621 acres of riparian habitat was also developed with CVP water supplies in Corning Water District, Del Puerto Water District and Kanawha Water District. Although these habitats are not considered to be large tracts of land, their loss is considered to be a significant impact because of their value to associated vegetation and wildlife species that are dependent on this habitat.

In addition, about 18,303 acres of undeveloped land could be developed with implementation of the proposed project when compared to permitted conditions. Of the 18,303 acres, 14,818 acres could be developed into CVP M&I uses and 3,485 acres could be developed into CVP irrigated agricultural uses. Table 2-37 identifies the habitats and corresponding acreage in the expansion area that could be affected with the Proposed Project.

The alteration of these habitats could change their ability to support associated wildlife species and other terrestrial biological resources. Large tracts of land that are able to support wildlife species are considered to be regionally important and could result in significant impacts on species. In areas that have relatively small and isolated tracts, contain varied habitat quality, and are geographically dispersed, the impact on common wildlife species is considered nonsignificant.

The historic encroachment of habitats for M&I purposes are not considered a new significant impact because this type of development has previously undergone environmental review by local land management agencies. These agencies determined that the alteration of such habitats was not significant or that there was suitable mitigation available to avoid, reduce, or otherwise minimize impacts to these habitats.

2.3.2 Alternative 1 Impacts

With implementation of Alternative 1, the authorized POU would not be expanded, and Reclamation would be prohibited from delivering CVP water to the 785,658 acres of land located outside the authorized POU. Accordingly, many land management activities and land uses that have relied on the delivery of CVP water may be jeopardized; however, the historic delivery of CVP water to areas outside the authorized POU cannot be construed as a vested right for the continued delivery of water.

TABLE 2-37
Vegetative Communities in Expansion Areas that Could be Affected by the Proposed Project

	Annual Grassland and Annual/ Perennial Grassland	Valley Foothill Hardwood-Conifer	Valley Foothill Riparian/Fresh Emergent Wetland	Alkali Sink Scrub	Mixed Chaparral	Montane Hardwood	Water	Dryland Agriculture	Irrigated Agriculture
Anderson Cottonwood Irrigation District	0	0	0	0	0	0	0	0	680
Arvin-Edison Water Storage District	483	0	16	106	0	0	0	0	1,460
City of Avenal	23,687	0	100	251	0	0	0	5,533	1,216
City of Coalinga	54,486	0	13,559	0	0	0	0	0	23,409
Colusa County Water District	390	3	8	0	21	0	0	0	0
Contra Costa Water District	270	0	89	0	0	0	0	0	0
Corning Water District	195	0	123	0	0	0	0	0	0
Del Puerto Water District	0	0	0	0	0	0	0	0	0
East Bay Municipal Utility District	0	0	0	0	0	0	0	0	0
El Dorado Irrigation District	0	0	0	0	0	0	0	0	0
Glenn Valley Water District	4	0	0	0	0	0	0	0	0
Kanawha Water District	131	0	37	0	0	0	0	0	0
Orland-Artois Water District	0	0	0	0	0	0	0	0	0
San Benito County Water District	0	0	0	0	0	0	0	0	2,098
San Luis Water District	0	0	0	0	0	0	0	0	0
Santa Clara Valley Water District	134,592	168,536	4,239	0	139,162	113,371	1,299	0	0
Sacramento Municipal Utility District	0	0	0	0	0	0	0	0	0
Westlands Water District	2,550	0	1,067	6,047	0	0	0	247	0
Westside Water District	335	0	114	0	255	0	0	131	0
Total	**217,123**	**168,539**	**19,352**	**6,403**	**139,438**	**113,371**	**1,299**	**5,533**	**28,863**

2.3.2.1 Land Use Impacts as Compared With Existing Conditions

Alternative 1 would eliminate existing CVP water delivery to 52,843 acres of irrigated agriculture. Because several CVP water contractors have available alternative water supplies, a total of about 30,681 acres of agricultural land could be irrigated by non-CVP water. An additional 51,025 acres of dryland agricultural could result unless they could not be managed in an economical manner. This would result in a total of 56,558 acres of dryland agriculture outside the POU. If not economical for commercial agriculture, those lands would likely be abandoned from agricultural uses and converted to another land use.

Alternative 1 also would eliminate existing CVP water delivery to about 32,777 acres of M&I land uses. However, it is unreasonable to assume that the permanent infrastructure and human populations that reside in these areas would be abandoned because of eliminating CVP water. Alternative sources of water are assumed to be available, at an unknown cost, to continue to support these land uses. Therefore, the 32,777 acres of M&I use would require non-CVP water sources.

Eight water contractors have relied solely on CVP water to support irrigated agriculture on lands outside the authorized POU (Table 2-38). These lands (totaling about 45,069 acres) would revert to dryland agriculture or commercial agricultural production would be discontinued unless an alternative water supply is acquired. If CVP irrigated agriculture is discontinued and alternative water sources are not developed, these lands probably would assume the characteristics of undeveloped lands in the immediate vicinity unless they were developed into residential or commercial land uses or dryland agriculture.

TABLE 2-38
CVP Water Contractors Relying Solely on CVP Water to Support Current Agricultural and M&I Land Uses Outside the Authorized POU

CVP Water Contractor	Irrigated (Acres)	M&I (Acres)
Coalinga, City of		4,674
Colusa County Water District	384	0
Corning Water District	1,307	0
Del Puerto Water District	448	0
Kanawha Water District	485	0
San Luis Water District	10,668	1,549
Westlands Water District	30,607	111
Westside Water District	122	0
Total Acreage	**45,069**	**6,334**

Three CVP water contractors have relied on CVP water to develop municipal, industrial, and rural residential uses outside the authorized POU (Table 2-38). These lands total about 6,334 acres. Other unproven water sources may be available, but it is assumed that these land uses developed because of CVP water availability. These water contractors would have to secure other water sources to meet local municipal water demand if Alternative 1 is implemented.

2.3.2.2 Wildlife Habitat Impacts as Compared With Existing Conditions

Alternative 1 would terminate the delivery of CVP water to lands outside the authorized POU. As a result, irrigated agricultural lands relying on CVP water would no longer receive it. It is expected that, where non-CVP water sources are available, these lands would continue to be irrigated. If no alternative water is available, however, the lands could convert to dryland agriculture or commercial agricultural practices would cease. The 52,843 acres of irrigated land outside the authorized POU currently receiving CVP water would no longer receive CVP water. About 30,681 acres would continue to be irrigated by non-CVP water. 51,025 acres of CVP-irrigated agriculture would revert to dryland agriculture or other land use if dryland agriculture is not economically feasible. This would result in a total of 56,558 acres of dryland agriculture outside the POU.

Lands that would no longer receive irrigation water are assumed to be used for dryland agricultural purposes. However, some lands may not be suitable for such practices, depending on site-specific economic conditions, and commercial agricultural use may be abandoned. Such lands eventually could revert to a state exhibiting native vegetation characteristics. The time required to revert to a native state is unknown and depends on the type of vegetation in the area, seed sources, successional stages of the native vegetation, precipitation, and other factors such as future land disturbances and fire. The removal of the lands from continued CVP water delivery would not result in a significant impact to biological resources.

Under Alternative 1, about 32,777 acres of M&I land outside the authorized POU would no longer be able to receive CVP water. These land uses would not likely be abandoned. None of these lands would revert to their native condition, therefore, this alternative would not have a beneficial impact on the availability of wildlife habitat. Alternative water would need to be acquired to continue supporting existing M&I land uses; however, the availability or cost of such water supplies is not known.

2.3.3 Alternative 2 Impacts

2.3.3.1 Land Use Impacts as Compared With Permitted Conditions

About 81,706 acres (about 10 percent) of the lands outside the authorized POU have been developed into irrigated agriculture. Of that total, about 52,843 acres currently use CVP water to provide irrigation. The remaining 28,863 acres use other sources of water. About 5,533 acres (0.7 percent) of the lands outside the authorized POU currently support dryland agriculture.

M&I land uses occur on about 32,777 acres (about 4 percent) of the lands outside the authorized POU. All of these lands use CVP water to support this land use. About 665,642 acres (about 85 percent) of the total lands remain in an undeveloped condition.

Implementation of Alternative 2 would result in the continued delivery of CVP water to these land uses. When compared to permitted conditions, this alternative would facilitate the increase of irrigated agriculture by about 51,025 acres since about 1,818 acres were previously receiving non-CVP water supplies. This alternative would not change the amount dedicated to M&I land use, nor would it reduce the acreage of lands classified as native vegetation.

2.3.3.2 Wildlife Habitat Impacts as Compared With Permitted Conditions

Alternative 2 would not induce any new impacts on vegetation and wildlife resources. No land use changes would occur with the implementation of this alternative. The delivery of CVP water has already facilitated changes to the land use on lands outside the authorized POU. As a result, the delivery of CVP water has facilitated changes to vegetation and wildlife habitats that historically were found on these lands.

Of the 52,843 acres currently receiving CVP water for irrigation, 45,390 acres of wildlife habitat were changed by CVP-induced agricultural development (Table 2-35). The habitats affected by the CVP-induced agricultural development include valley-foothill hardwood-conifer, fresh emergent wetlands, annual grassland, and alkali scrub. The remaining 7,453 acres had been previously disturbed by non-CVP-induced agriculture.

In addition to the CVP water that was delivered for agricultural uses, CVP water induced the development of land for M&I land uses. Of the 32,777 acres currently receiving CVP water for M&I purposes, development on 8,390 acres occurred as a result of delivering CVP water supplies. The remaining 24,387 acres were previously altered with the delivery of water by non-CVP M&I water sources.

The delivery of CVP water supplies resulted in the alteration of habitats and their ability to support associated wildlife and vegetation species. Where this has occurred over larger tracts of land, this alteration could have adversely affected the regional importance of the habitat to support viable populations of such species. As shown in Table 2-36, larger tracts of grassland and alkali scrub habitat have been affected by the delivery of CVP water supplies.

In the case of Del Puerto Water District, San Luis Water District, Westlands Water District, and Corning Water District, CVP water facilitated the development of 1,083 acres, 7,845 acres, 6,653 acres, and 1,230 acres of annual grassland habitats, respectively, into irrigated agricultural uses. CVP water supplies also facilitated the development 789 acres and 22,343 acres of alkali scrub habitat in San Luis Water District and Westlands Water District, respectively, into irrigated agricultural land uses. The development of these lands is considered a significant impact because of the regional importance these large tracts had on maintaining local populations of species specifically associated with them.

The availability of CVP water supplies also facilitated the development of 2,032 acres of riparian habitat in San Luis Water District, and 1,611 acres in Westlands Water District. A combined total of 621 acres of riparian habitat was also developed with CVP water supplies in Corning Water District, Del Puerto Water District and Kanawha Water District. Although these habitats are not considered to be large tracts of land, their loss is considered to be a significant impact because of their value to associated vegetation and wildlife species that are dependent on this habitat.

2.3.4 Alternative 3 Impacts

2.3.4.1 Land Use Impacts as Compared With Permitted Conditions

This alternative would have the same effects on land use as Alternative 1. Because no changes to the authorized POU would occur under this alternative, delivery of CVP water to lands outside the authorized POU would be terminated.

2.3.4.2 Land Use Impacts as Compared with Existing Conditions

As discussed in Section 2.3.2.1, terminating CVP water deliveries on the lands outside the authorized POU would eliminate CVP water delivery to lands located outside the authorized POU, including 52,843 acres currently receiving CVP water for irrigated agricultural lands and 32,777 acres of M&I land uses supported by CVP. Accordingly, many existing land management activities and land uses may require an alternative water source.

2.3.4.3 Wildlife Habitat Impacts as Compared With Permitted Conditions

Because Alternative 3 is identical to Alternative 1 (Permitted Conditions), no change in impacts to biological resources would occur with implementation of Alternative 3, when compared to Alternative 1.

The 52,843 acres of irrigated land outside the authorized POU currently receiving CVP water would no longer receive CVP water. About 30,681 acres would continue to be irrigated by non-CVP water. About 51,025 acres of CVP-irrigated agriculture would revert to dryland agriculture or other land use if dryland agriculture is not economically feasible. This would result in a total of 56,558 acres of dryland agriculture outside the POU.

Lands that would no longer receive irrigation water are assumed to be used for dryland agricultural purposes. However, some lands may not be suitable for such practices, depending on site-specific economic conditions, and commercial agricultural use may be abandoned. Such lands eventually could revert to a state exhibiting native vegetation characteristics. The time required to revert to a native state is unknown and depends on the type of vegetation in the area, seed sources, successional stages of the native vegetation, precipitation, and other factors such as future land disturbances and fire. The removal of the lands from continued CVP water delivery would not result in a significant impact to biological resources.

Under Alternative 3, about 32,777 acres of M&I land outside the authorized POU would no longer be able to receive CVP water. These land uses would not likely be abandoned. None of these lands would revert to their native condition, therefore, this alternative would not have a beneficial impact on the availability of wildlife habitat. Alternative water would need to be acquired to continue supporting existing M&I land uses; however, the availability or cost of such water supplies is not known.

The encroachment of habitats for M&I purposes are not considered a significant impact because this type of development has previously undergone environmental review by local land management agencies that either determined that the alteration of such habitats was not significant or that there was suitable mitigation available to avoid, reduce, or otherwise minimize impacts to these habitats.

2.3.4.4 Wildlife Habitat Impacts as Compared With Existing Conditions

Alternative 3 would have similar impacts on biological resources as Alternative 1. Alternative 3 would terminate the delivery of CVP water to lands outside the authorized POU. As a result, irrigated agricultural lands relying on CVP water would no longer receive it. It is expected that, where non-CVP water sources are available, these lands would continue to be irrigated. If no alternative water is available, however, the lands could convert to dryland agriculture or commercial agricultural practices would cease. The

52,843 acres of irrigated land outside the authorized POU currently receiving CVP water would no longer receive CVP water. About 30,681 acres would continue to be irrigated by non-CVP water. About 51,025 acres of CVP-irrigated agriculture would revert to dryland agriculture or other land use if dryland agriculture is not economically feasible.

In a manner similar to Alternative 1, about 32,777 acres of M&I lands outside the authorized POU would no longer be able to receive CVP water. These land uses would not likely be abandoned. None of these lands would revert to their native condition, therefore, this alternative would not have a beneficial impact on the availability of wildlife habitat. Alternative water would need to be acquired to continue supporting existing M&I land uses; however, the availability or cost of such water supplies is not known.

2.4 Mitigation Measures and Mitigation Monitoring Plan

As discussed in Section 2.3 of this EIR, significant adverse environmental impacts to terrestrial biological resources have occurred as a result of delivering and using CVP on encroachment lands outside the authorized POU. Additional significant adverse impacts could also occur, in the future, if the authorized POU is expanded to the boundaries proposed by Reclamation. Because these two categories of land involve an historical impact and a potential future impact, they would require different measures to mitigate associated adverse effects. Therefore, mitigation measures for each land category (encroachment vs. expansion) are addressed separately in the following discussion.

2.4.1 Mitigation Needs for Impacts to Encroachment Lands

Section 2.3 of this Final EIR describes impacts from the delivery and use of CVP water on encroached lands. Of the 85,620 acres that currently receive CVP water (32,777 acres for M&I uses and 52,843 acres for irrigated agriculture), the development and land use conversion of only 45,390 acres was facilitated by delivery of CVP water for agricultural purposes. The habitats of those 45,390 acres consisted of:

- 3 acres of valley-foothill hardwood-conifer
- 1 acre of mixed chaparral
- 4,278 acres of valley-foothill riparian / fresh emergent wetland
- 17,944 acres of annual grassland
- 23,165 acres of alkali scrub

Table 2-36 found on page 2-79 shows the water contractor service areas where these 45,390 acres of encroachment lands are located, the habitats affected by such encroachment, and the threatened and endangered species that are associated with those habitats.

These lands and associated habitats were directly affected by the delivery and use of CVP water for agricultural purposes. As concluded in Section 2.3, the impact to these habitats and associated wildlife species, designated as endangered or threatened in accordance with federal and state endangered species protection mandates, is considered a significant adverse impact.

2.4.2 Mitigation For Encroachment Land Impacts

It is recognized by both Reclamation and the SWRCB that mitigation for compensating past impacts to encroachment lands must provide similar environmental values that were associated with the affected lands. Suitable mitigation for the impact to 45,390 acres of habitat, as listed in Table 2-36, could consist of several different measures to acquire, maintain, and restore the environmental habitat values needed to support listed species that were previously found on these lands. Measures to obtain these habitat values could include, but are not limited to:

- Acquiring lands for habitat restoration for the listed species
- Implementing management programs to enhance existing habitat values for the listed species
- Acquiring development rights to control land use activities to be consistent with target species needs and habitat requirements.

Because several different measures are available to mitigate the impacts to encroachment lands, with each method capable of restoring some level of environmental value, the precise combination of measures needed to adequately mitigate the past impact to the encroached lands cannot be identified at this time.

As discussed in the following text, Reclamation is currently implementing several programs capable of achieving the mitigation requirements described in this EIR. These programs consist of ongoing, adaptive management efforts that will, overtime, restore, create and maintain targeted environmental habitat values which would mitigate impacts associated with the construction and operation of the CVP. These programs are recognized by the SWRCB as appropriate means to obtain mitigation for the impacts to encroachment lands, provided that portions of the funds and management efforts would specifically be assigned to mitigating those environmental values and listed species adversely affected by the encroachment of CVP water supplies to the 45,390 acres outside the authorized POU.

2.4.2.1 CVPIA Programs Mitigating Impacts to Fish and Wetland Resources

The passage of the Central Valley Project Improvement Act (CVPIA) in 1992 can be viewed as a turning point in the long-standing discussion of the relationship of fish and wildlife resources to the CVP. In general the CVPIA, among other actions, made protection and maintenance of fish and wildlife resources a project purpose of the CVP, mandated a number of specific actions be undertaken to address fish and wildlife resources, and established a funding mechanism to help carry out these actions. The CVPIA effectively sets forth a fish and wildlife mitigation program for the CVP as presently configured and operated.

The CVPIA provides funding and a certain degree of latitude in establishing programs and funding priorities for past impacts of the CVP. Although it is recognized that the major focus of the CVPIA is to address the needs of anadromous fish and waterfowl, a number of the actions implemented under the CVPIA mandated programs could have corollary benefits to terrestrial vegetation and wildlife species. In addition, there are other programs within the CVPIA that could provide direct benefits to the listed terrestrial species that have been impacted by the CVP.

Among the programs that could provide corollary benefits to terrestrial species are the anadromous fish and wetland restoration activities. The anadromous fish activities will include habitat acquisition activities, that while directed at developing / protecting stream side habitats primarily for fishery purposes, will provide benefits to terrestrial species by virtue of stream-side habitat enhancement. Wetland restoration activities also contribute to benefits for terrestrial species, and perhaps to a greater benefit than fishery oriented activities. Acquisition and development of wetlands usually involves developing a mosaic of habitats which include not only the wetlands but also adjacent upland habitats.

Several examples of recently implemented habitat restoration / mitigation efforts that Reclamation has implemented consist of:

Valensine Ranch Acquisition - Reclamation has provided substantial funds in a multi-agency organization partnership to purchase 4,300 acres of property. About 90 percent of the property consists of upland habitat types.

East Side Lake Berryessa - Reclamation is funding a planning and habitat restoration effort to develop and enhance over 2,000 acres of uplands on the east side of the lake.

Intermountain West, Central Valley Habitat, and Riparian Habitat Joint Ventures - Reclamation has provided funds for numerous habitat enhancement projects for each of these Joint Ventures. While the focus of the Joint Ventures is primarily wetland and riparian habitat, these projects typically have an upland habitat component associated with them.

These programs demonstrate that Reclamation is actively participating in programs designed to restore and enhance environmental values that were adversely affected by the construction and operation of the CVP. The future application of these programs to mitigate impacts associated with effects to encroachment lands is suitable and appropriate, provided that the program provides mitigation for lost habitat or habitat values for the listed terrestrial species.

2.4.2.2 CVPIA Programs Mitigating Impacts to Wildlife Resources

In addition to the programs discussed above, two CVPIA programs that will specifically address terrestrial habitats are the Land Retirement and the (b)(1) Aother@ Programs.

Land Retirement Program

The Land Retirement Program is directed toward acquiring lands from willing sellers with a preference for acquiring drainage-impaired lands in the CVP service area. In response to a request for proposals in 1997, there were 31 offers to sell drainage-impaired lands totaling 27,500 acres. Of this total, Reclamation anticipates funding purchases of about 12,500 acres.

In 1998, Reclamation will initiate a second effort to identify additional lands to purchase over the next 5 years. Funding for purchases identified in 1997 and through the next effort will be approximately $50 million over the next 5 years. This level of funding could accommodate the acquisition of up to 60,000 acres, depending on land value and negotiated market cost. In addition to the CVPIA Land Retirement program, the Department of Interior will jointly investigate the possibility of purchasing additional lands on the west side of the San Joaquin Valley with willing partners.

The CVPIA Land Retirement Program is currently in place and could provide direct environmental benefits that include the restoration of upland habitat in areas where listed terrestrial species have been significantly effected by CVP-related land use conversions.

(B)(1) "Other Program

The (b)(1)"other@ Program is specifically designed to mitigate impacts to species and associated habitats that were not specifically enumerated in the CVPIA. The focus of this program is expected to be on sensitive species and upland habitats. Initial focus of this program will be given to habitats known to have experienced the greatest percentage decline in habitat quantity and quality since construction and initiation of operations of the CVP.

All projects that are funded through the (b)(1) Aother@ Program must be clearly linked to impacts from construction, operation, and maintenance of the CVP, in addition to being ranked in accordance with the program prioritization factors included in the 1997 Draft Program Plan (Appendix F). This program was initially implemented in 1997 and anticipates annual funding in the range of $1-2 million, annually. Development of specific projects in the (b)(1) Aother@ program is being closely coordinated with other CVPIA programs and with other Federal, state, and private organizations that are implementing programs with similar goals and objectives.

Examples of specific activities funded include the following:

- Contribution to implementation of Pine Hill Ecological Reserve in El Dorado County to benefit listed plant species (1997-98 funding of $1.5 million).
- Contribute funding toward acquisition of 60,000 acre property in Merced County which supports several high priority habitats including oak woodland and native grassland (anticipated 1998 funding of $300,000).
- Contribute funding toward acquisition of property along Sandy Mush Road in Madera County to contribute to recovery of five federally listed species (anticipated 1997 funding of $100,000).
- Acquisition of Jensen Ranch in Fresno County. This is a 182 acre property along the San Joaquin River facing development pressures that included riparian habitat, oak woodland, and associated uplands.

Other Reclamation Programs to Enhance the Environment

In addition to the CVPIA directed or related programs, Reclamation has undertaken additional activities or programs designed to enhance environmental conditions that have been affected by CVP operations. These include the following.

Central Valley Project Conservation Program

This Program was established in 1997 under the authority of Section 7 (a)(1) of the Endangered Species Act for the primary purpose of undertaking actions to address the needs of species listed in accordance with the federal Endangered Species Act that have been affected by the CVP. A report describing the Program was completed in September 1997 (Appendix G).

A Program Manager has been assigned to develop and manage this Program. The Program was funded to undertake activities in October 1998. Anticipated funding is in the order of $2 million a year. The Conservation Program will address the needs of special status species, including federally listed species, species that are candidates or are proposed species for federal listing, and other species of concern. Each of these species groups will benefit from the Conservation program if they are determined to have high-priority biological needs. The Conservation Program will implement an adaptive management program to protect, restore, and enhance these species and the ecosystems which support them throughout the Central Valley of California and other areas where CVP water is delivered.

Reclamation is committed to a cooperative, interagency approach toward implementation of both the (b)(1) Another Program and the CVP Conservation Program. In this regard, guidelines describing these programs and the process for selecting habitat restoration activities to be funded have been developed and are publicly available. These guidelines establish the overall objectives of the programs and a framework for implementation. Both programs are dynamic; consequently, these guidelines will be updated periodically to reflect new information, changing ecological needs of species, and input from interested agencies, technical advisors, and the public.

Section 7 Consultation Actions

Reclamation has also undertaken other activities specifically related to section 7 consultations that broadly address impacts to listed species and terrestrial habitats. As one example of this, Reclamation, in cooperation with the Fish and Wildlife Service has developed a San Joaquin Valley Endangered Species Recovery Program that addresses in a comprehensive manner the needs of terrestrial species in the San Joaquin Valley. This is a comprehensive collaborative approach to determining the needs of sensitive species associated with upland habitats in areas affected by the CVP. Upon finalization, various funding sources will be utilized to implement activities pursuant to this Program.

CALFED Program

In addition to the Bureau of Reclamation actions described above the CALFED process is developing and beginning to implement an ecosystem restoration program directed to address the impacts of fish and wildlife associated with water development activities. Although this program is presently primarily directed towards aquatic and associated habitats directly related to the Bay-Delta ecosystem, many of the potential activities that would be funded under this program have corollary benefits to terrestrial species. As an example, land acquisition activities in the San Joaquin Valley directed toward riparian and stream side habitats would most likely also include some associated upland habitats. In addition, as the CALFED restoration effort evolves there may be opportunities to specifically address the needs of terrestrial species in uplands areas. Although future funding for this effort depends on congressional and state government appropriations, it is expected to be substantial. In 1997-1998 alone, approximately $155 million were made available for these restoration efforts.

2.4.2.3 Rationale of Approach to Achieve Greatest Net Environmental Benefits

The programs described above are designed to address the impacts of the CVP specifically, in addition to impacts of other water development activities in the Central Valley. These programs for the most part are designed to allow for agency and public input to determine

the priority of funding. Thus those agencies that have concerns relative to certain species / habitat types have an opportunity to help determine how these mitigation efforts are undertaken. To a certain extent what is occurring is that rather then continue debates about what project / action was responsible for what impact, and the exact mitigation that may be need for any particular species, programs were developed / authorized that provide funds to address the needs of species through a priority process.

In specific reference to the CVP, Reclamation and the Fish and Wildlife Service have agreed that full and successful implementation of the (b)(1) Aother@ and Conservation Programs , as well as other CVPIA actions that benefit species, will substantially meet the needs of species affected by the continued operation of the CVP. Taking this proactive approach will likely reduce or potentially eliminate the need for additional actions under any future Section 7 consultations related to the CVP as it is presently configured and operated. The proposed Section 7 consultation for the continued operation of the CVP and implementation of the CVPIA would guide implementation of the Conservation Program to ensure that identified needs are addressed.

As previously stated, the programs described above have been designed and are being implemented to address the impacts of the CVP, and other water development activities. These programs for the most part allow for the involvement of interested parties to determine the priorities of the programs and subsequently the activities that will be funded. Decisions to proceed with the implementation of these program action are based on the participation and concurrence of the U.S. Fish and Wildlife Service, California Department of Fish and Game, and other interested parties who are actively involved in implementing environmental mitigation / restoration actions in the CVP service area.

2.4.2.4 Integration of Encroachment Land Mitigation Needs Into Ongoing Reclamation Programs

In order to ensure that suitable mitigation for encroachment land impacts will be achieved as part of Reclamation=s ongoing environmental restoration / mitigation programs, the environmental / habitat values associated with the encroachment lands need to be recognized and considered in the planning and implementation of these programs. This would be accomplished with the participation of the SWRCB, as part of the multi-agency teams, to define the suitability of each future program to satisfy the requirements needed for mitigating impacts to the encroachment lands.

The specific goals and objectives of each project that will be implemented as part of these ongoing programs, as well as, how they may satisfy the mitigation needs for the encroachment lands, cannot be defined at this time. However, it is the intention of the SWRCB that future ongoing Reclamation restoration program activities will focus in part on achieving adequate mitigation or restoration for the environmental / habitat values affected by delivering CVP water to the encroached lands. Reclamation shall be required to develop a schedule for feasible implementation and monitoring of mitigation or restoration actions subject to approval of the SWRCB. In addition, the SWRCB will also compare each mitigation or restoration project=s environmental / habitat benefits with a set of criteria to be developed jointly by Reclamation and the SWRCB, in consultation with the Department of Fish and Game and the U.S. Fish and Wildlife Service, that will assign environmental / habitat target values that need to be restored or mitigated for, pursuant to the approval of

the petition to change the POU focusing primarily on listed species habitats lost on encroachment lands as identified in Table 2-36 found on page 2-79.

2.4.3 Mitigation For Expansion Lands

Section 2.3 of this Final EIR described potential impacts associated with future development in the expansion areas. Potential impacts in expansion areas were discussed at a programmatic level because future land and water uses cannot be determined at this time. Mitigation will be developed as part of the site-specific environmental documents to be written for the renewal of CVP water service contracts. Over 67 contracts were scheduled to expire between 1993 and 1997. However, the CVPIA mandated that only interim contract renewals could occur until the Programmatic Environmental Impact Statement for the CVPIA is completed. During contract renewal, a needs analysis to determine beneficial use of the CVP water and a site-specific assessment to determine potential impacts of using CVP water for habitats for Federal and State-listed and proposed species are completed. All contract renewals will be subject to review under the NEPA and ESA processes.

During the NEPA review process, the public will have the opportunity to evaluate and provide input with respect to the beneficial use of CVP water. For impacts associated with delivery of CVP water for municipal and industrial development in expansion areas, local government agencies will be responsible for development of mitigation from project-specific plans requiring preparation of CEQA documents. The SWRCB will be a responsible agency under CEQA with respect to project-specific CEQA documents and will make its final decision at that time whether to allow delivery of CVP water to specific expansion areas. In addition, the Federal action of contract renewal will be subject to provisions of the ESA, thus ensuring that impacts to threatened and endangered species will be minimized.

The proposed project would allow delivery of CVP water to currently undeveloped lands that contain characteristics preferred by plant and animal species designated as threatened or endangered by the FWS or the California Department of Fish and Game. These lands would be affected in a significant adverse manner if converted from an undeveloped condition to agricultural, municipal, or industrial land use.

Reclamation will not be authorized under its water rights permits to deliver water for use in these areas until adequate environmental documentation has been prepared in accordance with CEQA and the SWRCB has approved delivery of CVP water to the specific location. The SWRCB will require applicable CVP water contractors or the appropriate local agency to be the lead agency for the preparation of the environmental document. Lands in the immediate vicinity of the habitats of designated plant and animal species will be defined in consultation with interested regulatory agencies. Upon definition or delineation of the habitat boundaries, site-specific mitigation measures will be developed to protect and preserve the size and values of these areas. Specific measures that may be implemented include:

- Avoiding the special management zones during land conversion, and prohibiting subsequent land management operations that would degrade the value of the zone for which it was defined

- Identifying suitable buffer areas and protecting them by deed restrictions, purchase, or other appropriate limitations to prevent future disturbance of special habitat management zone resources
- Preparing and implementing plans for offsite mitigation/compensation that will achieve full resource values and species conservation through reconstruction or enhancement of similar special habitat management zones

Future land development in the expansion areas is a local action, and Reclamation should not be responsible for implementing the land use mitigation measures, except that Reclamation shall not deliver water for use in the expansion areas unless enforceable mitigation measures are in place and approved by the SWRCB for the effects of water delivery in those areas.

2.4.4 Mitigation Monitoring Plan

2.4.4.1 Introduction

To effectively reduce, minimize, or avoid significant impacts to identified resources, the SWRCB as lead agency pursuant to CEQA is responsible for designing a reporting or monitoring program that will ensure that mitigation measures adopted as part of project approval are implemented. Reclamation, as petitioner, will be responsible for implementing any conditions that the SWRCB places on its approval of all or part of the petition. Each CVP water contractor, although directly responsible for allocating CVP water to locations within its respective boundaries, is not responsible for implementing mitigation, reporting on its success, or monitoring its effectiveness, unless it is performed as part of a separate agreement between the CVP water contractor and Reclamation.

To ensure that adopted mitigation measures or programs are implemented pursuant to permit issuance by the SWRCB, the mitigation monitoring plan requires that all parties participate in assigned roles and procedures. To accomplish this objective, a mitigation monitoring program that encompasses all future CVP water delivery plans affecting lands located outside the currently authorized POU must be developed. This program would:

- Identify the responsibilities of all parties including the SWRCB, Reclamation, and individual CVP water contractors in the preparation and review of information regarding development activities and requirements for site-specific habitat mitigation or compensation.
- Identify site-specific information regarding development plans, environmental conditions, and appropriate monitoring requirements.
- Identify procedures for reviewing, modifying, and approving proposed development plans and monitoring while ensuring compliance with applicable permit conditions.
- Require that Reclamation enter into agreements with individual CVP water contractors to establish the water contractors= responsibilities and to make their compliance a condition of receiving water.

2.4.4.2 Monitoring Plan Description

The following discussion outlines the roles and responsibilities of the three parties (CVP water contractors, Reclamation, and the SWRCB). The activities discussed below would occur prior to the introduction of CVP water supplies to lands where significant adverse effects to identified environmental resources may occur.

2.4.4.3 Role of the CVP Contractors

Each CVP water contractor or designated CEQA lead agency would prepare and submit a plan and appropriate CEQA environmental document to Reclamation for lands located within the expanded POU that are currently undeveloped and could be served CVP water. Each plan would include any required take authorization pursuant to Fish and Game Code '2081 (California ESA). The plan would, at a minimum, describe:

- The location of lands to be served CVP water
- The location of proposed water delivery facilities including pump stations, pipeline/canal right-of-way, and other appurtenant facilities
- Environmental conditions of those lands that would receive CVP water or would support the installation of required water delivery facilities
- Suitable site-specific mitigation measures that would be implemented as part of facility installation and operation. Mitigation will be of sufficient detail to fully describe the type of mitigation being proposed, objectives and/or criteria to measure successful mitigation, schedule for implementation, and monitoring provisions for recording effectiveness
- Correspondence with relevant federal, state, and local regulatory, resource management, and land management agencies indicating that measures developed are suitable for the protection, mitigation, and/or maintenance of environmental resources

This information would be submitted to Reclamation in addition to other Reclamation-required information needed to allow connection to Reclamation facilities and/or use of CVP water to lands included in the modified place of use boundary. This information would not preclude or alleviate the individual CVP water contractors from CEQA or NEPA or other permit review requirements that may be mandated by other federal, state, or local permitting agencies prior to application of water to the expanded POU.

2.4.4.4 Role of the Bureau of Reclamation

Monitoring Encroachment Land Mitigation

Reclamation will work jointly with SWRCB, in consultation with the Department of Fish and Game and the U.S. Fish and Wildlife Service, to develop criteria for evaluating the effectiveness of future environmental restoration or mitigation projects in restoring the appropriate environmental/habitat values needed to mitigate encroachment land impacts.

Monitoring Expansion Land Mitigation

Reclamation will be responsible for submitting CVP water contractor-prepared information to the SWRCB for review and approval, prior to the delivery and use of CVP water supplies to the expansion area lands outside the authorized POU. Upon approval of the additional

deliveries and water uses, plus approval of mitigation monitoring plans by SWRCB, Reclamation will inform the CVP water contractors of any additional measures or obligations, as imposed by SWRCB, as part of authorizing CVP water deliveries to the expansion lands.

2.4.4.5. Role of the SWRCB

Monitoring Encroachment Land Mitigation

SWRCB will work jointly with Reclamation, in consultation with the Department of Fish and Game and the U.S. Fish and Wildlife Service, to develop criteria for evaluating the effectiveness of future environmental restoration / mitigation projects to restore the appropriate environmental / habitat values needed for mitigation of encroachment land impacts. In addition, SWRCB will consult with Reclamation and provide guidance and comments regarding the implementation of future programs to adequately mitigate encroachment land impacts.

Monitoring Expansion Land Mitigation

The SWRCB will consider approving a Reclamation-prepared reporting and monitoring program that will ensure that mitigation is implemented pursuant to permit conditions. Reclamation would submit CVP water delivery plans to the SWRCB, including project-specific mitigation measures. The SWRCB would evaluate the Reclamation-proposed CVP water delivery plans to ensure:

- Compliance with mitigation measures assigned as part of the water rights permit conditions
- Mitigation effectiveness in accordance with recommendations by interested federal, state, and local agencies participating in the review of the proposed project

2.5 Growth-Inducing Effects

2.5.1 Introduction

As defined in CEQA Guidelines Section 15126(g), a growth-inducing effect could occur when the implementation of a project fosters economic or population growth in the surrounding environment. Included in this are projects that would remove obstacles to population growth. Growth could result in an increased demand for public services.

2.5.2 Growth-Inducing Effects of the Proposed Project and Alternatives

The proposed project would not directly induce growth or land use changes on lands that would be incorporated into the authorized POU. The expansion of the authorized POU could allow CVP water to be delivered, and such delivery may encourage or facilitate future growth or development authorized by local land management authorities. Therefore, the proposed project would accommodate potential future growth by enabling individual CVP water contractors to supply water to future developments.

2.5.2.1 Growth-Inducing Effects of the Proposed Project

Of the total 785,658 acres of CVP water contractor served land outside the authorized POU, 85,620 acres currently receive CVP water for irrigated agriculture or M&I uses. An

additional 28,863 acres receive water from non-CVP sources while 5,533 acres are currently in a dryland agricultural land use. About 665,642 acres are not developed in agricultural or M&I land uses and are composed of native vegetation. Based on the analysis of available water that could be distributed to future developments, it is estimated that an additional 14,818 acres of municipal and industrial and 5,714 acres of agricultural development could be served CVP water. Therefore, although the proposed project would not directly induce growth or land use changes, it could accommodate the future development of 20,532 acres of M&I and agricultural development.

The CVP water contractors that have CVP water available to serve the potential future growth are listed in Table 2-39. This table also presents the estimated amount of water available for future development and the amount of acreage that could be supported by available water. This estimate is based on no substantial reallocation of existing water uses occurring within the CVP water contractor service boundary.

TABLE 2-39
Potential Future Land Use Changes Outside the Authorized POU

CVP Water Contractor	Amount of Available CVP Water (acre-feet)	Potential Land Use Change (acres)	
		Agriculture	M&I
Coalinga, City of	3,262		1,631
Colusa County Water District	618	210	
Glenn Valley Water District	469	4	
Kanawha Water District	3,301	168	
San Benito County Water District	23,683	2,098	
Santa Clara Valley Water District	33,812	2,530	13,187
Westside Water District	[a]	704	
Total		**5,714**	**14,818**

[a] Historical water use is not known.

2.5.2.2 Growth-Inducing Effects of Alternative 1

This alternative could result in growth-inducing effects because CVP water would no longer be served to about 32,777 acres of M&I lands and 52,843 acres of agricultural lands. To support the existing land uses, other water sources would need to be acquired. The acquisition and delivery of such supplies could require the construction of new water storage, conveyance, and distribution systems to support existing M&I land uses.

A secondary environmental effect may occur if the CVP water is replaced with other sources of water, and these other supplies require the installation of groundwater wells, water conveyance and delivery facilities, or energy consumption resulting from increased water pumping. The development of other water sources would most likely occur to replace M&I water. Because CVP water currently supports residential, commercial, and industrial land uses that required substantial individual and community investments, it is likely that other water sources would be acquired to meet water supply needs and avoid health and safety impacts to the public.

It is less likely that other water sources for agricultural land uses would be acquired, unless the water could be delivered to lands at a reasonable cost. If the acquisition of irrigation water is too expensive, the irrigated agricultural practices could be abandoned. This could result in an increase in dryland agriculture conversion to M&I uses, or allowing the lands to return to an undeveloped condition. If another water source is not acquired to support agricultural land uses, no growth-inducing effects would occur.

2.5.2.3 Growth-Inducing Effects of Alternative 2 (Existing Conditions)

Alternative 2 would not generate any growth-inducing effects because it would expand the authorized POU to encompass land already receiving CVP water or other water. Water delivered as a result of implementing this alternative would only accommodate existing development. About 32,777 acres of M&I lands and 81,706 acres of agricultural lands outside the authorized POU have been developed with CVP and other water. This alternative would not result in further development of lands with CVP water.

2.5.2.4 Growth-Inducing Effects of Alternative 3 (Permit Consolidation and Conformance)

This alternative would result in the same impacts as those discussed for Alternative 1 (No Project).

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SECTION 3

Additions, Deletions, and Corrections as a Result of Comments Received on the DEIR

The following discussion identifies specific additions, deletions, and corrections to the DEIR that are incorporated in response to comments received from the public and interested regulatory agencies during the DEIR review period. The revisions are presented below according to each section of the DEIR. If no changes have been made to a particular section, it is so indicated. Changes to text are indicated by page number, paragraph number, and line number within the paragraph. To aid the reader, this section of the Final EIR should be reviewed in conjunction with the DEIR.

Changes to Executive Summary

The Executive Summary is replaced in its entirety in the Final EIR.

Changes to Section 1

1. **Page 1-2, in Change 1, line 2, delete** "11" **and replace with** "9."
2. **Page 1-2, in Change 1, line 3, delete** "(pages 3-6 and 3-7)" **and replace with** "(pages 3-7 and 3-8)."
3. **Page 1-3, first full paragraph, line 1, add after "programmatic" the following:** "EIR prepared in accordance with Section 15168 of the CEQA Guidelines."
4. **Page 1-3, first full paragraph, line 1, add** "a" **before** "project-specific."
5. **Page 1-3, first full paragraph, line 2, delete** "15168" **and replace with** "15161."
6. **Page 1-3, first full paragraph, add at the end of the paragraph**: "Changes 1 and 2 are addressed at the project-specific level in this EIR."
7. **Page 1-3 2nd full paragraph, line 10, delete** "those."
8. **Page 1-3, 2nd full paragraph, line 11, add** "that have occurred since 1970" **after "land use developments."**
9. **Page 1-3, 2nd full paragraph, add at the end of the paragraph:** "Development that occurred prior to 1970 does not have such documents prepared for them."

Changes to Section 2

1. **Page 2-1, Item No. 1, line 2, delete** "11" **and replace with** "9**."**

2. **Page 2-1, 2nd bullet in Section 2.2, line 7, after "could no longer receive CVP water.", add** "Reclamation would specify to the CVP water contractors that expansion lands could not be served CVP water."

3. **Page 2-2, Table 2-1, for Alternative 1 – No Project Alternative, column 4, add the following at the end of the paragraph**: "Reclamation would specify to the CVP water contractors that expansion lands could not be served CVP water."

4. **Page 2-3, 1st bullet after paragraph 1, line 2, delete** "11" **and replace with** "9**."**

5. **Page 2-4, 1st paragraph below the two bullets at the top of the page, line 2, after "outside the authorized POU", add** "Reclamation would specify to the CVP water contractors that CVP water cannot be delivered to either encroachment or expansion lands."

6. **Page 2-4, 1st bullet after paragraph 1 in Section 2.2.3, line 2, delete** "11" **and replace with** "9**."**

7. **Page 2-4, after paragraph 1, insert, "**It is not known to what extent that operations of the CVP may need to be altered to deliver contracted water supplies in a manner consistent with the existing water right permits. An extensive evaluation may be required before one or more operational scenarios could be identified. Therefore, it is premature to estimate the potential impacts that the No Project Alternative may have on current CVP operations and affected environmental resources."

8. **Page 2-5, 1st bullet after paragraph 1, line 2, delete** "11" **and replace with** "9**."**

Changes to Section 3

1. **Page 3-6, paragraph 1, line 2, add** "The current method of CVP operation is not in accordance with the existing 16 water rights permits" **after "…contracts with water contractors."**

2. **Page 3-10, second full paragraph, line 8, delete the sentence beginning** "Reverse flows can occur in the fall…**."**

3. **Page 3-14, paragraph 2, line 3, add** "and fallowing" **after "field burning."**

4. **Page 3-16, paragraph 4, line 6, delete** "proposed to be listed as endangered." **and replace with** "listed as a federally threatened species."

5. **Page 3-25, paragraph 1, add at the end of the paragraph:** "Local Agency Formation Commissions also have decision-making authority regarding the location of municipal and special-district service boundaries."

6. **Page 3-29, Table 3-6, Shasta County row, column 3, line 1, delete** ";" **and replace with ."**"

7. **Page 3-29, Table 3-6, Shasta County row, column 3, line 2, delete** "Therefore, lumbering is a primary economic activity." **and replace with** "The primary economic activities in Shasta County are agricultural, urban growth, and the recreation industry."

8. **Page 3-31, Table 3-7, delete** "37,075" **in Total row, and replace with** "46,684**."**

9. **Page 3-31, Table 3-7, delete** "19,468" **in Total row, and replace with** "9,859**."**

10. **Page 3-31, 3rd bullet below paragraph 1, delete sentence and insert** "CVP-Induced M&I lands that were developed using CVP water for M&I purposes, which may have been addressed by local land management agencies in accordance with CEQA**."**

11. **Page 3-31, below the 3rd bullet insert**:

    - Non-CVP-Induced M&I – Lands that were developed for M&I land uses without CVP water supplies, which may have been addressed by local land management agencies in accordance with CEQA."

12. **Page 3-32, paragraph 2, line 2, add** " and incorporated lands of the cities of Redding and Anderson" **after** "counties**."**

13. **Page 3-35, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

14. **Page 3-40, paragraph 1, line 3, delete** "are expected to" **and replace with** "may**."**

15. **Page 3-45, paragraph 8, line 3, delete** "are expected to" **and replace with** "may**."**

16. **Page 3-56, paragraph 3, line 3, delete** "are expected to" **and replace with** "may**."**

17. **Page 3-57, paragraph 1, line 1, delete** "in 1994 by Pleasant Valley Water District," **and replace with,** "by the City of Coalinga and is in the final review process."

18. **Page 3-61, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

19. **Page 3-62, paragraph 4, line 2, delete** "and is under water."

20. **Page 3-62, paragraph 7, line 2, delete the last two sentences beginning** "Wells in the vicinity…**."**

21. **Page 3-62, paragraph 6, add at the end of the paragraph**: "The 749 acres in Alameda County that are within the Kellogg Creek watershed have been approved for watershed purposes only."

22. **Page 3-62, add as a new paragraph after paragraph 7**: "The Kellogg Creek watershed contains the Los Vaqueros Project reservoir, an off-stream facility that contain up to 100,000 acre-feet of stored water for water quality improvement and emergency supply reliability. The Los Vaqueros Project has been recently completed and reservoir filling has begun."

23. **Page 3-65, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

24. **Page 3-66, paragraph 2, add at the end of the paragraph**: "M&I development would not be allowed within the Kellogg Creek watershed because of existing requirements that requires the land to remain in open space, i.e., conservation easements granted to federal and state resource agencies. The requirements are required as part of the Los Vaqueros Water Quality and Resource Management Project."

25. Pag**e 3-70, paragraph 1, line 3, delete** "are expected to" **and replace with** "may**."**

26. **Page 3-74, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

27. **Page 3-79, paragraph 4, line 3, delete** "are expected to" **and replace with** "may**."**

28. **Page 3-81, paragraph 2, line 2, add** "that is served CVP water from Folsom Lake" **before** "covers**."**

29. **Page 3-81, paragraph 4, line 1, delete** "18,945" **and replace with** "18,495**."**

30. **Page 3-85, paragraph 4, line 3, delete** "are expected to" **and replace with** "may**."**

31. **Page 3-87, add as a new paragraph after paragraph 2:** "Of the lands identified as outside the authorized POU, only 37 acres have never been farmed. About 28 additional acres were farmed in the early 1970s, but they have not been farmed since. The remaining acreage has been farmed to various dryland crops in a regular rotation."

32. **Page 3-91, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

33. **Page 3-95, paragraph 3, line 3, delete** "are expected to" **and replace with** "may**."**

34. **Page 3-96, paragraph 3, line 1, delete** "incorporated and**."**

35. **Page 3-96, paragraph 5, line 3, delete** "Appro-ximately" **and replace with** "Approximately**."**

36. **Page 3-104, paragraph 1, line 3, delete** "are expected to" **and replace with** "may**."**

37. **Page 3-108, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

38. **Page 3-109, paragraph 1, line 2, delete** "February 28, 1992" **and replace with** "April 15, 1978 and has been amended."

39. **Page 3-113, paragraph 6, line 1, add** ", although the wells are not owned or operated by SBCWD." After "…existing land uses."

40. **Page 3-113, paragraph 7, line 2, delete** "from district-owned wells"

41. **Page 3-113, paragraph 7, line 2, delete the sentence beginning** "There is no indication that…" **and replace with** "Surface water and groundwater quality in this portion of San Benito County are inappropriate to support current beneficial uses; high boron concentrations in local groundwater supplies may pose a limit to use."

42. **Page 3-113, paragraph 7, add at the end of the paragraph** "Overdraft of the groundwater basin currently occurs in the SBCWD service area."

43. **Page 3-114, paragraph 1, line 3, delete** "are expected to" **and replace with** "may**."**

44. **Page 3-118, paragraph 2, line 3, delete** "are expected to" **and replace with** "may**."**

45. **Page 3-124, paragraph 1, line 3, delete** "are expected to" **and replace with** "may**."**

46. **Page 3-142, paragraph 2, delete the paragraph, and replace with** "Of the species listed in Table D-2, the Shasta salamander is designated as threatened in accordance

with the state Endangered Species Act, and the California red-legged frog is a federally threatened species."

47. **Page 3-151, paragraph 2, line 5, add** "Most subsurface drainage collector systems were plugged in connection with the closure of the San Luis Drain, and no drainage is discharged outside Westlands' boundaries" **after** "**drainage systems**."

48. **Page 3-151, paragraph 4, line 3, delete** "are expected to" **and replace with** "may**."**

49. **Page 3-155, paragraph 8, line 3, delete** "are expected to" **and replace with** "may**."**

Changes to Section 4

1. **Page 4-1, paragraph 3, line, add** "1" **after** "**Alternative."**

2. **Page 4-3, Table 4-1, for Sacramento Municipal Utility District, column 4, delete** "California linderiella**."**

3. **Page 4-5, first paragraph below bullets, line 4, delete** "211,678" **and replace with** "21,678**."**

4. **Page 4-6, paragraph 2, line 3, delete** "3-4" **and replace with** "3-2**."**

5. **Page 4-6, below paragraph 2, add the following as a new paragraph** "If Change 1 is denied, the CVP facilities may need to be reoperated. Water from selected CVP facilities would be used for the specific purposes assigned by the respective water rights permit and would continue to meet water service contract and other obligations. It is not currently known how the CVP would be operated if Change 1 were to be denied; therefore, the impacts on environmental resources associated with the denial of Change 1 are not known."

6. **Page 4-12, first paragraph below bullets, line 6, add** "(expansion lands)" **after** "other sources**."**

7. **Page 4-14, paragraph 2, line 4, delete** "agricultural" **and replace with** "agriculture**."**

8. **Page 4-19, Table 4-7, at bottom of table, add a "Total" column, add** "46,684" **in the Agricultural Water Delivery column, and add** "2,918" **in the M&I Water Delivery column.**

9. **Page 4-19, paragraph 4, line 3, delete** "value to" **before** "associated**."**

10. **Page 4-22, paragraph 5, line 3, add** "For this analysis, special-status species are considered to be those species that are designated for special management by federal and/or state legislation and regulatory mandates. These would include species listed in accordance with the federal and state Endangered Species Acts." **after** "and three alternatives."

11. **Page 4-30, paragraph 1, line 1, delete** "three alternatives" **and replace with** "Alternatives 2 and 3**."**

12. **Page 4-30, paragraph 1, add at the end of the paragraph:** "Alternative 1 (No Project) may require reoperation of the CVP facilities."

13. **Page 4-33, first full paragraph, line 2, delete** ";", **replace with ".**", **delete** "however" **and replace with** "However**."**

14. **Page 4-33, first full paragraph, line 4, delete** "**." and add** "from implementation of Alternatives 1 or 3."

15. **Page 4-33, first full paragraph, add at the end of the paragraph** "Groundwater variations, at the level of detail discussed below, are estimates only and may be immeasurable."

16. **Page 4-41, paragraph 4, line 2, delete** "development of" **and delete** "lands" **and replace with** "land uses."

17. **Page 4-41, paragraph 4, line 2, add** "The development supported within these five water contractor service areas was not necessarily initially supplied by the CVP."

18. **Page 4-43, paragraph 4, add at the end of the paragraph:** "Similarly, certain recreation opportunities that historically occurred on undeveloped lands changed as lands were developed into agricultural or M&I uses that were delivered CVP water. Such activities could have included hunting, hiking, fishing, and nature viewing. As lands were converted to agricultural uses, hunting activities for certain species were likely promoted because of the availability of suitable habitat. As lands were converted to M&I uses, dispersed recreational opportunities were likely converted to more formal recreation activities at urban park settings."

19. **Page 4-43, paragraph 5, add at the end of the paragraph:** "This would also be true of historic recreation opportunities; i.e., as lands were developed into M&I land uses, dispersed forms of recreation likely changed into opportunities that are more common to urban settings."

20. **Page 4-43, paragraph 6, line 4, add** "or may have occurred in the past" **after** "changes."

21. **Page 4-44, paragraph 1, add at the end of the paragraph:** "Similarly, historic development throughout the CVP water contractor service areas resulting from CVP water delivery has resulted in alterations to the landscape. Areas that had no other water source and were developed into agricultural or M&I land uses could be expected to change from an undisturbed native setting to one of an agricultural character, or of a more urban nature. These changes to the landscape have added variety and complexity to the visual environment."

22. **Page 4-45, paragraph 3, line 1, add the following sentence after "…results of the economic analysis.":** "The earnings values presented in Table 4-10 include all net annual returns from irrigated farming practices."

23. **Pages 4-46 and 4-47, add footnote to the title of the table** "No estimate was made for M&I water users."

24. **Page 4-52, 1st full paragraph, line 1, add** ", when compared to Permitted Conditions," **after** "Alternative 2."

25. **Page 4-52, 1st full paragraph, line 4, add** "This would not constitute an increase from the present." **after** "region. "

Changes to Section 5

1. **Page 5-2, Table 5-1, for Sacramento Municipal Utility District, column 4, delete** "California linderiella."

Changes to Section 6

1. **Page 6-5, insert the following discussion as the sixth bullet listed on this page:**

   – **Section 3406(b)(1) through (23)** – Requires the CVP to be operated to meet all obligations of under State and Federal law.

Changes to Section 7

Section 7 is replaced in its entirety in the Final EIR.

Changes to Section 8

1. **Page 8-1, paragraph 1, line 1, delete** "Program."

Changes to Section 9

No changes have been made to Section 9 of the Draft EIR.

Changes to Section 10

No changes have been made to Section 10 of the Draft EIR. Additional references used in preparing this Final EIR are presented in Section 5.

Changes to Appendix A

No changes have been made to Appendix A of the Draft EIR.

Changes to Appendix B

1. **Page B-1, Table B-1, for Contra Costa Water District, Schedule A, B, and C, in column 2, delete,** "115,239" **and replace with**, "115,220."

Changes to Appendix C

No changes have been made to Appendix C of the Draft EIR.

Changes to Appendix D

1. Table D-2 is replaced in its entirety with Table B-1 in this Final EIR.

Changes to Appendix E

1. Table E-1 is replaced in its entirety with Table C-1 in this Final EIR.

Changes to Appendix F

No changes have been made to Appendix F of the Draft EIR.

Changes to Appendix G

No changes have been made to Appendix G of the Draft EIR.

Appendix A

Methods Used to Revise the POU Boundary

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APPENDIX A

Methods Used to Revise the POU Boundary

Reclamation's Mid-Pacific Region geographic information system (GIS) service center (MPGIS) was directed by the Board to create a revised authorized POU map. The maps that were used by MPGIS to create this GIS layer were provided by the Board and consisted of mylar copies of the original maps filed with water right applications.

During consultation with Board staff, instructions were provided regarding which maps were to be used and how the boundary definitions of the permit boundaries were to be interpreted. It was agreed that the outmost edge of the permit lines would be digitized. After all of the maps were digitized, the subsequent GIS layers would be combined using a union topological overlay process. The resulting GIS layer would then be dissolved of internal permit lines and the outermost permit lines would be used. This final product would then be the existing authorized POU.

The method of coordinate registration of the maps was also discussed. MPGIS uses a 1:24000 scale Public Land Survey Data as the primary registration grid, combined with other layers such as county lines and roads, if necessary. This method was explained to and accepted by Board with the understanding that the final digital GIS layer to be delivered to Board would be transformed to the Teale Data Center PLS layer due to the fact that all Board GIS layers use the Teale grid for registration.

Each map was registered on a digitizing table using ground control tics from the 1:24000 scale PLS grid at MPGIS. The tics used were transformed into the UTM Zone 10 coordinate system. This projection scheme was chosen because the preparation of the original manuscripts had involved using copies of 100K or 250K USGS quadrangle base maps together. These maps have an original projection of UTM.

Before each map was digitized, it was visually inspected on a light table and the lines of interest were highlighted. The maps that seemed to be of equal scale and orientation (duplicates) were compared to ensure that the outermost extending map was digitized. If a map was a complete duplicate of another, it was skipped from the digitizing process, but the permit number and details were retained.

After the maps were digitized, quality control prints were made at the scale of the original maps and compared. Any errors in positional geometry or attributes were corrected as necessary.

Upon completion of the quality control process, the GIS layers were combined together using the UNION process. The internal lines were dissolved and the outermost lines were used. A single GIS layer was the final result. This layer was subsequently used to overlay with the current boundaries of the 19 districts involved in the petition. The layer of a given district was combined with the authorized POU to calculate the number of acres within that district that are located outside the authorized POU.

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Appendix B

Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

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TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Anderson-Cottonwood Irrigation District	Valley foothill hardwood-conifer	Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	--
	Valley foothill riparian/fresh emergent wetland	Vernal pool fairy shrimp	*Branchinecta lynci*	T	--
		Vernal pool tadpole shrimp	*Lepidurus packardi*	E	--
	Annual grassland	Conservancy fairy shrimp	*Branchinecta conservatio*	E	--
	Oak woodland	Foothill yellow-legged frog	*Rana boylei*	FSC	SC
		California red-legged frog	*Rana aurora draytonii*	T	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Yellow Warbler	*Dendroica petechia brewsteri*	--	SC
		Yellow-breasted Chat	*Icteria virens*	--	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		Silky cryptantha	*Cryptantha crinita*	FSC	--
		Bogg's Lake hedge-hyssop	*Gratiola heterosepala*	--	E

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Arvin-Edison Water Storage District	alley foothill riparian/fresh emergent wetland	Moestan blister beetle	*Lytta moesta*	FSC	--
	Alkali scrub	Morrison's blister beetle	*Lytta morrisoni*	FSC	--
	Annual grassland	Western spadefoot	*Scaphiopus hammondii*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Blunt-nosed leopard lizard	*Gambelia silus*	E	E
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	--	E
		Yellow Warbler	*Dendroica petechia brewsteri*	--	SC
		Yellow-breasted Chat	*Icteria virens*	--	SC
		Western mastiff bat	*Eumops perotis*	FSC	SC
		Tulare grasshopper mouse	*Onychomys torridus tularensis*	FSC	SC
		Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	E	E
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		Recurved larkspur	*Delphinium recurvatum*	FSC	--
		Hoover's eriastrum	*Eriastrum hooveri*	T	--
		San Joaquin woolly-threads	*Lembertia congdonii*	E	--
		San Joaquin adobe sunburst	*Pseudobahia peirsonii*	T	E
		Striped adobe lily	*Fritillaria striata*	FSC	T
		California jewel-flower	*Caulanthus californicus*	E	E
		Bakersfield cactus	*Opuntia basilaris var. treleasei*	E	E
		Vasek's clarkia	*Clarkia tembloriensis* ssp. *calientensis*	FSC	--
		Comanche Point layia	*Layia leucopappa*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Avenal, City of	Alkali scrub Annual grassland Valley foothill riparian/fresh emergent wetland	Moestan blister beetle	*Lytta moesta*	FSC	--
		Morrison's blister beetle	*Lytta morrisoni*	FSC	--
		Hoppings blister beetle	*Lytta hoppingi*	FSC	--
		San Joaquin dune beetle	*Coelus gracilis*	FSC	--
		Western spadefoot	*Scaphiopus hammondii*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Blunt-nosed leopard lizard	*Gambelia silus*	E	E
		Giant garter snake	*Thamnophis gigas*	T	T
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	--	T
		Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	FSC	SC
		Fresno kangaroo rat	*Dipodomys nitratoides exilis*	E	E
		Tulare grasshopper mouse	*Onychomys torridus tularensis*	FSC	SC
		San Joaquin pocket mouse	*Perognathus inornatus inornatus*	FSC	--
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		California jewel-flower	*Caulanthus californicus*	E	E
		San Joaquin woolly-threads	*Lembertia congdonii*	E	--
		Recurved larkspur	*Delphinium recurvatum*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Coalinga, City of	Annual grassland Valley foothill riparian/fresh emergent wetland Alkali scrub	Hopping's blister beetle	*Lytta hoppingi*	FSC	--
		San Joaquin dune beetle	*Coelus gracilis*	FSC	--
		Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	--
		Redheaded sphecid wasp	*Eucerceris ruficeps*	FSC	--
		California tiger salamander	*Ambystoma californiense*	C	SC
		Blunt-nosed leopard lizard	*Gambelia silus*	E	E
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Giant garter snake	*Thamnophis gigas*	T	T
		Long-billed Curlew	*Numenius americanus*	--	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Swainson=s Hawk	*Buteo swainsoni*	--	T
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Merlin	*Falco columbarius*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		California Horned Lark	*Eremophila alpestris actia*	--	SC
		LeConte's Thrasher	*Toxostoma lecontei*	--	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		Townsend’s western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	--	T
		Fresno kangaroo rat	*Dipodomys nitratoides exilis*	E	E
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		California jewel-flower	*Caulanthus californicus*	E	E
		Pale-yellow layia	*Layia heterotricha*	FSC	--
		San Joaquin woolly-threads	*Lembertia congdonii*	E	--
		Hoover's eriastrum	*Eriastrum hooveri*	T	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Colusa County Water District	Valley foothill hardwood-conifer	Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	--
	Valley foothill riparian/fresh emergent wetland	Sharp-shinned Hawk	*Accipiter striatus*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
	Mixed chaparral	Northern Goshawk	*Accipiter gentilis*	FSC	SC
	Annual grassland	American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Yellow Warbler	*Dendroica petechia brewsteri*	--	SC
		Saltmarsh Common Yellowthroat	*Geothlypis trichas sinuosa*	FSC	SC
		Yellow-breasted Chat	*Icteria virens*	--	SC
		Striped adobe lily	*Fritillaria striata*	FSC	T
Contra Costa Water District	Annual grassland	California tiger salamander	*Ambystoma californiense*	C	SC
	Saline emergent wetland	California red-legged frog	*Rana aurora draytonii*	T	SC
	Valley foothill riparian/fresh emergent wetland	Double-crested cormorant	*Phalacrocorax auritus*	--	SC
		California Black Rail	*Laterallus jamaicensis coturniculus*	FSC	T
		California Clapper Rail	*Rallus longirostris obsoletus*	E	E
		Long-billed Curlew	*Numenius americanus*	--	SC
		Osprey	*Pandion haliaetus*	--	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Merlin	*Falco columbarius*	--	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		Saltmarsh Common Yellowthroat	*Geothlypis trichas sinuosa*	FSC	SC
		Saltmarsh wandering shrew	*Sorex vagrans halicoetes*	FSC	SC
		Saltmarsh harvest mouse	*Reithrodontomys raviventris*	E	E
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		Mason's lilaeopsis	*Lilaeopsis masonii*	FSC	R
		Delta tule pea	*Lathyrus jepsonii var. jepsonii*	FSC	--
		Soft bird's beak	*Cordylanthus mollis* ssp. *mollis*	E	R
		Antioch dunes evening primrose	*Oenothera deltoides* ssp. *howelii*	E	E

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Corning Water District	Annual grassland Valley foothill riparian/fresh emergent wetland	Golden Eagle	*Aquila chrysaetos*	--	SC
		Swainson's Hawk	*Buteo swainsoni*	--	T
		Northern Harrier	*Circus cyaneus*	--	SC
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		Prairie Falcon	*Falco mexicanus*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Merlin	*Falso columbarius*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
Del Puerto Water District	Valley foothill riparian/fresh emergent wetland Annual grassland	Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	--
		California tiger salamander	*Ambystoma californiense*	C	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Giant garter snake	*Thamnophis gigas*	T	T
		Long-billed Curlew	*Numenius americanus*	--	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Swainson's Hawk	*Buteo swainsoni*	--	T
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Merlin	*Falco columbarius*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		California Horned Lark	*Eremophila alpestris actia*	--	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	--	T
		San Joaquin kit fox	*Vulpes mactoris mutica*	E	T

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
East Bay Municipal Utility District	Valley foothill hardwood-conifer	California tiger salamander	*Ambystoma californiense*	C	SC
	Valley foothill riparian/fresh emergent wetland	California red-legged frog	*Rana aurora draytonii*	T	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
	Mixed chaparral	Alameda whipsnake	*Masticophis lateralis euryxanthus*	T	T
	Annual grassland	Long-billed Curlew	*Numenius americanus*	--	SC
	Saline emergent wetland	California Black Rail	*Laterallus jamaicensis coturniculus*	FSC	T
		California Clapper Rail	*Rallus longirostris obsoletus*	E	E
		Western Snowy Plover	*Charadrius alexandrinus nivosus*	T	SC
		California Least Tern	*Sterna antillarum*	E	E
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Sharp-shinned Hawk	*Accipiter striatus*	--	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Saltmarsh Common Yellowthroat	*Geothlypis trichas sinuosa*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		Saltmarsh wandering shrew	*Sorex vagrans halicoetes*	FSC	SC
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		Delta tule pea	*Lathyrus jepsonii var. jepsonii*	FSC	--
		Congdon's tarplant	*Hemizonia parryi* ssp. *congdonii*	FSC	--
		Showy Indian clover	*Trifolium amoenum*	E	--
		Fragrant fritillary	*Fritillaria liliacea*	FSC	--
		Contra Costa goldfields	*Lasthenia conjugens*	E	--
		Diablo helianthella	*Helianthella castanea*	FSC	--
		Most beautiful jewel-flower	*Streptanthus albidus* ssp. *peramoenus*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
El Dorado Irrigation District	Annual grassland Valley foothill hardwood Oak woodland	California red-legged frog	*Rana aurora draytonii*	T	SC
		Western spadefoot	*Scaphiopus hammondii*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Bald Eagle	*Haliaeetus leucocephalus*	T	E
		Northern Harrier	*Circus cyaneus*	--	SC
		Sharp-shinned Hawk	*Accipiter striatus*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		Swainson's Hawk	*Buteo swainsoni*	--	T
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Merlin	*Falco columbarius*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Long-billed Curlew	*Numenius americanus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Long-eared Owl	*Asio otus*	--	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		California Horned Lark	*Eremophila alpestris actia*	--	SC
		Purple Martin	*Progne subis*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Yellow Breasted Chat	*Icteria virens*	--	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		Layne's butterweed	*Senecio layneae*	T	R
		Pine Hill ceanothus	*Ceanothus roderickii*	E	R
		Pine Hill flannelbush	*Fremontodendron decumbens*	E	R
		El Dorado bedstraw	*Galium californicum* ssp. *sierrae*	E	R
		El Dorado County mule ears	*Wyethia reticulata*	FSC	--
		Red hill's soaproot	*Chlorogalum grandiflorum*	FSC	--
		Stebbins' morning glory	*Calystegia stebbinsii*	E	E

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Glenn Valley Water District	Annual grassland	Golden Eagle	*Aquila chrysaetos*	--	SC
	Valley foothill riparian/fresh emergent wetland	Northern Harrier	*Circus cyaneus*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Merlin	*Falco columbarius*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
Kanawha Water District	Annual grassland	Western spadefoot	*Scaphiopus hammondii*	FSC	SC
	Valley foothill riparian/fresh emergent wetland	Foothill yellow-legged frog	*Rana boylei*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Merlin	*Falco columbarius*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	FSC	--
Orland-Artois Water District	Annual grassland	Golden Eagle	*Aquila chrysaetos*	--	SC
		Swainson's Hawk	*Buteo swainsoni*	--	T
		Northern Harrier	*Circus cyaneus*	--	SC
		Prairie Falcon	*Falco mexicanus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Sacramento Municipal Utility District	Annual grassland Fresh emergent wetland	Vernal pool fairy shrimp	*Branchinecta lynci*	T	--
		Vernal pool tadpole shrimp	*Lepidurus packardi*	E	--
		California tiger salamander	*Ambystoma californiense*	C	SC
		Western spadefoot	*Scaphiopus hammondii*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Giant garter snake	*Thamnophis gigas*	T	T
		Northern Harrier	*Circus cyaneus*	--	SC
		Swainson's Hawk	*Buteo swainsoni*	--	T
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Merlin	*Falco columbarius*	--	SC
		Prairie Falcon	*Falco mexicanus*	--	SC
		Long-billed Curlew	*Numenius americanus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		California Horned Lark	*Eremophila alpestris actia*	--	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		Sacramento orcutt grass	*Orcuttia viscida*	E	E
		Bogg's Lake hedge-hyssop	*Gratiola heterosepala*	--	E

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
San Benito County Water District	Valley foothill riparian/fresh emergent wetland Mixed chaparral Annual grassland	Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	--
		California tiger salamander	*Ambystoma californiense*	C	SC
		California red-legged frog	*Rana aurora draytonii*	T	SC
		Foothill yellow-legged frog	*Rana boylei*	FSC	SC
		Western spadefoot	*Scaphiopus hammondii*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Merlin	*Falco columbarius*	--	SC
		California Horned Lark	*Eremophila alpestris actia*	--	SC
		Purple Martin	*Progne subis*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Yellow-breasted Chat	*Icteria virens*	--	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		Western mastiff bat	*Eumops perotis*	FSC	SC
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		San Joaquin saltbush	*Atriplex joaquiniana*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
San Luis Water District	Alkali scrub Annual grassland Valley foothill riparian/fresh emergent wetland Mixed chaparral	Moestan blister beetle	*Lytta moesta*	FSC	--
		California tiger salamander	*Ambystoma californiense*	C	SC
		Foothill yellow-legged frog	*Rana boylei*	FSC	SC
		Blunt-nosed leopard lizard	*Gambelia silus*	E	E
		Giant garter snake	*Thamnophis gigas*	T	T
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Prairie Falcon	*Falco mexicanus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	FSC	T
		Tulare grasshopper mouse	*Onychomys torridus tularensis*	FSC	SC
		Giant kangaroo rat	*Dipodomys ingens*	E	E
		Fresno kangaroo rat	*Dipodomys nitratoides exilis*	E	E
		Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		San Joaquin woolly-threads	*Lembertia congdonii*	E	--
		Heartscale	*Atriplex cordulata*	FSC	--
		Hoover's eriastrum	*Eriastrum hooveri*	T	--
		Recurved larkspur	*Delphinium recurvatum*	FSC	--
		Hispid bird's beak	*Cordylanthus mollis* ssp. *hispidus*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Santa Clara Valley Water District	Annual grassland Perennial grassland Valley foothill riparian/fresh emergent wetland Mixed chaparral Valley foothill hardwood	Bay checkerspot butterfly	*Euphydryas editha bayensis*	T	--
		Edgewood blind harvestman	*Calicina minor*	FSC	--
		California brackish water snail	*Tryonia imitator*	FSC	--
		California tiger salamander	*Ambystoma californiense*	C	SC
		California red-legged frog	*Rana aurora draytonii*	T	SC
		Foothill yellow-legged frog	*Rana boylei*	FSC	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		Sharp-shinned Hawk	*Accipiter striatus*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		Ferruginous Hawk	*Buteo regalis*	FSC	SC
		Golden Eagle	*Aquila chrysaetos*	--	SC
		Prairie Falcon	*Falco mexicanus*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Long-eared Owl	*Asio otus*	--	SC
		Long-billed Curlew	*Numenius americanus*	--	SC
		California Black Rail	*Laterallus jamaicensis coturniculus*	FSC	T
		California Clapper Rail	*Rallus longirostris obsoletus*	E	E
		California Least Tern	*Sterna caspia*	E	E
		Saltmarsh Common Yellowthroat	*Geothlypis trichas sinuosa*	FSC	SC
		Black Swift	*Cypseloides niger*	--	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		Salt-marsh wandering shrew	*Sorex vagrans halicoetes*	FSC	SC
		Salt-marsh harvest mouse	*Reithrodontomys raviventris*	E	E
		Coyote ceanothus	*Ceanothus ferrisae*	E	--
		Santa Clara Valley dudleya	*Dudleya setchellii*	E	--
		Fountain thistle	*Cirsium fontinale var. fontinale*	E	E
		Fragrant fritillary	*Fritillaria liliacea*	FSC	--
		Talus fritillary	*Fritillaria falcata*	FSC	--
		Most beautiful jewel-flower	*Streptanthus albidus* ssp. *peramoenus*	FSC	--
		California sea blite	*Suaeda californica*	E	--
		Pt. Reyes bird's-beak	*Cordylanthus maritimus* ssp. *palustris*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Santa Clara Valley Water District (continued)		Sharsmith's harebell	*Campanula sharsmithiae*	FSC	--
		Mt. Hamilton thistle	*Cirsium fontinale var. campylon*	FSC	--
		Mt. Diablo phacelia	*Phacelia phacelioides*	FSC	--
		Brandegee's eriastrum	*Eriastrum brandegeae*	FSC	--
		Rock sanicle	*Sanicula saxatilis*	FSC	R
		Mt. Hamilton coreopsis	*Coreopsis hamiltonii*	FSC	--
		Mt. Hamilton jewel-flower	*Streptanthus callistus*	FSC	--
		Metcalf Canyon jewel-flower	*Streptanthus albidus* ssp. *albidus*	E	--
		Santa Cruz tarplant	*Holocarpha macradenia*	PT	E
		Congdon's tarplant	*Hemizonia parryi* ssp. *congdonii*	FSC	--
Westlands Water District	Alkali scrub Annual grassland Valley foothill riparian/fresh emergent wetland	Moestan blister beetle	*Lytta moesta*	FSC	--
		Morrison's blister beetle	*Lytta morrisoni*	FSC	--
		Hoppings blister beetle	*Lytta hoppingi*	FSC	--
		San Joaquin dune beetle	*Coelus gracilis*	FSC	--
		Western spadefoot	*Scaphiopus hammondii*	FSC	SC
		Western pond turtle	*Clemmys marmorata*	FSC	SC
		Blunt-nosed leopard lizard	*Gambelia silus*	E	E
		Giant garter snake	*Thamnophis gigas*	T	T
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Northern Harrier	*Circus cyaneus*	--	SC
		San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	FSC	T
		Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	FSC	SC
		Fresno kangaroo rat	*Dipodomys nitratoides exilis*	E	E
		Giant kangaroo rat	*Dipodomys ingens*	E	E
		Tulare grasshopper mouse	*Onychomys torridus tularensis*	FSC	SC
		San Joaquin pocket mouse	*Perognathus inornatus*	FSC	--
		San Joaquin kit fox	*Vulpes macrotis mutica*	E	T
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		California jewel-flower	*Caulanthus californicus*	E	E
		San Joaquin woolly-threads	*Lembertia congdonii*	E	--
		Recurved larkspur	*Delphinium recurvatum*	FSC	--
		Panoche pepper-grass	*Lepidium jaredii* ssp. *album*	FSC	--

TABLE B-1
Habitats Identified and Special-Status Plant and Animal Species Found within the Boundaries of Affected CVP Water Contractors

CVP Water Contractor	Habitats Identified in District	Special-Status Species that may have Occurred in District		Status[a]	
		Common Name	Scientific Name	Federal	State
Westside Water District	Valley foothill hardwood	Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	--
	Valley foothill riparian/fresh emergent wetland	Western pond turtle	*Clemmys marmorata*	FSC	SC
	Annual grassland	Golden Eagle	*Aquila chrysaetos*	--	SC
	Mixed chaparral	Northern Harrier	*Circus cyaneus*	--	SC
		Cooper's Hawk	*Accipiter cooperii*	--	SC
		American Peregrine Falcon	*Falco peregrinus anatum*	E	E
		Prairie Falcon	*Falco mexicanus*	--	SC
		Merlin	*Falco columbarius*	--	SC
		Burrowing Owl	*Athene cunicularia hypugea*	FSC	SC
		Long-eared Owl	*Asio otus*	--	SC
		Short-eared Owl	*Asio flammeus*	--	SC
		Purple Martin	*Progne subis*	--	SC
		Loggerhead Shrike	*Lanius ludovicianus*	FSC	SC
		Yellow Warbler	*Dendroica petechia brewsteri*	--	SC
		Yellow-breasted Chat	*Icteria virens*	--	SC
		Tricolored Blackbird	*Agelaius tricolor*	FSC	SC
		Townsend's western big-eared bat	*Plecotus townsendii townsendii*	FSC	SC
		San Joaquin saltbush	*Atriplex joaquiniana*	FSC	--

[a]Federal:
E = Endangered
T = Threatened
PT = Proposed Threatened
C = Candidate
FSC = Species of Concern

State:
E = Endangered
T = Threatened
R = Rare
C = Species of Special Concern

Sources:
CDFG. 1999a. Natural Diversity Data Base. Special Animals. June 1999.

CDFG. 1999b. Natural Diversity Data Base. June 1999.

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Appendix C

Effects on Land Use from the Proposed Project and Alternatives

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TABLE C-1
Effects on Land Use from the Proposed Project and Alternatives

CVP Water Contractor	Proposed Project						Alternative 1 - No Project and Alternative 3 - Permit Consolidation and Conformance						Alternative 2 - Existing Conditions					
	Irr. Ag.		Dryland Ag.	M&I		Undev.	Irr. Ag.		Dryland Ag.	M&I		Undev.	Irr. Ag.		Dryland Ag.	M&I		Undev.
	CVP	Non-CVP		CVP	Non-CVP		CVP	Non-CVP		CVP	Non-CVP		CVP	Non-CVP		CVP	Non-CVP	
Anderson-Cottonwood Irrigation District	680	0	0	0	0	0	0	680	0	0	0	0	0	680	0	0	0	0
Arvin-Edison Water Storage District	321	1,460	0	949	0	604	0	1,781	0	0	949	604	321	1,460	0	949	0	604
Avenal, City of[a]	232	1,216	5,155	2,480	0	23,654	0	1,448	5,155	0	2,480	23,654	232	1,216	5,155	2,480	0	23,654
Coalinga, City of[a]	5,956	23,409	0	6,305	0	67,293	0	23,409	5,956	0	4,674	68,924	5,956	23,409	0	4,674	0	68,924
Colusa County Water District	594	0	0	0	0	212	0	0	384	0	0	422	384	0	0	0	0	422
Contra Costa Water District	0	0	0	0	0	359	0	0	0	0	0	359	0	0	0	0	0	359
Corning Water District	1,496	0	0	0	0	318	0	0	1,496	0	0	318	1,496	0	0	0	0	318
Del Puerto Water District	1,307	0	0	0	0	0	0	0	1,307	0	0	0	1,307	0	0	0	0	0
East Bay Municipal Utility District	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0
El Dorado Irrigation District	0	0	0	711	0	0	0	0	0	0	711	0	0	0	0	711	0	0
Glenn Valley Water District	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
Kanawha Water District	653	0	0	0	0	0	0	0	485	0	0	168	485	0	0	0	0	168
Orland-Artois Water District	65	0	0	0	0	0	0	65	0	0	0	0	65	0	0	0	0	0
Sacramento Municipal Utility District	0	0	0	2,590	0	0	0	0	0	0	2,590	0	0	0	0	2,590	0	0
San Benito County Water District	2,098	0	0	0	0	0	0	2,098	0	0	0	0	0	2,098	0	0	0	0
San Luis Water District	10,668	0	0	1,549	0	0	0	0	10,668	0	1,549	0	10,668	0	0	1,549	0	0
Santa Clara Valley Water District	3,730	0	0	32,899	0	545,482	0	1,200	0	0	19,712	561,199	1,200	0	0	19,712	0	561,199
Westlands Water District	30,607	0	247	111	0	9,417	0	0	30,854	0	111	9,417	30,607	0	247	111	0	9,417
Westside Water District	826	0	0	0	0	0	0	0	253	0	0	573	122	0	131	0	0	573
Total	**59,237**	**26,085**	**5,402**	**47,595**	**0**	**647,339**	**0**	**30,681**	**56,558**	**0**	**32,777**	**665,642**	**52,843**	**28,863**	**5,533**	**32,777**	**0**	**665,642**

[a]Values shown include all lands outside the authorized POU within each CVP water contractor service area. 232 acres in the City of Avenal service area overlap with the Westlands Water District. 9,570 acres in the City of Coalinga service area overlap with the Westlands Water District. The Irr. Ag. CVP acreage for the Cities of Avenal and Coalinga is assigned to Westlands Water District for impact and mitigation purposes.

[b]The values shown in the Total column overstate the acreage outside the authorized POU by 9,802 acres because of the overlap between the City of Avenal, the City of Coalinga, and Westlands Water District. For calculating mitigation requirements, these values have been reduced appropriately.