Appendix A: Contractor Service Area Maps

Pajaro Valley W.M.A. - Santa Clara Valley W.D.
Westlands W.D. Distribution District #1
(3-Way Assignment From Mercy Springs W.D.)

14-06-200-3365A-IR15-B

Contractor's Service Area

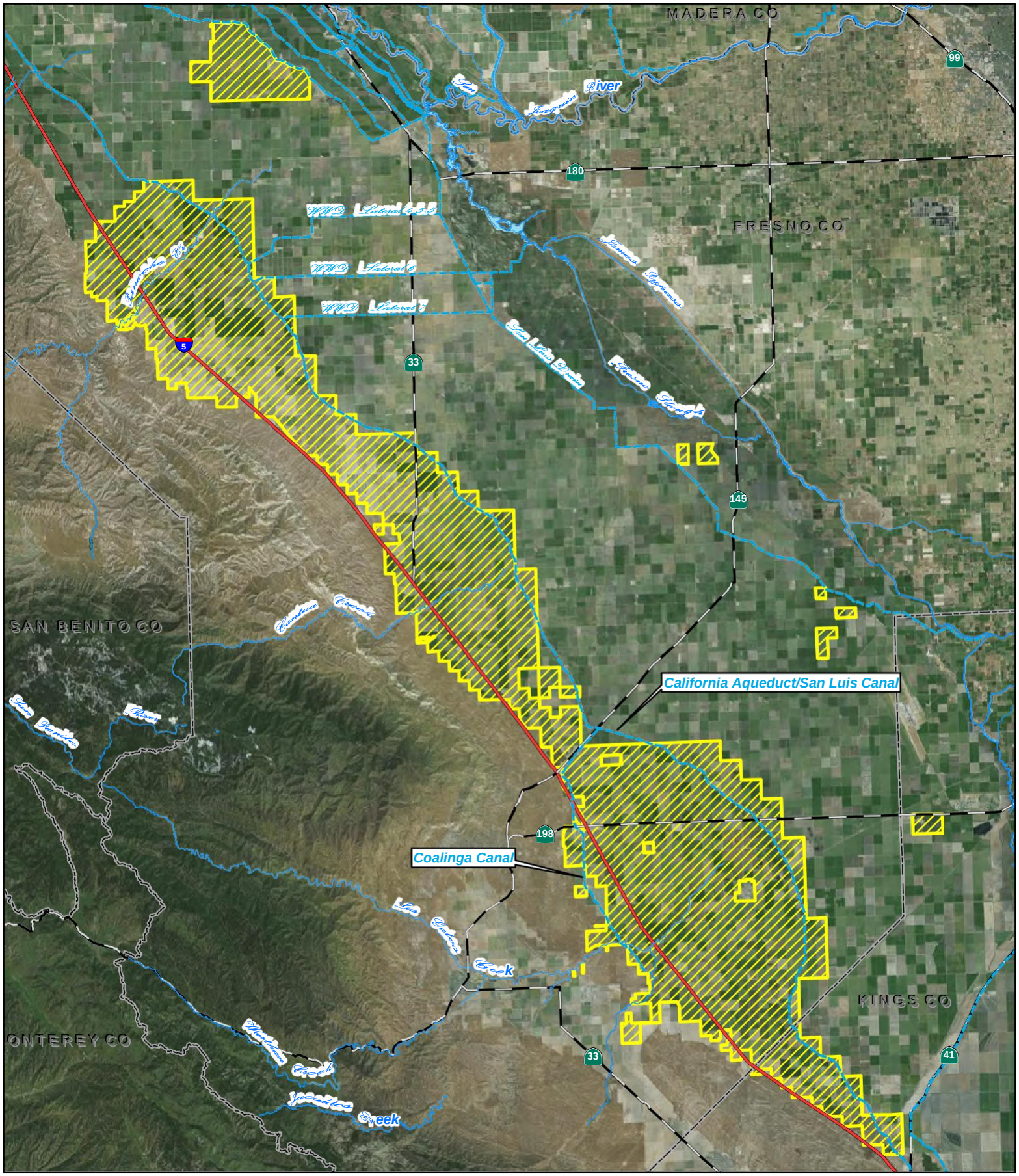
RECLAMATION
Managing Water in the West

Date: September 16, 2015
File Name: N:\districts\contracts\pajaro-santaclara-westdd#1\pajaro-santaclara-westdd#1 IR 15.mxd

Miles
0 5 10 20 30

N

805-202-104



Full Assignment from:
Broadview W.D. 14-06-200-8092-IR15
Centinella W.D. 7-07-20-W0055-IR15-B
Widren W.D. 14-06-200-8018-IR15

Contractor's Service Area

Westlands W.D. Distribution District #1

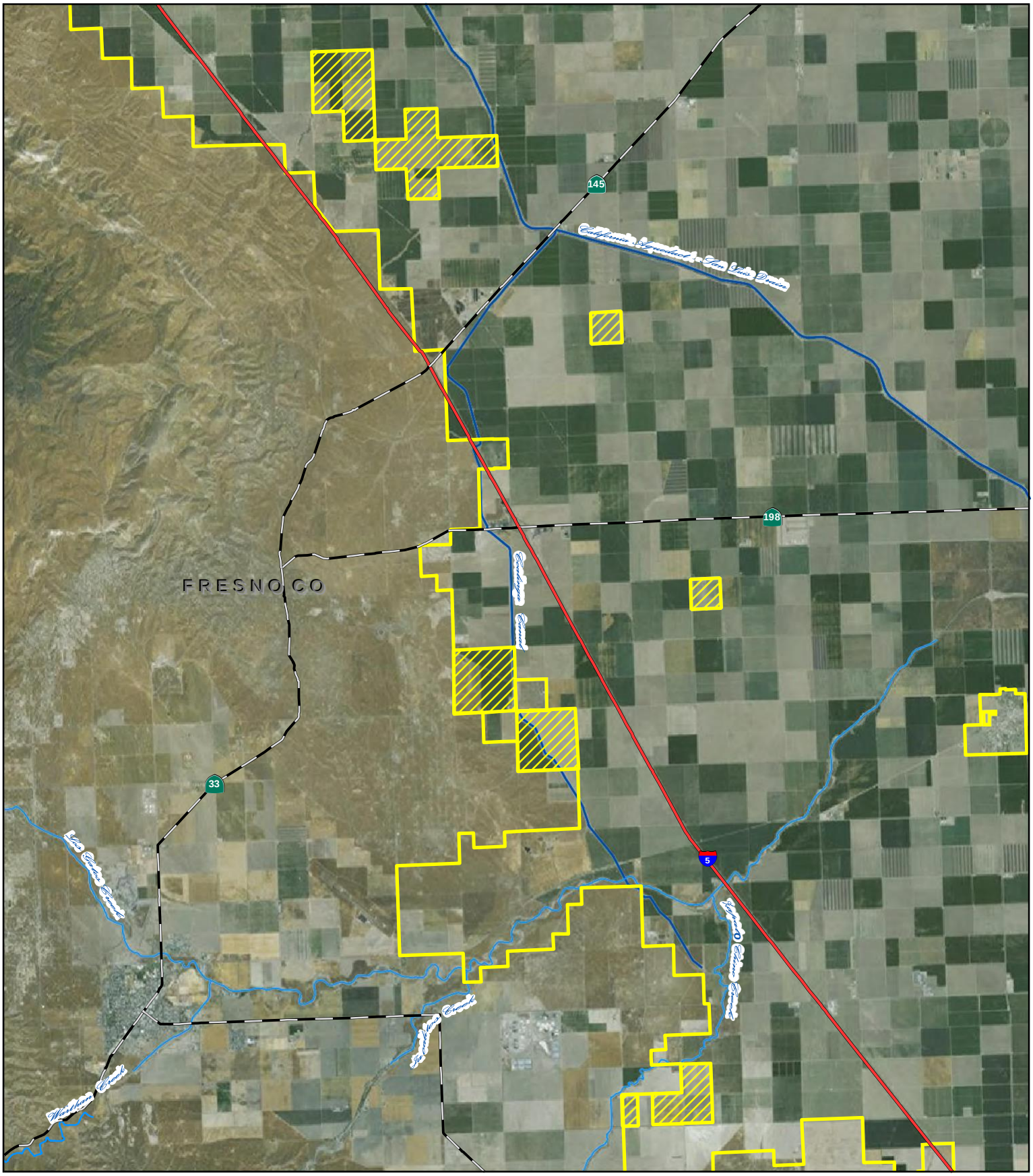
0 2.5 5 10 Miles

N

RECLAMATION
Managing Water in the West

805-202-105

Date: September 16,2015
File Name: N:\Districts\Contracts\westlands_distribution_district_1\AssignFromBroadviewCentinellaWidren2015.mxd



Contractor's Service Area

Westlands Water District

Westlands Water District
Distribution District No. 2
(Partial Assignment From Mercy Springs W.D.)

14-06-200-3365A-IR15-C

0 1 2 4 6 Miles

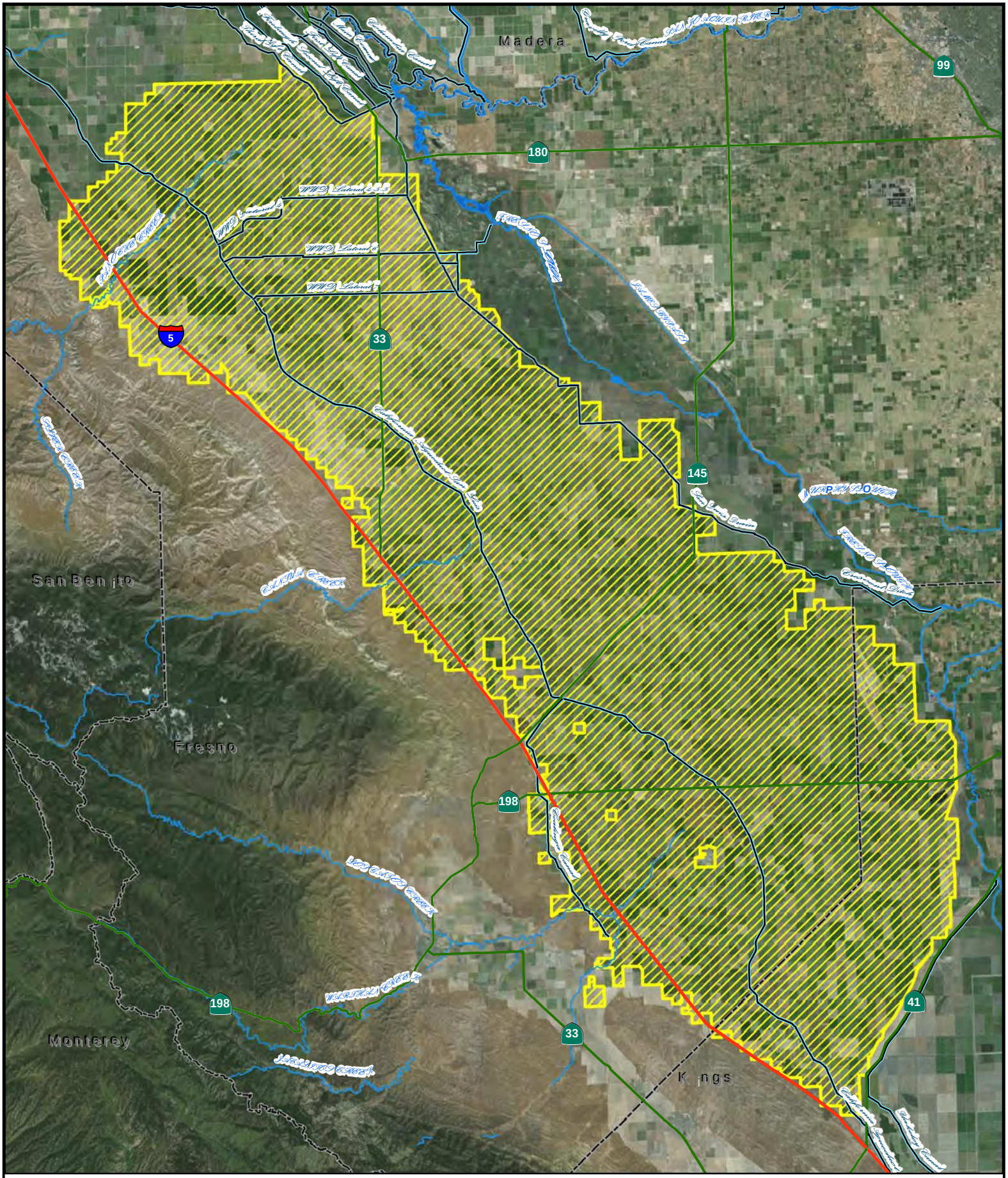
N

RECLAMATION
Managing Water in the West

Date:September 16, 2015

File Name: N:\Districts\Contracts\westlands_dd#2\westlands_dd2_AssignFromMercySprings_2015.mxd

805-202-107



Westlands Water District

14-06-200-495-IR5

Contractor's Service Area

5 2.5 0 5 Miles

N

RECLAMATION
Managing Water in the West

Date: September 16, 2015
File Name: N:\Districts\Contracts\westlands\Westlands_14_06_200_495_IR5.mxd

805-202-106

Appendix B: Purpose and Methodology for Water Needs Assessments

ATTACHMENT 1

CENTRAL VALLEY PROJECT (CVP) WATER NEEDS ASSESSMENTS:
PURPOSE AND METHODOLOGY

Purpose:

Water needs assessments have been performed for each CVP water contractor eligible to participate in the CVP long-term contract renewal process. These water needs assessments serve three purposes:

1. Confirm past beneficial use of CVP water;

2. Provide water demand and supply information under current and future conditions for the environmental documents; and

3. Provide an estimate of contractor-specific needs for CVP water by the year 2025 to serve as a starting point for discussions regarding contract quantities in the negotiation process.

Small Contractors exempt from Detailed Water Needs Assessments:

In order to minimize the informational burdens on CVP water contractors with small amounts of CVP supply under contract, an exemption from the requirement for detailed water needs assessments has been provided to these contractors. The exemption applies to contractors who provide agricultural water to a service area of 2000 irrigable acres, or less, and/or provide urban water now, or in the future, in the amount of 2000 acre-feet annually, or less. A contractor may be exempt from the water needs assessment requirement for its urban water service, but not for its agricultural water service, or vice-a-versa. These contractors are assumed to demonstrate future need if they have beneficially used their CVP supplies in the past.

Approach to Confirm Past Beneficial Use and Depict Current Conditions:

Originally, Reclamation requested water demand and supply information for the 1979 through 1997 timeframe. Reclamation believes that evaluations of beneficial use, current and future CVP needs based on information for a 19-year period of record, including both wet and dry periods, is a scientifically defendable way of conducting water needs assessments. However, the concerns of the CVP water contractors with respect to the magnitude of the information request persuaded Reclamation to perform the assessments using a representative snapshot year approach, instead. Although less scientifically rigorous, the snapshot year approach appears adequate for cursory evaluations of water needs.

The year 1989 is the snapshot year chosen to confirm past beneficial use of CVP water for the American, Delta, Contra Costa, Sacramento, and San Felipe regions (refer to the definitions below). This year was chosen because the majority of CVP water contractors received full delivery of their requested water supplies and the total annual precipitation for most CVP regions was in the normal range. Since 1989 was a drought year in the Friant region, 1996 is the snapshot year selected to calculate past beneficial use for this region. Water Need Assessments for the Stanislaus Region have been deferred pending the resolution of operational issues in the

Stanislaus River basin. Some contractors have elected to deviate from the selected snapshot year because of the unavailability of information for that year. Following is a description of the regions:

American: American River Division

Delta: Delta Division combined with West San Joaquin Division, but not the Contra Costa Unit

Contra Costa: Contra Costa Unit

Stanislaus: East Side Division

Friant: Friant Division combined with Hidden Unit, Buchanan Unit, and Cross Valley Canal

Sacramento: Sacramento River Division combined with Trinity River and Shasta Divisions

San Felipe: San Felipe Division

Following is a description of the process to evaluate past beneficial use of CVP water supplies:

For contractors who supply water to meet agricultural demands, Reclamation estimated the district irrigation efficiency associated with the crop water information provided for the snapshot year. Both the district irrigation efficiency and the amount of intra-district conveyance losses are evaluated for reasonableness. Past beneficial use of CVP supplies is confirmed if the district irrigation efficiency is close to the current statewide average of 75 percent, or if a trend towards increasing district irrigation efficiencies over time is apparent; **and** if intra-district conveyance losses total 10 percent, or less, of the district's total water supply. In situations where some, or all, of these conveyance losses contribute to groundwater recharge for later use by the contractor, these "conveyance losses" are shown as groundwater recharge rather than conveyance losses.

For contractors who supply municipal and industrial water, the primary test of past beneficial use of CVP supplies is whether the calculated per capita demand in column 36 is reasonably close to the reference per capita demand value in column 35. Acceptable explanations for calculated per capita demands that significantly exceed the reference number might include a large industrial water demand, or a significant percentage of residences on larger than average-size city lot parcels.

The environmental documentation associated with the CVP long-term contract renewals specifies 1995 as the base year. Therefore, water supply and demand information is indicated on the water needs assessments for the 1995 level of development, if available. In many cases, the

information provided to demonstrate past beneficial use is also reasonably representative of 1995 level water supplies and demands.

Definition of Need for CVP Water Supplies:

An important function of these assessments is the estimation of year 2025 CVP water needs. The assessments compare all demands and all supplies (including CVP supplies) estimated for the 2025 level of development for a normal hydrologic year. The results are displayed in Column 39 as Unmet Demand. If the number in this column is positive or only slightly negative[1] then the CVP water contractor is deemed to have full future need of the maximum annual CVP supply currently under contract for all year types.

Demands include agricultural, urban and, on occasion, environmental water demands.
CVP supplies in the assessments are set at the maximum annual contractual amount for each water contractor, except in the Friant Division. The Friant Division's Class II contract amounts are based on a wet hydrologic year. To reflect a normal hydrologic year, CVP supplies for the Friant Division are set at the maximum annual Class I contract amount plus 40% of the maximum annual Class II contract amount.

Dry year and critically dry year analyses were only performed for urban contractors who did not demonstrate full future need of their CVP contract supply in a normal hydrologic year.

The methodology used to estimate agricultural and urban water demands as well as to estimate the availability of non-CVP supplies is described in the following sections.

Agricultural Water Demand:

Agricultural water demand is defined as the sum of the district's irrigation water demand and the intra-district conveyance losses, where irrigation water demand is the product of the irrigated acreage in a district and the average farm delivery requirement. The farm delivery requirement is defined as the unit amount of water necessary to supply crop water needs in excess of effective precipitation and varies based on crop type, climate, irrigation water quality, soil salinity and irrigation method. The district's irrigation water demand is not necessarily the sum of all the on-farm irrigation water demands because such measures as recycling of intra-district return flows are effective in reducing the overall district irrigation water demand. The assumption for this analysis is that the continued implementation of water use efficiency measures between now and the year 2025 will further reduce the unit amount of water needed to grow crops in the future. Often, it is also assumed that district conveyance losses will decrease in the future. Specifically, district irrigation efficiencies are assumed to increase from an average of 75 percent currently to 85 percent by the year 2025, where district irrigation efficiency is defined as follows:

[1] If the negative amount is within 10% for contracts in excess of 15,000 acre-feet, or within 25% for contracts equal to, or less than, 15,000 acre-feet; the test of full future need of CVP supplies under contract is deemed to be met.

District Irrigation Efficiency= Supply - Non Recoverable Losses to the District[2]
Supply

Or, approximately =

Sum of On-farm Crop Water Requirements of Applied Water (ETAW) + Intra-District Reuse
District's Irrigation Water Demand

Certain districts, such as those with large elevation differences within their boundaries, have target district irrigation efficiencies of 80 percent based on the unavailability of certain water management options to increase overall district irrigation efficiency.

Estimating Crop Water Requirements:

Generally, the CVP water contractors' Water Management Plans provide historical information on crop water requirements. This information was used in the snapshot year analyses to confirm past beneficial use of CVP supplies and to reflect the base condition in the environmental documents.

Reclamation estimated crop water requirements for the year 2025 level of development based on the CVP water contractors' estimates of future crops and acreage planted multiplied by estimates of the farm delivery requirements for each crop. Reclamation staff initially estimated crop water requirements for all regions using evapotranspiration (ET) and effective precipitation (EP) data from several sources: 1) California Department of Water Resources (DWR) Bulletin 160-98, 2) DWR Bulletin 113-3, and 3) Reclamation knowledge and experience. The ET and EP information was tabulated on a Detailed Analysis Unit (DAU) basis and then proportioned to each district based on the district's area in a DAU. The data was then used in combination with other traditional methodologies for determining crop water requirements to estimate each district's total irrigation water demand in the year 2025.

In February 2000, representatives of the Friant and Delta Region CVP water contractors expressed the following concerns with using this methodology:

• The crop water requirements estimated are too low;

• The effective precipitation component to meeting crop water requirements is too high for some areas.

In order to address these concerns a number of evaluations were performed.

[2] The general equation for district efficiency includes conveyances losses; however, for these assessments intra-district conveyance losses are not included in the district efficiency equation because these are treated as a separate parameter for the purposes of evaluating beneficial use of CVP supplies.

One analysis compared the agricultural water demand calculations performed by a private consultant to CVP contractors and those performed by Reclamation staff for the water districts in the Delta Region. This analysis indicated that Reclamation's and the consultant's estimation of these water demands on a regional basis is close (within 8%). However, the results of the agricultural water demand determinations diverge as the regional area is broken into sub-regions and especially when the comparison is made at the district level.

A comparison of calculations of ET and EP for alfalfa in the Friant Region using the methodologies of Bulletin 160-98, Reclamation and the Natural Resources Conservation Service (NRCS) indicates that Bulletin 160-98 consistently estimates EP higher than the other two methods at the district level. One reason for this difference appears to be that the Bulletin 160-98 methodology estimates the contribution of rainfall to the soil moisture profile in the non-irrigation season in a different way than the other two methodologies. Similarly, a comparison of ET values shows that the Bulletin 160-98 values are consistently lower than the NRCS values at the district level. This difference is most likely the result of Bulletin 160-98's use of "actual" ET values. "Actual" ET is potential ET modified to reflect regional agricultural practices by farmers. The NRCS method uses potential ET values without modification.

Based on discussions with DWR, the affected CVP water contractors and their consultants; Reclamation concluded that the regional agricultural practices taken into account by Bulletin 160-98 may not be reflective of current and/or future practices by the CVP water contractors. For this reason, Reclamation determined that it was more prudent to use potential ET values than the "actual" ET values from Bulletin 160-98 in evaluating 2025 crop water requirements for water districts located in the Friant and Delta Regions.

In addition, Reclamation and representatives of the Friant and Delta Region water contractors agreed on a different methodology to estimate EP than the one used in Bulletin 160-98 because of the lack of dependable rainfall. The bulletin assumes rainfall is effective if it can be stored in the soil moisture profile, or directly meet crop water needs during any month. However, in actual practice to effectively manage farm operations, a farmer may need to pre-irrigate one or more fields earlier in the month only to have a major precipitation event occur later in the month, thus reducing the effectiveness of the rainfall during that month.

Revised Agricultural Water Demand Methodology for the Friant and Delta Regions:

Following is a description of the revised methodology for estimating ET and EP:

• EP is estimated to be 50 percent of long-term average annual rainfall with the exception of citrus EP. For citrus groves, it is estimated that one inch of the initial rainfall is stored before the soil seals over and the runoff begins; then about 10% of the additional rainfall for the season is estimated to be effective.

• ET is determined using California Irrigation Management Information System (CIMIS) potential ET data and crop coefficients supplied by the University of California Cooperative Extension.

No change was made to the ET and EP determinations for the CVP water contractors in the other regions because these regions are located in areas of higher precipitation not as sensitive to the issues raised in the comparative analyses.

Urban Water Demand:

Urban water demand is defined as the sum of residential, nonresidential and distribution system demands. The components of residential demand include indoor and outdoor demand. Originally, information on residential and a portion of nonresidential demand was requested in terms of these two components; however, most CVP water contractors were unable to provide the information in that format. Therefore, the information request was revised to a combined figure for indoor and outdoor use. Nonresidential demand includes commercial, institutional and industrial demands. Distribution system demands consist of unaccounted beneficial use and distribution system losses where:

• Unaccounted beneficial use includes water for such uses as firefighting, mainline flushing, storm drain flushing, sewer and street cleaning, construction site use, water quality testing and other testing.

• Distribution system losses accounts for water lost because of leaks in storage and distribution systems, evaporation, illegal connections, and water theft.

Projected M&I water demand will be influenced over time by many factors, including future land use changes, population shifts, and improvements in residential and distribution system efficiencies over time. As is the case for agricultural water demands, the methodology assumes that the implementation of water conservation measures in the next 25 years will increase the efficiency of urban water use and reduce unit M&I water demands. Specifically, the reference average per capita usage upon which the urban beneficial use evaluation is based decreases from 5% to 14% by the year 2025, depending on the location in the state.

Non-CVP Water Supplies:

Non-CVP water supplies can include groundwater including the conjunctive use of surface and groundwater, State Water Project (SWP} supplies, local surface water supplies, recycled water, inter-district return flows and water transfers. The methodology considers water transfers a beneficial use of water. Water transfers are, therefore, included in the 2025 level assessments if there is evidence of a commitment by both parties to engage in the transfer in this timeframe.

Average values for SWP and local surface supplies are used in the 2025 level assessments unless the analysis is for dry or critically dry year conditions. Often the source of information is the 10-year average surface water supply from the contractor's Water Management Plan. If there is an indication that surface water supplies will decrease in the future because of increased upstream diversions or increased environmental requirements, the surface water supply is reduced to reflect these considerations in the 2025 level assessment.

Where available, groundwater safe yields are used to estimate future groundwater pumping. Safe yield is defined as the amount of groundwater a district can pump on a long-term average and not cause the long-term decline of groundwater levels leading to excessive depths for pumping or leading to degradation of groundwater quality. A safe yield value is the result of a complex interaction between many factors; a change in any one of the factors can have an impact on the value obtained from safe yield computations. The main factors involved in safe yield computations can include, but are not limited to, water supply, consumptive use, losses to the system, and water quality. Adding to the complexity of the analysis is that many, if not most, of the factors involved in a safe yield computation are time dependent, and have both short-term and long-term trends--which may be quite different. If a safe yield analysis is not available for the contractors' groundwater resources, groundwater pumping and recharge, if applicable, is estimated from historical information for the 2025 level assessments.

Originally, groundwater pumping for the Friant Region was estimated based on historical estimates of groundwater pumping for 1996 from the water contractors' Water Management Plans. During the February 2000 discussions with representatives of the Friant Region water contractors, the issue of groundwater was raised. Specifically, Reclamation was requested to evaluate the possibility of using the original safe yields estimated by Reclamation as the supply available from groundwater in the 2025 level assessments. Reclamation agreed to investigate the use of these original safe yields because the original safe yields were developed for ultimate build-out and included CVP groundwater recharge. Following is a summary of the analysis performed to estimate groundwater pumping for the Friant Region in the 2025 level assessments.

Analysis of Groundwater Pumping in the Friant Region:

Groundwater technical studies were conducted by Reclamation in the 1940's and 1950's to characterize the geohydrology, groundwater occurrence and groundwater conditions in each district, and to determine each district's safe yield. Prior to the delivery of CVP water supplies, farmers irrigated mainly with groundwater, although some local surface water sources were also used. Because recharge of groundwater could not keep pace with the use of water primarily for agricultural purposes, groundwater levels had declined in many areas, and groundwater overdraft was common throughout the region.

A review of Reclamation's original safe yields for the Friant Region shows that these safe yield estimates are generally less than the estimated amounts of groundwater pumping for 1996. Reclamation's original safe yield estimates are also generally less than the updated safe yield estimates performed by Reclamation for some of the districts in the early 1990's. However, the 1990's safe yield estimates are considered preliminary numbers and were never adopted by Reclamation nor accepted by the Friant water contractors. Historical estimates of groundwater pumping indicate that these water contractors are pumping groundwater in excess of the original safe yields.

The groundwater pumping in excess of safe yield has resulted in the continued decline in the groundwater tables underlying most of the districts. A review of hundreds of individual well hydrographs shows that this increase in pumping has not been supported by the aquifer. Most districts are still experiencing declining groundwater levels since the inception of CVP

deliveries. With the exception of five districts (Delano Earlimart, Exeter, Lindmore, Lindsay-Strathmore and Orange Cove), cumulative groundwater storage has decreased in the remaining 19 Friant districts since the CVP began importing water into those districts. The five districts that show overall rises in groundwater storage change have unique geohydrologic conditions and were evaluated individually to determine appropriate levels of groundwater pumping for the 2025 level assessments.

From the analysis performed, it can be concluded that CVP deliveries since 1986, as evidenced by a continuous decline in storage from 1986 to 1992, have not been sufficient to maintain reasonably stable groundwater levels, nor have CVP deliveries supported an increase in groundwater levels in wet years under the conjunctive use operations practiced by most districts. Safe yield pumping in combination with surface water supplies should have sustained or raised groundwater levels to some stable level. However, historical groundwater pumping has been higher than the safe yield values. In addition, unforeseen factors in the original safe yield analysis such as the magnitude of groundwater use by non-district entities primarily for urban needs within the boundaries of the district, the magnitude of groundwater and surface water use by adjacent districts, changes in the type of crops, droughts and reductions in CVP water deliveries may render even the original safe yield values as too high. However, the unavailability of critical information and the lack of time to perform an analysis make the determination of new safe yields for the Friant Region infeasible at this time. Therefore, Reclamation concurs that the original safe yields are appropriate to depict groundwater pumping for 19 contractors in the Friant Region for the 2025 level assessments unless recharge is significantly higher than under the pre-project condition. In that case, groundwater pumping is assumed to be the safe yield plus a certain percentage of recharge. It is assumed that up to 10% of a district's supply may be lost in conveyance or recharge losses; the remainder of the recharge is assumed to be available for groundwater pumping.

Sources of Information

The Water Management Plans that most water districts have prepared in response to the mandates of the Central Valley Project Improvement Act and the Reclamation Reform Act provide information on agricultural, urban and environmental water demands as well as on water supplies available to meet these demands. In most cases, these plans depict information for a representative year, although some plans provide a number of years of historical information as well as projections for the future. Fortunately, the representative year for many of these plans is either 1989, or 1996. The water contractors were asked to verify that information contained in these plans may be used to calculate past beneficial use and/or to depict current conditions for the purposes of the environmental documentation. In addition, the agricultural water contractors were requested to provide projections of types of crops planted, irrigated acres and amounts and types of non-CVP water supplies for the year 2025. Similarly, the urban water contractors were asked to provide population projections, projections of nonresidential water demand and amounts and types of non-CVP water supplies for the year 2025. Department of Finance population projections were used to assess whether the contractors' population projections appear reasonable.

Other sources of information included DWR Bulletin 160-98, DWR Bulletin 113-3, CIMIS information, crop coefficients from various sources, Reclamation's annual crop reports, the January 2000 Water Forum Agreements for the American River, Reclamation's groundwater safe yield studies and miscellaneous planning and environmental documents.

WATER NEEDS ASSESSMENTS FOR CENTRAL VALLEY PROJECT LONG TERM RENEWAL

Purpose

Section 3406 (c) of the Central Valley Project Improvement Act states that upon request, the Secretary shall renew any existing long-term repayment or water service contract for the delivery of water from the Central Valley Project for a period of twenty-five years and may renew such contract for successive periods of up the 25 years each. In response to this provision, the Region submitted a Basis of Negotiation (BON) to the Commissioner on January 26, 1999 which required the Region to conduct water needs demand assessments for as many as 113 Long Term Renewal Contacts. As stated in the BON, the water demands in conjunction with information on available water supplies will be used to demonstrate historic beneficial use of both CVP and non-CVP water for each contractor. Also, a determination of future need for CVP will be made water based on comparisons of future water demands and the determination of non-CVP water supplies for each contractor.

Background

On October 23, 1998, Reclamation's Mid-Pacific Region announced its intent to undertake a water needs assessment for each contactor as part of the CVP long term contract renewal process. The letter requested written comments on the draft water needs assessment methodologies be submitted to Reclamation by December 11, 1998. As part of the scoping process, four public workshops were held in early November 1998 to address the development of water demand methodologies for both irrigation and M&I purposes. The various proposed steps to assess potential water needs for irrigation and M&I purposes and subsequent total potential demands for CVP water are detailed in the document entitled "Proposed Water Need Methodologies, LTRC, Central Valley Project."

On December 30, 1998, Reclamation requested information for water needs assessment for Long Term Contract Renewal from All CVP Interim Renewal Irrigation and M&I Contractors, and All CVP Irrigation and M&I Contractors Subject to Binding Agreement. The request stated that although Reclamation recognized the water demand methodologies where still in draft form and the comment period had been extended to January 8, 1999. Reclamation believed the required information would likely be needed irrespective of any changes in methodologies. The information was to be provided by February 19, 1999.

On January 29, 1999, Reclamation held technical discussions on the proposed irrigation contractor methodology for the needs assessment. As an outcome of this meeting, Reclamation committed to perform comparisons in order to streamline the irrigation water demand analysis. 1) Evaluate crop water needs plus distribution system water requirement for the years 1979 through 1997 for six representative districts to arrive at an "average" beneficial use of water for that time frame to establish a correlation between scientifically calculated beneficial use and actual deliveries. 2) Compare the result to determine if a close correlation between scientifically calculated beneficial use and actual deliveries can be made. 3) Using the districts' Water Management Plans, calculate the crop water needs and distribution system water

requirements for the "representative" year (either 1989 or 1996) and compare that with the actual water deliveries in that year. 4) Determine whether the "representative year" method appears to be a scientifically credible substitute for the "average year" method.

Based on Reclamation's analysis, a letter was sent out February 22, 1999, to update Reclamation's December 30 1998, request for information from the irrigation contractors. The letter extended the deadline for the submittal of information and provided contractors with the findings of the comparative analysis described in the previous paragraph. The conclusion in the comparative analyses was that the information provided in the water management plans was sufficient to meet the current water demand and supply information and the determination whether the historical water deliveries were beneficially used. Therefore, contractors were provided the opportunity to have the information presented in their water management plans as the basis for the analysis of historic and current use. If that information was not available, contractors where requested to submit information for 1995.

A similar letter was also sent to M&I contractors on February 22, 1999. This letter extended the deadline for submittal of water needs assessment information to March 19, 1999, and provided the contractors with the option of using information provided in their water management plan or current Integrated Resource Plan if that plan contained information corresponding to that information in Reclamation's December 30, 1998 information request.

A follow up letter dated June 3, 1999 was sent to those contractors which had not yet submitted the water assessment information requesting. The letter requested that the information be submitted by close of business June 25, 1999.

In the fall of 1999, Reclamation staff completed development of an Access© Data Base Program which was used to analyze the data submitted by the contractors. An output file was developed which provided information on the contractors' water supply, and agricultural and/or urban water demands. A summary column on the output provided information on the amount of water by which the contractors' water demands exceeded or were less than its supplies. Information was input for each contractor for a historic year to demonstrate beneficial use and for a future year (2025) to demonstrate future need. Between November 1999 and March 2000 this information was sent to most of contractors in draft form with results of the assessment. The contractors were asked to review the assessment to determine if all the information and assumptions were accurate.

Future demand was projected in most cases for year 2025. The data requested from the districts in December 1998, was for the future year 2025 because it was believed at that time the contracts would be finalized by 2000 and the irrigation contracts would be for 25 years. Although M&I water service contracts are for 40 years, it was assumed build out would occur by 2025. In the few instances in which an M&I contractor could demonstrate that build out would not occur by 2025, those contractors were allowed to provide projection to the year 2040.

Although all of the contracts were executed after 2000, it was assumed that the cropping patterns initially projected for 2025 would still be valid after that date since additional information to

discern annual out year cropping pattern changes was not available. Therefore, any estimated changes in cropping patterns after 2025 would be highly speculative.

The assessments were performed by technical staff in the Mid-Pacific Region's Resources Division and Reclamation's Technical Service Center. Reclamation used expertise from the California Department of Water Resource and the TSC to perform the urban water assessments. The Reclamation technical staff used to perform the agricultural needs analysis included agricultural engineering staff from the Region and the TSC and water conservation staff from the Region. These staff interacted with contractors and other stakeholders to develop the assessment tools based on a combination of technical literature and personal knowledge. When background information such as crop evapotranspiration information was in dispute, Reclamation funded consultants with technical expertise in the field to service as an independent source of information.

Resources that Reclamation staff used to substantiate estimates provided by the contractors included, the State Water Plan Bulletin 160-98 for (urban and agricultural water use trends and water use efficiency estimates), California Department of Finance (population trends), County Master Plans and Land Use Planning Reports (population trends, water supplies, and land use trends), Agricultural Commissioners Annual County Crop Reports (agricultural crop acreages) and Bulletin 113-3 (crop evapotranspiration).

The methodology for the water needs assessments was finalized in May of 200 I with the inclusion of provisions for the Friant Unit (attachment). M&I contractors with a contracted water supply of 2,000 acre feet or less, and Irrigation contractors with an irrigable acreage of 2,000 acre feet or less were exempted from the needs assessment. Along with general assumptions for all of the needs assessments, the methodology contained specific assumptions on evapotranspiration and effective precipitation for the Friant and Delta Regions and an assessment of groundwater conditions in the Friant Region resulting in the assumptions used to determine the safe yield of groundwater.

Reclamation began sending final water needs assessments to CVP contractors starting in September 2000. The majority of the assessments were sent under cover letter for each of the major divisions in the CVP. The divisions included the Sacramento Division, Tehama-Colusa Canal; Friant Division, Buchanan Unit, Hidden Unit, and Cross Valley Canal; Delta Division; Delta Mendota Canal, Delta Mendota and San Luis Unit. These assessments were analyzed as groups since data and methodology developed for the analysis were unique to each of these divisions. Contractors with a majority of their supplies used for M&I purposes each went out under an individual cover letter. The last final needs assessment was completed in December 2004.

Transmittal letters sent with each water needs assessment included a determination of whether the contractor had been beneficially using its past water supplies and if it was anticipated that the contractor needed its current allocation of CVP water to meet future demands.

Revisions to final needs assessments were made in a few cases. These revisions were required when new information was either presented by the contractors or identified by Reclamation that

would impact either the contractor's water demand or water supply. New information could include an anticipated change in water use such as agricultural or urban, or a change in the future amount of local water supply that will be available to the contractors. In each case, a letter identify the revised information was sent to the specific contractor.

Sacramento River Settlement Contractors Water Needs Assessments

Water needs assessments were performed for 11 settlement contractors participating in the Basin-wide Water Management Plan and 8 other settlement contractors on the Sacramento River.

For other areas of the CVP, Reclamation requested actual historic water demand and supply information to determine a contractor's past beneficial use and the contractor's estimated cropping pattern to determine future beneficial use. In the case of the Sacramento River Settlement Contractors Reclamation was able to use information developed as part of the BWMP which used a representative "normal" year approach based on normalized data for 1995 and 2020. The normal year approach allowed for a consistent and fair WNA for the SRSCs.

WNA's for water service contracts included non-contract water supplies such as groundwater including the conjunctive use of surface and groundwater, State Water Project (SWP) supplies, local surface water supplies, recycled water, inter-district return flows and water transfers. Due to the nature of the settlement contracts, Reclamation used the full contract quantities the year 2020 analysis as the contractors' only water supply because the settlement contracts were negotiated in lieu of the contractors exercising their water rights on the Sacramento River and its tributaries. Furthermore, The Settlement Contracts are different than water service contracts. These contracts were negotiated to settle disputes over the respective rights of the contractors and the United States. The contractors' use of water during the contract period is not to be used as a reference to how the contractors would have used the water under their water right(s). The contractors would have exercised due diligence to fully protect or prove their water rights. Existing language in the Settlement Contracts provides that the contractors' water use during the term of the contract cannot be construed as an admission that such water use was not water it would have been entitled to under their water rights.

Two SRSC's, Anderson-Cottonwood Irrigation District and Sutter Mutual Water Company, did not meet the criteria for renewing their contracts for the full amount. Long term historic cropping patterns and water diversions were analyzed to determine the highest reasonable annual diversions. The calculated annual diversion was used to negotiate the contract quantities for these two SRSC's.

Interim renewal contracts are needed to provide for the continued beneficial use of the water developed and managed by the CVP and for the continued reimbursement to the federal government for costs related to the construction and operation of the CVP. Additionally, CVP water is essential to continue agricultural and municipal viability for these contractors. The Proposed Action is to execute six interim renewal contracts in order to extend the term of the contractors' existing interim renewal contracts for two years, beginning March 1, 2018 and ending February 28, 2020. There would be no impacts to cultural resources as a result of implementing the Proposed Action as the Proposed Action would facilitate the flow of water through existing facilities to existing users. No new construction or ground disturbing activities would occur as part of the Proposed Action. The pumping, conveyance, and storage of water would be confined to existing CVP facilities.

This document is intended to convey the completion of the NHPA Section 106 process for this undertaking. This action would not have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by Reclamation (LND 02-01} (43 CFR 46.215 (g). Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106 review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.

Appendix C: Contractor Water Needs Assessments

Division: **West San Joaquin** | **Water Needs Assessment** | District: 203220 | Date: 5/25/2017

Agricultural and M&I Water Supply | **WESTLANDS WD**

Contractor's Water Supply Sources and Quantities (acre-feet)

		Surface Water Supply						Groundwater Supply				
Timeframe 1	Reference Delivery 2	USBR Total Deliv/Max 3	SWP 4	Local 5	Local Source	Trsfr/Rtrn /Recycle In 7	Trsfr/ Out 8	District 9	Private 10	Safe Yield 11	Recharge 12	Total Supply 13
2011	1,150,000	* 983,306	0	0	6	115,615	1,440	0	69,000	200,000	0	1,166,481
2050 FIA	1,150,000	* 1,150,000	0	0		45,383	0	0	0		0	1,195,383
2051 Settlement	1,193,000	* 895,000	0	0		0	0	0	0		0	895,000

Maximum Productive Acres for Years 2011, 2050= 560,700 **Contractor's Agricultural Water Demands** Possible Maximum Productive Acres for Year 2051= 460,700

Timeframe 1	Crop Water Requirement (acre-feet) 15	District Irrig. Efficiency (%) 16	Effective Precip (acre-feet) 17	Reference Effective Precip (acre-ft) 18	Calculated Net Crop Water Req (acre-feet) 19	USBR Net Crop Water Req (acre-feet) 20	Average Irrigated Acres (acres) 21	Reference Irrigated Acres (acres) 22	Calculated FDR (AF/acre) 23	USBR FDR (AF/acre) 24	Conveyance Loss (acre-feet) 25	Total Ag Demand (acre-feet) 26
2011	995,441	78	140,514	138,365	1,096,060	1,240,341	460,884	460,884	2.38	2.40	196	1,096,256
2050	1,314,025	85	168,209	168,209	1,348,019	1,397,355	560,700	560,700	2.40	2.32	193	1,348,212
2051	1,117,740	85	138,211	138,211	1,152,387	1,239,909	460,700	460,700	2.50	2.40	193	1,152,580

Contractor's M&I Water Demands

	Residential Water Demand			Nonresidential Water Demand			Loss						
Timeframe 1	Population 28	Per Capita Demand (gpcd) 29	Total Demand (acre-feet) 30	Industrial (acre-feet) 31	Comm/ Instit (acre-feet) 32	Total Demand (acre-feet) 33	Unacc /Distr (acre-feet) 34	Ref Urban Per Capita Dmd (gpcd) 35	Calc Urban Per Capita Dmd (gpcd) 36	Total M&I Demand (acre-feet) 37	Total Ag+ M&I Dmd (acre-feet) 38	Unmet Demand (acre-feet) 39
2011	7,415	410.3	3,408	1,126	564	1,690	0	198.0	613.8	5,098	1,101,354	-65,127
2050	7,975	166.0	1,483	1,134	568	1,702	0	166.0	356.5	3,185	1,351,397	156,014
2051	0	0.0	0	1,134	568	1,702	0	0.0	0.0	1,702	1,154,282	259,282

* Represents Maximum Contract Amount

Notes: Year 2011 data is derived from the Westlands water management plan dated April 19, 2013. The acronym FIA stands for the full irrigable acreage at project build out.

Years 2050 and 2051 transfer in, column #7, amounts are from the following contract assignment no.'s:

14-06-200-3365A-IR14-B	4,695 acre feet	(amount pursuant to the 3-way partial assignment after 20 years from date of execution [1999])
14-06-200-8092-IR14	27,000 acre feet	
7-07-20-W0055-IR14-B	2,500 acre feet	
14-06-200-3365A-IR14-C	4,198 acre feet	
14-06-200-8018-IR14-B	2,990 acre feet	
14-06-200-7823J	4,000 acre feet	

Maximum productive acres for years 2011 and 2050 is current as of 2011 Reclamation Mid-Pacific Region GIS mapping data.
Acreage has been reduced 100,000 acres for year 2051 pursuant to the Westlands Drainage Settlement.
The population numbers in years 2011 and 2050 solely reflect Lemoore Naval Stations active duty and civilian population.
A zero population in year 2051 reflects the Westlands Drainage Settlement. Year 2011 reference irrigated acres is from table 34 in the Westlands water management plan dated April 19, 2013.

Attachment D: Cultural Resources Determination

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 17-SCA0-248

Project Name: Central Valley Project (CVP) Interim Renewal Contracts for Westlands Water District, Santa Clara Valley Water District, and Pajaro Valley Water Management Agency 2018-2020

NEPA Document: EA-17-021

NEPA Contact: Kate Connor, Natural Resource Specialist

MP 153 Cultural Resources Reviewer: Scott Williams, Archaeologist /

Date: August 23, 2017

Reclamation proposes to execute interim renewal contracts for the contracts listed in Table 1 (see below) for a two year period (March 1, 2018 through February 28, 2020). This is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the NHPA Section 106 regulations codified at 36 CFR § 800.3(a)(1). Reclamation has no further obligations under NHPA Section 106, pursuant to 36 CFR § 800.3(a)(l).

Table 1 Contractors, Existina Contract Amounts, and Exoiration Dates

Contractor	Contract Number	Contract Quantity {acre-feet per year)	Expiration of Existing Interim Renewal Contract
Pajaro Valley Water Management Agency, Santa Clara Valley Water District, and Westlands Water District Distribution District# 1 (3-way assignment from Mercy Springs Water District)	14-06-200-3365A-IR15-B	6,260	2/29/2018
Westlands Water District	14-06-200-495A-IR5	1,150,000	2/29/2016
Westlands Water District Distributlon District #1 (full assignment from Broadview Water District)	14-06-200-8092-IR15	27,000	2/29/2018
Westlands Water District Distribution District #1 (full asslgnment from Centinella Water District)	7-07-20-W0055-IR15-B	2,500	2/29/2018
Westlands Water District Distribution District #2 (partial assignment from Mercy Sorinas Water District)	14-06-200-3365A-IR15-C	**4,198**	2/29/2018
Westlands Water District Distribution District #1 (full assignment from Wfdren Water District)	14-06-200-8018-IR15-B	2,990	2/29/2018

Appendix E: U.S. Fish and Wildlife Service Concurrence Memorandum

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2018-I-0344

FEB 27 2018

Memorandum

To: Resource Management Division Chief, U.S. Bureau of Reclamation, South-Central California Area Office, Fresno, California

From: Chief, San Joaquin Division, Endangered Species Program, Sacramento Fish and Wildlife Office, Sacramento, California Patricia Cole

Subject: Consultation on the Interim Renewal Water Service Contracts for Westlands Water District, and the 3-way Partial Assignment from Mercy Springs Water District to Pajaro Valley Water Management Area, Santa Clara Valley Water District, and Westlands Water District for March 1, 2018 – February 29, 2020

This memorandum is in response to the U.S. Bureau of Reclamation's (Reclamation) October 17, 2017 request for initiation of consultation with the U.S. Fish and Wildlife Service (Service) (initiation memo) on the execution of Central Valley Project (CVP) Interim Renewal Water Service Contracts (IRCs) for Westlands Water District (WWD) in western Fresno and Kings counties, and Pajaro Valley Water Management Agency (PVWMA) and Santa Clara Valley Water District (SCVWD) in Santa Clara County, from 2016-2018. Your request was received in our office on October 20, 2017. At issue are the IRCs' effects on the federally-listed as endangered California least tern *(Sterna antillarum browni),* San Joaquin kit fox *(Vulpes macrotis mutica),* blunt-nosed leopard lizard *(Gambelia silus),* and San Joaquin woolly-threads *(Monolopia congdonii),* and federally-listed as threatened giant garter snake *(Thamnophis* gigas). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is the two year-renewal of IRCs beginning on March 1, 2018 and ending February 29, 2020, for five WWD (WWD IRCs), and the three-way partial contract water assignment (Delta Division 3-way IRC) from Mercy Springs Water District to the WWD, PVWMA and the SCVWD. Pursuant to 50 CFR 402.12(j), you submitted a biological assessment (BA) for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, and is not likely to adversely affect (NLAA) the California least tern, giant garter snake, the blunt-nosed leopard lizard, San Joaquin kit fox, and San Joaquin woolly-threads. Critical habitat has not been designated for any of the species considered in this document.

Reclamation has requested initiation of informal consultation under the Act. In considering your request, we based our evaluation on the following information: (1) the October 17, 2017 initiation memo from Reclamation to the Service, (2) a BA for these IRCs dated September 2017, (3) a memo from Reclamation responding to Service questions about the BA dated December 4, 2017, (4) a Draft Environmental Assessment and FONSI (DEA) for this action dated November 2017, (5) electronic mail between Reclamation and the Service; (6) information provided by Reclamation's South Central California Area Office for the 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, and 2016 consultations involving some or all of these IRCs, and (7) other information available to the Service.

The Service's consultations IRCs have addressed the diversions of water at prescribed diversion points and times for the use of that water on a specified land area (the contractors' service area). All IRCs, while identifying a full contract amount, recognize that the delivery of full contract amount is subject to availability of water and other obligations of the CVP (such as Central Valley Project Improvement Act (CVPIA) and consultation requirements under the Act).

This consultation does not consider environmental effects of CVP IRC water deliveries to PVWMA. In 1999, Reclamation approved the CVP contract assignment of 6,260 acre-feet of Mercy Springs Water District's (Mercy Springs) Delta Division CVP water service contract (Contract No. 14-06-200-3365A-IR15-B) jointly to PVWMA, SCVWD, and WWD Distribution District #1 (DD#1). As PVWMA did not have infrastructure in place to receive their portion of the CVP water, a four-party agreement was prepared between Mercy Springs, PVWMA, SCVWD, and WWD which allows SCVWD and WWD DD#1 to take delivery of the water on an interim basis until PVWMA is able to take delivery of the CVP water. To date, conveyance facilities to transport CVP water to PVWMA have not been constructed and PVWMA is unable to take delivery of their portion of CVP water that could be allocated to them under the contract. As it is highly unlikely that PVWMA will have the ability to take CVP water through the term of these IRCs, water deliveries pursuant to this Mercy Springs contract are analyzed as solely going to the CVP service areas of SCVWD and WWD DD#1 and are referred to as the Delta Division 3-way IRCs.

Reclamation has requested concurrence with a NLAA determination for the blunt-nosed leopard lizard, the San Joaquin kit fox, and the San Joaquin woolly-threads. Based on the short duration of the WWD and Delta Division 3-way IRCs, the small quantity of contract supply for the Delta Division 3-way IRC from Mercy MSWD (6,260 acre feet/year), which includes the CVP contractors SCVWD and WWD DD#1, and an environmental commitment in the DEA (page 11) stipulating that "*no CVP water would be applied to native lands or lands untilled for three consecutive years or more without additional environmental analysis and approval*" (land conversion commitment), Reclamation has determined that the renewal of these IRCs will NLAA the blunt-nosed leopard lizard, San Joaquin kit fox, or San Joaquin woolly-threads, and will have no effect on the Federally-listed species or critical habitats identified in **Appendix A**.

Reclamation has also requested concurrence with NLAA determinations for two federally-listed species that were formerly handled through formal consultation for these IRCs: the California least tern and the giant garter snake. Reclamation has provided supporting information on the change of effect determinations for these two species which is discussed in more detail below.

Background and Related Consultations
Our previous consultation on these IRCs (File Number 2015-F-1331) included a summary of consultations on CVP contract renewals that the Service has completed that are related to these IRCs. We incorporate the background and summary of related consultations here by reference.

Consultations on Drainage
Interim renewal contract deliveries have several components of potential effects on listed species (e.g., effects from agricultural drainage management and disposal, and changes to land use and cropping patterns, etc.). The effects of agricultural drainage management have been addressed in other consultations, described in more detail below. The effects of the IRCs considered in this NLAA concurrence memo are related solely with the delivery of water and associated land use impacts within the affected district's CVP contract service area boundaries.

In 2006 Reclamation completed an Environmental Impact Statement (EIS) and Record of Decision (ROD) under the National Environmental Policy Act (NEPA), and the Service completed a Biological Opinion (BiOp) (File Number 2006-F-0027) and a Fish and Wildlife Coordination Act Report in accordance with the provisions of section 2(b) of the Fish and Wildlife Coordination Act (48 stat. 401, as amended; 16 U.S.C. 661, et seq.) on San Luis Drainage Feature Re-evaluation (SLDFR). The purpose of the SLDFR project was to meet Reclamation's obligations under the Federal San Luis Unit Act of June 3, 1960, Public Law 86-488, 74 Stat. 156, Section 5, to provide drainage service to drainage-impacted lands within the San Luis Unit. Once fully implemented, Reclamation anticipated in the EIS and ROD that the drainage discharge from the San Luis Unit would be reduced to sufficient standards to meet the statutory and judicial requirements imposed. Congress has not yet acted to authorize and make appropriations to implement the SLDFR ROD fully, although Reclamation has the authority and funding to complete some of the actions described in the EIS.

On September 15, 2015 the U.S. Department of Justice and WWD signed a settlement agreement (Settlement) that would relieve the United States of significant financial obligations and legal liability regarding agricultural drainage service in WWD. Implementation of the Settlement is contingent upon congressional authorization of enabling legislation. Under the Proposed Terms of the Settlement[1], Westlands will:

- Permanently retire not less than 100,000 acres of land from production. Westlands will agree to permanently retire a total of not less than 100,000 acres of lands within its boundaries utilizing those lands only for the following purposes: 1) Management of drain water, including irrigation of reuse areas; 2) Renewable energy projects; 3) Upland habitat restoration projects; or 4) Other uses subject to the consent of the United States.
- Cap contract deliveries at 75 percent of its full CVP contact amount (from 1.193 million acre-feet to 895 thousand acre-feet).
- Assume all responsibility for drainage management and disposal in accordance with all legal requirements under State and Federal law. Westlands WD would become legally responsible for the management of drainage water within its boundaries, in accordance with Federal and State law.
- Indemnify the United States for any damages and pay compensation for claims arising out of existing drainage litigation.

[1] Adapted from http://www.usbr.gov/mp/docs/Westlands-v-United-States-Settlement.pdf

- Continue to wheel water to Lemoore Naval Air Station.
- Be relieved from potential drainage repayment.

For the purposes of this consultation on these IRCs, we assume that any drainage service implemented in the WWD will be consistent with the project description and assumptions in the SLDFR BiOp. Any drainage management implemented in a manner not considered in the SLDFR BiOp will need to undergo separate section 7 or section 10 consultation pursuant to the Act as appropriate.

Consultation History

The consultation history, prior to the current proposed action, was identified in detail in previous consultations on WWD and Delta Division 3-way IRCs and is hereby incorporated by reference (Service Files 2015-F-1331, 2014-F-0035, and 2012-F-0256-1).

October 20, 2017: The Service receives a memo from Reclamation requesting informal consultation under the Act on the WWD and Delta Division 3-way IRCs. The transmittal includes a Biological Assessment as an attachment.

November 9, 2017: The Service sends an email to Reclamation transmitting questions on the WWD IRCs Biological Assessment.

November 30, 2017: The Service receives via email from Reclamation, a press release announcing the availability of the DEA and draft Finding of No Significant Impact for WWD and Delta Division 3-way IRCs.

December 4, 2017: The Service receives a memo from Reclamation responding to the questions the Service transmitted on the WWD IRCs.

Project Description

The purpose of the proposed action is the execution of six IRCs between the United States and the contractors listed in Table 1, for a two-year period from March 1, 2018 through February 29, 2020, as required by, and to further implement CVPIA Section 3404(c). Westlands WD would continue to receive up to 1,192,948 acre-feet per year, and WWD DD#1 and/or Santa Clara would continue to receive up to 6,260 acre-feet per year of CVP water pursuant to the new two-year IRCs. Westlands' main contract (14-06-200-495A-IR5) is currently on its fifth IRC. The Proposed Action would be their sixth. Execution of these six IRCs will provide the contractual relationship for the continued delivery of CVP water to the contractors pending execution of the long-term renewal contracts.

The Proposed Action would continue these existing IRCs, with only minor administrative changes to the contract provisions to update the previous IRCs for the new contract period. In the event that new long-term water service contracts are executed, the IRCs in-effect would be superseded by the long-term water service contract.

No changes to the contractors' service areas or water deliveries are part of the Proposed Action. Central Valley Project water deliveries under the IRCs can only be used within each designated contract service area (Figure 1). The proposed IRC quantities (**Table 1**) remain the same as in the existing IRCs. Water can be delivered under the IRCs in quantities up to the contract total, although it is likely that deliveries will be less than the contract total. The terms and conditions of the Delta

Division 3-way and five San Luis Unit (SLU) IRCs analyzed within the DEA for this action are incorporated by reference into the Proposed Action.

Table 1. Interim Contracts, Contract Entitlements and Purpose of Use

Contractor	Contract number	Contract Entitlement (AF)	Purpose of Use
Delta Division			
PVMWA, WWD DD#1, SCVWD (3-way assignment from MSWD)	14-06-200-3365A-IR15-B	6,260	Ag or M&I
San Luis Unit			
WWD	14-06-200-495A-IR5	1,150,000	Ag or M&I
WWD DD #1 (full assignment from Broadview Water District)	14-06-200-8092-IR15	27,000	Ag or M&I
WWD DD#1 (full assignment from Centinella Water District)	7-07-20-W0055-IR15-B	2,500	Ag or M&I
WWD DD #1 (full assignment from Widren Water District)	14-06-200-8018-IR15-B	2,990	Ag or M&I
WWD DD #2 (partial assignment from MSWD)	14-06-200-3365A-IR15-C	4,198	Ag or M&I

Conservation Measures

For the purposes of this consultation, and as outlined in the BA for this action, the conservation measures from the CVPIA BiOp apply to the WWD and Delta Division 3-way IRCs for the period of March 1, 2018 through February 29, 2020, or until long-term contracts are executed, whichever comes first. These measures are summarized in **Appendix B**.

In addition, the DEA for WWD and Delta Division 3-way IRCs includes the following environmental protection measures (from page 11):

1. CVP water will only be applied within areas that are inside the CVP Place of Use Boundary[2]
2. No CVP water will be applied to native lands or lands untilled for three consecutive years or more without additional environmental analysis and approval.
3. No new construction or modification of existing facilities will take place as part of this action.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for this

[2] As defined by the California State Water Resources Control Board's in *Revised Water Right Decision 1641* (available on the internet at: http://www.swrcb.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641_1999dec29.pdf).

Proposed Action falls mainly within portions of western Fresno and Kings Counties and a portion of Santa Clara County (see **Figure 1**).

The action area primarily consists of lands within the boundary of the CVP's SLU and San Felipe Division. The action area also includes the canals and waterways that convey agricultural runoff and subsurface drainage flows from agricultural lands within and down slope of the SLU (including those in the Grasslands marshes) back to the San Joaquin River.

Specifically, the action area also includes the CVP Service Areas of the WWD and SCVWD. The WWD boundary covers 605,422 acres of which 595,884 acres are within the CVP Place of Use Boundary (permitted to receive CVP water). In 2006, WWD purchased 9,100 acres of lands previously owned by Broadview WD and these lands are now considered part of WWD DD#1. SCVWD, which is within the San Felipe Division of the CVP, encompasses the entire Santa Clara County; however, the permitted place of use for the CVP water is considerably smaller. Maps of the CVP Contract Service Area boundaries are included in the DEA for this action and are hereby incorporated by reference.

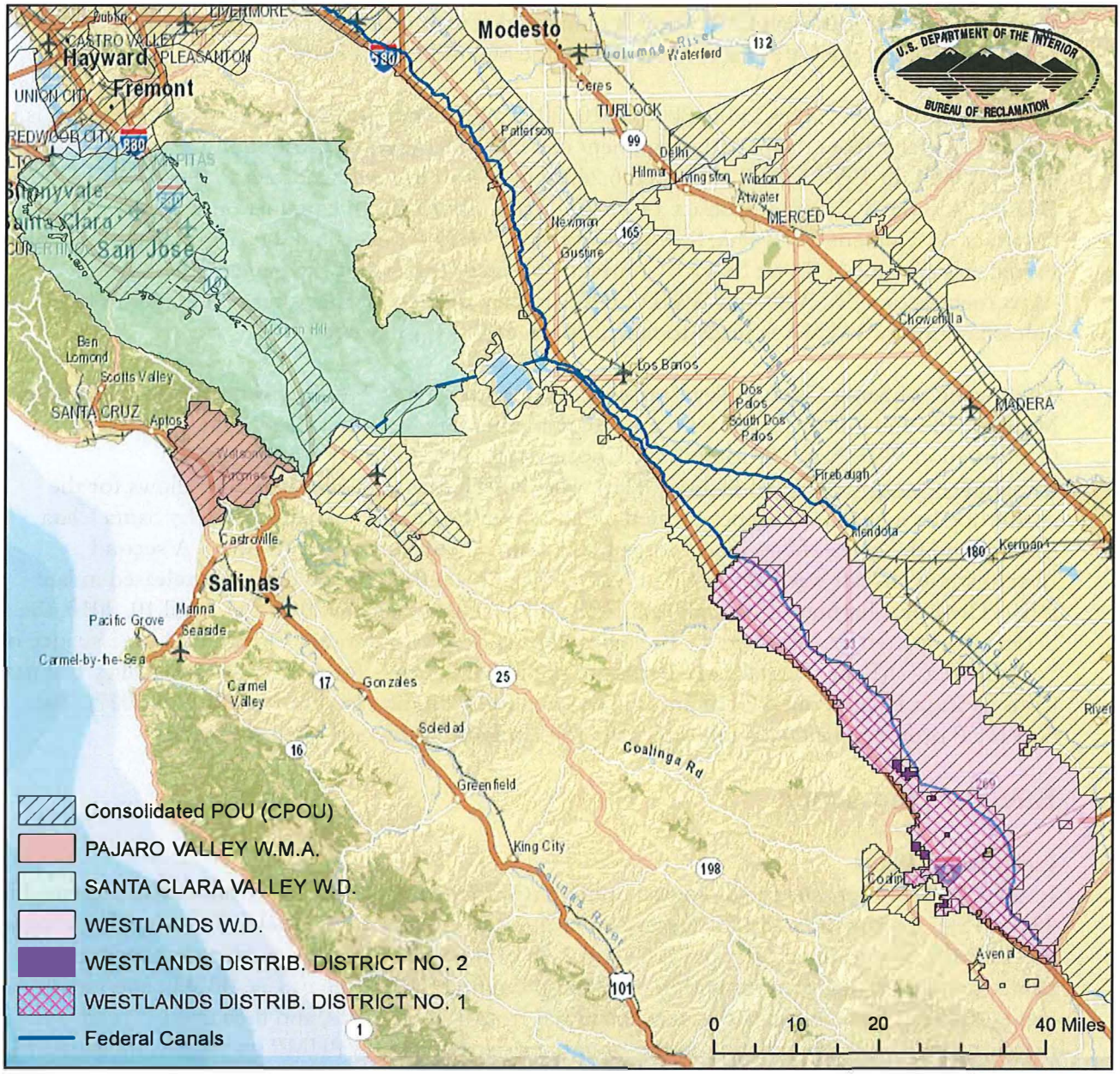
Westlands Water District

Westlands WD's permanent distribution system consists of 1,034 miles of closed, buried pipeline that conveys CVP water from the San Luis and Coalinga Canals and 7.4 miles of unlined canal that conveys CVP water from the Mendota Pool. The area served by the system encompasses about 88 percent of the irrigable land in the district, including all land lying east of the San Luis Canal. The district also operates and maintains the 12-mile long, concrete-lined Coalinga Canal, the Pleasant Valley Pumping Plant, and the laterals that supply CVP water to Coalinga and Huron. Westlands WD provides water via gravity water service and pumping from the San Luis Canal depending on location.

On June 5, 1963, WWD entered into a long-term contract (Contract 14-06-200-495-A) with Reclamation for 1,008,000 acre-feet of CVP supply from the San Luis Canal, Coalinga Canal, and Mendota Pool. In a stipulated agreement dated September 14, 1981, the contractual entitlement to CVP water was increased to 1.15 million acre-feet. The long-term contract expired on December 31, 2007. The first deliveries of CVP water from the San Luis Canal to WWD began in 1968.

Westlands WD supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users in the district. Other water supply sources available to the district for purchase include floodwater diverted from the Mendota Pool in periods of high runoff and water transfers from other districts.

Figure 1. Overview of Proposed Action Area



Santa Clara Valley Water District
The SCVWD includes all of Santa Clara County. The CVP place of use, however, does not include the entire county. Although CVP water is commingled with other sources of water, CVP water can only be applied in the CVP place of use within the SCVWD (see Figure 1).

Included in the 2002, 2004, 2006, 2008, 2010, 2012 , 2014 and 2016 IRCs, this interim renewal is the delivery of water from the partial assignment of MSWD to WWD Distribution District #1 (DD#1), and SCVWD. In 1999, MSWD assigned 6,260 acre-feet of its CVP Contract to the PVWMA, WWD DD #1, and the SCVWD (Contract 14-06-200-3365A-IR13-B). In conjunction with this Partial Contract Assignment, PVWMA, SCVWD and WWD DD #1 executed the "Agreement Relating to Partial Assignment of Water Service Contract" (Related Agreement). In general, the Related Agreement allows SCVWD and WWD DD#1 to take delivery of the water on an interim basis unless and until PVWMA is ready to take delivery of this CVP water.

The County of Santa Clara; Valley Transportation Authority, SCVWD, and the cities of San Jose, Morgan Hill, and Gilroy (Local Partners) are implementing the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (SCVHP) (http://scv-habitatagency.org/178/Final-Habitat-Plan). The SCVHCP is a 50-year Plan that allows for the permitting by a new local agency created under a Joint Powers Agreement (JPA) by Santa Clara County and the cities of San Jose, Morgan Hill, Gilroy, and Santa Clara County[3]. A second Administrative Draft was completed in June 2009, and a public review draft was released in late 2010. The Local Partners obtained both ESA and NCCP permits in 2013. On April 10, 2013, the Service completed an Intra-Service Biological Opinion and Conference Opinion on the issuance of a Section 10(a)(1)(B) Incidental Take Permit to the Local Partners for the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (Service File No. 2009-F-0077). The SCVHCP provides incidental take coverage for 9 wildlife species and 9 plant species.

Effects of the Action

Land Use Effects

In the CVPIA Programmatic biological opinion (CVPIA BiOp) dated November 2000 (Service File 98-F-0124), Reclamation and the Service committed to develop a Comprehensive Mapping Program (CVPHMP) (as described on pages 2-62 and 2-63 of the CVPIA BiOp), to identify remaining natural habitats and cropping patterns within the State-permitted CVP Place of Use (POU), and identify any changes within those habitats that have occurred from 1993 to 1999, and then every 5 years thereafter. We refer Reclamation to the language regarding the CVPHMP on pages 2-62 thru 2-64 of the CVPIA BiOp: "*Reclamation and the Service will use the best scientific and commercial information available, in conjunction with data from aerial photograph analysis to monitor trends in the environmental baseline for listed species. It is the ultimate goal of Interior to assure that listed species are being recovered. For any species affected by the CVP that are continuing to decline, the Service and Reclamation will immediately assess critical needs for the species and determine whether it is appropriate to expand the Conservation Program or implement other conservation measures. Any native habitat converted to agricultural or municipal/industrial use within the water service area without prior biological surveys, as required by Reclamation prior to the delivery of Reclamation water, will be evaluated to determine what mitigation measures will be required.*"

[3] The Santa Clara Valley Water District and Santa Clara Valley Transportation Authority are considered Permittees under the Plan.

Reclamation's determination that the IRCs considered in this consultation will NLAA the blunt-nosed leopard lizard, the San Joaquin kit fox, and the San Joaquin woolly-threads and would have no effect on federally-listed species or critical habitats identified in **Appendix A** is based on Reclamation's conclusion that CVP IRC deliveries do not result in land use changes that would adversely affect federally-listed species or critical habitat. For the previous consultation completed for these IRCs (File Number 2015-F-1331), Reclamation provided to the Service land cover change maps and tables comparing data from 2006 with 2011 (based on information from the National Land Cover Database[4]) for WWD, SCVWD and PVWMA. For the current consultation on these IRCs, Reclamation noted in the BA for this action "*that errors were found in those previous maps, such that in some cases, land use was not categorized correctly.*" The BA for this action then concludes, "*Upon inspection and comparison with aerial imagery, no losses of native lands or lands fallowed and untilled for three or more years were found.*" In support of this conclusion, the BA provided **Figure 2** (USBR 2017). No land use change analysis was provided for this consultation.

We note that the WWD annual crop reports (which do record acreages of fallowed lands by year within the district) have documented a significant drop in fallowed acreage in 2017, compared with the past four years. The fallowed area in WWD in 2017 was 140,477 acres, in 2016 was 175,901 acres, in 2015 was 212,846 acres, and in 2014 was 206,915 acres (see http://wwd.ca.gov/news-and-reports/crop-acreage-reports/). We are unable to determine where the fallowed lands are within WWD with the data provided in the BA (**Figure 2**).

[4] Information on the National Land Cover Database is available at: http://www.mrlc.gov/

Figure 2. Aerial Imagery and August 2017 CNDDB Records in Westlands Water District

Drainage Effects
Reclamation has requested concurrence with NLAA determinations for two federally-listed species that were formerly handled through formal consultation for these IRCs: the California least tern and giant garter snake. Reclamation provided supporting information on the change of effect determinations for these two species which is discussed in more detail below.

California Least Tern
There is suitable habitat for California Least Terns in the action area as supported by direct observations of least terns foraging at the sewage ponds at Lemoore Naval Air Station (NAS) in 1997 and 1998. At Westlake Farms in the San Joaquin Valley, California least terns have not been seen since June 7, 2011 (one pair) and haven't nested there since 2010 (J. Seay pers. comm.).

As a result of the incidental take statement for the previous WWD IRC consultation (File No. 2015-F-1331), Reclamation was required to map wetted areas along the San Luis Drain (SLD) where it runs through or near WWD. On April 14, 2016, Reclamation conducted the required mapping. Wetted areas were extensive, although they were quite shallow, and it had recently rained, which suggested that these areas were very ephemeral in nature. On June 13, 2016, the Service asked Reclamation to go out as soon as possible to re-check these areas. On June 16, 2016, Reclamation re-checked these areas, and again provided a report to the Service via email. There were almost no wetted areas remaining. One new wetted area appeared to be fed by tailwater discharge from a nearby field within the James Irrigation District. Reclamation voluntarily collected a water sample from this wetted area, and the analysis showed that the selenium concentration was 0.8 µg/L. In summary, the only substantially wet area had a very low selenium concentration, and was not fed by drainage from within WWD. As a result of the findings from mapping the wetted areas, and with the Service's consent, Reclamation did not conduct bird surveys in 2016.

In April of 2017, Reclamation again went out to map wetted areas. Wetted areas were extensive due to an extremely wet hydrologic year, and when Reclamation re-checked them in late May 2017, there was still a relatively large area of open water. Bird surveys were conducted by a Service-approved biologist, beginning in June, and continuing through July 2017. No California Least Terns were heard or observed. Surveys were terminated (with the Service's written approval) after July 2017, rather than continuing through the fledging period, as no least terns were ever sighted prior to that time. In both the 2016 and 2017 field efforts, tadpoles were seen in some of the wetted areas of the SLD.

Given that field surveys conducted by Reclamation along the wetted portions of the SLD in the project area did not confirm any sitings of California least terns, we can concur with Reclamation's determination that the proposed action will NLAA the least tern.

Giant Garter Snake
Species Baseline
The environmental baseline for the giant garter snake in the Grassland Bypass Project (GBP) BiOp (File No. 09-F-1036) is incorporated here by reference. The 2009 GBP BiOp included an updated Status of the Species and Environmental Baseline on the threatened giant garter snake (*Thamnophis gigas*) in the public and private wetlands in the Grasslands Area and Mendota Pool vicinity. In the GBP BiOp, the Service found that the garter snake has been adversely affected by water management actions (i.e. water transfers/exchanges, and ground water pumping, which have contributed to changes in cropping patterns), limited availability of summer water habitat (e.g., level 4 refuge water supplies) and by degradation of water quality in the San Joaquin Valley. The GBP BiOp indicated that under current conditions in the Grasslands marshes water supply channels,

"dietary selenium concentrations in the South Grasslands still pose a risk to growth, reproduction and survival of giant garter snakes. Further, contamination in the food chain in the North Grasslands, specifically Mud Slough (North) could preclude re-establishment of the snake in the vicinity of this waterway." The current baseline of the garter snake in the Grasslands marshes and Mendota Pool vicinity was determined to be experiencing significantly declining numbers, and reduced reproduction and distribution through this portion of its range.

Subsequent to the GBP BiOp, factors that could affect environmental conditions for the giant garter snake in the south Grasslands include: five years of drought from 2012-2016, a 10-year Transfer Program of the San Joaquin Exchange Contractors, and various refuge diversification projects, all of which could affect to some degree, the timing and quality of water in the south Grasslands wetland channels. These degraded habitat conditions, compounded with elevated selenium concentrations in water and biota, periodically reach levels that are reasonably likely to result in adverse effects to any giant garter snakes that could be present at those times. However, these degraded habitat conditions likely result from multiple unregulated sources, and at the present time there is no way to determine the magnitude of the contribution resulting from the IRCs. To the extent that giant garter snakes are present during the times when selenium concentrations are elevated in the wetland channels, they could be exposed through contaminated prey items.

The last surveys for the giant garter snake in the south Grasslands were conducted in 2006 and 2007. The last reported giant garter snake in the south Grasslands was caught in Junction of Agatha Canal and Poso Drain in 2006 (Hansen 2007). We have high uncertainty of the status of the giant garter snake in the south Grasslands, as recent conditions have become even more unfavorable to maintain even a small population of snakes.

Effects of WWD drainage

As has been denoted in previous IRC consultations involving WWD (File Nos. 2015-F-1331, 2014-F-0035, 2012-F-0256, and 2008-F-0538-3) giant garter snakes in the Grasslands marshes may be subject to harm as a result of contamination from subsurface movement of shallow groundwater originating in WWD. The discussion and analysis of WWD drainage impacts to downslope lands and surface waters from these previous consultations is hereby incorporated by reference.

Water quality in south Grasslands wetland channels

On November 9, 2017, the Service sent an email to Reclamation with some questions on the BA for these IRCs. The Service email asked for documentation of water quality in the Grasslands Wetland Channels for 2016 and 2017 that supports the conclusion in the BA that "*it is extremely unlikely that giant garter snakes would be adversely affected by any drainage originating from Westlands.*" Reclamation responded to the Service's email question in a memo dated December 4, 2017.

Reclamation's December 4 memo included the statement that "*In the past, Reclamation has measured salinity, selenium, and boron in these wetlands channels in weekly grab samples when flow exceeded 20 cubic feet per second (cfs) pursuant to our previous Waste Discharge Requirements."* This is true only for water quality data collected and reported in 2014 and 2015. Weekly surface water quality monitoring in the south Grasslands wetland channels, irrespective of flows, had been a feature of the GBP monitoring program for nearly 20 years. **Figure 3** shows a schematic of the GBP monitoring stations, including stations J, K, L2 and M2 in the south Grasslands. The weekly monitoring data was not only important in documenting improvement of water quality in the wetland channels with the implementation of the GBP, but also in tracking compliance with the selenium Total Maximum Daily Load (TMDL) for the Grasslands Marshes (CVRWQCB 2000) and the 2 µg/L selenium objective (based on a monthly mean) for the Grassland wetland supply channels. Since 2016,

Reclamation has ceased reporting water quality in the south Grasslands, including stations J and K, so we have incomplete and indeterminate data for this consultation on water quality for the giant garter snake. The decision to sample water quality only when flows exceeds 20 cfs is not useful for evaluating water quality impacts in the wetland channels for the snake. Further, the Revised Monitoring Plan (RMP) for the GBP that was distributed by Reclamation in 2013 did not specify that water quality would be reported only during storm water discharges, or when flows in stations J (Camp 13 Ditch) and K (Agatha Canal) exceeded 20 cfs. The RMP actually stated that "*Stations J (Camp 13), Station K2 (Agatha Canal Headworks) and Station F (Salt Slough) will be sampled weekly*" (see: https://www.usbr.gov/mp/grassland/documents/gbp_2013_rev_mon_plan.pdf

Notable elevated selenium concentrations documented in the GBP monthly monitoring reports over the past decade were 26.4 µg/L on August 10, 2009 at Station K, Agatha Canal , and 50 µg/L on April 16, 2012 at Station J, Camp 13 Ditch. Both of these events were associated with low-flow conditions in the wetland channels. From an ecological standpoint, it is important to note that selenium bioaccumulates rapidly in aquatic organisms and a single pulse of selenium (>10 µg/L) into aquatic ecosystems can have lasting ramifications, including elevated selenium concentrations in aquatic food webs (Besser *et al.* 1993; Graham *et al.* 1992; Maier *et al.* 1998; Nassos *et al.* 1980; Hamilton 2004). Elevated selenium concentrations in the Grassland wetland channels are of concern to the health and integrity of wetland ecosystems, including habitat for federally listed species such as the giant garter snake in the south Grasslands.

Figure 3. Schematic of Grassland Bypass Project Monitoring Stations.

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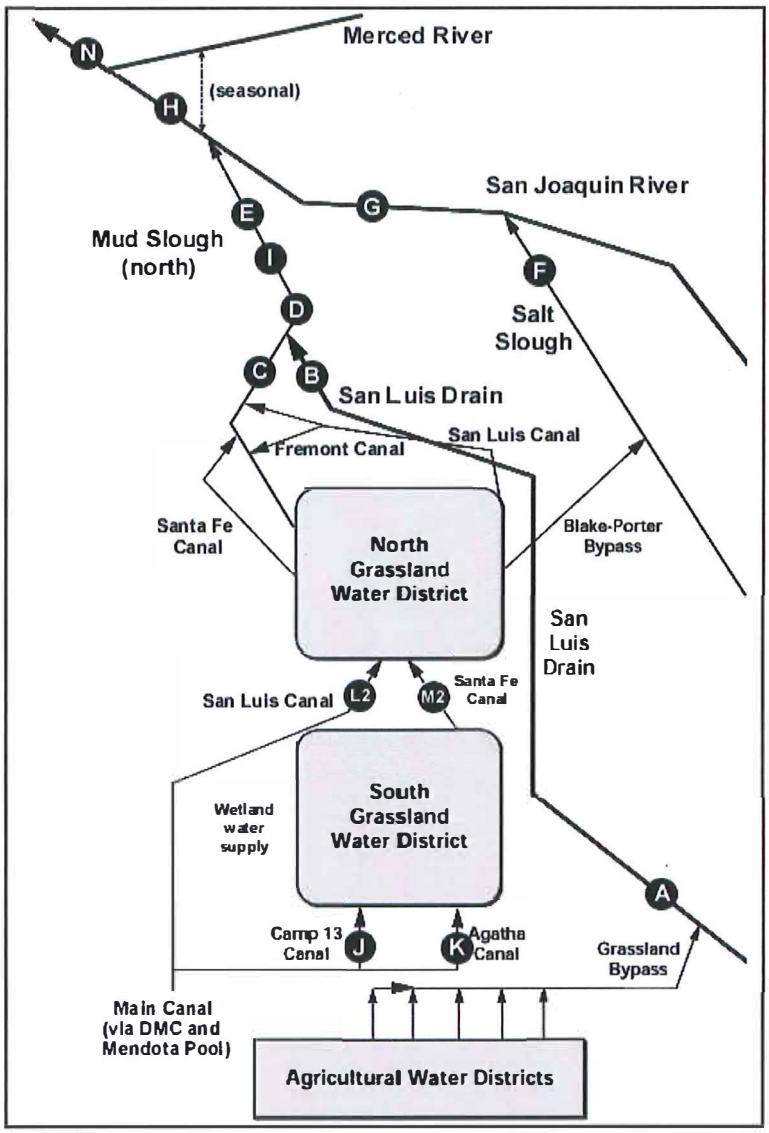

Conclusion

For the California least tern, the Service concurs with Reclamation's NLAA determination. Our concurrence is based on least tern field surveys conducted by Reclamation along the wetted portions of the SLD in the project area that did not confirm any sitings of California least terns.

The status of the giant garter snake in the south Grasslands likely has declined due to many factors described above. A great deal of work would be needed to improve the environmental conditions to provide a clean and reliable water supply before the south Grasslands could once again support a stable giant garter snake population of any size. We therefore concur with Reclamation's NLAA determination for the giant garter snake. We ask that prior to the next consultation on these IRCs or long term contract renewals, whichever comes first, that Reclamation provide water quality and flow data for GBP stations J and K and the water quality data collected by the Grassland Water District for Santa Fe Canal and CCID San Luis Canal, to verify the conclusion in Biological Assessment for this action that "*it is extremely unlikely that giant garter snakes would be adversely affected by any drainage originating from Westlands.*"

For future consultations on the WWD and Delta 3-way IRCs or long-term contract renewals, in order to test assumptions made for past IRC consultations, the Service asks that the additional information specified in this memo be provided when Reclamation initiates these consultations under the Act. Specifically, we ask that prior to the next WWD and Delta 3-way IRCs or long-term contract renewals, whichever comes first, that Reclamation work collaboratively with the Service to interpret, evaluate and update the CVPHMP to examine sensitive land use changes revealed by said mapping.

We believe that larger-scale time series spatial data on the location of natural and fallowed lands within CVP service areas of the subject IRCs would increase our confidence level in evaluating these actions. Given that we do not have such data, we concur with Reclamation's NLAA determination on renewal of the IRCs for WWD and the Detla Division 3-way IRC to WWD DD#1, SCVWD and PVWMA. Going forward, we would like to work with Reclamation to develop mapping data that accurately reflects on-the ground habitat conditions and trends at larger scales.

Our concurrence with your NLAA determination concludes this consultation for this action. Therefore, unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act is necessary. If you have questions regarding this consultation, please contact Patricia Cole, San Joaquin Valley Division Chief, at the letterhead address or at (916) 414-6544.

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Appendix A. Federally threatened and endangered species and/or critical habitat potentially within the Action Area that Reclamation has determined would not be affected by the proposed action.

Common Name	Scientific Name	Federal Status	Critical Habitat
Alameda whipsnake,	*Masticophis lateralis euryxanthus*	Endangered	Designated
bay checkerspot butterfly	Euphydryas editha bayensis	Threatened	Designated
beach layia	*Layia carnosa*	Endangered	None
Buena Vista Lake shrew	*Sorex ornatus relictus*	Endangered	Designated
California clapper rail	*Rallus longirostris obsoletus*	Endangered	None
California condor	*Gymnogyps californianus*	Endangered	Designated
California jewelflower	*Caulanthus californicus*	Endangered	None
California red-legged frog	*Rana draytonii*	Threatened	Designated
California sea blite	*Suaeda californica*	Endangered	None
California tiger salamander	*Ambystoma californiense*	Threatened	Designated
Conservancy fairy shrimp	*Branchinecta conservatio*	Endangered	Designated
Contra Costa goldfields	*Lasthenia conjugens*	Endangered	Designated
coyote ceanothus	*Ceanothus ferrisae*	Endangered	None
delta smelt	*Hypomesus transpacificus*	Threatened	Designated
fountain thistle	*Cirsium fontinale var. fontinale*	Endangered	None
Fresno kangaroo rat	*Dipodomys nitratoides exilis*	Endangered	Designated
giant kangaroo rat	*Dipodomys ingens*	Endangered	None
least Bell's vireo	*Vireo belli pusillus*	Endangered	Designated
marbled murrelet	*Brachyramphus marmoratus*	Threatened	Designated
Marin dwarf-flax	*Hesperolinon congestum*	Threatened	None
Menzies's wallflower	*Erysimum menziesii* (includes spp. *yadonii*)	Endangered	None
Metcalf Canyon jewelflower	*Streptanthus albidus* spp. *albidus*	Endangered	None
palmate-bracted bird's-beak	*Cordylanthus palmatus*	Endangered	None
robust spineflower	*Chorizanthe robusta* var. *robusta*	Endangered	Designated
salt marsh harvest mouse	*Reithrodontomys raviventris*	Endangered	None
San Bruno elfin butterfly	*Callophrys mossii bayensis*	Endangered	

Common Name	Scientific Name	Federal Status	Critical Habitat
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	Endangered	None
San Mateo thornmint	*Acanthomintha duttonii*	Endangered	None
San Mateo woolly sunflower	*Eriophyllum latilobum*	Endangered	None
Santa Clara Valley dudleya	*Dudleya setchellii*	Endangered	None
Santa Cruz tarplant	*Holocarpha macradenia*	Threatened	
showy Indian clover	*Trifolium amoenum*	Endangered	None
Tiburon paintbrush	*Castilleja affinis* ssp. *neglecta*	Endangered	None
tidewater goby	*Eucyclogobius newberryi*	Endangered	Designated
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	Endangered	None
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Threatened	Designated
vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened	Designated
vernal pool tadpole shrimp	*Lepidurus packardi*	Endangered	Designated
western snowy plover	*Charadrius alexandrinus nivosus*	Threatened	Designated
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Proposed	None

Appendix B. Summarized Environmental Commitments from the CVPIA Biological Opinion (Service File 98-F-0124) and previous IRC consultations that are Relevant to the SLU and Delta Division 3-Way IRCs

Conservation Measures from Previous IRC Consultations

As described in previous IRC consultations, Reclamation developed and implemented a short-term conservation program for IRC CVP Service Areas. The proposed action includes a commitment to develop and implement a long-term program to address the overall effects of the continued operation of the CVP on listed, proposed, and candidate species, and a short-term program to minimize the adverse effects on these species in any areas affected by CVP water deliveries, other than those effects addressed here.

The short-term program to minimize adverse effects of continued water delivery under the IRCs included the following measures:

1(a) Notify districts regarding ESA requirements (Completed);
1(b) Develop information on distribution and habitat of listed, proposed and candidate species (Ongoing);
1(c) Map and distribute information in 1(b) above (Ongoing);
1(d) Monitor land use changes and ongoing activities to ensure project water is not used in a manner that adversely affects listed, proposed or candidate species. Coordinate with the Service on any activities adversely affecting these sensitive species (Ongoing);
2(a) Work with the Service, CDPR and others to develop guidelines and information assessing the effects of pesticides on listed, proposed and candidate species (Completed);
2(b) Develop and distribute guidance on construction and maintenance activities (Completed);
2(c) Review District water conservation plans (Completed);
2(d) Amend criteria for water conservation plans (Completed);
3(a) Identify lands critical to listed and proposed species (Ongoing);
3(b) Identify land and water use activities critically impacting listed and proposed species (Ongoing);
3(c) Develop and implement critical need plan (Ongoing);
4 Develop a long-term program to address overall effects of the CVP and Implementation of the CVPIA (Ongoing).

2000 CVPIA BiOp

B. Commitments Associated with Long-term Renewal[5] of CVP Water Service Contracts

1. Long-term contracts will be renewed, and Reclamation will complete tiered site specific consultations with the Service. No CVP water will be delivered or applied outside current contract service areas until either formal or informal consultation, as appropriate, is complete. Once formal site specific consultation has occurred that is in compliance with this opinion, it is assumed that changes in land-use practices, and impacts to listed and proposed species, in the districts have been addressed.

[5] These apply to IRCs as well.

4. Reclamation and the Service will write a joint letter to the water districts, any member agencies, Planning Departments of cities or counties within the districts using CVP water, and other responsible parties regarding requirements under the ESA. The letter will include: (1) a discussion of Reclamation's need to ensure that CVP water is not used in a manner which could jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated *critical habitat*, and (2) an explanation of the prohibitions described under Section 9 of the ESA in regard to *take*. The letter will discuss the appropriate protection measures as described here and in subsequent contract renewal consultation and will be completed within 60 days of execution of long-term contracts.[6]

5. Conservation strategies will be in place for the districts or areas receiving CVP water. The types of strategies that could be accepted are: *Habitat Conservation Planning* as described in section 10(a) of the ESA; programmatic land management actions that include protection of listed and proposed species; requirements resulting from site specific Section 7 consultation; or an expansion of the existing CVP Conservation Program that adequately compensates for the direct and indirect effects of increased water delivery to an area.[7]

6. Reclamation will, subsequent to a determination of *may affect* to listed species and/or adverse modification to designated *critical habitat* in consultation with the Service's Sacramento Fish and Wildlife Office (SFWO) Endangered Species Division, consult on all Federal actions that result in changes in purpose of use for CVP water contracts, including changes from Agriculture to Agriculture/Municipal and Industrial purposes.

7. The Service and Reclamation will work together to convey information to the water districts, and individual water users (as appropriate), on listed species needs. Reclamation will establish an outreach and education program, in collaboration with the Service, to help water users integrate implementation of the CVPIA and requirements of the contract renewal process as it relates to the ESA [Act].[8]

8. Interior will work closely with the water users, providing them maps of listed species habitats within their service-areas and guiding them through the consultation process to address site specific effects. Reclamation may encourage CVP contractors to complete HCPs encompassing the affected areas.

10. Reclamation and CVP contractors will comply with all applicable opinions related to the CVP. Flow standards that form the environmental baseline of the 1995 OCAP biological opinion will be met, and Reclamation will take no discretionary actions (e.g. new contracts, contract amendments, facility construction) that would incrementally increase diversions and alter hydrologic and environmental conditions in the Delta until any required consultation is reinitiated and completed.

11. Contractors are required to conform with any applicable provisions of any biological opinions addressing contract renewal so as to prohibit the use of CVP water that results in unauthorized *take* or conversion of wildland habitat determined to have the potential to be occupied by listed species, or violation of any terms of the contracts pertaining to the conservation of listed species. All contracts (or related biological opinions) will also stipulate Reclamation will not undertake any discretionary action allowing the delivery of CVP water to native habitat for listed species depicted

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[6] Letters were already sent to CVCs and Friant Contractors, but an Environmental Commitment Program form would be used for the IRCs that would inform districts of the required commitments.

[7] This would take the form of "requirements resulting from site specific Section 7 consultation" in this case.

[8] Addressed by Reclamation's Environmental Commitment Program form.

on the maps attached to the 18-month notices unless clearance pursuant to the ESA has been obtained from the Service.
13. Reclamation will make certain that applicable measures to ensure ESA compliance for the renewal of CVP water service contracts are provided within the text of new and/or amended long-term water contracts and related actions.
14. Reclamation will provide information related to proposed new water assignments of Project water to the Service's SFWO Endangered Species Division prior to execution of the assignment.

F. Commitments Associated with Conservation Programs

Comprehensive Mapping and *Land Use Monitoring and Reporting Program*

- Monitoring will be used to assess the condition and impacts of Reclamation actions on listed species. Reclamation and the Service are actively developing a monitoring strategy based on the comprehensive mapping program. The land cover database for year 2000, described in Phase III, will be revisited every 5 years for monitoring purposes.
- The Comprehensive Mapping Program will be implemented immediately to test and track, for the purpose of validating over the life of the project, the assumptions made in this biological opinion that the baselines of the species in Appendix B are stable or increasing.
- For any species affected by the CVP that are continuing to decline, the Service and Reclamation will immediately assess critical needs for the species and determine whether it is appropriate to expand the Conservation Program or implement other *conservation measures*. Any native habitat converted to agricultural or municipal/industrial use within the water service area without prior biological surveys, as required by Reclamation prior to the delivery of Reclamation water, will be evaluated to determine what mitigation measures will be required.

I. Service and Reclamation Strategy Statement to Ensure Compliance with the Endangered Species Act

7. CVP or CVPIA actions or parts of actions, which *may affect* listed species or for which there is not enough information available to estimate *take* or make a *not likely to adversely affect* determination, will receive future tiered analysis and consultation. Reclamation or the Service will provide to the Service's SFWO Endangered Species Division, dependent on lead agency status, clear descriptions of proposed CVP or CVPIA actions, specific areas that may be affected directly or indirectly by these actions, the manner in which the actions *may affect* any listed species or designated *critical habitat*, and other relevant reports and information. Reclamation and the Service will also identify any and all interrelated and interdependent actions and measures related to the proposed CVP or CVPIA action. In those situations where the lead agency, or the Service's SFWO Endangered Species Division, determines that an action *may affect* listed species or may adversely modify designated *critical habitat*, Reclamation and/or the Service will initiate informal or formal consultation as appropriate.

8. Reclamation and the Service will work together to develop means to more effectively facilitate ESA compliance through the coordination of activities and commitments discussed in this Project Description. This coordination will include establishment of a process within 3 months of this biological opinion that will provide necessary information to the Service's SFWO Endangered Species Division in situations where a determination of *no affect* has been made, sufficiently in advance, to enable the Service's review.

13. Reclamation will establish a tracking program to assure conditions necessary for compliance with ESA are met within areas affected by the delivery of CVP water. Where Reclamation and/or the Service believe there are *adverse affects* on listed species, a conservation strategy will be required to be in place for the district or area to receive the contract water. The types of strategies that could be accepted are: *Habitat Conservation Planning*, as described in Section 10(a) of the ESA; requirements resulting from a Section 7 consultation, programmatic land management actions that include protection of listed and proposed species, implementation of site specific *conservation measures*, or an expansion of the existing CVP Conservation Program that adequately compensates for the direct and indirect effects of increased water delivery to an area. Other actions that include components of the above strategies could also be accepted.