RECLAMATION

Managing Water in the West

Final Environmental Assessment

Partial Assignment of CVP Contract and Associated Water Supply from Ivanhoe Irrigation District to Kaweah Delta Water Conservation District

EA-06-119

September 2009

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms, Abbreviations and Definition of Terms

af	acre-feet (the volume of water one foot deep and an acre in area)
af/yr	acre-feet per year
cfs	cubic feet per second
Class I	(Friant Division Only) Firm supply of water for certain contractors who have no other surface water supply. That supply of water stored in or flowing through Millerton Lake which, will be available for delivery from Millerton Lake and the F-K and Madera Canals. It is a dependable water supply during each year.
Class II	(Friant Division Only) Undependable water. Supplied when available. That supply of water which can be made available subject to the contingencies for delivery from Millerton Lake and the F-K and Madera Canals in addition to the supply of Class 1 Water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable characterized and will be furnished only if, as, and when it can be made available as determined by the Contracting Officer.
Contract	Contract 175r-1809 LTR1
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DFG	California Department of Fish and Game
DWR	California Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FWCA	Fish & Wildlife Coordination Act
HR	hydrologic regions
IID	Ivanhoe Irrigation District
KDWCD	Kaweah Delta Water Conservation District
LSID	Lindsay Strathmore Irrigation District
LTCR Opinion	The Biological Opinion (1-1-01-F-0027) on U.S. Bureau of Reclamation Long-Term Contract Renewal of Friant Division and Cross Valley Unit Contracts, January 19, 2001
NEPA	National Environmental Policy Act
Plan	Groundwater Management Plan
Reclamation	Bureau of Reclamation
RRA	Reclamation Reform Act of 1982
Section 215	Temporary water service contracts of nonstorable flood flows authorized under Reclamation Reform Act of October 12, 1982 (public Law 97-293), Section 215
TID	Tulare Irrigation District
USFWS	U.S. Fish & Wildlife Service
Valley	San Joaquin Valley

Section 1 Purpose and Need for Action

1.1 Background

The Ivanhoe Irrigation District (IID) is located in Tulare County, approximately 50 miles southeast of Fresno, California. It occupies portions of Townships 17 and 18 South, Ranges 25 and 26 East, of the Mt. Diablo Base and Meridian. The Friant-Kern Canal (FKC) forms the district's eastern boundary for a distance of six miles (Figure 1-1). IID entered into Contract 175r-1809 with the United States Bureau of Reclamation (Reclamation) in September 1949. As renewed, Contract 175r-1809 LTR1 (Contract) for a supplemental water supply from the FKC. The distribution system facilities were transferred to IID for operation and maintenance on March 1, 1956. IID's Contract with Reclamation is for 7,700 acre-feet per year (af/yr) of Class I water and 7,900 af/yr of Class II water from the Friant Division of the Central Valley Project (CVP). On average, deliveries from the FKC represent 48 percent of the consumptive needs of IID.

Kaweah Delta Water Conservation District (KDWCD) was formed in 1927 under the provisions of the Water Conservation District Act of 1927 for the purpose of conserving and storing waters of the Kaweah River, protecting lands from flood damage and conserving and protecting the groundwater of the Kaweah Delta. KDWCD is located in the south-central portion of the San Joaquin Valley and lies in both Kings and Tulare Counties (Figure 1-1). Both districts share the same groundwater basin.

1.2 Purpose and Need

Because of the variable nature of IID's Class II supply, it does not meet the district's requirement for supplemental supply dependability. Therefore, IID has historically purchased surface water, when it becomes available, from the Wutchumna Water Company (Wutchumna) to meet their water demand incrementally. Since Wutchumna failed to obtain storage water rights behind Terminus Dam, in Kaweah Reservoir, Wutchumna has unstorable abundant spring time flows and diminished supplies available at other times of the year. This results in a lack of sufficient surface water available for purchase by IID during times of peak summer demand. Thus, the Proposed Action is needed to alleviate IID's problem with the timing of available supplies, rather than with the quantity of those supplies. IID needs a reliable water supply deliverable on an irrigation demand pattern.

IID's objective is to participate in a partial assignment to increase the reliability of their dry year supply and to optimize their direct use of the Kaweah River stock water rights. IID's water needs assessment, developed by Reclamation, showed an average year water supply deficiency. This deficiency is even greater in the dry years given the lack of the Class II supplies in those year types. The partial assignment would increase the reliability of supply for IID because the Longs Canal Company right provides an increased water supply in dry years. Additionally, the storage rights in Kaweah Reservoir could be used to better regulate IID's existing Kaweah supplies to meet their late summer demands.

KDWCD's objective is to enhance the groundwater resources available within the Kaweah River Basin (Basin) for the benefit of the landowners and water users located within the Basin. KDWCD acknowledges that the Basin is in overdraft condition and has continually sought to import supplies in order to increase the amount of water available to the Basin. KDWCD needs long-term contractual rights to out-of-Basin supplies to help alleviate the groundwater overdraft within the Basin.

1.3 Scope

Reclamation is required by the terms of its Contract with IID to review the Proposed Action and determine its compliance with applicable state and federal laws and existing rules, regulations and guidelines on implementing the federal law regarding such acitons. Such laws include but are not limited to, Federal Reclamation Law, the 1992 Central Valley Project Improvement Act (CVPIA), the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and Section 106 of the National Historic Preservation Act (NHPA). Additionally, Reclamation must determine if the Proposed Action is consistent with the terms of the Contract.

1.4 Applicable Regulatory Requirements

KDWCD has previously submitted documentation to Reclamation regarding compliance with Reclamation Reform Act of 1982 (RRA). As a result of these submittals, it has been determined that sufficient eligible lands exist within KDWCD to allow for the delivery of up to 105,000 af annually to lands within KDWCD within the construct of the RRA, in particular its reporting and certification requirements. All lands in KDWCD are within the State Water Resources Control Board permitted place-of-use for the water rights from the San Joaquin River which controls the Friant Division of the CVP.

1.5 Related Environmental Documents

The CVPIA Programmatic Environmental Impact Statement (PEIS): The PEIS provided a programmatic evaluation of the impacts of implementing the CVPIA. Four alternatives, 17 supplemental analyses, Preferred Alternatives, and No-Action Alternative were evaluated in the PEIS. The impact analysis in the PEIS was completed at a sub regional level but presented within the PEIS on a regional basis for the Sacramento Valley, San Joaquin Valley, and the Tulare Lake Regions. The PEIS No Action Alternative assumed that existing water service contracts would be renewed under the same terms as expiring contracts. The Record of Decision was signed in January 2001.

Friant Long-Term Contract Renewal Environmental Assessment (EA): A separate EA that analyzed the site specific impacts of the renewal of water service contracts between Reclamation and the Friant Division CVP contractors was completed and executed in 2001. Current Friant Long-Term Contractors have executed contracts for a 25-year period.

The Biological Opinion (1-1-01-F-0027) on U.S. Bureau of Reclamation Long-Term Contract Renewal of Friant Division and Cross Valley Unit Contracts, January 19, 2001 (LTCR Opinion): The LTCR Opinion was prepared by the U.S. Fish and Wildlife Service (USFWS) to address the proposed renewal by Reclamation of the water service contract with the Friant Division and Cross Valley units of the CVP in accordance with Section 7 of the Endangered Species Act of 1973, as amended. The USFWS concluded that the renewal for 25 years of the CVP water service contract is not likely to jeopardize 34 listed species. However, contract assignments involving Friant Division or Cross Valley Contractors were not analyzed by the LTCR Opinion. The incidental take statement with the LTCR Opinion (page 6-1) explains that separate effects determinations pursuant to section 7 and/or section 10 of the ESA are required for "Any future assignments of Central Valley Project water involving Friant Division or Cross Valley Contractors." The LTCR Opinion did not address all of the currently listed species and critical habitats, because their listings/designations occurred after the LTCR Opinion was issued. These species and critical habitats are: all critical habitats for vernal pool species

and critical habitat for the California tiger salamander, the vernal pool fairy shrimp, and the vernal pool tadpole shrimp.

1.6 Potential Issues

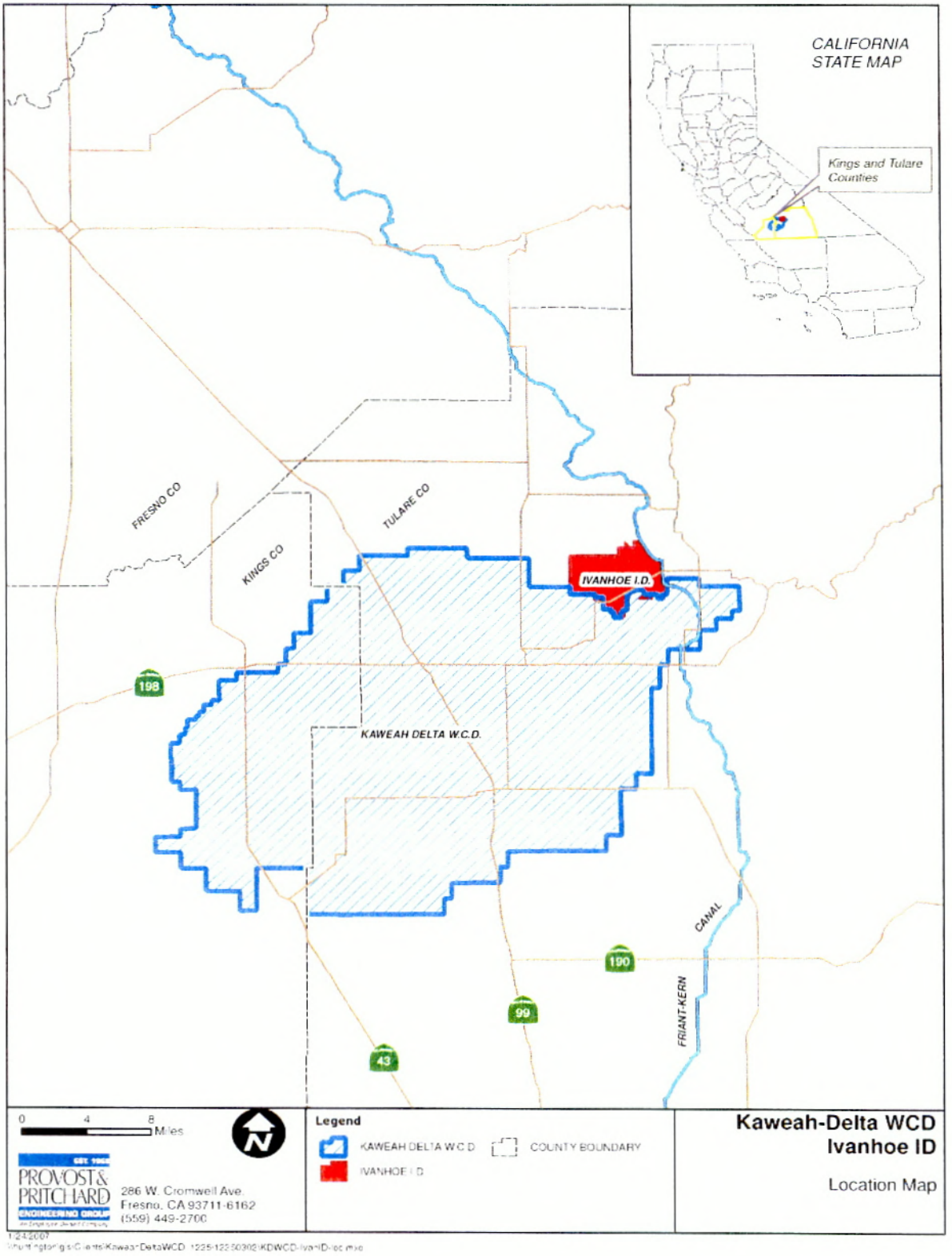
The potentially affected resources in the project vicinity include:

- Surface Water Resources
- Groundwater Resources
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trusts Assets
- Socioeconomic Resources
- Environmental Justice

1.7 Public Review Period

The draft environmental assessment was available May 7 through June 5, 2008 for public comment on Reclamation's website. Reclamation received one comment letter. The comment letter and Reclamation's responses can be found in Appendix A.

Figure 1-1: Overview of Project Area.



Alternatives Including the Proposed Action

2.1 Alternative A: No Action

Under the No Action Alternative Reclamation would not approve the partial assignment of a portion of IID's existing water service contract to KDWCD. The existing contract and associated quantities of CVP water supply would remain with IID, and KDWCD would retain its storage and Kaweah River rights.

2.2 Alternative B: Proposed Action

Reclamation proposes to approve a partial assignment of portions of the Friant Division CVP long term water service contract and associated water supply to KDWCD. Reclamation proposes to approve the proposed partial assignment of IID's Contract water supply to KDWCD. The Proposed Action would assign 1,200 af/yr of IID's Class I water, and 7,400 af/yr of Class II water to KDWCD. Approval of the Proposed Action would allow KDWCD to become a long-term water service contractor in the Friant Division.

In exchange for the partial assignment, IID and KDWCD have entered into an agreement for the following:

- KDWCD would assign 2,500 af of storage space in the Kaweah Reservoir to IID.
- KDWCD would assign ownership to its water supply from the Long's Canal Company diversion right (Longs Right) to IID.
- A total of $450,000 would be made from KDWCD to IID.

KDWCD would permanently assume IID's rights and obligations for that portion of the Contract assigned, and Reclamation would become contractually obligated to provide to KDWCD that portion of CVP water that would have otherwise been delivered to IID. The partial contract assignment would reduce the quantity of Friant Division CVP water under the current Contract to IID. Land in IID would continue to be farmed using the remaining CVP water and other water supplies available to IID, including supplies received in exchange for the proposed partial assignment.

KDWCD would use the assigned CVP water within their district to address existing groundwater overdraft issues within the Kaweah River Basin by delivering the water for direct groundwater recharge, or delivering the water to water service customers within the district as a substitute to groundwater pumping.

Figure 2-1 below is a map of potential delivery points in which KDWCD would receive the CVP water under the assignment.

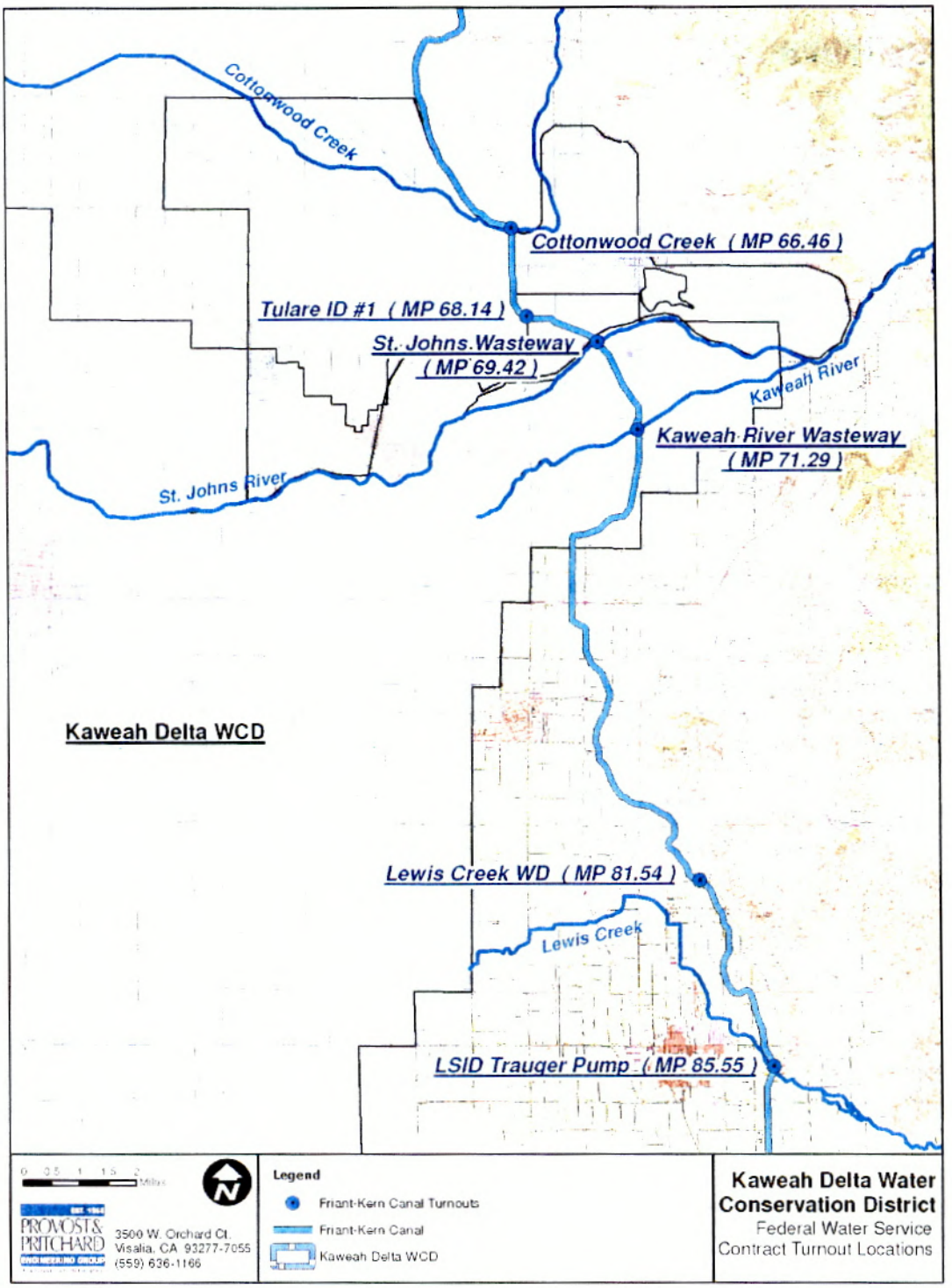


Figure 2-1: Map of turnout locations that could potentially be used by KDWCD.

Section 3 Affected Environment and Environmental Consequences

3.1 Surface Water Resources

3.1.1 Affected Environment

The San Joaquin Valley (Valley) is the southern portion of the Great Central Valley of California. It is a structural trough up to 200 miles long and 70 miles wide filled with up to 32,000 feet of marine and continental sediments deposited during periodic inundation by the Pacific Ocean and by erosion of the surrounding mountains, respectively. Continental deposits shed from the surrounding mountains form an alluvial wedge that thickens from the valley margins toward the axis of the structural trough. This depositional axis is below to slightly west of the series of rivers, lakes, sloughs, and marshes, which mark the current and historic axis of surface drainage in the San Joaquin Valley (DWR 2003).

3.1.1.1 Ivanhoe Irrigation District

As previously stated, in 1949, IID contracted with Reclamation for 7,700 af/yr of Class I and 7,900 af/yr of Class II Friant Division CVP surface water diverted from the FKC. The Contract has been amended to include, among other things, construction of a distribution system by Reclamation. The distribution system facilities were subsequently built by Reclamation and transferred to IID for operation and maintenance on March 1, 1956. The latest contract version (Contract No. 175r-1809-LTR1) was executed on February 6, 2001.

The Reclamation-constructed distribution system includes three main pipe laterals, four pumping plants, two traveling water screens, approximately 43 miles of pipe laterals and numerous appurtenant structures, including standpipes, junction boxes, valves and meters.

In addition to the CVP supply, the IID has private rights to the surface waters of the Kaweah River through its Wutchumna stock ownership. The 7.9 shares of Wutchumna stock, with a long-term average annual yield of about 582 af/share, provides for a long-term average supply of about 4,600 af/yr.

The IID supplemental Kaweah River surface water supply is diverted from the Kaweah River through the Wutchumna Ditch from which IID has turnout structures. From these structures, IID diverts and co-mingles the water with the CVP supply. Refer to Table 3-1 for the historical water supply available to the IID (IID 2004).

Table 3-1: Historical Water Supply Deliveries to IID

Water Year[1]	Total CVP Delivery (af)	Wutchumna Supply (af)	Total[2] (af)
1949	4,491	0	4,491
1950	7,682	0	7,682
1951	11,510	865	12,375
1952	5,308	1,650	6,958
1953	14,804	1,170	15,974
1954	16,100	1,242	17,342
1955	15,261	1,007	16,268
1956	16,467	1,100	17,567

Water Year[1]	Total CVP Delivery (af)	Wutchumna Supply (af)	Total[2] (af)
1957	14,394	1,294	15,688
1958	16,351	1,583	17,934
1959	11,120	694	11,814
1960	9,302	795	10,097
1961	7,370	533	7,903
1962	16,501	3,767	20,268
1963	13,601	3,276	16,877
1964	10,662	2,125	12,787
1965	15,601	3,504	19,105
1966	10,482	0	10,482
1967	14,892	0	14,892
1968	7,455	0	7,455
1969	14,102	0	14,102
1970	10,993	2,655	13,648
1971	12,077	2,041	14,118
1972	9,199	1,283	10,482
1973	13,348	3,342	16,690
1974	12,605	4,139	16,744
1975	12,587	3,471	16,058
1976	4,602	994	5,596
1977	2,444	5,089	7,533
1978	16,598	1,854	18,452
1979	12,841	2,362	15,203
1980	17,241	3,339	20,580
1981	8,500	3,890	12,390
1982	16,065	3,045	19,110
1983	16,000	4,242	20,242
1984	10,641	3,913	14,554
1985	8,952	4,009	12,961
1986	16,444	4,033	20,477
1987	7,347	3,933	11,280
1988	7,055	2,890	9,945
1989	9,126	2,850	11,976
1990	5,464	1,936	7,400
1991	10,600	1,359	11,959
1992	6,361	2,339	8,700
1993	15,302	4,372	19,674
1994	6,160	2,856	9,016
1995	14,596	3,980	18,576

Water Year[1]	Total CVP Delivery (af)	Wutchumna Supply (af)	Total[2] (af)
1996	12,432	3,578	16,010
1997	10,874	0	10,874
1998	9,957	3,555	13,512
1999	10,634	3,388	14,022
2000	10,751	3,477	14,228
2001	8,371	4,546	12,917
2002	8,332	4,594	12,926
2003	10,897	4,317	15,214
2004	7,361	4,426	11,787
2005	12,020	6,554	18,574
Total	638,233	143,256	781,489
Average	11,197	2,755	13,710

[1]January through December Water Year
[2]Data compiled from Ivanhoe ID 2004 Water Conservation Plan.

In order to assist in understanding the water supply consequences resulting from the assignment and resource exchange, tables have been prepared and follow which contrast pre-partial assignment to post-partial assignment by month for three years spanning the last ten years with differing hydrologic circumstances (see Tables 3-2 to 3-4 below). The intent of these tables is to demonstrate the impact of Kaweah River storage on assignment and the reasonableness of the exchange of 1,200 af of CVP Class 1 supply for the Longs Canal water and related storage. These tables were not adjusted for effective precipitation and therefore are not a reflection of the overall water balance within IID; however, by focusing on the "Kaweah River" column (to look at the impacts of storage) and the additive value of the "CVP" column deliveries and the "Kaweah River Transfers" column (to look at the net surface water deliveries due to the Longs Canal/CVP water exchange) the impact of the assignment on these areas can be demonstrated.

It should be noted that the last column in each of the tables reflects the difference between the crop water demand and the surface water available from the various sources. This remaining demand is provided either by precipitation or groundwater pumping. Comments in this section about the effect of the assignment on groundwater pumping are qualitative as the tables do not provide sufficient information to determine the changed quantities of groundwater pumping.

Table 3-2 has been generated as an example of the effects with and without the partial assignment contract based on the water deliveries in calendar year 2007. During 2007 (pre-partial assignment contract), the Class 1 CVP water declaration was 65 percent of contract allocation resulting in 5,005 af. (7,700 af times 0.65) (The tables are based on a calendar year while the water allocations are based on a contract year – March through February and, therefore, the Class 1 CVP deliveries may be slightly higher or lower than the allocations due to the differing time periods. In this case, the table reflects deliveries of 5,112 af of contract supply). Class 2 and Section 215 water were not available due to the dry hydrologic conditions, which likely resulted in increased groundwater pumping.

If there had been a partial assignment contract in place, IID would have delivered 797 af less of Class 1 supplies, but would have gained 1,371 af of the Longs Canal Company supply which is shown as additional Kaweah River Transfers. The additional 735 af of surface water would meet crop demand. It

is likely that most of the 735 af would offset groundwater pumping since 2007 was a relatively dry year. In a year similar to 2007, a relatively dry year in both the Kaweah and San Joaquin watersheds, there would be no additional benefit to Kaweah River supplies due to storage as water supply demand could absorb all surface water available.

Table 3-3 has been generated as an example of the effects with and without the partial assignment contract based on the water deliveries in calendar year 2005. During 2005 (pre-partial assignment contract), the Class 1 CVP water was 100 percent of allocation resulting in 7,330 af. (Although 100 percent of the Class 1 contract supply is 7,700, due to the change in delivery period from contract year to calendar year 7,330 af was 100 percent of the CVP water available.) Additionally, there was a declaration of 10 percent Class 2 over the contract year, but a condition of uncontrolled season Class 2 during a limited period. (During uncontrolled season, due to Reclamation's need to release water from Millerton Reservoir, Reclamation allows contractors to take as much Class 2 water as they can put to beneficial use up to their contract total, which in IID's case is 7,900 af. This ability to take uncontrolled season Class 2 is limited in duration and provides the most benefit to districts with storage or recharge facilities.) In a year like 2005, IID could use their small recharge and storage facilities as well as meet immediate crop demand with this water. IID was able to utilize 2,953 af despite the fact that the declaration only yielded 790 af. Post-exchange, IID would have been able to additional Section 215 water, estimated at 3,718 af. (Section 215 water is unstorable flood flows that Reclamation makes available under separate contract.)

In this hydrologic example there was more rainfall and, due to lack of storage, IID could not take delivery of their available local surface water supplies since crop demand had been met, most likely by precipitation, and there was no storage available for the available surface water supplies. In such cases, IID chooses which water supplies to forgo, mainly based on economic drivers. In this case the table shows a small gain in the Kaweah River supplies of 318 af which was lost in reality, due to the lace of storage space.

If there had been a partial assignment contract in place in a year similar to 2005, IID would benefit from increased storage by having the ability to retain the 318 af until crop demand utilized the water. IID would have had less Class 2 available since 7,400 af has been assigned but IID would possibly be able to take delivery of 215 water when it is available since they have reduced abilities to take Class 2 water. Comparing the pre- and post- assignment, the net CVP and Kaweah River surface water available is 6,150 af pre-assignment and 6,275 af post -assignment. Adding the 318 af additional surface water due to storage capabilities and the 125 af increase in the exchanged water supplies, there is a net gain to IID of 443 af. This example demonstrates in a hydrologic year similar to 2005 there would be a net gain in surface water to IID due to the assignment.

Table 3-4 has been generated as an example of the effects with and without the partial assignment contract based on the water deliveries in calendar year 1998. During 1998 (pre-partial assignment contract), the Class 1 CVP water declaration was for a 100 percent allocation resulting in 7,386 af (see previous comments explaining deviation from 7,700 af). The Class 2 declaration was for 10 percent of the Class 2 contract entitlement or in this case 790 af. As explained regarding 2005, surface water storage on the Kaweah River system was not available and a determination was made by IID to forgo Kaweah River water when the District realized that conditions did not allow the utilization of 2,500 af in May and June. All available Class 2 water is taken and 215 water is also taken, but this is limited due to the need to use other contracted and available water supplies.

If there had been a partial assignment contract in place in a year similar to 1998, IID would benefit from increased storage by having the ability to retain the 2,500 af until crop demand utilized the water. Additionally, again as discussed related to 2005, IID would have had less Class 2 available since 7,400 af has been assigned. IID would possibly be able to take delivery of 215 water when it is available since they have reduced abilities to take Class 2 water. Comparing the pre- and post-assignment, the net CVP and Kaweah River surface water available is 14,463 af pre-assignment and 17,118 af post -assignment. Although there is a reduction in the CVP/Longs Canal surface water supplies, the increase in storage more than makes up for the deficit. Adding the 2,500 af additional surface water due to storage capabilities and subtracting the 1,063 af decrease in the exchanged water supplies, there is a net gain to IID of 2,655 af. This example demonstrates a hydrologic year similar to 1998 there would be no surface water reduction to IID due to the assignment.

For normal year effects and wet year effects in the needs analysis exercise utilized by Reclamation, effective precipitation by year type is a consideration. Groundwater extractions during late spring and early summer months in the tables reflect evapotranspiration demands which would actually be partially satisfied by precipitation in lieu of groundwater pumping and/or surface water deliveries.

3.1.1.2 Climate Change

Climate change refers to changes in the global or a regional climate over time. Global climate change is expected to have some effect on the snow pack of the Sierra Nevadas and the run off regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley (SJV). Water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operational flexibility and therefore surface water resource changes due to climate change would be the same with or without the Proposed Action.

Table 3-2: Dry Year With and Without the Partial Assignment Contract

PRE-RESOURCES EXCHANGE

Dry Year

Calendar Year - 2007

MONTH	DEMAND	KAWEAH		CVP			CVP TRANSFERS		KAWEAH RIVER TRANSFERS		GROUNDWATER
	(AF)	(AF)		(AF)			(AF)		(AF)		(AF)
		Delivered	Lost	Class 1[1]	Class 2	Section 215	In	Out	In	Out	
January	213	0	0	0	0	0	0	0	0	0	213
February	487	0	0	518	0	0	0	518	0	0	0
March	730	0	0	0	0	0	0	0	0	0	730
April	485	0	0	107	0	0	0	0	0	0	378
May	3,971	20	0	397	0	0	0	0	130	0	3,424
June	5,100	460	0	699	0	0	0	0	3	0	3,938
July	6,647	1,043	0	988	0	0	0	130	270	0	3,846
August	4,080	958	0	1,145	0	0	0	0	565	0	1,412
September	2,090	1,057	0	833	0	0	0	553	1,550	0	0
October	427	928	0	396	0	0	0	0	0	0	0
November	7	168	0	29	0	0	0	0	0	0	0
December	3	0	0	0	0	0	0	0	0	0	3
TOTAL	24,240	4,634	0	5,112	0	0	0	1,201	3,018	0	13,944[2]

(1) Class 1 CVP = 65% Allocation.

(2) Beneficial impacts of effective precipitation not included.

POST RESOURCES EXCHANGE

Dry Year

Calendar Year - 2007

MONTH	DEMAND	KAWEAH		CVP			CVP TRANSFERS		KAWEAH RIVER TRANSFERS		GROUNDWATER
	(AF)	(AF)		(AF)			(AF)		(AF)		(AF)
		Delivered	Lost	Class 1[1]	Class 2	Section 215	In	Out	In	Out	
January	213	0	0	0	0	0	0	0	54	0	159
February	487	0	0	437	0	0	0	518	76	0	0
March	730	0	0	0	0	0	0	0	140	0	590
April	485	0	0	90	0	0	0	0	120	0	275
May	3,971	20	0	335	0	0	0	0	395	0	3,221
June	5,100	460	0	590	0	0	0	0	229	0	3,821
July	6,647	1,043	0	834	0	0	0	130	997	0	3,773
August	4,080	958	0	967	0	0	0	0	785	0	1,370
September	2,090	1,057	0	703	0	0	0	553	1,550	0	0
October	427	928	0	334	0	0	0	0	0	0	0
November	7	168	0	24	0	0	0	0	9	0	0
December	3	0	0	0	0	0	0	0	34	0	0
TOTAL	24,240	4,634	0	4,315[2]	0	0	0	1,201	4,389[3]	0	13,209[3,4]

(1) Class 1 CVP = 65% Allocation.

(2) Class 1/Longs Exchange: 797 AF Class 1 for 1,371 AF of Longs.

(3) Groundwater extraction reduction = 735 AF.

(4) Beneficial impacts of effective precipitation not included.

Table 3-3: Wet Year With and Without the Partial Assignment Contract

PRE-RESOURCES EXCHANGE

Normal Year

Calendar Year - 2005

MONTH	DEMAND	KAWEAH		CVP			CVP TRANSFERS		KAWEAH RIVER TRANSFERS		GROUNDWATER
	(AF)	(AF)		(AF)			(AF)		(AF)		(AF)
		Delivered	Lost	Class 1[1]	Class 2[2]	Section 215	In	Out	In	Out	
January	213	89	0	152	0	0	0	0	0	0	0
February	487	0	0	0	0	0	0	1,609	0	0	487
March	730	93	0	0	37	0	0	0	0	0	600
April	485	236	0	0	1,295	0	0	0	0	0	0
May	3,971	821	318	0	1,167	169	0	0	0	0	1,814
June	5,100	1,272	0	0	0	1,928	0	0	0	0	1,900
July	6,647	1,311	0	1,639	454	0	0	235	0	0	3,243
August	4,080	533	0	2,779	0	0	0	233	0	0	768
September	2,090	1,126	0	1,804	0	0	1,168	1,999	700	0	0
October	427	1,035	0	956	0	0	0	0	400	0	0
November	7	0	0	0	0	0	0	0	0	0	7
December	3	38	0	0	0	0	0	0	0	0	0
TOTAL	24,240	6,554	318	7,330	2,953	2,097	1,168	4,076	1,100	0	8,819[3]

(1) Class 1 CVP = 100% Allocation.

(2) Class 2 CVP = Uncontrolled Season.

(3) Beneficial impacts of effective precipitation not included.

POST RESOURCES EXCHANGE

Normal Year

Calendar Year - 2005

MONTH	DEMAND	KAWEAH		CVP			CVP TRANSFERS		KAWEAH RIVER TRANSFERS		GROUNDWATER
	(AF)	(AF)		(AF)			(AF)		(AF)		(AF)
		Delivered	Lost	Class 1[1]	Class 2[2]	Section 215	In	Out	In	Out	
January	213	89	0	128	0	0	0	0	113	0	0
February	487	0	0	0	0	0	0	1,609	70	0	417
March	730	93	0	0	2	0	0	0	142	0	493
April	485	236	0	0	69	1,024	0	0	230	0	0
May	3,971	821	0	0	62	1,066	0	0	265	0	1,757
June	5,100	1,272	0	0	0	1,628	0	0	220	0	1,980
July	6,647	1,311	0	1,384	54	0	0	235	110	0	3,788
August	4,080	851[3]	0	2,346	0	0	0	233	0	0	883
September	2,090	1,126	0	1,523	0	0	1,168	1,999	0	0	0
October	427	1,035	0	807	0	0	0	0	723	0	0
November	7	0	0	0	0	0	0	0	447	0	0
December	3	38	0	0	0	0	0	0	50	0	0
TOTAL	24,240	6,872	0	6,188	187	3,718	1,168	4,076	2,370[4]	0	9,318[5][6]

(1) Class 1 CVP = 100% Allocation.

(2) Class 2 CVP = Uncontrolled Season.

(3) Includes 318 AF lost due to lack of storage.

(4) Class 1/Longs Exchange: 1,142 AF Class 1 for 1,270 AF of Longs.

(5) Groundwater extraction reduction = 0 AF

(6) Beneficial impacts of effective precipitation not included.