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El Dorado Irrigation District

Water Supply Assessment for the Memorandum of Understanding for Water Service to the Shingle Springs Rancheria

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Prepared for

ESA

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Section 1: Introduction and Background

1.1 Introduction

This Water Supply Assessment (WSA) has been prepared for El Dorado Irrigation District (EID or District) to analyze the District's ability to provide an increase in annual water service to the Shingle Springs Rancheria (Rancheria or Tribe) over pre-project conditions, consistent with the terms and conditions of the 2008 Memorandum of Understanding (MOU) between the District and Rancheria. This WSA has been prepared pursuant to the statutory enactment (Public Resources Code Section 21151.9, and California Water Code Sections 10631, 10657, 10910, 10911, 10912, and 10915 as applicable) referred to as Senate Bill (SB) 610. SB 610 amended state law, effective 1 January 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires a water supply assessment to be included in the environmental documentation of certain proposed projects.

This WSA evaluates water supplies that are or will be available during normal, single dry and multiple dry water years for 20-years in the future, to meet existing demands, expected demands of the Rancheria, and reasonably foreseeable planned future water demands served by the water purveyor.

1.2 Background

In 2001, the California Department of Transportation (Caltrans) and the Tribe finalized an agreement by which Caltrans would work with the Tribe so the Tribe could construct an interchange connecting Highway 50 to the Rancheria. That interchange would allow the Tribe to construct and operate a casino and hotel on the Rancheria pursuant to a gaming compact with the State of California and certain approvals from the National Indian Gaming Commission (NIGC) and the Bureau of Indian Affairs (BIA). The casino and hotel project was reviewed pursuant to National Environmental Policy Act (NEPA) and an Environmental Assessment (EA) was prepared¹. Caltrans and the BIA also prepared and certified a joint EA/EIR in 2002², which analyzed off-Rancheria impacts of the interchange and the hotel and casino. Federal courts upheld legal challenges to both the EA and joint EA/EIR. State court litigation on the joint EA/EIR resulted in Caltrans preparing a Supplemental EIR³. Ultimately, the California Court of Appeal upheld Caltrans's environmental review of the interchange and hotel and casino, and, in 2008, the California Supreme Court declined to review the case, ending the litigation. The Tribe opened the hotel and casino in late 2008.

¹ National Indian Gaming Commission, *Shingle Springs Rancheria Hotel and Casino Project Final Environmental Assessment/Finding of No Significant Impact*, December 2001.

² California Department of Transportation, *Shingle Springs Interchange Project Final Environmental Impact Report/Environmental Assessment*, September 2002

³ California Department of Transportation, *Shingle Springs Interchange Project Final Supplemental Environmental Impact Report*, August 2006.

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Also in 2008, EID and the Tribe entered into a MOU stating that the District would provide the Rancheria with water service at a maximum rate of 95 gallons per minute (gpm) and an average volume of 135,000 gallons per day (gpd). This agreement provided for a net increase of 215.75 Equivalent Dwelling Units (EDU)⁴ over the existing 45 EDUs of water service EID was already providing the Tribe.

EID's existing 45 EDU of water service to the Tribe conformed to limitations imposed in a 1988 resolution of the El Dorado County Local Agency Formation Commission (LAFCO) approving the petition of the Shingle Springs Rancheria to annex into the EID service area for the purpose of water service. The resolution included a condition that EID provide water for residential uses only, including accessory uses and for tribal use limited to community facilities, schools, playgrounds, recreational facilities, a residential home for tribal elders and community grazing or garden projects. A further condition limited water service to that necessary to serve a community of 40 residential lots.

In connection with its approval of the MOU, EID stated that the El Dorado LAFCO restrictions were not binding because they were in conflict with achieving congressionally approved uses of the Rancheria, including the hotel and casino, and were therefore legally preempted. The District prepared a Notice of Exemption under California Environmental Quality Act (CEQA) for adopting and implementing the MOU. Following adoption of the MOU, the Tribe completed the physical improvements on the Rancheria necessary to receive water service consistent with its provisions.

Approval of the MOU with a CEQA exemption was subsequently challenged in El Dorado County Superior Court (Court). In a December 15, 2009, decision (*Voices for Rural Living v. El Dorado Irrigation District, et. al.*), the Court concluded that the District's Notice of Exemption was improper. Specifically, the Court found that the administrative record contained evidence to support a fair argument that the MOU could have a significant impact on the District's cumulative water supplies, particularly during severe drought conditions. The Court, therefore, directed EID to prepare an EIR. The Court did not identify any other environmental impacts or impact categories for which substantial evidence in the record supported a fair argument that the MOU could significantly impact the environment.

On September 13, 2010, the Court issued the Writ, providing that EID may only adopt a MOU with the Rancheria or other agreement to provide water service to the Rancheria after EID has: (1) complied with CEQA; and (2) secured any necessary approvals from the El Dorado LAFCO. The Writ further states that EID may continue to provide water service to the Rancheria in an amount not to exceed what the MOU allows and on terms not inconsistent with the MOU, so long as the District is actively pursuing the actions described above in (1) and (2). The District

⁴ An Equivalent Dwelling Unit is the amount of water an average single-family residence in the same part of EID's service area would consume annually.

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has prepared its response to the Writ in the form of an EIR⁵, and the Writ, therefore, defines the required scope of the EIR analysis. To provide a complete assessment of potential impacts of the proposed project (Project) and in response to the Writ, existing conditions (or baseline) regarding water supply is defined as those water supply conditions that existed before EID approved the MOU.

Therefore, the Project is defined as EID providing water service to the Shingle Springs Rancheria consistent with the MOU (maximum continuous flow of 95 gpm and a maximum average daily delivery of 135,000 gpd), the relocation of an existing flow meter vault, the abandonment in place of existing six inch waterlines, and the installation of a new 4,025 12-inch pipeline on the Rancheria to connect with EID's existing water supply infrastructure.

1.3 Project Water Demand

The MOU between the District and the Rancheria allowed for an annual water service at a maximum rate of 95 gpm and an average volume of 135,000 gpd. The maximum supply allowed to the Project is 154 acre feet per year (AFY). Past meter information of water usage by the Project showed that the average maximum demand was 129,725 gpd for July and August 2009, which was 5,000 gpd below the imposed MOU limit. The meter data showed significantly lower usage in the winter months; however, this WSA assumes that the Rancheria will have an average daily demand at a constant 135,000 gpd, consistent with the terms and conditions of the MOU.

1.4 Capital Outlay Program [Section 10910(d)(2)(B)]

This subsection requires a copy of the capital outlay program for financing the delivery of the water supply that has been adopted by the District, a public water system.

Infrastructure improvements required for the proposed Project are within the Rancheria and will be constructed and funded by the Rancheria; none will be constructed nor funded by the District. However, all facilities that were to be owned by the District were plan-checked by District engineers before construction, inspected by District staff during construction, and tested prior to operation. Concurrent with accepting ownership of the facilities, the District obtained recorded easements for access and ongoing operation and maintenance. The Rancheria has not provided specific information regarding capital funding. Proposed Project components are discussed in previous sections and are summarized below:

Potable Water

- Abandon 6-inch water pipeline in place and remove the existing water meter.
- Construct 4,025 linear feet of 12-inch water pipeline.

⁵ El Dorado Irrigation District Memorandum of Understanding for Water Service to the Shingle Springs Rancheria Draft Environmental Impact Report, State Clearinghouse No. 2011022045, November, 2011.

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- Install a new 3-inch water meter, vault and appurtenances.

1.4.1 Required Permits [Section 10910(d)(2)(C)]

This subsection requires identification of any federal, state, and local permits that are required for construction of necessary infrastructure associated with delivering the water supply to the proposed Project.

No new infrastructure would be constructed off the Rancheria in the EID service area and existing EID operations would remain unchanged, therefore no permits are necessary. The Tribe installed the Project water service infrastructure on the Rancheria in 2008; and it has been in continuous operations since being placed into service that year.⁶ The Tribe is responsible for the construction of any new infrastructure on the downstream side of the flow meter, including backflow protection. As part of EID's and the Tribe's respective construction responsibilities, EID would abandon existing easements on Rancheria land, and the BIA would grant EID easements for all new lines to allow EID acceptance, control, and maintenance of the facilities delivering water to the Tribe. Water service on the Rancheria would be provided through a tribal utility district independent of EID.

1.4.2 Regulatory Approvals [Section 10910(d)(2)(D)]

This subsection requires identification of any regulatory approvals that are required to convey or deliver the water supply to the proposed Project.

1.4.2.1 LAFCO

As described in Section 1.2 Background, in 1988, the El Dorado County LAFCO adopted a resolution approving the Rancheria petition to annex into the District service area for the purpose of water service. The resolution included a condition that EID provide water for residential uses only, including accessory uses and for tribal use limited to community facilities, schools, playgrounds, recreational facilities, a residential home for tribal elders and community grazing or garden projects. A further condition imposed was that water service was to be limited to that necessary to serve a community of 40 residential lots (equivalent to 45 EDUs).

The MOU stated that the LAFCO restrictions were not binding because they were in conflict with achieving congressionally approved uses of the Rancheria, including the hotel and casino, and were therefore preempted. The 2010 Writ states that EID may only adopt a MOU with the Rancheria or other agreement to provide water service to the Rancheria after EID has: (1) complied with CEQA; and (2) secured any necessary approvals from LAFCO. The Writ further states that EID may continue to provide water service to the Rancheria in an amount not to exceed what the MOU allows and on terms not inconsistent with the MOU, so long as the District is actively pursuing the actions described above in (1) and (2).

⁶ Consistent with the Writ; however, the analysis of the description of the Project and analysis of environmental impacts in the Draft EIR assumes these water service improvements are not yet constructed.

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1.4.2.2 Water Distribution System Improvements

The Project includes the installation of a new three-inch flow meter, 12-inch water pipeline and associated appurtenances (including a backflow prevention assembly structure). The District followed all standard plan review, inspection, and testing procedures for this new waterline and appurtenances prior to acceptance as part of the District water distribution system.

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Section 2: Elements of a WSA (Water Code Section 10910)

This Section describes the required elements of the WSA, as outlined by the California Water Code, specifically Section 10910.

The format of the WSA is intended to follow Water Code Sections 10910 – 10915 to delineate clearly the specific requirements of a WSA. This Section is structured according to those requirements. Section 10910 of the Water Code is intended to evaluate if existing supply sources are adequate to meet the Project demands. What follows is a breakdown of the elements of the Water Code that respond to the adequacy of existing supplies. If Section 10910 is satisfied, the WSA can move forward with a positive finding of sufficiency in water supplies. If Section 10910 is not satisfied, further evaluation into planned water supply sources and projects need to be included as per Section 10911 of the Water Code.

2.1 Determine if the Project is Subject to CEQA [Water Code Section 10910(a)]

The Project has been determined to be subject to CEQA.

2.2 Determine if the Project is a "Project" [Water Code Section 10912(a) or (b)]

The Project has been determined to be a "project" as set forth by the Water Code and is subject to SB 610.

2.3 Does the Project include a Subdivision [Government Code 66473.7(a)(1)]

The Project does not include a "subdivision" as defined by California Government Code Section 66473.7(a)(1). Therefore, the project is not subject to SB 221.

2.4 Identify Responsible Public Water System [Section 10910(b)]

The District is the public water system responsible for providing water to the Project.

2.5 Determine if the Project has already been Assessed [Section 10910(h)]

No previous SB 610-compliant WSA has been completed, although the District did assess the sufficiency of water supplies to meet water demands specific to this Project pursuant to its own policies, regulations, and procedures prior to entering into the MOU.

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2.6 Determine if there is an adopted Urban Water Management Plan (UWMP) [Section 10910(c)(1)]

The District adopted the 2010 Update to its Urban Water Management Plan (UWMP) on June 27, 2011 and submitted it to California Department of Water Resources on July 8, 2011. Population, water demand and water supply data and projections in this WSA are from the 2010 UWMP Update.

2.7 Determine if the Project is Accounted for in the UWMP [Section 10910(c)(2)]

The 2010 UWMP Update does not specifically identify this Project in its water future demand projections. Although the Project is included as an existing demand, due to the county land use assigned to the Rancheria for the parcel, the future demand of this Project is not included in the 2010 UWMP Update's calculation for future demands. Therefore, the full Project water demand is being analyzed in this document as a future projected demand that has not been accounted for as part of the District's most recent urban water management planning process.

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Section 3: Background

This Section describes the District water service area, and provides background information regarding demographics related to the service area. Although this information is not required by SB 610, it is useful for the reader to help understand the make-up of the District.

3.1 Description of Service Area [Section 10631(a)]

The District provides potable water service to a portion of El Dorado County, which is located northeast of the City of Sacramento on the western slopes of the Sierra Nevada mountain range. The service area is generally bounded by the South Fork American River to the north (with the exception of the Swansboro community) and the North Fork Cosumnes River to the south. Figure 2 of the EIR details the District service area and regions.

Water sources are primarily in the higher elevations. Due to the District's geography, topography, and infrastructure configuration, some water supplies are limited to certain areas of the District. For planning purposes, the District has divided its service area based on topography and points of diversion into two service regions; El Dorado Hills (lower elevations) and Western/Eastern (higher elevations). The District has the ability to convey water supplies by gravity from the Western/Eastern region to the El Dorado Hills region; however, infrastructure constraints limit the ability to use El Dorado Hills supplies (from Folsom Reservoir) to serve the Western/Eastern region.

Folsom Reservoir supplies most of the water to the El Dorado Hills region. However, the District also typically conveys water from the Western/Eastern region on a seasonal basis to reduce operating costs. The Rancheria is located approximately in the center of the Western region.

Due to the District's integrated operation of its water delivery system, this WSA must consider the water sources and demands within the entire contiguous District in order to properly assess the available water supply.

3.2 Local Climate [Section 10631(a)]

The District service area is located in a region of varying climate, typically dry in the summer months and wet with some snow in the late fall, winter, and early spring months. The region generally has mild weather, and does not experience extreme winter or summer temperatures. Table 1 shows a summary of climate data including the average temperature, precipitation, snowfall and evapotranspiration (ET_o) of the service area. The District service area extends easterly to Pollock Pines, which has regular snowfall; however, the Rancheria area rarely has snowfall.

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Table 1: Climate Data

	Average Max. Temperature⁽¹⁾ (°F)	Average Min. Temperature⁽¹⁾ (°F)	Average Total Precipitation⁽¹⁾ (in.)	Average Total Snowfall⁽¹⁾ (in.)	Average Snow Depth⁽¹⁾ (in.)	Standard average ETo⁽²⁾ (in.)
Jan	53.4	32.6	6.92	1.2	0	1.41
Feb	56.9	35.0	6.65	0.3	0	1.88
Mar	60.5	37.6	5.76	0.4	0	2.99
Apr	66.3	40.5	3.19	0.3	0	4.47
May	74.8	46.3	1.51	0	0	5.91
Jun	83.9	51.9	0.44	0	0	7.46
Jul	92.7	57.2	0.07	0	0	9.00
Aug	91.4	56.2	0.09	0	0	8.21
Sep	85.7	52.1	0.54	0	0	6.23
Oct	74.8	45.0	2.13	0	0	4.19
Nov	61.3	37.4	4.40	0	0	1.84
Dec	53.8	33.1	6.47	0.4	0	1.37
Annual	71.3	43.8	38.17	2.6	0	54.96

Notes:

- (1) Source: Western Regional Climate Center, Placerville, CA (046960), 1/1/1900 to 12/31/2010
- (2) Source: California Irrigation Management Information System, Camino Station 13, 12/1982 to 4/1/2011

3.3 Service Area Population [Section 10631(a)]

The current and projected population served within the District service area is presented in Table 2.

Table 2: Population Served

	2010	2015	2020	2025	2030
Service Area Population	112,100	115,100	122,100	132,000	142,560

Notes:

- (1) Source: El Dorado Irrigation District, 2010 Urban Water Management Plan Update

3.4 Current and Projected Water use by Sector [Section 10631 (e)(1)]

Projected water demands are used by water providers to plan for future water needs. Current and projected water deliveries are shown in Table 3 and Table 4. The data provided below is from the 2010 UWMP Update, which states that District records for actual historical water use are as published in the annual Consumption Report, and that the projected demands are taken from the draft Integrated Water Resources Master Plan (IWRMP)

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In accordance with Section 10631, projections are shown in 5-year intervals out 20 years from 2008. Except as specified in Section 2.7 above, water use for the Project is conservatively assumed to not be included in the demand projections in the 2010 UWMP Update, and is added as a separate line item in Table 3. In addition, total Project demands are conservatively assumed to be the maximum allowable amount (per the MOU) of 154 AFY. As discussed in Section 1.3, this amount is somewhat higher than actual recent metered water use by the Rancheria. Note that the Project demand is less than one percent of the District’s total water demand.

Table 3: Current and Projected Water Deliveries, AFY

Water Use Sectors	2010	2015	2020	2025	2030
Single Family	14,895	21,725	23,410	29,679	34,505
Multi-Family	1,430	2,086	2,248	2,849	3,313
Commercial/Industrial	2,479	3,616	3,896	4,939	5,743
Landscape	1,073	1,565	1,686	2,138	2,486
Agriculture and Ditches	5,431	7,921	8,536	10,821	12,581
Other Authorized Uses	2,453	5,917	6,049	2,323	2,701
Subtotal	27,761	42,829	45,825	52,750	61,328
Project Demand	154	154	154	154	154
Total Demand	27,915	42,983	45,979	52,904	61,482
Project Percent of Demand ⁽¹⁾	0.55%	0.36%	0.33%	0.29%	0.25%

Notes:

(1) Percent Demand is the ratio of Rancheria demand to District Demand Total x 100%.

Table 4: Total Water Use, AFY

Water Use	2010	2015	2020	2025	2030
User Demand Total	27,915	42,983	45,979	52,904	61,482
Sales to Other Water Agencies	1,155	1,200	1,215	1,275	1,330
Additional Water Uses and Losses	4,764	4,892	5,227	6,003	6,962
Total	33,834	49,075	52,421	60,182	69,774

Section 4: Water Supply

This section evaluates the District's existing and planned water supply sources, and identifies the quantities allocated from each water supply source and its associated water rights. The water supply reliability is evaluated for each source using historical data for single dry years and multiple dry years.

4.1 Wholesale Water Supply [Section 10631(k)]

The District currently purchases, and expects to continue to purchase Folsom Reservoir water via a United States Bureau of Reclamation (USBR) Water Service Contract. In the future, the District expects to purchase water wholesale from the El Dorado County Water Agency (EDCWA), which is pursuing a USBR Water Service Contract under Public Law 101-514.

4.2 Groundwater Supply [Section 10631(b)]

The District does not currently use groundwater as a supply source, and has no plans to pursue groundwater as a supply source.

4.3 Summary of Water Supply Sources (Sections 10910(d)(1) and (d)(2)(A)]

The District relies solely on surface water to meet water demands; from the 2010 UWMP Update:

“The District’s potable water system is composed of a main contiguous system which serves over 95% of its customers, and two satellite systems. The three principle diversion points for delivering into the main system are: District owned and operated Sly Park Dam and Jenkinson Lake; the District owned and operated El Dorado Hydroelectric FERC Project 184 (Project 184) at Forebay Reservoir; and Folsom Reservoir via a United States Bureau of Reclamation (USBR) Water Service Contract, a Warren Act Contract for rediverted District ditch and Weber Reservoir water supplies, and State water right permit 21112. The two satellite diversions include potable water deliveries to Outingdale by diverting water from the Middle Fork of the Cosumnes River and Strawberry by diverting water from the upper South Fork American River. The District also diverts water into the Crawford Ditch from the North Fork of the Cosumnes River as a raw water source. Aside from the USBR Contract, the District does not currently purchase water from any wholesale supplier. In the future, the District expects to purchase water wholesale from the El Dorado County Water Agency (EDCWA), which is pursuing a USBR Contract under Public Law 101-514.”

These water sources are described in detail in the 2010 UWMP Update and listed in Table 5. Copies of the water rights, permits, statements, and water supply contracts are available upon request from the District.

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Table 5: Summary of Water Supply Rights, Contracts, and Entitlements

Source No.	Water Source	Water Supply Area	Facility Name or Location	Contract / Agreement or Appropriator	Water Right Application Number	Water Right Permit Number	Water Right License Number	Entitlement (AFY)	
								Annual Supply (Maximum)	Firm Yield ⁽¹⁾
1	Folsom Lake	El Dorado Hills Cameron Park	EDH Raw Water PS	USBR EID Contract 14-06-200-1375A	13370 13371	11315 11316	USBR	7,550	5,660
1	Folsom Lake	El Dorado Hills Cameron Park	Weber Dam EDH Raw Water PS	USBR EID Contract 06-WC-20-3315	Pre-1914 1692	1053	2184	4,560	3,000
2	Jenkinson Reservoir	Contiguous District	Jenkinson Lake Sly Park Dam	EID	5645A 2270	12258 2631	11835 11836	33,400	20,920
2	Camp Creek	Contiguous District	Jenkinson Lake	EID	Pre-1914	N/A	N/A	Included above	Included in 20,920 above
3	South Fork American River at Kyburz and Project 184 Reservoirs	Contiguous District	El Dorado Forebay Diversion to EID Main Ditch	EID	Pre-1914	N/A	N/A	15,080	15,080
4	North Fork Consumes River	Somerset	North Fork Crawford Ditch Camp Creek Segment	EID	Pre-1914	N/A	N/A	5,000	N/A
4	Clear Creek	Somerset	Crawford Ditch Clear Creek Segment	EID	Pre-1914	N/A	N/A	5,000	N/A
4	Squaw Hollow Creek	Diamond Springs	East Diamond Ditch	EID	Pre-1914	N/A	N/A	N/A	N/A
5	Middle Fork Cosumnes River	Outingdale	Outingdale Subdivision	EID	7478	4071	N/A	104	N/A
6	South Fork American River	Strawberry	Strawberry Subdivision	EID	Pre-1914	N/A	N/A	50	Included in 15,080 above
7	Recycled Water	El Dorado Hills Cameron Park	El Dorado Hills and Deer Creek Reclamation Plants	EID	N/A	N/A	N/A	Plant ADWF	Plant ADWF
8	Folsom Lake	Contiguous District	Project 184	EID	5645B	21112	N/A	17,000	17,000
13	Bass Lake	El Dorado Hills Cameron Park	Bass Lake	EID	Pre-1914	N/A	N/A	60	60

Notes:

(1) Sources 4 and 5 are raw water supplies and do not supply the District's potable water system.

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As discussed in the 2010 UWMP Update, several factors influence the District water availability, including hydrology, infrastructure constraints (affecting only El Dorado Hills deliveries), use history, and seasonal diversion and storage policies. The District establishes its firm yield through computer modeling. The OASIS Model is a computer software package developed by HydroLogics, Inc. to model hydrologic conditions in conjunction with certain input parameters. The OASIS Model determines the firm yield of the integrated system for the District and consists of the following sources, restricted by contractual commitments and supply: 7,550 AFY from USBR EID Contract 14-06-200-1375A; 15,080 AFY from El Dorado Forebay; 20,920 AFY from Jenkinson Lake; 17,000 AFY from Project 184 (Permit 21112), and 4,560 AF from USBR EID Contract 06-WC-20-3315. During a dry or critically dry year, the annual supply would be reduced pursuant to Board Policy 5010, and would include a 25% cutback to 5,660 AFY for the former USBR EID Contract and a reduced supply from the latter USBR EID Contract of 3,000 AFY.

Firm yield is defined as the annual demand that the integrated supply system can meet 95% of the time while incurring shortages of no more than 20% annually in the remaining 5% of the time. The firm yield for each current water source is shown in Table 5. The District's projected normal-year water supply is shown in Table 6. Normal supplies are equal to the annual supply maximum with the exception of Jenkinson Lake. The average annual use from Jenkinson Lake is approximately 23,000 AFY, though the District's annual water right is for 33,400 AFY of total beneficial use. Under average flow conditions, Jenkinson Lake is operated to maintain 14,000 to 18,000 AFY of carryover storage. Jenkinson Lake contributes 20,920 AFY to the District's system firm yield.

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Table 6: Water Supply in a Normal Year, actual and projected, AFY

Water Supply Sources		2010	2015	2020	2025	2030
Water Purchased from USBR	Folsom Reservoir	7,550	7,550	7,550	7,550	7,550
Supplier-Produced Surface Water	Jenkinson Lake	23,000	23,000	23,000	23,000	23,000
Supplier-Produced Surface Water	El Dorado Forebay	15,080	15,080	15,080	15,080	15,080
Water Purchased from EDCWA	Folsom Reservoir - PL 101-514 (Fazio)	0	7,500	7,500	7,500	7,500
Supplier-Produced Surface Water	Folsom Reservoir - Warren Act Contract	4,560	4,560	4,560	4,560	4,560
Supplier-Produced Surface Water	Project 184 - Permit 21112	17,000	17,000	17,000	17,000	17,000
Supplier-Produced Surface Water	SMUD-El Dorado Agreement	0	0	30,000	30,000	40,000
Recycled Water	El Dorado Hills and Deer Creek WWTPs	3,084	4,356	5,878	7,730	7,730
Supplier-Produced Groundwater	None	0	0	0	0	0
Transfers In	None	0	0	0	0	0
Exchanges In	None	0	0	0	0	0
Desalinated Water	None	0	0	0	0	0
Total		70,274	79,046	110,568	112,420	122,420

Notes:

(1) Source: El Dorado Irrigation District, 2010 Urban Water Management Plan Update

4.4 Future Water Supply Sources

Table 6 includes two planned future water supply sources: Folsom Reservoir – PL101-514 (Fazio) and SMUD-El Dorado Agreement. These sources are included in the 2010 UWMP Update water supply projections, and are discussed in the following subsections.

4.4.1 Public Law 101-514 Supply

Public Law 101-514 legislatively mandated the execution of a Water Supply Contract between USBR and EDCWA for 15,000 AFY of water from Folsom Reservoir. The District expects to receive at least 7,500 AFY of this total through execution of a sub-contract with the EDCWA. This allocation would be subject to the USBR Shortage Policy for Municipal and Industrial Contractors of maximum dry year reductions of 25%.

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4.4.2 SMUD-EI Dorado Agreement

This agreement allows for 30,000 acre-feet of annual water storage in SMUD reservoirs under normal year conditions through 2025 and 40,000 acre-feet thereafter; with an additional 15,000 acre-feet available for carryover purposes. After a first dry year in which annual storage supplies would be exhausted, the District projects using 5,000 acre-feet of the 15,000 acre-foot total of carryover supplies in each subsequent year of a multiple-dry year sequence.

4.5 Water Rights Evaluation [Section 10910(e)]

Other than the future supplies discussed in Section 4.4, the Project will not rely on water supplies not yet used. Copies of the water rights, permits, statements, and water supply contracts are available upon request from the District.

4.6 Other Water Evaluation Criteria [Section 10631(c)]

The purpose of this subsection is to identify any aspects that could potentially reduce the reliable water supply.

4.6.1 Water Quality

In accordance with California Department of Health Services regulations, annually the District prepares a Consumer Confidence Report which includes the water quality testing results for the previous year. That report is provided to all District customers and is published on the District website. A copy of the most current report is included in the 2010 UWMP Update. At this time, no known or potential water quality issues have been identified by the District that could impact waters supplies, either by natural or human-induced activities.

4.6.2 Infrastructure Constraints

The MOU will not increase the maximum water flow (95 gpm) to the Rancheria, which has its own storage, pumping and distribution system. The District does not deliver high flows to the Rancheria for peak demand periods or for fire suppression needs; therefore, the current District infrastructure is sufficient and is not impacted by the increase in annual flow to the Rancheria.

4.6.3 Vulnerability to Shortage

Various factors that can cause water supply shortages are change in climate, earthquakes, chemical spills, dam failures, canal breaks, waterline ruptures, and energy outages at treatment and pumping facilities. The actions required to respond to both near-term and long-term changing water supply conditions are outlined in the 2010 UWMP Update, and include the District's adopted 2006 Drought Preparedness Plan and 2009 Drought Management Plan, which are multiple-stage demand reduction plans. Drought stages are defined by associating water supply conditions and demand reduction targets.

Reliable water supply for a single dry year is projected in Table 7. The single dry year projections are based on the lowest annual runoff for the watershed (base year 1977), as

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directed by California Department of Water Resources' Guidebook to Assist Water Suppliers in Preparation of the 2010 UWMP.

Table 7: Projected Single Dry Year Water Supply, AFY⁽¹⁾

		2015	2020	2025	2030
Supplier-Produced Surface Water	Jenkinson Lake	22,000	22,000	22,000	22,000
Supplier-Produced Surface Water	El Dorado Forebay	15,080	15,080	15,080	15,080
Water Purchased from EDCWA	Folsom Reservoir - PL 101-514 (Fazio)	5,625	5,625	5,625	5,625
Wholesale Water	Folsom Reservoir - USBR Contract	5,660	5,660	5,660	5,660
Supplier-Produced Surface Water	Folsom Reservoir - Warren Act Contract	3,000	3,000	3,000	3,000
Supplier-Produced Surface Water	Project 184 - Permit 21112	17,000	17,000	17,000	17,000
Supplier-Produced Surface Water	SMUD-El Dorado Agreement	0	30,000	30,000	40,000
Recycled Water	El Dorado Hills and Deer Creek WWTPs	4,356	5,878	7,730	7,730
Supplier-Produced Groundwater	None	0	0	0	0
Transfers In	None	0	0	0	0
Exchanges In	None	0	0	0	0
Desalinated Water	None	0	0	0	0
Total		72,721	104,243	106,095	116,095
Percent of Normal Year		92%	94%	94%	95%

Notes:

(1) Source: El Dorado Irrigation District, 2010 Urban Water Management Plan Update July 2011.

Reliability of existing water supply is shown in Table 8, which details the normal water supply compared to multiple dry years. Note that future water supply sources discussed in Section 4.4 are not included.

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Table 8: Existing Water Supply Reliability, AFY

Water Supply Sources		Normal Water Year Supply	Multiple Dry Water Year Supply		
			Year 1	Year 2	Year 3
Supplier-Produced Surface water	Jenkinson Lake	23,000	22,000	17,000	15,500
Supplier-Produced Surface water	El Dorado Forebay	15,080	15,080	15,080	15,080
Wholesale Water	Folsom Reservoir - USBR Contract	7,550	5,660	5,660	5,660
Supplier-Produced Surface water	Folsom Reservoir - Warren Act Contract	4,560	3,000	3,000	3,000
Supplier-Produced Surface water	Project 184 - Permit 21112	17,000	17,000	17,000	17,000
Recycled Water	El Dorado Hills and Deer Creek WWTPs	3,084	3,084	3,084	3,084
Supplier-Produced Groundwater	None	0	0	0	0
Transfers In	None	0	0	0	0
Exchanges In	None	0	0	0	0
Desalinated Water	None	0	0	0	0
Total		70,274	65,824	60,824	59,324
Percent of Normal Year			94%	87%	84%

Notes:

- (1) Source: El Dorado Irrigation District, 2010 Urban Water Management Plan Update July 2011
- (2) Single dry year is based on data from 1976-1977.
- (3) Multiple dry year is based on data from 1987-1992.

Section 5: Water Supply Assessment

This Section evaluates the District's water supply and demands. The assessment includes comparison of supply and demand for normal, single dry and multiple dry years.

5.1 Supply and Demand Comparison [Section 10910(c)(3)]

Projected water supply and demands for normal years are compared in Table 9. Supplies are those shown in Table 6. Demands are those shown in Table 4, which include the Project demand of 154 AFY.

Table 9: Normal Year Water Supply and Demand Comparison, AFY

	2015	2020	2025	2030
Supply Totals	79,046	110,568	112,420	112,420
Demand Totals	49,075	52,421	60,182	69,774
Difference	29,971	58,147	52,238	42,646
Difference as % of Supply	38%	53%	46%	38%
Difference as % of Demand	61%	111%	87%	61%

Projected water supply and demands for a single dry year are compared in Table 10. Reliable supplies are those shown in Table 7. Demands are those shown in Table 4, which include the Project demand of 154 AFY.

Table 10: Single Dry Year Water Supply and Demand Comparison, AFY

	2015	2020	2025	2030
Supply Totals	72,721	104,243	106,095	116,095
Demand Totals	49,075	52,421	60,182	69,774
Difference	23,646	51,822	45,913	46,321
Difference as % of Supply	33%	50%	43%	40%
Difference as % of Demand	48%	99%	76%	66%

Projected water supply and demands for multiple dry years are compared in Table 11. These multiple dry years would occur after a single dry year (shown in Table 10), and therefore represent the final three years of a four-year drought period. Reliable existing supplies are those shown in Table 8; reliable future supplies are as discussed in Section 4.4. Demands are those shown in Table 4, which include the Project demand of 154 AFY.

Table 11 provides the multiple-dry year water supply and demand for a three-year period and is intended to provide the most conservative analytical approach. It is assumed that no additional water conservation efforts are in place and overall demands are not reduced to meet the 20% reductions by 2020. In addition to assuming no water conservation, no mandatory rationing is assumed to be implemented in any of the dry years.

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Table 11: Multiple Dry Year Water Supply and Demand Comparison, AFY

		2015	2020	2025	2030
Year 1	Supply Totals	71,449	86,449	86,449	86,449
	Demand Totals	49,075	52,421	60,182	69,774
	Difference	25,521	53,697	47,788	38,196
	Difference as % of Supply	34%	51%	44%	35%
	Difference as % of Demand	52%	102%	79%	55%
Year 2	Supply Totals	66,449	76,449	76,449	76,449
	Demand Totals	49,075	52,421	60,182	69,774
	Difference	17,374	24,028	16,267	6,675
	Difference as % of Supply	26%	31%	21%	9%
	Difference as % of Demand	35%	46%	27%	10%
Year 3	Supply Totals	64,949	69,949	69,949	69,949
	Demand Totals	49,075	52,421	60,182	69,774
	Difference	15,874	17,528	9,767	175
	Difference as % of Supply	24%	25%	14%	0.3%
	Difference as % of Demand	32%	33%	16%	0.3%

Note: Supply totals from 2010 UWMP Update, Table 5-12. Demand totals from 2010 UWMP Update, Table 5-12, plus Project demand of 154 AFY.

5.2 Water Supply Assessment [Section 10910(c)(3)]

Based on analyses provided in this WSA, the projected District water supplies available during normal, single dry and multiple dry years will meet the projected water demands for existing and planned future uses, including those associated with the Project, during the 20-year projection period. Normal demand projections are used in all of the assessments. As noted in Section 4.6.3 and discussed in detail in the 2010 UWMP Update, the District has the capability to respond to both near-term and long-term changing water supply conditions, including implementation of multiple-stage demand reduction plans. Although implementation of demand reduction plans would reduce total demands, even if they did not, projected supplies are sufficient to meet total demands.

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References

California Department of Water Resources, *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001*, 8 October 2003.

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