Appendix D - Delta Reliance

1. Background

Under the Sacramento-San Joaquin Delta Reform Act of 2009, state and local public agencies proposing a covered action (e.g., a proposed project) in the Sacramento-San Joaquin Delta (Delta), prior to initiating the implementation of that action, must prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies and submit that certification to the Delta Stewardship Council.

Anyone may appeal a certification of consistency. If the Delta Stewardship Council grants the appeal, the covered action may not be implemented until the agency proposing the covered action submits a revised certification of consistency. The covered action may be implemented if either: 1) no appeal is filed; or 2) the Delta Stewardship Council denies the appeal to the revised certification of consistency.

The City of Fresno (City) contracts with the United States Bureau of Reclamation (USBR) Central Valley Project (CVP) Friant Division for an annual supply of 60,000 af of Class 1 water through an agreement originally executed in January 1961. Although the Friant Division of the CVP does not pull water from the Delta, the project was developed through an exchange agreement reached in 1939 with the Delta-Mendota supply that provides water to the Exchange Contractors[1] with historic pre-1914 San Joaquin River water rights. As restrictions on Delta exports have hindered USBR from making deliveries to the Delta-Mendota Canal, the Exchange Contractors can call on their historic rights, which reduces the Friant Division Class 1 allocations. As such, the City is required to demonstrate consistency with the Delta Plan's policy to reduce reliance on the Delta.

An urban water supplier that anticipates participating in or receiving water from a proposed covered action such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta should provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

WR P1 details what is needed for a covered action to demonstrate consistency with reduced reliance on the Delta and improved regional self-reliance. WR P1 subsection (a) states that:

[1] The Exchange Contractors are the benefactors of the historic pre-1914 water rights established by Miller and Lux. These contracts include: Central California Irrigation District; San Luis Canal Company; Firebaugh Canal Water District; and Columbia Canal Company, per http://www.sjrecwa.net/history.html (accessed March 10, 2021).

(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

(1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);

(2) That failure has significantly caused the need for the export, transfer, or use; and

(3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:

(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;

(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and

(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self- reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).

The analysis and documentation provided below include all the elements described in WR P1(c)(1) that need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action.

2. Methodology

As stated in WR P1(c)(1)(C), the policy requires that, commencing in 2015, UWMPs include expected outcomes for improved regional self-reliance and measurable reduction in Delta reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta. The expected outcomes for the City's regional self-reliance and reduced Delta reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 issued in March 2020 (Guidebook Appendix C), including the use of narrative justifications for the accounting of supplies and the documentation of specific data sources.

All data were obtained from planning documents adopted by the City Council, including the current and previous UWMPs and Metropolitan Water Resource Management Plan (Metro Plan) and represent average or normal water year conditions. Using normal water year demands serves as a proxy for the amount of supplies that would be used in a normal water year, which helps alleviate issues associated with how supply capability is presented to fulfill requirements of the UWMP Act versus how supplies might be accounted for to demonstrate consistency with WR P1.

To calculate the expected outcomes for improved regional self-reliance and reduced Delta reliance, a baseline is needed to compare against. This analysis uses a normal water year representation of 2010 as the baseline, which is consistent with the approach described in the Guidebook Appendix C. Data for the 2010 baseline were taken from the City's 2008 UWMP. Consistent with the 2010 baseline data approach, the expected outcomes for improved regional self-reliance and reduced Delta reliance for 2015 and 2020 were taken from the City's 2010 and 2015 UWMPs, respectively. Expected outcomes for 2025-2045 are from the current 2020 UWMP. Documentation of the specific data sources and assumptions are included in the discussions below.

3. Demonstration of Regional Self-Reliance

3.1 Service Area Demands without Water Use Efficiency

Because WR P1 considers water use efficiency savings a source of water supply, water suppliers such as the City that do not explicitly quantify water use efficiency savings in their UWMPs can calculate their embedded water use efficiency savings based on changes in forecasted per capita water use since the baseline.

Agencies that explicitly calculate and report water use efficiency savings in their UWMP will need to make an adjustment to properly reflect normal water year demands in the calculation of reduced reliance. As explained in the Guidebook Appendix C, water use efficiency savings must be added back to the normal year demands to represent demands without water use efficiency savings accounted for; otherwise the effect of water use efficiency savings on regional self-reliance would be overestimated. **Table 1** (included at the end of this appendix) shows the results of this adjustment for the City. Supporting narratives and documentation for all the data shown in Table 1 are provided below.

Service Area Demands with Water Use Efficiency

The service area demands shown in Table 1 represent the total water demands for the City's service area. The demand data shown in Table 1 were collected from the following sources:

- Baseline (2010): Fresno 2008 UWMP, Table 6-5
- 2015: Fresno 2010 UWMP, Table 7-2
- 2020: Fresno 2015 UWMP, Table 4-4
- 2025-2045: Fresno 2020 UWMP, Table 4-6

Non-Potable Water Demands

The non-potable water demands shown in Table 1 represent recycled water use that offsets potable water use in the City's service area. The demand data shown in Table 1 were collected from the following sources:

- Baseline (2010): Fresno 2008 UWMP, Table 10-7
- 2015: Fresno 2010 UWMP, Table 7-1
- 2020: Fresno 2015 UWMP, Table 6-14
- 2025-2045: Fresno 2020 UWMP, Table 4-7

Potable Service Area Demands with Water Use Efficiency

Subtract "Non-Potable Water Demands" from "Service Area Demands with Water Use Efficiency."

Service Area Population

The population data shown in Table 1 were collected from the following sources:

- Baseline (2010) and 2015: Fresno 2015 UWMP, Table 5-1
- 2020-2045: Fresno 2020 UWMP, Table 3-3

Estimated Water Use Efficiency Since Baseline

The "Per Capita Water Use" calculated using "Potable Service Area Demands with Water Use Efficiency" divided by "Service Area Population". The "Change in Per Capita Water Use from Baseline" was then calculated by comparing with 2010 Per Capita Water Use. Finally, the "Estimated Water Use Efficiency Since Baseline" was calculated by multiplying the "Change in Per Capita Water Use from Baseline" by the population for one (1) year.

Service Area Water Demands without Water Use Efficiency

Add "Service Area Demands with Water Use Efficiency" to "Estimated Water Use Efficiency Since Baseline."

3.2 Supplies Contributing to Regional Self-Reliance

For a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) states that water suppliers must report the expected outcomes for measurable improvement in regional self-reliance. Table 2 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in **Table 2** (included at the end of this appendix) represent efforts to improve regional self-reliance for the City's entire service area and include the total contributions of the City and its customers. Supporting narratives and documentation for all of the data shown in Table 2 are provided below.

Estimated Water Use Efficiency Since Baseline

The water use efficiency information shown in Table 2 is taken directly from Table 1.

Water Recycling

The water recycling information shown in Table 2 is taken from the Non-Potable Water Demands row in Table 1.

Local and Regional Water Supply and Storage Programs

The values shown in Table 2 represent groundwater supplies considering both natural recharge and intentional recharge. The supply data shown in Table 2 were collected from the following sources:

- Baseline (2010): Fresno 2008 UWMP, Table 4-9
- 2015: Fresno 2010 UWMP, Table 7-1
- 2020: Fresno 2015 UWMP, Table 6-14

- 2025-2045: Fresno 2020 UWMP, Table 6-8

Other Programs and Projects the Contribute to Regional Self-Reliance

The values shown in Table 2 represent Kings River supplies considering both contracted supplies and recycled water exchange supplies. The supply data shown in Table 2 were collected from the following sources:

- Baseline (2010): Fresno 2008 UWMP, Table 4-11
- 2015: Fresno 2010 UWMP, Table 7-1
- 2020: Fresno 2015 UWMP, Table 6-5
- 2025-2045: Fresno 2020 UWMP, Table 6-8

Water Supplies Contributing to Regional Self Reliance

Sum of:

- Estimated Water Use Efficiency Since Baseline
- Water Recycling
- Local and Regional Water Supply and Storage Programs
- Other Programs and Projects the Contribute to Regional Self-Reliance

Percent of Water Supplies Contributing to Regional Self-Reliance

"Water Supplies Contributing to Regional Self Reliance" divided by "Service Area Water Demands without Water Use Efficiency" (from Section 3.1).

3.3 Conclusions

The results shown in Table 2 demonstrate that the City's service area is measurably improving its regional self-reliance. The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for the City's regional self-reliance:

- Near-term (2025): The expected outcome for normal water year regional self-reliance is expected to increase by 129,700 AFY from the 2010 baseline; this represents an increase of about 31 percent of 2025 normal water year demands (Table 2).
- Long-term (2045): The expected outcome for normal water year regional self-reliance is expected to increase by more than 191,600 AFY from the 2010 baseline, this represents an increase of about 14 percent of 2045 normal water year retail demands (Table 2).

The results show that the City is measurably improving regional self-reliance, both as an amount of water used and as a percentage of water used.

4. Demonstration of Reduced Reliance on the Delta

The City's service area reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and regional and local demand management measures.

4.1 Calculation of Reliance on Water Supplies from the Delta Watershed

The calculation of reliance on water supplies from the Delta watershed, shown in **Table 3** (included at the end of this appendix), is based on the following assumptions.

CVP/SWP Contract Supplies

The City water supplies with a connection to the Delta watershed are CVP/SWP Contract Supplies. The supply data shown in Table 3 is for anticipated average yield from the City's USBR contract and were collected from the following sources:

- Baseline (2010): Fresno 2008 UWMP, Table 4-6
- 2015: Fresno 2010 UWMP, Table 7-1
- 2020: Fresno 2015 UWMP, Table 6-14
- 2025-2045: Fresno 2020 UWMP, Table 6-2

Water Supplies from the Delta Watershed

Equal to "CVP/SWP Contract Supplies."

Percent Change in Supplies from the Delta Watershed

Divides "Water Supplies from the Delta Watershed" by "Service Area Demands without Water Use Efficiency" (from Section 3.1) and calculates changes from the 2010 baseline.

4.2 Conclusions

The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for the City's Delta reliance on supplies from the Delta watershed:

- Near-term (2025): The expected outcome for normal water year reliance on supplies from the Delta watershed is expected to decrease by 4,520 AF from the 2010 baseline. With Delta water representing 25.5% of service area water demand without water use efficiency, this represents a decrease from the 2010 baseline of 10.1% (Table 3).
- Long-term (2045): The expected outcome for normal water year reliance on supplies from the Delta watershed is expected to decrease by 4,520 AF from the 2010 baseline. With Delta water representing 19.5% of service area water demand without water use efficiency, this represents a decrease from the 2010 baseline of 16.2% (Table 3).

The results shown in Table 3 demonstrate that City is measurably reducing reliance on the Delta, both as an amount of water used and as a percentage of water used.

5. UWMP Implementation

In addition to the analysis and documentation described above, WR P1 subsection (c)(1)(B) requires that all programs and projects included in the UWMP that are locally cost-effective and technically feasible, which reduce reliance on the Delta, are identified, evaluated, and implemented consistent with the implementation schedule. WR P1 (c)(1)(B) states that:

> *(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta[.]*

In accordance with Water Code Section 10631(f), water suppliers must already include in their UWMP a detailed description of expected future projects and programs that they may implement to increase the amount of water supply available to them in normal and single-dry water years and for a period of drought lasting five consecutive years. The UWMP description must also identify specific projects, include a description of the increase in water supply that is expected to be available from each project, and include an estimate regarding the implementation timeline for each project or program.

Chapter 6 of the City's 2020 UWMP summarizes the implementation of future water projects and continued progress in developing a diversified water portfolio to meet the City's water needs.

6. 2015 UWMP Appendix L

The information contained in this appendix is also intended to be a new Appendix L attached to the City's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) (Cal. Code Regs. tit. 23, § 5003). The City provided notice of the availability of the draft 2020 UWMP, 2020 WSCP, and a new Appendix L to the 2015 UWMP and the public hearing to consider adoption of the documents in accordance with CWC Sections 10621(b) and 10642, and Government Code Section 6066, and Chapter 17.5 (starting with Section 7290) of Division 7 of Title 1 of the Government Code. The public review drafts of the 2020 UWMP, Appendix L to the 2015 UWMP, and the 2020 WSCP were posted on the City's website, fresno.gov, on June 28, 2021, more than 14 days in advance of the public hearing on July 15, 2021. The notice of availability of the documents was sent to the City's customers, as well as cities and counties in the City's service area. Copies of the notification letter sent to the customers and cities and counties in the City's service area are included in the 2020 UWMP Appendix L. Thus, this Appendix D to the City's 2020 UWMP, which was adopted with the City's 2020 UWMP, will also be recognized and treated as Appendix L to the City's 2015 UWMP.

The City held the public hearing for the draft 2020 UWMP, draft Appendix L to the 2015 UWMP, and draft 2020 WSCP on July 15, 2021, at a regular City Council meeting, held online due to COVID-19 concerns. At the meeting, the City Council determined that the 2020 UWMP and the 2020 WSCP accurately represent the water resources plan for the City's service area. In addition, the City Council determined that Appendix L to the 2015 UWMP and Appendix D to the 2020 UWMP includes all of the elements described in Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. tit. 23, § 5003), which need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action. As stated in Resolutions 2021-196, 2021-197, and 2021-198, the City Council adopted the 2020 UWMP, the 2020 WSCP, and Appendix L to the 2015 UWMP and authorized their submittal to the State of California. Copies of the resolutions are included in the 2020 UWMP Appendix M.

Table 1. Calculation of Service Area Water Demands without Water Use Efficiency (UWMP Table C-1 and Table C-2)

Table C-1: Optional Calculation of Water Use Efficiency -To be completed if Water Supplier does not specifically estimate Water Use Efficiency as a supply

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	163,300	172,900	168,200	136,579	147,505	154,434	161,372	168,318
Non-Potable Water Demands	750	1,000	9,500	14,220	14,220	14,220	14,220	14,220
Potable Service Area Demands with Water Use Efficiency Accounted For	162,550	171,900	158,700	122,359	133,285	140,214	147,152	154,098

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Population	505,315	525,575	550,217	609,433	674,677	719,327	765,278	812,529

Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Per Capita Water Use (GPCD)	287	292	257	179	176	174	172	169
Change in Per Capita Water Use from Baseline (GPCD)		5	(30)	(108)	(111)	(113)	(116)	(118)
Estimated Water Use Efficiency Since Baseline		(2,833)	18,294	73,684	83,745	91,180	99,023	107,277

Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	163,300	172,900	168,200	136,579	147,505	154,434	161,372	168,318
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline	-	(2,833)	18,294	73,684	83,745	91,180	99,023	107,277
Service Area Water Demands without Water Use Efficiency Accounted For	163,300	170,067	186,494	210,263	231,250	245,614	260,395	275,595

Table 2. Calculation of Supplies Contributing to Regional Self-Reliance (UWMP Table C-3)

Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Estimated Water Use Efficiency since Baseline	-	(2,833)	18,294	73,684	83,745	91,180	99,023	107,277
Water Recycling	750	1,000	9,500	14,220	14,220	14,220	14,220	14,220
Stormwater Capture and Use								
Advanced Water Technologies								
Conjunctive Use Projects								
Local and Regional Water Supply and Storage Projects	88,800	76,100	132,480	138,090	143,630	149,100	154,490	159,820
Other Programs and Projects the Contribute to Regional Self-Reliance	131,750	117,400	116,000	125,030	131,600	131,600	131,600	131,600
Water Supplies Contributing to Regional Self-Reliance	221,300	191,667	276,274	351,024	373,195	386,100	399,333	412,917

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	163,300	170,067	186,494	210,263	231,250	245,614	260,395	275,595

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies Contributing to Regional Self-Reliance	221,300	191,667	276,274	351,024	373,195	386,100	399,333	412,917
Change in Water Supplies Contributing to Regional Self-Reliance		(29,633)	54,974	129,724	151,895	164,800	178,033	191,617

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies Contributing to Regional Self-Reliance	135.5%	112.7%	148.1%	166.9%	161.4%	157.2%	153.4%	149.8%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		-22.8%	12.6%	31.4%	25.9%	21.7%	17.8%	14.3%

Table 3. Reliance on Water Supplies from the Delta Watershed (UWMP Table C-4)

Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
CVP/SWP Contract Supplies	58,200	58,200	52,600	53,680	53,680	53,680	53,680	53,680
Delta/Delta Tributary Diversions								
Transfers and Exchanges of Supplies from the Delta Watershed								
Other Water Supplies from the Delta Watershed								
Total Water Supplies from the Delta Watershed	58,200	58,200	52,600	53,680	53,680	53,680	53,680	53,680

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	163,300	170,067	186,494	210,263	231,250	245,614	260,395	275,595

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies from the Delta Watershed	58,200	58,200	52,600	53,680	53,680	53,680	53,680	53,680
Change in Water Supplies from the Delta Watershed		-	(5,600)	(4,520)	(4,520)	(4,520)	(4,520)	(4,520)

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies from the Delta Watershed	35.6%	34.2%	28.2%	25.5%	23.2%	21.9%	20.6%	19.5%
Change in Percent of Water Supplies from the Delta Watershed		-1.4%	-7.4%	-10.1%	-12.4%	-13.8%	-15.0%	-16.2%