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June 27, 2019

Tom Francis, Water Resources Manager
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
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Dear Mr. Francis,

Please find attached the information you requested on impacts to the Regional Water System under implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment). As information previously provided for preparation of the 2015 Urban Water Management Plans are no longer up-to-date, the attached information is intended to be used in the preparation of Water Supply Assessments, pursuant to California Water Code Sections 10910 through 10915, by SFPUC's Wholesale Customers who are required to do so as the local urban water supplier in their corresponding retail service areas. The attached language and water supply reliability projections are consistent with the SFPUC's Water Supply Assessments approved by its Commission on May 28, 2019 by Resolution Nos. 19-0103 through 19-0107. Three water supply scenarios are analyzed:

- Scenario 1: No implementation of the Bay-Delta Plan Amendment or Voluntary Agreement
- Scenario 2: Implementation of the Voluntary Agreement
- Scenario 3: Implementation of the Bay-Delta Plan Amendment

It is our understanding that you will pass this information on to the Wholesale Customers. It also should be noted that the information regarding anticipated shortages in the attachment only apply to Tier 1 of the Shortage Allocation Plan, the shortages for the individual wholesale customers will require the application of Tier 2 of the Shortage Allocation Plan. We assume BAWSCA can provide the necessary support to the Wholesale Customers in applying Tier 2. If you have any questions or need additional information, please do not hesitate to contact me at (415) 554-0792.

Sincerely,

Paula Kehoe
Director of Water Resources

Enclosure: ATTACHMENT - Water Supply Reliability Information for BAWSCA Member Agencies' Water Supply Assessments

ATTACHMENT

Water Supply Reliability Information for BAWSCA Member Agencies' Water Supply Assessments

2018 Bay-Delta Plan Amendment

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 40% of the "unimpaired flow"[1] on the three tributaries from February through June in every year type, whether wet, normal, dry, or critically dry.

If the Bay-Delta Plan Amendment is implemented, the SFPUC will be able to meet its contractual obligations to its Wholesale Customers as presented in the SFPUC's 2015 UWMP in normal years. The SFPUC's 2015 UWMP already assumes shortages in single and multiple dry years through 2040, but implementation of the Bay-Delta Plan Amendment will result in greater shortages.

The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. But implementation of the Plan Amendment is uncertain for several reasons. First, under the Clean Water Act, the United States Environmental Protection Agency (U.S. EPA) must approve the water quality standards identified in the Plan Amendment within 90 days from the date the approval request is received. By letter dated June 11, 2019, EPA rejected the SWRCB's two-page submittal as inadequate under the requirements of the Clean Water Act. Pursuant to EPA's letter, the Board has 90 days to respond with a submittal that complies with the law. At this point, EPA has neither approved, nor disapproved, any of the revised water quality objectives. It is uncertain whether the U.S. EPA will approve or disapprove the water quality standards in the future. Furthermore, the determination could result in litigation.

Second, since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal court, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including two legal challenges filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation in state and federal courts. These cases are in the early stage and there have been no dispositive court rulings to date.

Third, the Bay-Delta Plan Amendment is not self-implementing and does not allocate responsibility for meeting its new flow requirements to the SFPUC or any other water rights holders. Rather, the Plan Amendment merely provides a regulatory framework for flow allocation, which must be accomplished by other regulatory and/or adjudicatory proceedings, such as a comprehensive water rights adjudication or, in the case of the Tuolumne River, the 401 certification process in the Federal Energy Regulatory Commission's relicensing proceeding for Don Pedro Dam. The license amendment process is currently expected to be

[1] Unimpaired flow represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Bay-Delta Plan Amendment, Introduction, p.1-8.

completed in the 2022-23 timeframe. This process and the other regulatory and/or adjudicatory proceedings would likely face legal challenges and have lengthy timelines, and quite possibly could result in a different assignment of flow responsibility (and therefore a different water supply impact on the SFPUC).

Fourth, in recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support SFPUC's participation in the Voluntary Agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency and the leadership of the Newsom administration. The negotiations for a voluntary agreement have made significant progress since an initial framework was presented to the SWRCB on December 12, 2018. The package submitted on March 1, 2019 is the product of renewed discussions since Governor Newsom took office. While significant work remains, the package represents an important step forward in bringing together diverse California water interests.

For all these reasons, whether and when the Bay-Delta Plan Amendment will be implemented, and how those amendments if implemented will affect the SFPUC's water supply is currently uncertain and possibly speculative. Given this uncertainty, this WSA analyzes water supply and demand through 2040 under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment or the March 1st Proposed Voluntary Agreement ("Scenario 1"), (2) Implementation of the March 1st Proposed Voluntary Agreement ("Scenario 2"), and (3) Implementation of the Bay-Delta Plan Amendment ("Scenario 3").

Dry Year Water Supplies

Since adoption of the UWMP, the following milestones have occurred:

- Calaveras Dam Replacement Project – Construction of the new dam was completed in September 2018, and the overall project was completed in June 2019.

- Regional Groundwater Storage and Recovery Project – Construction of this project is still underway. Phase 1 of the project, consisting of installation of 13 production wells, will be completed in 2019. Since May/June 2016, the project has been in a storage phase through periodic deliveries of RWS surface water in lieu of groundwater pumping by Daly City, San Bruno, and the California Water Service Company.

Additional Water Supplies

In light of the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations to RWS supply during dry years, the SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would increase overall water supply resilience. Developing these additional supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. In addition to the Daly

City Recycled Water Expansion project, which was a potential project identified in the 2015 UWMP and had committed funding at that time, the SFPUC has taken action to fund the study of potential additional water supply projects. Capital projects under consideration to develop additional water supplies include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. The SFPUC is also considering developing related policies and ordinances, such as funding for innovative water supply and efficiency technologies and requiring potable water offsets for new developments. A more detailed list and descriptions of these efforts are provided below.

The capital projects that are under consideration would be costly and are still in the early feasibility or conceptual planning stages. Because these water supply projects would take 10 to 30 or more years to implement, and because required environmental permitting negotiations may reduce the amount of water that can be developed, the yield from these projects are not currently incorporated into SFPUC's supply projections. Capital projects would be funded through rates from both Wholesale and Retail Customers based on mutual agreement, as the additional supplies would benefit all customers of the RWS, unless otherwise noted. State and federal grants and other financing opportunities would also be pursued for eligible projects, to the extent feasible, to offset costs borne by ratepayers.

1. **Daly City Recycled Water Expansion** (Regional, Normal- and Dry-Year Supply, 3 mgd)

   Project Description: The SFPUC and North San Mateo County Sanitation District (NSMCSD, or Daly City) have been exploring ways to increase the recycled water treatment capacity in Daly City to serve additional customers and decrease irrigation water withdrawals from the Westside Groundwater Basin, both in San Francisco and further south of Daly City. The majority of the irrigation demand met by groundwater withdrawals, approximately 2 mgd, serves cemeteries in Colma. An initial feasibility study completed in 2010 identified the capital requirements that would be needed to produce additional capacity at the existing treatment plant location. The study demonstrated that a new tertiary treatment facility would be required onsite to produce additional capacity of up to 3.4 mgd. Currently, flows that exceed the capacity of the existing treatment plant are discharged into the Pacific Ocean. With this project, some of that discharge may be treated and used for irrigation. New facilities would include a treatment facility, pump station, distribution pipelines, and storage.

   Estimated Costs and Financing: The capital cost is estimated to be $85 million, which is budgeted for in the SFPUC's 10-year capital planning horizon. The annual operations and maintenance (O&M) cost is estimated to be $3 million. This project may present regional benefits that would result in cost-sharing with Wholesale Customers because the replacement of groundwater used for irrigation with recycled water will result in a greater volume of groundwater storage that can be used in dry years as part of the SFPUC's existing Groundwater Storage and Recovery project, approved by the SFPUC in 2014 in Resolution no. 14-0127.

   Permits and Approvals: Daly City adopted a Final Initial Study/Mitigated Negative Declaration (IS/MND) and Mitigation Monitoring and Reporting Program (MMRP) for the proposed project in September 2017. The SFPUC has not yet approved its participation in the project. Other permits and/or approvals that may be needed for this project include: BART, CAL/OSHA, San Francisco Bay RWQCB, and encroachment permits from Caltrans, Daly City, South San Francisco, SFPUC, San Mateo County, and Colma to construct distribution and storage facilities. Institutional agreements between the project

partners for project construction and operation, as well as with the customers whose supplies will change from groundwater to recycled water, will also need to be developed.

Estimated Acquisition: Construction may occur as soon as 2023 with operation beginning in 2027.

2. **Alameda County Water District Transfer Partnership** (Regional, Normal- and Dry-Year Supply, 5 mgd)

   Project Description: Water would be acquired from Contra Costa Water District (CCWD) for delivery to Alameda County Water District (ACWD) through the South Bay Aqueduct utilizing a planned expansion of the Los Vaqueros Reservoir.

   Estimated Costs and Financing: The capital cost is estimated to be $50-150 million, with an annual O&M cost of $2.5 million.

   Permits and Approvals: Planning and environmental review of the Los Vaqueros Reservoir Expansion is underway by CCWD, and has several objectives beyond water deliveries to the SFPUC. CCWD has identified over 15 permits, approvals and consultations that will be necessary such as Dredge and Fill, National Pollutant Discharge Elimination System (NPDES), Streambed Alteration, and Encroachment permits. These permits and approvals will be obtained by CCWD and/or its contractor. To enable a water supply transfer between ACWD and the SFPUC, water right modifications may be necessary and if additional infrastructure is needed, additional permits will be required. As this project is in the conceptual stage, permitting details have not yet been identified.

   Estimated Acquisition: Construction may occur as soon as 2028 with operation beginning in 2032.

3. **Brackish Water Desalination in Contra Costa County** (Regional, Normal- and Dry-Year Supply, 9+ mgd)

   Project Description: The Bay Area Brackish Water Treatment (Regional Desalination) Project is a partnership between CCWD, East Bay Municipal Utility District (EBMUD), SFPUC, Santa Clara Valley Water District (SCVWD) and Zone 7 to turn brackish water into a reliable, drought-proof drinking water supply, delivering a total of up to 10-20 mgd in drought and non-drought years (i.e., dry and normal years), throughout the region. A new brackish water treatment plant would be constructed in East Contra Costa and tie into the existing CCWD system for delivery through Los Vaqueros Reservoir and the South Bay Aqueduct, or delivery via a connection with EBMUD.

   The SFPUC would rely on existing infrastructure and institutional agreements to receive water transfers from partner agencies. For planning and cost estimation purposes, it was assumed that the SFPUC's share of the regional water supply would be 9 mgd in all year types; however, if additional capacity is available, the SFPUC may secure additional water supply, based on negotiations with partner agencies.

   Estimated Costs and Financing: The capital cost is estimated to be $200-800 million, with an annual O&M cost of $12-20 million.

Permits and Approvals: To proceed, this concept would require extensive institutional agreements, permitting, and environmental review. Construction of a new desalination plant will require construction and operating permits such as NPDES, Dredge and Fill, consultations with federal and state agencies, and others. In addition, water rights will need to be secured and/or modified. In California, permitting and regulatory approvals of desalination projects has typically taken 10-18 years. In addition, institutional agreements among partner agencies will be needed.

Estimated Acquisition: Construction may occur as soon as 2032 and be phased so that 5-9 mgd would be available to the region by 2035 and a total of 5-11 mgd would be available after 2040.

4. **ACWD-USD Purified Water Partnership** (Regional, Normal- and Dry-Year Supply, 5 mgd)

Project Description: This may be an indirect or direct potable reuse project that would inject highly-treated water from Union Sanitary District (USD) for groundwater recharge, then recover the water through the ACWD Brackish Groundwater Desalination Plant. How the water is transferred to the SFPUC remains to be determined.

Estimated Costs and Financing: The capital cost is estimated to be $200-400 million, with an annual O&M cost of $2.5 million.

Permits and Approvals: An initial assessment will be underway in 2019, which will identify potential project scenarios. Permitting and approvals for a project will depend on its design and nature, which have not yet been identified.

Estimated Acquisition: Construction may occur as soon as 2038 with operation beginning in 2045.

5. **Crystal Springs Purified Water** (Regional, Normal- and Dry-Year Supply, 6+ mgd)

Project Description: This is an indirect potable reuse project that would blend wastewater from Silicon Valley Clean Water and possibly San Mateo into Crystal Springs Reservoir and treat the blended water at Harry Tracy Water Treatment Plant for potable reuse.

Estimated Costs and Financing: The capital cost is estimated to be $400-700 million, with an annual O&M cost of $18-25 million.

Permits and Approvals: Construction and operating permits would be required for this project. They would likely include NPDES, Encroachment, consultations with state and federal agencies, and others. Surface water augmentation is regulated by the SWRCB, and consultations and public hearings would be required.

Estimated Acquisition: Construction may occur as soon as 2034 and be phased so that 3-5 mgd would be available to the region by 2035 and a total of 3-7 mgd would be available after 2040.

6. Additional Storage Capacity in Los Vaqueros Reservoir from Expansion (Regional)

Project Description: Expansion of storage capacity in Los Vaqueros is to allow the ACWD Transfer Partnership and Brackish Water Desalination in Contra Costa County to be optimized.

Estimated Costs and Financing: The capital cost is estimated to be $20-50 million. SFPUC's portion of the project yield and cost share are not yet known. The annual O&M cost is yet to be estimated.

Permits and Approvals: Planning and review of the Los Vaqueros Reservoir Expansion is underway by CCWD, and has several objectives beyond water deliveries to the SFPUC. CCWD has identified over 15 permits, approvals and consultations that will be necessary such as Dredge and Fill, NPDES, Streambed Alteration, and Encroachment permits. These permits and approvals will be obtained by CCWD and/or its contractor. To enable a water supply transfer between ACWD and the SFPUC, water rights modifications may be necessary and if additional infrastructure is needed, additional permits will be required. As this project is in the conceptual stage, permitting details have not yet been identified.

Estimated Acquisition: Construction may occur as soon as 2021 with operation beginning in 2027.

7. Calaveras Reservoir Expansion (Regional)

Project Description: Calaveras Reservoir would be expanded to create 289,000 AF additional capacity to store excess Regional Water System supplies or other source water in wet and normal years. In addition to reservoir enlargement, the project would involve infrastructure to pump water to the reservoir, such as pump stations and transmission facilities.

Estimated Costs and Financing: The costs of this project is yet to be determined.

Permits and Approvals: Similar to Los Vaqueros Reservoir Expansion, this project would require numerous permits, approvals and consultations, such as Dredge and Fill, NPDES, Streambed Alteration, Encroachment, possible water right modifications, etc. These permits and approvals will be obtained by SFPUC and/or its contractor. As this project is in the conceptual stage, permitting details have not yet been identified.

Estimated Acquisition: Construction may occur as soon as the early 2040s with operation beginning around 2050.

Even if all the capital projects above are implemented, the total amount of water and storage yielded would not be enough to make up for the dry year shortfall that may result from implementation of the Bay-Delta Plan Amendment as adopted, and would occur years after such shortfalls begin. Thus, the SFPUC continues to proactively explore opportunities for reuse and innovation, such as the following policy:

- **Evaluation of Recycled Water Throughout Service Area**
  Wastewater treatment plants throughout the SFPUC service area would be surveyed to identify potential non-potable, indirect potable, and direct potable projects.

Comparison of Projected Supply and Demand

The following sections provide a supply and demand comparison for the three scenarios described above. Procedures for determining RWS supply availability are provided in the Water Supply Allocation Plan (WSAP) between the SFPUC's Retail and Wholesale Customers. It also should be noted that the information regarding anticipated shortages in the tables provided below only apply to Tier 1 of the WSAP, the shortages for the individual wholesale customers will require the application of Tier 2 of the WSAP to derive available supply for each wholesale customer. In addition, wholesale customers will need to include the availability of other supplies in addition to SFPUC supplies to drive their total water supply shortages under each scenario.

Scenario 1: No Implementation of the Bay-Delta Plan Amendment or the Voluntary Agreement

Table below compares the SFPUC's wholesale water supplies and demands through 2040 during normal year, single dry-, and multiple dry-year periods under Scenario 1.

The RWS supply projections shown in Table 1 differ from those provided previously for use in the 2015 UWMP. First, Table 1 reflects SFPUC's full 8.5-year design drought sequence instead of the minimum 3-year sequence required to be provided in the 2015 UWMP. Under legislation adopted in 2018 (S.B. 606) future UWMPs will be required to project water supply availability during a minimum of 5 years of continuous drought (Water Code section 10631(b)(1)). Second, the SFPUC water supply system model includes the following assumptions, which differ from those used for the 2015 UWMP projections:

- In-stream flow releases from Crystal Springs Reservoir to San Mateo Creek were included in this simulation. The average volume of these releases is approximately 3,900 acre-feet per year.
- Annual water supply transfers from the irrigation districts that operate New Don Pedro Reservoir (Districts) to SFPUC were not included in this analysis. An annual transfer of 2,300 acre-feet was assumed from the Districts to the SFPUC Water Bank Account in the WSIP 2018 simulation.

As shown in Table 1, under Scenario 1 without implementation of the Bay-Delta Plan Amendment, RWS supplies would meet wholesale demands (i.e., contractual obligations) in all normal years, single dry years, and the first year of the 8.5-year design drought. During subsequent drought years, shortfalls would range from 31 to 60 mgd, or 17-36%, increasing into the outer years of the design drought.

Table 1: Projected Supply and Demand Comparison Under Scenario 1
(No Implementation of the Bay-Delta Plan Amendment or the Voluntary Agreement) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years							
				Year 1[1]	Year 2[2]	Year 3[2]	Year 4[2]	Year 5[2]	Year 6[2]	Year 7[3]	Year 8[3]
2020	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	184.0	184.0	152.6	152.6	132.5	132.5	132.5	124.2	124.2
	Shortfall	0.0	0.0	0.0	31.4	31.4	51.5	51.5	51.5	59.8	59.8
	Shortfall as % of Demand	0.0%	0.0%	0.0%	17.1%	17.1%	28.0%	28.0%	28.0%	32.5%	32.5%
2025	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	184.0	184.0	152.6	152.6	132.5	132.5	132.5	124.2	124.2
	Shortfall	0.0	0.0	0.0	31.4	31.4	51.5	51.5	51.5	59.8	59.8
	Shortfall as % of Demand	0.0%	0.0%	0.0%	17.1%	17.1%	28.0%	28.0%	28.0%	32.5%	32.5%
2030	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	184.0	184.0	152.6	152.6	132.5	132.5	132.5	124.2	124.2
	Shortfall	0.0	0.0	0.0	31.4	31.4	51.5	51.5	51.5	59.8	59.8
	Shortfall as % of Demand	0.0%	0.0%	0.0%	17.1%	17.1%	28.0%	28.0%	28.0%	32.5%	32.5%
2035	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	184.0	184.0	152.6	152.6	132.5	132.5	132.5	124.2	124.2
	Shortfall	0.0	0.0	0.0	31.4	31.4	51.5	51.5	51.5	59.8	59.8
	Shortfall as % of Demand	0.0%	0.0%	0.0%	17.1%	17.1%	28.0%	28.0%	28.0%	32.5%	32.5%
2040	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	184.0	184.0	152.6	152.6	132.5	132.5	132.5	124.2	124.2
	Shortfall	0.0	0.0	0.0	31.4	31.4	51.5	51.5	51.5	59.8	59.8
	Shortfall as % of Demand	0.0%	0.0%	0.0%	17.1%	17.1%	28.0%	28.0%	28.0%	32.5%	32.5%

Notes:
1. During multiple dry years 2-3 (years 3-4 of SFPUC's design drought sequence), the wholesale allocation under the WSAP is 64.0% of available RWS supply, or 152.6 mgd.
2. During multiple dry years 4-6 (years 5-7 of SFPUC's design drought sequence), the wholesale allocation under the WSAP is 62.5% of available RWS supply, or 132.5 mgd.
3. During multiple dry years 7 and 8 (years 8 and 8.5 of SFPUC's design drought sequence), the wholesale allocation under the WSAP is 62.5% of available RWS supply, or 124.2 mgd.
4. It is assumed that wholesale demands will continue to be limited to the Supply Assurance of 184 mgd. The 184 mgd assumes that San Jose and Santa Clara remain temporary, interruptible customers.
5. Procedures for RWS allocations are provided in the WSAP.

Scenario 2: Implementation of the Voluntary Agreement

As stated earlier, the March 1st Proposed Voluntary Agreement has yet to be accepted by SWRCB as an alternative to the Bay-Delta Plan Amendment and thus the shortages that would occur with its implementation are not known with certainty. However, given that the objectives of the Voluntary Agreement are to provide fishery improvements while protecting water supply through flow and non-flow measures, the RWS supply shortfalls under the Voluntary Agreement would be less than those under the Bay-Delta Plan Amendment, and therefore would require rationing of a lesser degree than that which would occur under Scenario 3. The degree of rationing would also more closely align with the SFPUC's RWS LOS goal of limiting rationing to no more than 20% on a system-wide basis in drought years. This goal was adopted in 2008 by the Commission (Resolution No. 08-0200).

Scenario 3: Implementation of the Bay-Delta Plan Amendment

Table 2 below provides projected supplies and demands under Scenario 3. The RWS is projected to experience significant shortfalls in single dry and multiple dry years starting as soon as 2022 and through 2040, regardless of whether the proposed project is constructed. These significant shortfalls are a result of implementation of the Bay-Delta Plan Amendment and not attributed to the incremental retail demand associated with the proposed project. *[Note to Wholesale Customers: This statement will need to be tailored to reflect your own water supply planning (e.g., you may already be showing significant shortfalls regardless of the Bay-Delta Plan Amendment].*

If additional water supplies were not acquired before the Bay-Delta Plan Amendment were implemented, the SFPUC would impose Wholesale Customer rationing to help balance water supply deficits during dry years.

Given the severity of the reduction in RWS supply with implementation of the Bay-Delta Plan Amendment, existing and planned dry-year supplies would not be enough to meet projected wholesale water demand obligations without rationing above the SFPUC's RWS LOS goal of limiting rationing to 20% on a system-wide basis for all dry years starting as soon as 2022. Although the WSAP does not address implications to supply during system-wide shortages above 20%, the WSAP indicates that if system-wide shortage greater than 20% were to occur, RWS supply would be allocated between retail and Wholesale Customers per the rules corresponding to a 16-20% system-wide reduction, subject to consultation and negotiation between the SFPUC and its Wholesale Customers to modify the allocation rules. The allocation rules corresponding to the 16-20% system-wide reduction are reflected in Table 2 above for Scenario 3. These allocation rules result in shortfalls of 85 to 124 mgd, or 46-68%, across the wholesale service area under Scenario 3.

Table 2: Projected Supply and Demand Comparison Under Scenario 3 (Implementation of the Bay-Delta Plan Amendment) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years							
				Year 1[1]	Year 2[2]	Year 3[2]	Year 4[2]	Year 5[2]	Year 6[2]	Year 7[3]	Year 8[3]
2020	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	99.4	99.4	76.2	76.2	76.2	76.2	76.2	59.6	59.6
	Shortfall	0.0	84.6	84.6	107.8	107.8	107.8	107.8	107.8	124.4	124.4
	Shortfall as % of Demand	0.0%	46.0%	46.0%	58.6%	58.6%	58.6%	58.6%	58.6%	67.6%	67.6%
2025	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	99.4	99.4	76.2	76.2	76.2	76.2	76.2	59.6	59.6
	Shortfall	0.0	84.6	84.6	107.8	107.8	107.8	107.8	107.8	124.4	124.4
	Shortfall as % of Demand	0.0%	46.0%	46.0%	58.6%	58.6%	58.6%	58.6%	58.6%	67.6%	67.6%
2030	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	99.4	99.4	76.2	76.2	76.2	76.2	76.2	59.6	59.6
	Shortfall	0.0	84.6	84.6	107.8	107.8	107.8	107.8	107.8	124.4	124.4
	Shortfall as % of Demand	0.0%	46.0%	46.0%	58.6%	58.6%	58.6%	58.6%	58.6%	67.6%	67.6%
2035	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	99.4	99.4	76.2	76.2	76.2	76.2	76.2	59.6	59.6
	Shortfall	0.0	84.6	84.6	107.8	107.8	107.8	107.8	107.8	124.4	124.4
	Shortfall as % of Demand	0.0%	46.0%	46.0%	58.6%	58.6%	58.6%	58.6%	58.6%	67.6%	67.6%
2040	Total Wholesale Demand[4]	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
	Total Wholesale RWS Supply[5]	184.0	99.4	99.4	76.2	76.2	76.2	76.2	76.2	59.6	59.6
	Shortfall	0.0	84.6	84.6	107.8	107.8	107.8	107.8	107.8	124.4	124.4
	Shortfall as % of Demand	0.0%	46.0%	46.0%	58.6%	58.6%	58.6%	58.6%	58.6%	67.6%	67.6%

Notes:

1. During a single dry year and multiple dry year 1 (year 2 of SFPUC's design drought sequence), the wholesale allocation under the WSAP is 62.5% of available RWS supply, or 99.4 mgd.
2. During multiple dry years 2-6 (years 3-7 of SFPUC's design drought sequence), the wholesale allocation under the WSAP is 62.5% of available RWS supply, or 76.2 mgd.
3. During multiple dry years 7 and 8 (years 8 and 8.5 of SFPUC's design drought sequence), the wholesale allocation under the WSAP is 62.5% of available RWS supply, or 59.6 mgd.
4. It is assumed that wholesale demands will continue to be limited to the Supply Assurance of 184 mgd. The 184 mgd assumes that San Jose and Santa Clara remain temporary, interruptible customers.
5. Procedures for RWS allocations are provided in the WSAP.