

# Agenda Report

September 18, 2017

**TO:** Honorable Mayor and City Council

**THROUGH:** Municipal Services Committee (July 25, 2017)

**FROM:** Water and Power Department

**SUBJECT: ADOPT A RESOLUTION OF THE CITY COUNCIL IN SUPPORT OF CALIFORNIA WATERFIX AND CALIFORNIA ECO RESTORE**

## **RECOMMENDATION:**

It is recommended that the City Council:

1. Find that adopting a resolution in support of the California WaterFix project and the California Eco Restore is exempt from the California Environmental Quality Act ("CEQA") per Guidelines Section 15061 (b)(3); and
2. Adopt a resolution in support of California WaterFix and California Eco Restore.

## **Municipal Services Committee Recommendation:**

On July 25, 2017, the Municipal Services Committee approved the recommended actions and requested that staff present additional information on alternatives to the City Council.

## **BACKGROUND:**

The Sacramento River and San Joaquin River form a confluence known as the Sacramento-San Joaquin Delta ("Delta"), which is located approximately 40 miles north-east of the San Francisco Bay. The Delta is a wetland complex consisting of marshes, diked islands, levees, and a network of channels. For more than a hundred years the Delta has supported agricultural, industrial and municipal economies, while providing resources for recreational activities and sustaining the habitat.

The Delta provides an average of 4.9 million acre-feet ("MAF") annually in water supplies to more than 25 million California residents and 3 million acres of agricultural land by way of two large and complex water systems known as: (1) The Central Valley Project ("CVP") that provides approximately 2.2 MAF of water annually to farms and agencies in the San Joaquin Valley; and, (2) The State Water Project ("SWP") that serves Southern California, the San Francisco South Bay Area, and Central Valley as well.

The SWP was developed in the 1960s and is operated by the California Department of Water Resources (“DWR”) under contracts with 29 water agencies including its largest contractor, Metropolitan Water District of Southern California (“MWD”). SWP contract deliveries average 2.7 MAF annually and MWD purchased an average of 1.3 MAF over the past 16 years. SWP exports represent only about 8% of the total water flowing through the Delta.

The water supplying the CVP and SWP is pumped from a man-made reservoir known as the Clifton Court Forebay (“Forebay”) located at the south end of the Delta, about 50 miles east of the Golden Gate Bridge. The Forebay feeds two large pumping systems and marks the starting point for the California Aqueduct which conveys SWP water and the Delta-Mendota Canal for the CVP water. When these large pumps operate, natural flow patterns in the Delta may reverse (“reverse flows”) causing fish to swim in a direction that is away from their spawning grounds and towards the Forebay and pumps. Some of the fish species are endangered or critically close to being endangered. In addition, the reverse flows have been found to alter tidal flows from the San Francisco Bay and to introduce higher salinity levels deeper into the Delta.

The current Delta conveyance system is vulnerable to levee failure and sea level rise, either of which could have severe and long-lasting adverse impacts on water supplies from the SWP and CVP. Water must travel several hundred miles through the Delta along exposed river channels and canals prior to entering the Forebay. Much of the surrounding embankments or levees are at a higher elevation than the adjacent grade due to subsidence. If a large section of the levee is breached, water delivery may be jeopardized and repairs could take months to complete. A breach could also introduce chemicals used for agricultural fertilizers and pesticides into the water and adversely affect the water quality. There is no practical or economically efficient way to construct, heighten and reinforce the existing levees to keep pace with sea level rise or prevent the levees from collapsing during a large earthquake.

### ***Bay Delta Conservation Plan***

In 2009 California’s legislature passed the 2009 Delta Reform Act which established co-equal goals of providing a more reliable supply of water and protecting, restoring, and enhancing the Delta ecosystem. The Bay Delta Conservation Plan (“BDCP”) was developed as the long-term strategic solution for addressing the co-equal goals and considered more than 19 project alternatives. The recommended alternative, known as “Alternative 4A,” proposes a series of below grade tunnels that would divert water from the Sacramento River more than 30 miles north of the Forebay. In December 2013, the environmental impact report (“EIR”) for the BDCP was made available for public review. Over the subsequent year, thousands of comments were received and key project proponents came to the conclusion that timely certification of the EIR was improbable.

In April 2015, the DWR and United States Bureau of Reclamation, as principal backers of the BDCP announced a significant change in the approach to accomplishing the co-equal goals. Recognizing that certification of the EIR would be challenging given the project dependence on issuance of a long-term environmental permit, the agencies proposed to

forego the long-term permit and separate the proposed project into two components. Under this approach the projects are now known as California WaterFix and California Eco Restore.

### ***California WaterFix***

The California WaterFix project proposes to construct a series of reinforced concrete tunnels located up to 150 feet below the Delta and divided into two general sections known as the North Tunnels and Main Tunnels. The North Tunnels would start approximately 34 miles north of the Forebay with three intake structures, each diverting up to 3,000 cubic feet per second (1.35 million gallons per minute) of water from the Sacramento River. The most northern intake would be served by a 28-foot diameter tunnel then combining with a 40-foot diameter tunnel at the second intake. The third intake would be connected to a separate 28-foot diameter tunnel. The intakes connected by the North Tunnels then join the Main Tunnels consisting of two 40-foot diameter tunnels that span approximately 30 miles south to the inlet of the Forebay. At this junction tunnel water would either be pumped or flow by gravity into the Forebay and then the water would be distributed at the existing pumping facilities to the SWP and CVP contractors.

California WaterFix offers a number of benefits. The water entering the intake is located away from fish spawning grounds and sensitive habitat, thus impacts to sensitive fish species and salinity issues due to reverse flows would be significantly reduced because water would no longer be pulled through the Delta by the large pumps. Levee failures due to continued subsidence or a large seismic event would result in minimal impact to the conveyance since the water is protected by the tunnels deep underground. A rise in sea levels due to global warming would not affect the quality of the water in the Forebay since the inlet would be relocated much further inland and upstream from the San Francisco Bay. Although California WaterFix does not guarantee or intend to provide greater water supplies, it provides a higher level of reliability compared to continued existing operations and mitigates the potential for future reductions in water supplies.

At present, DWR is pursuing a water rights permit for the California WaterFix project, and it may take up to a year to complete the hearing process. In December 2016, the final EIR and the Environmental Impact Statement ("EIS") for the project were released. Now that the EIR and EIS are completed, additional biological studies can be finalized to complete the environmental clearance of the project and allow issuance of regulatory permits in late 2017 or early 2018. Final design is anticipated to take four years to complete, with construction starting in the third and take up to 13 years for completion. Conservatively, project completion is anticipated sometime in the mid-2030s.

The financial burden for completing California WaterFix and associated operations will be the responsibility of SWP and CVP contractors, not tax payers. On August 14, 2017 MWD presented to their Board of Directors cost information on the California WaterFix to adjust the budget to 2017 dollars. The revised projected cost to construct California WaterFix including mitigation is \$16.7 billion with an annual operating, maintenance and mitigation cost of \$64.4 million beginning in 2033. In addition, MWD performed a sensitivity analysis to reflect three interest rates scenarios (4%, 6%, and 8%) over a

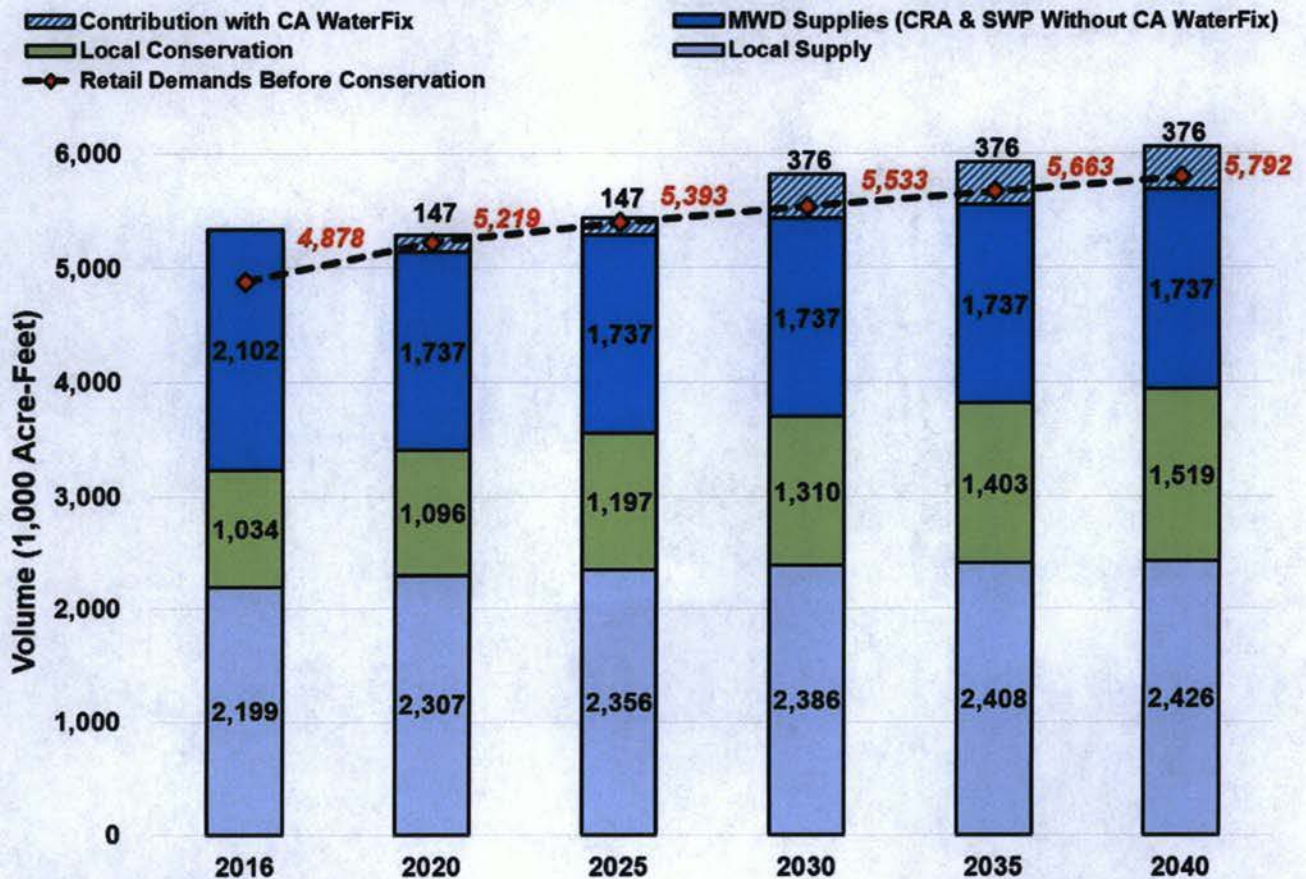


40-year term. While the cost allocations have not been finalized, MWD's share of updated construction costs is expected to be approximately \$4.33 billion. With the updated assumptions reflecting the three interest rate scenarios, MWD is projecting the California WaterFix will increase their Tier 1 water rates by a range of approximately \$122 to \$196 per acre-foot. The current Tier 1 rate is \$979 per acre-foot. For an average Pasadena household, the water bill is projected to increase approximately \$2.30 to \$3.60 month as a result of funding and operating the California WaterFix (excluding the effect of any other potential water cost increases).

**MWD's 2015 Integrated Water Resources Plan**

In 2015, MWD updated its Integrated Water Resources Plan. Chart 1 illustrates MWD's demands from 2016 to 2040 and its imported supplies from the Colorado River and the SWP with and without the contribution from the California WaterFix. Local supplies and conservation savings were provided by MWD's member agencies.

**CHART 1 – MWD'S PROJECTED DEMAND AND SUPPLY**



Demands before conservation are projected to increase from 4.88 to 5.79 MAF by 2040. While local supplies and conservation would also increase from 3.23 to 3.95 MAF by 2040, this increase includes MWD's goal of 200,000 AF beyond what was projected by its member agencies. MWD's imported supplies from the Colorado River and the SWP without California WaterFix would decline by approximately 360,000 AF from 2.10 MAF in 2016 to 1.74 MAF by 2020. Without the contribution of the California WaterFix, MWD

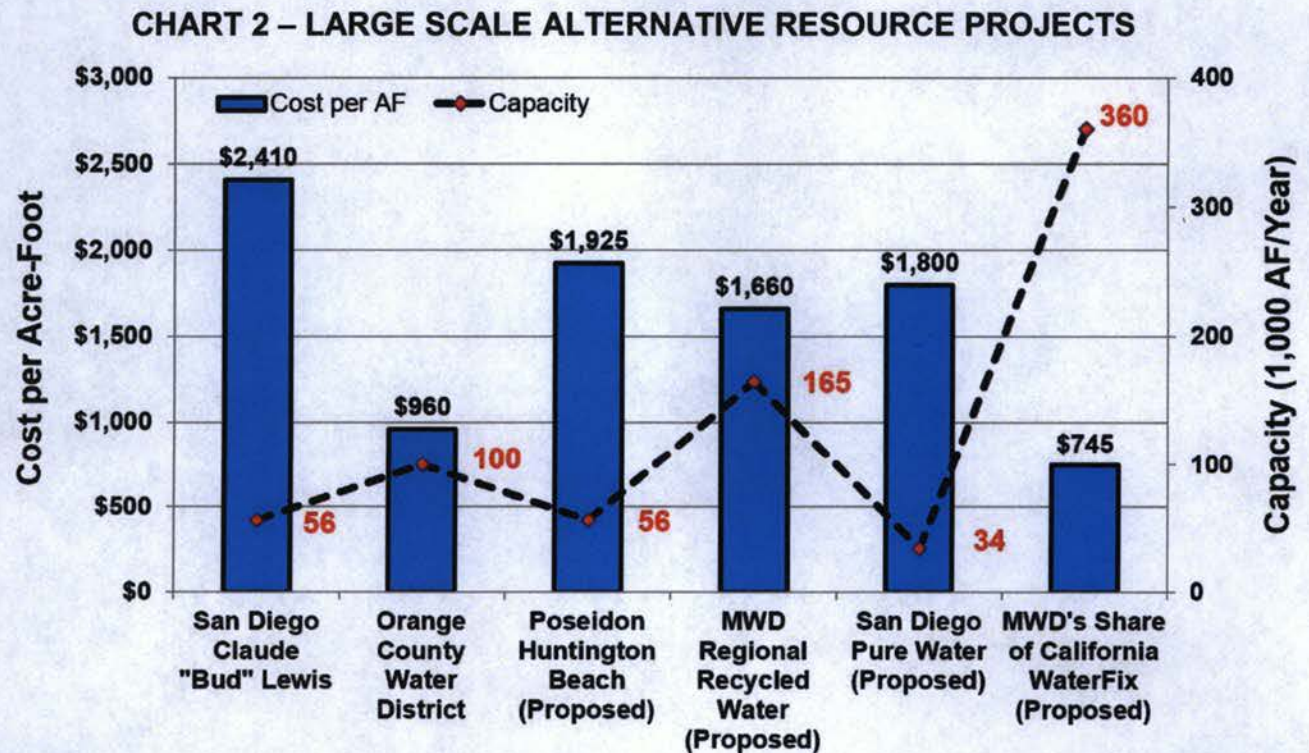


would face shortages ranging from 79,000 to 115,000 AF. In order for these shortages to be met, MWD would draw water from its dry-year storage program. Although the storage program is designed for this purpose, it was not intended to serve as an operational long-term storage program. Eventually the storage would require replenishing. The contribution to MWD's imported supplies from California WaterFix would restore deliveries by approximately 360,000 AF and result in surplus conditions ranging between 44,000 to 276,000 AF. During periods of surplus, the excess water would replenish the dry-year storage programs for future droughts and emergencies.

**Alternative Resource Projects**

Developing alternative resource supplies serves an important and complimentary role to California WaterFix in meeting the water supply reliability for Southern California. A resource portfolio consisting of conservation, recycled water, stormwater, seawater desalination, and local groundwater, while stabilizing imported supplies from the Colorado River and the SWP, will improve the water supply reliability and reduce the adverse impacts from droughts and emergencies.

CHART 2 compares the unit cost for water of large scale alternative resource projects with MWD's share of the California WaterFix.



The unit cost of water ranges from \$960/AF for recharging the aquifer with advanced treated recycled water to \$2,410/AF for seawater desalination. The annual capacity ranges from 34,000 AFY to 165,000 AFY. MWD's cost share of the California WaterFix based on a 6% interest rate and with operation, maintenance, and mitigation costs is approximately \$268 million. The California WaterFix would contribute by stabilizing SWP water deliveries to MWD by an average of 360,000 AFY. The unit cost of MWD's



share of the California WaterFix would be approximately \$745/AF ( $\$268\text{M} \div 360 \text{ TAF}$ ), which is lower than the five large scale alternative resource projects.

### ***California Eco Restore***

California Eco Restore is an initiative to restore at least 30,000 acres of critical habitat in the Delta by 2020. The project is supported by advanced and proven science and an adaptive management strategy through multi-agency coordination. California Eco Restore includes a broad range of habitat restoration projects, including aquatic, sub-tidal, tidal, riparian, flood plain, and upland ecosystem. The restoration efforts will contribute to the long-term health of the Delta by providing subsidence reversal, carbon management, flood plain protection, and improved fish passage and protection.

Costs for California Eco Restore are expected to reach at least \$300 million in the first four years, the majority of which will be borne by the SWP and CVP contractors. Funding is also provided by Propositions 1 and 1E grants, state agencies, and private donations.

### ***Benefits and Risks to Pasadena***

Pasadena Water and Power ("PWP") purchases approximately 60% of its water supplies from MWD, which in turn procures approximately 60% of its imported water supply from the Delta via the SWP. MWD procures the remaining 40% of its imported water from the Colorado River, which is also vulnerable to climate change and water shortages. MWD has made significant investments in regional storage, conveyance, and treatment systems in order to deliver SWP water. As a member agency, Pasadena has contributed millions of dollars towards these water system and infrastructure investments.

Implementing the California WaterFix creates risks that are manageable and can be mitigated to a reasonable extent.

- Strong opposition challenging the project creates political risk and the possibility of delays. These opposing groups believe that Southern California benefits from increased water supplies at the cost of the Delta and the local communities. However, California WaterFix does not guarantee greater water supplies, but rather is intended to support the co-equal goals of improving the system reliability and restoring the ecosystem.
- Any project of this scale has exposure to construction overruns. The current cost estimate was calculated by an engineering and construction management firm specializing in large and complex projects. This estimate was also independently verified by a second company. The estimated cost also includes a sizable contingency to further mitigate cost risks.
- MWD's volumetric rate recovery presents a risk of escalating MWD rates if overall sales decline. This will have a greater impact on member agencies that have limited alternatives for alternative water supplies. The estimated increase to MWD's Tier 1 water as a result of the California WaterFix was derived assuming relatively low future sales volumes. However, it is more likely that volume sales will be greater than those forecast, thus reducing the unit costs.

Moving forward with California WaterFix and California Eco Restore will protect investments made by MWD and its member agencies. By doing nothing to address the Delta issues jeopardizes access to critical water supplies that are necessary to continue sustaining California's economy and quality of life.

PWP recommends that the City Council support and advocate for the implementation of California WaterFix and California Eco Restore as it collectively represents the most cost-effective large-scale solution to improving regional water supply reliability for Southern California and hence for Pasadena.

**COUNCIL POLICY CONSIDERATION:**

Support of California WaterFix and California Eco Restore is consistent with the City of Pasadena 2017 State Legislative Platform; the 2011 Water Integrated Resource Plan; the 2015 Urban Water Management Plan; and City Council's goal to improve, maintain, and enhance public facilities and infrastructure.

**ENVIRONMENTAL ANALYSIS:**

The proposed action is exempt from CEQA pursuant to State CEQA Guidelines Section 15061 (b) (3), the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. The action proposed herein is simply a policy statement in support of the projects (California WaterFix and California Eco Restore), and not a commitment to either by the City of Pasadena. Where it can be seen with certainty that there is no possibility that the action in question may have a significant effect on the environment, the action is not subject to CEQA.

**FISCAL IMPACT:**

Assuming the California WaterFix is constructed and funded as currently envisioned, the cost of imported water from MWD would increase by approximately \$122 to \$196 per acre foot, resulting in an estimated \$1.6 to \$2.6 million increase in PWP's annual purchased water costs. For an average Pasadena household, the water bill is projected to increase approximately \$2.30 to \$3.60 per month as a result of funding the California WaterFix. Conversely, if the project is not constructed, MWD and PWP would need to seek alternative water sources to replace declining supplies from the Delta at an unknown but undoubtedly much higher cost.

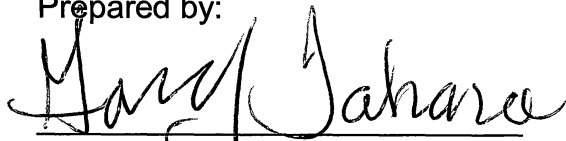
Respectfully submitted,



---

GURCHARAN S. BAWA  
General Manager  
Water and Power Department

Prepared by:



---

Gary Takara  
Engineering Manager

Approved by:



---

*for* STEVE MERMELL  
City Manager