



April 4, 2018

Attention: Imported Water Committee (Presentation)

Update on California WaterFix

Purpose

This report provides an update on California WaterFix (WaterFix) and Metropolitan Water District's (MWD) discussions on the project's potential changed scope and its scheduled actions related to the project.

Background

Last October, the MWD Board voted to support WaterFix, including its participation of 25.9 percent of overall project costs (or, \$4.3 billion out of a total estimated \$16.7 billion in 2017 dollars). MWD's funding amount assumed other water contractors would pay their share of the project. Before the MWD Board action, the largest Central Valley Project (CVP) water contractor – Westlands Water District – turned down participating in the project, citing costs as a major driver for its decision.¹

After failing to gain financial traction by any CVP contractors to fund 45 percent of the project's cost (or, \$7.5 billion), in early February the California Department of Water Resources (DWR) announced that it will use a "staged" approach to address the funding gap. Under this approach, one tunnel (Stage 1) – with a capacity of 6,000 cubic-feet-per-second (cfs) at a cost of \$11.1 billion² – would be built first, presumably to be funded by State Water Project (SWP) contractors. Construction of the second tunnel would follow at a later date if and when funding is obtained. The state later released an economic analysis for Stage 1 of WaterFix³ that concluded that this approach could provide a positive "benefit to cost" ratio between 1.23 and 1.35, depending on the level of agricultural contractors' participation and assuming a project life span of 100 years.

Discussion

Discussions at MWD

Following the state's announcement, MWD reviewed the staged approach with its Board and reported that the SWP contractors only needed 5,000 cfs of the 6,000 cfs capacity to make them "whole," leaving 1,000 cfs for potential CVP contractor participation. MWD later reported that none of the CVP contractors would participate in Stage 1 either. MWD staff further reported that if every SWP contractor funds its proportional share of Table A entitlement,⁴ MWD's share of Stage 1 would be \$5.3 billion -- a \$1 billion, or 22 percent, increase from the participation amount the Board authorized last October. However, MWD also reported that six agricultural SWP contractors in the San Joaquin Valley have already indicated that they plan to "sell" some portion of their WaterFix "reliability benefits," to other urban SWP contractors, including MWD.

¹ Sacramento Bee, *Farming district says it won't pay for Delta tunnels in a vote that could kill the project* <http://www.sacbee.com/news/state/california/water-and-drought/delta/article174229771.html>

² DWR's memo placed the cost at \$10.7 billion, which does not include construction mitigation costs.

³ *Economic Analysis of California WaterFix Stage 1, Sunding*. https://www.californiawaterfix.com/wp-content/uploads/2018/02/WaterFixEconomicAnalysis_Final.pdf

⁴ As calculated without the five SWP contractors located north of the project, who have been "excused" from participating in the project.

When the staged approach was first discussed at MWD, some directors⁵ expressed a desire for MWD to “show leadership,” and asked staff to evaluate the option for MWD to fund the CVP’s unsubscribed share of the total project so both tunnels could be built at the same time. MWD later reported that, under this approach, its costs would increase to \$10.8 billion.⁶ MWD’s calculation is based on SWP contractors collectively funding 6,000 cfs of the total project, or 22 percent more than previously envisioned; it then assumes MWD funds the construction of the remaining full project cost, so both tunnels are built at the same time. With either the single tunnel staged approach, or one in which MWD funds the second tunnel, the MWD Board will need to take another action to authorize MWD’s participation under the changed scope and increased cost.⁷

Potential Cost Implications to the Water Authority

In 2012, MWD’s “talking points” for the Twin Tunnels project estimated the project cost at between \$12 - \$14 billion, or about \$4 - \$5 per household per month⁸, based on monthly household water use of 20 hundred cubic-feet (“billing unit”) and a 50 percent reliance on MWD water. MWD later revised the household impact to \$2 to \$3 per month in 2017,⁹ saying that monthly use of 20 billing units was too high. It replaced this methodology with a different one in which MWD’s WaterFix cost is spread over the 6.2 million residential household connections in its service area, and assuming 70 percent of MWD’s water use is for residential. However, not all household connections within its service area purchase MWD water, while others buy very little MWD water; therefore, the impact of WaterFix to individual agencies and households will vary.

In its report to the Board at its March 27 WaterFix workshop, MWD estimated the impact of MWD increasing its financial commitment to the Twin Tunnels project from its Board-approved amount of \$4.3 billion to \$10.8 billion – a 2.5 times increase -- at \$4.80 per month – or about the same as the original 2014 household impact estimate. Again, this updated estimated is accomplished by assuming a lower average monthly household water use and spreading the cost over all residential household connections within MWD’s service area.

The Water Authority’s demand for MWD water as well as MWD’s level of participation in WaterFix and how MWD allocates those costs to its rates – either as a transportation or a supply cost – will determine the cost impact of WaterFix to the Water Authority. Attachment 1 details a range of potential cost implications to the Water Authority, including potential impacts on the Water Authority’s rates based on the “interim demand forecast reset” profile in 2035 as presented in February.¹⁰ For example, the “interim demand

⁵ Details of this discussion can be found in Attachment 1.

⁶ MWD March 27 WaterFix workshop PowerPoint (slide 17).

⁷ In an email dated April 2, 2018, MWD General Manager reported that MWD staff will bring only the staged approach for its Board’s consideration in April. This decision followed a meeting MWD had with CVP, other SWP contractors, DWR, and the U.S. Bureau of Reclamation (USBR) on March 30, during which a majority of CVP contractors and USBR officials told the meeting participants that “there still remained a number of internal institutional issues that first needed to be resolved among the CVP contractors before they could make a commitment to participate in the full 9,000 cfs project.” MWD’s email stated that “Metropolitan staff will continue to engage in discussions with CVP contractors and USBR on their issues and alternative financing options for the second stage that honor the ‘beneficiaries pay’ principle which the first stage is using, and we will keep the Board apprised of progress.”

⁸ http://www.mwdfacts.com/wp-content/uploads/MWD_Bay_Delta_Talking_Points.pdf

⁹ http://www.mwdh2o.com/DocSvcsPubs/WaterFix/assets/waterfixdialogue_q-a.pdf (page 6)

¹⁰ See Interim Long-Range Water Demand Forecast “Reset” presentation on pages 58-64 found here:

https://www.sdcwa.org/sites/default/files/2016-12/Board/2018_Presentations/2018_02_22Presentations.pdf

forecast reset,” including the projected implementation of Verifiable and Additional Planned local supplies from the Water Authority’s 2015 Urban Water Management Plan, estimates the San Diego region, by 2035, will have a normal-year demand profile that relies on MWD for about 10,000 acre-feet of supplies. However, the Water Authority will continue to use MWD facilities to deliver 280,000 acre-feet of independently obtained Colorado River supplies.

The impact on the Water Authority’s rates to its 24 member agencies and region’s average ratepayer will depend, to the greatest degree, on how MWD recovers the cost of the project through its rates and charges: either on MWD’s water supply rate, or on its transportation rates. Table A summarizes analysis provided in Attachment 1, displaying a range of potential impacts of MWD’s WaterFix commitment on the Water Authority’s rates and an average monthly household water bill based on the profile described above, if MWD applies its WaterFix costs on its transportation rates.

Table A: Range of WaterFix Costs on Water Authority’s Rate and Average Monthly Water Bill, with WaterFix Costs Allocated to MWD’s Transportation Rates

MWD Financial Commitment ¹¹	Impact to Water Authority’s Rates Per/AF ¹²	Average increase in household monthly water bill ¹³
\$5.3 billion	\$195-\$309	\$6.50-\$10.30
\$11.9 billion	\$440-\$699	\$14.67-\$23.30

Should MWD apply its WaterFix costs on its supply rates, Table B summarizes a range of potential impacts of MWD’s WaterFix commitment on the Water Authority’s rates and an average monthly household water bill based on the demand profile profile described above.

Table B: Range of WaterFix Costs on Water Authority’s Rate and Average Monthly Water Bill, with WaterFix Costs Allocated to MWD’s Supply Rates

MWD Financial Commitment ¹¹	Impact to Water Authority’s Rates Per/AF ¹²	Average increase in household monthly water bill ¹³
\$5.3 billion	\$8-\$12	\$0.27-\$0.40
\$11.9 billion	\$18-\$29	\$0.60-\$0.97

For the Water Authority, the differential impact on the average household water bill in 2035 is profound: from a low of 27 cents to 40 cents per month if the project is recovered on MWD’s supply rate, to approximately a \$6.50 to \$10.30 per month increase if it’s recovered on MWD’s transportation rate, if MWD only participates in Stage 1 at a cost of \$5.3 billion without entering into additional transfer agreements. That’s because the Water Authority’s average year demands on MWD for supply will be approximately 10,000 acre-feet in 2035, but it will be paying MWD to transport 280,000 acre-feet of its Quantification Settlement Agreement transfer supplies annually. Under the scenario in which MWD would fund \$11.9 billion of the \$16.7 billion Twin Tunnels project, the impact would range from 60

¹¹ See cost impact assumptions and definitions on page 6 of Attachment 1.

¹² Range based upon financing interest rates of 4% and 8%. Amounts shown are in 2018 dollars.

¹³ Based on a single-family household of four using an average of 0.4 acre-feet of imported water per year.

cents to 97 cents if MWD recovers the cost on its supply rate, and \$15 to \$23 per month if recovered on MWD's transportation rate.

All of these figures are dependent upon the final project cost not escalating beyond its current estimate. Lastly, the Water Authority's projected demand on MWD also influences the ultimate WaterFix cost to the Water Authority's ratepayers. For example, the cost impact would be higher, should the Water Authority's actual MWD demand exceed the demand currently forecasted under the "interim demand forecast reset."

Issues to Consider

With CVP contractors unwilling, or incapable of providing upfront funding for WaterFix, and the state's desire to continue moving the project forward, either in stages or with MWD providing advance funding for the CVP's share of the cost, there are several issues that should be carefully considered, including:

- *Impact to CVP contractors.* Would CVP contractors cooperate if the implementation of Stage 1 resulted in the reduction of total exports, thus negatively impacting them?
- *Cost recovery.* If MWD decides to fund the twin tunnels now, can agreements be structured to ensure MWD's full recovery of costs, especially since CVP contractors already said the project is too expensive?
- *Significant cost increase.* If CVP contractors cannot pay the full cost, how would MWD justify to its ratepayers subsidizing agencies outside of its service boundary? Would such subsidies be lawful under cost of service requirements of California laws and Constitution?
- *Finance Joint Powers Authority (JPA).* While DWR is pursuing its validation action, it plans to rely on the finance JPA to fund WaterFix construction. This means ratepayers of the finance JPA members will be responsible for the JPA debt. Currently, MWD and Zone 7 are the only agencies that have agreed to participate in the finance JPA. Will the liabilities incurred by finance JPA members outweigh the project benefit to the JPA ratepayers?
- *Impact on local supply development.* Based on a "cost follows water" approach, MWD presumably will receive an increased amount of WaterFix supply in proportion to its financial contribution. If so, how will this increase in supply affect MWD's support for local supply project development?
- *Ability to store the water and need for the water.* To obtain the "average" year WaterFix supply benefit, the ability to store water during wet years is critical. Considering MWD was unable to store all its 2017 supplies when the SWP allocation was at 85 percent, does MWD have the capacity to take advantage of the projected increased supplies and the ability to store it for later use, if it takes on a larger share of the project's cost?
- *Cost allocation.* While MWD's planning documents have suggested that it plans to recover the cost through its transportation rates, DWR has traditionally characterized "peripheral canal related" facilities' (like WaterFix) costs as "Project Conservation Facilities" (or supply) costs in its Bulletin 132, Appendix B to support the calculation of contractors' annual charges. What would be the justification for DWR to now shift how it characterizes and invoices this supply project?

MWD's Upcoming Schedule

In an email dated April 2, 2018, MWD General Manager indicated that MWD will be considering the staged approach only at its April Board meeting, after being informed by the CVP contractors that they cannot make a commitment to participate in the full project.

Imported Water Committee

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Attachment 1: California WaterFix Potential Cost Impact to the San Diego Region

California WaterFix Potential Cost Impact to the San Diego Region

Due to a variety of reasons, the Sacramento-San Joaquin Bay-Delta (Bay-Delta) ecosystem is in decline and that demise has caused water exports from the Bay-Delta to be less dependable. Over the past 25 years, the Water Authority and its member agencies have diversified the region's supplies and in doing so, greatly reduced the region's reliance on the Bay-Delta by decreasing its MWD purchases. Purchases from MWD are the only source of the region's Bay-Delta supplies. The San Diego region's dependence on MWD supply has reduced from 95 percent in 1991 to about 41 percent today. With local supply development projected to continue through the implementation of the Verifiable and Additional Planned supplies identified in the Water Authority's 2015 Urban Water Management Plan (UWMP), the region's MWD normal-year demand under the recently developed "interim demand forecast reset" is projected to be about 10,000 acre-feet in 2035.¹ The Water Authority has long been a proponent of a cost-effective and environmentally sustainable Bay-Delta solution, and the Board has received dozens of briefings on various aspects of the Bay Delta Conservation Plan (BDCP), and its successor, California WaterFix (WaterFix).²

Rather than pursue permitting through a Habitat Conservation Plan approach, WaterFix sought permits under the less durable Section 7 of the Endangered Species Act, a species-by-species approach, under which the current State Water Project (SWP) operates. WaterFix planned to create three intake points on the Sacramento River in the upper Bay-Delta and transport the water south through two 40-foot-diameter, 30-mile-long tunnels. The new tunnels would be operated as a dual facility with the existing through-Delta water conveyance south to the Delta pumps. The California Department of Water Resources (DWR), the lead on the project, estimated that the implementation of WaterFix would allow 4.7 million acre-feet (MAF) to 5.3 MAF of water exports per year, helping maintain about 1.3 MAF of supplies that DWR believes otherwise would be lost due to future increased regulations. Last July, DWR certified WaterFix's environmental analysis after receiving federal biological opinions.

The estimated cost for WaterFix is \$16.7 billion in 2017 dollars. State law requires that WaterFix be paid for by water contractors.³ However, the project has struggled to gain financial support by all contractors. The project was assumed to be cost shared by the Central Valley Project (CVP) and SWP contractors via a 45 – 55 percent split. While the participation of WaterFix for the CVP contractors is through an opt-in approach, the state has maintained that the SWP contractors would pay for their portion of the project in accordance with their long term DWR State Water Contracts.⁴ For those SWP contractors that desire to have a different share than their current contract amount, they can enter into voluntary transfer or other agreements with other contractors to redistribute their cost obligations.

Last October, the MWD Board authorized its participation of 25.9 percent of the project cost (or, \$4.3 billion), assuming CVP contractors would fund 45 percent of the project. Several SWP contractors subsequently expressed support for and willingness to fund their share of the project;⁵ however, the state ultimately was unable to get any of the CVP contractors to commit to fund the project.

¹ See Interim Long-Range Water Demand Forecast "Reset" presentation on pages 58-64 found here:

https://www.sdcwa.org/sites/default/files/2016-12/Board/2018_Presentations/2018_02_22Presentations.pdf

² For previous Water Authority board memos and presentations on BDCP and WaterFix, see: <http://www.sdcwa.org/baydelta>.

³ California Water Code §85089

⁴ With the exception of five contractors located north of the project.

⁵ Not all SWP contractors supported fully funding their share of WaterFix; the Sacramento Bee reported that only half of Kern County Water Agency's member units expressed an interest to participate

Staging of California WaterFix

In February, DWR announced an approach that would implement the project in two stages “consistent with the support expressed by public water agencies.”⁶ The first stage would include one tunnel and two intakes with a total capacity of 6,000 cubic feet per second (cfs). A second tunnel and a third intake with a capacity of 3,000 cfs would be added, “once additional funding commitments are made from supporting water agencies.” Stage 1 would cost \$11.1 billion, about two-thirds of the original \$16.7 billion estimate for the full project.

Since SWP and CVP share the same Bay-Delta waterway, the two projects have always coordinated their operations for a number of reasons, including to reduce their impacts on endangered species. WaterFix is intended to act as part of a dual facility with the existing south-of-Delta pumps; the staged implementation of WaterFix would require both projects to be operated under a new set of rules. With WaterFix employing a “cost follows water” approach, MWD reported that Stage 1 would result in it having the same supply benefit to SWP contractors, if not more, as the full project. However, Stage 1 would provide less total supply benefit than the full project.⁷ As a result, the implementation of Stage 1 may negatively affect CVP contractors’ exports. Westlands raised that concern in a letter to the State Water Resources Control Board as part of its water rights hearing in February.⁸

MWD’s Discussion to Fully Fund WaterFix

When the staged approach was first reviewed by the MWD Board following the state’s announcement, some MWD board members⁹ advanced the idea that MWD should consider funding not just its share of the project, but also the CVP share so both tunnels may be built at the same time.¹⁰ In doing so, these board members said MWD could “maximize environmental benefits” and help address statewide issues such as groundwater overdrafts. MWD General Manager Kightlinger agreed to explore this idea further and suggested that MWD could potentially control the extra capacity and recoup its costs by selling or leasing that capacity. At its March Water Planning and Stewardship meeting, MWD Assistant General Manager Patterson reported that staff had since discussed with DWR the idea of MWD funding the uncommitted share of twin tunnels. He said that these discussions were proceeding well, and expected MWD and DWR to reach agreement on terms soon that would ensure MWD has adequate input and control over its

(<http://www.sacbee.com/news/state/california/water-and-drought/delta/article178552571.html>); see also Wheeler Ridge-Maricopa Letter to Kern, https://wrmsd.com/wp-content/uploads/2018/02/CWF_Feb21_WRMWSD_Participation_10.11.2017.pdf

⁶ <https://www.californiawaterfix.com/wp-content/uploads/2018/02/DWR-ltr-to-PWAs-participating-in-WaterFix-Feb-7-2018.pdf>

⁷ The implementation of WaterFix is intended to keep CVP and SWP yields from further deteriorating due to future environmental regulations. MWD reported that the implementation of a 9,000 cfs project would help maintain 1.3 million acre-feet of supplies that would otherwise be lost, in contrast, Stage 1 would only maintain 0.9 million acre-feet of supplies. See slides 6 and 7: <http://edmsidm.mwdh2o.com/idmweb/cache/MWD%20EDMS/003738230-1.pdf>

⁸ https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/docs/2018/20180207_wwd_policy.pdf

⁹ Directors Atwater (Foothill Municipal Water District), Barbre (Municipal Water District of Orange County), and Blois (Calleguas Municipal Water District) all expressed a similar sentiment. For more discussion see: Mavens Notebook, <http://mavensnotebook.com/2018/02/14/cal-water-fix-metropolitan-committee-discusses-possible-staged-construction-project/> and Sacramento Bee <http://www.sacbee.com/news/local/article199950429.html>

¹⁰ Not all MWD directors supported expanding MWD’s financial involvement, Directors Paskett (Los Angeles), Steiner (San Diego County Water Authority), and Pressman (Beverly Hills) raised questions with such an approach.

WaterFix investment. In contrast, Patterson reported negotiations with other contractors on purchase or option agreements were “not quite as far advanced” but are continuing.

Analysis of State’s Economic Analysis

On February 13, DWR released an economic cost benefit analysis for Stage 1 of WaterFix. With an assumed project life span of 100 years, the analysis showed a positive benefit cost ratio for both urban and agricultural agencies.¹¹ However, the benefit margins are slight and any deviations to the assumptions used would change the benefit cost outcome. For example, while the report factored in the Sustainable Groundwater Management Act’s impact on the Central Valley’s need for imported water, it is not apparent that the potential demand reduction in Southern California as a result of the State Board’s Long-Term Water Use Efficiency Framework is included, since it is not yet finalized. It is also unclear if the analysis factored in about 200,000 acre-feet of new local supplies, reported in MWD member agencies’ 2015 UWMPs,¹² to be developed.¹³ The imposition of permanent efficiency standards and implementation of planned local supply projects would change Southern California’s need for imported water, which could also change the benefit analysis.

While it is not common for tunnels to be designed for 100-year life; there are examples¹⁴ of this being done. However, it is unclear how the analysis deals with other project components that have a shorter design life.¹⁵ While the report stated that some capital replacement costs¹⁶ are included in the project’s operations and maintenance (O&M) estimates, the project’s assumed O&M expenses in the second 50 years are lower than the first half of the project by more than one-third, raising a question as to whether adequate funding is set aside to assure the project’s 100-year life span.

Potential Cost Impact for the Water Authority

Per the Water Authority Board’s request, staff analyzed the potential cost impacts to the Water Authority – as expressed in capital cost impacts as well as impacts to the Water Authority’s rates -- under a number of WaterFix scenarios.¹⁷ There are several factors that influence the cost of WaterFix to the Water Authority:

¹¹ In the earlier draft economic analysis for the full WaterFix project, the analysis assumed that 28 percent (\$3.9 billion out of \$13.9 billion) of the project cost would be subsidized by the state or federal government. This analysis found a benefit cost ratio of 2.4 for SWP urban contractors, and 0.7 and 0.6 for SWP and CVP agricultural contractors, respectively.

¹² Includes projects used to meet projected demands; additional planned projects are not included.

¹³ On March 26, 2018, Restore the Delta released documents it obtained through the Public Records Act related to WaterFix. One of the responsive documents included an email exchange between MWD staff that described the data MWD provided to DWR for its analysis is based on “the IRP ‘Do Nothing’ case...,” which implies none of the proposed projects envisioned in MWD member agencies’ UWMPs were included in DWR’s analysis: https://spaces.hightail.com/space/zxeEiVTR46/files/fi-8c2def94-4d2c-4124-921a-686c78459b6a/fv-61299887-5ce0-4fdf-82f4-cb3f766bed08/MWDPRA-SEJ0000481_Redacted.pdf

¹⁴ <https://www.channelnewsasia.com/news/singapore/phase-2-of-deep-tunnel-sewer-system-designed-to-last-100-years-9423740>

¹⁵ For example, the Water Authority typically designs its pump stations with a 25-year equipment life and a 50-year building life; in contrast, the distribution pipelines are typically designed for a 75-year life.

¹⁶ See page 2 of the Economic Report, “*During construction, operation and maintenance mitigation for the first 13 years is estimated at \$31.1 million per year. Operation and maintenance costs increase to \$49.5 million per year, including capital replacements and \$17.7 million in operations and maintenance mitigation annually, for the first 50 years of the project. Thereafter, the operation and maintenance costs amount to \$31.9 million per year.*”

¹⁷ In an email dated April 2, 2018, MWD General Manager indicated MWD staff will bring only the staged approach for its Board’s consideration in April, due to “institutional issues” that must first be resolved among the CVP contractors.

MWD participation level; how MWD allocates WaterFix costs to its rates; debt interest rate; and demand for MWD supply.

This analysis assesses WaterFix’s impact to the Water Authority using a demand profile based on the 2035 “interim demand forecast reset,” presented in February. It evaluates WaterFix being constructed as a full project, as well as staged. Within the two scenarios, different levels of MWD financial participation are analyzed, including a scenario in which MWD funds the entire unsubscribed CVP share of the twin tunnel project.

Although MWD previously reported that the SWP contractors only needed 5,000 cfs of the 6,000 cfs Stage 1 capacity, at its March 27 meeting, staff reported that none of the CVP contractors were interested in funding Stage 1. As a result, if Stage 1 were to be pursued, it is assumed that the SWP contractors as a group would pay 22 percent more for the project than they otherwise would have if the project were implemented in full and CVP contractors paid their 45 percent share. At the same meeting, MWD staff presented a framework under which the six SWP agricultural contractors in the San Joaquin Valley – to defray their WaterFix costs – would sell some or all of their WaterFix capacity to other SWP buyers, including MWD. Under this framework, a SWP buyer agency would pay 85 percent of the seller agency’s WaterFix cost and get about 81 percent of seller’s WaterFix Table A capacity share. Scenarios assume MWD enters into transfer agreements taking on 80 percent of the six SWP agricultural contractor’s share they wish to dispose.¹⁸ (For detailed assumptions, see *Cost Impact assumptions and Definitions* on the last page of this attachment.)

Tables 1 through 4 describe potential capital costs to the Water Authority and impacts to the Water Authority’s rates based on its demand profile in 2035. This analysis shows that while MWD’s participation levels influence the cost impact to the Water Authority, how MWD ultimately recovers WaterFix costs through its rates has a substantial impact on the Water Authority. Based on the “interim demand forecast reset” presented in February, that includes the development of the Verifiable and the Additional Planned local supplies from the Water Authority’s 2015 Urban Water Management Plan, the Water Authority’s 2035 MWD purchases in a normal-year scenario are forecasted to be 10,000 acre-feet per year. Even though MWD recovers the majority of its expenses through variable rates, if it chooses to allocate WaterFix costs on its transportation rates as suggested in its 2018 budget documents, the WaterFix impact on the Water Authority could be 24 times more than if MWD were to assess its WaterFix costs on its water supply rates only. This difference is because even though the Water Authority and its member agencies continue to reduce the region’s dependence on MWD supplies, the Water Authority uses MWD’s Colorado River Aqueduct to transport its own independent Colorado River supplies. Lastly, should the Water Authority’s demand profile differ from the “interim demand forecast reset,” WaterFix’s impact on the Water Authority would change accordingly.

¹⁸ The six agencies are: Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency, County of Kings, Oak Flat Water District, and Tulare Lake Basin Water Storage District; Empire West, County of Kings, Oak Flat, and Tulare Lake have all expressed a desire to sell their entire WaterFix capacity to other contractors, whereas Dudley Ridge plans to sell 1/3 of its WaterFix capacity and Kern plans to sell half of its WaterFix capacity.

**Potential Impact of WaterFix on Water Authority
Based on Average “Interim Demand Forecast Reset”**

Full WaterFix Project (\$16.7B)

**Table 1: WaterFix Capital Cost Impact on Water Authority
(\$16.7B total cost and based on 2035 Water Authority share of MWD demands)**

	Allocated to MWD Supply and Wheeling (\$ in Millions)	Allocated to MWD Supply (\$ in Millions)	Difference, Resulting from Inclusion of Wheeling (\$ in Millions)
MWD funds 71.4% (\$11.9B)	\$ 1,945	\$ 81	\$ 1864
MWD funds 64.6% (\$10.8B)	\$ 1,759	\$ 73	\$ 1,686
MWD funds 25.9% (\$4.3B)	\$ 706	\$ 29	\$ 676

**Table 2: Total WaterFix Cost Impact on Water Authority’s Rates
(Additional \$ per Acre-Foot in 2035)***

	Allocated to MWD Supply and Wheeling (\$/AF)*	Allocated to MWD Supply (\$/AF)*	Difference, Resulting from Inclusion of Wheeling (\$/AF)
MWD funds 71.4%	\$ 440 – 699	\$ 18 – 29	\$ 442 – 670
MWD funds 64.6%	\$ 398 – 632	\$ 16 – 26	\$ 382 – 606
MWD funds 25.9%	\$ 159 – 253	\$ 6 – 10	\$ 153 – 243

Stage 1 of WaterFix -- Funded by SWP (\$11.1B)

**Table 3: Stage 1 WaterFix Capital Cost Impact on Water Authority
(\$11.1B total cost and based on 2035 Water Authority share of MWD demands)**

	Allocated to MWD Supply and Wheeling (\$ in Millions)	Allocated to MWD Supply (\$ in Millions)	Difference, Resulting from Inclusion of Wheeling (\$ in Millions)
MWD funds 59.9% (\$6.6B)	\$ 1,084	\$ 45	\$ 1,039
MWD funds 47.1% (\$5.3B)	\$ 852	\$ 35	\$ 817

**Table 4: Stage 1 WaterFix Cost Impact on Water Authority’s Rates
(Additional \$ per Acre-Foot in 2035)***

	Allocated to MWD Supply and Wheeling (\$/AF)*	Allocated to MWD Supply (\$/AF)*	Difference, Resulting from Inclusion of Wheeling (\$/AF)
MWD funds 59.9%	\$ 248 – 394	\$ 10 – 16	\$ 238 – 377
MWD funds 47.1%	\$ 195 – 309	\$ 8 – 12	\$ 187 – 296

*Based on 4% to 8% interest rate

Cost Impact Assumptions and Definitions

- Project scope scenarios:
 - Full project (\$16.7 Billion)
 - MWD funds 71.4 % (31.6 % MWD's proportion of SWP Stage 1 share, plus 33 % unfunded CVP share amount, plus 6.8 % representing 80 % of the six SWP contractors share that may enter into transfer agreements)¹⁹
 - MWD funds 64.6 % (31.6 % of MWD's proportion of SWP share, plus 33 % unfunded amount to full project representing the CVP share)
 - MWD 25.9 % (approved amount from October 2017 which is no longer realistic given lack of support by other contractors, instead, this is meant to serve as reference to original cost)
 - Stage 1 only, no CVP participation (\$11.1 Billion)
 - MWD funds 59.9 % (47.1 % of MWD proportional Table A share,²⁰ plus 12.8 % representing eighty percent of the six agencies that may wish to enter into transfer agreements)
 - MWD funds 47.1 %
- Cost assumptions for all scenarios:
 - Construction cost spread over 13 years beginning in 2020. Those costs, along with interest, approximately follow schedule presented by MWD²¹
 - Total cost includes: capital cost (\$11.1 billion or \$16.7 billion in 2017 dollars) plus a 3 percent inflation factor
 - Analysis includes debt interest rates between 4 and 8 percent
 - In addition to base interest rate, a 0.25 % rate is added to reflect cost of issuance, reserves, and underwriters discount
- Estimated cost impact on Water Authority's MWD Water Purchases and Wheeling:
 - Water Purchases (Supply) is the amount of water purchased by the Water Authority from MWD
 - Water Purchases and Wheeling includes the previous category as well as additional charges by MWD to transport Water Authority owned water (i.e. Imperial Irrigation District and Canal Lining transfer water)
 - Cost to Water Authority is estimated by calculating Water Authority's share of those two categories in 2035 compared to all MWD purchases.
- Demand data sources:
 - The Water Authority's estimated MWD purchases and wheeled water based on updated "interim demand forecast reset" presented in February 2018.²²

¹⁹ MWD's 31.6 % is based on 47.1 % (MWD's proportional Table A) multiplied by 66.7 % (Stage 1 cost as a percent of full project cost). The six agencies that have indicated they would like to sell their WaterFix capacity: Kern County Water Agency (50% of its WaterFix share); Dudley Ridge Water District (33% of its WaterFix share); Tulare Lake Basin Water Storage District, County of Kings, Oak Flat, and Empire West Side Irrigation District (100% of their WaterFix capacity). As envisioned under the transfer agreements, buyer agencies like MWD, would pay 85 of the seller agencies' share to buy them out of WaterFix.

²⁰MWD's and the other six SWP contractors proportional Table A amounts are based on their respective Table A, with five north-of-Delta SWP contractors "excused" from paying because they would not directly benefit from the project. The five contractors are: County of Butte, City of Yuba City, Plumas County Flood Control & Water Conservation District, Napa County Flood Control & Water Conservation District, and Solano County Water Agency.

²¹The spread of debt approximately follows estimates in MWD's third White Paper:

http://www.mwdh2o.com/DocSvcPubs/WaterFix/assets/cawaterfix_finance_costallocation_whitepaper_factsheet.pdf

²² See Interim Long-Range Water Demand Forecast "Reset" presentation on pages 58-64 found here:

https://www.sdcwa.org/sites/default/files/2016-12/Board/2018_Presentations/2018_02_22Presentations.pdf