California WaterFix Update: Cost Impact

Imported Water Committee
April 12, 2018

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San Diego County Water Authority

Assumptions

- Assumptions and definitions used listed on page 117 of Board packet
  - Page 6 of Attachment 1 to board memo
- Key assumptions:
  - Total capital cost at $16.7 billion (2017$)
    - Plus 3% inflation factor
  - Underlying data is from MWD documents
    - White Paper #3 on Project Financing
      - Project construction cost spread over 13 years beginning in 2020
      - 4% and 8% interest rates on debt
    - 2015 Urban Water Management Plan

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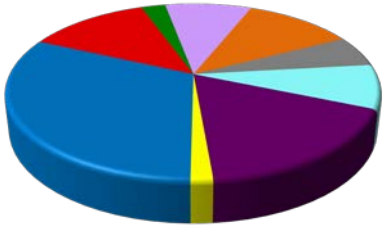
Assumptions
Impacts on Water Authority

- Supply is amount purchased from MWD
  - Based upon updated Interim Demand Forecast Reset
    - 2035 normal year demand of 10,225 AF
    - Presentation includes sensitivity analysis for 60,225 AF of MWD supply purchases
- Wheeling impacts based upon 280,000 AF/year
- Cost based upon Water Authority percentage of MWD's 2035 demand (2015 UWMP)
- Single household using 0.4 AF of Water Authority water per year
- $/AF depicted nominal dollars

Interim Demand Forecast Reset

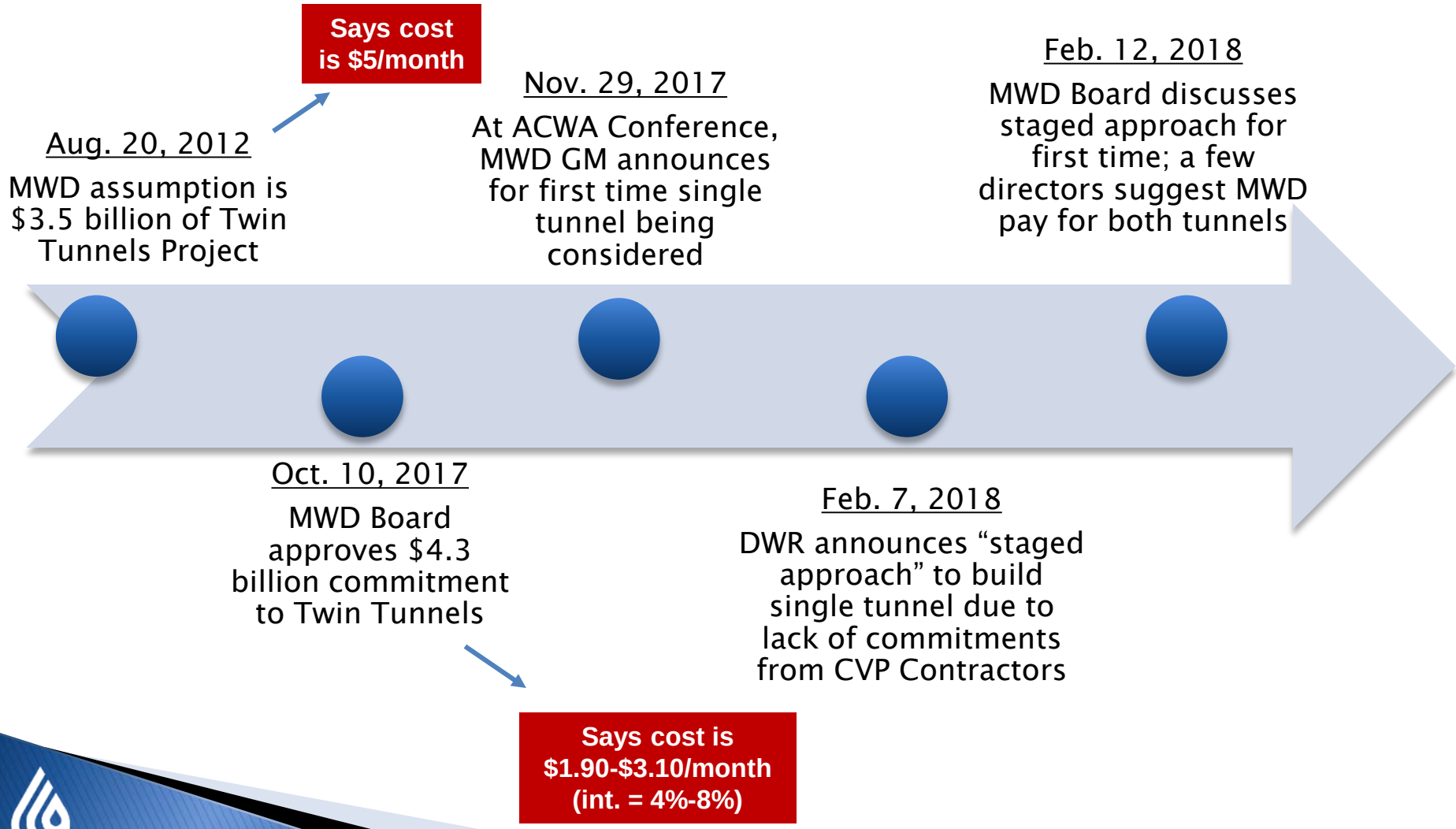


MWD
10 TAF, 2%

Key Points

- WaterFix cost impact to Water Authority depends on:
  - Water Authority's demand on MWD
  - How MWD recovers WaterFix costs on rates
- MWD's planning documents assume WaterFix costs will be recovered on transportation
  - Despite DWR's traditional characterization of "peripheral canal related" facilities (e.g. WaterFix) as "Project Conservation Facilities" -- i.e. supply cost
- Under Interim Demand Forecast Reset profile in 2035, WaterFix costs on Water Authority would be ~24 times higher than if MWD recovers costs on supply

Timeline



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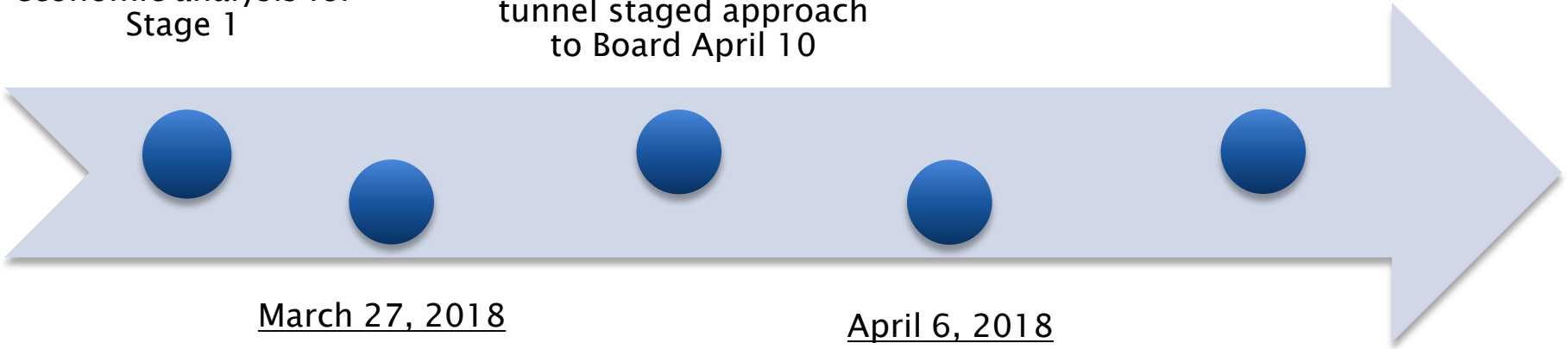
MWD's Recent Actions

Says Cost = $4.8/month



Feb. 27, 2018

MWD again discusses staged approach; reviewed State's economic analysis for Stage 1

March 27, 2018

MWD workshop on WaterFix; reviewed MWD costs for both staged approach and MWD funds second tunnel

April 2, 2018

Memo from MWD GM and Chair tells board staff will bring single tunnel staged approach to Board April 10

April 6, 2018

At 3:25 p.m., MWD issues Board memo: two options will be considered

April 10, 2018

MWD Board approves at least $10.8 billion of Twin Tunnels Project, plus undetermined shares from other SWP contractors

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MWD's April 10 Action

- Commit to paying 64.6% of twin tunnels WaterFix project
  - At $16.7B project cost, commitment is $10.8B
  - Total dollar commitment, however, is uncapped
    - Board gave GM sole discretion to determine final project cost
- Negotiate agreements to assume additional cost obligations from other SWP contractors
  - To acquire portions of six other SWP agricultural contractors' obligations
    - Could increase MWD's commitment to $11.9B, or 71.4% of total $16.7B project

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Second Tunnel Doesn't Increase MWD Yield

	OPTION 1 (First Stage)	OPTION 2 (Full Facility)
Principal Features		
New Diversions	2 intakes at 3,000 cfs each	3 intakes at 3,000 cfs each
Tunnels	One 40 foot diameter 35 miles long	Two 40 foot diameter 35 miles long
Pumping Plants	1	2
Costs		
Total Capital Costs (2017 dollars)	$11.1 billion	$16.7 billion
MWD Capital Costs	$5.2 billion (47.1%)	Up to $10.8 billion (64.6%)
MWD Total Annual Costs	$252 million	Up to $515 million
MWD Overall Cost Increase	16%	Up to 33%
Annual Cost Increase over 15 Years	1.1%	Up to 2.2%
Average Cost Increase per Acre-Foot	$148	Up to $303
Average Household Cost (Based on 70% residential spread over 6.2 million households)	$2.40/month	Up to $4.80/month
Benefits		
Annual Average MWD Supply Improvement	Approx. 405 – 455 TAF/yr plus additional flexibility from two intakes	Approx. 405 – 455 TAF/yr plus additional flexibility from three intakes
Average Reverse Flows	Approx. -405 cfs	Up to +53 cfs
Transfer Capacity (Preliminary State Water Contractor analysis)	0.8 MAF/yr at 50th percentile	1.1 MAF/yr at 50th percentile
Climate Change Adaptation	6,000 cfs capacity (North Delta Intakes)	9,000 cfs capacity (North Delta Intakes)
Capacity to Mitigate for Earthquake or Other South Delta Outages	6,000 cfs capacity (North Delta Intakes)	9,000 cfs capacity (North Delta Intakes)
Reduced Total Dissolved Solids (TDS) (Dry Years)	15%	Up to 19%
Reduced Bromide (Dry Years)	24%	Up to 31%

Source: MWD

Cost Implications to the Water Authority and Region's Ratepayers

Calculation Steps

Calculating Cost to MWD

$16.7B Total Project Cost (2017$) Built over 13 years (2020-2033)

→ Annual Capital Cost Financed at 4% or 8% plus annual O&M Cost

x MWD's assumed share

= MWD Annual Cost, $

Calculating Cost to Water Authority

MWD Annual Cost, $

x SDCWA portion (%) of MWD deliveries in 2035 based on costs applied to: 1. transportation, or 2. supply

= SDCWA Annual Cost, $

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Calculating Cost to Water Authority (cont.)

SDCWA Annual Cost, $	÷	SDCWA projected sales in 2035 (including MWD supply, QSA supply, and desal supply), AF	=	$/AF Water Authority Rate Increase

Calculating Cost to Our Ratepayers

$/AF Water Authority Rate Increase	x	0.4 AF/Year Average Household Demand	=	Annual Household Increase $/AF	÷	12 Months	=	Monthly Increase

San Diego County Water Authority

MWD assigns WaterFix costs on Supply

Full Project ($16.7B)

MWD Financial Commitment	Impact to Water Authority: Capital ($ in M)	Impact to Water Authority Rates ($/AF)*	Increase in household monthly bill
$10.8 billion	$73	$16–26	$0.55–$0.80
$11.9 billion	$81	$18–29	$0.60–$0.97

*interest rate: 4% and 8%, nominal $

**based on single family household using 0.4 AF of Water Authority water per year

San Diego County Water Authority

MWD assigns WaterFix costs on Transportation

Full Project ($16.7B)

MWD Financial Commitment	Impact to Water Authority: Capital ($ in M)	Impact to Water Authority Rates ($/AF)*	Increase in household monthly bill**
$10.8 billion	$1,759	$398-632	$13.27-$21.07
$11.9 billion	$1,945	$440-699	$14.67-$23.30

*interest rate: 4% and 8%, nominal $

**based on single family household using 0.4 AF of Water Authority water per year

San Diego County Water Authority

MWD assigns WaterFix costs on Supply (In 2018 Dollars)

Full Project ($16.7B)

MWD Financial Commitment	Impact to Water Authority: Capital ($ in M)	Impact to Water Authority Rates ($/AF)*	Increase in household monthly bill
$10.8 billion	$73	$10–16	$0.34–$0.50
$11.9 billion	$81	$11–18	$0.38–$0.60

*interest rate: 4% and 8%, 2018$

**based on single family household using 0.4 AF of 100% Water Authority's water per year

San Diego County Water Authority

MWD assigns WaterFix costs on Transportation (in 2018 Dollars)

Full Project ($16.7B)

MWD Financial Commitment	Impact to Water Authority: Capital ($ in M)	Impact to Water Authority Rates ($/AF)*	Increase in household monthly bill**
$10.8 billion	$1,759	$249-395	$8.29-$13.17
$11.9 billion	$1,945	$275-437	$8.92-$14.56

*interest rate: 4% and 8%, 2018 $

**based on single family household using 0.4 AF of 100% Water Authority's water per year

San Diego County Water Authority

What if Water Authority Buys 50,000 AF More MWD Water in 2035?

MWD Assigns WaterFix on Transportation

MWD Financial Commitment	WA MWD Purchase	Impact to WA: Capital	Impact to WA: Annual	Impact to WA Rates ($/AF)*	Avg. inc. in household monthly bill**
$10.8B	10,225	$1,759M	$136M–$216M	$398/AF–$632/AF	$13.27–$21.07
	60,225	$2,007M	$155M–$246M	$396/AF–$629/AF	$13.21–$20.97

MWD Assigns WaterFix on Supply

MWD Financial Commitment	WA MWD Purchase	Impact to WA: Capital	Impact to WA: Annual	Impact to WA Rates ($/AF)*	Avg. inc. in household monthly bill**
$10.8B	10,225	$73M	$6M–$9M	$16/AF–$26/AF	$0.55–$0.80
	60,225	$419M	$32M–$51M	$83/AF–$131/AF	$2.76–$4.38

*interest rate: 4% and 8%, nominal $
**based on single family household using 0.4 AF of WA water per year

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Different Assumptions & Future Decisions Could Change Impact

- Key factors that could decrease rate impacts:
  - Project costs lower than $16.7 billion
  - O&M costs are lower
  - MWD recovers significant share of WaterFix transportation charge on Readiness-to-Serve (RTS)
    - RTS is not charged under Exchange Agreement
  - Water Authority member agencies' local supplies
  - Lower interest and/or inflation rate
  - Agricultural contractors agree to bear some share of project cost
  - State and/or federal government provide funding

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Different Assumptions & Future Decisions Could Change Impact

- Key factors that could <u>increase</u> rate impacts:
  - Final WaterFix project cost exceeds $16.7 billion
    - Construction materials
    - Unknown geological conditions
  - Operations and maintenance costs are higher
  - Schedule delays
    - Legal challenges
    - Changes in political priorities
  - MWD assumes more than 71.4% of total project cost
  - Higher interest and/or inflation rate

San Diego County Water Authority

Where MWD Recovers WaterFix Costs Matters to Water Authority

Bulletin 132-17
Appendix B

Data and Computations
Used to Determine
2018 Water Charges

Source: DWR Bulletin 132-17 Appendix B

Where MWD Recovers WaterFix Costs Matters to Water Authority

Table 2 Project Purpose Cost Allocation Factors (percentages)[a]

PROJECT FACILITIES	Water Supply and Power Generation		All Other Purposes (Nonreimbursable)	
	Capital Costs	Minimum OMP&R Costs	Capital Costs	Minimum OMP&R Costs
Project Conservation Facilities				
Frenchman Dam and Lake	21.5	0.0	78.5	100.0
Antelope Dam and Lake	0.0	0.0	100.0	100.0
Grizzly Valley Dam and Lake Davis	1.0	1.8	99.0	98.2
Oroville Division[b]	97.1	99.5	2.9	0.5
California Aqueduct, Delta to Dos Amigos Pumping Plant	96.6	96.7	3.4	3.3
Delta Facilities				
Peripheral Canal Related	86.0	86.0	14.0	14.0
Remaining of Delta Facilities	96.6	96.7	3.4	3.3
Transportation Facilities				
Grizzly Valley Pipeline	100.0	100.0	0.0	0.0

Source: DWR Bulletin 132-17 Appendix B

Where MWD Recovers WaterFix Costs Matters to Water Authority

Metropolitan Water District of Southern California

FISCAL YEARS 2018/19 and 2019/20 COST OF SERVICE
REPORT FOR PROPOSED WATER RATES AND CHARGES

April 2018

Source: MWD's FYs 2019 & 2020 COS Report

Where MWD Recovers WaterFix Costs Matters to Water Authority

California WaterFix

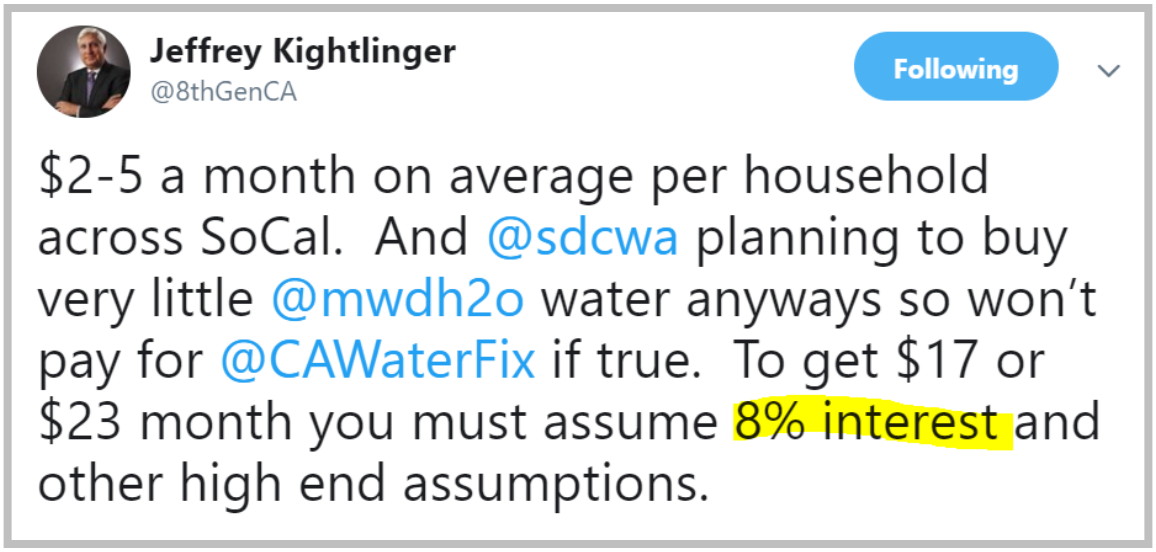
California WaterFix is an improvement to the SWP, the largest water supply[12] project in the country. The project is a science-driven upgrade to the SWP's conveyance system in the Delta. The existing Delta water conveyance system needs to be improved and modernized to address operational constraints on pumping in the south Delta. The SWP is subject to biological opinions and incidental take permits that substantially limit the way DWR operates the SWP. Therefore, under the California WaterFix, DWR will extend the delivery system from new north Delta water intakes on the Sacramento River to a new forebay in the south Delta to provide additional operational flexibility in operating the SWP. The California WaterFix includes the

At this time, DWR has not provided an analysis for how it proposes to categorize the capital financing and operating costs of the California WaterFix on State Water Contractor Statement of Charges. However, in fiscal years 2018/19 and 2019/20, Metropolitan anticipates it will incur $4 million and $12 million, respectively

The California WaterFix is expected to be financed through the issuance of debt instruments to be paid back over time, resulting in annual capital financing costs. Consistent with the functionalization of SWP transportation costs, the capital financing costs of the California WaterFix have been functionalized to the conveyance and aqueduct function in the biennial budget cost of service analysis. This functionalization is based on the nature of the project and information available to Metropolitan at this time and Metropolitan will continue to review its cost allocations of the project as it is constructed, and in the event DWR allocates the project any differently.

Source: MWD's FYs 2019 & 2020 COS Report

Communicating Cost Impacts



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Source: MWD