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MODERNIZING THE SYSTEM:

CALIFORNIA WATERFIX FINANCE AND COST ALLOCATION

3

The third in a series of policy papers prepared for the consideration of Metropolitan's Board of Directors in advance of planned summer meetings and decisions in fall 2017.

Modernizing and improving California's water system is essential for the reliable delivery of water supplies to much of the state. About 30 percent of the water that flows out of taps in Southern California homes and businesses comes from Northern California watersheds and flows through the Sacramento-San Joaquin Delta. But the Delta's declining ecosystem and 1,100 miles of levees are increasingly vulnerable to earthquakes, flooding, saltwater intrusion, climate change and further environmental degradation. California WaterFix is the product of more than a decade of review, planning, rigorous scientific and environmental analysis and unprecedented public comment.

This white paper provides information about the costs of the project, including adjustments of capital, mitigation and O&M costs to 2017 dollars. The financing plan is presented with financial assumptions and a range of financing scenarios. The cost allocation information covers Metropolitan's anticipated financial commitment, an estimate of member agency wholesale rate impacts, and metrics to assess retail level impacts. Using this information and when compared to costs for other local supply alternatives, California WaterFix would provide a cost-effective supply for Southern California's water portfolio.

A Cost-Effective Approach to Reliability

- California WaterFix is a sound investment to maintain a reliable source of water for Southern California.
- The proposed project would provide measureable and quantifiable water supply and water quality benefits.
- Costs will be fairly allocated among participating agencies using the 'beneficiary pays' principle.
- Metropolitan will coordinate with the California Department of Water Resources (DWR) and the other state and federal water contractors to evaluate options to optimize financing and reduce costs while minimizing risks.

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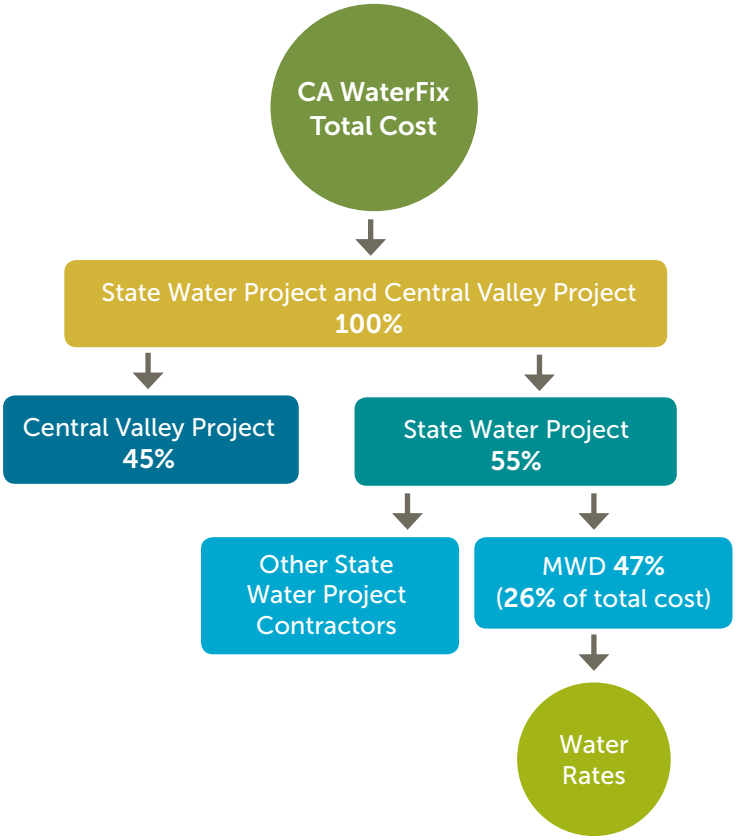
Cost Estimate and Cost Allocation

CAPITAL COSTS		
	2014 Dollars	2017 Dollars
Environmental Mitigation*	$ 367 M	$ 401 M
Conveyance System Cost	$ 14.9 B	$16.33 B
Overall Cost	$ 15.3 B	$ 16.7 B

*The mitigation costs for capital and O&M for 25 years equals $796M in 2014 dollars or $870M in 2017 dollars.

- Cost estimates were determined through a rigorous analysis by industry professionals and will be updated as additional information becomes available.
- Estimated costs for mitigation and associated environmental commitments are preliminary and will be revised as costs are refined.

CA WaterFix Cost Allocation



Costs and Financing Approach

Costs and financing considerations include the following:

- Planning, design, construction and other capital costs will be financed with revenue bonds beginning in mid-2019.
- A validation action has been filed by DWR to, among other things, provide the requisite assurance to the financial community for the sale of revenue bonds.
- Anticipated cost increases for California WaterFix have already been incorporated into Metropolitan's ten-year Financial Forecast and are included as part of the long-term projected average 4.5% rate increases.

Approximate average household cost of California WaterFix within the **MWD Service Area**

$2-3/PER MONTH

(BASED ON 6.2 MILLION HOUSEHOLDS AND RESIDENTIAL SECTOR PAYING 70 PERCENT OF COSTS)

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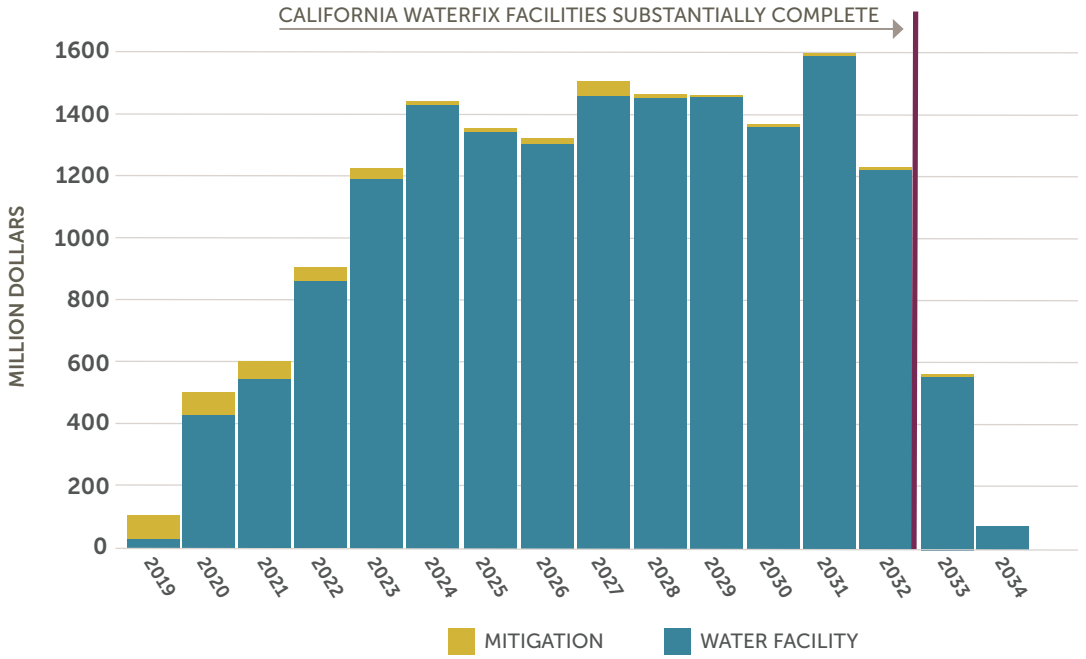
Financing and Funding Structure

ESTIMATED CASH FLOW FOR CAPITAL EXPENDITURES



Construction of the facilities is expected to be substantially complete in 2032 and fully operational in 2033.

Key Uncertainties And Mitigation Measures

FINANCING OPTIONS

In addition to revenue bonds, a range of other financing options will be evaluated to optimize financing and reduce costs, such as short-term borrowing and pursuing WIFIA (federal loan program) supplemental funding.

SWP CONTRACTOR DEFAULTS ON PAYMENTS

Mitigation is included in SWP delivery contracts, obligating contractors to make payments and if necessary compel contractor to levy taxes or assessments in the event of non-payment.

REIMBURSEMENT OF DIRECT CONTRACTOR FUNDING CONTRIBUTIONS

The first issuance of revenue bonds will include funds to reimburse contractor-provided gap funding and prior funding contributions for planning costs.

JUDICIAL DETERMINATION ON DWR AUTHORITY TO ISSUE BONDS

- Pending completion of the validation action, private placement bond sales with the Finance Joint Powers Authority (JPA) would allow funding for project implementation to proceed.
- If DWR does not have the authority, a process would be established leading to the potential conveyance of interest in the project to the Finance JPA or designee to proceed.

CVP CONTRACTOR PARTICIPATION

- DWR will not move forward with project implementation without the commitment of a sufficient number of SWP and CVP contractors.
- Discussions are ongoing concerning the risk of a participating CVP contractor defaulting during project implementation.

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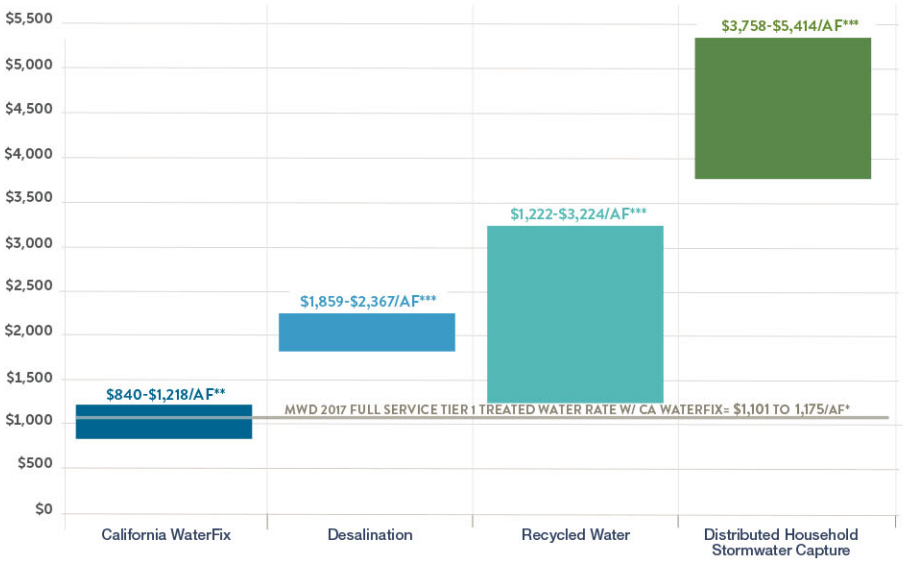
Ensuring Affordable, Reliable Water Supplies

California WaterFix vs. Alternative Supplies



* Based on Metropolitan's 2017 Full Service Tier 1 Treated Rate of $979 plus WaterFix costs ranging from $122/AF to $196/AF.

** Illustrative marginal cost shown for California WaterFix when treated and conveyed to Metropolitan's service area so as to be directly comparable to the cost of alternatives. Based on 4%-8% interest rate scenarios in 2017 dollars, projected average supply improvement of 1.3 MAF/YR, and 2017/18 budgeted State Water Contract power costs of $197/AF and variable treatment costs of $30/AF.

*** Range is based on the 25-75% percentiles of projected project costs as reported in the 2015 IRP (in 2015 dollars).

California WaterFix is the most cost-effective alternative

If we keep our existing imported water supply, made more reliable with California WaterFix, it would cost approximately $2-3/mo. per average household in the Metropolitan service area.

If we tried to develop new local supplies to replace the imported water supply we would lose without California WaterFix, it would cost two or more times as much per average household in the Metropolitan service area.

JOBS AND ECONOMIC BENEFITS

SECURING CLEAN WATER SUPPLIES

4.7-5.3 MILLION

ACRE-FEET ON AVERAGE ANNUALLY (Combined SWP and CVP)

Enough to supply 9-11 million households with water for one year

CREATING & PROTECTING JOBS

1.1 MILLION

FULL-TIME EQUIVALENT JOBS CREATED AND SAVED FOR CALIFORNIA

Based on a year-by-year estimate

SUPPORTING THE ECONOMY

$1 TRILLION

SOUTHERN CALIFORNIA ECONOMY DEPENDS ON DELTA-CONVEYED WATER

OUR MISSION

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

ABOUT METROPOLITAN

The Metropolitan Water District of Southern California is a state-established cooperative of 26 member agencies – cities and public water agencies – that serve nearly 19 million people in six counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies and helps its members develop increased water conservation, recycling, storage and other resource management programs.

For a full version of the Finance and Cost Allocation Paper, visit mwdh2o.com/waterfix

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8/10/17

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MODERNIZING THE SYSTEM:

California WaterFix Finance & Cost Allocation

AUGUST 2017

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Introduction

This is the third of three policy white papers prepared for the Metropolitan Water District of Southern California's Board of Directors on the proposed California WaterFix. The overall objective of these papers is to provide relevant information as the Board considers decisions on the project.

This paper focuses on the financing plan and the allocation of California WaterFix costs. The discussion of the financing plan includes a financing scenario for the issuance of revenue bonds to finance the project. The cost allocation analysis includes the proposed mechanisms to ensure a financial commitment from the state and federal water contractors that would benefit from the project. The cost allocation examination also covers Metropolitan's proposed financial commitment and responsibilities, an estimate of member agency wholesale cost impacts, and metrics to assess household impacts.

The two previous white papers focused on the project's planned infrastructure improvements, the impacts of regulatory requirements on water project operations in the Sacramento-San Joaquin Delta (Delta), and the overall effects of the proposed project's operations on State Water Project (SWP) and Central Valley Project (CVP) performance.

The specific objectives of this paper are to:

A. Describe the existing funding and cost allocation structures under the State Water Contracts used to pay for the construction costs of SWP facilities;

B. Describe the financing plan for California WaterFix that would make use of both revenue bond proceeds and short-term gap funding contributions from the state water contractors;

C. Describe Metropolitan's potential share of California WaterFix costs and the potential cost impacts to Metropolitan's member agencies and households within Metropolitan's service area; and

D. Describe the implementation and management approaches for cost allocation and financing that would address uncertainties and mitigate financial risks.

Summary and Overview of Cost Allocation Process

One of the major sources of water for Californians is the SWP, which is owned by the State of California and operated and maintained by the California Department of Water Resources (DWR). The SWP is comprised of a series of interconnected facilities that transport water from the Feather River and through the Delta to 25 million water users throughout much of California. Today, the SWP includes 34 storage facilities, reservoirs and lakes; 20 pumping plants; 4 pumping-generating plants; 5 hydroelectric power plants; and about 700 miles of open canals and pipelines. These facilities deliver water to the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. The SWP's 444-mile California Aqueduct delivers water to four connections in Metropolitan's water distribution system.

California WaterFix addresses a long-standing deficiency in the SWP system – the inability to convey water around the Delta. As described in the second policy white paper, "Modernizing the System: California WaterFix Operations," the operational flexibility afforded by California WaterFix would help native fish species, protect and restore water supply reliability, address climate change and seismic risks to water supply, and help restore the Delta ecosystem. Although the project has wide-ranging benefits, its costs would be entirely funded by water agencies.

While California WaterFix would be a component of the SWP and owned and operated by DWR, it would provide benefits to SWP Contractors as well as CVP Contractors. Consistent with the "beneficiary pays" principle, SWP Contractors and participating CVP Contractors would fund California WaterFix. California WaterFix supply[1]

[1] The term "supply" is used to distinguish between other functions of the SWP such as recreation and flood control. The term is not used to distinguish between the conservation (supply) and transportation (conveyance) functions of the SWP under the State Water Contracts.

benefits have been allocated 55 percent to the SWP Contractors and 45 percent to the CVP Contractors (55/45 split). Under this allocation, funding for capital costs and operations and maintenance (O&M) would also follow this same 55/45 split.

As discussed in the first policy white paper, "Modernizing the System: California WaterFix Infrastructure," capital costs for California WaterFix are estimated at $14.9 billion in 2014 dollars. As described in this paper, with mitigation project capital costs and escalation to 2017 dollars, the total capital costs are $16.7 billion. Total annual O&M costs when the project is fully operational are $64 million in 2017 dollars. Based on the 55/45 split, SWP Contractor project costs would be $9.2 billion in capital and $35 million in annual O&M.

With the exception of five north of Delta contractors that would not receive direct California WaterFix benefits, all SWP Contractors are expected to pay for the SWP share of project costs. The financing plan for the SWP share relies on the existing long-term State Water Contracts as the vehicle for DWR to allocate costs to the SWP Contractors and to pay the debt service for its bonds. Based on the schedule of maximum water allocations in these State Water Contracts (known as Table A), Metropolitan's share among the SWP Contractors is 47 percent (meaning Metropolitan's share of the total project costs would be 26 percent). Figure 1 shows the overall allocation of costs described above.

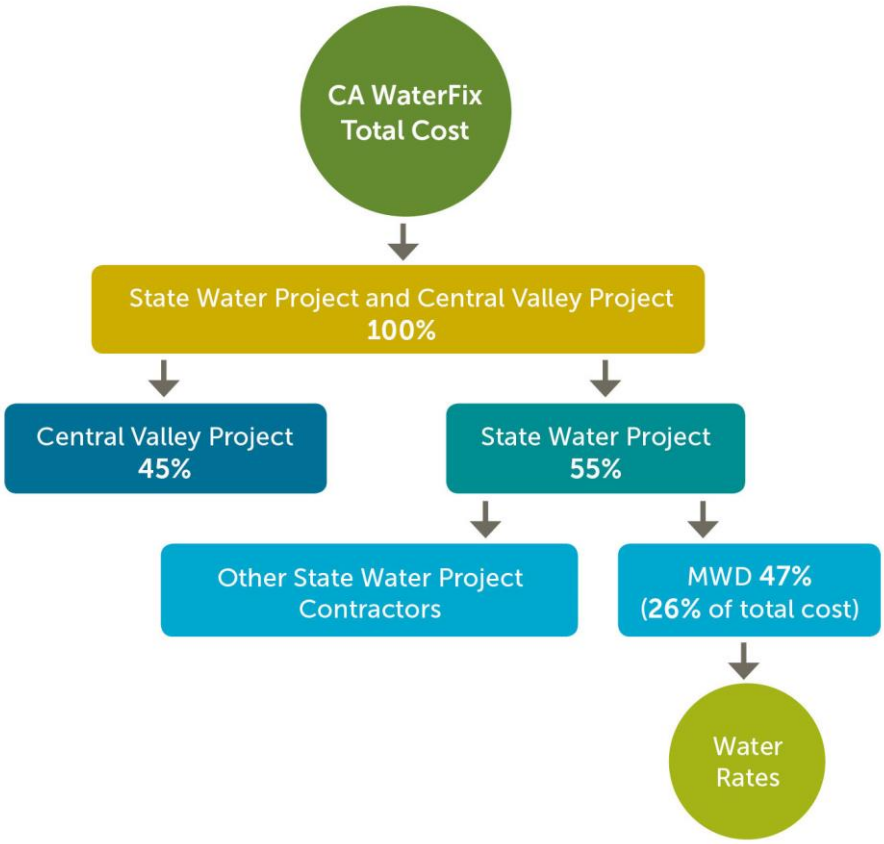

FIGURE 1: CALIFORNIA WATERFIX COST ALLOCATION FRAMEWORK

The cost impacts on Metropolitan would vary principally based on the interest rate assumed for project financing. The analysis presented in this policy paper assumed a range of interest rates, from today's base case interest rate of 4 percent to 8 percent for a sensitivity analysis. Along with other financing assumptions, the peak annual increase in Metropolitan's costs would range from an average of $122 per acre-foot of water sold for the 4-percent scenario to an average of $196 for the 8-percent scenario. On an estimated per household basis across Metropolitan's service area, this represents an average monthly cost of $1.90 to $3.10.

Metropolitan's annual cost increase due to California WaterFix over a 15-year ramp-up to the maximum yearly expenditure is expected to be between 0.9 and 1.4 percent, depending on the interest rate sensitivity analysis.

Metropolitan previously estimated California WaterFix costs into its ten-year rate projection and those projections remain appropriate. The ten-year forecast estimates annual rate increases for all anticipated Metropolitan expenditures, including California WaterFix, at 4.5 percent for 2019 through 2026.

California WaterFix Cost Estimates

CAPITAL AND O&M COSTS

The overall costs for California WaterFix's proposed infrastructure improvements and environmental mitigation are described in the first policy white paper, "Modernizing the System: California WaterFix Infrastructure." These materials are drawn from cost estimates developed by DWR and rigorously analyzed by industry professionals.

These cost estimates reflect a significant engineering analysis that formulates and defines the design criteria for each major component of California WaterFix, resulting in the optimal alignment and other features. Based on these estimates, California WaterFix's capital costs are estimated to total $14.9 billion in 2014 dollars. For this white paper, the cost estimates have been converted to 2017 dollars based on an annual escalation rate of 3 percent. In 2017 dollars, the capital cost for California WaterFix is estimated to be $16.3 billion, excluding mitigation costs.

Estimated costs for mitigation and associated environmental commitments take into consideration the measures adopted in the Final Environmental Impact Report/Environmental Impact Statement and likely requirements for the US Army Corps of Engineers (U.S. Army Corps) Section 404 permit. The preliminary mitigation cost estimate would be revised to incorporate all mitigation-related costs, including those associated with Endangered Species authorizations and U.S. Army Corps and other regulatory permits when finalized. The estimated mitigation costs total $796 million in 2014 dollars, of which $367 million is capital and the remainder represents O&M for 25 years. In 2017 dollars, mitigation costs total $870 million, with $401 million of that being capital.

The estimated operating costs for the water facility come from Chapter 8 of the November 2013 Bay Delta Conservation Plan. Because of subsequent project refinements, California WaterFix operating costs should be lower than these estimates. Operating costs are composed of three components: (1) power costs for pumping and other operations, (2) other facility O&M, and (3) capital replacement. Annual operating costs are estimated to be $40.3 million in 2014 dollars and $44.1 million in 2017 dollars.

A cost summary showing the capital, mitigation, and O&M costs for California WaterFix in both 2014 and 2017 dollars is shown in Table 1.

CAPITAL COSTS CASH FLOW

The estimated cash flow requirements for the $16.7 billion (2017 dollars) capital expenditures is shown in Figure 2. Assuming a construction start date of 2019, California WaterFix is expected to be substantially completed (96 percent complete) in 2032. Capital expenditures signficantly decrease the following year (2033) when the facility is assumed to be fully operational. Some minor capital expenditures are shown for 2034 to reflect project close-out costs.

TABLE 1: CALIFORNIA WATERFIX COST SUMMARY

	2014 $M	2017$M
CAPITAL COSTS		
Water Facility		
Construction	9,499	10,380
Contingency (36%)	3,378	3,692
Program Management/Construction Management/Engineering	1,920	2,098
Land Acquisition (includes 20% contingency)	146	160
Sub-Total Water Facility	**14,943**	**16,330**
Mitigation (includes 35% contingency) (1)	**367**	**401**
Total Water Facility and Mitigation Capital Costs	**15,310**	**16,731**
ANNUAL OPERATIONS AND MAINTENANCE COSTS		
Water Facility		
Facility O&M (2)	20.0	21.9
Power (2)	6.6	7.2
Capital Replacement (2)	13.7	15.0
Sub-Total Water Facility	**40.3**	**44.1**
Mitigation (1,2)	**18.6**	**20.3**
Total Annual O&M Costs	**58.9**	**64.4**

(1) The mitigation costs for capital and O&M for 25 years equals $796M in 2014 dollars or $870M in 2017 dollars.
(2) When project is fully operational.

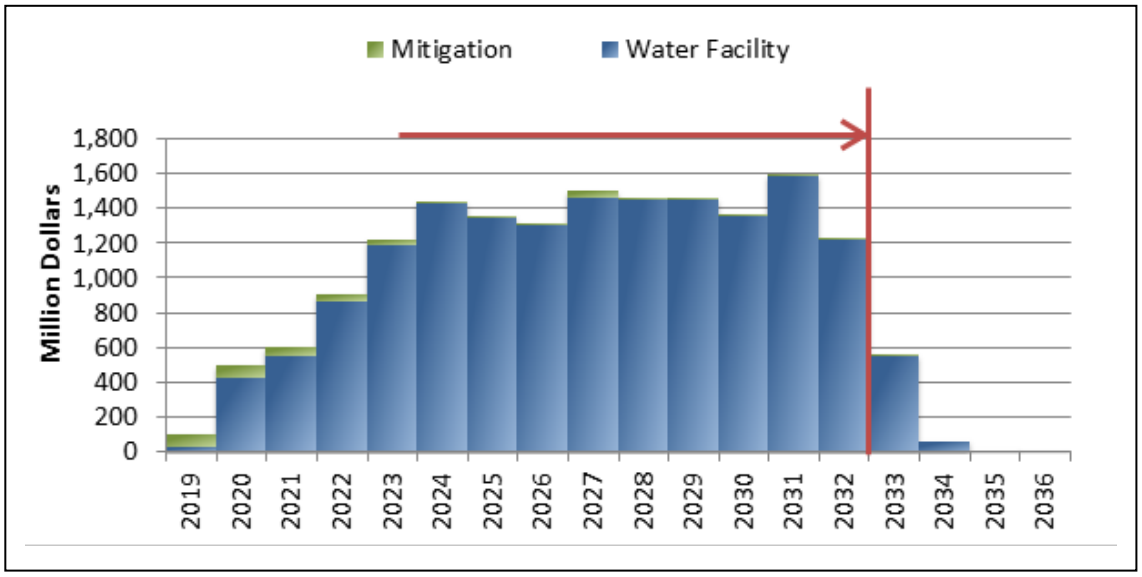

FIGURE 2: CALIFORNIA WATERFIX CAPITAL COSTS IN 2017 DOLLARS

Financing Plan for California WaterFix

As previously stated, the cost share split between the SWP Contractors and the participating CVP Contractors is assumed to be a 55/45 split, respectively.

For the SWP share, the project would be treated like any other major improvement to the SWP system. Under the California Water Code, DWR is responsible for the construction, maintenance, and operation of the SWP and for securing funding for related costs. The SWP share of California WaterFix costs would be paid by the SWP Contractors in accordance with the long-term DWR State Water Contracts.

In addition to establishing payment and other provisions for the SWP Contractors' participation, the existing State Water Contracts offer flexibility to allow individual SWP Contractors to adjust their level of water reliability and financial responsibility through voluntary water transfers and other arrangements. The potential for these management actions are discussed later in this policy white paper.

The participating CVP Contractors' share of California WaterFix costs would be funded by direct payments from them.

FUNDING ARRANGEMENTS FOR CONSTRUCTION OF SWP FACILITIES UNDER THE STATE WATER CONTRACTS

DWR has signed long-term State Water Contracts with Metropolitan and 28 other public agency SWP Contractors. These State Water Contracts provide each agency with access to the SWP conveyance system and an annual proportional allotment of available water. The maximum amount of SWP water that a SWP Contractor may request for delivery each year is set forth in Table A of its State Water Contract. However, the amount of water that a SWP Contractor actually receives is often much less than the contracted amount. Water deliveries are affected by hydrological conditions, State Water Resources Control Board regulations, restrictions imposed under federal or California Endangered Species Acts, operational decisions, and other limitations.

SWP Contractors must make payments regardless of the amount of SWP water actually received. The State Water Contracts require payments to DWR in return for participation in the SWP storage and conveyance system. All SWP Contractors must make payments according to their respective Table A contract amounts and for the portion of the SWP conveyance system needed to deliver their contracted water. The amount of the base payment is not tied to the amount of water actually received. The cost of power to deliver water varies with the amount of water delivered.

SWP Contractors whose service areas are farther from the Sacramento-San Joaquin area must pay more SWP system costs than those that are located closer to it, because of the capital costs associated with the California Aqueduct and other transportation facilities as well as the increased pumping and O&M costs.

In exchange for SWP Contractor payments, DWR is required to make all reasonable efforts to complete facilities necessary for water deliveries, subject to fiscal, construction scheduling, and operating constraints. DWR is authorized to accept SWP Contractor advances to complete design and construction of SWP facilities if DWR, for whatever reason, does not have the funds on hand. In such cases, the amount provided by a SWP Contractor is credited by DWR against the Contractor's obligation under the State Water Contracts.

The charges paid by the SWP Contractors pay for the debt service and costs of revenue bonds issued by DWR to finance the cost of constructing SWP facilities. About 78 percent of the construction costs for the SWP system have been financed by the sale of general obligation and revenue bonds. The debt service for these bonds is paid by DWR through collections from the SWP Contractors, not the general state taxpayer. The SWP Contractors that are the beneficiaries are responsible for all water development and transportation-related costs, including those pertaining to the O&M of SWP facilities. General O&M costs are not financed through bonds.

The current State Water Contracts would remain in effect for: (1) 75 years from the effective date of an individual agency's contract; (2) December 31, 2035: or (3) until all bonds issued to finance construction costs of SWP facilities have been repaid, whichever period is longer. DWR and the SWP Contractors are currently negotiating details of an extension of the State Water Contracts. The parties reached an agreement in principle for this amendment in June 2014. The proposed amended agreement between the parties would extend the term of the State Water Contracts until December 31, 2085. In addition, the proposed agreement would amend the State Water Contracts' current treatment of capital costs on an amortized basis to an annualized, "pay as you go" basis for revenues needed by DWR in a given year for scheduled debt service to repay capital costs.

For California WaterFix, the existing State Water Contracts between DWR and the individual SWP Contractors would be the mechanism to recover the SWP share of California WaterFix costs from all contractors downstream of the Sacramento-San Joaquin Delta. The five SWP Contractors that are north of the Delta – 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 – would not receive direct benefits from California WaterFix and would be excused from payment of project costs.

Costs are assumed to be recovered in proportion to each SWP Contractor's baseline Table A contract amount.

FINANCING THE SWP CONTRACTOR SHARE OF CALIFORNIA WATERFIX

The ultimate source of funds for the SWP Contractors' share of California WaterFix costs would be revenue bonds. DWR plans to issue a series of new bonds, California WaterFix Revenue Bonds, for the SWP share of the total capital costs. Based on the 55/45 SWP/CVP split, this amount is $8.4 billion in 2014 dollars, or $9.2 billion in 2017 dollars. Bond proceeds would fund construction, planning, and other preconstruction costs (including the reimbursement of funds and services previously provided by various state and federal contractors, including Metropolitan), and would pay for the costs of bond issuance. Scheduled principal and interest on California WaterFix bonds would be secured by a portion of revenues collected by DWR under its long-term SWP State Water Contracts. Pledged funds under the State Water Contracts would be deposited into a Revenue Fund maintained by DWR to ensure payment of the debt service.

Initially, for the SWP Contractors' share of the costs, DWR proposes to sell revenue bonds to a finance joint powers authority (Finance JPA) comprised of certain SWP and CVP Contractors. This would facilitate the financing and marketability of its revenue bonds. DWR's direct sale of these revenue bonds is targeted for the middle of calendar year 2018.

CONTRIBUTIONS BY CVP CONTRACTORS

The overall financing plan calls for the remaining amount of California WaterFix costs to be contributed by the CVP Contractors that would participate in the project. Based on the 55/45 SWP/CVP split, this amount is $6.8 billion in 2014 dollars, or $7.5 billion in 2017 dollars. DWR and the participating CVP Contractors are negotiating terms of a master agreement for use of California WaterFix facilities. This agreement would allow CVP Contractors to purchase an interest in a set amount of capacity in California WaterFix facilities. Under the proposed agreement, and based on the 55/45 split, CVP Contractors would pay for (1) 45 percent of all capital and fixed O&M costs for California WaterFix, regardless of use; and (2) all variable O&M costs associated with the CVP Contractors' actual use of facilities. This agreement also would provide a payment mechanism for variable O&M costs incurred to move CVP water that is not classified as California WaterFix water.

Pursuant to the terms of the proposed master agreement, CVP Contractors would be entitled to transfer or convey portions of their rights to use the facility to other CVP or SWP Contractors, but would not be allowed to sell, exchange or transfer their rights outside of the state and federal water contractor families.

WATER CONTRACTOR FINANCE JOINT POWERS AUTHORITY

The marketability of California WaterFix Revenue Bonds to private investors may be affected by judicial challenges to DWR's authority over the project. DWR therefore proposes to make direct placement sales of California WaterFix Revenue Bonds to a Finance JPA consisting of certain SWP and CVP Contractors until resolution of such legal challenges.

Under this approach, the Finance JPA would purchase California WaterFix Revenue Bonds directly from DWR in phases. The proceeds would be used to pay California WaterFix capital costs. In turn, the Finance JPA would finance its purchase of California WaterFix Revenue Bonds by issuing its own bonds (Finance JPA Bonds).

The debt service for the Finance JPA Bonds would be secured by DWR's pledge to pay a portion of the amounts collected under the State Water Contracts and paid to the Finance JPA as debt service payments for the DWR-issued California WaterFix Revenue Bonds.

ARTICLE 51(E) AND GAP FUNDING CONTRIBUTIONS

To fund continuing design and preconstruction costs prior to the issuance of revenue bonds for California Water Fix, DWR proposes a pair of interim funding mechanisms. Through the end of the 2017 calendar year, DWR proposes the use of so-called Article 51(e) funds. Under Article 51(e) of the State Water Contracts, DWR may allocate certain additional funds to mutually-agreed SWP purposes after conferring with SWP Contractors on the appropriate use. DWR's proposed use of Article 51(e) funds through December 31, 2017, is subject to the DWR Director's discretion.

From January 2018 until the issuance of the first revenue bonds for the project, DWR plans to request the short-term contribution of additional funds from willing SWP and CVP Contractors, or a joint powers agency representing such contractors, for continuing pre-construction costs. Such additional contributions would be similar in concept to prior advances made for the California WaterFix's planning, study, design and environmental assessment costs. Additional contractor contributions would be made pursuant to a Gap Funding Agreement with DWR. Gap funding contributions would be subject to reimbursement from the first issuance of bonds by DWR. Under the current schedule, Metropolitan staff would provide options for Metropolitan's participation in a Gap Funding Agreement to the Board for its consideration when it considers taking action on California WaterFix.

Financed Costs of the SWP Contractor Share

In implementing the financing plan, there is a range of possible cost impacts to the SWP Contractors. Capital financing costs would extend over the term of the bonds, while O&M costs would continue through the operating life of the facilities.

The following analysis focuses on the financing of the 55 percent SWP share of California WaterFix. The financing scenarios assume that 100 percent of capital costs for the water facility and mitigation are debt financed and annual O&M costs are paid as incurred. Project and financing assumptions common to all scenarios are shown in Table 2. The financial assumptions reflect values typically used in Metropolitan's financial analysis of projects or DWR requirements.

TABLE 2: PROJECT AND FINANCIAL ASSUMPTIONS

PROJECT ASSUMPTIONS	
Project Start	2019
Water Facility Substantially Complete	2032
First Year Project Operational	2033 (Year 15)
Average Improvement in Project Water Supply	1.3 MAF/Year
State Water Project/Central Valley Project Share	55%/45%
Metropolitan's Share of State Water Project	47.13%
Metropolitan's Overall Share of Project	25.92%
FINANCIAL ASSUMPTIONS	
Escalation Rate	3.00%
Discount Rate	3.00%
Level Annual Debt Service	
Fixed Interest Rate	4%, 6%, and 8% Scenarios
Underwriters Discount	$2.50 per $1,000
Cost of Issuance	$0.5M per issue
Bond Reserve	½ max annual debt service
Bond Cover	25%

FINANCING SCENARIOS

All financing scenarios assume that bonds would be issued annually, with the final bond sale in year 15 of project construction when California WaterFix is scheduled to be operational. All bond issues would be fixed rate debt issues with level annual debt service and no interest or principal deferment during construction. All bond issues are assumed to have a 40-year term.

The only thing that changes in the three scenarios is the interest rate paid on the bond issuances. The interest rate is the most influential factor in determining the financing cost of the project. Current interest rates for AA rated municipal bonds are about 3.88 percent. The base case financing scenario, "Base Case 4% Interest Scenario," estimates the cost of the project using an approximation of current interest rates of 4 percent. The second "6% Interest Scenario" is consistent with Metropolitan's 2013 estimate of California WaterFix costs. The 6 percent interest approximates the 6.135 percent assumption used for Metropolitan's first cost estimate.[2] The 6.135 percent interest rate was based on a 95 percent confidence interval of interest rates over the past decade. This means that 95 percent of the time interest rates were less than 6.135 percent. The third "8% Interest Scenario" shows the sensitivity of California WaterFix financing costs and the effect of a doubling of interest rates from current market conditions.

[2] "Bay Delta Conservation Plan Impacts on Integrated Water Resources Plan & Water Rates." Special Committee on Bay-Delta. Item 3b, August 27, 2013.

Base Case 4% Interest Scenario

The Base Case 4% Interest Scenario finances the SWP Contractors' share of California WaterFix, with 40-year fixed rate bonds at an interest rate of 4 percent. The 4 percent interest rate represents current market rates for an AA rated California utility. Figure 3 displays the annual payments, in nominal dollars, required to pay for the capital financing costs for California WaterFix and the project's O&M costs. The annual payments increase as annual bond issuances would be made to pay for construction. In the 15th year (2033), the final bond issuance would be made when construction is substantially complete and the project becomes operational. Full O&M costs also begin in 2033. In 2033, when the project is fully operational, annual payments equal $703 million per year, which equates to $438 million in 2017 dollars.

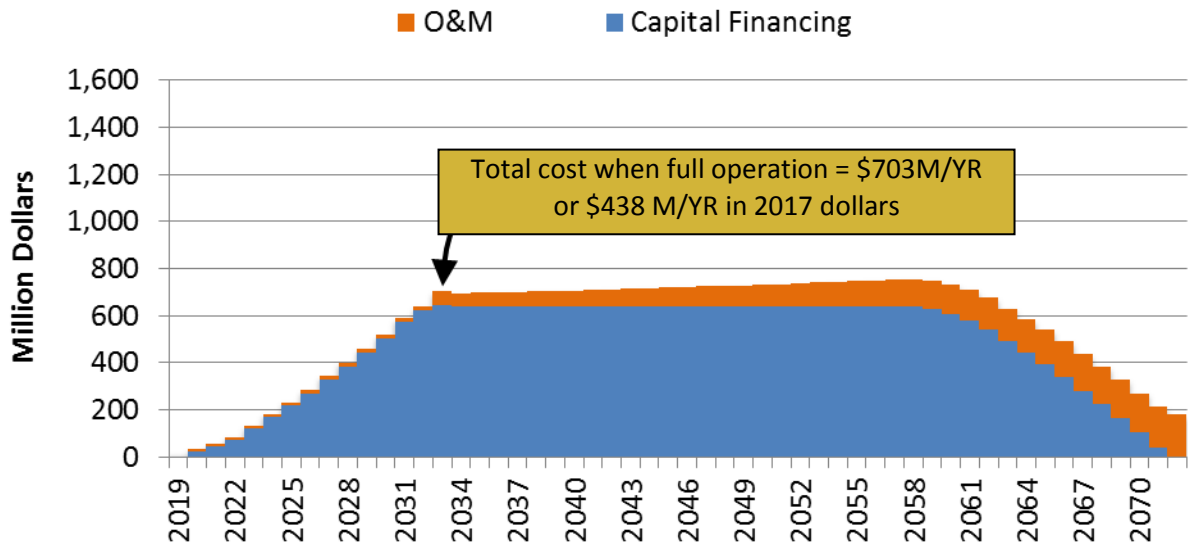

FIGURE 3: BASE CASE 4% INTEREST SCENARIO – CAPITAL FINANCING AND O&M COSTS

6% Interest Scenario

The 6% Interest Scenario has identical project and financing assumptions as the Base Case, except that the bonds have a higher interest rate of 6 percent. Figure 4 displays the annual payments, in nominal dollars, required for the capital financing costs for California WaterFix and the O&M to operate the facility. This financing scenario results in annual payments of $910 million per year in 2033 when the project is fully operational, which equates to $567 million in 2017 dollars.

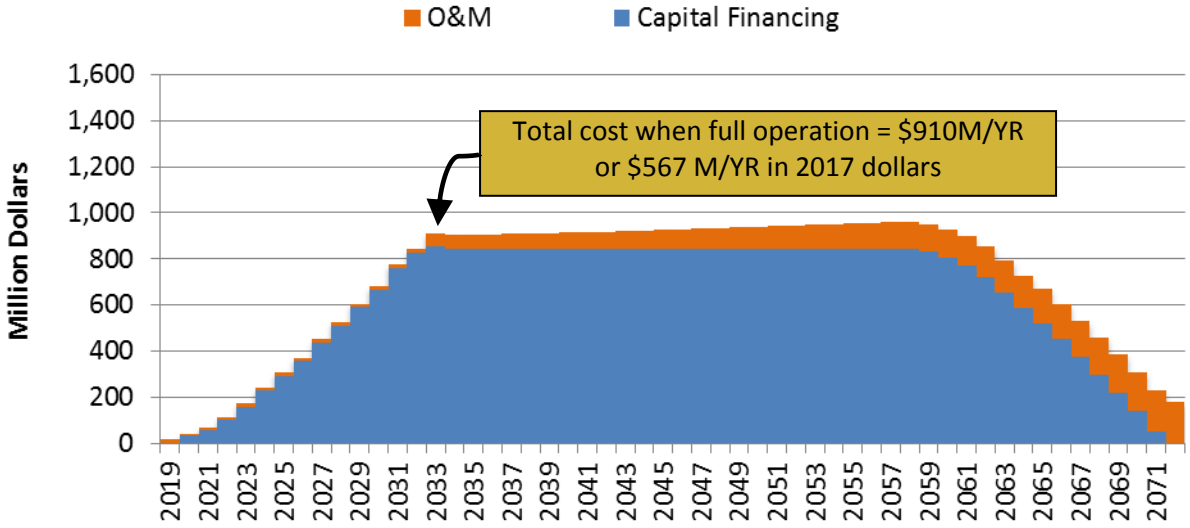

FIGURE 4: 6% INTEREST SCENARIO – CAPITAL FINANCING AND O&M COSTS

8% Interest Scenario

The 8% Interest Scenario shows the financing impacts of a much higher interest rate compared to the Base Case. The high interest rate scenario is provided to show the effect of a doubling of interest rates from current market conditions. Figure 5 displays the annual payments required to pay for the capital financing costs for California WaterFix and the O&M to operate the facility. This financing scenario results in annual payments reaching the maximum amount of $1.137 billion per year in 2033, which equates to $709 million in 2017 dollars.

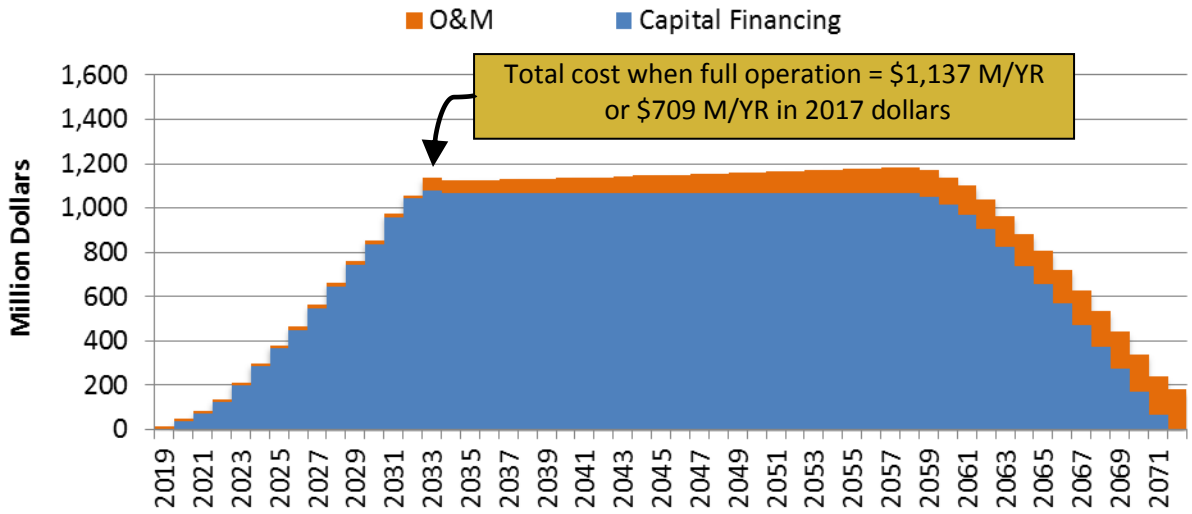

FIGURE 5: 8% INTEREST SCENARIO – CAPITAL FINANCING AND O&M COSTS

COST IMPACT SUMMARY

The three financing scenarios described above outline the annual payments required for the financing of capital construction costs and annual O&M costs. The cost impact analysis is based on the annual costs incurred when the project is fully operational in 2033. This point is used for cost impact analysis because it is the year when the full cost impact of the project is incurred. Costs from 2033 to 2059 are mostly level, with small increases in O&M costs because of inflation.

Figures 3, 4 and 5 above show the annual California WaterFix costs in nominal dollars. While nominal dollars represent the actual dollar outlays that would be expended at various points in time, they have not been adjusted for inflation and therefore cannot be compared to today's costs. Since the costs occur in the future they are discounted to 2017 dollars to (1) calculate comparative cost impacts by comparing to today's costs and (2) compare the cost of California WaterFix to alternatives with costs estimated in today's dollars.

A summary of the cost impacts for the Base Case, 6% Interest Scenario and 8% Interest Scenario in 2017 dollars is shown in Tables 3 and 4.

The total annual costs for the SWP share of California WaterFix when the project is fully operational are expected to range from $438 million in the Base Case to $709 million in the 8% Interest Scenario in 2017 dollars. About 92-95 percent of these costs are capital financing costs and 5-8 percent of costs are annual O&M costs.

TABLE 3: FINANCING STATE WATER PROJECT SHARE OF CALIFORNIA WATERFIX IN 2017 DOLLARS

	Base Case 4% Interest	6% Interest Scenario	8% Interest Scenario	Units
CALIFORNIA WATERFIX CAPITAL COST				
Total Water Facility & Mitigation Capital Costs	16.7	16.7	16.7	2017 $B
FINANCING STATE WATER PROJECT (SWP) PORTION				
SWP SHARE	**55%**	**55%**	**55%**	
SWP Share of Capital Costs	9.2	9.2	9.2	2017 $B
FINANCING RATE	**4%**	**6%**	**8%**	
Term	40	40	40	years
Annual Financing Costs (1)	403	532	673	2017 $M
Annual O&M Costs (1)	35	35	35	2017 $M
TOTAL ANNUAL COSTS	**438**	**567**	**708**	**2017 $M**

(1) When project is fully operational in 2033 (year 15).

Analyses of Cost Impacts

METROPOLITAN SHARE OF PROJECT COST

When excluding the five north-of-Delta contractors, Metropolitan's share of the SWP Table A Contract Amounts is 47.13 percent. Metropolitan's 47.13 percent share can be used to calculate the annual cost impact to Metropolitan from the total financing of the SWP share of California WaterFix. The annual cost impact to Metropolitan for the three scenarios ranges from $207 million in the Base Case to $334 in the 8% Interest Scenario in 2017 dollars. See Table 4.

When compared to Metropolitan's current costs, as represented by the 2017/2018 Revenue Requirement of $1.574 billion, the total annual percentage cost increase to Metropolitan from California WaterFix ranges from 13 percent in the Base Case to 21 percent in the 8% Interest Scenario. Spreading the total annual percentage cost increase over the 15-year period to 2033 when the maximum annual cost impact would be incurred results in an annual average percentage cost increase ranging from 0.9 percent in the Base Case to 1.4 percent in the 8% Interest Scenario.

Dividing the annual cost impact by Metropolitan's 2017/2018 budgeted 1.7 million acre-feet (MAF)[3] sales base provides an estimate of the increase in Metropolitan's average water cost required to recover the annual California WaterFix cost. The increase in Metropolitan's average water cost would range from $122/AF in the Base Case to $196/AF in the 8% Interest Scenario in 2017 dollars. This increase is the largest increase that would be required once the project is fully operational in 2033. Annual increases would be approximated by the annual average percentage cost increases of 0.9 percent in the Base Case to 1.4 percent in the 8% Interest Scenario. Estimates of the annual cost increases have already been incorporated into Metropolitan's ten-year Financial Forecast as part of the planning for California WaterFix. Their impact on rates are also included as part of the long-term projected average 4.5 percent rate increases that have been previously published (see section on Impact on Metropolitan's Ten-Year Financial Forecast).

[3] Based on Metropolitan's 2017/18 Budget.

TABLE 4: METROPOLITAN SHARE OF CALIFORNIA WATERFIX COSTS IN 2017 DOLLARS

	Base Case 4% Interest	6% Interest Scenario	8% Interest Scenario	Units
METROPOLITAN'S SHARE OF ANNUAL PROJECT COSTS				
METROPOLITAN'S SHARE OF SWP	**47.13%**	**47.13%**	**47.13%**	
Financing Costs (1)	190	251	317	2017 $M
O&M Costs (1)	17	17	17	2017 $M
TOTAL COSTS	**207**	**268**	**334**	**2017 $M**
METROPOLITAN'S COST IMPACT				
METROPOLITAN'S OVERALL COST INCREASE	**13%**	**17%**	**21%**	
Annual Cost Increase Over 15 Years	0.9%	1.1%	1.4%	
Average Cost Increase per AF (1,3)	122	157	196	2017 $/AF
Metropolitan's 2017 Full Service Tier 1 Treated Water Rate with California WaterFix (1,3,4)	1,101	1,136	1,175	2017 $/AF
Average Monthly Household Impact (1,3,5)	1.90	2.50	3.10	2017 $
ILLUSTRATIVE MARGINAL COST (UNIT COST)				
Marginal Cost at Clifton Court Forebay (6)	613	793	991	2017 $/AF
Marginal Cost when Treated and Conveyed to Service Area (6,7)	840	1,020	1,218	2017 $/AF

(1) When project is fully operational in 2033 (year 15).
(2) Based on Metropolitan's 2017/18 Revenue Requirement of $1,574M.
(3) Based on Metropolitan's 2017/18 Budget of 1.7 million acre-feet (MAF).
(4) Metropolitan's 2017 Full Service Treated Volumetric Rate = $979/AF.
(5) Based on 6.2 million occupied residential households in the Metropolitan service area and 70 percent residential/30 percent commercial split.
(6) Based on projected average supply improvement of 1.3 MAF/YR.
(7) Based on 2017/18 Budget, $197/AF State Water Contract Power costs and $30/AF variable treatment costs.

Residential Household Impacts in the Service Area:

One measure of the relative cost of California WaterFix is the approximate cost impact to residential households. While it is not possible to calculate the precise water rate impacts at the retail level because of the wide variation in water rates and differential costs and sources of water supplies from retail purveyors, it is possible to approximate an average household impact using basic planning assumptions and data.[4]

There are an estimated 6.2 million residential households in Metropolitan's six-county service area. Residential water use comprises about 70 percent of the total Municipal and Industrial (M&I) water use. By allocating 70 percent of the calculated annual California WaterFix cost to Metropolitan to M&I sector and dividing by the number of residential households, an average household cost impact can be estimated. By this method, the average annual household impact within Metropolitan's service area is estimated to range from $23.30 in the Base Case to $37.70 in the 8% Interest Scenario. On a monthly basis, this presents a range of household impacts of $1.90 in the Base Case to $3.10 in the 8% Interest Scenario.

[4] Metropolitan is a regional wholesale water provider and provides water service only to its 26 member agencies. Some of those agencies provide retail service, but others are only wholesale water providers. Thus, Metropolitan does not provide water directly to retail customers and it has no control over the manner by which any retail water agency recovers its costs for Metropolitan water.

Illustrative Marginal Cost Per Acre-Foot

SWP Contractors do not purchase units of water from the SWP, as previously noted. However, the estimated marginal cost per acre-foot for California WaterFix is still useful for comparing to the marginal costs of other resources and for evaluation purposes.

The total annual costs for the SWP share of California WaterFix when the project is fully operational is expected to range from $438 million in the Base Case to $709 million in the 8% Interest Scenario in 2017 dollars. The project's water supply reliability benefits are described in detail in the second policy white paper, "Modernizing the System: California WaterFix Operations." California WaterFix is estimated to bring an average water supply yield improvement of 1.3 MAF per year based on a range of 1.2 MAF to 1.4 MAF, depending on future regulatory and operating requirements, of which about 55 percent would be the SWP share. Dividing the total annual costs by the average water supply yield results in an estimated marginal cost of $613/AF in the Base Case to $991/AF in the 8% Interest Case in 2017 dollars. This would represent the marginal cost of the supply at the Clifton Court Forebay. To compare the marginal cost of California WaterFix to the marginal costs of other resources within Metropolitan's service area, variable conveyance and treatment costs must be added. The marginal cost of California WaterFix when treated and conveyed to Metropolitan's service area ranges from $840/AF in the Base Case to $1,218/AF in the 8% Interest Case in 2017 dollars[5].

IMPACT ON METROPOLITAN'S TEN-YEAR FINANCIAL FORECAST

Metropolitan's latest Ten-Year Financial Forecast was produced as part of the fiscal year 2016/17 and 2017/18 Biennial Budget. As part of the ongoing planning for California WaterFix, Metropolitan's Ten-Year Financial Forecast included costs for the project that were estimated in 2015. The Ten-Year Financial Forecast costs assumed California WaterFix financing with terms similar to the 6% Interest Scenario but with a construction schedule that had an earlier start and completion date. As a result, the cost projection that was included in the Ten-Year Financial Forecast is higher than each of the three scenarios included in this paper. A comparison of cost estimates of Metropolitan's share of California WaterFix is shown in Figure 6.

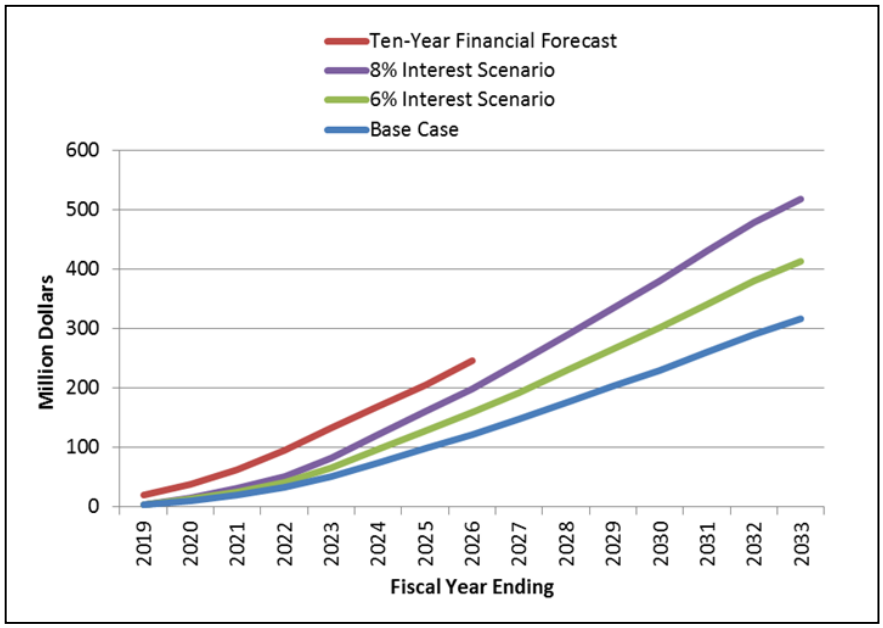

FIGURE 6: COST ESTIMATE COMPARISON OF METROPOLITAN'S SHARE OF CALIFORNIA WATERFIX

The Ten-Year Financial Forecast estimated annual rate increases of 4.5 percent for 2019 through 2026, which included cost estimates for California WaterFix that were higher than those shown in this paper. Thus, the projected rate increases in the Ten-Year Financial Forecast are conservative with respect to California WaterFix, and need not be revised at this time. The projected rate increases from the Financial Forecast are shown below in Table 5.

[5] Based on Metropolitan's 2017/18 Budget, $197/AF State Water Contract Power costs and $30/AF variable treatment costs

TABLE 5: SUMMARY OF PROJECTED RATE INCREASES FROM METROPOLITAN'S 10-YEAR FORECAST

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Avg Rate Increase	1.5%	1.5%	4.0%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

COMPARISONS OF CALIFORNIA WATERFIX COSTS TO OTHER LARGE WATER INFRASTRUCTURE PROJECTS IN THE STATE

The project costs and impacts of California WaterFix on individual public agencies are comparable to the construction of other large water infrastructure projects and underscores the project's economic value.

A survey of both the funding mechanisms used for other public water projects as well as the capital cost impacts of those projects was previously considered in Chapter 8 of the Bay Delta Conservation Plan. As shown in Table 6, per capita costs for California WaterFix facilities compare favorably with other large-scale water projects in California.

TABLE 6: COSTS OF LARGE-SCALE WATER PROJECTS IN CALIFORNIA, SORTED BY PER CAPITA COSTS IN 2017 DOLLARS

Project	Agency	Date Completed	Capital Cost in Billions (1)	Population within Service Area in Millions (2)	Project Cost per Capita
Diamond Valley Reservoir/Inland Feeder	Metropolitan Water District	2000	$3.6	18	$198
Freeport Project	East Bay Municipal Utility District	2010	$0.6	1.3	$481
Emergency Storage Project	San Diego County Water Agency	Est. 2014	$1.7	2.8	$598
Capital Improvement Program	Santa Clara Valley Water District	Ongoing	$1.1	1.8	$620
California WaterFix	**CA Department of Water Resources**	**Est. 2033**	**$16.7**	**25**	**$669**
Los Vaqueros Reservoir Expansion Project	Contra Costa Water District	2012	$0.7	0.55	$1,186
State Water Project	State of California	1965	$19.2	13	$1,476
Coastal Branch Aqueduct	Department of Water Resources and Central Coast Water Authority	1997	$1.1	0.43	$2,444
Hetch Hetchy Aqueduct Improvement Project	San Francisco Public Utilities Commission	Ongoing	$5.1	2.5	$2,052

Source: BDCP Public Draft, November 2013, Chapter 8, Table 8-44.

(1) Capital costs presented in 2017 based on ENR Construction Cost Index – 20 Cities.

(2) Population at time of completion or 2017 for projects not yet completed.

COMPARISON OF CALIFORNIA WATERFIX TO OTHER WATER SUPPLY ALTERNATIVES

Concerns have been raised that California WaterFix is costly and that other local supply alternatives should be developed in its place. To address this, an analysis of potential local supply alternatives is necessary to determine comparable costs. A significant amount of local resources have already been developed through Metropolitan's Integrated Resources Plan (IRP). The 2015 IRP Update continues to target future local resource development in addition to California WaterFix. The 2015 IRP Update process included a comprehensive review of potential local project alternatives and a survey of actual and estimated development costs. Given the range of cost resulting from the financing analyses detailed in this white paper, California WaterFix is a cost-effective component of Metropolitan's IRP. Potential local project alternatives would be more costly than California WaterFix and would result in much higher costs to ratepayers. See Table 7.

Comparing the Cost of California WaterFix with the Cost of Local Resource Alternatives

As presented in the second policy white paper, "Modernizing the System: California WaterFix Operations," the future total water supply from the SWP and CVP with California WaterFix is estimated to range from 4.7 to 5.3 MAF on a long-term average annual basis, while a future condition without California Water Fix is assumed to be 3.5 to 3.9 MAF.

This average increment of 1.3 MAF per year in total SWP and CVP supplies translates to 337,000 AF[6] of supplies available to Metropolitan based on cost and water allocation methodology. Although California WaterFix provides reliability and water quality benefits for all SWP supplies made available to Metropolitan, for purposes of comparing California WaterFix to the costs of alternatives, only the 337,000 AF increment is used.

As shown in Table 4, the marginal cost of a 337,000 AF increment with California WaterFix under the Base Case is calculated at $613/AF in 2017 dollars[7]. The estimated annual cost for California WaterFix to Metropolitan under the Base Case is $207 million in 2017 dollars.

In the 2015 IRP Update, Metropolitan updated its survey of potential local resources projects and local resource development costs. For the purposes of comparing to California WaterFix, rather than developing and analyzing a specific alternative mix of local resources that could be developed to replace a 337,000 AF increment of water supplies from California WaterFix, the cost of two focused alternatives were developed: recycled water and seawater desalination. The estimated cost of developing the two focused alternatives is based on the estimated costs of two specific project examples; the cost of each falls within the range of surveyed costs from the IRP. For the recycled water alternative, the estimated cost of the proposed Regional Recycled Water Project (RRWP) was used. For the seawater desalination alternative, the projected cost of the Carlsbad Desalination Plant was used. Other local supply alternatives, such as distributed stormwater capture, have surveyed cost ranges that are equal to or greater than recycled water or seawater desalination and thus would have total costs that are represented by the two focused alternatives.

Recycled Water Alternative

Based on the 2015 IRP Update survey of local resource development cost, recycled water development ranges in cost between $526/AF and $8,412/AF in 2015 dollars. In addition, Metropolitan recently completed a feasibility study for the Regional Recycled Water Project (RRWP), a large-scale indirect potable reuse project that could provide 165,000 AF per year of water. Based on the feasibility study, the RRWP is estimated to cost $1,610/AF in 2016 dollars. Escalating the cost of the RRWP to 2017 dollars results in a cost of $1,658/AF. After accounting for the offset cost of treating and distributing SWP water supplies from California WaterFix to be equivalent to locally delivered water, the resulting net unit cost of $1,431 can be multiplied by the 337,000 AF increment to obtain a total annual cost of $482 million in 2017.

This annual cost increase is more than twice the annual cost of California Water Fix of $207 million under the Base Case. Using the same method as used previously in this paper to estimate household impact of California WaterFix

[6] Based on Metropolitan's 25.92 percent share of the project.
[7] Based on Metropolitan's 2017/18 Budget, $197/AF SWP power costs and $30/AF SWP variable treatment costs.

at $1.90 per household per month, the recycled water alternative would have a household impact of $4.50 per household per month, an increase of $2.60 over the household impact of California WaterFix.

Seawater Desalination Alternative

Based on the 2015 IRP Update survey of local resource development cost, seawater desalination ranges between $1,530/AF and $2,985/AF in 2015 dollars. The San Diego County Water Authority released a projection of the 2017 unit costs for the Carlsbad Desalination Plant, with an estimated unit cost of $2,412/AF. After accounting for the offset cost of treating and distributing SWP water supplies from California WaterFix to be equivalent to locally delivered water, the resulting net unit cost of $2,185 can be multiplied by the 337,000 AF increment to estimate a total annual cost of $736 million in 2017 dollars. This represents an increase of 256 percent in the additional annual cost over the annual cost of California WaterFix of $207 million under the Base Case. Using the same method as used previously in this paper to estimate household impacts, the seawater desalination alternative would have a household impact of $6.90 per household per month, an increase of $5.00 over the household impact of California WaterFix.

TABLE 7: COST OF ALTERNATIVES TO CALIFORNIA WATERFIX

	California WaterFix Base Case	Recycling Alternative*	Desalination Alternative**	Units
Unit Cost	$613	$1,658	$2,412	2017 $/AF
Loss SWP Power and Variable Treatment Cost (1)	---	($227)	($227)	2017 $/AF
Net Unit Cost	**$613**	**$1,431**	**$2,185**	**2017 $/AF**
Yield (2)	337	337	337	TAF
Annual Cost	**207**	**482**	**736**	**2017 $M**
Cost Increase over California WaterFix		**133%**	**256%**	
Metropolitan's Overall Cost Increase (3)	**13%**	**31%**	**47%**	
Average Cost Increase per AF (4)	122	284	433	
Average Monthly Household Impact (4,5)	**$1.90**	**$4.50**	**$6.90**	**2017 $**

* Based on Regional Recycled Water Program Feasibility Study, base case scenario $1,610/AF in 2016 dollars escalated to 2017 dollars (3 percent). Assumed financing with annual debt service for 30 years at 4 percent.

** Based on projected 2017 unit cost of Carlsbad Desalination Plant as reported by San Diego County Water Authority, unit cost would increase as debt service increases over time (not level debt service). First principle payment deferred until 2020.

(1) Based on 2017/18 Budget, $197/AF State Water Contract Power costs and $30/AF variable treatment costs.

(2) Based on 1.3 MAF average improvement in project water supply x 25.92 percent (Metropolitan's overall share of project)

(3) Based on 2017/18 Revenue Requirement of $1,574 million.

(4) Based on Metropolitan's 2017/18 Budget of 1.70 MAF.

(5) Based on 6.2 million residential households in the Metropolitan service area and 70% residential/30% industrial split.

California WaterFix has been identified in the IRP as part of a balanced and diversified approach to providing a reliable water supply to Southern California. The IRP approach relies upon continued development of local resources and conservation development to meet the growing demands of the service area. Developing additional local resources as an alternative to California WaterFix would be significantly more expensive and result in much higher cost and household impacts.

Implementation and Management Approaches

As noted throughout this policy white paper, many assumptions have been made in Metropolitan's analysis of the project's financial aspects. These include assumptions that have been explicitly stated, such as assumed interest rates and the type of financing, as well as assumptions that have been implied, such as whether the SWP and CVP Contractors assumed to participate in the project and its funding will actually do so. As the project moves forward, these assumptions would be tested, revised, or replaced. This section outlines the implementation and management approaches to cost allocation and financing that will be used as the California WaterFix plans are put into effect.

FINANCING OPTIONS

Assuming California WaterFix moves forward, Metropolitan would coordinate with DWR and the other SWP and CVP Contractors to evaluate options to optimize financing and reduce costs. One way would be to use short-term borrowing (like commercial paper) to finance construction and then periodically replace short-term borrowing with fixed rate bonds. This example would reduce debt service costs by taking advantage of the lower interest rates on the short-term borrowing and eliminating the negative carry[8] on a long-term, fixed bond. Alternative financing options such as those potentially available under the Water Infrastructure Finance and Innovation Act Program (WIFIA) and the Water Infrastructure Loan Act (WILA) would also be explored.

Water Infrastructure Finance and Innovation Act Program

In addition to the outlined revenue bond financing structures, DWR and the SWP and CVP Contractors may also leverage monies that may be available under the Water Infrastructure Finance and Innovation Act Program (WIFIA).

Authorized under the Water Resources Reform and Development Act of 2014 (WRRDA), WIFIA is modeled after 1998's successful Transportation Infrastructure Finance and Innovation Act (TIFIA) to provide low-interest financing (secured loans or loan guarantees) for the construction of water and wastewater infrastructure. WIFIA is similar to State Revolving Fund (SRF) programs, but is intended to provide subsidized financing for large-dollar-value projects. Eligible recipients include corporations, partnerships, municipal entities, and SRF programs.

For fiscal year 2017, WIFIA received initial funding of $20 million, of which $3 million is to be used for administrative purposes, leaving $17 million to subsidize loans. WIFIA leverages federal dollars, so for every dollar Congress appropriates, $50 to $60 is expected to be loaned out. That means the $17 million would leverage an estimated $1 billion in federal loans based on an average rate subsidy of about 2 percent. On May 5, 2017, as part of an omnibus spending bill, Congress appropriated an additional $10 million for WIFIA. The additional $10 million brings WIFIA funding in 2017 to $30 million, which can leverage an estimated $1.5 billion in federal loans. For fiscal year 2018, WIFIA is budgeted to again receive initial funding of $20 million.

Given the funding allocations and eligibility requirements, WIFIA may provide supplemental funding for the project and serve as part of the suite of funding tools. It would not, however, serve as the sole source of project funding.

Water Infrastructure Loan Act

The proposed Water Infrastructure Loan Act (WILA) is modeled after the existing Railroad Rehabilitation Improvement and Financing program. The proposed WILA program is designed to provide financial resources for the maintenance, development, and enhancement of water infrastructure while protecting the interest of the taxpayers. WILA is draft legislation and as such the program does not currently exist. However, with federal legislative action to authorize WILA, the program could provide alternative or supplemental California WaterFix financing with the following benefits:

[8] Negative Carry is a situation in which the cost of holding a security exceeds the yield earned. A negative carry situation is typically undesirable because it means the investor is losing money.

- Low Rate – Reduced Cost
- Locked Rate – Reduced Interest Rate Risk
- Draw Down Feature – Reduced Interest Carry
- Delayed Repayment – Repayment can be deferred until 5 years after substantial completion of the project
- 100 percent of project construction costs financed through WILA.

Metropolitan will continue to monitor the proposed legislation. If WILA becomes available, Metropolitan would work with DWR and the other contractors to evaluate and pursue financing as appropriate.

COST AND WATER SUPPLY MANAGEMENT MEASURES UNDER SWP CONTRACTS

The costs of California WaterFix are substantial. However, as outlined in this policy white paper, the costs that would be allocated to Metropolitan are reasonable and affordable, given the water supply reliability improvements. Indeed, California WaterFix is the least-cost alternative compared with other new long-term water supply options. However, each water contractor is differently situated. For some, the calculations are not as clear as for others, and some SWP Contractors may look to the flexibility under their SWP State Water Contracts as a means of managing their overall reliability needs and cost exposure.

The State Water Contracts have provisions and flexibility that provide SWP Contractors with tools to manage their long-term costs and reliability through various methods, including the purchase and sale of Table A water, exchanges of supplies and transfers of supplies.

While all SWP Contractors south of the Delta would participate in California WaterFix, some contractors may wish to balance the increased reliability of California WaterFix against the increased costs. This would be accomplished by adjusting their contractual rights to Table A water on either a permanent or temporary basis through the mechanisms noted below.

Permanent Table A Adjustment

The State Water Contract provides for permanent transfers of Table A between SWP Contractors. Each transfer involves a price for the transferred Table A that the acquiring contractor pays to the relinquishing contractor. The acquiring contractor also assumes all prospective charges associated with the transferred Table A. In addition, if the contractor needs additional aqueduct capacity to convey the acquired Table A water, there are additional transportation, capital, and O&M charges for additional use of facilities. Finally, in SWP reaches where additional capacity is required, the acquiring contractor would have a one-time obligation for retroactive SWP transportation capital charges. This charge is redistributed among contractors based on repayment reach participation. The SWP retroactive capital charge is similar in concept to Metropolitan's annexation fee.

The SWP Contractor relinquishing Table A is relieved of the prospective charges for the amount of Table A relinquished. That contractor also receives the negotiated price for each acre foot of Table A relinquished.

To make the purchase of Table A more manageable in the future, the SWP Contractors have proposed reducing the period used to calculate the retroactive SWP transportation capital charge. This period is proposed to be changed from all past years to a lesser period, between 30 and 50 years. These discussions, however, are in the early stages and not associated with California WaterFix.

Short Term Adjustment

There is flexibility under the State Water Contract for short and medium term adjustments to Contract payment obligations, while still retaining Table A participation rights. Historically, these adjustments included the Turnback Pool and, for 2013/14 and 2015/16, the Multi-year Market Pool. The price for water in the Turnback Pool is a fraction of the Delta Water Charge. The price for water in the Multi-year Market Pool was market-based.

Additional areas of flexibility under the existing contract include extending the return period for water exchanges, allowing higher return ratios for exchanges; allowing one-year exchanges; and allowing flexibility in cost compensation for exchanges and allowing multi-year transfers and exchanges. Flexibility in the exchange and transfer programs would enable contractors to structure agreements between willing participants to meet the financial and water supply needs of each party. For example, a contractor that desires to have long-term reliability can participate in California WaterFix by entering into medium-term agreements that cover costs in the early stages of construction and operation through multi-year transfers that ensure financial integrity of the selling party and boost reliability of the purchasing party. Multi-year exchanges would serve the same purpose and provide similar benefits to parties entering into those agreements.

Contractor Payment Default

The SWP long-term State Water Contracts require the SWP Contractors to pay for all water supply-related costs of the infrastructure capital, operations, and maintenance of SWP facilities. Thus, a significant concern for the state is the risk of contractor default on their payment obligations. This concern has been addressed through the provisions of the long-term contracts themselves.

The SWP State Water Contracts include articles that obligate each SWP Contractor to make payments. The contract articles also include language that obligates, and if necessary compels, the SWP Contractor to levy taxes or assessments in the event of non-payment. Additionally, the State may suspend water deliveries, within health and safety limits, if the contractor is in default for a significant period.

There are additional provisions related to default on charges for SWP capital facilities financed with revenue bonds. The SWP State Water Contracts provide for the state to protect bondholders and non-defaulting contractors against costs resulting from any SWP Contractor's failure to make payments related to the revenue bonds.

In practice, the State administers this provision by maintaining a revenue bond reserve equal to one half the maximum annual revenue bond debt service for all outstanding revenue bonds and by adding a 25 percent refundable surcharge to the SWP Contractor's revenue bond capital charge.

For California WaterFix, the SWP long-term State Water Contracts would continue as the primary contracting vehicle between DWR and the SWP Contractors. As such, these contracts would address uncertainties relating to default on the payment obligations under the contracts.

MANAGING UNCERTAINTIES

Uncertainties involving financing assumptions and approaches for California WaterFix would largely be addressed through the development of new agreements among the SWP and CVP Contractors, the proposed joint powers authorities, and DWR, as well as through reliance on the considerable protections already in place under the existing SWP long-term State Water Contracts. Processes and commitments would be included in these agreements to reduce financial risks and uncertainties. These agreements will be summarized in detail for the Board's consideration at the time it is asked to render decisions on California WaterFix.

Table 8 highlights some key uncertainties and strategies to reduce risks associated with financing California WaterFix.

TABLE 8: KEY UNCERTAINTIES AND RISK REDUCTION STRATEGIES

Key Uncertainties	Risk Reduction
Interest Rates	• Other financing options would be evaluated to optimize financing and reduce costs, such as short-term borrowing, pursuing WIFIA supplemental funding, or pursuing financing through the potential WILA program.
SWP Contractor Default on Payments	• Protections are already built into the SWP State Water Contracts, obligating the Contractor to make payments, and if necessary, compels the Contractor to levy taxes or assessments in the event of non-payment.
Participation in and Solvency of Finance JPA	• Agreements would provide that in the event DWR cannot make its payments, SWP members would "step up" to pay their fair share of debt service. • Decisions of Finance JPA by a board of directors that would include Metropolitan.
Reimbursement of direct Contractor funding contributions	• DWR would include in its first issuance of revenue bonds an amount sufficient to reimburse Contractor-provided gap funding as well as all prior funding contributions for planning costs.
Judicial Determination on DWR Authority to Issue Bonds	• During pendency of litigation, private placement bond sales with Finance JPA would allow funding for project implementation to proceed. • If DWR is found not to have the requisite authority, a process would be established leading to potential conveyance of interest in the project to the Finance JPA or designee.
CVP Contractor Participation	• DWR would not move forward with project implementation without the commitment of a sufficient number of SWP and CVP Contractors. • Discussions are on-going concerning the risk of a participating CVP Contractor to default during project implementation.

Conclusion

The State Water Project is a vital source of water for Californians that needs reinvestment and modernization.

California WaterFix would be an important step in this effort and would provide wide-ranging benefits both in terms of water supply reliability and environmental improvements. The state and federal water contractors would fund all of the capital costs, associated mitigation, and operation and maintenance costs of the California WaterFix consistent with the beneficiary pays principles.

In looking at California WaterFix and evaluating economic factors, an overriding consideration is whether the benefits of the project's water supply reliability, water quality benefits, resiliency against natural events such as earthquakes and major flood events, and longer term climate change impacts and sea level rise outweigh the project costs and risks. The costs, financing options, and management considerations that have been presented provide a positive cost-benefit analysis and demonstrate that California WaterFix represents an investment in ensuring California's water future.

Note: For additional information on Metropolitan's policies related to California WaterFix, including a policy white paper on infrastructure improvements that would modernize the state's water system and a policy white paper on California WaterFix Operations, see http://mwdh2o.com/ or http://www.mwdh2o.com/DocSvcsPubs/WaterFix/