

MODERNIZING THE SYSTEM: CALIFORNIA WATERFIX OPERATIONS

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

2

Modernizing and improving California's water system are 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 in collaboration with fishery agencies and an unprecedented level of public comment.

Extensive analysis and work has been performed by state and federal water agencies and fish and wildlife agencies to determine conveyance system improvements and an operations framework to improve the direction of river flows in ways that will help native fish species, protect water supplies from climate change impacts and help restore the Delta ecosystem. Details of the proposed operations are addressed in Metropolitan's second white paper and summarized below.



WaterFix Operations Objectives



California WaterFix proposes a strong operations plan based on sound, collaborative science and adaptive management to meet the following objectives:

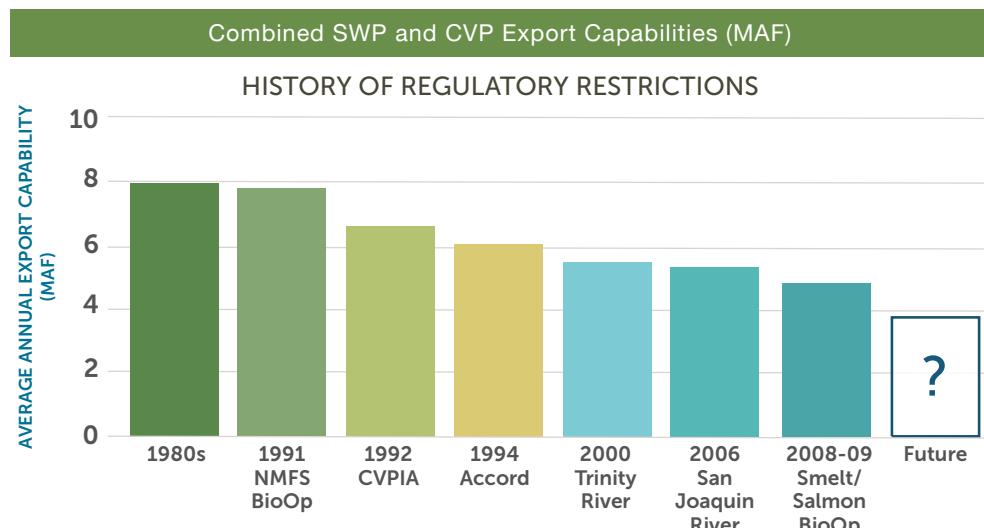
- Improve water supply reliability
- Enhance ecosystem fishery habitat throughout the Delta
- Allow flexible pumping operations in a dynamic fishery environment
- Improve export water quality
- Respond to climate change risks
- Reduce seismic risks



Regulatory Impacts



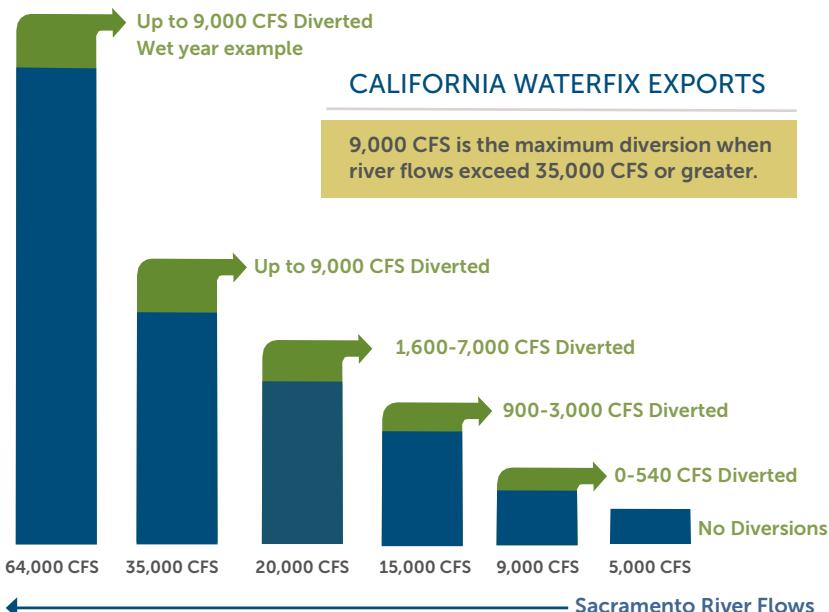
State Water Project and Central Valley Project operations have been, and continue to be, affected by regulations that seek to change flow regimes in the Delta by setting rules for outflow variables. This has decreased operational flexibility and reduced exports to 25 million Californians who receive water from the SWP and CVP south of the Delta and millions of acres of irrigated farmland.



Science-based Operations



As part of the California WaterFix planning process, extensive modeling and analysis has been done to evaluate the potential operational and water supply benefits and to determine the preferred project alternative that will advance the coequal goals of water supply reliability and protecting the Delta ecosystem. Creating a dual conveyance system with additional points of diversion for water exports in the Delta will improve river flow patterns, restore natural tidal fluctuations, reduce entrainment and improve habitat for native fish.



THE BAY-DELTA IS AN EVOLVING PLACE. UNCERTAINTY FROM CLIMATE CHANGE AND OTHER FACTORS WILL BE ADDRESSED BY CALIFORNIA WATERFIX THROUGH AN ADAPTIVE MANAGEMENT STRATEGY.

The most sensitive time of the year for Delta fisheries is December to June. Operations criteria would require a minimum Sacramento River flow before any water could be diverted at the north Delta intakes. The criteria also include biologically-based triggers to benefit fish species. A maximum possible diversion of 9,000 cfs is reached at river flows of 35,000 cfs or greater under the proposed operations.

Source: California WaterFix, State of California
CFS=cubic feet per second

Key Operational Benefits



California WaterFix is an environmentally responsible plan that improves water supply reliability and operational flexibility. Many supply and environmental benefits that have been incorporated into the proposed project operations will:

IMPROVE WATER SUPPLY RELIABILITY

New intakes in the north Delta would provide greater flexibility and reliability by capturing more water in wet and above-normal years. Predicted future water supply for SWP and CVP with California WaterFix would range from 4.7 to 5.3 million acre-feet.

PROTECT FLOWS IN THE DELTA

A more natural flow direction in the Delta during critical fish protection periods will increase water supply reliability and minimize reverse flows. North Delta diversions, fish screen designs, bypass flow criteria and real time operations will be managed to limit effects on listed fish species.

IMPROVE EXPORT AND IN-DELTA WATER QUALITY

With the new north Delta intakes, the quality of water for exports would improve. The project will also protect in-Delta agricultural water quality by maintaining standards and limiting north Delta diversions when river flows are low.

REDUCE CLIMATE CHANGE RISKS

The SWP and CVP pumps in the south Delta are vulnerable to increased salinity from rising sea levels. New northern intakes would greatly improve water quality under future changing conditions.

ADHERE TO INTEGRATED WATER RESOURCE PLAN

Improved water supply reliability would advance Metropolitan's 2015 Integrated Water Resources Plan Update strategy and leverage investments made to the regional storage portfolio over the past two decades.

MINIMIZE ADVERSE IMPACTS TO COMMUNITIES

The footprint, construction activities and proposed operations reflect numerous efforts to minimize adverse impacts to Delta communities and areas of sensitive habitat for fish and wildlife.

OPERATIONAL AND ENVIRONMENTAL BENEFITS

WATER DELIVERY FORECAST

PREDICTED FUTURE WATER SUPPLY FOR SWP/CVP

WITHOUT CALIFORNIA WATERFIX

3.5 TO 3.9 MILLION ACRE-FEET/YEAR*

PREDICTED FUTURE WATER SUPPLY FOR SWP/CVP

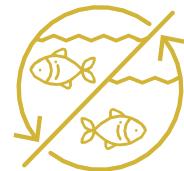
WITH CALIFORNIA WATERFIX

4.7 TO 5.3 MILLION ACRE-FEET/YEAR**

Total SWP and CVP water deliveries

* Proposed w/o northern intake (existing conditions high outflow scenario)

** California WaterFix preferred alternative 4A H3-H4



Reinstate a more natural direction of river flows in the south Delta, minimizing reverse flows.



Protect against saltwater intrusion.



Safeguard against vulnerabilities that threaten water reliability such as earthquake risk and climate change.

Environmental Benefits



MITIGATION

The biological opinions and EIR/EIS for California WaterFix outline mitigation measures related to the construction and future operations of the project. Some of the benefits of the fishery habitat that will be created and restored include:

- Improved habitat conditions along important juvenile salmon migration routes
- Restored tidal and non-tidal wetlands, and native riparian forest habitat
- Increased food production, spawning and rearing areas

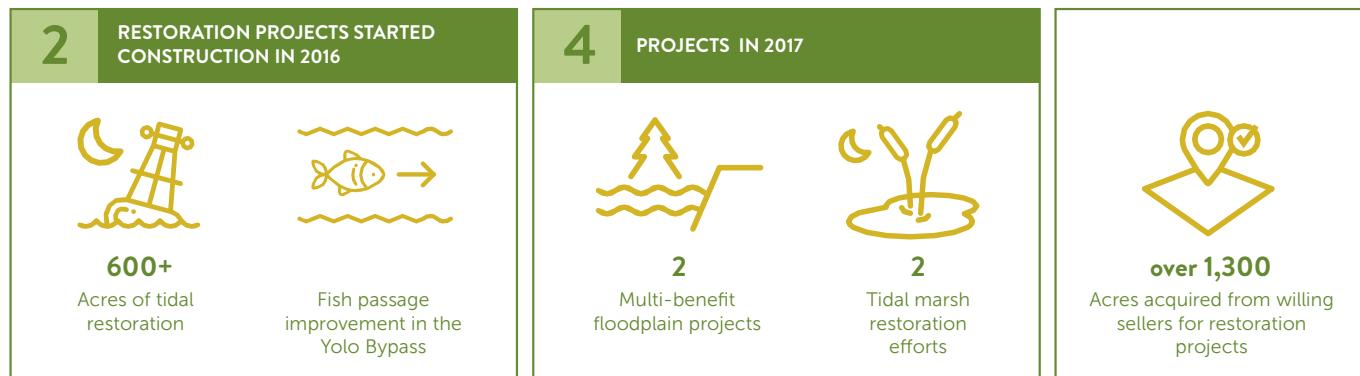
- Natural refuge from predators and changing climate conditions
- Improved connectivity between existing areas of natural habitat

These measures will enhance other state-sponsored programs to restore natural communities and ecological processes including California EcoRestore and the Delta Smelt and Sacramento Valley Salmon Resiliency Plans, both of which contain actions to improve the status of the species. Metropolitan is a strong proponent and active participant with the state on these programs.

CALIFORNIA ECORESTORE

California EcoRestore represents the state's near-term effort to accelerate habitat restoration in the Delta. California EcoRestore is being developed in parallel to California WaterFix, but separate from the mitigation requirements of the project, to improve the long-term health of the Delta. EcoRestore seeks to advance at least 30,000 acres of habitat restoration including 3,500 acres of managed wetlands, at least 17,500 acres of floodplain restoration, 9,000 acres of tidal and sub-tidal habitat restoration and at least 1,000 acres of aquatic, riparian and upland habitat projects and multi-benefit flood management projects.

AFTER TWO YEARS IN OPERATION, CALIFORNIA ECORESTORE HAS MADE SIGNIFICANT PROGRESS:



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.

For a full version of the Operations Policy Paper, visit mwdh2o.com/waterfix

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.

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