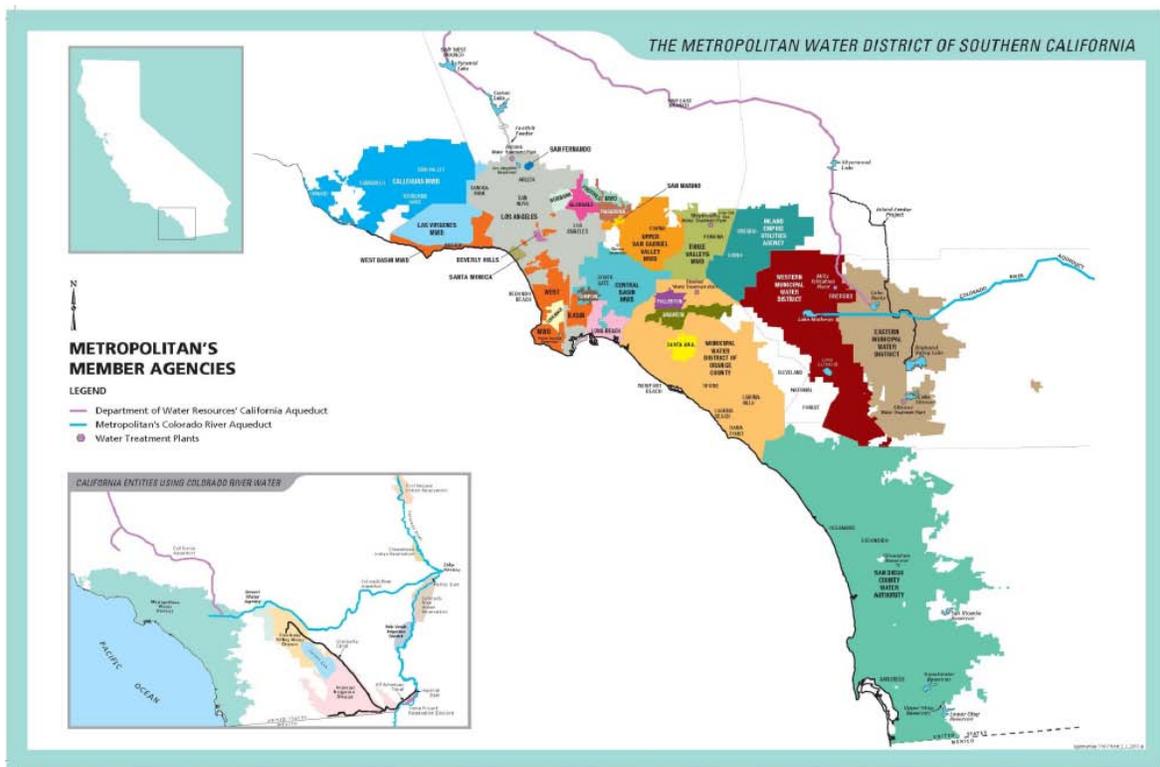


Metropolitan Water District of Southern California

6.1 Description

The Water Authority’s imported water sources include purchases from Metropolitan. Metropolitan was formed in 1928 to develop, store, and distribute supplemental water in Southern California for domestic and municipal purposes. Metropolitan supplies water to approximately 19 million people in a service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. The Metropolitan service area, shown in Figure 6-1, covers a 70-mile-wide strip of the Southern California coastal plain, extending from the city of Oxnard on the north to the Mexican border. Close to half of the water used in this 5,200-square-mile region is supplied by Metropolitan, and about 90 percent of its population receives at least some of its water from Metropolitan. The Water Authority, one of 26 Metropolitan member agencies, is the largest in terms of purchases, purchasing 331,825 AF, or about 21 percent of all the water Metropolitan delivered in fiscal year 2010. The extent to which Metropolitan’s member agencies rely upon Metropolitan supplies varies by the amount of local supplies available or their own reliability goals. Water Authority demands on Metropolitan, provided by Metropolitan, can be found in **Appendix I**.

**Figure 6-1
Metropolitan Service Area**



6.1.1 Metropolitan Act Section 135 – Preferential Right to Water

Under Section 135 of the Metropolitan Act, each member agency has a preferential right to Metropolitan purchases. The preferential rights are determined by each agency's total historic payments to Metropolitan from property taxes, readiness-to-serve charges, and other minor miscellaneous revenue. Revenue resulting from the purchase of Metropolitan water is excluded, even though more than 81 percent of Metropolitan's revenues come from water sales.

Metropolitan member agencies' ability to exercise preferential rights was confirmed in a lawsuit filed by the Water Authority in 2001. The court decisions made clear how much water the Water Authority may count on from Metropolitan should a member agency invoke its preferential right. While the Water Authority had a preferential right to purchase 17.47 percent of Metropolitan's water as of June 30, 2010, it purchased about 21 percent of their available supply in fiscal year 2010.

In Metropolitan's 2010 Regional Urban Water Management Plan (RUWMP), Section 2.3, Metropolitan presents its supply availability at the regional level, rather than at the member agency level. The report stated that the region can provide reliable water supplies under both the single driest year and the multiple dry-year hydrologies through 2035. The report listed Metropolitan's forecasted imported water supply capabilities under normal, single driest year and multiple dry-year hydrologies through 2035, which would provide the Water Authority with adequate supplemental imported supplies in normal years and a single dry-year. In multiple dry years, under its projected preferential right formula, the Water Authority could experience shortages as shown in **Section 9.3**.

6.2 Metropolitan's Water Supplies

Metropolitan obtains its water from two sources: the CRA, which it owns and operates, and the SWP, with which Metropolitan has a water supply contract through the state of California. Figure 6-2 shows these imported water supply sources, and they are described below. In order to meet emerging challenges from dry hydrologic conditions and regulatory restrictions that limit supplies from the SWP, Metropolitan's strategy also includes utilizing its storage programs to maximize available supplies in wet years for dry years' use.

Figure 6-2
Major Water Conveyance Facilities Serving San Diego County



6.2.1 Colorado River

Metropolitan was formed to import water from the Colorado River. During the 1930s, Metropolitan built the CRA to convey this water. Metropolitan's member agencies received the first deliveries in 1941. The aqueduct is more than 240 miles long, beginning at Lake Havasu on the Arizona/California border and ending at Lake Mathews in Riverside County. The aqueduct has capacity to deliver up to 1.25 million AF/YR. Figure 6-2 shows the location of the aqueduct.

6.2.1.1 Reliability Issues

Before 1964, Metropolitan had a firm annual allocation of 1.212 million AF of Colorado River water through contracts with the U.S. Department of the Interior, which was enough to keep Metropolitan's aqueduct full. However, as a result of the U.S. Supreme Court decision in *Arizona vs. California*, Metropolitan's firm supply fell to 550,000 AF, its basic annual apportionment. Due to growth in demand from the other states and drought conditions, since 2003, Metropolitan's deliveries have been limited to its basic annual apportionment plus water resulting from unused apportionment water by other California holders of priorities 1 through 3, and transfer programs resulting from conservation with other senior water right holders.

Water availability from the Colorado River is governed by a system of priorities and water rights that has been established over many years. The Colorado River Lower Basin states (California, Arizona, and Nevada) have an annual apportionment of 7.5 million AF of water divided as follows: (1) California, 4.4 million AF; (2) Arizona, 2.8 million AF; and (3) Nevada, 300,000 AF. The 1931 Seven Party Agreement established California's priorities for water among California's contractors to use Colorado River water made available to California. The first four priorities total the 4.4 million AF/YR available to California. Metropolitan has priorities 4, 5(a), and 5(b) water listed in the Seven Party Agreement, but only priorities 1–4 of the Seven Party Agreement are within California's basic annual apportionment. Metropolitan's fourth priority of 550,000 AF is junior to that of the first three priorities, 3.85 million AF to California agricultural agencies. Water used to satisfy Metropolitan's priorities 5(a) and 5 (b) must come from unused allocations within California, Arizona, or Nevada, or from surpluses declared by the Secretary of the Interior.

6.2.1.2 Environmental Considerations

Several fish species and other wildlife species either directly or indirectly have the potential to affect Colorado River operations, thus changing power operations and the amount of water deliveries to the CRA. A number of species that are on either "endangered" or "threatened" lists under the federal and/or California Endangered Species Acts (ESAs) are present in the area of the Lower Colorado River. To address this issue, a broad-based state/federal/tribal/private regional partnership, which includes water, hydroelectric power, and wildlife management agencies in Arizona, California, and Nevada, developed a multi-species conservation plan for the main stem of the Lower Colorado River (the Lower Colorado River Multi-Species Conservation Program [MSCP]). Developed between 1996 and launched in early-2005, this 50-year plan allows Metropolitan to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations and diversions on the Colorado River. The MSCP also covers operations of federal dams and power plants on the Colorado River.

6.2.1.3 Water Quality Considerations

Please see Section 7, “Water Quality,” for information.

6.2.1.4 Current Supplies

Per the Seven Party Agreement, Metropolitan has a firm Colorado River supply of 550,000 AF from its fourth priority within California’s basic apportionment of 4.4 million AF. Because Metropolitan continues to face dry hydrologic challenges coupled with increasing demands, Metropolitan relied on its fifth priority for up to 662,000 AF/YR (through unused water from holders of priorities 1 through 3, water saved by Palo Verde, or when the U.S. Secretary of Interior declares surplus or unused water by Arizona and/or Nevada), and additional supplies when the Department of Interior declared surplus flows are available. With the 2003 QSA and related agreements among the IID, the Coachella Valley Water District (CVWD), State of California, Department of Interior, Metropolitan, and the Water Authority, a plan was formalized on how California will implement water transfers and supply programs that allow California to live within the state’s 4.4 million AF basic annual apportionment of Colorado River water. Since then, Metropolitan has relied on cooperative transfer programs and storage programs to increase its Colorado River water deliveries beyond its basic priority 4 water.

6.2.1.5 Quantification Settlement Agreement and Future Supplies

The Water Authority, together with CVWD, IID, and Metropolitan, entered into the QSA in October 2003. The QSA, which is in effect for 45 years (and up to 75 years), resolved longstanding disputes regarding Colorado River water use among the agencies, and established a baseline water use for IID, CVWD, and Metropolitan. This permitted the implementation of a variety of water conservation and transfer agreements, including the Water Authority’s transfer agreement with IID. The QSA also provides that CVWD and Metropolitan will put aside, for the term of the agreement, a dispute over beneficial use of water by IID; and that Metropolitan would forbear consumptive use of water to permit the Secretary of Interior to satisfy the uses of the non-encompassed water delivered to holders of present perfected rights. See Section 4.2, “Water Authority – IID Water Conservation and Transfer Agreement,” for more information on the QSA.

Metropolitan's Tables 2-9, 2-10, and 2-11 in its 2010 RUWMP indicate that Metropolitan’s current program Colorado River Aqueduct supply target for an average (based on 1922–2004 hydrologies) and single (repeat of 1977 hydrology) or multiple dry year (based on 1990–1992 hydrology) is 1.25 million AF, the maximum Colorado River Aqueduct delivery capacity. The figure includes water management programs and IID/Water Authority transfers and conserved canal lining water conveyed by the aqueduct.

6.2.2 State Water Project

The SWP is owned by the State of California and is operated by the DWR. Metropolitan has a take-or-pay supply contract with the State of California and is entitled to take about 48 percent of available SWP water through its Long-Term SWP Water Supply Contract (Table A allocation). The project stretches more than 600 miles, from Lake Oroville in the north to Lake Perris in the south. Water is stored at Lake Oroville and released when needed into the Feather River, which flows into the Sacramento River and to the Sacramento–San Joaquin River Delta (Delta). The Delta is the largest estuary on the United States’ west coast and is also home to an agricultural industry, recreation and

fishing, and provides the means by which to deliver water from Northern California to the south. In the north Delta, water is pumped into the North Bay Aqueduct for delivery to Napa and Solano counties. In the south Delta, water is diverted into the SWP's Banks Pumping Plant, where it is lifted into the 444-mile-long California Aqueduct. Some of this water flows into the South Bay Aqueduct to serve areas in Alameda and Santa Clara counties. The remainder flows southward to cities and farms in central and southern California. In the winter, when demands are lower, water is stored at the San Luis Reservoir located south of the Delta. SWP facilities provide drinking water to 23 million Californians and 755,000 acres of irrigated farmland. Figure 6-2 shows the California Aqueduct.

6.2.2.1 Reliability Issues

The reliability of SWP supplies is limited by both the level of SWP supply development and pumping restrictions due to state and federal environmental regulations and hydrology. When approved by the voters in the 1960s, the SWP was planned to deliver 4.2 million AF to 32 contracting agencies. Subsequent contract amendments reduced total contracted deliveries to 4.13 million AF and the number of contracting agencies to 29. Metropolitan's contracted entitlement is 1,911,500 AF. Metropolitan's original long-term water supply contract for 2,011,500 AF was amended as part of the 2003 QSA. Effective in 2005, the amendment resulted in an exchange agreement among CVWD, Desert Water Agency (DWA), and Metropolitan. The exchange agreement provides for the transfer of 88,100 AF of Metropolitan's Table A amounts to CVWD and 11,900 AF of Metropolitan's Table A amounts to DWA. When voters approved construction of the SWP in 1960, state planners did not expect the full amount of contracted water to be needed for at least the first 20 years of the project. As a result, the planners anticipated that the facilities needed to produce the full contracted amount would be constructed over time as demands on the system increased. However, decisions about these additional facilities were repeatedly deferred as public attitudes and environmental regulations changed and costs increased. New state and federal environmental laws put some potential water supply sources off limits to development. More stringent water quality standards adopted by the SWRCB to protect the San Francisco Bay/Sacramento-San Joaquin River Delta have reduced the amount of water available for diversion. Environmental challenges to the SWP operations also resulted in the issuance of new biological opinions, which led to pumping restrictions that further reduced SWP exports. At the same time, California's population and water demand continued to grow.

Since 2006, a voluntary collaboration of state, federal and local water agencies, state and federal fish agencies, environmental organizations, and other interested parties began development of the Bay Delta Conservation Plan (BDCP). The purpose of the BDCP is to restore and protect Delta water supply, water quality, and ecosystem health within a stable regulatory environment. A parallel effort, the Delta Habitat Conservation and Conveyance Program (DHCCP) is in process, and is the state government's mechanism for achieving the BDCP's goals.

In November 2009, the state Legislature passed a package of bills that established in state policy the co-equal goals of water supply reliability and environmental restoration in the Delta. The bills also provided a governance structure for the Delta and required the preparation of a Delta Plan to guide the process of achieving the co-equal goals and outline a plan to restore listed species. The Delta Stewardship Council, an independent state agency, is required to develop the Delta Plan by January 1, 2012. In order for the BDCP to be incorporated into the Delta plan and for public funds to be made available for public restoration benefits, the BDCP must also be approved by the California Department of Fish and Game (CDFG) as a Natural Community Conservation Plan (NCCP). If unsuccessful,

operational constraints likely will continue until a long-term solution to the problems in the Delta is implemented.

DWR's *2009 State Water Project Delivery Reliability Report* updated DWR's estimate of the current and future water delivery reliability of the SWP. The 2009 report showed that future deliveries will be further impacted by significant restrictions due to operational requirements contained in federal biological opinions and forecasted effects of climate change, which is changing the hydrologic conditions of the state. The 2009 report projected that the primary component of the annual SWP deliveries will be less, when compared to the preceding 2007 report, where the 2007 report incorporated interim and less restrictive operational requirements established by federal Judge Oliver Wanger in 2007. For current conditions, the dominant factor for the SWP's reductions is the restrictive operational requirements contained in the federal biological opinions. For future conditions, it is the restrictive operational requirements coupled with the forecasted effects of climate change. Metropolitan's SWP deliveries projection listed in its RUWMP are based on DWR's *Draft 2009 Report*, which is substantially the same as the final report. For dry, below-normal conditions, Metropolitan also developed its Central Valley storage and transfer programs to increase its supply capabilities.

In developing its supply capabilities, Metropolitan assumed a new Delta conveyance as fully operational by 2022 and would return supply reliability similar to 2005 conditions, prior to supply regulatory restrictions imposed. Metropolitan also assumes near-term improvements that could potentially provide a 10% increase in water supplies obtained from the SWP allocation for the year. Additional supplies from this interim fix are assumed to materialize by 2013. In terms of water supply impacts, Metropolitan identified regulatory restrictions water costs of over one million AF between both the SWP and the federal Central Valley Project in 2010.

6.2.2.2 Environmental Considerations

In recent years, actions taken to protect the ecosystem of the Bay-Delta have placed additional restrictions on SWP operations. The Bay-Delta is the largest estuary on the west coast and supports more than 750 plant and animal species. However, 150 years of human activity, dating back to 19th century gold mining, has taken its toll on the Bay-Delta ecosystem and the fish that live there.

Numerous factors contribute to the degradation of the Bay-Delta ecosystem and the decline of Delta fisheries, such as habitat loss, water diversions, non-point source pollution, over-fishing, and the introduction of nonnative species. Regulatory protection efforts have nevertheless tended to focus on the operations of the SWP and the federal Central Valley Project (CVP). The restrictions began in 2007, when Federal Court Judge Oliver Wanger, acting in a case filed two years earlier, invalidated the Biological Opinion (BiOp) for the Delta smelt and imposed an injunction that limited the time during which water could be pumped out of the Delta. The judge imposed restrictions on pumping to protect the Delta smelt, while new BiOps were being prepared. During the spring of 2008, Judge Wanger also invalidated the federal government's BiOps with respect to salmon and steelhead in the Sacramento River. In December 2008, the U.S. Fish and Wildlife Service (USFWS) issued a new BiOp for the Delta smelt. This BiOp imposed operating restrictions that were even more severe than those imposed by the judge. Metropolitan and other State Water Contractors filed separate lawsuits in federal district court challenging the BiOp.

On June 4, 2009, the National Oceanic and Atmospheric Administration National Marine Fisheries Service issued a BiOp intended to protect spring- and winter-run Chinook salmon, Central Valley

steelhead, green sturgeon, and Southern Resident killer whales. This action placed additional restrictions on SWP and CVP operations. By the spring of 2010, Judge Wanger granted a preliminary injunction against the federal government's implementation of pumping restrictions under the salmon BiOp. The judge said that the federal government had not properly taken into account the impact the restrictions would have on people in the Central Valley and had not justified the need for imposing the harshest restrictions within the range stated in the biological opinion. Shortly thereafter, as with the salmon ruling, Judge Wanger found that water officials must consider impacts on humans along with the delta smelt. He also found that water users made convincing arguments that the federal government's science did not prove that increased pumping from the delta imperiled the smelt. Deliveries estimated for DWR's *2009 Report* are reduced by the operational restrictions of the biological opinions issued by the USFWS in December 2008 and the National Marine Fisheries Service in June 2009 governing the SWP and Central Valley Project operations.

On December 14, 2010, Judge Wanger issued a decision in the Delta Smelt consolidated lawsuits. He granted a number of the State Water Contractors', CVP Contractors', and other plaintiffs' motions for summary judgment, while denying others. On the whole, the decision invalidates the federal government's biological opinions on the Delta smelt and lessens the resulting restrictions on water supply to the state and federal water contractors. It is expected that Judge Wanger will most likely call a remedies hearing, at which the water contractor plaintiffs and the federal defendants will work to agree on a new set of restrictions based on the decision. There are still hearings to be held on the biological opinion regarding salmon. In addition, another lawsuit by environmentalist organizations is challenging the federal government's decision not to list the longfin smelt as endangered. Should the federal government lose that lawsuit, the restrictions on pumping to protect the longfin smelt may erase any gains in water supply resulting from the Wanger decision.

6.2.2.3 Water Quality Considerations

Please see Section 7, "Water Quality," for information.

6.2.2.4 Current Supplies

Metropolitan's SWP supplies are projected using DWR's *Draft 2009 State Water Project Delivery Reliability Report*. The reliability report presents current DWR estimates of the amount of water deliveries for current (as of 2009) and 20 years in the future conditions. The estimates incorporate restrictions on SWP and CVP operations in accordance with the biological opinions of the USFWS and National Marine Fishery Service issued on December 15, 2008, and June 4, 2009, respectively. Under the reliability report, the delivery estimates for the SWP for current conditions as percentage of maximum Table A amounts are 7 percent under a single dry-year (1977) condition, which is equivalent to 134,000 AF, and 60 percent under long-term average conditions, which is equivalent to 1.15 million AF. In dry, below-normal conditions caused by dry hydrologic conditions and regulatory restrictions, Metropolitan developed additional supplies from Central Valley storage and transfer programs.

6.2.2.5 Future Supplies

Metropolitan's 2010 RUWMP indicates that Metropolitan's SWP target for "current programs" in a single dry year (based on 1977 hydrology) is 522,000 AF in 2015, 601,000 AF in 2020, and 651,000 AF in 2025. The 2010 RUWMP also estimates that in the 2030–2035 period, Metropolitan's annual supply range from the SWP will be between 609,000 and 610,000 AF. These figures include Central

Valley transfer and storage program supplies conveyed by the aqueduct. In Metropolitan's 2010 RUWMP, the increased supply yield from a long-term delta fix is contained in "programs under development." The 2010 RUWMP estimates that the SWP "current programs" will be capable of serving between 1.55 million to 1.73 million AF to Metropolitan from 2015 through 2035 in an average year.

6.2.3 Storage Management Programs

Metropolitan relies on water in storage to augment at times limited imported supplies. It manages its storage portfolio by storing water during wet years to meet the region's needs during critical droughts caused by varied hydrologic conditions and SWP pumping restrictions imposed to protect endangered or threatened fish species. Metropolitan's likelihood of having adequate supply capability before environmental issues that caused Delta pumping restrictions are addressed to meet projected demands, without implementing the Water Supply Allocation Plan (WSAP), is largely dependent on its storage resources. The principles that guide the management of supply and storage are based on the framework established in the Water Surplus and Drought Management (WSDM) Plan, and is being further refined through the WSAP update process. Currently, Metropolitan has about 30 storage programs in operation that provide flexibility to meet delivery requirements. The storage accounts include groundwater and surface storage programs and facilities, within and outside of Metropolitan's service area. Metropolitan's dry-year storage portfolio has the potential to store more than 5 million AF.

Metropolitan's 2010 RUWMP indicates that the in-region storage and programs target for "current programs" in a single dry year (based on 1977 hydrology) is 685,000 AF in 2015, 931,000 AF in 2020, and 1,076,000 AF in 2025. The 2010 RUWMP also estimates that in the 2030–2035 period, Metropolitan's annual supply range from the in-region storage and programs will be 964,000 and 830,000 AF, respectively. The 2010 RUWMP estimates that the in-region storage and transfer program will be capable of serving between 830,000 AF and 964,000 AF to Metropolitan from 2015 through 2035 in an average year.