

# Urban Water Management Plans

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Approval Process and Contents

# San Diego Taxpayers Educational Foundation

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## Urban Water Management Plan (UWMP) Backgrounder

*July 2012*

### ***Introduction***

Water remains a precious resource in Southern California. A dry Mediterranean climate forces the region to import the majority of its water from other areas, and high prices result due to the costs of procuring and transporting imported water. Expansion of the San Diego region requires access to more water in order to meet the demand from new businesses, construction, and households. State law mandates urban water wholesalers and local agencies release a plan in years ending in five and zero detailing local water issues and strategies to cope with water scarcity. The following table shows predicted population growth in the San Diego region according to San Diego Association of Governments' (SANDAG) estimates<sup>1</sup>:

<b>Year</b>	<b>Population</b>
2015	3,271,773
2020	3,438,837
2025	3,599,952
2030	3,758,933
2035	3,906,718

In light of an increasing population, the Urban Water Management Plan is a chance for the San Diego County Water Authority (SDCWA) and local water agencies to convey to the State of California and the public how it plans to adapt to resource constraints. This report examines the history and contents of Urban Water Management Plans (UWMPs) in the San Diego region.

### ***Urban Water Management Planning Act***

The Urban Water Management Planning Act mandates that utilities publish a UWMP every five years. The mandate applies to all water suppliers that provide more than 3,000 acre-feet of water to customers every year or has more than 3,000 water supply connections (houses, restaurants, office buildings, etc). The Act requires water suppliers to provide an assessment of estimated water reliability over 20 years. Furthermore, suppliers must consider water supply strategies in differing climatic conditions: normal water supply years, one drought year (dry-year)<sup>2</sup>, and two or more drought years in a row. Each water supplier submits the UWMP to the California Department of Water Resources for review to ensure the water supplier has completed all requirements.

<sup>1</sup> SANDAG 2050 Regional Growth Forecast. February 26 2010. SANDAG Board of Directors. Retrieved from <[http://www.sandag.org/uploads/projectid/projectid\\_355\\_10794.pdf](http://www.sandag.org/uploads/projectid/projectid_355_10794.pdf)>.

<sup>2</sup> A dry year is defined by the Water Authority as a year in which rainfall is below the long-term average.

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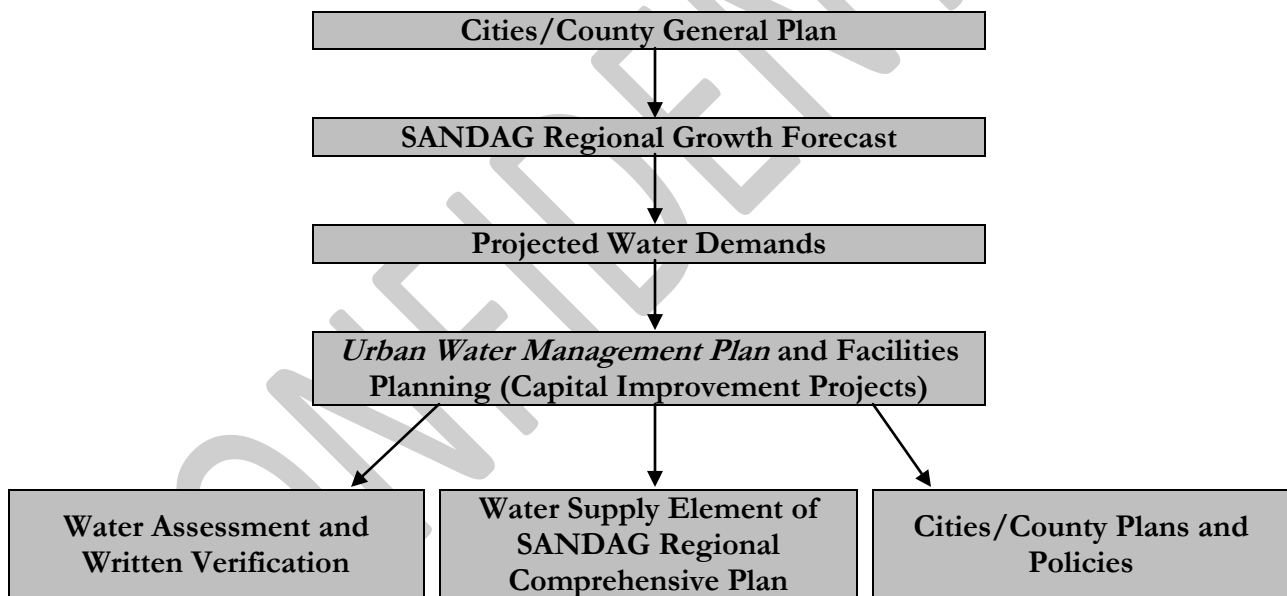
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In November 2009, the Water Conservation Act (SBX 7-7) passed as part of Governor Schwarzenegger's 20x2020 plan. The 20x2020 plan requires a 20 percent reduction in daily per capita urban water usage by the year 2020. Under the new law, it is possible that some reporting requirements will change. Although not all water suppliers address the 20x2020 plan directly in their UWMP, they must consider the 20 percent reduction goal when designing water conservation strategies.<sup>3</sup> SDCWA provides demand forecasts under normal circumstances and forecasts under SBX 7-7 compliance.

## *UWMP Adoption Process*

The UWMP has become a part of larger planning efforts in the San Diego region. SANDAG now considers SDCWA's Plan to be part of its comprehensive planning strategy and SDCWA uses SANDAG population estimates when calculating projections. The following figure shows the importance of the UWMP in general regional planning<sup>4</sup>:

**Figure 1: UWMP Adoption Process**



The 2010 UWMP creation and adoption process took over a year to complete. SDCWA must make time for input from member agencies, the public, and any other stakeholders. Table 2 shows a timeline for the creation of SDCWA's 2010 UWMP:

<sup>3</sup> *Urban Water Management*. California Department of Water Resources. Accessed 12 Feb 2012. <<http://www.water.ca.gov/urbanwatermanagement/>>.

<sup>4</sup> Information provided by the San Diego County Water Authority

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<b>Table 2: 2010 UWMP Adoption Timeline<sup>5</sup></b>	
<b>Oct 1, 2009</b>	Kick-off Meeting with member agencies
<b>Aug 26, 2010</b>	Report to Board on schedule for preparation of the 2010 Plan
<b>Feb 10, 2011</b>	Committee workshop on preliminary baseline demand forecast and supply mix
<b>Feb 25, 2011</b>	Preliminary demand forecast distributed to member agencies
<b>Mar 7, 2011</b>	Host Department of Water Resources workshop on preparation of 2010 Plan
<b>Mar 31, 2011</b>	Member agency draft 2010 Plan distributed to Board and public for review
<b>Apr 28, 2011</b>	Update to Board on schedule and release of 2010 Plan
<b>May 6, 2011</b>	Public hearing to receive comments on draft 2010 Plan
<b>May 23, 2011</b>	Committee workshop on proposed elements of 2010 Plan, including demand forecast and supply mix
<b>May 26, 2011</b>	Public hearing to receive comments on draft 2010 Plan
<b>June 6, 2011</b>	Comments due on draft 2010 Plan
<b>June 15, 2011</b>	Final draft 2010 Plan distributed to Board

Using projections from member agencies, SDCWA establishes a baseline demand forecast. The baseline demand forecast is simply a prediction of how much water SDCWA will need annually over the 20 year UWMP planning horizon. Throughout the process, directors at member agencies have the right to suggest changes to the draft UWMP in order to make it more accurate and representative.

The SDCWA approves and adopts a UWMP with a Board vote. The vote must be greater than 55% and, as with all SDCWA Board votes, the vote is weighted according to the size of each individual member agency.

The City of San Diego and other cities in the region follow a similar process. In the City of San Diego, a UWMP draft is written and released to stakeholders and the public followed by a period of public comment. After San Diego's Long-Range Planning and Water Resources Department gives a presentation to the Independent Ratepayers Oversight Committee and the Natural Resources and

<sup>5</sup> Memo to the Water Planning Committee. *Adoption of the Water Authority's 2010 Urban Water Management Plan*. San Diego County Water Authority. June 15 2011, p 1.

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Culture Committee, the UWMP moves to the City Council for a simple majority vote.<sup>6</sup> The 2010 City of San Diego UWMP was adopted by a City Council vote on June 28, 2011.<sup>7</sup>

## *Water Supply*

The San Diego County Water Authority seeks to diversify water sources in order to become less dependent on water from the Metropolitan Water District of Southern California. As diversification continues, price increases from one source (MWD for example) should have less of an effect on local ratepayers. The following charts show that current and estimated future reliance on MWD is expected to decrease:

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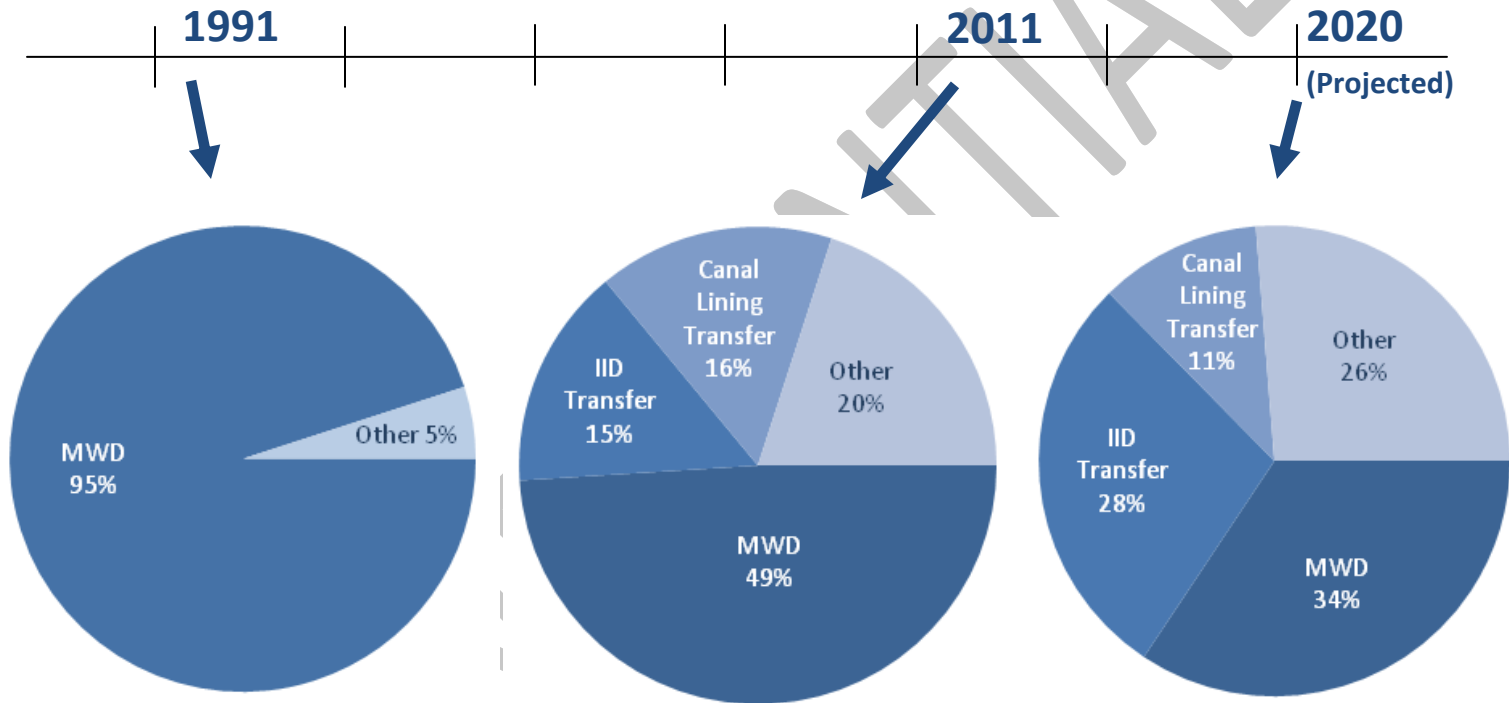
<sup>6</sup> Presentation to the Natural Resources and Culture Committee. *2010 Urban Water Management Plan*. May 2011.

<sup>7</sup> Adoption of the 2010 Urban Water Management Plan. *City of San Diego Council Docket for June 28, 2011*.

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Figure 2: Water Supply by Source



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## *Imperial Irrigation District Transfer Agreement*

In 1998, SDCWA and the Imperial Irrigation District (IID) signed an agreement called the Water Authority-IID Water Conservation and Transfer Agreement. Under the agreement, IID sells water conserved by Imperial Valley farmers to the Water Authority. Imperial Valley farmers participate voluntarily in the IID transfer program. The first official transfer happened in 2003 and consisted of 10,000 AF of water. The amount increased to 70,000 AF by 2010 and the Water Authority projects the transfer amounts will increase in the future and stabilize around 2025:

2010	2015	2020	2025	2030	2035
70,000	100,000	190,000	200,000	200,000	200,000

IID does not deliver transferred water directly to SDCWA. The terms of the agreement state that IID delivers the water to MWD through its Colorado River Aqueduct and MWD then delivers a “like quantity and quality” of water to the Water Authority.<sup>9</sup>

The Water Authority purchases IID transfer water through rates and charges. The price began at \$258 per acre foot and increased each of the next seven years. A fifth amendment to the Transfer Agreement, executed in December 2009, states that the price will be \$405 per acre foot in 2010 and increase to \$624 per acre foot by 2015. The following figure shows the progression in price from 2003 to 2015<sup>10</sup>:

<sup>8</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-5. June 2011.

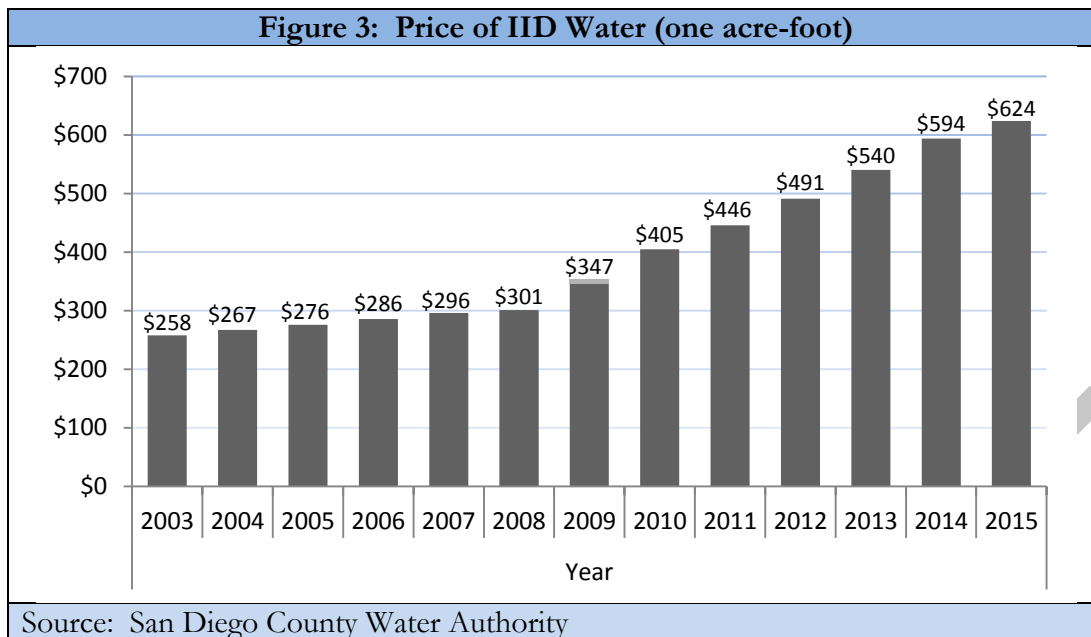
<sup>9</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-3. June 2011.

<sup>10</sup> QSA 5<sup>th</sup> Amendment. <http://www.sdcwa.org/sites/default/files/files/FifthAmendment-iid-sdcwa.PDF>



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From 2016 to 2034, the price will increase by the national rate of inflation released annually by the Bureau of Economic Analysis.<sup>11</sup> In 2035 the Water Authority and IID have the option to negotiate a market price.<sup>12</sup>

Transportation costs began at \$253 per acre-foot and have been set by MWD's Board of Directors every year since. In 2010, the transportation charge per acre foot was \$314.

Other expenses incurred as part of the agreement include:

- Ten million dollars were reserved by SDCWA to counter effects of land following (IID will credit this amount back to SDCWA over time)
- \$64 million will be paid by SDCWA for environmental mitigation projects and the Salton Sea Restoration Fund

### ***All-American Canal and Coachella Canal Lining Projects***

The Water Authority is responsible for funding the All-American Canal and Coachella Canal lining projects. The canals experience a loss of water through seepage, and the Water Authority's canal lining projects result in a decrease in seepage and an increase in the water supply. Due to its funding

<sup>11</sup> QSA 5<sup>th</sup> Amendment. <http://www.sdcwa.org/sites/default/files/files/FifthAmendment-iid-sdcwa.PDF>

<sup>12</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-4. June 2011.

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of the projects, the Water Authority is entitled to the conserved water. The projects will result in 8.5 million more acre-feet during the 110-year agreement.<sup>13</sup>

Financing of the projects came from the state and SDCWA. California Water Code Section 12560 required that California provide \$200 million in the funding of the canal lining projects. Proposition 50, passed by voters in 2002, made available \$3.44 billion in bonds to fund water projects throughout the state.<sup>14</sup> The canal lining projects received \$20 million from Proposition 50. An additional \$36 million was made available from Proposition 84. Any additional expenses had to be paid by the Water Authority. Furthermore, some of the operation, maintenance, and repair costs are paid through the Water Authority's rates and charges.<sup>15</sup>

The Water Authority, however, does not keep all of the water saved by the canal lining projects. In 2003, an Allocation Agreement stipulated that the San Luis Rey Indian Water Rights Settlement Parties were entitled to 16,000 acre-feet per year. The table below shows how much the Water Authority and the San Luis Rey Indian Tribe each receive from the lining projects<sup>16</sup>:

All-American Canal	67,700
Coachella Canal	26,000
Sub-Total	93,700
<i>San Luis Rey Indian Water Rights Settlement Parties</i>	<i>(16,000)</i>
<b>Total Water Authority Supply</b>	<b>77,700</b>

## ***Carlsbad Seawater Desalination Project***

The Carlsbad Desalination Project began in 1998 and, when it begins to run at full capacity, will provide approximately 56,000 acre-feet per year to the San Diego region. The estimated 56,000 acre-feet per year is expected to remain steady as long as the desalination plant is running. The Water Authority believes that the plant will be running at full capacity by early 2016. The treated water is expected to cost about \$1,600 per acre-foot and will be paid for by SDCWA. To guarantee future public ownership of the Desalination Project, the Water Authority has the option to buy the plant for \$1 after 30 years of operation.<sup>17</sup>

Similar desalination projects are being pursued at Camp Pendleton and Rosarito Beach. In May 2009, the Board of the Water Authority authorized \$5.72 million to continue feasibility studies. In

<sup>13</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-5. June 2011.

<sup>14</sup> Legislative Analyst's Office. *Proposition 50 Resources Bond: Funding Eligibility of Private Water Companies*. Retrieved from <[http://www.lao.ca.gov/2004/prop\\_50/051404\\_Prop\\_50\\_Bonds.htm](http://www.lao.ca.gov/2004/prop_50/051404_Prop_50_Bonds.htm)>.

<sup>15</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-6. June 2011.

<sup>16</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-6. June 2011.

<sup>17</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 4-9. June 2011.

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April 2010, a Memorandum of Understanding was agreed upon by the Water Authority and Camp Pendleton. Further studies are expected to be released by 2012. An official feasibility study for the Rosarito Beach Desalination Project is being funded by the Water Authority, Southern Nevada Water Authority, and the Central Arizona Water Conservation District. If built, the plant is expected to begin with a capacity of 25 million gallons per day, which could increase to a capacity of 75 million gallons per day.

## *Member Agency Water Demand*

The population increase projections released by SANDAG suggest that the area will continue to expand economically as more people move to the San Diego region. The Water Authority projects water demand by each of its member agencies to increase over the next 20 years. The following table shows the Water Authority's predicted member agency dependence on SDCWA in acre-feet per year using SANDAG's population increase estimates<sup>18</sup>:

<b>Table 5: SDCWA Projected Member Agency Demand (acre-feet)</b>			
<b>Member Agency</b>	<b>2015</b>	<b>2035</b>	<b>% Change</b>
Carlsbad MWD	16,862	23,253	37.90%
City of Del Mar	1,222	1,266	3.60%
City of Escondido	23,734	24,601	3.65%
Fallbrook PUD	14,140	18,318	29.55%
Helix WD	33,441	37,898	13.33%
Lakeside WD	4,114	5,043	22.58%
City of Oceanside	23,566	26,702	13.31%
Olivenhain MWD	21,118	22,854	8.22%
Otay WD	40,483	48,524	19.86%
Padre Dam MWD	14,935	18,656	24.92%
Camp Pendleton	850	850	0.00%
City of Poway	12,593	14,076	11.78%
Rainbow MWD	21,537	26,137	21.36%
Ramona MWD	11,213	12,539	11.83%
Rincon del Diablo MWD	3,696	7,024	90.04%
City of San Diego	201,721	260,107	28.94%
San Dieguito WD	4,736	5,836	23.23%
Sante Fe ID	8,738	8,919	2.07%
Sweetwater Authority	8,125	5,292	-34.87%
Vallecitos WD	18,666	19,949	6.87%
Valley Center MWD	32,497	38,537	18.59%
Vista ID	16,080	20,000	24.38%
Yuima WD	2,098	2,707	29.03%
<b>TOTAL</b>	<b>536,165</b>	<b>649,088</b>	<b>21.06%</b>

<sup>18</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 2-14. June 2011.

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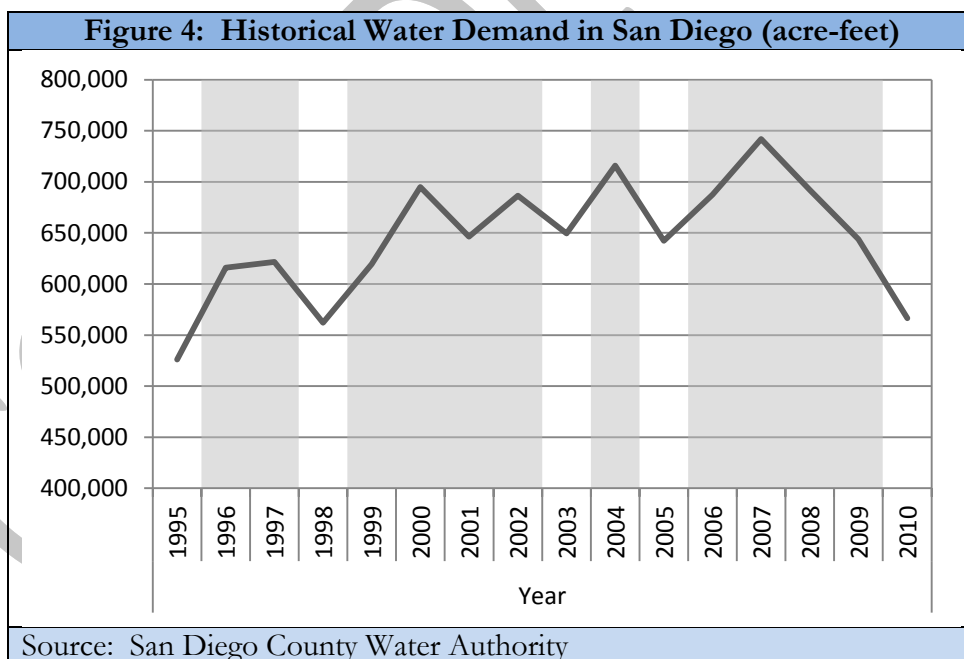
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## Dry Years

In accordance with the Urban Water Management Plan Act, all urban water suppliers must project water supplies in dry years and multiple dry years. A dry year is defined as any year in which rainfall is below the long-term average. The table below displays water sources and supply amounts in acre-feet per year during a normal (non-dry) year<sup>19</sup>:

Source	Year				
	2015	2020	2025	2030	2035
Water Authority Supplies	180,200	326,200	336,200	336,200	336,200
Member Agency Supplies	108,896	118,288	122,101	124,180	125,647
MWD Supplies	358,189	230,601	259,649	293,239	323,838
<b>TOTAL</b>	<b>647,285</b>	<b>675,089</b>	<b>717,950</b>	<b>753,619</b>	<b>785,685</b>

However, over the last 15 years there have been more dry years than normal years. The following table shows total yearly water demand in acre-feet from the Water Authority. The line represents the total number of acre-feet used in that year. Shaded regions represent dry years and non-shaded regions represent normal years<sup>20</sup>:



<sup>19</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 9-2. June 2011.

<sup>20</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 1-15. June 2011.

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As shown by the graph, only five of the last 15 years have been normal years according to standards set by UWMP. The following table shows water supply in acre-feet during a single dry year<sup>21</sup>:

<b>Table 7: Single Dry Year Water Supply (acre-feet)</b>					
Source	Year				
	2015	2020	2025	2030	2035
Water Authority Supplies	180,200	326,200	336,200	336,200	336,200
Member Agency Supplies	76,889	87,157	90,032	91,707	93,427
MWD Supplies	430,431	305,101	338,501	376,023	409,389
<b>TOTAL</b>	687,520	718,458	764,733	803,930	839,016

Also required by the UWMP Act are projections for multiple continuous dry years. The following table displays projected water supplies for a three year period beginning in 2012<sup>22</sup>:

<b>Table 8: Multiple Dry Year Supply (acre-feet)</b>			
Source	Year		
	2012	2013	2014
Member Agency Supplies	69,597	84,440	103,907
Water Authority Supplies	170,200	180,200	180,200
MWD Allocation	317,760	319,177	320,456
Total Estimated Supplies	557,557	583,817	604,563
Total Estimated Demand	658,381	679,509	711,241
<i>Potential Shortage</i>	<i>(100,824)</i>	<i>(95,692)</i>	<i>(106,678)</i>
MWD Carryover <sup>23</sup>	40,000	40,000	30,000
<i>Remaining Shortage</i>	<i>(60,824)</i>	<i>(55,692)</i>	<i>(76,678)</i>

Any potential shortage is unmet demand due to multiple dry years. The MWD carryover amount is an amount delivered from MWD to SDCWA in case of a water shortage caused by drought. The difference between potential shortage and MWD carryover is the remaining shortage. The remaining shortage is addressed through Management Actions. Management Actions begin with voluntary conservation and progress to various levels of official drought status in order to achieve needed water savings to meet the remaining shortage.<sup>24</sup>

<sup>21</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 9-3. June 2011.

<sup>22</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 9-4. June 2011.

<sup>23</sup> The Water Authority assumes this amount will come from MWD in the case of multiple dry years.

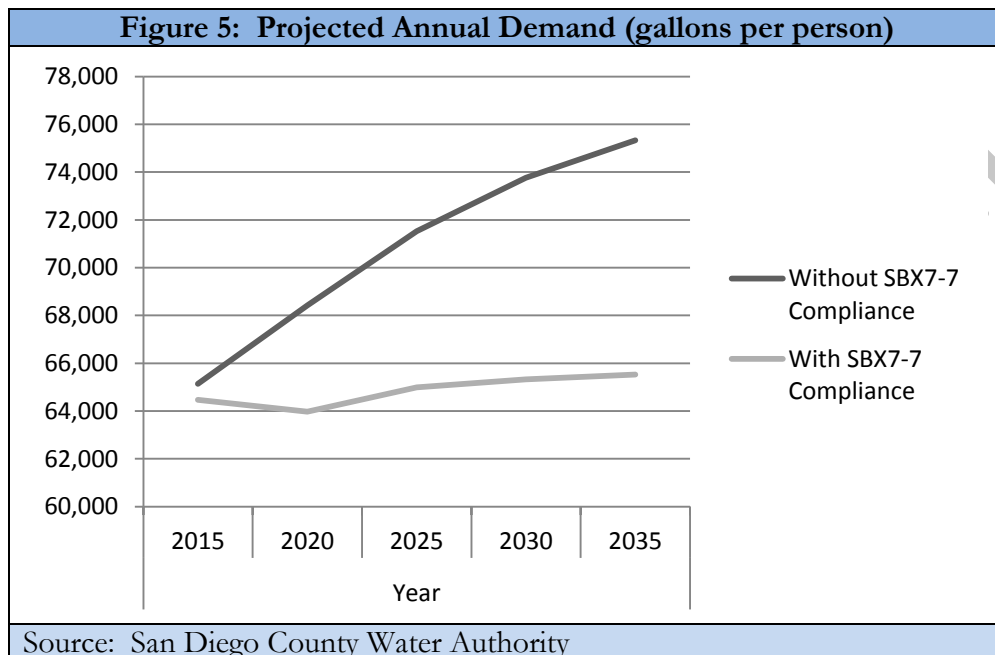
<sup>24</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 11-6. June 2011.

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## SBX 7-7 (20x2020) Water Conservation Projections

SDCWA's 2010 UWMP directly addresses the need to curb per capita water usage by 20 percent by 2020. Using the original forecast without 20x2020 compliance, SDCWA also provides the original baseline without conservation. The following chart shows projected usage with and without compliance<sup>25</sup> using SANDAG's population growth estimates<sup>26</sup>:



SDCWA expects total per capita water demand to remain flat at around 65,000 gallons per person per year. The following table shows projected year-by-year water conservation savings in gallons:

	2015	2020	2025	2030	2035
Without SBX 7-7 Compliance	65,137	68,418	71,528	73,761	75,335
With SBX 7-7 Compliance	64,466	63,969	64,990	65,328	65,532
<b>Difference</b>	<b>671</b>	<b>4,449</b>	<b>6,538</b>	<b>8,433</b>	<b>9,803</b>

<sup>25</sup> San Diego County Water Authority. *2010 Urban Water Management Plan*, p 9-2. June 2011.

<sup>26</sup> SANDAG 2050 Regional Growth Forecast. February 26 2010. SANDAG Board of Directors. Retrieved from [http://www.sandag.org/uploads/projectid/projectid\\_355\\_10794.pdf](http://www.sandag.org/uploads/projectid/projectid_355_10794.pdf)

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## *Conclusions*

Urban Water Management Plans are an opportunity for local water agencies to articulate water use plans to the public. The following are some issues involving Urban Water Management Plans:

- Released every five years, Urban Water Management Plans are required by all water agencies that deliver 3,000 acre feet of water to customers every year and/or have more than 3,000 service connections.
- UWMPs require water agencies to devise strategies for coping with shortages and compliance with conservation standards.
- UWMPs provide water agencies with an opportunity to outline compliance measures with new laws such as SBX 7-7.
- Input from water agencies, scientists, and the general public influence water use strategies described in UWMPs.

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