



SPECIAL WATER PLANNING COMMITTEE WORKSHOP

Board Room

February 10, 2011

1:30 p.m.

Mitch Dion – Chair
Hershell Price – Vice Chair
Javier Saunders – Vice Chair
Brian Boyle
Betty Ferguson
Lynne Heidel
Michael Hogan

Jeremy Jungreis
John Linden
Gerald Walson
Bud Pocklington
Fern Steiner
Mark Watton
Ken Williams

1. Call to order.
2. Roll call – determination of quorum.
3. Public comment – opportunities for members of the public to address the Committee on matters within the Committee’s jurisdiction.

I. CONSENT CALENDAR

II. ACTION/DISCUSSION

1. Overview of Water Authority’s Urban Water Management Plan. Ken Weinberg
(Discussion)
2. Review draft update of 2010 Urban Water Management Plan. Kelley Gage
(Discussion)

III. INFORMATION



IV. ADJOURNMENT

Doria F. Lore
Clerk of the Board

Note: This meeting is also called and noticed as a meeting of the Board, but will be conducted as a Water Planning meeting. Members of the Board who are not members of the Committee may participate in the meeting pursuant to Section 2.00.060(g) of the Water Authority Administrative Code. All items on the agenda, including information items, may be deliberated and become subject to Committee action. All public documents provided to the committee or Board for this meeting including materials related to an item on this agenda and submitted to the Board of Directors within 72 hours prior to this meeting may be reviewed at the San Diego County Water Authority headquarters located at 4677 Overland Avenue, San Diego, CA 92123 at the reception desk during normal business hours.



February 3, 2011

Attention: Water Planning Committee

Draft update of 2010 Urban Water Management Plan. (Information)

Purpose

To present the Water Authority's draft regional 2035 Water Demand Forecast and preliminary mix of current and future water supplies to meet that demand. These two elements are the foundation for preparation of the Water Authority's draft 2010 Urban Water Management Plan.

Background

Every five years, concurrent with the update to the Water Authority's Urban Water Management Plan (UWMP), both the regional long-range 25 year water demand forecast and the mix of current and future water supplies needed to meet that demand are developed. The demand forecast has two primary projections: forecasted Municipal and Industrial (M&I) demand and Agricultural water demand. The Water Authority has utilized econometric models to develop its long-range water demand forecasts since the mid-1990s. The Water Authority's Municipal and Industrial Needs model (CWA-MAIN) uses local population, housing, and employment projections obtained from the San Diego Association of Governments (SANDAG) to forecast M&I water demands. The CWA-MAIN model was customized for the Water Authority by a consultant to project sector-level demands by member agency, and has undergone several refinement cycles corresponding with each UWMP update. Agricultural demands within the Water Authority's service area are estimated using a separate regression model. This agricultural demand model projects consumptive demand using agricultural acreage estimates from SANDAG, crop watering requirements and crop-type distribution data.

Beginning with the 2005 update to the UWMP, the long-range demand forecast now includes estimated water demand for known future potential annexations identified by member agency and Water Authority staff. In the 2010 update to the UWMP, staff is proposing the inclusion of an additional increment of demand associated with potential accelerated residential development identified by SANDAG in the course of its regional housing unit forecast. This demand is attributed to housing needs being forecasted by SANDAG but not yet included in existing general land use plans.

The mix of current and future supplies is developed jointly between the Water Authority and its member agencies. The mix of supplies is represented in two ways. Verifiable supplies are those supplies identified by the Water Authority or member agencies as having achieved a level of certainty in their planning and implementation where CEQA has been satisfied, permits are in hand or contracts have been executed. Verifiable supplies are included in water supply assessments and verifications used by the cities and county in their land use decisions regarding available water supplies for growth under SB 221 and SB 610. Planned supplies are those that have not yet achieved the same level of certainty as the verifiable but have progressed to a point

where the Water Authority or a member agency has taken significant financial actions to pursue the project.

The long range demand forecast and the mix of local and Water Authority supplies is used for a variety of purposes. It is the basis for all supply reliability planning and a foundational element of the Water Authority's UWMP. When member agency local supplies are taken into account, it results in an estimate of demand on the Water Authority and guides water supply planning and policy. The forecast is also used to develop water sales projections and in financial planning and water rate setting analysis. Finally, the long-range demand forecast is the basis for establishing the timing and need for future Water Authority capital facilities.

Discussion

Preliminary Demand Forecast

The first step in developing an M&I forecast is to establish a Baseline Forecast using the Water Authority's CWA-MAIN model. The CWA-MAIN model relates historic water demand to household income, consumer response to the price of water, and weather, along with demographic and economic projections to predict future M&I water demands. This data was compiled from various sources including SANDAG, Water Authority member agencies, and weather data from the Scripps Institute of Oceanography. Under the terms of a 1992 memorandum of agreement between the Water Authority and SANDAG, the Water Authority utilizes SANDAG's official forecast to project consumptive water demands for the region. This coordination ensures linkage between local jurisdictions' general plans and the Water Authority's projected water demands.

In February 2010, SANDAG's Board approved its 2050 Regional Growth Forecast for release. Two key refinements of the 2050 Regional Growth Forecast include an economic outlook that factors in the current recession and local jurisdictions' general/specific plan updates that were not completed at the time of the last SANDAG forecast. The newly released SANDAG demographic and economic projections (i.e. household density, household size and employment counts) were incorporated into the CWA-MAIN model. SANDAG does not forecast land use on Marine Corps Base Camp Pendleton (MCB Camp Pendleton). Demand projections for MCB Camp Pendleton were developed outside of the CWA-MAIN model, based on projections provided by base staff, and were added to the total demand forecast.

This is the first forecast that consumer price response to the retail cost of rates has played a prominent role in predicting future demands. The preliminary forecast for both M&I and agriculture reflects the price effect of the significant rate increases over the last few years as well as an assumption of continued substantial increases at the retail level over a sustained period of time. This trend is contrary to historic retail rate increases the region has experienced in the past.

Agricultural demand projections are developed through a cooperative effort between Water Authority staff, its member agencies, SANDAG, County of San Diego Agricultural Weights and Measures, and the California Avocado Commission. The basis of this forecast is irrigated acreage within the Water Authority's service area, the associated crop type distribution, and

estimated water use factors. SANDAG's projections of future agricultural land conversions to other uses provide the long-term trend in acreage used to forecast agricultural water use. The total agricultural forecast is then separated into two categories: 1) projected future demands in the Water Authority's Special Agricultural Water Rate (SAWR) program and 2) demands under the Water Authority M&I rate or agricultural demands met through local supplies. It should be emphasized that the delineation between the two categories is a rough estimate based on professional judgment and takes into account the potential future acreage in the SAWR program.

As noted above, a small increment of demand associated with potential known future annexations and potential accelerated forecasted growth was incorporated into the total demand forecast. Demands associated with potential known future annexations are for lands currently outside the Water Authority's service area that may be annexed within the next five years. However, incorporation of the demands provides no assurance of annexation. Approval by the Water Authority's Board would still be required before water service is provided to these lands. The demand increment associated with accelerated forecasted growth is intended to account for land-use development included in SANDAG's growth forecast projected to occur between 2035 and 2050, but not yet accounted for in local jurisdictions' general land use plans. SANDAG estimates that general plan amendments, allowing this accelerated residential development, could occur within the 2035 planning horizon of the UWMP. Staff is including a small additional demand increment to ensure the Water Authority is adequately planning supplies for potential accelerated growth within the service area. This will also assist member agencies that rely on the Water Authority's UWMP to comply with laws linking water availability and land-use approvals for projects requiring general plan amendments. SANDAG estimates that 34,000 housing units forecasted beyond 2035 could be developed within the 2010 UWMP planning horizon. Table 1 provides a breakout of all the forecast elements along with an estimated total.

Table 1
2035 Draft Regional Baseline Water Demand Forecast (AF)

Forecasted Demand	2015	2020	2025	2030	2035
Municipal and Industrial ¹	582,000	662,000	728,000	787,000	838,000
Agricultural	55,000	50,000	48,000	47,000	46,000
<i>SAWR Program Agricultural</i>	<i>30,000</i>	<i>27,000</i>	<i>26,000</i>	<i>26,000</i>	<i>25,000</i>
<i>Full Service (M&I) and Local Agricultural</i>	<i>25,000</i>	<i>23,000</i>	<i>22,000</i>	<i>21,000</i>	<i>21,000</i>
Known Future Annexations	6,000	6,000	6,000	6,000	6,000
Accelerated Forecasted Growth	2,000	4,000	7,000	9,000	11,000
Total Forecasted Demand	645,000	722,000	789,000	849,000	901,000

¹ Demands include continued passive savings from existing code-based conservation and decay of historic active conservation program savings which will be replaced by future code-based and program savings.

Accounting for Water Conservation

Once the baseline forecast is established, it is necessary to account for future water conservation activities. The 2010 long-range forecast marks a change in how staff determines the net demand for water after conservation activities are taken into account. Previously, implementation of the

Conservation Best Management Practices (BMPs) under the *Memorandum of Understanding for Urban Water Conservation* was the basis for determining the conservation element of the demand forecast. However, with the passage of SBX7-7, retail agencies are now required to achieve a 20 percent reduction in urban per capita water use from their historic baseline use by December 31, 2020. That reduction can be achieved through conservation and/or water recycling. The bill also requires urban wholesale water suppliers to include an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions in their UWMP.

As a wholesale water agency, SBX7-7 does not require the Water Authority to meet the reduction in water use that is required of the Water Authority's member agencies. For current planning purposes it was assumed by staff that each of the Water Authority's member agencies will meet the statutory requirements of SBX7-7 through Method 1, which is eighty percent of the baseline per capita water use. It is important to note that member agencies are still determining which method to choose for compliance. Staff will update the final demand forecast to reflect member agency decisions on how to comply with SBX7-7. Table 2 shows derivation of the retail water use efficiency target based on projected total regional demand after achieving the 20% reduction by 2020 and including existing recycling. Compliance with the gpcd goals will require a combination of future planned recycling and additional conservation savings. It is also assumed that the same 2020 gpcd target (currently estimated at 167 gpcd) is utilized to determine required water use efficiencies post-2020.

Table 2
Retail Water-Use Efficiency Target and Projected Recycling and Conservation to meet Target (Retail Compliance with SBX7-7 2020 Target) (AF)

	2015 ²	2020	2025	2030	2035
Total Baseline Demand ¹	645,000	722,000	789,000	849,000	901,000
Potable Demand SBX7-7 GPCD Target ³	691,000	649,000	686,000	723,000	757,000
Existing Recycling	26,000	26,000	26,000	26,000	26,000
Water-Use Efficiency (WUE) Target (Baseline minus Target minus Existing Recycling)	---	47,000	77,000	100,000	118,000
Meeting the WUE Target:					
Additional Projected Verifiable Recycling	15,000	20,000	25,000	28,000	32,000
Additional Conservation Requirement	---	27,000	52,000	72,000	86,000

¹ Includes M&I, agriculture, known future annexations, accelerated forecasted growth, existing passive savings, and non code based historic savings.

² Baseline forecast is below 2015 gpcd target due to projected slower economic recovery by SANDAG and lingering effects from recent retail water rate increases

³ Demand target initially based on retail compliance with SBX7-7 utilizing Method 1. Final demand target will be based on member agency selection of compliance method.

As part of estimating the amount of water use efficiency (conservation and recycling) needed to achieve the regional target, the Baseline Forecast assumes that historic BMP savings from code based devices, where there is no consumer choice in future replacement, results in permanent water savings. However, savings achieved from active programs, such as residential surveys or devices not required by code, will decay over time and may partially or wholly have to be

recaptured. This distinction is especially important in light of the need to measure success in conservation on a gallon per capita per day (gpcd) basis rather than an estimate of savings resulting from implementation of specific BMPs.

Identifying the Region’s Water Supply Mix

To accurately assess the region’s overall plan for future reliability, it is important that the Water Authority correctly reflect member agencies’ projected yields from local supplies and estimated conservation savings targets. This will help maintain consistency between the Water Authority’s and its member agencies’ long-range planning forecasts, thereby reinforcing the importance of these supplies in meeting local and regional water demands. Based on local supply figures provided by the member agencies, the Water Authority has identified regional totals for local surface water, groundwater, desalination and recycled water projections through the year 2035 for inclusion in the Draft 2010 UWMP. In addition to member agency local supplies, the Water Authority’s existing and projected supplies are identified in the supply mix. This includes increased yield from the Water Authority-Imperial Irrigation District Conservation and Transfer Agreement and conserved supplies from the All-American and Coachella Canal Lining Projects. The proposed regional Carlsbad seawater desalination project is also considered a verifiable supply and included in the mix of resources. The remaining supplemental supply increment is expected to be from Metropolitan Water District (MWD) deliveries. Table 3 contains a summary of the preliminary water supply mix in a normal weather year.

**Table 3
 Preliminary Water Supply Mix (AF) Normal Weather Year**

	Existing Supplies FY 2010 ¹	2015	2020	2025	2030	2035
Total Demands w/ SBX7-7 Conservation		645,000	694,000	736,000	777,000	815,000
QSA Supplies ²	145,000	180,000	270,000	280,000	280,000	280,000
Member Agency Supplies ³	72,000	128,000	132,000	137,000	141,000	145,000
<i>Surface Water</i>	27,000 ¹	59,000	59,000	59,000	59,000	59,000
<i>Groundwater</i>	12,000	12,000	11,000	11,000	11,000	11,000
<i>Brackish Groundwater</i>	7,000	16,000	16,000	16,000	16,000	16,000
<i>Recycled Water (WUE Target)</i>	26,000	41,000	46,000	51,000	55,000	59,000
Proposed Regional Carlsbad Seawater Desalination	0	56,000	56,000	56,000	56,000	56,000
MWD	335,000	281,000	236,000	263,000	300,000	334,000
Total Projected Supplies		645,000	694,000	736,000	777,000	815,000

¹ Existing local surface water supply reflects dry-year yields and projected yield is based on normal conditions. No future increase in surface water yield is anticipated. Increased storage capacity will be achieved through the Water Authority’s carry-over storage project and programs which will be reflected in dry-year resource mix.

² Quantification Settlement Agreement (QSA) supplies consist of conserved supplies from the Water Authority-Imperial Irrigation District Transfer Agreement through Canal Lining Projects.

³ Verifiable member agency supplies are included in the projected resource mix.

As mentioned in the background, for reliability planning purposes, supplies have been categorized between verifiable and additional planned projects. These additional planned projects are not included in the verifiable mix, but can also have an effect on the ultimate demand for Water Authority supplies if implemented. Table 4 provides an estimate of those supplies based on available information. Prior to finalizing the public review draft of the 2010 UWMP, staff will continue to coordinate with member agencies on categorizing local projects between verifiable and planned.

Table 4
2035 Forecast of Demand for Water Authority Supplies (AF)
Maximum Member Agency Supply Development

Supply	2015	2020	2025	2030	2035
Total Demand w/ SBX7-7 Conservation	645,000	694,000	736,000	777,000	815,000
Verifiable Member Agency Supplies	128,000	132,000	137,000	141,000	145,000
Demand for Water Authority Supplies with verifiable local supply development	517,000	562,000	599,000	636,000	670,000
Additional Potential Member Agency Planned Local Supplies ¹	800	48,000	52,000	52,000	52,000
Demand for Water Authority Supplies with verifiable and additional planned member agency supplies	516,200	514,000	547,000	584,000	618,000

¹ Includes additional planned groundwater and recycled supplies reported by member agencies for Draft 2010 UWMP along with binational seawater desalination project planned by Otay Water District and indirect potable reuse project planned by City of San Diego

A public review draft of the Water Authority's 2010 UWMP is scheduled to be released to the public and Board in April 2011. Prior to release of the public review draft, the member agency managers will have an opportunity to conduct a technical review of the draft plan. Staff anticipates presenting the final draft 2010 UWMP to the Board for approval in June 2011.

Prepared by: Tim Bombardier, Senior Water Resources Specialist
 Reviewed by: Ken Weinberg, Director Water Resources
 Reviewed by: Sandra L. Kerl, Deputy General Manager