



February 14, 2018

Attention: Water Planning Committee

Interim Long-Range Water Demand Forecast “Reset” (Presentation)

Purpose

To provide information on the Interim long-range water demand forecast reset.

Background

Since the early-1990s, the Water Authority has used an econometric water demand forecast model to develop its long-range water demand projections. The demand forecast model utilizes historic water use data, an estimated schedule of future wholesale water rates and SANDAG demographic and economic projections to develop sector level forecasts of member agency water demands. The latest Water Authority forecast was updated in 2015 concurrent with the update of the 2015 Urban Water Management Plan (2015 UWMP). Spanning the period 2020 through 2040, the 2015 UWMP demand forecast was used to develop the region’s water supply mix to reliably meet member agencies’ water demands over the 20-year planning horizon.

Discussion

Since the Water Authority’s 2015 UWMP demand forecast was finalized in late-2015, significant events have occurred that impacted and continue to influence the region’s water use patterns. These events include the most recent five-year drought, as well as Governor Brown’s state-wide drought emergency proclamation in 2014 and the State Water Resources Control Board’s (State Board) unprecedented mandatory conservation standards imposed on water agencies starting in 2015. The extraordinary measures implemented by San Diego area retail customers in response to the State Water Board’s water use restrictions resulted in fiscal year 2016 total regional water demand plunging to 454,963 acre-feet – demand levels not seen since the mid-1980s.

Water use in the San Diego region has experienced a slight recovery since 2016, reflecting several factors including; the overall continuation of many retail water use efficiency practices implemented during the drought, the State Board’s termination of mandatory conservation standards in early-2017, the Governor’s declared end to the statewide drought emergency for most of the state in April 2017 and continued warmer than average temperatures across the region. Fiscal year 2017 total demand increased by 22,061 acre-feet (or five percent) year-over-year, and cumulative water demand for the first half of fiscal year 2018 is up from this same period last year.

With total regional water demand for fiscal year 2018 projected to reach approximately 496,000 acre-feet, it is highly unlikely that total regional consumptive water use will rebound to the projected 587,581 acre-feet of demand by 2020 forecasted in the 2015 UWMP (an increase of almost 20 percent). This difference has created a disconnect between the 2015 UWMP demand forecast and current projections of regional water demand based on recent actual demands. Because of this disconnect, staff believes an interim water demand forecast reset (Interim Reset) is necessary to adjust for this downward shift in projected total water demand. The Interim Reset is intended as a

provisional update that will support on-going Water Authority supply, facility and financial planning activities that utilize regional long-range demand projections. The Interim Reset is not envisioned as a comprehensive update of the demand forecast model or modification of underlying SANDAG demographic and economic projections. A full re-estimation of water demand forecast model equations and update of modeling datasets is planned to coincide with preparation of the Water Authority's 2020 UWMP. Development of a scope of work to update the demand forecast model is scheduled to begin later this calendar year.

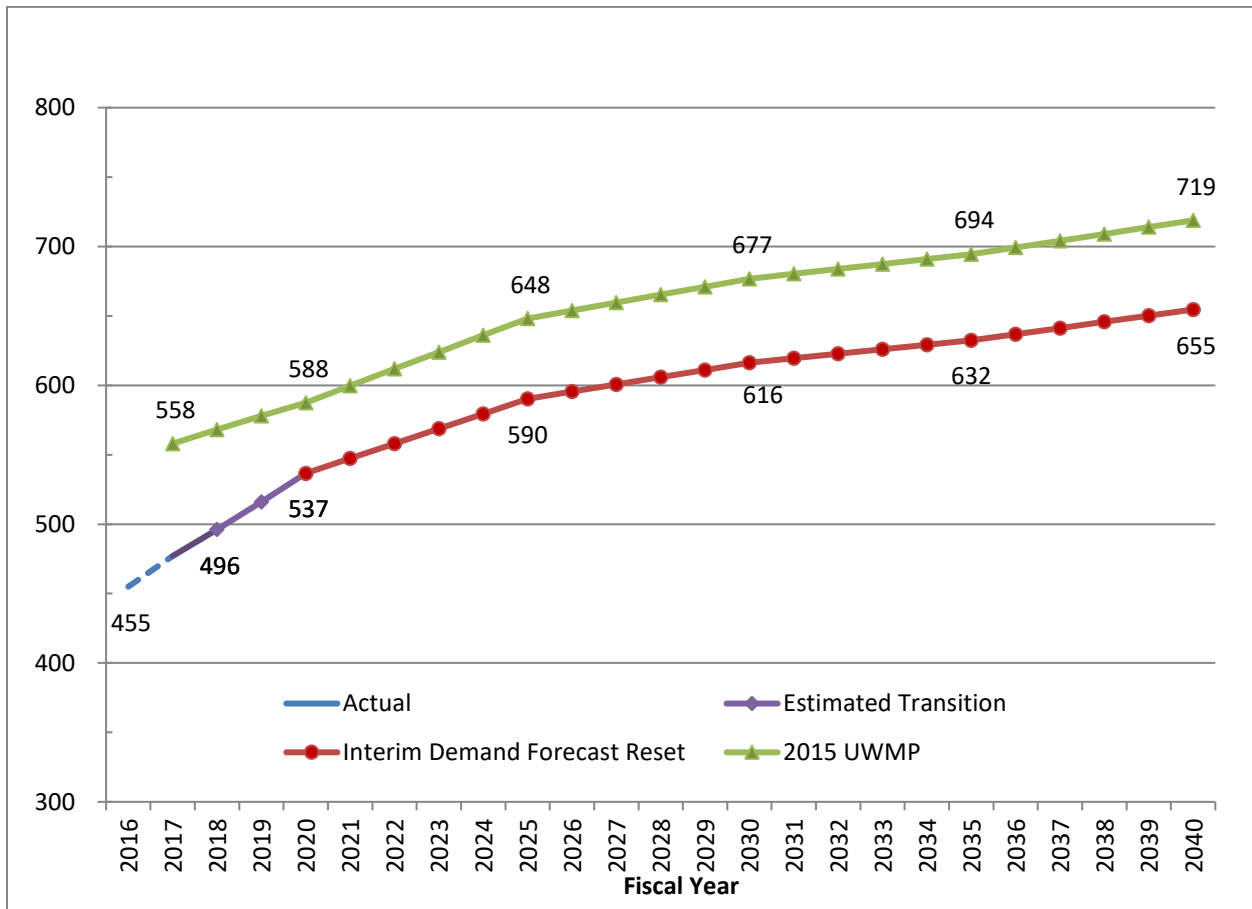
As a first step in the Interim Reset process, staff initiated a discussion at the Member Agency Managers' meeting on January 16, 2018. Staff solicited member agency input on current retail demand trends, contributing factors to these trends and insights on projected water demands over the near-term and long-range planning horizons. Several agencies indicated that demands in their service areas were up on a cumulative basis for the first six months of fiscal year 2018. However, this demand increase was primarily attributed to dry conditions compared to last season's wetter conditions – particularly for the month of December. Member agencies were also asked about the variance between their current fiscal year 2018 total demand estimates and projected 2020 water demands from their respective 2015 UWMPs to assess the likelihood of reaching these forecasted 2020 demand levels in just two and a half years.

A core set of assumptions was developed based on member agency input, current demand trends and estimated impacts associated with the State Board mandatory water prohibitions. These assumptions include:

- Between 2018 to 2020, annual growth in total demand could range from two to four percent a year (demand recovery dampened from previous post-drought periods due to implementation of long-term water use efficiency practices)
- Post-2020, maintain the same five-year incremental demand growth rate as the 2015 UWMP (i.e., no change to underlying SANDAG demographic and economic projections developed for the 2015 UWMP)

Using the above listed assumptions, staff evaluated various scenarios across a range of demand trends for both near-term recovery and long-range growth in water demand through 2040. The normal year Interim Reset scenario shown in Figure 1 was determined to best represent a reasonable re-estimation of projected total water demand for the San Diego region, beginning in 2020. The new Interim Reset shows a reduction in projected demand in 2020 of approximately 51,000 acre-feet, as compared to the 2015 UWMP. Beyond 2020, the Interim Reset follows the same incremental growth rate in water demand as the 2015 UWMP, resulting in a revised regional water demand projection of 655,000 acre-feet in 2040.

Figure 1: Normal Year Interim Demand Forecast Reset (TAF)



For reference, a comparison of actual 2017 total per capita water use, and projected per capita use based on the 2015 UWMP and based on the Interim Reset scenario is shown in Table 1 below.

Table 1: Comparison of Total Per Capita Water Use (GPCD)

	2017	2020	2025	2030	2035	2040
Actual	131	-	-	-	-	-
2015 UWMP	-	157	166	166	166	168
Interim Reset	-	141	148	149	148	150

Supply Mix Update

The Water Authority service area supply mix contained in the 2015 UWMP represents a snapshot of existing and projected Water Authority and member agency supplies based on member agency direction regarding local supply project implementation, development schedules and production levels as perceived in 2015. A comprehensive update of this supply mix will be undertaken, in

coordination with the member agencies, as part of the preparation of the 2020 Urban Water Management Plan.

However, in order to provide a comparison of the Interim Reset versus the current supply mix listed in the 2015 UWMP, Table 2 shows 2015 UWMP projected supplies (Verifiable + Additional Planned¹) and demands for 2035 from the Interim Reset and 2015 UWMP. As a result of the Interim Reset, projected purchases from MWD are reduced by roughly 62,000 acre-feet.

Table 2: Normal Year Interim Demand Forecast Reset and Verifiable + Additional Planned Supplies for Year 2035 (in acre-feet)

	2015 UWMP	Interim Reset
Demand Forecast	694,431	632,418
Water Authority Supplies		
IID Water Transfer	200,000	200,000
AAC and CC Lining Projects	80,200	80,200
Seawater Desalination	50,000	50,000
Water Authority Total	330,200	330,200
Member Agency Supplies¹		
Surface Water	51,180	51,180
Water Recycling	57,044	57,044
Seawater Desalination	22,100	22,100
Potable Reuse	109,399	109,399
Brackish Groundwater	12,500	12,500
Groundwater	23,770	23,770
San Luis Rey (SLR) Supplemental Supply ²	16,000	16,000
Member Agency Total	291,993	291,993
MWD Supplies	72,238	10,225

¹ Includes 2015 UWMP member agency Verifiable + Additional Planned local supplies.

² New member agency supply type: San Luis Rey - Indian Water Authority 2003 Quantification Settlement Agreement “supplemental” water wheeled to the City of Escondido and Vista Irrigation District.

Staff is continuing to evaluate the impact of the Interim Reset on supply projections. Staff plans to return to the Board in March to discuss the impact of the Interim Reset on single and multiple dry year supply/demand scenarios.

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¹ As defined in the 2015 UWMP, Verifiable projects are those with substantial evidence and adequate documentation regarding implantation and supply utilization. Additional Planned projects are those that the Water Authority and member agencies are actively pursuing and currently funding, but do not rise to level of verifiable for implementation.