#72

Late Backup

WATER CONSERVATION GOAL SUMMARY

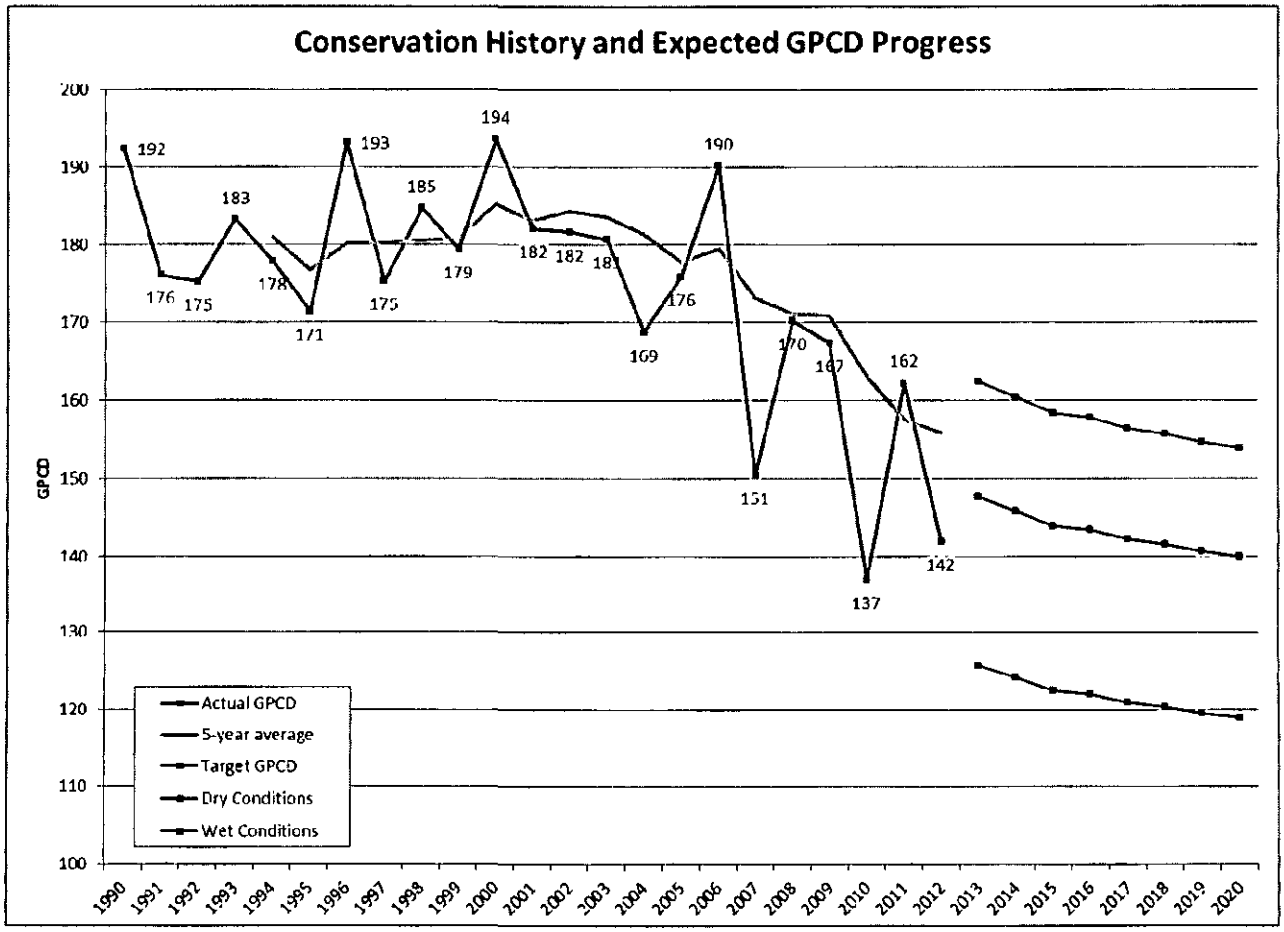
Austin's well-rounded approach to water demand management focuses on three key goals:

* Reducing total gallons per capita per day (GPCD) water use to 140 GPCD by 2020;
* Reducing summer peaking factor to an average of 1.5 by 2035; and
* Further delay reaching the trigger for additional raw water payments to LCRA.

These goals illustrate conservation's benefit in reducing cost of treating and delivering water, potentially delaying need for additional treatment capacity, and maximizing life of existing water supplies. To reach these goals, the City of Austin will also need to continue its leadership role on regional water issues.

Reducing Total Water Use to 140 GPCD by 2020

Austin Water adopted the goal of reducing total average water use to 140 GPCD[1] or lower by FY 2020 in accordance with Council Resolution No. 20100513-035. Austin Water is on track to meet this goal, as depicted in the following graph:



[1] Austin Water calculates GPCD as total water pumped from its treatment plants annually divided by population of its retail and wholesale service areas. Annual population estimates are derived from census data and historical trends, and have been updated to reflect 2010 Census figures. The 140 GPCD goal is based on a five-year rolling average to normalize for weather.

The 140 GPCD goal is representative of Austin's historically aggressive conservation approach since firm water supplies, with conservation and reuse, are considered sufficient to meet projected demand over the most recent 50-year regional planning horizon. In addition, reaching 140 GPCD offers cost savings in terms of operational expenditures for pumping and treating water and wastewater. As of FY 2011, the cost per thousand gallons was $0.33 to deliver water and $0.23 to treat wastewater. Austin Water can evaluate cost-effectiveness of programs reducing average-day use by comparing lifetime gallons saved with costs for pumping and treating the same amount of water and/or wastewater.[2]

According to historical trends, dry years show an increase in water use of up to 10 percent while wet years show a decrease of as much as 15 percent. Austin Water will track progress toward the goal graphically with wet and dry year target lines accompanying an average line that represents a normal weather year. Depending on weather conditions, the annual figure may be somewhat higher or lower than 140 GPCD in the year 2020, but is expected to be within the target range. Austin has made significant progress toward lowering total GPCD, particularly after enacting mandatory water use restrictions in FY 2008. Recent trends show that despite record-setting heat and low rainfall in recent years, GPCD has fallen steadily from a peak of 194 in FY 2000's hot, dry conditions to an impressive 162 GPCD in FY 2011 despite record-setting drought that year.

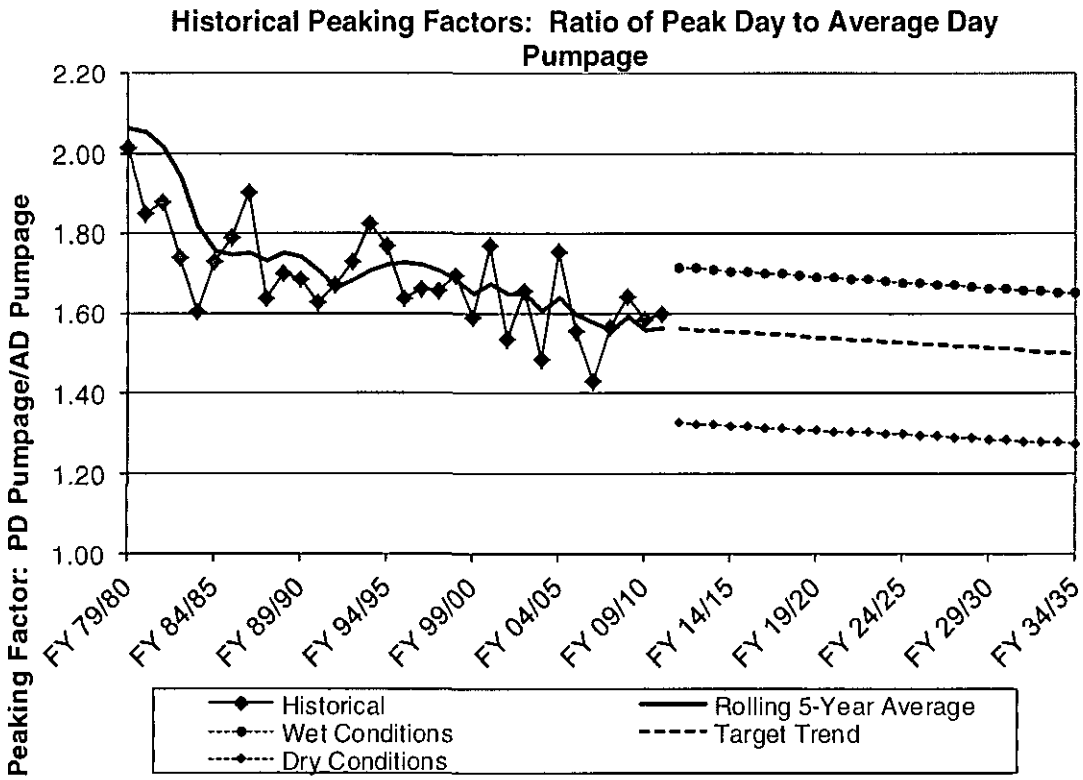
Reducing Summer Peaking Factor to an Average of 1.5 by 2035

A 2006 City Council resolution directed the City Manager to identify strategies that would reduce peak day water demand by 1% per year for ten years, or by 25 MGD. Recommendations were presented and adopted in May 2007 to achieve that goal. Austin Water immediately implemented strategies with the largest potential savings, and by 2010 had exceeded the peak day reduction goal of 25 MGD through a mandatory water schedule and the initiation of several large reclaimed water projects.

Austin Water will continue to address peak day water use by reducing the peaking factor[3] to an average of 1.5 by 2035, as shown in the graph below.

[2] Note that while GPCD is an excellent metric for evaluating conservation progress over time, it is not an accurate measure for comparing water use among cities, as climate, geography, usage patterns, industry mix, and water source characteristics may vary greatly. Additionally, since the calculation includes all usage types, total GPCD does not reflect household water use levels.

[3] Austin Water calculates peaking factor as amount of water pumped from its treatment plants on the highest demand day of the year, divided by average daily water pumpage for the fiscal year. (This may be adjusted if highest daily pumpage is driven by system issues rather than customer demand.) Peaking factor is evaluated as a 5-year rolling average to normalize for weather.



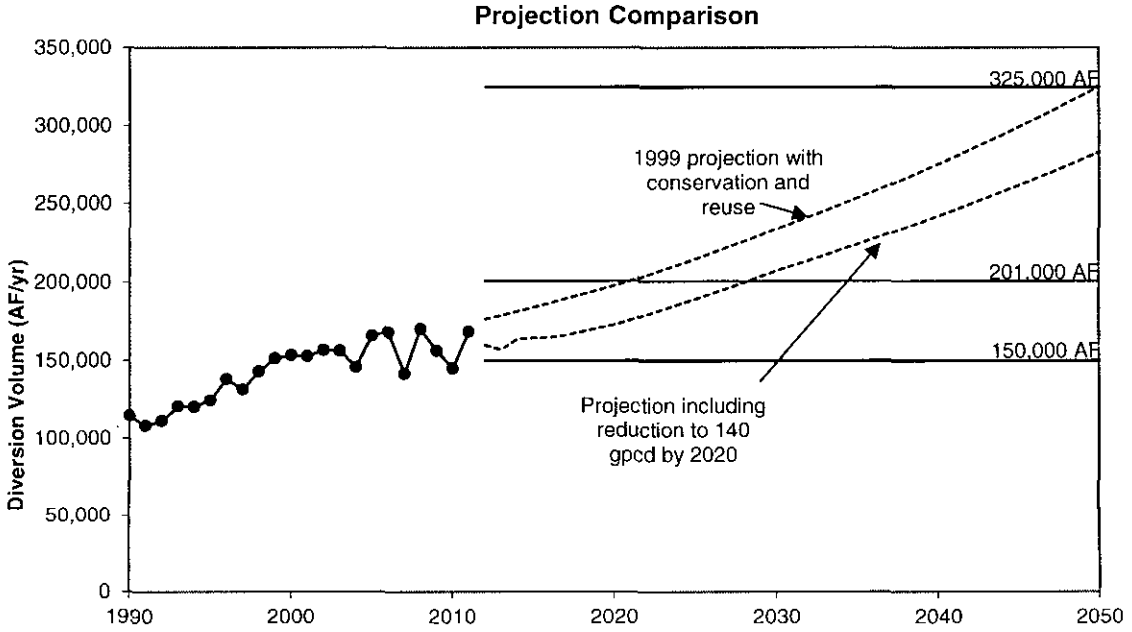
To ensure that water treatment plants can reliably meet basic customer needs and essential fire protection even when discretionary use is high, treatment and system capacity must be sufficient to handle anticipated demands for the highest-use day of the year under widely-ranging weather conditions, including drought. As a result, plant capacity is required to well exceed average day use. This goal represents a reduced treatment capacity sizing needs associated with accommodating higher peak demand days during a limited portion of the year. It is important to understand that treatment plants and infrastructure expansions are not driven by demand alone. A water system must be considered as a whole to plan for reliability, resiliency, and replacement of aging infrastructure, and to serve specific geographic areas as a City grows. However, a reduced peaking factor can make more effective use of existing treatment capacity and give planners additional flexibility in managing water system expansions.

Because it accounts for population growth, the peaking factor goal represents a fuller picture of system utilization than does a specific reduction in gallons per day. The value of measures intended to reduce peak day use can be expressed in terms of peak-day gallons saved as compared with average cost per gallon of building new treatment capacity, currently estimated at around $4.00 per gallon.

Austin Water has also been successful in reducing the peaking factor from a high of over 2.0 in the 1980s to below 1.6 by FY 2011. Recent trends show a gradual decline in peaking factor, which will need to continue in order to reach the 1.5 goal. It should be noted that Austin Water has achieved large gains in reducing peaking factor over the last 30 years, and future gains will be incremental due to those previous savings and the attention to both peak and average day water savings. To see a reduction in peaking factor, the rate of savings in peak use will need to outpace average day savings.

Delaying Lower Colorado River Authority (LCRA) Payment Trigger

Austin Water is committed to delaying as long as possible the annual average use[4] of 201,000 acre-feet of water for two consecutive years (which triggers annual payments to LCRA for water used above 150,000 acre-feet per year). The following graph shows original projections compared with current projections and a future scenario for additional delays:



Water demand projections at the time of the "1999 Agreement"[5] with LCRA indicated that Austin would reach this payment trigger in FY 2022, and would begin raw water payments to LCRA in FY 2023, at an estimated cost of $12.4 million in the first year. The payments would increase annually with increasing consumption. Delaying that payment trigger will result in significant financial savings for Austin by maximizing prepaid water supplies. It could also further extend the amount of time before Austin needs to seek new water rights or water sources to meet growing demand. Compared to projections at the time of the 1999 Agreement, the utility's plan to reach 140 GPCD by 2020 will result in a 7-year delay in payments, at a net present value savings of $95M through 2050. This represents a present value savings of $2.4 million annually over the next 39 years. Austin Water will continue to look for opportunities to reduce average use and extend the payment trigger even further.

Providing Leadership on Regional Water Issues

With one of the most extensive water conservation programs in the nation, Austin will continue to play a leadership role in conservation at the regional, state and national levels, and share experience and resources with other water providers to promote conservation innovation and effectiveness. This includes but is not limited to:

[4] Austin Water, under its 1999 Agreement with LCRA, measures total annual use as the total amount of water diverted from the Colorado River and the Highland Lakes under its contract with LCRA, and water diverted under the City's own water rights.

[5] First Amendment to December 10, 1987 Comprehensive Water Settlement Agreement Between the City of Austin and the Lower Colorado River Authority dated October 7, 1999

* participating in Senate Bill 1 regional planning efforts to meet future water needs in the lower Colorado River basin (Region K);
* developing best management practices and legislative recommendations for the state Water Conservation Advisory Council;
* developing new water supply and reuse strategies through the City of Austin/Lower Colorado River Authority Water Partnership;
* sharing ideas and information among Central Texas Water Efficiency Network members;
* exchanging information with other LCRA Firm Water Customers and providing comment to LCRA on its water supply management and contract programs;
* partnering in research and studies with other entities around the nation under the auspices of the Water Research Foundation and Alliance for Water Efficiency; and
* enhancing programs through education, training and presentations given at conferences and events of the American Water Works Association.

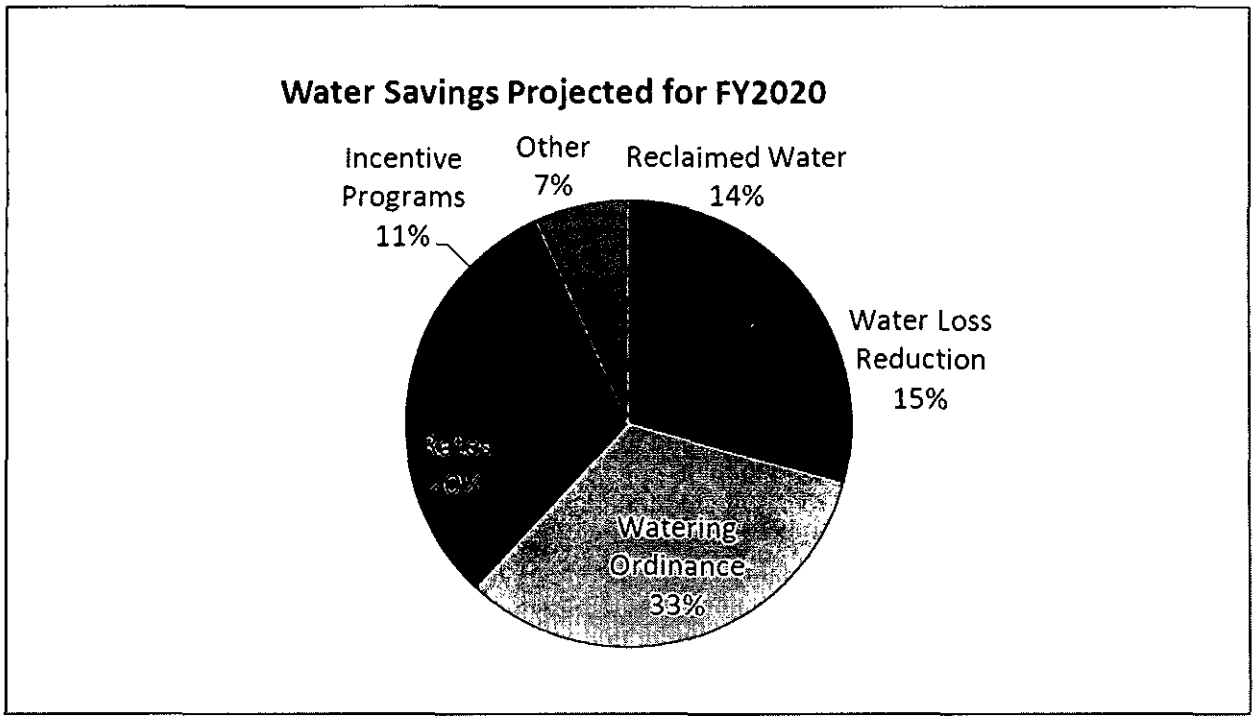
Implementation Measures to Achieve Key Goals

Each of the above goals represents a different benefit to the utility and its customers, yet all share a set of broad strategies for attaining them, including: (1) reducing usage both indoors and outdoors, (2) reducing use by the commercial and industrial sectors, (3) promoting auxiliary water sources, including reclaimed water, (4) lowering city and utility water use, including pipe repair and replacement, (5) providing comprehensive customer education and outreach, and (6) employing conservation rates and pricing structures.

Austin Water will address each strategy through a variety of measures – financial incentives, education, and regulation – having adequate flexibility to allow for evaluation and alteration to fit current conditions. These include:

* Shifting focus to short-term incentives for new water-saving technology and to comprehensive changes that save larger water volumes rather than continuing to provide mainly smaller residential rebates;
* Employing regulations to embed conservation into new development and deter excessive discretionary water use;
* Creating programs that target high water users, and continuing marketing efforts to heighten consumer awareness of water use; and
* Conducting pilot projects and participating in research projects to identify future conservation strategies and savings potential.

The figure below shows the percentage allocation for each category of measure that Austin Water intends to implement. Austin Water will prioritize cost-effective measures that do not place unnecessary burdens on customers; however, with Austin's strong conservation history, it has already employed many of the easiest measures and may need to consider more aggressive ones. It will review the conservation program annually to ensure the best mix of measures for meeting the goals.



As Austin Water reduces customer water use, it will be necessary for it to continue to adapt its business model to ensure financially viable service delivery. This adaptability is crucial, particularly as Austin pursues the peaking factor goal, which targets seasonal, outdoor water use. In the residential sector, discretionary use such as this commands the highest rates. Because these higher rate tiers subsidize lower-use customers, water savings among high users disproportionately affects revenue generation. Efforts are already underway to increase the amount of fixed revenue collected and to establish a reserve fund for when conservation or weather patterns introduce volatility into the revenue stream.