

Analysis of implementation of water conservation strategies by regional water planning groups

by Ken Kramer

In October 2012 the Texas Water Development Board adopted revised rules on regional water planning to govern the preparation of the 2016 regional water plans. Included in Rule § 357.45 was the requirement that each regional water planning group in its 2016 plan:

“...shall describe the level of implementation of previously recommended water management strategies. Information on the progress of implementation of all water management strategies that were recommended in the previous RWP [regional water plan], including conservation and drought management water management strategies; and the implementation of projects that have affected progress in meeting the state’s future water needs.”

Based on that requirement the Water Conservation Advisory Council anticipated that the 2016 regional water plans would provide extensive information on the implementation of any water conservation strategies recommended for water user groups in the previous (2011) plans. Each regional water plan now includes a separate chapter (chapter 11) that specifically discusses the implementation of the previous plan for that region and compares the new plan to the previous one. In the preparation of each 2016 plan the respective regional water planning group or its consultants distributed or conducted an “implementation survey,” whose results are provided in a matrix as an appendix to each plan. The matrix is a template developed by the Texas Water Development Board. Some regional plans also discuss implementation of conservation strategies in the section of the plan (Chapter 5) that describes the water management strategies recommended in the 2016 plan.

However, a review of a selected sample of the 2016 regional water plans indicates that the plans vary widely in the level of detail, comprehensiveness, and usefulness of their respective discussions of the implementation of water conservation strategies recommended in the 2011 plans, and most of the evaluation, with some exceptions, is of municipal conservation strategies rather than conservation strategies in other sectors of water use.

Indeed, the overview of conservation implementation found in most plans is minimal. The reasons most often cited for the paucity of information provided is inadequate budget to conduct a review of implementation and poor implementation survey response rates by water user groups and entities. Another complicating factor in assessing the use of conservation strategies from the 2011 plans (which were actually finalized and approved in 2010) was the 2011 drought, which for certain areas continued well past 2011. That drought led to the imposition of a number of drought contingency plans, making it difficult sometimes to distinguish between impacts on per capita water use from temporary drought measures and impacts from new or ongoing conservation initiatives.

Several regional plans, however, demonstrate a determined effort to gather and present information on conservation strategy implementation, with varying degrees of success. Among these are the 2016 plans for Regions C, H, and K.

Region C

The Region C plan has one of the more extensive discussions of the implementation of conservation strategies among the 2016 plans, although a comprehensive evaluation was complicated by the failure of a number of municipal water user groups to respond to a special survey distributed by the Region C consultants to determine whether those water suppliers had put into effect several measures as either conservation or drought management strategies. This survey was sent to 30 wholesale water suppliers and 238 municipal water user groups in the region in March 2013. The 2016 Region C plan reported that 70 percent of the wholesale water suppliers and 53 percent of the water user groups responded to the survey. While in some respects this is a respectable response rate for a survey of this type, the failure of so many water providers to return the survey limits the opportunity to make definitive conclusions. Among those entities that did respond, however, the most widely adopted conservation strategies were identified as water system audits, leak detection and repair, time-of-day watering restrictions, and education programs – all of which were part of the “Basic Water Conservation Package” that had been recommended for each municipal water user group in the 2011 Region C plan. Roughly a third of the entities responding indicated that they had adopted “days per week watering restrictions,” which were part of the “Expanded Water Conservation Package” recommended for 145 of the 277 municipal water user groups in the 2011 Region C plan. However, the commentary in the 2016 plan notes that there may have been some confusion among the respondents in reporting this measure as an ongoing water conservation measure when in fact it had been imposed only on a temporary basis as a drought contingency measure during a dry period. Survey respondents indicated very low levels of adoption (from

1% to 11%) of any of the other parts of the “Expanded” package, and Region C indeed modified its conservation recommendations in the 2016 plan to reflect that experience.

The 2016 Region C plan provides another insight into the implementation of conservation measures in the region, however, in pointing out that projected municipal water demands decreased significantly from the 2011 plan to the 2016 plan, based in part on lower per capita water use in the region. The plan notes that: “The total municipal 2060 gallons per capita per day (gpcd) in the 2011 Plan was 200 as opposed to the total municipal gpcd of 165 in the 2016 Plan [these gpcd figures are *before* any recommended conservation strategies have been implemented].” The plan authors note that this is partly a reflection of dry-year per capita water use in 2011 being the basis for calculating per capita figures (which the Region C planning group had some disagreement with), but the plan does point to conservation implementation as being an important factor in the lower per capita water use projections.

Region H

In Region H the evaluation of implementation of conservation strategies relied primarily on two sources: a review of municipal conservation plans submitted from water user groups in the region to the Texas Water Development Board and the work of the Goldwater Project. An attempt by the Region H consultants to survey municipal water user groups specifically on whether they had adopted water conservation strategies from the 2011 plan produced a very low response rate – only 47 of the water user groups in the region responded – and very little information was provided by those who did. Region H consultants also distributed a general Implementation Survey to 270 sponsors or representatives associated with projects recommended in the 2011 regional plan, but the response to the survey was low. Only 14 of those sponsors responded, although they included large entities such as the City of Houston. While those 14 sponsors covered 59 projects (including some municipal conservation) those projects constituted only 7 percent of the 839 projects surveyed.

The review of municipal water conservation plans submitted to the state by 241 water suppliers in Region H proved more information. That review found that approximately 90% of the municipal water suppliers employed the following conservation measures: metering and record management; system audits, leak detection, and repair; and conservation pricing (through water rates). Approximately 80% of the plans included prohibitions on waste of water and conservation outreach programs, and about 70% incorporated school education programs in their conservation efforts. A very small percentage of plans (10% or less) included outdoor irrigation audits, indoor water use audits, or conservation incentive programs (such as rebates for water-efficient appliances). Of course, inclusion of any of the measures noted in water conservation plans does not necessarily translate into implementation of those measures nor

does it provide a clear sense of the extent, quality, or effectiveness of those measures. Although the Region H plan states in its Chapter 11 that “It is assumed that municipal conservation practices have been implemented in Region H since the development of the 2011 RWP,” that is a very broad conclusion. Other evaluations such as the Texas Water Conservation Scorecard released by the Texas Living Waters Project in May 2016 (www.texaswaterconservationscorecard.org) highlighted a good deal of variation in the water conservation efforts of retail public water utilities in Region H (as well as other regions of the state).

The findings of the Goldwater Project also indicate a somewhat mixed record in municipal conservation strategy implementation in Region H. The Goldwater Project (www.goldwaterproject.com), conducted by Kip Averitt & Associates under the auspices of the Texas Water Foundation, attempted to quantify and measure ongoing water conservation efforts in Region H as part of the development of the 2016 plan and as a form of technical assistance to many municipal water suppliers in the region. Participating water suppliers in Region H (including the City of Houston) received tailored reports about what conservation measures they might consider adopting and how much water savings to expect from adopting those measures. The Goldwater Project used the tracking tool developed by the national Alliance for Water Efficiency to evaluate the water savings.

The Region H Water Planning Group supported the efforts of the Goldwater Project to track progress toward municipal conservation in the region. The conclusions reached in the final report of the Project that was submitted to Region H indicated that overall water suppliers in the region as of 2015 had met 10.5% of the municipal water conservation savings needed to meet the conservation goal for 2060 that was recommended in the 2011 plan and that overall the region was on pace through 2020 to meet the 2060 goal. The findings noted variability in efforts by those water suppliers, however. The report found that Fort Bend County was on pace through 2020 to meet the 2060 goal, Galveston County was on pace through 2026 to meet the 2060 goal, Harris County was on pace through 2028, and Montgomery County was on pace through 2023. However, the report concluded that Brazoria County was not on pace to meet the 2060 goal nor were the 10 counties in the region. Moreover, not all water suppliers in each county were making progress on water conservation. The bottom line, however, was that Region H had 45 years (past 2015) to meet the remaining 89.5 percent of its 2060 water conservation savings goal but that adoption of additional conservation measures would be needed past the years noted in order to be able to reach that goal (the Goldwater Project noted that the adoption of two-times-per-week-watering restrictions throughout Region H would allow the region to not only reach but exceed the 2060 goal).

Region K - Lower Colorado

Although the 2016 Region K plan does not provide as much detail about conservation implementation as the Region C and H plans, the planning group and its consultants did gather information from a variety of sources to evaluate whether progress was being made in conservation in the region – including not only through the survey but also through individual contacts and additional research. As a result, the data on implementation provided in the survey matrix is more comprehensive and detailed than in many other regional plans. The matrix includes, for example, identification of which conservation management practices (such as leak detection and repair, water conservation pricing, permanent irrigation schedule, etc.) have been adopted or initiated and – in many cases – in which year that action occurred. In most instances “municipal water conservation” strategies that were recommended in the 2011 Region K plan are indicated in the 2016 plan to be “currently operating.”

A few other items of note from some of the other regional plans are as follows:

- The 2016 Region A plan concluded that water savings from agricultural irrigation conservation projected in the 2011 plan were over-estimated, and projected savings from these practices were adjusted in the 2016 plan.
- The Region E (Far West Texas) plan notes that the largest municipal water supplier in the region – El Paso Water Utilities (EPWU) has “reduced per capita municipal use in El Paso from about 225 gallons per capita per day (gpcd) in the late 1970s to a current level of 132 gpcd” and that demand can be reduced by a continuation of “EPWU aggressive water conservation efforts” to approximately 118 gpcd by 2060.
- The 2016 Region I (East Texas) plan relied primarily on a review of measures in the water conservation plans of utilities and certain water rights holders to determine what conservation efforts were being made in the region. The plan also notes that “over 25 percent of the municipal water users in the [region] use less than 100 gallons per capita per day (gpcd) and 62 percent use less than the [Water Conservation Implementation Task Force] recommended 140 gpcd.” Although the plan also points out that Region I is a “water-rich region, and water conservation is driven by economics and not by lack of water supply,” it also suggests that “enhanced water loss control programs may be a potentially feasible water conservation strategy for some WUGs.”
- Although the 2016 Region L (South Central Texas) plan has a very thorough municipal water conservation strategy recommendation for the appropriate user groups, and although several entities in Region L have recognized achievements in conservation, the plan appears to provide no specific information about implementation of conservation strategies from the 2011 plan. The response of water user groups to the

Implementation Survey was anemic (San Antonio Water System provided most of the information gathered through the survey).

One common theme throughout most of the regional plans reviewed for this evaluation is that per capita water consumption in Texas is projected to continue to drop (although the 2011 base per capita use for the 2016 regional plans in some regions was higher than the base used for the 2011 plans), and this in part reflects implementation of passive and active conservation requirements and initiatives.

The 2017 state water plan – which incorporates all 16 of the 2016 regional water plans – contemplates an even greater percentage of water demands being met over the 50-year planning horizon from conservation and reuse than what was projected in the previous state plan. Given that fact, the statutory directive that conservation be given first priority in regional water planning, and the direction from the Texas Legislature that no less than 20 percent of SWIFT funding be applied to conservation and reuse, more specific information in regional plans regarding implementation of water conservation strategies – perhaps a separate chapter of each regional plan dedicated to that evaluation – might be warranted in moving forward. Currently, trying to determine in a comprehensive way from a state level whether and how effectively conservation is being implemented in each water planning region is extremely difficult and does not provide a clear picture of whether Texas will meet its conservation savings goals envisioned in the regional and state water plans.