



Water Grand Challenges: Water Conservation

Policy and Education Driven Water Conservation

Background - Given the long tradition in Texas of independently addressing and solving problems, it is not surprising that a similar methodology has been enacted to confront water conservation. There are many approaches to achieving a more effectual use of Texas waters and, as conservation efforts become more important with residents, Texas has begun to implement various conservation programs that have had differing levels of success. As the need for water rises, especially during drought, the approaches to effective water resource management need to change with demand. The Texas Water Development Board's (TWDB) 2012 Texas Water Plan lays out a proposal to increase water supply through a variety of means. According to TWDB projections, 34% of future water supply will have to come from effective water conservation efforts in order to meet demand.¹ The strategies for conservation approached by the state rest within three main methods: incentive driven policy that offers financial rewards for those who implement water conservation, coercive driven policy that punishes those who fail to meet a certain level of conservation, and education policies that attempt to give individuals and communities the tools to reach conservation goals voluntarily.

Municipal Water Conservation – Municipal water use includes consumption for residential neighborhoods and communities, schools and institutions of higher education, as well as commercial uses such as stores and office complexes. Existing statewide municipal conservation efforts mainly address the need to adequately assess the loss of water resources.² The 78th Legislature in 2003 amended the Texas Water Code to require that all retail public utilities providing potable water must perform a 5-year audit to assess water efficiency.³ The data is sent to TWDB for analysis and recommendations are made to improve efficiency and reduce water loss. Furthermore, in 2011, the 82nd Texas Legislature passed House Bill 3090 that requires all retail public utilities receiving funding from TWDB to implement a water resource plan and conduct water audits to provide data to the TWDB. This data gathering provides necessary information to determine the effectiveness of the current water conservation plan. However, no measure is in place to monitor the impact of the plan on reducing water use per-capita.³

The impacts of effective management of our water resources can already be seen. The 50-year conservation period defined in the 2012 Texas Water Plan shows a 2 million acre-fee/year savings in part due to compliance with the plumbing and fixtures code, as well as community proactive approach following the provided conservation strategies. Examples of this success includes programs such as the City of Austin's financial rebates for rainwater collection and the City of El Paso's rebate for "water wise" landscaping and irrigation audits.⁴



Agriculture Water Conservation – Water use for agriculture purposes can be immense, however, statewide irrigation rates have stayed relatively constant since the 1970’s even though yields have dramatically risen. This is due to increasingly advanced irrigation practices that are fueled by the installation of efficient equipment (paid for, in part, by subsidies) and increased technology in creating more drought-tolerant crops. Texas agriculture averages less than 18 inches of irrigation water per acre annually, in comparison to household’s lawn watering of an average 22 inches per acre annually.⁵

Industrial Water Conservation – It is challenging to assess and implement policy or educational resources to industrial endeavors due to the variability in the trade. From water usage in hydraulic fracturing, water consumption used in the manufacturing of chemicals and petroleum refining, to paper production, water is used in variety of ways. Best Management Practices (BMPs) must be put into place to effectively reduce water consumption.

Results – While future predictions paint a grim scene of water availability in Texas not all of the news is negative. There have been a number of success stories utilizing smart policy, best practices, and common sense. San Antonio and El Paso have reduced their per-capita water use in the municipality by 30 percent over the last 17 years.⁶ Austin, similarly, has an ambitious conservation plan in place. It is this type of community driven action that engenders subsequent action on the part of the community and results are being seen. Policy and educational programing focusing on the importance of water conservation should be encouraged to help propel future, and perhaps more aggressive, changes.

¹ Texas Water Development Board. Water for Texas 2012 State Water Plan. Texas Water Development Board, 2012.

² Texas Water Matters. Conservation Water Use. 2012. http://www.texaswatermatters.org/conservation_users.htm (Accessed March 1, 2013)

³ Texas Water Development Board. An Assessment of Water Conservation. 2012, Report to the 82nd Legislature.

⁴ The Texas Tribune On Water Conservation, Texas Has Room to Improve. 2012, Kate Galbraith.

⁵ Texas Water Resource Institute. Water use, economic value of irrigated agriculture examined in new report. 2013.

⁶ Texas Water Matters. Water Conservation 2012. <http://www.texaswatermatters.org/conservation.htm> (Accessed March 1, 2013).