



MEMORANDUM

DATE: April 10, 2015

TO: Honorable Mayor and Council
Members

FROM: 
Nicole Ewing Gavin, Director
Office of Integrated Planning

SUBJECT: 2014 Annual Report - City/County Water and Wastewater Study Action Plan

I am pleased to report to you on progress that has been made this past year on the City/County Water and Wastewater Study Action Plan for Water Sustainability that the Mayor and Council adopted in November of 2010. This 5-Year Action Plan continues to guide the City's efforts toward water reliability and sustainability. A copy of the Plan and all background materials on the Study are available on-line at <http://webcms.pima.gov/cms/One.aspx?pageId=135647>. Below is a summary of progress made in the past year:

- Plan Tucson – Following voter ratification of Plan Tucson, the City's new General and Sustainability Plan in November 2013, the City is now implementing the Plan. The Water/Wastewater Study and the Action Plan were foundational pieces in the preparation of Plan Tucson. In addition Plan Tucson furthers specific action items from the City/County Water such as the Future Growth Scenario Map which directs growth to suitable growth areas and areas with existing infrastructure. The City/County Water Study recognized that achieving a sustainable water future requires a rational plan for growth that addresses the form, location, and cost of growth, as well as the efficient and sustainable allocation of water to serve growth.
- Water Plan 2050 - The update to the Tucson Water Plan 2050 is complete. All aspects of the Plan deal with contingencies for drought both locally and on the Colorado River (since Tucson currently imports most of its potable supply from the Colorado River). The updated Plan includes consideration of CAP supply shortages after 2040; this is a conservative estimate based on information from Central Arizona Water Conservation District and the Bureau of Reclamation. The probabilities of shortage were presented to the water community at the end of 2012 with the "Colorado River Basin Water Supply and Demand Study."
- Water Conservation – Tucson Water potable demand continues to trend downward with a residential average of 88 GPCD (gallons per capita per day), and 124 GPCD for average total demand. To date, the conservation fee collected for every ccf (hundred cubic feet) of water sold has resulted in over 600 million gallons of savings, more than \$4 million invested in community incentives, over 30,000 high-efficiency toilet and urinal installations, and over 800 irrigation efficiency, rainwater harvesting, and graywater applications received. Tucson Water continues to provide funding for three education partners: Arizona Project WET, SmartScape, and the Environmental Education Exchange. In 2014, these partners educated over 30,000 students, provided training for over 350 teachers and 2,000 local professionals, and reached over 4,000 adults, resulting in a projected water savings of 1.5 million gallons. The conservation division continues to have a strong water-waste enforcement team, with two conservation inspectors

visiting nearly 700 commercial water customers in 2014. The division also collaborates with the Zanjeros water audit team to provide information for residential customers.

- Rainwater Harvesting – Rainwater harvesting is identified as a means to reduce demands on potable water supplies. Jointly working with Pima County Regional Flood Control, a City-County guideline document has been completed for Low Impact Development and Green Infrastructure. The City of Tucson was involved in beta testing of a cost benefit analysis software of the eight green infrastructure elements in the Low Impact Development and Green Infrastructure Guidance Manual and four projects within the city of Tucson. The sustainable return on investment (SROI) illustrated the benefits of green infrastructure toward mitigating urban heat island, reducing traffic mortality, reducing direct and social cost of water, reduced flooding and value to improving air quality. The stakeholders benefiting from green infrastructure were the community/other, government/taxpayers and economic/business activity. Results of these findings have been shared through local, regional and southwestern states through conferences, workshops and forums. In addition, Pima Association of Governments (PAG) adopted a Green Infrastructure resolution in 2012 and a new resolution emphasizing green infrastructure benefiting community health and economics in 2015.
- Recycled Water Program - Introduced in December 2013 as the Recycled Water Master Plan, the Recycled Water Program is now being implemented by Tucson Water. This critical step in the creation of a sustainable water future identifies best practices and makes recommendations for maximizing the use of Tucson's local renewable water supplies. The purpose of Tucson Water's Recycled Water Program is to use the City's effluent resources to maximize wet-water supply benefits and overall water resource reliability for Tucson Water customers. Early stages of the Program's implementation have included community outreach through staff presentations, surveys, and focus group discussions, while preliminary technical activities have included treatment train and conveyance route studies. Full implementation of the Program will take place over the next 10-15 years.
- City Water Service Area Policy – The continued implementation of the City's Water Service Area Policy is a critical element in creating a sustainable water future by defining where water resources and infrastructure will be directed based on social, economic, and environmental considerations. The Water Service Area Policy is aligned with the City's annexation goals which help bring additional state shared revenue to the region. The new appeal process for water service denials was employed during a December meeting of the Water Service Area Review Board (WSARB), and further appeal hearings have been held during early 2015.
- Wheeling Agreements - Tucson Water continues to facilitate the delivery of renewable supplies to areas previously reliant on groundwater by entering into wheeling agreements with other water providers. Wheeling agreements also help to ensure property owners outside the Tucson Water Service Area have water service options. Wheeling agreements are now in place with Oro Valley, the Pasqua Yaqui Tribe, Vail Water Company, and Metro Water District. These entities are able to utilize their CAP allocations to serve their customers, rather than relying solely on groundwater. Negotiations are progressing with the Town of Marana for current and future water deliveries with the Town's boundaries.
- Office of Integrated Planning – Following voter approval of Plan Tucson, the City Manager formed an Office of Integrated Planning that is responsible for establishing and administering an integrated planning process for coordination of policy, plan development and public improvement projects for the City. OIP works closely with Tucson Water, and the Transportation and Planning and Development Services Departments to ensure the continued implementation of the action items from the City/County Water Study.

- Mixed Use Development and Infill - The Mayor and Council have taken several steps toward the goal of a more sustainable urban form, which impacts future water use, water infrastructure and energy costs. Construction of the Modern Streetcar, along with other infrastructure improvements and incentives such as the GPLET, have sparked nothing short of a renaissance in downtown Tucson. The recent approval of modifications to the Infill Incentive District help to ensure that new development within the central city will achieve high quality design. Efforts have progressed this year with the public/private development of the Ronstadt Transit Center and the City-owned west side lands south of Cushing Street. County bond funds are being pursued for several downtown projects.
- Water Quality - Tucson Water continues to be vigilant in the monitoring of and reporting on water quality. Construction of the new Advanced Oxidation Process Treatment Facility to treat 1,4 Dioxane is complete. The facility has been operating continuously since March 3, 2014, with water samples taken at the designated Point-of-Entry (POE) into the distribution system reflecting less than detection levels of both 1,4-dioxane and TCE.
- New Water Supplies - Tucson Water has worked with SAWUA to develop procedures for acquisition and finance of new water supplies. The ADD Water Program has not moved forward in part because the CAP proposal was not acceptable in its entirety to the stakeholders. U.S. Bureau of Reclamation and the CAP Board are developing a standard wheeling agreement that would make it possible to purchase additional supplies and have them delivered to Tucson. ADD water might be re-started after the completion of the wheeling agreement work. More importantly, Tucson and Phoenix have entered into an Inter-AMA Self-Firming program, which will be a wet-water benefit to both Cities during shortage of our CAP allocations. Tucson Water staff is working with Phoenix and CAP staff to develop an agreement that will allow the program to start.
- Reclaimed System Modifications - Tucson Water has completed construction of three new recharge basins at its Reclaimed Water Treatment Plant. The additional basins allow more consistent capture of effluent from the new Agua Nueva Wastewater Reclamation Facility, ensuring that customers' reclaimed water demands can be accommodated. Necessary modifications to the Reclaimed Treatment Plant's disinfection facilities have also been completed, ensuring that the reclaimed system remains in compliance with its permit limitations while also utilizing effluent from Agua Nueva WRF. In the southeast area of the City, the Southeast Houghton Area Recharge Project (SHARP), a joint project of Tucson Water and Pima County Regional Wastewater Reclamation Department, is progressing. Design and permit phases have started with a design completion in early FY 2016. Construction could begin in late FY 2016 and be completed in early FY 2017.
- Habitat Conservation Plan - In consultation with the U.S. Fish and Wildlife Service (F&W) and a Technical Advisory Committee, Tucson Water and the Office of Integrated Planning have completed development of a Habitat Conservation Plan (HCP) for Tucson Water's retired farm properties in Avra Valley. The HCP will help balance the community's long-term water supply needs with the needs of plants and wildlife on Tucson Water's Avra Valley lands. With the establishment of a land-management contract with BKW, Tucson Water is confident it is ready to successfully execute the HCP. The final draft has been reviewed by F&W, and Tucson Water has submitted its application for an Incidental Take Permit on its HCP lands.
- Conserve2Enhance - The C2E program funded three Community Enhancement Projects in 2014, including two neighborhood projects and one project at a regional park. To date, a total of seven projects have been funded by C2E with a total investment of \$44,000 from community donations

through www.conserve2enhance.org and through the Utility Services bill check box for “Open Space and Riparian Enhancement.” The Jefferson Park Neighborhood Association received \$1,900 to create street-side water harvesting basins in the right-of-way to capture stormwater from Vine Ave. The Palo Verde Neighborhood Association received \$5,940 to create a pocket park with integrated stormwater capture on a vacant Tucson Water well site, which will mitigate flooding, create new native habitat, and act as community gathering spot. And the Tucson Audubon Society received \$5,800 to improve natural wash conditions through Silverlake Park by altering wash management practices, which will increase wildlife habitat and reduce erosion. The C2E program also had a formal groundbreaking celebration at Atturbury Wash, complete with a sign unveiling and speeches by Mayor Rothschild and Parks & Recreation Director Fred Gray. In 2014, the Water Use Dashboard (www.conserve2enhance.org) was launched to help participants track water use and donate to C2E. The Tucson Dashboard presents participants’ water-use data on a monthly basis through a series of user-friendly graphics. Since January 2011, C2E has recruited 100 participants who have saved 6.3 million gallons of water. 871 water customers donated to C2E via the check box on their Utility Services Statement in 2014. Twenty-nine rainwater harvesting projects have been implemented by participants, and 30 water harvesting basins have been built at project sites with 197 trees and plants planted.

- Conservation Effluent Pool (CEP) – The CEP Task Force developed a list of potential candidate projects that could be supported by the 10,000 acre-feet of effluent/reclaimed water available through the CEP. The Task Force developed evaluation criteria for assessing the environmental, social, and economic benefits associated with projects, and rating each project based on its potential as a near-term project. A report detailing this assessment is available from the Community Water Coalition. The City and County have each designated their respective CEP Administrator, and the Administrators have completed an application form for use in requesting a CEP allocation.

Background on the City/County Water Study and Action Plan

In February 2008, the Mayor and Council and Pima County Board of Supervisors approved a scope of work for a joint *Water Infrastructure, Supply and Planning Study*. The purpose of the Study was to improve City/County collaboration on water and wastewater issues and to define and plan for a sustainable water future for the region. The scope set forth a five-phase scope of work, with a City/County effort initiating the process. To provide independent review and oversight of staff work, the Council and Board appointed a Joint City/County Oversight Committee (Committee), consisting of four members each from the Citizens Water Advisory Committee and the Regional Wastewater Reclamation Oversight Committee and two members each from the jurisdictions’ Planning and Zoning Commissions, for a total of 12 members. At the explicit direction of the Council and the Board, staff and the Committee implemented a broad-based public process for engaging the community in Phases I and II.

Phase I was completed in April 2009 with both governing bodies endorsing the Phase I Report. The goal of Phase I was to assemble basic information on City and County water and wastewater systems and resources and to identify the elements that must be addressed as part of water sustainability. A key outcome from Phase I was improved cooperation and fact sharing between the two largest water utilities in the region, a necessary basic foundation in moving toward a sustainable water future.

Key findings from Phase I included:

- Our water and wastewater systems are generally reliable, well maintained and newer than those found in many other cities. However, these systems are aging, and both water and wastewater rates will need to increase in the future to fund the rehabilitation of our systems and to meet increasingly stringent water and wastewater quality standards.

- Due to past investments in acquiring and delivering Central Arizona Water Project (CAP) water, Tucson Water has a reliable and renewable water supply that can meet the needs of current residents and provide for a significant amount of growth (approximately 360,000 additional customers).
- Faced with a variety of uncertainties, we need to be prudent with our water resources. Global warming, climate change, and long-term drought could affect local water demand, rainfall amounts and future flows of the Colorado River.
- Any expansion of the Tucson Water service area must be done thoughtfully and with deliberation. The recent past shows that demand-based service expansion is not sustainable or prudent. Planning for and directing growth to areas where it is most appropriate should guide future water service decisions.
- Additional water resources will likely be needed in the future and the time to plan for this is now. Obtaining new water resources, which will be more expensive than what we are familiar with today, will require regional cooperation.
- Sustainability requires that we think more broadly about water resource management, beyond just clean, safe water for people, to considering environmental and economic needs for water and allocating water for these purposes.

Phase II began immediately following Phase I in the spring of 2009. The scope of work for Phase II called for the City and County to reach agreement on a set of water resource development and conservation goals, including:

- Agreement on population growth, water, urban form, land use planning and infrastructure.
- Integration of land use planning with water resources and infrastructure.
- Increasing the use of reclaimed or recycled water on turf irrigation to substitute for groundwater use.
- Develop renewable water sources for the City/County area.
- Develop a consolidated drought management plan.
- Implement consistent water conservation standards.
- Respect for the environment.

Fourteen technical papers were prepared by staff and outside parties during Phase II on these topics. The technical papers were presented at Committee meetings for review and comment by Committee members and the public. The Phase II Report included perspectives from both City and County staff and the Oversight Committee. The Phase II Report set forth 19 City/County shared goals and 56 recommendations organized around four critical aspects of water sustainability:

- Comprehensive, integrated planning
- Respect for the environment
- Water supply
- Demand management

On February 17, 2010, the Mayor and Council approved Resolution No. 21478 adopting the City/County Water and Wastewater Study Phase II Report. One of the follow up items called for in the Resolution was the development of an Action Plan to implement the Phase II goals and recommendations.

The Action Plan was developed by a joint City/County staff team working together over a 6 month period with the input of stakeholders and citizen oversight committee members. The Plan describes specific steps the City and County plan to take toward water sustainability over a 5 year period (2011-2015). It should be viewed as a living document subject to updates and refinements based on additional input by stakeholders, new information and opportunities, and changing circumstances.

The Plan includes a set of 87 specific actions grouped within 14 programs to be implemented over 5 years to achieve the following outcomes:

- Water, wastewater, and stormwater resources are planned in an integrated fashion.
- More renewable water resources including effluent, reclaimed, stormwater and rainwater and greywater are put to beneficial use in an efficient manner.
- Water resource policies are aligned with economic goals.
- Collaborative efforts are undertaken to acquire new water, to achieve greater flexibility in use of existing supplies, and to align and enhance standards for water use efficiency.
- Improved water quality resulting from regional wastewater treatment facility upgrades (i.e. the Regional Optimization Master Plan or ROMP) is matched to needs for recharge, environmental restoration and public amenities such as parks, golf courses and ball fields.
- Land use, infrastructure and water resources planning are linked and foster optimum use of renewable water resources in future growth areas and increased water and energy efficiency outcomes in new development.
- Water is dedicated and allocated to environmental needs, sensitive riparian ecosystems are preserved and maintained, and cost-effective and collaborative environmental restoration projects are advanced
- Public values are considered in water resources planning and public awareness of the environmental and human benefits of increased water use efficiency is increased.

In these challenging economic times, the financial constraints facing the City and County loomed large over the action planning process. Staff did not feel it was prudent to make this plan contingent on the securing of new resources. Rather, staff focused on how best move water sustainability efforts forward in light of the current economic times. The Action Plan does not rely on new resources to move forward, but rather is intended to be integrated into existing programs and organizational structures of the City and County. That is not to say that additional resources will not be sought through grants or partnerships. Additional resources would allow certain activities to move forward more quickly or to be implemented more extensively.

Water Policy Decision Making Framework – As part of the February 17, 2010 Resolution adopting the City/County Water and Wastewater Study Phase II Report, the Mayor and Council approved a Water Policy Decision Making Framework in response to concerns raised by SAHBA and the Tucson Regional Water Coalition related to the economic and cost impacts of the Study recommendations. The framework below will serve as a filter, providing staff a set of factors that are analyzed prior to coming forward with any proposed IGAs, regulations, or policies related to water policy.

Water Policy Decision Making Framework

1. Financial costs (to the City, to Tucson Water ratepayers, to private parties, and on Tucson Water's bond coverage ratio)
2. Economic impacts (jobs, housing, tax base)
3. Environmental impacts
4. Impact on Tucson Water's resources, per capita water demand, and water quality
5. Effect on drought/climate change preparedness
6. Impact on public infrastructure, services, and fiscal sustainability
7. Impact on location of growth, urban form, and land use
8. Energy costs
9. Opportunity costs (does this foreclose other opportunities)
10. Social equity considerations/community's ability to pay

Feel free to contact me if you have any questions.