

**Date:** March 26, 2020

**To:** Carmine DeBonis, Jr., Deputy County Administrator - Public Works

**From:** Linda Mayo,  Director, Office of Sustainability, Conservation and Historic Preservation  
Jackson Jenkins, Director, Regional Wastewater Reclamation Department

**RE: Water and Wastewater Infrastructure, Supply and Planning Study (WISP)  
Post Action Report 2019**

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The WISP Report, completed in 2010, was followed by a five-year action plan period ending in 2015. Although the City of Tucson ended WISP reporting, Pima County continues to report on the status of WISP action items. Accordingly, attached is the 2010 WISP Post-Action Report. WISP reports, Phase 1 and 2, Technical Reports and Action Plans are available at the [WISP Website](#).

Pima County and the City of Tucson have made notable progress toward several WISP goals and some goals remain unresolved. Below is a list of key deficiencies and progress:

- Tucson Water Service Area Policy – The city policy continues to limit development in sustainable growth areas in unincorporated Pima County. Staff is reviewing water service denials of this policy in unincorporated Pima County from 2015 through 2018.
- Conservation Effluent Pool (CEP) – The City of Tucson submitted an application for CEP water from the Heritage Project. When revised and found complete, final approval from the Board of Supervisors and Tucson Mayor & Council will be needed.
- Environmental Restoration - Restoration of the Agua Caliente Pond will ensure the pond's long-term sustainability. Construction of an ephemeral wetland at Canoa Ranch will restore a cienega to support and attract additional avian species as part of a larger project to restore riparian habitat.
- Lower Santa Cruz River Management Plan - Staff initiated the second phase, which will recommend alternatives and an implementation plan incorporating priorities in development of multi-benefit solutions.
- State and Federal Water Quality – Staff participated in the Arizona Department of Water Quality's (ADEQ) triennial review process of state water quality standards, promoting protections for outstanding waters, specifically Cienega Creek and Davidson Canyon.
- Drought Preparedness - Pima County monitors the status of drought and collaborates with water providers regarding drought response actions through the Local Drought Impact Group and with the Arizona Department of Water Resources.

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- 2018-2015 Sustainable Action Plan for County Operations – Staff began implementation of the 2018 SAPCO plan, collecting data for the 2019 report and creating a framework for reporting green infrastructure progress.

It is notable that the City and County initiated the WISP report in 2008 and adopted in 2010 and, yet, many of its goals are still relevant. Pima County continues to make significant progress in achieving the WISP goals.

Should you have any questions, please feel free to contact us.

Attachment

## **Water & Wastewater Infrastructure, Supply and Planning Study Post Action Plan Report 2019**

The Water & Wastewater Infrastructure, Supply and Planning Study (WISP), or City/County Water Study, was initiated in 2008 and produced a two-phase report assessing existing water resources, infrastructure capacity and demand scenarios. Based upon the first phase framework, to include an extensive stakeholder process, agreement was reached on a range of topics central to sustainable water planning. An action plan was developed to implement the 19 shared goals and 56 recommendations over a five-year period. The WISP Action Plan for Water Sustainability 2011-2015 (Action Plan) was adopted by both Mayor and Council and the Board of Supervisors in 2010. The City and County have submitted a year-end progress report for each year of the plan period. Despite the closing of the plan period, County staff will continue reporting on the progress of WISP goals.

The Action Plan contains four elements, each with programs, goals, recommendations and action items to implement the recommendations.

### COMPREHENSIVE INTEGRATED PLANNING

#### WISP Goals

1. Encourage sustainable urban forms
  2. Direct growth to suitable growth areas
  3. Integrate land use and water resources planning
  4. Growth should pay for itself over time and be financially sustainable
- Pima Prospers Implementation Update

Pima Prospers, the County's Comprehensive Plan, was adopted in 2015 and incorporated the WISP Action Plan, Water Resources Element (4.2), into its implementation and work plan. The Pima Prospers Steering Committee monitors progress and guides project priorities.

Pima Prospers Comprehensive Plan Water Resources Element (4.2) cites the Action Plan, directing the Plan Update to "comply with all applicable goals and recommendations in the 2011-2015 Action Plan for Water Sustainability, approved by the Board of Supervisors and the City of Tucson Mayor and Council."

The 2019 mid-term Pima Prospers Progress Report itemizes significant progress in completion of implementation items. The report can be found here:

[https://webcms.pima.gov/government/pima\\_prospers/](https://webcms.pima.gov/government/pima_prospers/)

- Tucson Water Service Area Policy and Service Denials

Pima County contests the current Tucson Water service area policy as inconsistent with WISP goals and recommendations to "direct growth to suitable growth areas" and to "take steps to encourage

growth and new development in areas that are within or adjacent to the existing built environment, are outside of the conservation land system, and are identified as most suitable for development”.

Unincorporated parcels have been denied service in WISP designated “suitable growth areas”. Uncertainty regarding the provision of water service is limiting to appropriate development and infrastructure planning. The current service area policy is not comprehensive in addressing appropriate land use and economic development goals of benefit to the entire region.

Staff has drafted a report of all denials from 2015 through 2018. The Southwest sub-region continues to be the most problematic area. The Tucson Water service area policy remains inflexible, allowing for exceptions to the policy that would “provide clear and substantial benefit to the region” but limits exceptions to the Primary Jobs Incentive Program and not other beneficial development such as low income housing.

- City Water Service Area Review Board

The City of Tucson’s Water Service Area Review Board reviews service denials brought by appellants and considers appeals either upholding Tucson Water’s denial of service or overturning the denial and directing Tucson Water to provide service.

In 2019, the Board heard one appeal for service in the Northwest area which was denied.

- Pima County Economic Development Plan

The Pima County Economic Development Plan was updated in 2019 and focuses efforts to promote regional economic development, job growth and increased income as previous iteration but the 2019 update emphasizes workforce development goals. The Plan will continue to preserve and support existing businesses and recruit new companies in high wage sectors. Developing a workforce to meet current and future growth is necessary to sustain economic success in Pima County.

- Pima County Integrated Infrastructure Plan

The Pima County Integrated Infrastructure Plan unifies the infrastructure planning process across disciplines and departments and planning areas. The plan incorporates County Sustainability Initiatives and the Economic Development Plan with the core function investment in physical infrastructure allowing for delivery of key public services that foster long term economic growth.

- Central Arizona Groundwater Replenishment District

The Arizona State University Kyl Center for Water Policy released a report in 2019 on the role Central Arizona Groundwater Replenishment District (CAGRDR) plays in the Assured Water Supply program. The report cites the significant number of enrolled Member Lands in suburban areas of the three-county service area that lack any hydrological connection to the groundwater that is pumped and the renewable CAP water that is replenished. The water supply available to the CAGRDR to use for replenishment is limited and future cuts to Colorado River water further constrain CAGRDR supply options. CAGRDR water has become increasingly expensive as a result as it endeavors to build a sustainable water portfolio. The report theorizes that expense could drive those enrolled in CAGRDR to look to alternative water supplies, reducing funds and driving the cost of CAGRDR water even higher. Nearly sixty sub-divisions are enrolled in the CAGRDR in the

Sahuarita-Green Valley area in which water levels are falling several feet each year. The CAGR is being reconsidered as a long term water supply option because of the hydrological disconnect. In Pima County, only 100 lots enrolled in the CAGR over the past five years and the projected replenishment obligation is relatively small.

## RESPECT FOR ENVIRONMENT

### WISP Goals

1. Preserve existing riparian areas through coordinated regulation, policy and outreach
2. Identify needs and opportunities for future restoration
3. Ensure that public projects are multi-benefit including restoration, stormwater management, recharge and public amenity
4. Ensure the future of riparian and aquatic habitat along the effluent-dependent reach of the Santa Cruz River
5. Develop water supply for the environment

- Lower Santa Cruz River Management Plan

The Lower Santa Cruz River Management Plan is being developed by Pima County Regional Flood Control District (RFCD) to manage the effluent dependent river while balancing flood risk and infrastructure protection with aquifer recharge and riparian habitat preservation.

In 2019, RFCD initiated the second phase of the Lower Santa Cruz River Management Plan, which will identify recommended alternatives and an implementation plan incorporating other County and RFCD priorities in development of multi-benefit solutions. RFCD will propose recommendations to the Board of Supervisors, City of Tucson and the Town of Marana. The recommended alternatives are expected by January 2021.

- Living River Report WY2018

This report documents the improved water quality released into the Lower Santa Cruz River and resultant benefits. Water quality in the river improved following significant upgrades of the County's wastewater treatment plants, reducing ammonia concentrations.

Water quality continues to improve with ammonia concentration no longer toxic. Aquatic diversity is increasing with the improved water quality providing habitat. In June, the river dries before reaching the Tres River Water Reclamation Facility. This stretch ranges between .03 and 2 miles depending on outflow from the Agua Nueva Water Reclamation Facility. Pima County is reviewing system processes to reduce occasional periods of elevated ammonia concentrations.

- Conservation Effluent Pool Applications

Tucson Water submitted three applications for Conservation Effluent Pool (CEP) water in 2018. The proposed CEP water projects for the two existing recharge projects, the Lower Santa Cruz Managed Recharge Project and the Santa Cruz River Managed Underground Storage Facility, and the pending Santa Cruz River Heritage Project.

The City of Tucson withdrew the applications and resubmitted an application for the Heritage Project. The application was incomplete. When found complete, it will need final approval by the Board of Supervisors and Mayor and Council.

- ADEQ Triennial Review and 404 Program

The federal Clean Water Act (CWA) Section 303(c) requires states to review and revise water quality standards at least every three years in a public process, or Triennial Review. As directed by the County Administrator, staff participated in the Arizona Department of Environmental Quality's (ADEQ) review process. Pima County supports maintaining protections for water quality and the existing and designated uses of waters, especially for the threatened areas of Cienega Creek and Davidson Canyon.

The OSC issued a memo of the outcomes of the Triennial Review process now that the review is completed and the final rule published. Staff found mixed outcomes with ADEQ failing to address substantive issues in this review such as water quality standards for state waters and the Outstanding Arizona Waters rule making. ADEQ will consider County proposals in a future review including the effluent dependent waters definition and exempting riparian restoration projects using recycled water from redundant permitting.

ADEQ did not adopt rules to govern discharges to water bodies lacking a nexus to traditional navigable waters. There is no regulatory framework for discharges to streams in Altar and Avra Valleys and segments of the Santa Cruz River.

Staff has recommended the County seek statutory changes at the state level to authorize the development of a permitting and enforcement program for those water bodies not classified as Waters of the US.

CWA Section 404 regulates the discharge of dredged or fill material into waters of the United States and requires a permit before said material may be discharged into waters. The Arizona 53<sup>rd</sup> State Legislature passed and the Governor signed Senate Bill 1493 granting the state the authority to develop rules to assume the program consistent with the CWA.

The ADEQ has held stakeholder and technical work group meetings. Based on the outcome of the stakeholder process ADEQ has decided not to continue with CWA Section 404 assumption.

- Agua Caliente Pond Restoration

Pima County Natural Resources, Parks and Recreation has been managing pond restoration at Agua Caliente Park. The park's focal point is a natural artesian spring that feeds a creek and produces an abundant variety of oasis vegetation and a habitat for native species. The natural spring originally flowed into two constructed ponds dating to the late 1800s, but in past years, the spring has stopped flowing. Fortunately the spring has recently recovered and is able to fill the ponds.

After grading and deepening the pond, a polymer liner was installed to reduce seepage and groundwater pumping required to keep the pond filled when the natural spring failed. The pond is being refilled and parts of the park are open. The water conservation project will ensure the ponds long term sustainability.

- Canoa Ranch Cienega Construction

RFCD constructed a pond at the historic Canoa Ranch in 2018. In 2019, RFCD began construction on an ephemeral wetland north of the pond. A spillway feeds the cienega from the pond and soil grading, landscaping and construction of an earthen trail is underway. The cienega will support and attract additional species and is part of a larger project to restore riparian habitat in the Santa Cruz River floodplain.

## WATER SUPPLY

### WISP Goals

1. Work collaboratively to acquire new water supplies for reliability
2. Maximize and make efficient use of effluent and other locally renewable water supplies
3. Address regulatory barriers to maximizing local supplies
4. Foster increased use of reclaimed water
5. Be prepared for climate change and drought

- 2018 Effluent Generation Report

Pima County Regional Wastewater Reclamation Department (RWRD) produces approximately 60,000 acre feet (20 billion gallons) of effluent annually at eight water reclamation facilities (WRF). The effluent is highly treated to reclaimed water standards and put to beneficial use by either direct reuse in Tucson Water's reclaimed system, aquifer replenishment in underground recharge projects or environmental restoration projects.

In 2018, the RWRD produced 60,557 acre feet (af) of effluent, 56,480 af from the metropolitan water treatment facilities and 4,077 af at the non-metropolitan facilities.

Pima County's share of metro effluent was 2,828 af: the County utilized 1,236 af for reclaimed system use, 778 af was delivered to the Lower Santa Cruz River Managed Recharge Project (LSCMRP) and 638 af was delivered to Marana High Plains Constructed Recharge Project (MHPRP).

Pima County earned 2,563 af of long term storage credits.

LSCMRP	122 af	Avra Valley WRF	1,473 af
MHPCRP	600 af	Corona de Tucson WRF	367 af

- LDIG Drought and Climate Update

The Pima County Local Drought Impact Group (LDIG) held six meetings in 2019. An advisory board to the County Administrator and Board of Supervisors, federal, state and local agencies and departments participate in monitoring the extent and severity of drought and resultant impacts in Pima County. The National Weather Service and Central Arizona Project routinely present on winter and monsoon weather data and Colorado River and Lake Mead conditions respectively.

LDIG submits an annual drought report of drought conditions in Pima County to the Arizona Department of Water Resources (ADWR) for inclusion in the state's Arizona Drought Preparedness Annual Report. The 2019 Pima County LDIG Drought Report can be found on [LDIG's website](#).

LDIG's Drought and Climate Change in Pima County Report can be found on the [Drought Management website](#).

- Class A+ Reclaimed Water

Pima County Regional Wastewater Reclamation Department filed notice of intent with the Arizona Department of Environmental Quality to begin production of Class A+ reclaimed water at the Agua Nueva Water Reclamation Facility. Upgrading from Class B+ reclaimed water will allow more uses with the improved water quality and permitting.

## DEMAND MANAGEMENT

### WISP Goals

1. Increase the effectiveness of conservation programming through coordinated planning and evaluation
  2. Establish common water conservation goals and targeted methods
  3. Manage demand through the design of the built environment
  4. Manage demand through changing behaviors
  5. Increase the use of rainwater and stormwater
- 2018-2025 Sustainable Action Plan for County Operations

Pima County adopted the Sustainable Action Plan for County Operations (SAPCO) in 2008, integrating sustainability goals with County operations such as facility and fleet maintenance, purchasing and land and water conservation. SAPCO was updated and a new action plan adopted in 2014. The 2018 SAPCO update builds upon previous success in increasing the use of renewables, decreasing waste and emissions while saving \$14 million in avoided costs.

The OSC is working with departments implementing the SAPCO plan approved by the Board of Supervisors in 2018, collecting data for a baseline report and working on the 2019 report card. A framework is being created for reporting green infrastructure progress. Internal task force groups are implementing SAPCO targets.

OSC is collaborating with community organizations to promote food system resilience. The Food System Chapter of SAPCO was added in 2018. In a unique application of AutoCASE, the triple bottom line economic modeling software used by RFCD, the Las Milpitas Farm (owned by RFCD and operated by the Community Food Bank) was evaluated and found to be a net positive financial investment for the County. The report suggested similar projects would be a net benefit as well.

- LID/GI Update

The County's Green Infrastructure (GI) Action Plan identifies additional candidate sites on County lands for GI and tree planting, evaluates the full range of costs and benefits of such work, and

demonstrates climate readiness to credit rating agencies. The plan catalogs 43 sites ranked by surface temperature and tree canopy and models the costs and benefits under future drought and climate scenarios for pilot projects. The pilot sites indicated climate adaptation benefits associated with urban cooling, pollution and flood risk reduction and recreational value.

RFCD continued to add case studies to evaluate design solutions reflecting regional efforts to integrate sustainable design practices of Low Impact Development (LID) and GI into development. RFCD's case study inventory was updated in 2019 and now include 34 sites. The studies include local commercial, industrial, residential and transportation projects that have LID/GI features. The District also collaborated with the University Of Arizona Department Of Architecture to redesign sites in problematic areas for net-zero water design. Two small parcels in the Christmas Wash in the City of Tucson were acquired and retrofit to incorporate GI/LID as a multi-benefit drainage solution.

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