

City/County Water and Wastewater Infrastructure Supply and Planning Study
ACTION PLAN FOR WATER SUSTAINABILITY
Mid-Year Update – August 2011

Comprehensive Integrated Planning (CIP) - Action Items #1, 2, 3 - Underway

Project Title: General and Comprehensive Plan Updates

Update: The City's General Plan and the County's Comprehensive Plan provide overall policy direction for land use, water, and wastewater and many other governmental services and infrastructure. State law requires an update to the City's General Plan that is approved by the voters by November 2015. The County intends to update its Plan as well. Both the City's General Plan Update and the Pima County Comprehensive Plan Update are intended to rely on the principles of smart growth and sustainability.

The County is moving forward with the Integrated Infrastructure Planning project in preparation for an update to the Comprehensive Plan and future bond election. An inter-departmental Pima County staff team comprised of representatives from 13 departments and led by the Pima County Development Services Department is conducting an overall inventory of infrastructure and services for 12 areas that will result in a planning document that identifies current deficiencies for each area. The water resources component of the inventory will include a comprehensive assessment of water supplies, water service providers and service areas, and potable, reclaimed, and stormwater infrastructure. Staff will work with other jurisdictions as appropriate when gathering data in areas that affect them. A draft report on Subarea 7 (southeast Tucson) has been completed and presented to the County Administrator for review. The 12 areas have been reprioritized, and work has begun on the first draft for Subarea 5 (Sahuarita/Green Valley). The majority of the most likely developable subareas will be completed in time to be of use in the comprehensive plan process.

The City of Tucson has begun the process to update its General Plan (called Plan Tucson), which is expected to go to voters in November 2013. An inventory of existing plans and policies has been done and initial stakeholder meetings have been held. Policy Working Groups are now being formed to address specific topic areas. The WISPS study is providing policy guidance in the development of Plan Tucson. More information can be found on the Plan Tucson website at www.tucsonaz.gov/plantucson.

Lead Jurisdiction: Both

Pima County lead: Development Services Department

City of Tucson Lead: Housing and Community Development Department

Comprehensive Integrated Planning (CIP) - Action Items #10, 16 - Underway

Project Title: Promote Mixed Use Development and Address Barriers to Infill

Update: How we grow as a community affects and is affected by our water policies. The WISP Study included the goals of encouraging sustainable urban forms and directing growth to suitable growth areas as important elements of a sustainable water future. More efficient development patterns (characterized by infill, density, mixed use, and transit-orientation/walkability) not only mean more efficient use of our water and wastewater infrastructure and resources, but have a host of additional benefits related to energy, affordability, and quality of life as described in the Study. The primary activity underway by the City to further this goal at this time is land use

planning and overlay zoning along the Modern Streetcar route which extends from the University to the westside of downtown. These planning/rezoning efforts will make this area “shovel ready” for denser, mixed use, transit oriented development within this prime infill location.

Lead Jurisdiction: City of Tucson

Pima County lead: NA

City of Tucson Lead: Planning and Development Services Department

Comprehensive Integrated Planning (CIP) - Action Item #14 - Underway

Project Title: Land Use Code Sustainability Audit

Update: The City of Tucson received a Department of Energy grant to conduct a sustainability audit of its Land Use Code which the goal of identifying changes that can be made to encourage more environmentally friendly building and development practices. The initial diagnostic has been completed and priority recommendations for amendments are now beginning. The first set of changes include “quick wins” that will occur this fall. Those changes will address green requirements for retrofits, use of pervious materials to encourage on-site capture of rainwater, shade structures, electric vehicles, and urban food policies.

While the County did not receive grant funding to conduct an audit of its own, County staff are reviewing changes being made by the City to see if they can also be applied to the County’s code.

Lead Jurisdiction: City of Tucson

Pima County lead: Development Services Department

City of Tucson Lead: Planning and Development Services Department

Comprehensive Integrated Planning (CIP) - Action Item #19 – Completed/Ongoing

Project Title: Wheeling Agreements

Update: The hydrologic disconnect between where groundwater pumping occurs and where it is recharged as groundwater replenishment is a significant regional problem, especially outside the Tucson Water Service Area. Tucson Water staff has entered into and continues to enter into ‘wheeling agreements’ with other providers to deliver renewable wet water resources to areas that currently rely on groundwater. In the past six months, potable water wheeling agreements have been successfully negotiated with Oro Valley and with the Pasqua Yaqui Tribe which will mean that these entities will begin delivering their CAP allocations to customers rather than relying solely on groundwater. Similar agreements are being negotiated and/or explored with Metro Water and Vail Water Company.

Lead Jurisdiction: City of Tucson

Pima County lead: NA

City of Tucson Lead: Tucson Water

Comprehensive Integrated Planning (CIP) - Action Item #20 - Completed

Project Title: Participate in the Safe Yield Task Force to address pumping/recharge disconnect

Update: In order to better integrate land use and water resources planning, the WISP Action Plan for Water Sustainability (2011-2015) recommended working toward regional solutions to address hydrological and pumping/recharge disconnects. The Arizona Department of Water Resources Groundwater Users Advisory Committee (GUAC) convened the Safe Yield Task Force (SYTF) in July 2010 to address strategies to achieve Safe Yield in the Tucson Active Management Area by 2025. Priority issues to be explored include CAP Utilization, recovery of long term storage credits, sub-area management and agricultural and industrial groundwater rights. Alternatives will be developed and submitted to the GUAC for further implementation and could form the basis of the Tucson Active Management Area's Fourth Management Plan. City of Tucson and Pima County staffs are actively participating in the SYTF. SYTF meetings are open to the public and comments and suggestions are welcome.

A progress report was delivered to GUAC in May 2011 that listed four high priority items that will receive further consideration:

- Achieve Full CAP Utilization
- Reach Optimum Utilization and Comprehensive Management of Effluent
- With Willing Parties, Facilitate Matching the Water Use to the Water Source
- Regional Public Education Campaign

Another progress report to GUAC is anticipated at the end of 2011. Issue papers and meeting materials can be found at <http://sawua.org/SYTF/SYTF.htm>

Lead Jurisdiction: Both

Pima County Lead Department: Regional Wastewater Management Department

City of Tucson Lead Department: Tucson Water

Comprehensive Integrated Planning (CIP) - Action Items #13, 21 – Completed/Ongoing Refinement

Project Title: Water Service Area Policy

Update: In August, 2010 the Mayor and Council formally adopted a Water Service Area Policy establishing a water service boundary for Tucson Water. An interim water service area had been in place since December 2007. As recognized in the WISP Study, a water service area for Tucson Water is a critical element in a sustainable water future because it defines where water resources and infrastructure will be directed based on social, economic, and environmental criteria. The City is in the process of conducting its first annual review of the policy and service area to determine if refinements are necessary. One of the areas being reviewed is whether the policy is in-line with economic goals for the region (as called for in action item #13). A refinement already made in August 2011 in response to stakeholder feedback was the extension of the water assurance letter from one to two years for property owners requesting water service. The Citizen's Water Advisory Committee (CWAC) is seeking comments from stakeholders and is expected to make recommendations to the Mayor and Council on additional refinements to the policy in early 2012.

Lead Jurisdiction: City of Tucson

Pima County lead: NA

City of Tucson Lead Department: Tucson Water

Comprehensive Integrated Planning (CIP) - Action Item #22 - Underway

Project Title: Develop / Update Consistent Water Efficiency Standards

Update: The WISP Action Plan for Water Sustainability (2011-2015) identified goals to integrate land use planning and water resources planning and to develop consistent standards and guidelines for water use efficiency. A key mechanism to achieve these goals in Pima County is the Water Policy Element of the Comprehensive Plan. The Water Policy Element requires developers to identify water impacts and mitigation measures in conjunction with Comprehensive Plan Amendments and Rezonings. For Rezonings that include a site analysis, the developers are required to submit a “Preliminary Integrated Water Management Plan” at the platting and development plan stage.

Staff are working on various projects to develop standards, design guidelines and model codes to support developers in implementing their Preliminary Integrated Water Management Plans. These include the development of design guidelines for neighborhood stormwater harvesting (*See Demand Management Activity #5*), stormwater detention guidelines (*See Respect for Environment #19*), riparian mitigation guidelines (*See Respect for Environment #9*) and a net zero energy building code (*See Demand Management #7*). All draft standards, guidelines or new requirements will undergo a stakeholder review process prior to Board consideration for adoption.

City and County coordination on these efforts consists of joint project meetings as needed, sharing/reviewing deliverables, and holding semi-annual meetings of the WISP Core Team from each jurisdiction to review progress on Action Plan implementation.

Lead Jurisdiction: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #1 - Complete

Project Title: Finalize Conservation Effluent Pool Agreement

Update: The WISP Action Plan for Water Sustainability (2011-2015) identified a goal to develop a water supply for the environment and an objective to finalize the Conservation Effluent Pool (CEP) Agreement. This objective has been achieved. Staff negotiated the terms of the implementing agreement to establish the procedures and criteria for allocating effluent from the CEP for environmental projects. A CEP agreement was adopted by the Board of Supervisors on December 14, 2010 and the City of Tucson Mayor and Council on January 25, 2011 establishing the process and procedures for allocating effluent for the CEP for environmental projects. The next step will be to define projects to use the CEP.

Lead Jurisdiction: Cooperative Effort

Pima County Lead Department: Pima County Attorney’s Office

City of Tucson Lead Department: City of Tucson Attorney’s Office

Respect for Environment (RFE) - Action Items #2, 7 - Complete

Project Title: Conserve To Enhance

Update: The WISP Action Plan for Water Sustainability (2011-2015) identified a goal to develop a water supply for the environment. Linking water conservation to environmental preservation/restoration was further identified as a key objective.

This project involves commitment of City/County resources to launching the first ever Conserve to Enhance (C2E) program in Arizona linking money saved from water conservation at residences to a fund for environmental restoration. City and County representatives serve on the advisory board and the City staff also assist with establishing the funding mechanism through the Tucson Water bills.

Conserve to Enhance successfully launched the checkbox feature on the Tucson Water bill enabling customers to donate money saved from water conservation efforts to be used to fund environmental restoration projects. The advisory board also created project selection criteria and oversaw the selection of the first project, Atturbury Wash in the City of Tucson, for C2E funding.

Regional discussions regarding restoration priorities, opportunities, and needs are ongoing, many within the context of the C2E program. Creation of a separate Regional Restoration Working Group has not been deemed necessary in light of the collaboration and work through C2E.

Jurisdiction Lead: Cooperative Effort

Pima County Lead Department: Office of Conservation and Sustainability; Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water; Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #4 – On Hold

Project Title: Tucson Audubon Stewardship Program

Update: The purpose of this action item is to coordinate development of a volunteer-based stewardship program with Tucson Audubon Society. The grant that was anticipated to fund this program was not awarded, however alternative grant funding is being pursued.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: Office of Conservation and Sustainability; Regional Wastewater Reclamation Department

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #5 - Underway

Project Title: Joint 404 Mitigation Plan

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes goals to identify needs and opportunities for future environmental restoration. To accomplish that goal the Action Plan recommends developing regional polices and regulatory compliance projects.

The Joint 404 Mitigation Project involves coordination to establish an intergovernmental agreement with the U.S. Army Corps of Engineers for riparian restoration, a riparian mitigation site list and an implementation plan. The Pima County Regional Flood Control District (RFCD) is coordinating with City of Tucson, Tucson Audubon Society (Audubon) and other organizations to establish riparian restoration sites on District and City land that would meet the U.S. Army Corps of Engineers (Corps) policy governing in-lieu fee riparian restoration sites. The sites would serve as regulatory compliance (mitigation) for Clean Water Act Section 404 for public and/or private projects. Staff will participate with the Corps and Audubon in a watershed-based assessment for determining appropriate riparian restoration projects. This effort involves

evaluation of existing lands for suitability of environmental restoration and partnering with non-governmental entities that do restoration for improved cost effectiveness. The Pima County Regional Flood Control District (RFCDD) meets regularly with the Corps, the Audubon Society and other stakeholders to evaluate setting up in-lieu fee mitigation banks, specifically the Financial Assurances and Conservation Easements. RFCDD Currently working with the RTA to fund a Corps position to work on regional 404 issues.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #8 - Complete

Project Title: Lee Moore Wash Watershed Study

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to preserve existing riparian areas through coordinated regulation, policy and outreach.

The Pima County Regional Flood Control District, in concert with the Town of Sahuarita, Pima County, and the City of Tucson initiated the Lee Moore Wash Basin Management Study in 2005 to identify flood hazards, develop floodplain management protocols, and provide a comprehensive flood control protection program for this 198 square mile watershed in Pima County. The area is south of the Tucson International Airport along and east of the Old Nogales Highway. The study produced facts, flood hazard, riparian and flow corridor maps, an implementation plan and development criteria to be used as a guide for development in the watershed and surrounding areas. The goal of the study was to give regulatory authority and guidance to foster appropriate development in the region.

The Pima County Board of Supervisors and the City of Tucson Mayor and Council have both adopted the Plan. Policies in the Plan have already been integrated into the County's Comprehensive Plan and will be integrated into the City of Tucson's General Plan.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #9 - Complete

Project Title: Riparian Habitat Mitigation Guidelines

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to preserve existing riparian areas through coordinated regulation, policy and outreach. The Pima County Regional Flood Control District (District) is in the process of revising its standards and guidelines for mitigating and protecting riparian habitat in Pima County. The purpose of the riparian habitat protection regulations is to minimize flood and erosion damage for all county residents, property, and infrastructure, and ensure the long-term stability of natural floodplains which allows for the survival of plants and animals indigenous to Pima County. The County organized a Mitigation Working Group of interested stakeholders and provided public Open Houses to receive comments. The final guidance document will be presented to the Board of Supervisors in early Fall 2011 for adoption <http://rfcd.pima.gov/wrd/riparian/stdsrevision.htm>

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #12 - Underway

Project Title: Coordinate Final Multi Species Conservation Plan and Environmental Impact Statement

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes goals to preserve existing riparian areas through coordinated regulation, policy and outreach. The Multi-Species Conservation Plan (MSCP) is an integral part of implementing the Sonoran Desert Conservation Plan; it provides Pima County with incidental take protection under the Endangered Species Act for “covered species and covered activities”.

The incidental take permit application was completed and this project is a follow up implementation effort to prepare the public Draft Multi-Species Conservation Plan (MSCP) and coordinate the Draft Environmental Impact Statement (DEIS) and public comment process. The terms of a Final MSCP/EIS and an Implementing Agreement will also be negotiated and submitted to the Board of Supervisors in early 2012. In December 2010 the application was submitted and Pima County is still waiting for U.S. Fish and Wildlife Service comments. See [Http://www.pima.gov/cmo/sdcp/MSCP/MSCP.html](http://www.pima.gov/cmo/sdcp/MSCP/MSCP.html). In the meantime, staff is working with stakeholders on a proposal to provide optional incidental take coverage for private lands. This proposal will be included in the formal draft MSCP/EIS expected later in 2011.

Jurisdiction Lead: Pima County

Pima County Lead Department: Office of Sustainability and Conservation

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #13 - Underway

Project Title: Southlands Habitat Conservation Plan

Update: The City continues to pursue completion of the Southlands Habitat Conservation Plan (HCP) in order to protect environmental habitat and species in anticipation of growth and development in the southlands area. The City has received grant funding to complete the Plan and an intergovernmental agreement is in place with Arizona Game and Fish regarding the timing and deliverable associated with the grant.

This 4th phase of work on the HCP will conclude in June 2013 with a revised, and mostly complete, draft plan. Technical and stakeholder input on the development of the plan is provided by the HCP Technical Advisory Committee and the Resources Planning Advisory Committee.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: Office of Sustainability and Conservation

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #15 - Underway

Project Title: Public Lands Field Assessments and Remediation

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes goals to preserve existing riparian areas through coordinated regulation, policy and outreach. Proactive stewardship

of the riparian areas currently owned by Pima County helps ensure the preservation of existing riparian habitat. Performing biological assessments to establish baseline conditions and document possible stressors is a key action being taken to implement this goal.

Pima County staff from the Office of Sustainability and Conservation and the Regional Flood Control District are characterizing biological threats and values via studies to determine actions needed to protect riparian and aquatic resources. Specifically, this project focuses on assembling data and preparing technical reports and water quality sampling plans to guide restoration efforts in the Santa Cruz and San Pedro riparian areas. Studies include water quality investigations, amphibian surveys, LiDAR imagery acquisition and floodplain investigations. The studies will guide future conservation and restoration actions in the San Pedro and Santa Cruz watersheds. Some of the information will also guide comments on the potential for mine-related impacts.

Accomplishments to date include conducting water quality sampling for the Oracle Ridge area. Technical review comments for Rosemont hydrology were submitted to the Forest Service. LiDAR imagery has been acquired through contract with PAG, and analysis has begun.

Jurisdiction Lead: Pima County

Pima County Lead Department: Office of Sustainability and Conservation

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #16 - Underway

Project Title: Rosemont Environmental Monitoring

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes goals to preserve existing riparian areas through coordinated regulation, policy and outreach. Proactive stewardship of the riparian areas currently owned by Pima County helps ensure the preservation of existing riparian habitat. Performing biological assessments and monitoring to establish baseline conditions and document possible stressors is a key action being taken to implement this goal.

Pima County is monitoring and commenting on impacts to groundwater supplies, riparian areas and water quality from new mining proposals. The Regional Flood Control District (RFGD) and the Office of Sustainability and Conservation Science (OSC) staff are investigating groundwater and surface water impacts at Rosemont. While the focus of this effort is the proposed Rosemont Mine, another limestone mine along Davidson Canyon downstream of the Rosemont area will also be addressed. Impacts to groundwater supplies, riparian areas and water quality resulting from the new mining proposals will be monitored and comments on the Public Draft Environmental Impact Statement (DEIS) will be prepared. Comments on the Administrative Draft Environmental Impact Statement were provided to the U. S. Forest Service on June 30, 2011.

Jurisdiction Lead: Pima County

Pima County Lead Department: Office of Sustainability and Conservation

City of Tucson Lead Department: Office of Conservation and Sustainable Development

Respect for Environment (RFE) - Action Item #19 - Underway

Project Title: Standards Development: Detention Basin Retrofits

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes the goal to ensure the public projects are multi-benefit. The Pima County Regional Flood Control District (RFGD) is developing a document for retrofitting detention basins and a list of basins that offer

opportunities for habitat restoration and/or recreation. Matthew Bossler, a U of A Landscape Architecture student, prepared draft guidance which described concepts for detention basin retrofits and included a preliminary design for the Kolb Rd. detention basin. At this point, RFCDD is deciding if the detention basin retrofit guidance are best included in the Detention/Retention manual, or as a separate document based on Bossler's draft. Once guidance is written opportunities for public and stakeholder review and comment will be provided through Planning and Zoning meetings and Board of Supervisors meetings.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: NA

Respect for Environment (RFE) - Action Item #20 - Underway

Project Title: Retrofit Kolb Rd. detention basin project

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes the goal to ensure that public projects are multi-benefit. The Regional Flood Control District is implementing demonstration project involving a retrofit to the Kolb Road detention basin for environmental restoration using stormwater. Plans have been developed by Novak Environmental showing the proposed retrofits. Relevant permits have been acquired and we anticipate that the retrofit will be completed by Granite Construction in the fall of 2011.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: NA

Respect for Environment (RFE) - Action Item #23-26 - Underway

Project Title: Corazon – Planning Phase

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes the goal to ensure the future of riparian and aquatic habitat along the effluent-dependent reach of the Santa Cruz River. A key objective is to develop a "Lower Santa Cruz River Management Plan".

This project entails developing concept plans and water resources management plans for the Santa Cruz River building from the Tres Rios Del Norte Feasibility Study with focus on the river confluence area, El Corazon. RFCDD staff will lead the planning phase to conduct pilot demonstration restoration and recharge projects that will be initiated in two locations along the Santa Cruz River: 1) recharge at the gravel bar road, upstream of Sanders Road and 2) environmental restoration at a former sand and gravel pit upstream of Ina Road.

The in-stream constructed recharge aspect of this pilot will allow for evaluation of low tech and low cost methods to increase recharge in the river. The environmental restoration will be constructed in a former gravel pit using effluent flowing in the river from Roger Road as well as tributary stormwater flows. This will allow for evaluation of how best to manage habitat when transitioning from effluent dependent to using stormwater harvesting as a water source.

This project builds upon the extensive public participation that occurred in conjunction with the Tres Rios Del Norte Project. Additional opportunities for public participation will be on going through the Bond Advisory Committee and Parks Commission's public meetings held on a regular basis.

A water budget for the Corazon de los TRDN has been prepared. While the consultant concluded that sufficient water exists for the project, because of concerns about the potential for infiltration, it is not clear whether water will remain in the pit as a pond to allow the recreation proposed for Corazon de los TRDN. For this reason, questions remain as to whether the pond concept is viable. County Real Property is appraising the lands and has started to negotiate with CalPortland.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #1 - Underway

Project Title: Project ADD Water

Update: Tucson Water staff is working with Pima County water interests (through the Southern Arizona Water Users Association and with individual local water providers) and Maricopa and Pinal counties' entities to ensure that the ADD Water Project will be successful in meeting the three-county area's future supply needs. Phase II of the stakeholder process will likely continue through 2011 and possibly beyond to develop the necessary procedures. Once the process details have been finalized, the next phase of the effort will be to acquire the legal rights to ADD Water supplies and to develop and finance the necessary delivery infrastructure.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Items #2, 28 - Underway

Project Title: Tucson Water 2050 Long Range Plan Update

Update: Activities associated with *Water Plan: 2000-2050* will touch all parts of Tucson Water given its multi-pronged planning and implementation approach. The overall goal is to maximize Tucson Water's flexibility in order to increase its ability to adapt to future uncertainty. This flexibility and adaptability will continue to take many forms within the Utility and in its water service area. Critical outcomes identified to date include but are not limited to:

- Fully utilize currently available renewable supplies
- Increase water use efficiencies through expanded conservation and other demand-management measures, and
- Acquire additional water supplies through collaborative processes

Focus for 2011 is update of the Drought Preparedness and Response Plan and progress on the Recycled Water Master Plan, both of which will feed information into the update of *Water Plan: 2000-2050*.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: NA

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #3 - Underway**Project Title: Water Quality Updates**

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to maximize and make efficient use of effluent and other locally renewable water supplies. Staying vigilant about water quality is a key objective. Pima County and the City of Tucson both provided updates on water quality as follows:

Pima County - The Regional Wastewater Reclamation Advisory Committee (RWRAC) acts as an official advisory body to the Board of Supervisors. It reviews, evaluates, and recommends policies and procedures for the operation of the Pima County Regional Wastewater Reclamation Department. Four RWRAC members represented the committee on the Joint City/County Water and Wastewater Infrastructure, Supply and Planning Study. Water Quality information presented to the RWRAC made in the past year include:

- Dispose-A-Med program – Jeff Prevatt
- Trace Organics - Dr. Robert Arnold in cooperation with Tucson Water and RWRD
- Tucson Water’s Unregulated Contaminant Monitoring – John Kmiec
- Regional Optimization Master Plan (ROMP). The RWRAC gets regular updates on the ROMP and that project has a strong water quality component.

City of Tucson – Tucson Water prepares an annual Water Quality Report for its customers. The latest report was released in June and is posted to the Tucson Water website www.tucsonaz.gov/water/annual_wq_reports. On June 1, 2011, Jeff Biggs and Ralph Marra presented to CWAC an update to the ongoing project "Decision H2O". This update provided information relating to the rising levels of Total Dissolved Solids (TDS) in the Clearwater Blend being delivered to our customers. The presentation provided costs to construct a treatment facility to remove the TDS from the water and the results from a Triple Bottom Line (TBL) assessment concerning the rising levels of TDS. This presentation was also given to the M&C aides on July 12, 2011.

Tucson Water staff (Andy Quigley and Jeff Biggs) provided 1,4-dioxane information to the M&C on May 10, 2011, July 6, 2011, and August 9, 2011. Information included the costs for a treatment facility to remove 1,4-dioxane, current public outreach activities and updates on discussions with the Air Force on reimbursement for the costs of 1,4-dioxane treatment.

Jurisdiction Lead: Both

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #4 - Underway**Project Title: CAP Order**

Update: The City’s full allocation of Colorado River water will soon be delivered to Tucson for beneficial use in Tucson Water’s obligated service area. The Utility’s current financial plan includes funding for the phased-in purchase of the full CAP allocation over the next two fiscal years. The full allocation will be purchased and delivered to Tucson Water’s recharge and recovery facilities in the Avra Valley and at Pima Mine Road. The full order will be placed on October 1, 2011 for delivery to Tucson recharge facilities in 2012.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: NA

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Items # 6, 8, 11, 13, 15-21 - Underway

Project Title: Recycled Water Master Plan

Update: Tucson Water’s Effluent Master Plan has been renamed the “Recycled Water Master Plan”. The purpose of the plan is to fully utilize the City’s effluent resources to maximize wet-water supply benefits and overall water resource reliability for Tucson Water customers. A secondary emphasis may include but not be limited to assessing system capabilities to wheel the effluent entitlements of other parties and to using the conveyance network for other potential uses. The development of the Recycled Water Master Plan is underway, and will include a review of other communities’ best practices as well as independent third party review by a National Water Research Institute Panel. The Plan is expected to be completed in approximately one year.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #7 - Complete

Project Title: SE Houghton Area Recharge Project

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to maximize and make efficient use of effluent and other locally renewable water supplies. The balanced allocation of effluent resources among various non-potable water supply needs including aquifer recharge, environment needs for water and reclaimed (i.e. turf/landscape irrigation), is a key objective.

The Regional Wastewater Reclamation Department and Tucson Water are planning to construct a recharge project in the Southeast/Houghton Road area of Pima County to physically store water in this vicinity for replenishment of the aquifer and for potential future use. The design, permitting, construction and operation of the joint constructed recharge project facilities will be implemented in a phased manner over a period of time. Both parties agree to contribute \$4 million each for the project exclusive of the land acquisition. The project is projected to be completed over the next seven years. Each party will have rights to 50 percent of the storage capacity.

An intergovernmental agreement was approved by the Board of Supervisors and the City of Tucson Mayor and Council. A Joint Recharge Oversight Committee has been established consisting of senior staff from Tucson Water and RWRD. Initial site investigations have begun on the project. Both the City of Tucson and Pima County are keeping the local community informed of project work at the proposed site by posting signs and answering questions brought up in community forums.

Jurisdiction Lead: Cooperative Effort

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #9 - Complete

Project Title: Cooperate with the Bureau of Reclamation to develop demonstration recharge projects in the Santa Cruz River

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to maximize and make efficient use of effluent and other locally renewable water supplies. The balanced allocation of effluent resources among various non-potable water supply needs including aquifer recharge, environment needs for water and reclaimed (i.e. turf/landscape irrigation), is a key objective.

The Lower Santa Cruz River Managed Recharge Project recharges treated effluent in the Santa Cruz River. Recharge occurs along a 17-mile stretch of relatively narrow, incised channel. The facility typically recharges less than half of its permitted annual recharge volume and receives only 50% of available storage credit. The Enhanced Recharge Demonstration project was conceived to spread river flows across a broad, 5.6-acre gravel bar to effectively increase infiltration area and allow testing of in-channel recharge methods under existing permits. The demonstration project will last for up to two years.

Participants received approval by ADWR and ADEQ under current permits. This project went through review to verify that it meets environmental and cultural regulations, and participants secured approval to construct under an Army Corp of Engineer 404 Nationwide Permit. Construction was accomplished in 8 days during early January 2011 using in-kind contributions of labor and equipment from the participants – U.S. Bureau of Reclamation, Tucson Water, Pima County, Oro Valley, Metropolitan Domestic Irrigation District and Flowing Wells Irrigation District. In-flow and out-flow flumes were installed, and initial flow into the project was established at 4.5 cfs. The project operated until it was inundated with sediment by river storm flow events during the first week of July. Cooperators will assess reconstruction when the 2011 monsoon storm season has passed. Information from the Enhanced Recharge Demonstration project will be used for planning low-cost effective ways to achieve constructed recharge projects that will qualify for 100% recharge credit in the Santa Cruz River.

Jurisdiction Lead: Cooperative Effort

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #10 - Complete

Project Title: ROMP

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to maximize and make efficient use of effluent and other locally renewable water supplies. Improving water quality is a key objective for increasing efficient use of effluent.

Increasingly stringent discharge standards, greater reliance on reclaimed water and the need to store more water underground are all contributing factors that require continual attention to improving effluent water quality. Pima County Regional Wastewater Reclamation Department (RWRD) is responding to the need for improved wastewater treatment through the implementation of the Regional Optimization Master Plan (ROMP). Two of the major components of ROMP will be the upgrade of the Ina Road WRF and the construction of a state-of-the-art replacement facility near the Roger Road Wastewater Reclamation Facility which will be decommissioned. RWRD is currently on schedule to complete ROMP improvements by January 2015.

The ROMP will increase the capacity at Ina Rd to 50 million gallons per day (MGD) and convert the existing processes at Ina to a Bardenpho® [wastewater treatment] process to significantly remove nitrogen, ammonia, and phosphorous. RWRD will centralize all biosolids processing and handling at the Ina Road WRF, as well as bio-gas utilization. A new Water Reclamation Campus in the vicinity of the existing Roger Road WRF site will include a new 32 MGD Bardenpho® treatment facility, train and the central laboratory facility along with a setting for world class water research. Associated environmental enhancements include adjacent parks, natural areas as well as the County's solar energy project.

When complete, the new facilities will produce much higher quality water that will add flexibility to the current effluent use options which include reclaimed water reuse, groundwater recharge and water for the environment. For example, higher quality effluent increases infiltration rates, and creates more cost effective options for recharge. As a result of RWRD advocacy during the State Blue Ribbon Panel (BRP) deliberations on statewide water sustainability issues, the BRP's final report recommended that the Arizona Department of Environmental Quality pursue options for increased flexibility in permitting requirements for use of reclaimed and effluent water in environmental restoration projects in consideration of new higher quality effluent, among other factors.

The design-build-operate (DBO) phase of the Water Reclamation Campus is complete. Construction is 4% complete with mass excavation and deep piping being installed. The lab is 70% complete and will be in operation by December, 2011. The Ina Road Facility is 30% complete. The Plant Interconnection between the two facilities was completed in December, 2010 and is fully operational.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: NA

Water Supply (WS) – Action Item #14 & 18 - Underway

Project Title: Extend reclaimed infrastructure to County parks and pursue bond funding

Update: The WISP Action Plan for Water Sustainability (2011-2015) includes a goal to foster increased use of reclaimed water through expanded financing options and uses of reclaimed water for municipal and environmental water supply needs. Pima County staff is conducting coordinated and comprehensive analyses of potential parks and environmental restoration/enhancement projects suitable for reclaimed water line extensions. A cost benefit analysis of water demands at selected county parks, current water costs, costs to extend reclaimed water lines to these parks, proximity to reclaimed water lines and presence of adjacent schools or other water users that also could benefit from an extended reclaimed water line will be conducted.

Pima County attorneys will perform a legal review of the wheeling rate and reimbursement method (City Code 27-37) discussed in the Wheeling Agreement. Tucson Water is performing capacity modeling for their reclaimed water system to determine if the targeted lines for extension can handle the increased capacity demands for any proposed extensions to county parks, environmental restoration sites and possibly nearby schools. The County is also pursuing funding and extension of reclaimed service lines as part of utility improvements associated with roadway projects. In fiscal year 2011, as part of the Magee Road widening project, Pima County will work with Metro Water to extend reclaimed water lines to serve the CDO river park from La Cholla to Thornydale, Omni Golf Course and the Northwest Community Park.

Pima County is currently negotiating with Tucson Water and Metro Water to provide year round reclaimed water to the Christina Taylor Green CDO River Park from the Magee Road reclaimed water line extension, and in the future the Northwest Community Park. NRPR has also proposed that funding be included in the next county bond election to fund the extension of reclaimed water lines to priority County parks based on Tucson Water's current reclaimed system and its capacity modeling along with upgrades to outdated and inefficient ball field irrigation systems.

The Bond Committee will provide a forum for public participation on this effort.

Jurisdiction Lead: Pima County

Pima County Lead Department: Natural Resources Parks and Recreation

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #20 - Underway

Project Title: Pima County Effluent Management Plan

Update: The WISP Action Plan for Water Sustainability (2011-2015) established a goal to increase use of effluent. A project to develop an effluent management plan for the county's share (about 4,000 acre-feet annually) will be initiated.

The Plan will identify current and proposed uses of effluent and reclaimed water and will include reclaimed water use on parks, aquifer replenishment and environmental enhancement. Preliminary planning for the Effluent Management Plan has begun. A draft Water Resources Asset Management Plan has been prepared that provides guidance and a framework for managing Pima County's water assets including water rights, effluent and long term storage credits. Additionally, an Effluent Generation and Utilization Report prepared in 2010 details Pima County's uses of effluent. See http://www.pima.gov/wwm/pubs/pdf/Effluent_gen_2010.pdf. Both documents will be used as a basis for developing the Effluent Management Plan.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: NA

Water Supply (WS) – Action Item #22-27 - Complete

Project Title: State Blue Ribbon Panel on Water Sustainability and Follow-on Work for Regulatory & Water Resource Management Improvement

Update: The WISP Action Plan for Water Sustainability (2011-2015) established a goal to The final report of the Governor's Blue Ribbon Panel (BRP) on Water Sustainability was released on November 30, 2010. The report contains 18 sets of recommendations organized into five categories: Education/Outreach, Standards, Information Development & Research Agenda, Regulatory Improvements, and Incentives. Within the 18 sets of recommendations, a total of 64 unnumbered "sub-recommendations" were actually approved by Blue Ribbon Panelists and described in the report. Working with other stakeholders throughout 2010, staff from Tucson Water and Pima County's RWRD and RFCD had significant input into the recommendations found in this report.

On June 7, 2011 the state released an Implementation Plan for the BRP recommendations. For each issue, it identifies a lead agency from among the Arizona Department of Environmental

Quality, Arizona Department of Water Resources, Arizona Corporation Commission, or the state's universities. Because of the new norm of lowered funding and staffing at these state institutions, implementation must span 3 or more years and each recommendation is assigned a priority in accordance with the following scheme:

- 0 – Maintain at current level or initiate at low resource level as opportunity arises
- 1 – Begin effort during Calendar Year 2011
- 2 – Begin effort during Calendar Year 2012
- 3 – Begin effort during or after Calendar Year 2013

Priority 0 issues include continuing linkages to universities to support work on water resource management and technology. Also, ADEQ will work with ACC to foster water utility investment in treatment technology research and to explore ways to enhance/facilitate the exchange of recycled water supplies. The ACC will make it an immediate priority to review, revise, or establish ratemaking guidelines that promote reclaimed water use.

Priority 1 issues include five items that are related to goals identified in WISP and grew out of ideas proposed by Pima County for consideration by the BRP:

- ADEQ will convene a stakeholder process to review inconsistencies and conflicts among different state agencies and different water regulatory programs
- ADWR will initiate stakeholder input for review and revision of state agency permit and non-permit water data submittal requirements, including developing common databases and using electronic data submittal
- Universities in cooperation with ADWR and ADEQ will form a coalition with other states, federal agencies, and national organizations to develop a plan for strategic research into new and expanded uses of reclaimed water and gray water
- ADEQ will update and revise the reclaimed water quality standards rules
- ADWR will attempt to improve the interface between permits for projects utilizing reclaimed water alone or in conjunction with stormwater, graywater, remediated water or other source water for irrigation, recharge, or environmental enhancement.

Other WISP issues are found in later priority items, and City and County staff will need to stay attuned to developments that may prompt future action on those “back burner” topics.

Jurisdiction Lead: Both

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Water Supply (WS) – Action Item #29 - Underway

Project Title: Integrated Drought/Climate Change Preparedness Program

Update: Climate change and drought may affect local water demand, local-area rainfall and future flows of the Colorado River. The City's Drought Response Plan provides an on-going mechanism for evaluating and updating needed responses to long-term drought and potential relationship with climate change. Climate change may also affect water supply and water demand. A multi-pronged preparedness strategy can make the community and its water resources more resilient to a variety of possible future scenarios. Consistent messages regarding regional and local impacts will help avoid confusion within the community, will reduce unnecessary overreaction when unwarranted and will prevent the community from becoming complacent when additional drought mitigation measure are needed. Coordinated drought planning and

response is important for community understanding, support and implementation. A well-coordinated adaptive drought response plan will provide flexibility to provide water resources to sectors impacted by drought. Tucson Water staff are working on the updates and expect to bring a draft forward to CWAC and the Mayor and Council by the end of the year.

Jurisdiction Lead: City of Tucson
Pima County Lead Department: NA
City of Tucson Lead Department: Tucson Water

Demand Management (DM) - Action Item #1 - Underway

Project Title: Evaluation of Post 2000 Residential Housing Water Use

Update: The WISP Action Plan for Water Sustainability (2011-2015) established a goal to increase the effectiveness of conservation programming through coordinated planning and evaluation. A key objective is to collect uniform data on water use patterns to identify conservation potential. Staff has initiated a coordinated data collection project involving the collection of parcel data on homes built since 2000 and prior to 2000. The Parcel database and assessors records were used in combination with Tucson Water's records of water use data on all residential parcels for the 2009 and 2010 calendar years. Prototype 'green' subdivisions also were evaluated to see if 'green' subdivisions use water more efficiently than other housing built since the 2000s. Staff is currently preparing a report comparing water use in houses built since 2000 with homes built prior to 2000, and the relative efficiency of 'green' subdivisions built since 2000 with other houses built since 2000.

Jurisdiction Lead: Both
Pima County Lead Department: Regional Flood Control District
City of Tucson Lead Department: Tucson Water

Demand Management (DM) - Action Item #5 - Underway

Project Title: Net-Zero Energy Building Code

Update: Develop a model City/County Building Code to reduce the water/energy footprint in new and renovated buildings as a voluntary alternative path for compliance with the currently adopted energy code.

Research on water use in prototypical buildings has been completed by Tom Arnold at Tucson Water. The research allows for the development of the Water Use Intensity Factor and the embedded energy in water that a Net-Zero Building must produce. The **Water Use Intensity Factor** is the estimated annual interior and exterior water use in gallons per square foot of conditioned floor area per year. Water use Intensity factors are as follows:

- Residential Group = 42 gal/sf/yr
- Business Group = 26 gal/sf/yr
- Mercantile Group = 61 gal/sf/yr
- All other uses = 61 gal/sf/yr

The **Embedded Energy in Water** is the average amount of energy required for pumping and processing to deliver water to the building site. Using Tucson Water data, the embedded energy in water use intensity factors were calculated as follows:

- Residential Group = 2.1 kBtu/sf/yr
- Business Group = 1.3 kBtu/sf/yr
- Mercantile Group M = 3.1 kBtu/sf/yr

- All other uses = 3.1 kBtu/sf/yr

Therefore, for example, for a residence to be considered net-zero under the code, it will have to produce enough electricity through photo-voltaic (PV) panels on the roof to offset 2.1 kBtu/sf/yr in electricity cost to pump water to the house. For a typical house, this means a 0.8 kW PV system to offset this energy use.

Jurisdiction Lead: Pima County

Pima County Lead Department: Development Services Department

City of Tucson Lead Department: Planning and Development Services Department and Office of Conservation and Sustainable Development

Demand Management (DM) - Action Item #6 Underway

Project Title: Greywater Education

Update: The new Tucson Water rebate program for Gray Water Irrigation Systems offers a free 2-hour seminar designed specifically for residential water customers interested in installing a permanent gray water irrigation system for their landscape plants. Information regarding the rebate guidelines as well as the City of Tucson Gray Water Ordinance, Arizona Department of Environmental Quality regulations and practical considerations are presented. Six seminars are scheduled for 2011, with three already completed. The average attendance has been 37 people per seminar.

Jurisdiction Lead: City of Tucson

Pima County Lead Department: Regional Wastewater Reclamation Department

City of Tucson Lead Department: Tucson Water

Demand Management (DM) - Action Item #7 Underway

Project Title: Develop design guidelines for neighborhood stormwater harvesting to encourage the creation of habitat and water efficient landscapes

Update: Develop a Neighborhood Stormwater Harvesting Manual to provide a consistent standard for use by all regulatory agencies in the City of Tucson and in unincorporated Pima County. The manual will also describe how to determine the detention benefits of Low Impact Development (LID) practices, how riparian mitigation can be accomplished in private detention basins and how to size flood detention and retention basins.

An LID Workshop held on March 15, 2011 resulted in forming an LID Steering Committee to move forward with the recommendations of the workshop. A chapter on LID has been drafted for the update of the RFCD Detention Retention manual. Staff from RFCD, PCDEQ and OCSD are meeting to develop the neighborhood water harvesting manual. See:

<http://rfcd.pima.gov/pdd/lid/>

Pima County conducts public participation prior to adoption of all new standards and regulations.

Jurisdiction Lead: Pima County

Pima County Lead Department: Regional Flood Control District

City of Tucson Lead Department: Office of Conservation and Sustainable Development