Comprehensive Integrated Planning
2015 Report

The Water/Wastewater Infrastructure, Supply and Planning (WISP) Study Phase 2 Report recognized the complexity in which water and growth are connected and the challenges in achieving a sustainable water future in our arid environment. The Phase 2 Report concluded a sustainable water future could be achieved with "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". Ensuring the community grows in such a rational and carefully planned manner is the purpose of the WISP Program Areas and Pima Prospers.

Comprehensive Integrated Planning goals were meant, in part, to address key Water Study topics:

- City/County agreement on the location of future growth incremental in to 2050.
- Influence of urban form, water and infrastructure planning on where this future population growth increment will occur.
- Ensuring this future growth occurs in a manner that does not disadvantage/adversely impact existing residents or the environment, economy and conservation of resources.

General and Comprehensive Plan documents for the City and County respectively guide land use, urban design and infrastructure investment. These Plan updates provided an opportunity to fully incorporate Phase 2 Report goals, recommendations and action plan items. With the completion of Pima Prospers, the 2015 update to the County Comprehensive Plan, future regional growth patterns will be influenced by assessment of available water resources and analysis of infrastructure and public facilities needs in a way previous Plans did not focus. Land use policy now seeks compliance with all applicable goals and recommendations in the 2011-2015 Action Plan for Water Sustainability. New challenges are acknowledged, such as a potential need for new water supplies to ensure a secure water future and the increasing probability of a shortage on the Colorado River- considerations not contemplated in previous Plans. Tucson Water long-term planning seeks to ease reliance on Colorado River water while expanding utilization of local renewable supply. The County's land use planning is proactive in addressing these challenges, guided by the Comprehensive Integrated Planning element of the Action Plan. There is no disconnect between land use and infrastructure planning and water resource management.

Where once infrastructure challenges limited water resources, now more development is served by renewable water since initiation of the Action Plan as direct delivery of CAP and reclaimed water has replaced groundwater pumping. Wheeling agreements between water providers have successfully brought renewable CAP and reclaimed water to development in service areas lacking a physical connection to those renewable sources, eliminating the hydrologic disconnect of displaced recharge and recovery.

City/County Action Plan Program Areas
General and Comprehensive Plan Updates
Smart Growth Tools and Regulations
Linking Water and Land Use Planning

County Programs
• Pima Prospers Comprehensive Plan • Water Resource Element-Comprehensive Plan • Preliminary Integrated Water Management Plan (PIWMP) • Southwest Infrastructure Plan (SWIP) • Conservation Land System (CLS) • Conservation Acquisition Program • Cluster Ordinance • Focused Development Investment Areas Element

Departments and Organizations
Pima County Development Services Department (DSD), Regional Wastewater Reclamation Department (RWRD), Regional Flood Control District (RFCD)
City of Tucson Housing and Community Development, Planning and Development Services, Office of Conservation and Sustainable Development, Tucson Water (TW)
TREO, Metro Water, Safe Yield Task Force

Goals	Recommendations	Action Plan Items	
1.0 Encourage sustainable urban forms Ensure that the form of growth enhances beneficial water/energy, environment, economic and social outcomes through inclusion of diverse housing types and compact, environmentally sensitive and walkable communities.	1.1 Require and encourage smart growth principles	CIP 2, 3, 10, 11, 14, 15	Pima Prospers (1) Links urban form, infrastructure availability, resource efficiency and economic development to create a healthy and climate-resilient region, (2) Incentivizes compact, energy efficient development, (3) Connects housing to jobs, services and amenities and (4) Supports urban development within evolving mixed use areas while providing a variety of housing tenures, types and price ranges.
2.0 Direct growth to suitable growth areas Direct future growth away from environmentally sensitive areas and closer to existing infrastructure through infrastructure investments, regulation, policies, and open space acquisitions.	2.1 Encourage growth in four (4) suitable growth areas/existing built environment as highest priority: Infill, Houghton Corridor, Southlands, Southwest Area. 2.2 Link capital planning and land use planning/direct investment to desired growth areas 2.3 Acquire open space to define desired growth areas 2.4 Conduct regional growth scenario modeling	CIP 1, 4, 5, 6, 7, 8, 9, 12, 13, 16, 18	County/City collaboration through respective Plans is key to address growth areas in each jurisdiction- County planning positions future investment in the Southwest Infrastructure Plan (SWIP) area and links capital investment planning with land use; Plan Tucson future growth scenario mapping situates new development and infrastructure expansion into the Houghton Corridor and Southlands Area as master planned neighborhoods. Infill potential is mapped in appropriate community areas. Both Plans reference WISP as a land use planning tool and application of the Conservation Land System (CLS) and open space.
3.0 Integrate land use and water resources planning Enhance efforts to link land use and water resources planning to foster increased use of renewable water resources in new development and to balance economic, environmental and human needs for water.	3.1 Conduct comprehensive water resource planning outside of the obligated service area 3.2 Consider obligated service area expansion based on above analysis and additional criteria 3.3 Continue to track resources for new development/County Water Resource Element, City Water Checkbook 3.4 Pursue wheeling and recharge agreements	CIP 19, 20, 21, 22, 23	Tucson Water Service Area Policy amendment in 2013 has defined obligated and non-expansion areas; annual review of Tucson Water Checkbook. Wheeling agreement has addressed provision within portion of non-expansion area in SWIP. Other wheeling agreements providing direct delivery (effluent & CAP), reducing hydrologic disconnect. Pima Prospers enhances the Water Resource Element and use of robust tools such as the

	3.5 Work toward regional solutions to address hydrological pumping/recharge disconnect		Preliminary Integrated Water Management Plan (PIWMP) that assess the impact of land use changes to local water resources and groundwater ecosystems and directs conservation and mitigation measures putting land use and water in context.
4.0 Growth should pay for itself over time and be financially sustainable Ensure that the full cost of new development is considered and that growth related costs for water and wastewater are recovered.	4.1 Put mechanisms in place to ensure fiscal sustainability of new development 4.2 Continue to ensure "growth pays for growth" in Water and Wastewater financial planning	CIP 17	Pima Prospers Cost of Development Element seeks equitable cost sharing, the portion of costs of new infrastructure and levels of service needed to support new development is paid for by developer and in turn costs borne result in benefit to the new development.

Program 1: General and Comprehensive Plan Updates

Lead Jurisdiction	Action Plan Item	Status
COT/PC	CIP 1: Analyze infrastructure and public facilities needs in preparation for updates to the Plans. (2.1)	COMPLETED. DUAL LEAD. Appendix A of Pima Prospers serves as a "backbone" and preparation for the policy framework and implementation of the Plan; it is a background and current condition volume, cataloging water resources, availability, infrastructure and use in each planning area. City's Plan Tucson adopted 2013.
COT/PC	CIP 2: Update the Urban Form elements of the Plans to encourage smart growth and sustainable urban form. (1.1)	COMPLETED. DUAL LEAD. Focused Development Investment Areas Element (Chapter 3.2) recognizes the link between urban form, conservation and economic development and the appropriate characteristics that balance the region's resources and growth management strategies within the scale, character and identity of the area. The Housing and Community Design Element (Chapter 3.5) also addresses this, and the subject matter is weaved throughout Pima Prospers.

Lead Jurisdiction	Action Plan Item	Status
COT/PC	CIP 3: Review and update Water Elements in Plans to ensure consistency with the City/County Water Study recommendations and state requirements. (1.1)	COMPLETED. DUAL LEAD. The Water and Wastewater Infrastructure, Supply and Planning Study (WISP) is specifically referenced in the Water Resource Element of Pima Prospers with the intent of complying with all applicable goals and recommendations. City's Plan Tucson adopted 2013.
COT/PC	CIP 4: Explore policy to provide for pre-zoning in growth areas as part of updates to the Plans. (2.1)	CONTINUING. DUAL LEAD. Identified lands (in cooperation with owner) in the I-10 economic development corridor will be recommended to the Board of Supervisors for pre-zoning for industrial use to assist in concept-ready economic development for suitable parcels. The recommendation is to direct staff to pursue pre-zoning on a case-by-case basis, to make the properties more shovel ready, if the property owners agree in writing with the change- County staff has initiated industrial rezoning on about 40 acres of private land and 170 acres of AZ State Land along I-10, to BOS early April 2016. City's Plan Tucson adopted 2013.
COT/PC	CIP 5: Identify and designate suitable growth areas in the updates to the Plans. (2.1)	COMPLETED. DUAL LEAD. Pima Prospers recognizes Southwest Infrastructure Plan (SWIP) in Special Area Policies. Future sewer system expansion is planned to support regional growth areas (Chapter 4.4). Identifies Focused Development Investment Areas (growth areas) and land uses appropriate in size and location for future employment and revenue generating development. Other focused development areas will continue to be Flowing Wells, the Southwest Area (Ajo/Valencia), TIA/I-10 Area and the City of Tucson. All municipalities, key target areas and revitalization corridors identified by the Community Development Department have been added as well as Economic Development areas targeted for

Lead Jurisdiction	Action Plan Item	Status
		public-private investment. City's Plan Tucson adopted 2013.
COT/PC	CIP 6: Identify and designate employment and job centers in the updates to the Plans. (2.1)	COMPLETED. DUAL LEAD. Within Comprehensive Plan and the County Administrator's updates to the Economic Development Strategic Plan. The updated Board-adopted strategic economic development plan is interlinked with Pima Prospers; economic development centers and corridors are planned to support emerging and established industry and support small business; Focused Development Investment Areas Element recognizes the link between urban form and economic development, seeks to coordinate public and private investment and funding partnerships. City's Plan Tucson adopted 2013.
COT/PC	CIP 7: Establish infrastructure and service phasing boundaries within growth areas. (2.2)	COMPLETED. DUAL LEAD. Special Area policies call for infrastructure phasing plan for improvements. Establishment of methodology to determine need and assess cost of new facilities and services, Levels of Service Standards, and timeframe and phasing with other uses encouraged as a pattern of development. City's Plan Tucson adopted 2013.
COT/PC	CIP 8: Develop an implementation component for each of the Plans. (2.2)	COMPLETED. DUAL LEAD. The implementation strategies and matrix of timing and responsibility (Appendix B of the Plan) are developed within the Comprehensive Plan. An Inter-Departmental Steering Committee will coordinate implementation of Pima Prospers, managing all lead departments' contribution to the mission of aligning the County's planning, programming and budget to the shared vision of the Plan; and will be responsible for publishing an annually updated work program,

Lead Jurisdiction	Action Plan Item	Status
		identifying deviations from implementation strategy and reporting to the Board and public. Appendix B of Pima Prospers serves as the initial work program, listing lead department, schedule and funding source, while Chapter 10.8 defines the intent of the steering committee and implementation strategy. City's Plan Tucson adopted 2013.
COT/PC	CIP 9: Link County Conservation Acquisition Program with updated Plans. (2.3)	COMPLETED. DUAL LEAD. Intent of the Comprehensive Plan, but dependent upon administration of the land acquisition program. For both statutory reasons and land market reasons, the Open Space Element of the Plan only addresses already acquired property. To the maximum extent possible, CIP and future bond programming, as well as county budget and development review manuals, will be aligned to Pima Prospers to ensure universally shared vision is achieved.

Program 2: Smart Growth Tools and Regulations

Lead Jurisdiction	Action Plan Item	Status
COT	CIP 10: Identify opportunities to promote mixed uses and well-designed density. (1.1)	CITY LEAD
PC	CIP 11: Revise County's Cluster Ordinance to improve water efficiency of new development. (1.1)	CONTINUING. COUNTY LEAD. Review of the County's Cluster ordinance for changes, including water efficiency, considered after the Plan update adoption. If water efficiency application was limited to the cluster ordinance, little would be accomplished given how few cluster projects are done. This has been expanded

Lead Jurisdiction	Action Plan Item	Status
		overall in a voluntary, incentivized manner well beyond cluster development in Pima Prospers.
COT/PC	CIP 12: Evaluate improvement districts as a tool to purchase natural areas/riparian habitat. (2.3)	County concluded research into the creation of an improvement district to purchase the 280-acre Painted Hills property in the Tucson Mountains but found approach problematic- taxing a small group of property owners for a region-wide benefit. As a tool, this Action Plan Item may be more appropriately applied when benefits accrue to a more localized area.
COT	CIP 13: Work with TREO on public/private collaboration, base job creation (multiplier) and urban revitalization- water policy aligned with economic goals. (2.1)	CITY LEAD
COT	CIP 14: Conduct a Land Use Code sustainability audit to identify opportunities to encourage sustainable urban forms. (1.1)	COMPLETED/CONTINUING.CITY LEAD
COT/PC	CIP 15: Explore conservation subdivision requirement in Conservation Land System (CLS) to better integrate new development into environmentally sensitive areas. (1.1)	COMPLETED. DUAL LEAD. Included in Pima Prospers. The Plan uses the Conservation Subdivision Ordinance (CSO) for proposed subdivisions zoned CR-1 (or less intense) in the CLS, meeting all CLS requirements if any change in land use. CLS is integrated into Pima Prospers, linking the two documents for the first time. Incentives for residential conservation subdivisions within the Low Intensity Urban land use categories of LIU3.0, 1.2, 0.5 and 0.3.
COT/PC	CIP 16: Identify and address barriers to infill. (2.1)	CONTINUING. CITY LEAD
COT	CIP 17: Develop a fiscal sustainability model. (4.1)	CITY LEAD

Lead Jurisdiction	Action Plan Item	Status
COT	CIP 18: Explore City transfer of development rights to help direct growth to suitable growth areas. (2.1)	CITY LEAD

Program 3: Linking Water and Land Use Planning

Lead Jurisdiction	Action Plan Item	Status
COT	CIP 19: Continue wheeling negotiations between Tucson Water and other water providers to deliver more renewable supplies to the region. (3.4)	COMPLETED/CONTINUING. CITY LEAD
COT/PC	CIP 20: Participate in the Safe Yield Task Force to address pumping recharge disconnect. (3.5)	COMPLETED/CONTINUING. DUAL LEAD. The Task Force continues to meet to strategize Safe Yield by 2025 and develop Fourth Management Plan. City of Tucson and Pima County staff are participating.
COT	CIP 21: Implement Tucson Water Service Area Policy and annual water resource "checkbook balance" review. (3.2)	COMPLETED/CONTINUING. CITY LEAD
PC	CIP 22: Implement Pima County Water Resource Element to assess water resource impacts of new development. (3.3)	COMPLETED. COUNTY LEAD. A Preliminary Integrated Water Management Plan (PIWMP) or Water Supply Impact Review is specified as a continuing water requirement for all applicable comprehensive plan amendments and rezoning proposals in order to minimize impacts of development upon water supply for existing and future residents followed by appropriate conservation measures as conditioned.
PC	CIP 23: Conduct a pilot study of integrated water resource planning in the Southwest area. (3.1)	COMPLETED. COUNTY LEAD. Study of water resources available to developable parcels in SWIP concluded. Increased coordination occurring with Tucson Water and Metro Water for water service to most of the undeveloped areas of the Southwest area. Metro Water

Lead Jurisdiction	Action Plan Item	Status
		has received a reallocation of CAP water to serve SWIP, wheeled through SAVSARP.

Respect for Environment
2015 Report

City/County Action Plan Program Areas
Collaboration for Environmental Restoration
Preservation and Protection of Riparian Areas
Incorporation of Multiple Benefit Features into Capital Improvement Projects
Development of a Lower Santa Cruz River Management Plan

County Programs
• Sonoran Desert Conservation Plan (SDCP) • Multi-Species Conservation Plan (MSCP) • Conservation Land System (CLS) • Conservation Effluent Pool (CEP) • LSCR Management Plan • Riparian Habitat Mitigation Plan (RHMP) • Floodprone Land Acquisition Program (FLAP) • Regional Optimization Management Plan (ROMP) • Living River Project/LSCR Basin Study

Departments and Organizations
Pima County Regional Wastewater Reclamation Department (RWRD), Regional Flood Control District (RFCD), Natural Resources Parks and Recreation (NRPR), Office of Sustainability and Conservation (OSC), County Attorney's Office
City of Tucson Office of Conservation and Sustainable Development, Tucson Water, City Attorney's Office
Pima Association of Governments, Army Corp of Engineers, Conserve 2 Enhance

The Lower Santa Cruz River entered a new phase with implementation of the Regional Optimization Master Plan (ROMP) completed by County Regional Water Reclamation Department and the resultant improvement in water quality. More than just ensuring the future viability of the existing riparian and aquatic habitat that has been established along 23 miles of the historic watercourse, ROMP is providing a visibly different river, one of clear water and a healthier and more diverse aquatic life. The Lower Santa Cruz is the only flowing water habitat for unique species in our region, a distinct feature rare in the Southwest, and a prominent County riparian area, complemented by seven river parks and The Loop.

The changes to the Santa Cruz River as an ecosystem are just beginning to be understood, through monitoring by The Living River Project, but initial indication is a significantly, and permanently, improved river is emerging and conditions that limited aquatic life and health are being eliminated. With a substantial reduction in ammonia and nutrient pollution, fish and other aquatic life finally have the necessary water quality to survive and the "muck" clouding the water bed is gone. The habitat is home to hundreds of unique bird species while invertebrate species diversity is increasing, an indicator of improving health.

Recognizing the expertise of the Living River Technical Committee, and the valuable data and analysis of the Project, County Administration has directed transitioning The Living River Project to development of a Lower Santa Cruz River Management Plan with the task of preserving habitat values under various future effluent flows. Such a plan will provide clarity by identifying wetland functions and habitat that must be balanced with recharge and reclaimed use demands.

The Cienega Creek Watershed is focus of a Pima County conservation action strategy to minimize or eliminate threats to the sustainability of natural resources in this riparian habitat, designated an Outstanding Water of Arizona for the high quality of surface water in perennial flow. The Office of Sustainability and Conservation (OSC) is undertaking a comprehensive cataloging and analysis of current conditions and potential future changes within the basin, developing standards and templates in reporting methodology. Given the complexities involved in analyzing critical habitat, OSC is building a suite of reports on land use, vegetation land cover, wildlife, groundwater and surface water, springs, drought and climate and a final risk assessment and summary report. This effort will assist OSC in recommending a conservation strategy for priority resources in the Cienega Basin and could serve as a model example in addressing other County watersheds, protecting riparian value. Pima Prospers, Water Resources Element, implementation includes development of watershed management plans, identifying watersheds impacting the County, their drainage characteristics, regulatory and infrastructure needs. Going forward, it is important to recollect, the Water/Wastewater Infrastructure, Supply and Planning (WISP) Study acknowledged environmental water needs and economic benefits derived from a healthy environment, outlining goals with a commitment to minimize additional loss of riparian habitat, protect existing riparian areas against vulnerability to climate change and continuing human action and where circumstance allows, restore degraded ecosystems to greater functionality.

Goals	Recommendations	Action Plan Items	
1.0 Preserve existing riparian areas through coordinated regulation, policy and outreach Pursue a coordinated approach to preserving existing riparian areas and foster increased public support of protection and maintenance of healthy ecosystems.	1.1 Continue preservation through acquisition, regulation, education and outreach 1.2 Address non-exempt wells and surface water diversions affecting riparian areas	RFE 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	County Floodprone Land Acquisition Program (FLAP) and Regulated Riparian Habitat/Floodplain Management Ordinance provide for protection or restoration of natural floodplain/riparian function.
2.0 Identify needs and opportunities for future restoration Pursue a collaborative, comprehensive and systematic strategy to identify needs, opportunities, resources and partnerships to implement cost-effective regional environmental restoration.	2.1 Develop regional policy on regulatory compliance projects 2.2 Collaborate regionally on riparian restoration 2.3 Work with ADEQ on water quality standards for habitat restoration	RFE 2, 3, 5,	CEP representative of County and City, citizen water coalition.
3.0 Ensure that public projects are multi-benefit including restoration, stormwater management, recharge and public amenity Maximize beneficial use of reclaimed water, rainwater and stormwater in flood control, water and wastewater treatment facilities and other capital projects.	3.1 Pursue multi-benefit public projects using reclaimed water 3.2 Pursue stormwater management opportunities in areas dominated by impervious surface	RFE 19, 20, 21, 22,	Paseo de las Iglesias most recent multi-benefit project completed, using reclaimed water. RFCD Design Standards for Stormwater Detention/Retention Manual. RFCD Low Impact Development/Green Infrastructure Guidance manual. LID Working Group.

Goals	Recommendations	Action Plan Items	
4.0 Ensure the future of riparian and aquatic habitat along the effluent-dependent reach of the Santa Cruz River Evaluate alternative strategies for protection of the riparian and aquatic habitat along the effluent-dependent reach of the Santa Cruz River building upon prior research and planning studies.	4.1 Advocate for changes to allow full recharge credit for Sec of Interior effluent 4.2 Develop a "Lower Santa Cruz River Management Plan" 4.3 Build upon pilot restoration demonstration projects to develop a portfolio of multi-purpose projects 4.4 Incorporate in and off channel recharge facilities features	RFE 23, 24, 25, 26	County Administrator direction for Living River Technical Committee to begin drafting a River Plan, building on expertise from Living River Project.
5.0 Develop water supply for the environment Ensure an adequate amount of water is available to meet the seasonal needs of restored habitats.	5.1 Finalize the IGA for the Conservation Effluent Pool 5.2 Link water conservation to environmental preservation/restoration	RFE 1, 7	C2E Program directs funding from water savings to neighborhood LID/GI projects. CEP IGA finalized, Program Administrators assigned and initial allocation request in process.

Program 1: Collaboration for Environmental Restoration

Lead Jurisdiction	Action Plan Item	Status
COT/PC	RFE 1: Finalize the Conservation Effluent Pool (CEP) implementing agreement, establish City/County CEP administrators – implement CEP. (5.1)	COMPLETED.
COT/PC	RFE 2: Establish a Regional Restoration Working Group to inventory resources, develop criteria for restoration and identify initial projects. (2.2)	CONTINUING. Citizen-led Community Water Coalition (CWC) has requested of City and County a volume of the Conservation Effluent Pool (CEP) for riparian benefit within the Santa Cruz River. Discharge of CEP volume within the Santa Cruz is consistent with a number of project recommendations from CEP Task Force. CEP allocation is pending a more thorough understanding of operational and flow regime changes from new Agua Nueva upgrade.

Lead Jurisdiction	Action Plan Item	Status
		As example of inventory and criteria development efforts, the Office of Sustainability and Conservation, at Administration direction, is developing a risk assessment and action strategy to mitigate risks or threats to natural resources in the Cienega Basin- an all-encompassing package of assessment reporting will be synthesized into final risk assessment identifying conservation targets and strategy. This method could be applied to other important watersheds/riparian areas.
PC	RFE 3: Inventory City and County lands for suitable riparian restoration. (2.2)	COMPLETED. COUNTY LEAD. RFCD has identified suitable County lands for riparian restoration via Clean Water Act (CWA) in-lieu mitigation program. RFCD has been directed to prepare a detailed plan for Canoa Ranch In-Lieu Fee to the Corps of Engineers for approval. Paseo de las Iglesias Phase 1 project completion. Cienega Basin conservation targets and strategy initiated. Pima Prospers will be advancing watershed management plans within the County.
COT	RFE 4: Coordinate development of volunteer stewardship program with Tucson Audubon pending their grant funding. (1.1)	CITY LEAD.
PC	RFE 5: Work with Audubon and Army Corps of Engineers (ACOE) on watershed based approach to utilizing group's 404 in-lieu mitigation fees/funds. (2.1)	CONTINUING. COUNTY LEAD. County adapting Action Item by development of a new Army Corps of Engineers prospectus for Canoa Ranch In-Lieu Fee Program.
COT/PC	RFE 6: Begin development of outreach/education to inform community of riparian importance and protection/restoration. (1.1)	RWRD/RFCD/OSC/NRPR work on Living River Project incorporates outreach & education through

Lead Jurisdiction	Action Plan Item	Status
		reporting, public speaking, annual Santa Cruz River Research Days and Living River of Words efforts.
COT/PC	RFE 7: Participate in Conserve to Enhance (C2E) program to develop funding source to acquire water for environment. (5.2)	COMPLETED/CONTINUING.

Program 2: Preservation and Protection of Riparian Areas

Lead Jurisdiction	Action Plan Item	Status
PC	RFE 8: Adopt and implement Lee Moore Basin Management Plan to protect riparian habitat in future growth area. (1.1)	COMPLETED. COUNTY LEAD.
PC	RFE 9: Adopt revised County riparian mitigation guidelines associated with their habitat preservation ordinance. (1.1)	COMPLETED. COUNTY LEAD.
COT	RFE 10: Finalize City's new Riparian Area Protection Ordinance and seek approval from M&C. (1.1)	CITY LEAD.
COT/PC	RFE 11: Identify ways to improve City/County data sharing and develop annual monitoring reports that address shallow groundwater areas. (1.2)	COMPLETED. COUNTY LEAD. OSC-PAG report on groundwater pumping completed.
PC	RFE 12: Apply for County incidental take permit associated with MSCP and implement CLS and guidelines. (1.1)	COMPLETED. COUNTY LEAD. OSC. USFWS will issue Pima County and County RFCD a Section 10 permit in early 2016, successful culmination of County's MSCP.
COT	RFE 13: Continue to develop City Southlands Habitat Conservation Plan. (1.1)	CONTINUING. CITY LEAD.

Lead Jurisdiction	Action Plan Item	Status
COT	RFE 14: Inventory high value riparian areas and develop monitoring/management database. (1.1)	CITY LEAD
PC	RFE 15: Improve management of public lands – field assessment and remediation of trespassing and dumping. (1.1)	CONTINUING. COUNTY LEAD. Buffel Grass Eradication- Office of Emergency Services FEMA grant for critical infrastructure protection along Mission Road and TIA corridor; NRPR, PCDOT and RFCD have ongoing efforts benefitting hundreds of acres and miles of roadway.
PC	RFE 16: Develop response/management guidelines by responsible agency to address threats to public land. (1.1)	CONTINUING. COUNTY LEAD**.** At Rosemont, Federal decisions are still pending; County has asked USFW to scope environmental impact of water re-allocation. A threats assessment and conservation strategy for County actions in the Cienega Creek watershed. NRPR, OCS and RFCD are collaborating on the work.
COT/PC	RFE 17: Pursue bond funding for acquisition of natural areas and riparian habitat, reclaimed extension to Vail. (1.1/1.2)	Pima County included additional open space acquisitions in most recent Bond program; funding amount of about $ 120,000,000 failed to receive voter approval.
COT	RFE 18: Finalize City Southlands Habitat Conservation Plan and apply for incidental take permit. (1.1)	CITY LEAD

Program 3: Incorporation of Multiple Benefit Features into Capital Improvement Projects

Lead Jurisdiction	Action Plan Item	Status
PC	RFE 19: Develop guidance document for retrofit of detention basins, list basins offering opportunity for habitat restoration/rec. (3.1)	COMPLETED. COUNTY LEAD. Regional Flood Control District Advisory Committee, following stakeholder process and technical literature review, submitted revised Stormwater Detention/Retention Manual (approved by Board) that includes Low Impact Development practices and integrated site planning with first flush requirement (impedes pollutant conveyance). RFCD developing riparian restoration in basins on a case-by-case basis after individual analysis rather than generalized application. Inventory of basin multi-purpose potential previously completed.
PC	RFE 20: Retrofit Kolb Rd detention basin for environmental restoration using stormwater as demonstration project. (3.1)	COMPLETED.
PC	RFE 21: Develop guidance for multi-purpose parks – water harvesting, green development, wildlife habitat – reduce operating costs. (3.1)	COMPLETED. COUNTY LEAD. NRPR guidance document for park design and construction continues to take account of water harvesting. Multi-use path connections are forming the Loop and the River Park Enhancement and Expansion Initiative incorporates landscape and irrigation using reclaimed water where feasible.
COT/PC	RFE 22: Develop a joint policy on rainwater harvest, stormwater retention, non-potable use, recreation and ecological features in CIP budgets. (3.1)	CONTINUING. PAG's Stormwater Management Working Group advocates a regional, holistic approach in the retention and use of stormwater, facilitating dialogue in preparation for changing regulatory issues- PAG's watershed

Lead Jurisdiction	Action Plan Item	Status
		planning evaluates and advances LID/GI best management practices through LID/GI Working Group."

Program 4: Refinement of Lower Santa Cruz River Management Plan

Lead Jurisdiction	Action Plan Item	Status
PC	RFE 23: Finalize Tres Rios del Norte Feasibility Study, broad concept for Santa Cruz River (SCR), review alternatives with Restoration Working Group. (4.2)	CONTINUING. COUNTY LEAD. Purchase of land completed in 2012, El Corazon de Tres Rios Del Norte proposed multi-phase plan, Congressional authorization approved. Latest ACOE Feasibility Study is being amended to refocus on the area near the SCR / Rillito / CDO confluence.
PC	RFE 24: Develop refined estimates of evapotranspiration and infiltration along SCR. (4.2)	CONTINUING. COUNTY LEAD. Detailed calculations were developed for the infiltration of effluent in the Roger to Cortaro reach of the Santa Cruz River. A component of this was an assessment of evaporation and evapotranspiration of the riparian corridor based on the vegetation species and the plant water demands of those species for Lower Santa Cruz River each spring from 2005 to 2012. Mean estimates were between 1.7 and 2.7 ac-ft/day. Most recent Living River Report shows a doubling of infiltration rate- more water replenished to aquifer.
PC	RFE 25: Construct project at former gravel pit using effluent and stormwater – evaluate best management of transition to stormwater. (4.3)	CONTINUING. COUNTY LEAD. As component of El Corazon de Tres Rios Del Norte proposed project.

Lead Jurisdiction	Action Plan Item	Status
PC	RFE 26: Conduct scenario planning to evaluate differing effluent flows, options to maintain riparian & aquatic habitat along SCR. (4.2)	CONTINUING. COUNTY LEAD. Municipal water demand trends study may change sewage flow unit design requirements as water and wastewater providers adapt to changing demographic patterns. Lower Santa Cruz River Living River Report will monitor discharge infiltration. The first Living River Annual Report documented wetland health conditions prior to the WRF facility upgrades completed in December, 2013. The report documented the wetland health of the effluent-dependent Santa Cruz River from the Roger Rd WRF outfall to Trico Rd prior to the upgrade of the WRFs. Living River Report establishes a baseline summary of conditions- summarizing evapotranspiration and infiltration as part of the river's water flow characteristics. The second annual Living Report for water year 2014 showed dramatic change following the treatment plant upgrades. Conditions show improved aquatic habitat, improved water clarity and increased infiltration (nearly doubled) in the Lower Santa Cruz River; builds upon previous documentation such as Historical Conditions of the Effluent-Dependent Lower Santa Cruz River. At this point, there is a need to begin a strategic plan for Santa Cruz River management to address the substantial change in infiltration and water availability, the additional use of effluent, and the desire for recreation and habitat maintenance and restoration using data collected through the Living River project and other available data.

Water Supply
2015 Report

As the Bureau of Reclamation and its Western state study partners assembled data and compiled the Colorado River Basin Water Supply and Demand Study (Colorado Basin Study), it quantified the demand of the Lower Basin states (Arizona, California and Nevada) in excess of basic state apportionments that could only be met in Surplus Conditions beyond Baseline assumptions within the Colorado Study. Upper Basin states have not developed into their full apportionments, thereby providing relief for the Lower Basin state's overdraft, buying time and obscuring the eventual full impact of imbalance (Upper Basin projects are being initiated to take more of their water). To satisfy the Lower Basin, and Arizona's demand, water management must include augmentation, re-use, conservation and water transfers[1] as a portfolio of options and maximization of current supply is employed now and into the future. Such efforts will require extensive negotiation and stakeholder involvement at all levels of government both regionally and locally.

Fortunately, Arizona's water management has responsibly positioned the state to endure imbalance and drought, and locally, is enhanced by Pima County's regional planning. Building on the Colorado Basin Study, the Lower Santa Cruz River Basin Study (LSCR Basin Study; co-managed by Pima County RWRD) will bring sound methodology from the Colorado Basin Study and focus expert supply and demand scenario building for the local region, helping identify specific challenges and solutions within the Tucson Active Management Area - affected by drought and climate change, an area historically reliant on groundwater and now dependent on renewable water from the Colorado Basin. Synthesizing a wealth of recent study, understanding of causes and impacts of Colorado River Basin imbalance will be scaled to the local level, an opportunity to come full circle in our knowledge of water management issues from the Colorado to Santa Cruz River and quantify local imbalance in supply and demand as well as infrastructure requirements to ensure supply reliability.

As this period of action plan reporting comes to a close, significant achievements have been realized with completion of the Regional Optimization Master Plan. The Agua Nueva and Tres Rios Water Reclamation Facilities will continue to supply effluent of near drinking water quality for re-use of benefit to the reclaimed system, groundwater aquifer recharge and riparian habitats- completing reclaimed water use priorities tasked in multiple County plans (WISP, WRAMP, SAPCO, SPUR, SDCP). Full utilization of available water supplies requires optimizing re-use and consistent production of high quality effluent. The County's production of this valuable resource is vital to state and local water providers' long range planning, as we maximize existing supplies. The County's Strategic Plan for Use of Reclaimed Water and City's Recycled Water Master Plan guide full utilization of the region's only renewable water supply while the upcoming LSCR Basin Study enhances local understanding of water use and needs within our basin.

City/County Action Plan Program Areas
Water Supply and Water Quality
Effluent Management
Regulatory/Policy Advocacy for Effluent, Reclaimed, Stormwater and Gray water
Drought Preparedness

County Programs
• Regional Optimization Master Plan (ROMP) • Water Resource Asset Management Plan (WRAMP) • Strategic Plan for Use of Reclaimed (SPUR) • Drought Response Plan and Ordinance • LSCR Basin Study • Living River Project

Departments and Organizations
Pima County Regional Wastewater Reclamation Department, Compliance and Regulatory Affairs Office, Natural Resources Parks and Recreation, Regional Wastewater Reclamation Advisory Committee, Water Rights Team, Local Drought Impact Group (LDIG), Water and Energy Sustainable Technology (WEST) Labs, Arid West Water Quality Research Project (AWWQRP).
Tucson Water, Citizens Water Advisory Committee.
Bureau of Reclamation (BOR), Southern Arizona Water Users Association (SAWUA), Central Arizona Project (CAP), Joint Recharge Oversight Committee (JROC), State Blue Ribbon Panel on Water Sustainability.

[1] Colorado Basin Study Executive Summary.

Goals	Recommendations	Action Plan Items	
1.0 Work collaboratively to acquire new water supplies for reliability Expand cooperative efforts to buttress our existing supplies and diversify our water resource portfolio to prepare for potential shortages stemming from climate change and drought.	1.1 Maximize opportunities to acquire ADD water supplies through regional cooperation 1.2 Acquire additional supplies to buttress TW CAP allocation and serve growth in obligated area 1.3 Consider all costs and benefits in the acquisition of new supplies.	WS 1, 2, 4, 5	Tucson Water has actively participated in ADD Water Program and explored options for reallocation, lease and transfer of new supply. Pima County will collaborate with water providers to support the development of new supplies. Innovative Inter-AMA Firming Project brings new water supply into the AMA for banking, increasing reliability. CAP stakeholder process underway to wheel Non-Project Water through CAP canal.
2.0 Maximize and make efficient use of effluent and other locally renewable water supplies Reduce use of groundwater for non-potable water needs through greater emphasis on locally-renewable resources such as reclaimed water, rainwater and gray water.	2.1 Balance uses of effluent – reclaimed, environment and aquifer recharge 2.2 Continue ROMP 2.3 Stay vigilant about water quality 2.4 Evaluate reclaimed expansion from efficiency and portfolio perspective 2.5 Evaluate greywater expansion 2.6 Encourage rainwater harvesting	WS 3, 6, 7, 8, 9, 10, 11, 12, 22, 23	Pima County's Strategic Plan for Use of Reclaimed Water (SPUR) considers current and future County reclaimed supply and prioritizes beneficial use. ROMP completion and resultant higher water quality enabling other applications, such as GSF, and improving river health. Rainwater and greywater are included in DSD's PIWMP conservation menu. Feasibility study completed of County reclaimed expansion.
3.0 Address regulatory barriers to maximizing local supplies Pursue regulatory changes that will protect public health and safety yet provide flexibility to foster increased uses of reclaimed water to offset use of groundwater for non-potable demands.	3.1 Address groundwater credits for incentives to convert to reclaimed 3.2 Move to Class A+ water for reclaimed 3.3 Work with ADEQ and DWR on water quality standards for riparian projects	WS 13, 24, 25, 26	County producing Class A+ quality water. Reduced nitrogen and ammonia allowing improvement of aquatic species and riparian habitat, monitored by the EPA-funded RFCD/RWRD/OSC/NRPR Living River Project.
4.0 Foster increased use of reclaimed water The use of reclaimed water for irrigation, environmental purposes and aquifer augmentation should be evaluated in the overall context of	4.1 Expand financing options 4.2 Maintain private payer and explore pricing incentives to encourage conversion 4.3 Lower operating costs through efficiencies 4.4 Consider reclaimed water in new developments	WS 14, 15, 16, 17, 18, 19, 20, 21, 27	City/County respective reclaimed planning documents seek to maximize benefits of water resource. Reclaimed feasibility study found collaborative opportunities for regional reclaimed master planning efforts could be

Goals	Recommendations	Action Plan Items	
maximizing the community's water resource portfolio.	4.5 Other uses for reclaimed, municipal & environment 4.6 Increase dedicated reclaimed use of effluent. 4.7 Attract additional reclaimed customers based on efficiency considerations and benefits		worthwhile, finding efficiencies in cost sharing of infrastructure investment.
5.0 Be Prepared for climate change and drought Pursue adaptive, flexible, multi-pronged preparedness strategies such as diversification of water supplies, improved demand management and increased reliance on water harvesting.	5.1 Continue multi-pronged planning approach 5.2 Use scenario planning	WS 28, 29, 30	Pima County is teaming with SAWUA and the Bureau of Reclamation in the LSCR Basin Study project, a three-year study investigating, supply and demand projections, needed infrastructure and adaptive management strategies to mitigate water supply deficits during climate change scenarios.

Program 1: Water Supply and Water Quality

Lead Jurisdiction	Action Plan Item	Status
COT	WS 1: Acquire new water supplies through Project ADD Water. (1.2)	CONTINUING. CITY LEAD. ADD Water Program has been re-focused into a CAP Non-Project Wheeling stakeholder group.
COT	WS 2: Identify future water needs for Tucson Water in the 2050 Tucson Water Plan. (1.2)	CONTINUING. CITY LEAD.
COT/PC	WS 3: Water quality research and regulation updates provided to BOS, M&C, CWAC and RWRAC. (2.3)	COMPLETED/CONTINUING. Pima County Water and Energy Sustainability Center labs are conducting water quality research. RWRD activities include ROMP, CRAO functions, Industrial Wastewater Control, Dispose-a-Med program, public outreach and Biosolids/Biogas Master Plan-updates are presented regularly. Arid West Water Quality Research Project (AWWQRP) managed by the County.

Lead Jurisdiction	Action Plan Item	Status
COT	WS 4: City purchase of full CAP allocation and increased recharge. (1.3)	COMPLETED. CITY LEAD
COT	WS 5: Update Tucson Water 2050 Plan to consider costs, benefits, tradeoffs of acquiring new water, costs of Project ADD in water plan update. (1.3)	CITY LEAD

Program 2: Effluent Management

Lead Jurisdiction	Action Plan Item	Status
COT	WS 6: Incorporate reclaimed environmental and aquifer recharge uses in Tucson Water's *Effluent Master Plan*. (2.1)	COMPLETED. CITY LEAD
COT/PC	WS 7: Develop joint recharge project in Southeast area – proposed as SHARP. (2.1)	CONTINUING. DUAL LEAD. Joint ownership overseen by Joint Recharge Oversight Committee. Design and permitting nearing completion in 2016; construction to begin in 2019.
COT	WS 8: Expand Sweetwater Recharge Facility. (2.1)	COMPLETED. CITY LEAD
COT/PC	WS 9: Cooperate with BOR to develop demonstration recharge projects in the Santa Cruz River. (2.1)	COMPLETED. Demonstration project completed in 2011.
PC	WS 10: Implement ROMP. (2.2)	COMPLETED. COUNTY LEAD. Tres Rios and Agua Nueva constructed ahead of scheduled deadlines and under budget; Roger Rd has been decommissioned and received clean closure permitting. Re-purposing of Roger Rd underway.
COT	WS 11: Maximize use of City effluent; convey effluent entitlements for region-wide benefit through Tucson Water *Effluent Master Plan*. (2.4)	COMPLETED. CITY LEAD

Lead Jurisdiction	Action Plan Item	Status
PC	WS 12: Assess impact of gray water on sewer system. (2.5)	CONTINUING. COUNTY LEAD. RWRD Observing reduced water usage and lower wastewater flows into system, and monitoring to determine if lower wastewater flows impact self-cleansing sewer velocities.
COT	WS 13: Identify/assess range of incentives to encourage new reclaimed customers in preparation of *Effluent Master Plan*. (3.2)	COMPLETED. CITY LEAD
PC	WS 14: Pursue bond funding for reclaimed expansion benefitting public use projects. (4.1)	COMPLETED. COUNTY LEAD. NRPR submitted bond project scope for funding extending reclaimed water lines to county parks. RFCD has extended reclaimed water lines to the new Paseo de la Iglesias Project on the Santa Cruz River Park between Ajo and 29th Street, and NRPR continues to evaluate opportunities to extend reclaimed lines on other sections of the Santa Cruz River Park along with other County parks. Bond packages dependent upon voter support and approval.
COT	WS 15: Assess price incentives to encourage reclaimed expansion. (4.2)	COMPLETED. CITY LEAD
COT	WS 16: Increase reclaimed efficiencies through *Effluent Master Plan.* (4.3)	COMPLETED. CITY LEAD
COT	WS 17: Consider reclaimed in new development through Comp and General Plan update. (4.4)	CONTINUING. CITY LEAD
PC	WS 18: Evaluate extending reclaimed to County parks. (4.5)	COMPLETED. COUNTY LEAD. NRPR is working with RWRD to extend the County's reclaimed water line at the Tres Rios WRF to Ted Walker District Park and the Mike Jacob Sports Park. Paseo de las Iglesias completed in 2015 and connected to reclaimed

Lead Jurisdiction	Action Plan Item	Status
		system. Sports Park planned to accept reclaimed water direct from Tres Rios WRF when A+ designation is granted by ADEQ. Considering reclaimed water options for PACC.
COT	WS 19: Evaluate extending reclaimed to City parks. (4.6)	CONTINUING. CITY LEAD
PC	WS 20: Prepare effluent plan for use of County share. (4.6)	COMPLETED. COUNTY LEAD. The Strategic Plan for Use of Reclaimed (SPUR) recommendations accepted by the County Administrator and communicated to the Board. The Plan is integral to the Water Resources Asset Management Plan (WRAMP).
COT	WS 21: Identify additional reclaimed water customers. (4.7)	COMPLETED. CITY LEAD.

Program 3: Regulatory / Policy Advocacy for Effluent Reclaimed Water, Stormwater and Gray Water

Lead Jurisdiction	Action Plan Item	Status
COT/PC	WS 22: Advocate for regulatory changes to expand use of gray water through Blue Ribbon Panel (BRP) participation. (2.5)	CONTINUING. Dual Lead. State committee formed, SAWUA and County representation, no further report – dependent on legislative action.
COT/PC	WS 23: Lobby for ADEQ to recognize rainwater harvesting and green infrastructure as stormwater management Best Management Practices. (2.6)	CONTINUING. Dual Lead. No ADWR action, EPA has issued memo and fact sheet recognizing green design in compliance activity and BMP, no further report – dependent on legislative action. Local and regional incorporation of green infrastructure more successful- PAG's 2015 & 2012 LID/GI Resolution and RFCD LID Working Group.

Lead Jurisdiction	Action Plan Item	Status
COT/PC	WS 24: Change ADWR policy to provide Groundwater Savings Facility credits for turf irrigation through participation in BRP. (3.1)	CONTINUING. Dual Lead. No further report – dependent on legislative action. Comment on this submitted by RWRD on ADWR's 4th Management Plan draft.
COT/PC	WS 25: Numeric rather than technical based standards for reclaimed – BRP. (3.2)	CONTINUING. Dual Lead. May be dependent on legislative action. RWRD applied for A+ designation for Tres Rios WRF using this approach – ADEQ is considering approval. Opportunity for involvement in ADEQ's 2016 stakeholder process to revise reclaimed water quality standards.
COT/PC	WS 26: Flexibility in water quality and permitting for riparian and environmental projects using reclaimed – BRP. (3.3)	CONTINUING. Dual Lead. May be dependent on legislative action. Opportunity for involvement in ADEQ's 2016 stakeholder process to revise reclaimed water quality standards.
COT/PC	WS 27: Regulation changes to allow remediated groundwater in reclaimed system – BRP. (4.5)	CONTINUING. Dual Lead. May be dependent on legislative action. Opportunity for involvement in ADEQ's 2016 stakeholder process to revise reclaimed water quality standards.

Program 4: Drought Preparedness

Lead Jurisdiction	Action Plan Item	Status
COT	WS 28: Update *Tucson Water 2050 Plan* to include multi-pronged drought preparedness. (5.1)	COMPLETED. CITY LEAD
COT	WS 29: Update City *Drought Preparedness and Response Plan*. (5.2)	COMPLETED. CITY LEAD

Lead Jurisdiction	Action Plan Item	Status
PC	WS 30: Update County *Drought Management Plan*. (5.2)	COMPLETED/CONTINUING. COUNTY LEAD. Board approved Vulnerability Assessment in Drought Mitigation Report and Drought Response Plan and Water Wasting Ordinance amendment in August 2014. Staff to provide quarterly Drought Conditions and CAP Water Supply status reports. LSCR Basin Study may inform amendment of County drought plan.

Demand Management
2015 Report

City/County Action Plan Program Areas
Planning and Evaluation
Consistent Standards and Guidelines
Education and Outreach

County Programs
• *Pima Prospers* Comprehensive Plan • Design Standards, Stormwater Detention & Retention Manual • Low Impact Development/Green Infrastructure Guidance Manual • LID Working Group • RFCD AutoCASE • County Landscape Design Manual • LSCR Basin Study

Departments and Organizations
Pima County Regional Flood Control District (RFCD), Development Services (DSD), Regional Wastewater Reclamation Department (RWRD)
City of Tucson Planning and Development Services, Office of Conservation and Sustainable Development, Tucson Water
Bureau of Reclamation (BOR), Pima Association of Governments (PAG), Southern Arizona Water Users Association (SAWUA), Watershed Management Group (WMG)

Water conservation in a desert state is common sense. Arizona, like other Basin states, has taken serious conservation strides and today uses approximately the same volume of water as the state did in 1957, despite a 472% growth in population and greatly expanded economy. The Tucson Metro region has one of the lowest per capita water demand in the state, result of a water-wise ethic promoted since the 1970's by Tucson Water and expounded by the multiple conservation rebate and incentive programs offered today for high-efficiency fixtures, graywater and rainwater harvesting. However, many Basin metropolitan areas have also decreased water use and attenuated population growth with conservation and despite this, the Basin is still facing imbalance. Part of the solution is understanding where the gap is in our water conservation efforts.

The Colorado River Basin Water Supply and Demand Study is the most comprehensive and up-to-date long term assessment of Colorado River Basin water resources upon which our local water providers rely on as a renewable source. An imbalance of 3.2 million acre-feet annually could occur among Colorado River users if action is not taken to address water use within the Basin. Recommendations from the study, in forming a mitigation strategy, assumed a one million acre-feet (af) annual increase in supply from both municipal and agricultural conservation through broadly defined options.

The Moving Forward Phase 1 Report is part of the Colorado River Basin Study Moving Forward effort of the Department of the Interior and Basin stakeholders "to respond in a coordinated and collaborative manner in identifying and implementing actions that address projected water supply and demand imbalances." Representatives from all water use sectors engaged in three workgroups, focusing heavily upon conservation and water use efficiency (both urban and agricultural) through the Municipal & Industrial Conservation and Reuse Workgroup and Agricultural Conservation Workgroup. The recent wealth of study continues to be refined and taken another step, eventually leading to funding of pilot conservation programs.

The forthcoming Lower Santa Cruz River Basin Study (LSCR Basin Study) will delve into local water supply and demand projections, both current and future, identifying imbalance and opportunities for regional conservation. The Sun Corridor, a projected future mega-politan region, represents a significant share of future growth in demand projected in the Colorado Basin Study- having a better understanding of water use and adaptive management options, as well as gaps in conservation efforts, at the local level will be invaluable to water policy going forward.

Looking back at County efforts over the past year, Pima County Regional Flood Control District has advanced the coordination of Low Impact Development/Green Infrastructure (LID/GI). LID/GI restores natural drainage, reducing stress on and cost of stormwater infrastructure while improving water quality, lowering urban temperatures and reducing potable consumption. RFCD has led the LID Working Group, which helped in developing the 2012 and 2015 PAG adopted resolutions supporting LID/GI regional infrastructure and use of stormwater as a water resource. Additionally, RFCD completed the Design Standards for Stormwater Detention and Retention Manual, guiding neighborhood stormwater harvesting, multi-use aspects of stormwater infrastructure and incorporation of LID practices as well as the Low Impact Development and Green Infrastructure Guidance Manual. These accomplishments build upon last year's innovative cost/benefit and risk analysis tool, AutoCASE, which monetizes the net social benefit derived from LID/GI, an important consideration neglected in infrastructure analysis.

Goals	Recommendations	Action Plan Items	
1.0 Increase the effectiveness of conservation programming through coordinated planning and evaluation Improve monitoring of water use trends to increase our ability to target inefficient and high water use areas, and to encourage innovation in water conservation research, methods, and reporting.	1.1 Collect uniform data on water use patterns to identify conservation potential 1.2 Use triple bottom line and cost/benefit analysis to improve conservation program 1.3 Employ adaptive planning approach to drought preparedness	DM 1	Completed a study of residential water use by house age and construction date (Tucson Water and RFCD) Completed Residential Water Demand Trends Dynamic Planning Tool (Woodard Study); WaterSMART grant-funded LSCR Basin Study will assess current and future sector demand, identify imbalance and develop mitigation strategies to include demand management and conservation. RFCD new economic and risk analysis tool, AutoCASE, itemizes LID/GI features, identifying those achieving the best net social benefit.
2.0 Establish common water conservation goals and targeted methods Develop shared goals to provide a foundation for increasing regional consistency and coordination.	2.1 Establish regional, measurable water efficiency and conservation goals 2.2 Develop regional water conservation approaches	DM 3, 9	Tucson Water Conservation & Education Subcommittee to Citizens Water Advisory Committee.
3.0 Manage demand through the design of the built environment Incorporate consistent low water usage development standards into new construction and establish land forms that reduce the “water footprint” of the built environment.	3.1 Review development regulations for consistency and improved potable water conservation	DM 4, 5, 6, 8	Pima Prospers supports efficient water demand management practices and strategies that protect both local and basin-wide water supplies. DSD Net-Zero Energy Building Code adopted.
4.0 Manage demand through changing behaviors Enhance coordinated education programs to enable implementation of efficient practices. Assess public preferences for conservation to better	4.1 Gather public input regarding quality of life trade-offs associated with water efficiency 4.2 Advance a regional approach to conservation education, communication, pilot projects and training	DM 9	Tucson Water Conservation & Education Subcommittee to Citizens Water Advisory Committee.

understand and communicate the benefits of conserving water.			
5.0 Increase the use of rainwater and stormwater Coordinate efforts to maximize and evaluate the benefits of rainwater harvesting to meet outdoor needs, reduce demands on potable supplies, increase floodwater retention and limit migration of contaminants.	5.1 Develop design guidelines for neighborhood stormwater harvesting 5.2 Analyze expanded water and stormwater harvesting potential and benefits	DM 2, 7	County coordinated LID/GI Working Group; Low Impact Development and Green Infrastructure Guidance Manual; Design Standards for Stormwater Detention/Retention Manual, and GI/LID Case Studies. The GI/LID Working Group implemented an LID Workshop of stakeholders in April, 2015.

Program 1: Planning and Evaluation

Lead Jurisdiction	Action Plan Item	Status
COT/PC	DM 1: Collect data – assess/reduce the water/energy footprint of new development. Identify regional uniform data collection opportunities. (1.1)	COMPLETED/ CONTINUING. Regional collaboration in funding the SAWUA supported Residential Water Demand Trends Dynamic Planning Tool (Woodard Study); An investigation of declining water use trends, underlying conditions and estimated range of future changes seeks to support dynamic modeling and scenario testing in order to address challenges facing municipal water providers. Long-term declines combined with the abrupt housing market downturn have altered the municipal sector's customer base, operations and revenue requirements; this tool aims to provide more forecast certainty for planners and policy makers. LSCR Basin Study will synthesize multiple demand data and provide assessment of current and future demand for all sectors, including environment, under scenarios of growth and climate change.

Lead Jurisdiction	Action Plan Item	Status
COT	DM2: Analyze effectiveness of City water harvesting ordinance – potential for expanded water and stormwater harvesting. (5.2)	CITY LEAD.
COT	DM 3: Benchmark study of water efficiency goals, success indicators and best management practices to inform regional dialogue. (2.1)	CITY LEAD.
PC	DM 4: Evaluate outdoor water use requirements, water budgeting methods, drought tolerant plant lists and appropriate watering practices for urban desert landscapes. Use results to inform development of more efficient and consistent outdoor water use standards and practices. (3.1)	CONTINUING. COUNTY LEAD. Update of general plant list and the buffer overlay zone plant list referenced in the Pima County landscape design manual part of Pima Prospers Implementation.

Program 2: Consistent Standards and Guidelines

Lead Jurisdiction	Action Plan Item	Status
PC	DM 5: Develop model City/County building code to reduce water/energy footprint in new and renovated buildings. (3.1)	COMPLETED. COUNTY LEAD**.** DSD Net-Zero Energy Building Code adopted.
COT	DM 6: Expand City's ordinance related gray water education program to include guidelines and education on use of gray water outdoors. (3.1)	COMPLETED. CITY LEAD.
PC	DM 7: Develop design guidelines for neighborhood stormwater harvesting to encourage the creation of habitat and water efficient landscapes. (5.1)	COMPLETED/CONTINUING. COUNTY LEAD. RFCD Design Standards for Stormwater Detention/Retention Manual includes LID practices and design standards for neighborhoods to protect or enhance riparian habitat and direct supplemental irrigation through stormwater harvesting. RFCD evaluated GI/LID features, identifying those achieving the best net social benefit, with the use of new economic and risk analysis tools, AutoCASE.

Lead Jurisdiction	Action Plan Item	Status
		Combined with the Envision Rating System, infrastructure projects can earn credits towards certification, validating social and environmental benefits, similar to the LEED program. Completion of Low Impact Development and Green Infrastructure Guidance Manual, and GI/LID Case Studies. County coordinated LID/GI Working Group continues to meet. The GI/LID Working Group implemented an LID Workshop of stakeholders in April, 2015.
COT	DM 8: Develop commercial green building rating system to increase consistency and effectiveness of water and energy standards in commercial. (3.1)	CITY LEAD.

Program 3: Education and Outreach

Lead Jurisdiction	Action Plan Item	Status
COT	DM 9: Work with regional utilities to develop coordinated and consistent demand management strategies, practices, surveys and messages. (2.1, 4.1, 4.2)	CITY LEAD.