

Area	Title	Partner	Amount	Duration	Description	Origin	Status	Upcoming fund request this FY
Conservation - Municipal	Regional Single Family Water Use Study	Phoenix, Chandler, Glendale, Gilbert	\$100,000 to \$250,000	1 Year	A regional single-family end-use study that would compare and contrast different municipalities/utilities in the Valley. Such a study would replicate national studies done in the past when targeted surveys and data-logging were used to collect detailed information on indoor and outdoor use by samples of single family residences. This study would allow for the collection of supplementary data in Phoenix (i.e. surveys and some data-logging that would add to what WSD has already done) and for entirely new data collection in a number of other utility service areas in the Greater Phoenix area.	ADWR / Cities	A Proposed Project	To be discussed at GUAC 9/10/15
Conservation - Municipal	Regional Industrial/Commercial/Institutional Water Use Study	Phoenix, Chandler, Glendale, Gilbert	\$200,000 to \$300,000	1 year	A regional industrial/commercial/institutional (ICI) end-use study that would investigate water use trends in a limited number of sectors such as schools, medical facilities (focus on hospitals and clinics), and hotels/motels/resorts, building on research initially undertaken by Phoenix and its consultants (and any other relevant utilities or agencies). Sectors where Phoenix has already done some level of research include: multifamily; general office; general retail; warehouses; health care facilities with an emphasis on hospitals; schools; and hotels/motels. Additional sectors would be investigated in later phases of regional research. This study would attempt to provide baseline data, usage trends, and projections of future use with a focus on sector-specific metrics (e.g. hotel usage on a per-room basis or hospital usage on a per-bed or per patient visit basis).	ADWR / Cities	A Proposed Project	To be discussed at GUAC 9/10/15
Conservation	SMARTSCAPE Professional Landscape Training	SMARTSCAPE (AMWUA)	\$60,000 over two years	Thru 8/30/17	SMARTSCAPE has instructed landscape professionals in the fundamentals of design, installation, irrigation, and maintenance of low-water-use landscapes since 1994. SMARTSCAPE has been coordinated and funded in the Phoenix area by AMWUA. ADWR matching funding goes toward analysis of program impacts, administration of the SMARTSCAPE website, and increasing promotion and partnerships.	Renewal	Funded; project ongoing	New contract (amendment to contract) signed 7/15/15 for two more years
Conservation	Arizona Project WET	AZ Project WET	\$100,000 over two years	4/1/14 - 6/30/16	Arizona Project WET, a recipient of ADWR Assistance Program funds since 2001, has developed and provided teacher workshops, Arizona-specific instructional materials, water education festivals and other innovative and valuable educational resources that promote the awareness, appreciation, knowledge, and stewardship of Arizona water resources. Funding of \$50,000/year for two years from ADWR goes toward increasing the frequency, type and reach of teacher professional development opportunities, as well as expanding water festivals to additional cities.	Renewal	Funded; project ongoing	Next Deliverable Due 1/31/2016 for \$20,000
Conservation - Ag	Water Conservation Management Program (WCMP)	East Maricopa NRCD	\$108,000 for one year	thru 10/31/15	ADWR funding provides for the WCMP to be administered by the East Maricopa Natural Resources Conservation District (EM-NRCD) through a subcontracted agent. The WCMP program assists agricultural and urban irrigation water users within the Phoenix AMA by providing on-site irrigation technical assistance, including education and outreach to all agricultural water users; and by serving as a monitoring agent for the Department's Agricultural Best Management Practice (BMP) program. The goals of the WCMP are to increase irrigation efficiencies and promote water conservation through a variety of services.	Renewal	Funded; project ongoing	Contract ends Oct 2015; propose renewing contract for 2-year period. To be discussed at GUAC 9/10/15.
Conservation - municipal	Salinity - education and certified installer program	Arizona Water Quality Association AWQA	\$40,000	8/1/14 - 7/31/15 (deadline to be extended)	Contract to develop a public education campaign program to provide basic information on salinity and how it affects water resources; and to develop a certification program for water softener sales associates, installers and service technicians designed to increase water softener efficiency and decrease the amount of salinity entering the sewer system.	ADWR	Funded; project ongoing	Contract deadline to be extended - awaiting ADOA.
Monitoring and Assessing Water Availability	Water level monitoring	ADWR	\$30,000-\$50,000	Yearly	In order to establish suitable monitoring sites within the Buckeye waterlogged area, ADWR may install one or more piezometers equipped with water level transducers.	ADWR	Funded; project ongoing	\$20,000 (estimate)

Area	Title	Partner	Amount	Duration	Description	Origin	Status	Upcoming fund request this FY
Monitoring and Assessing Water Availability	Geohydrology analysis - Superstition Vistas	Joint participation by ADWR, ASLD, SRP, BOR, AWC	\$175,000 per year for two years	Through 8/31/2016	3-year project to perform geohydrology analysis in Superstition Vistas, to assess groundwater availability and recharge potential. Certain tasks would be subcontracted to Arizona Geologic Survey. Study would include drilling of exploratory borings and test wells; analyzing geologic data; and preparation of report of findings.	SRP / Partners	Funded; project ongoing	Contract signed 8/25/15. Deliverables 1 and 2 forthcoming from SRP. Associated payment to be \$312,500
Conservation	Building Water Efficiency Website	AMWUA	\$15,000	To be revisited by ADWR and AMWUA	AMWUA has committed funding towards developing an interactive conservation website within the commercial and industrial sectors. ADWR matching funding has gone toward providing resources and information that complement ADWR's regulatory requirements and management plans. Funding can also be put toward marketing ADWR's website.	ADWR /AMWUA	Likely	On hold - AMWUA still has expressed interest in future. (needs staff)
Conservation	Development of online Low Water Use Plant List database	AMWUA	\$25,000		Proposal for teaming with AMWUA in development of a searchable online Low Water Use Plant List database.	ADWR, AMWUA	Likely	
Conservation	Conservation Outreach and Messaging program	ADWR, AMWUA, others	\$15,000		Funding for purchase conservation outreach & literature materials, and/or participation in conservation messaging, via billboards, traffic ads, or other media	ADWR	Likely	\$15,000
Conservation	Smart Controller Study - Best Management Practices Approach	TBD	\$75,000	1 year	Develop Best Management Practices program for use of irrigation controllers within municipal, golf, residential, and commercial settings. Demonstrate potential savings from improved application and monitoring of smart controllers.	ADWR	Needs development	
Conservation	HOA Landscape/Irrigation Water Conservation	TBD	\$75,000	Over 2 years	Within the Phoenix AMA there are hundreds of HOAs, many of which have inefficient irrigation systems, aging infrastructure, and lack of continuity among HOA board members. Possible avenues for assistance could include funding landscape irrigation audits; providing education for residents; providing scholarships for Smartscape trained landscapers; and possibly funding infrastructure and installation of reclaimed water to turf facilities.	ADWR	Needs development	
Conservation - municipal	Contract - leak detection services	TBD	\$80,000	Over 2 years	Water providers showing the need for assistance with leak detection would qualify for services subcontracted with a leak detection company.	ADWR	Needs development	
Conservation (industrial)	Study of Decommissioning of Golf Courses	TBD	\$75,000	1 year	With the changing economy and consumer preferences, a number of golf courses within AMAs have struggled to remain in operation in recent years. A study has been proposed that would explore the feasibility of voluntarily de-commissioning golf courses and transitioning them for other uses, with an emphasis on reduced water consumption.	ADWR	Needs development	Will contact other parties - followup.
Recharge / Augmentation	Activities to facilitate recharge/storage	TBD	300000	Multiple years	Examples: 1. Provide funding for recharge feasibility studies; 2. Provide funding for purchase of water for storage, or for purchase of credits; 3. Provide funding for studies of treatment of poor quality groundwater;		Needs development	
Conservation - Ag	On-Farm Conservation Program	TBD	\$75,000	One year	Irrigation water management programming		Remove?	Needs are likely already being met by WCMP.

GUAC WMAP Funding – Potential Projects

[Draft: For Discussion Only]

Background:

Proposed projects:

- Will provide data on a regional basis (i.e. be useful for the majority of the AMA)
- Will involve multiple utilities, agencies and/or research entities.

Representatives of:

- The City of Chandler, Central Arizona Project, City of Gilbert, City of Glendale, City of Phoenix and Salt River Project met to discuss possible research projects that would assist both the individual organizations and the region.
- Two priority projects were identified:
 - o A regional single family water use study
 - o First phase of a regional industrial/commercial/institutional (ICI) study.
- The information provided by these studies would:
 - o Identify baseline conditions including specific water end uses (e.g. clothes washer use; landscape irrigation use; cooling tower use)
 - o Estimate adoption rates of more water efficient devices and practices, and
 - o Project future demand for both existing and new (future) customers.
- While the four utilities in the study group would be responsible for working with consultants to collect and analyze data, it is possible that other Phoenix Metropolitan area utilities may wish to become part of one or both projects and contribute staff time and meter data.

Water demand is declining across many if not all sectors, but the declines are occurring at different rates. The research findings will be useful for multiple utilities and agencies to estimate future demands and to be able to better plan for the reconciliation of supply and demands in the medium and long terms (5-35 years).

The research findings can also be used to help water utilities and agencies to identify sectors that could be targeted to accelerate the rate at which older inefficient devices, fixtures, or practices could be upgraded. The methods for accelerating efficiency upgrades could range from education and outreach efforts to loan guarantees and financial incentives.

Priority Research Projects

Project 1: Regional Single Family Water Use Study

Description

A regional single-family end-use study that would compare and contrast different municipalities/utilities in the Valley.

Such a study would:

- Replicate national studies done in the past to collect detailed information on indoor and outdoor use by samples of single family residences, although with a slightly different, localized approach for landscape/irrigation evaluations of single family parcels.
- Collect supplementary data specific to the Phoenix AMA (i.e. surveys and some data-logging that would add to what WSD has already done) that is currently not widely available and hard to find.
- Look at the potential impact of variables like turf removal rebates, urban design guidelines, public outreach programs and water rates on relative water use by single family homes in different utility areas.

Type of Consultants to Be Utilized

It is highly likely that this project would be awarded through a sole source procurement process since the firm Aquacraft has done numerous studies of this kind with a wide variety of organizations and it is unlikely that any other consulting firm would have the skills and equipment necessary to successfully implement a study of this type. Vehicles equipped with data-loggers, computers equipped with proprietary data-logging software, and staff experienced in both data-logger installation/collection and interpretation of the signatures of specific devices/practices would be required.

Anticipated Products

The study would:

- Collect detailed information on a sample of approximately 250-500 homes located in participating utility areas that would be generally representative of the size, type, age and cost of single family homes found in the Phoenix AMA.
- Obtain data from water meter usage, County assessment information, landscape analysis, detailed data-logger information on interior fixture/appliance use, mail/email surveys and perhaps even site visits/audits.

This information would then be used to estimate and project demand by providing:

- Detailed estimates of water demand by irrigation systems, pools, appliances & fixtures for different age cohorts, sizes and locations of homes in 2016.
- Estimated inventories by age, type and capacity of indoor devices like toilets, washing machines and shower heads.

- Estimated inventories of landscapes, irrigation systems, pools and other outdoor water features, with associated estimates in the rate of transition from water-intensive landscapes to more efficient landscapes and for pool installation and removal over time.
- Simple projections of the rate of decline of water demand in single family households based on criteria like: age cohort; size of home; size of lot; geographic area; etc.

This information would be very useful for utilities/agencies that only want to do relatively simple spreadsheet-based projections of water demand or for utilities/agencies that want to use the primary research data as an input to more complicated models.

Anticipated Cost:

At approximately \$400 to \$500 per house, the cost of this project is expected to be between \$100,000 and \$250,000 depending on the size and geographic distribution of the sample chosen.

Project 2: Regional Industrial/Commercial/Institutional Water Use Study (Phase 1)

Description

A regional industrial/commercial/institutional (ICI) end-use study that would investigate water use trends in a limited number of sectors such as schools, medical facilities (focus on hospitals and clinics), and hotels/motels/resorts.

This study would attempt to provide baseline data, usage trends, and projections of future use with a focus on sector-specific metrics (e.g. hotel usage on a per-room basis or hospital usage on a per-bed or per patient visit basis).

Type of Consultants to Be Utilized

Prior research efforts at the City of Phoenix and elsewhere indicate that it is challenging to find consultants with the right mix of analytical capabilities, site audit experience and research-oriented philosophy to successfully undertake water demand in ICI sectors. While many possible combinations are possible, it is highly likely that a firm with very good high-level analytical capabilities will have to be teamed together with a firm or firms that excel in undertaking site audits that produce detailed water balance calculations and inventories of equipment and practices.

Anticipated Products:

The study would:

- Collect detailed information on a sample of approximately 30 – 200 schools, hospitals/clinics and hotels/motels located in participating utility areas that would be generally representative of these types of uses found in the Phoenix AMA.
- Obtain data from water meter usage, County assessment information, aerial imagery analysis, interviews with facility managers & engineers, site audits, review of equipment/device specifications on the internet and in manuals, and interviews with product support personnel and industry experts.

This information would then be used to prepare:

- Detailed estimates of water demand by cooling systems, specialized equipment, irrigation systems, pools, different types of appliances & fixtures for the different targeted ICI-subsectors in 2016.
- Estimated inventories by age, type and capacity of commonplace indoor water using devices AND more specialized equipment and cooling systems, with associated adoption rates for more water efficient devices over time.
- Estimated inventories of landscapes, irrigation systems, pools and other outdoor water features, with associated adoption rates from water-intensive landscapes to more efficient landscapes and for pool installation and removal over time.
- Simple projections of the rate of decline in water demand in targeted ICI-subsectors based on criteria like: age cohort; size of home; size of lot; geographic area; etc.

This information would be very useful for utilities/agencies that only want to do relatively simple spreadsheet-based projections of water demand or for utilities/agencies that want to use the primary research data as an input to more complicated models.

Anticipated Cost:

Based on the experience of the City of Phoenix in undertaking past ICI studies, it is expected that phase 1 of this study, probably focusing on schools, medical facilities, and the hospitality sector, would cost \$200,000 to \$300,000.

		Amount
Balance after encumbrances (includes SmartScape, AWQA, WCMP, Project WET)		\$ 1,260,623
Priority 1 - proposed, funded or likely	PROPOSED Regional SF Water Use Study	\$ 250,000
	PROPOSED Regional I/C/I Water Use Study	\$ 300,000
	SMARTSCAPE	\$ 60,000
	WCMP	\$ 216,000
	Water Level Monitoring	\$ 20,000
	Superstition Vistas	\$ 350,000
	Building Water Efficiency Website	\$ 25,000
	Development of Online LWU Plant List	\$ 25,000
	Purchase of Conservation Materials	\$ 5,000
	Conservation Outreach & Messaging	\$ 15,000
	<i>Subtotal</i>	<i>\$ 1,266,000</i>
Balance		\$ (5,377)
Priority 2 - needs development	Smart controller study	\$ 75,000
	HOA landscape irrigation water conservation	\$ 75,000
	Leak detection	\$ 80,000
	Decommissioning golf course study	\$ 75,000
	Activities to facilitate recharge/storage	\$ 300,000
	<i>Subtotal</i>	<i>\$ 605,000</i>
Balance		\$ (610,377)
Anticipated groundwater withdrawal fees for 2014		\$ 460,000
Balance		\$ (150,377)

Project	Category	Sector	Amount	By Sector	Percent By Sector
Water Conservation Management Program (WCMP)	Conservation	Agricultural	\$ 216,000	\$ 216,000	12%
Activities to facilitate recharge/storage	Augmentation	All	\$ 300,000	\$ 320,000	17%
Water level monitoring	Monitoring and Assessing Water Availability	All	\$ 20,000		
SMARTSCAPE Professional Landscape Training	Conservation	Industrial	\$ 60,000	\$ 285,000	15%
Smart Controller Study - Best Management Practices Approach	Conservation	Industrial	\$ 75,000		
HOA Landscape/Irrigation Water Conservation	Conservation	Industrial	\$ 75,000		
Study of Decommissioning of Golf Courses	Conservation	Industrial	\$ 75,000		
Purchase of conservation materials	Conservation	Municipal	\$ 5,000	\$ 1,050,000	56%
Proposed Res & I/C/I Studies	Conservation	Municipal	\$ 550,000		
Building Water Efficiency Website	Conservation	Municipal	\$ 25,000		
Conservation Outreach/Messaging program	Conservation	Municipal	\$ 15,000		
Development of online Low Water Use Plant List database	Conservation	Municipal	\$ 25,000		
Contract - leak detection services	Conservation	Municipal	\$ 80,000		
Geohydrology analysis - Superstition Vistas	Monitoring and Assessing Water Availability	Municipal	\$ 350,000		
			\$ 1,871,000		

Project	Category	Sector	Amount	By Category	Percent By Category
Activities to facilitate recharge/storage	Augmentation	All	\$ 300,000	\$ 300,000	16%
Water Conservation Management Program (WCMP)	Conservation	Agricultural	\$ 216,000	\$ 1,201,000	64%
SMARTSCAPE Professional Landscape Training	Conservation	Industrial	\$ 60,000		
Smart Controller Study - Best Management Practices Approach	Conservation	Industrial	\$ 75,000		
HOA Landscape/Irrigation Water Conservation	Conservation	Industrial	\$ 75,000		
Study of Decommissioning of Golf Courses	Conservation	Industrial	\$ 75,000		
Purchase of conservation materials	Conservation	Municipal	\$ 5,000		
Proposed Res & I/C/I Studies	Conservation	Municipal	\$ 550,000		
Building Water Efficiency Website	Conservation	Municipal	\$ 25,000		
Conservation Outreach/ Messaging program	Conservation	Municipal	\$ 15,000		
Development of online Low Water Use Plant List database	Conservation	Municipal	\$ 25,000		
Contract - leak detection services	Conservation	Municipal	\$ 80,000		
Water level monitoring	Monitoring and Assessing Water Availability	All	\$ 20,000		
Geohydrology analysis - Superstition Vistas	Monitoring and Assessing Water Availability	Municipal	\$ 350,000		