

CHAPTER NINE:
WATER MANAGEMENT
ASSISTANCE

9.1 INTRODUCTION

The Water Management Assistance Program (WMA) is intended to provide financial and technical resources to assist water users in the development and implementation of conservation programs, facilitate augmentation and renewable water supply utilization and obtain information on hydrologic conditions and water availability in the Tucson Active Management Area (TAMA) (A.R.S. § 45-567(A)(5))(A.R.S. § 45-567(A)(7)).

The WMA is funded primarily from groundwater withdrawal fees collected from each person withdrawing groundwater in an Active Management Area (AMA) from a non-exempt well (A.R.S. § 45-611(C)). Withdrawal fees are authorized by the *1980 Groundwater Code* (Code) and are levied based on the acre-foot volume of groundwater withdrawn on an annual basis. The groundwater withdrawal fee rate for augmentation of the water supply, conservation assistance to water users within the AMA and monitoring and assessing water availability within the AMA is set annually by the Director with input from the TAMA Groundwater Users Advisory Council (GUAC) and is limited to a maximum of two dollars per acre-foot per year (A.R.S. § 45-611(A)(2)).

9.2 DESCRIPTION

Programs funded by the WMA help water users achieve efficient use of water supplies and help the TAMA meet its water management goal. The water management goal of the TAMA is to attain safe-yield by the year 2025.

9.2.1 Conservation Assistance

Conservation assistance helps water users plan and undertake conservation programs and lessens the number of enforcement actions related to conservation requirements. It is used for information and education services, including services that increase public awareness about the importance of water conservation and the TAMA's groundwater supplies. It also provides technical support designed to increase water use efficiency across the TAMA. Conservation assistance supports the ADWR's role as a central source for information on water conservation, augmentation and recharge.

9.2.2 Augmentation

Augmentation supplements the water supply of an AMA and includes water importation, water storage and artificial recharge (A.R.S. § 45-561(2)). Augmentation assistance helps water users study renewable resource options, design and construct renewable resource facilities and provides information to resolve technical feasibility challenges or to optimize recharge project operation. It also includes studies initiated or conducted by ADWR, cost-sharing grants for augmentation projects, studies initiated or conducted by others and planning and technical support for AMA-wide and local area water management strategies.

9.2.3 Monitoring and Assessing Water Availability

Monitoring and water availability assessment activities provide information and data that are useful for developing strategies for reaching safe-yield, while also taking localized hydrologic conditions into account in the TAMA. Examples of the information and data that can be obtained through monitoring and assessment activities include the following:

- Groundwater movement and volumes
- Locations of recharge and depletions
- Location and migration of poor quality groundwater
- Impact of continued groundwater pumping, including water level declines and land subsidence
- Stream flows, snowmelt and precipitation data

9.3 FUNDING

9.3.1 Groundwater Withdrawal Fees

The WMAP is funded primarily from groundwater withdrawal fees levied and collected from each person withdrawing groundwater in an AMA from a non-exempt well (A.R.S. § 45-611(A)). Other sources of funding include one-half of the annual surcharge collected from persons holding a permit for interim groundwater use in bodies of water within the AMA and application fees for underground storage facility permits, groundwater savings facility permits, water storage permits and recovery well permits (A.R.S. § 45-133(E)) (A.R.S. § 45-871.01(A)).

No later than October 1 of each year, the Director must set the groundwater withdrawal fee for the following calendar year (A.R.S. § 45-614(A)). Prior to setting the fee, the GUAC for the AMA recommends to the Director how the fee should be set within the statutory limit. Within 30 days after setting the fee, the Director is required to give written notice of the fee to all counties, cities, towns, private water companies, political subdivisions and holders of groundwater withdrawal permits in the AMA (A.R.S. § 45-614(C)). The fee is required to be paid to ADWR at the time the person withdrawing the water files an annual water withdrawal and use report (annual report) pursuant to A.R.S. §§ 45-632, 45-614(E).

**TABLE 9-1
TUCSON AMA ANNUAL WMAP
WITHDRAWAL FEE* SUMMARY, 1997-2013**

Year	Groundwater Pumped (ac-ft)	Withdrawal Fee** (\$/ac-ft)	Monies Collected
1997	285,751	\$0.50	\$142,875.29
1998	260,458	\$0.50	\$130,229.02
1999	262,526	\$0.50	\$131,263.20
2000	288,503	\$0.50	\$144,251.45
2001	250,097	\$0.50	\$125,048.67
2002	241,221	\$0.50	\$120,610.68
2003	221,965	\$0.50	\$110,982.68
2004	208,168	\$0.50	\$104,084.14
2005	201,930	\$0.50	\$100,965.10
2006	192,760	\$0.50	\$96,380.15
2007	185,690	\$0.50	\$92,844.87
2008	183,423	\$0.50	\$91,711.33
2009	178,060	\$0.50	\$89,029.78
2010	154,228	\$0.50	\$77,114.17
2011	166,851	\$0.50	\$83,425.33
2012	161,725	\$0.50	\$80,862.30
2013	169,369	\$0.50	\$84,684.37

*Withdrawal fees and fees collected reflect only that portion of the groundwater withdrawal fee established to support the WMAP. Total withdrawal fees through 1997 have been greater than Table 1 fees, since the first one dollar per acre-foot of the annual withdrawal fee was established for general ADWR administrative purposes.

**The figures in the groundwater pumped column reflect the most recent information available in the AMA. This information may vary from the figures used at the time the groundwater withdrawal fees were actually collected.

The total fund amount for each year is known by April, after the receipt of annual reports in March. Total

available funding for the programs varies from year to year depending on the amount of groundwater withdrawn and any carry-over of funds from previous years.

All fees received by ADWR for the WMAP must be transmitted to the state treasurer (A.R.S. § 45-615). The state treasurer is required to hold the fees in a separate fund and to maintain within the fund separate accounts for each AMA (A.R.S. § 45-615(1)). Monies held in the fund for an AMA may be used only to finance the augmentation and conservation assistance programs for the AMA and to fund any projects that are authorized by the Director for monitoring and assessing water availability within the AMA (A.R.S. § 45-613(A)). Table 9-1 shows the total groundwater pumped, annual groundwater withdrawal fees, and total fees collected from 1997 through 2013.

9.4 HISTORY

9.4.1 Second Management Period

The assistance program originated during the second management period (1990-2000) as an augmentation program, including incentives for artificial recharge (A.R.S. § 45-565(A)(6)). A program for conservation assistance was required in 1990 (A.R.S. § 45-615(1)). In 1996, legislation authorized funding for monitoring and assessing water availability and land subsidence in addition to augmentation and conservation assistance (A.R.S. § 45-611). The addition of monitoring and assessing resulted in changing the name of the program from the “Conservation and Augmentation Fund” (as in the Second Management Plan) to the “Water Management Assistance Program” (as in the Third Management Plan).

During the second management period (1990-2000), the TAMA funded approximately \$1,200,000 in municipal, industrial and agricultural conservation programs and approximately \$2,500,000 in augmentation programs between 1987 and 2000. Descriptions can be found in Chapter 9 of the Third Management Plan (3MP). (See <http://www.azwater.gov/azdwr/WaterManagement/AMAs/TucsonAMAFourthManagementPlan.htm>).

9.4.2 Third Management Period

The 3MP (2000-2010) required a program for “additional augmentation of the water supply of the AMA, if feasible, including incentives for artificial groundwater recharge” (A.R.S. §45-566(A)(6)) and a program for “conservation assistance to water users within the AMA” (A.R.S. § 45-566(A)(8)). During the third management period, the WMAP program intended to focus only on projects that provided maximum benefit, due to the decline in WMAP funds as a result of the reduction in the withdrawal fee and reductions in pumping due to renewable supply use. Program objectives included:

- Increasing efficiency of all water use,
- Assisting regulated water users in meeting their conservation requirements,
- Maximizing the effectiveness of conservation programs through cooperative activities and transferability of grant products,
- Targeting the water using sectors with the greatest conservation potential,
- Allocating staff resources for education, assistance and outreach efforts,
- Supporting activities that expedite the utilization of renewable water supplies to replace groundwater use, as well as facilitating regional cooperative efforts,
- Developing a more site-specific local resource management approach to address concerns about localized negative impacts of groundwater level changes and
- Collecting data about hydrologic conditions to determine aquifer storage and subsidence impacts

The process for applying for WMAP funds programs and projects changed during the third management period due to legislation enacted in 1999 (A.R.S. §§ 41-2701-2706). As a result, Chapter 9 was modified

in 2003 to meet the requirements for soliciting and awarding grants as required by the new legislation. The legislation requires state agencies to follow specific procedures in soliciting and awarding grants, including: 1) publishing notice of a request for grant applications; 2) appointing at least three peers or other qualified individuals who are not members of the GUAC to evaluate the applications; and 3) keeping all information in the applications confidential until the grants are awarded.

Some of the projects that were funded with WMAP monies in the Tucson AMA during the third management period include:

- Tucson AMA Regional Xeriscape Contest
- Drop Your Water Use conservation campaign for classifying/labeling nursery stock
- Exterior water conservation workshops for professionals (“Smartscape: A Training Program for Landscape Professionals”) and for homeowners (“WaterSmart”)
- Water conservation educational materials geared toward grade school children
- Irrigation Conservation Assistance Program, assisting farmers with irrigation scheduling and water management techniques
- Project WET – Water Education for Teachers – provides elementary school teacher professional development that aids water stewardship and STEM (Science, Technology, Engineering and Math) literacy for students
- Residential GPCD study – investigating causes of recent declines in per-household water demand, experienced by numerous municipal providers
- Cost share with USGS – Subsidence monitoring activities
- Installation of water level monitoring equipment

9.5 NEEDS AND CHALLENGES FOR THE FOURTH MANAGEMENT PLAN

WMAP funds have declined with decreased groundwater withdrawals in the TAMA. A higher proportion of annual or long-term storage credit recovery in the future will result in lower WMAP funds but more progress towards the achievement of the TAMA safe-yield goal. If groundwater pumping increases, overdraft would increase but more funds would be available to the WMAP.

9.5.1 Future Needs Identified in the 3MP

In the 3MP, the TAMA identified the following needs:

- ADWR Staff to provide direct conservation assistance to regulated water users, facilitate regional planning efforts (e.g. bring CAP water to the Green Valley-Sahuarita area, study the implication of new drinking water standards on recharge and recovery operations), provide technical assistance and conservation information/education and facilitate cooperatively funded efforts.
- Monitoring projects to support a better understanding of the aquifer and the impact of groundwater depletion on land subsidence.
- A hydrologic model for the TAMA to aid in evaluating impacts on groundwater movement, mining, recharge and volumes in storage.
- Municipal sector assistance such as expanding renewable water utilization and evaluating conservation programs.
- Agricultural sector assistance such as irrigation water management, installation of efficient irrigation systems and infrastructure to convey renewable supplies to farms, monitoring crop and water use patterns and evaluating the impact of market conditions and regulatory programs on farming operations.
- Industrial sector assistance such as identifying opportunities for renewable supply use, evaluating the application rate and new irrigation technologies for turf facilities, researching the impact of reclaimed water and CAP water on cooling tower operation and the use of blowdown water for

irrigation and further investigation of cooling tower maintenance technologies.

9.5.2 TAMA Water Demand and Supply Assessment 1985 - 2025

The *Demand and Supply Assessment 1985-2025, Tucson Active Management Area* (Assessment), completed in 2010, (See:

<http://www.azwater.gov/AzDWR/WaterManagement/Assessments/default.htm>) (ADWR, 2010) identified the following challenges:

- Difficulty projecting the nature of the economy
- Climate variability and drought impacts to availability of renewable supplies
- Relationship between power cost and water cost
- Ability to obtain additional renewable supplies
- Financial capability to import water supplies
- Potential for any future water agreements
- Local/regional cooperative water management
- Localized groundwater management
- Location of underground storage vs. location of annual or long-term storage credit recovery
- Climate variability planning and response program
- Short-term drought response program
- Additional infrastructure and funding
- Ability to respond positively to economic growth without increasing groundwater withdrawals
- Planning horizon beyond 2025.

9.6 PROCEDURES

The WMAP will continue to be implemented during the fourth management period. Following is a description of how projects are funded, identified, solicited, and awarded. A flow chart summarizes the process (See *Figure 9-1*).

9.6.1 Identifying Priority Projects

In an effort to apply available funding and technical assistance to the most qualified projects, ADWR identifies priorities with assistance from members of the water-using community and the GUAC. Information may potentially be gathered in the following ways:

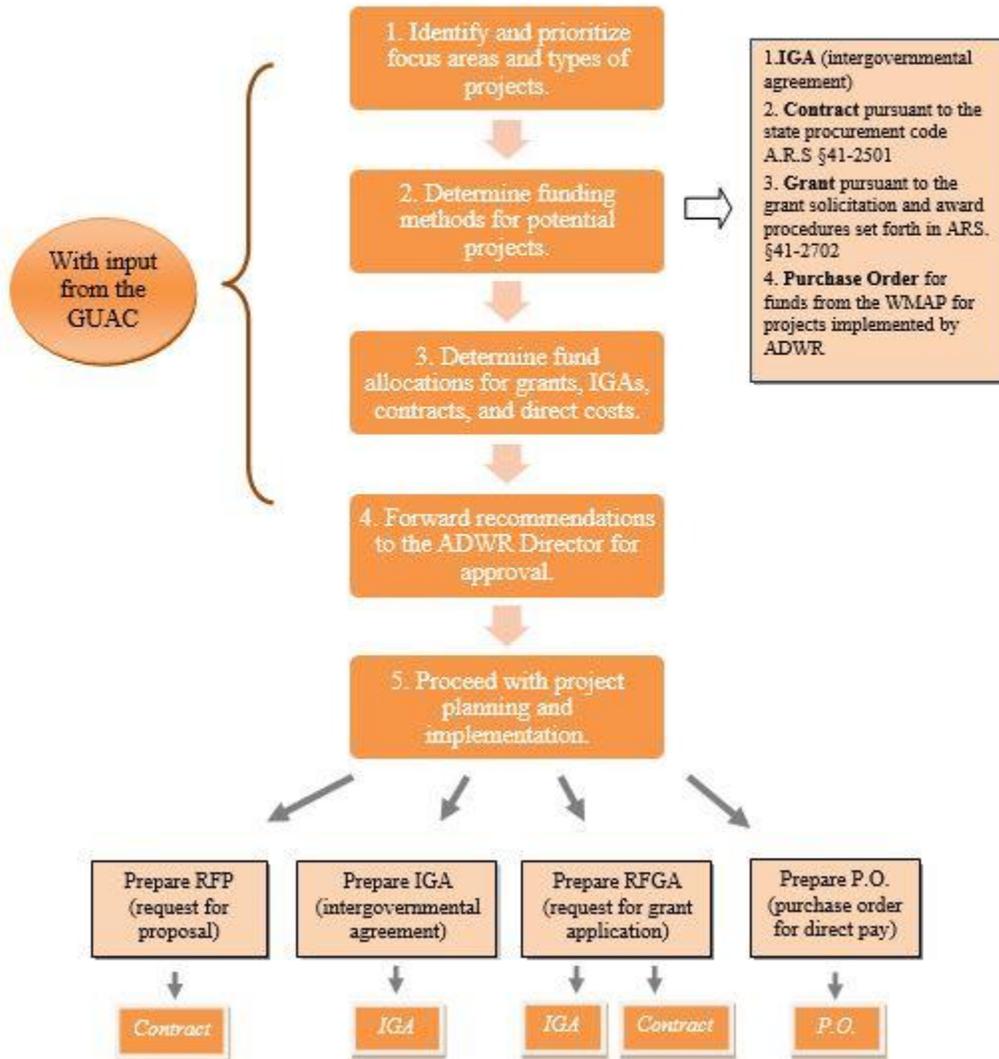
- Soliciting public input at GUAC meetings from the GUAC and the public.
- Soliciting ideas from conservation coordinators at the state level conservation information sharing meetings.
- Meeting with technical administrators of currently funded projects to assess project progress and anticipate future needs.
- Conducting surveys and/or requesting letters of intent so that stakeholders have the opportunity to put their ideas in writing.
- Documenting expressions of interest and inquiries received via phone, email or in person.
- Meeting with appropriate water management staff to learn about agency needs, resources, and legal requirements relating to conservation in the industrial, municipal, agricultural and municipal/agricultural Best Management Practice (BMP) programs.
- Reviewing current focus areas of other funding agencies and/or meeting with grant coordinators (e.g. US Bureau of Reclamation) to identify needs, gaps and/or areas for collaboration.

9.6.2 Applying Funds to WMAP Projects

ADWR identifies priorities for program assistance with input from members of the GUAC and the water-using community. Recommendations are made to the Director about allocating funds among the program categories: conservation, augmentation and monitoring hydrologic conditions or assessing water availability. The type of project or program to be funded determines whether one of the following four methods is used to apply funds: Inter-Governmental Agreement (IGA), contract, grant and direct use by ADWR.

**FIGURE 9-1
WMAF PROCESS**

**Water Management Assistance Program (WMAF)
Process for Funding Projects**



A. Intergovernmental Agreement

ADWR may enter into an IGA with public agencies (as defined in A.R.S. § 11-951) (A.R.S. § 45-105(A)(8)). IGAs are appropriate when the source of the service requested is limited and the awards do not have to be competitive. The project must involve a joint exercise of powers common to the parties or an agreement for joint or cooperative action.

B. Contract

ADWR may enter into a contract for specific services by issuing a request for proposal (RFP). An RFP is used for specific services or a narrow scope of work and where the lowest bid is not necessarily the winning bid (A.R.S § 41-2534). An RFP is used for purposes of procuring a specific end product in the form of materials, services or construction.

C. Grant

A grant process is used when selection requires a competitive process to be fair. It can be used for both governmental and non-governmental entities. The scope of the project should not be too specific as to single out only one or two possible entities and not too general so as to generate projects that do not meet project objectives. A.R.S. §41-2702 includes a set of requirements for the grants process including the following:

- Preparation of a Request for Grant Application (RFGA) that includes scope, funding amount and evaluation criteria.
- Confidentiality of applications until an award or awards are made; and
- Evaluation by at least three evaluators. Note that GUAC members may not serve as evaluators, but can be involved in grant award selection.

D. Direct use by ADWR

If a project is to be implemented by ADWR, it will use monies directly from the WMAP.

9.6.3 Contract Development, Monitoring and Support

Each person receiving monies for WMAP purposes through a grant, IGA or contract must enter into a contractual agreement with ADWR. Contracts, prepared by ADWR staff, describe what tasks are to be accomplished and set deadlines for task completion and fund disbursements. ADWR staff track progress and review deliverables for compliance with contract requirements. ADWR authorizes and issues payments, modifies contracts as needed, and provides other legal and administrative support.

9.6.4 ADWR's Role in the WMAP

Fund management and administration of grants and contracts are coordinated between ADWR's Administration Division and the AMA staff. The Administrative Division's functions include management of the separate funds for each AMA and contract administration. The following responsibilities may be assigned to ADWR staff:

- Prioritize, review and provide input on submitted proposals and identify areas of need for future project proposals.
- Analyze potential projects and identify appropriate funding methods (grant, IGA, procurement contract).
- Administer IGAs, contracts and grants.
- Implement ADWR projects.
- Provide technical and field assistance.
- Provide information and educational services. ADWR staff develops water conservation information materials, educational curricula and displays, and programs specific to water users within the AMAs. These materials and programs may be developed independently, with WMAP funding, or through partnerships with other government agencies, community groups or utilities. ADWR staff also maintains web-based or hard copy inventories of information and educational materials for distribution to water users, and provide water-related presentations to civic groups, schools and others.

9.6.5 GUAC Role in the WMAP

The GUAC advises the AMA Director, makes recommendations on groundwater management programs and policies for the AMA and submits comments to the AMA Director and to ADWR Director on draft management plans (A.R.S. § 45-421). The following list describes the GUAC's role in the WMAP:

- Provide recommendations regarding withdrawal fees.
- Provide input and recommendations about the goals and priority focus areas for the TAMA.
- Assist ADWR in selecting general project ideas for funding prior to the solicitation of applications or proposals.
- Allow public input and comment on potential projects at meetings.
- Identify sets of criteria for evaluating proposals and contracts.
- In coordination with ADWR, participate in selecting evaluators for grants.

9.6.6 Criteria Used to Evaluate Projects

Specific sets of criteria are needed when developing RFGAs or RFPs. These criteria are established by ADWR with assistance from the GUAC. Certain criteria may be given greater weight, and any weighted system must be applied consistently. Following is a list of criteria to be considered:

- Does the project support augmentation of the water supply of the AMA; provide conservation assistance to water users with the AMA; and/or support monitoring and assessing water availability within the AMA?
- Is the project consistent with ADWR policies and programs, and the management goal of the AMA?
- Does the project benefit multiple water users or stakeholders? Is there community and/or sector support for the project?
- Is there the potential to leverage the project with other proposed or ongoing projects? Are there cost-sharing opportunities with applicant or other parties? Would the project be otherwise implemented without WMAP funding?
- Can the effectiveness of the project be measured? Examples of metrics might include comparing pre-project water use and post-project water savings; scientific data collections and reporting methods; or pre-program and post-program surveys to verify project results.
- If the project is a continuation of ongoing activities, has the project been shown to be effective? If a new project, is the proposed work duplicative of work that has previously been performed?
- Is the project proposal complete? In particular, proposals should include:
 - Clear statement of purpose, goals, methodology and list of deliverables (data collection, interim and final reports, etc.) and
 - Detailed project budget, including salary costs and benefits, retrofit device costs, equipment/supply purchases, etc.

Bibliography

ADWR. (2010). Water Demand and Supply Assessment 1985-2025, Tucson Active Management Area. Phoenix.