

APPENDIX A

OTHER WATER USERS IN THE REGION

Although Tucson Water is the largest municipal water provider in southern Arizona, the Utility is but one of many providers and water users in the Tucson AMA. Two domestic water improvement districts, smaller municipal providers, private water companies, irrigation districts, and industrial and agricultural users that have their own ground-water rights all draw water supplies from the same regional aquifer. This appendix briefly summarizes who the other water users are in the Tucson AMA. For more information about AMAs, refer to Appendix E: *Federal, State, and Local Regulations and Policies*.

HISTORICAL PERSPECTIVE

Water use in the Tucson AMA has changed over time. Municipal water use has increased since 1940 and by 1985 replaced agriculture as the largest water-using sector. In 2000, the total reported volume of ground water used in the AMA was 326,103 acre-feet of which about half was municipal water use. Industrial use, which includes mines and sand and gravel facilities, has remained fairly constant since 1975 (ADWR, 1999).

The number of water providers in the Tucson AMA has also changed over time. Prior to the 1940s, there were many small potable water providers serving from a dozen services up to several thousand. The City of Tucson has acquired more than 100 of these companies and their wells over the past 60 years. These small systems have been acquired for a number of reasons including expansion of the City's boundary, requests by the water providers to be taken over, and opportunities to consolidate water services in order to increase efficiencies and improve the quality of service. Purchases continue to this day on a case-by-case basis.

Tucson Water's first formal long-range planning process resulted in the *Tucson Water Resources Plan 1990-2100* which was completed in 1989. The initial planning effort was driven by regulatory requirements created by Arizona's 1980 Groundwater Management Act and local concerns about how available water resources including Colorado River water would be utilized.

The Northwest Area Agreement of 1979 was drafted in anticipation of the Tucson region receiving Colorado River water from the Central Arizona Project and to help address area providers' concerns regarding long-term, sustainable supplies. The agreement committed Tucson Water to provide treated Colorado River water to three private utilities: Metropolitan Water Company (now Metropolitan Domestic Water Improvement District—MDWID), Cañada Hills Water Company (subsequently purchased by the Town of Oro Valley), and the Rancho Vistoso Water Company (also purchased by the Town of Oro Valley). In return, these private water companies agreed to utilize Colorado River water as their base supply, provide well pumping data, and help pay for construction of the system that would supply the imported water. This multi-party agreement positioned Tucson Water to become the regional municipal water provider.

Tucson Water's role in the regional water picture has changed since the Mayor and Council approved the *Tucson Water Resources Plan 1990-2100* in 1989. This long-range plan, like the Northwest Area Agreement, was created with the idea that Tucson Water would be the regional water provider. In the years since the plan was adopted, three new municipal water providers, with their own governing bodies, have been created.

By the early 1990s, purchases of the private water companies by government entities led to agreements that dissolved the Northwest Area Agreement; as a result, Tucson Water was no longer in the position to become the regional water provider. Subsequent agreements have been made between the City of Tucson, MDWID, and the Town of Oro Valley. An intergovernmental agreement in 1998 between MDWID and the City settled a legal dispute between the parties over the terms of the Northwest Area Agreement. This agreement turned over 9,500 acre-feet of the City's Central Arizona Project allocation to MDWID (where 642 acre-feet of this amount was transferred to the Town of Oro Valley for a portion of the original Metropolitan Water Company located within the Town boundaries). MDWID paid the City \$11.5 million for past capital costs on the Central Arizona Project allocation and to be released from the Northwest Area Agreement. In late 2001, the City's annual Central Arizona Project allocation was reduced another 4,454 acre-feet due to a settlement between the City of Tucson and the Town of Oro Valley. In addition, the Town of Oro Valley paid the City of Tucson \$3.8 million to be released from the Northwest Area Agreement.

WATER PROVIDERS IN THE TUCSON AMA

As of 2000, more than 40 potable water providers in addition to Tucson Water were located in the Tucson AMA as shown on Table A-1 (ADWR, 2003b). Tucson Water is the largest provider in the Tucson AMA with a service area population of 638,936 in 2000. The next largest in terms of population served is 15 times smaller than Tucson Water. After Tucson Water, the next four largest providers are MDWID, the Town of Oro Valley, the Flowing Wells Irrigation District, and Community Water Company of Green Valley.

Metropolitan Domestic Water Improvement District

The Metropolitan Domestic Water Improvement District (MDWID) was created by the Pima County Board of Supervisors in 1992 and is the second largest water provider in the Tucson

User Name	Estimated 2000 Population	2000 Pumpage (Potable) (Ac-ft)	Central Arizona Project Allocation	Service Agreement with Tucson Water	Effluent Allocation	Assured Water Supply Designation
MDWID ¹	44,029	8,633	8,858	Interconnect	Yes	Yes
Town of Oro Valley ¹	34,153	9,085	6,748		Yes	Yes
Community Water of Green Valley	15,286	2,448	1,337			
Flowing Wells Irrigation District	15,109	2,879	4,354			
Lago del Oro	8,225	2,220				
Avra Water Co-op	7,020	1,027				
Davis-Monthan Air Force Base	6,187	1,423				
University of Arizona	5,014	1,516				
Ray	4,830	668				
Green Valley Water Company	4,757	2,225	1,900			
Arizona Water Company	4,140	379				
Hub Water Company	4,056	1,105				
Arizona State Prison Complex	3,990	653				
Marana Municipal Water System	3,591	544	47	Interconnect		Yes
Las Quintas Serenas	3,080	442				
Vail Wtr. Co. (formerly Del Lago)	2,537	296	786			Yes
Voyager Wtr. Company	2,415	279				
Farmers Wtr. Company	2,390	538				
Marana Domestic Water Improvement District	1,847	326				
Forty Niners Water Company ²	981	742		Interconnect		
Los Cerros	924	165				
Rancho del Conejo	830	105				
Thim Utility	758	102				
Spanish Trail	720	130	3,037			Yes
Sandario	640	119				
Rincon Ranch Estates	627	123				
E&T	623	20				
Winter-haven	593	221				
Lazy "C"	480	56				
Honea	460	68				
Saguaro	420	46				
Diablo Village	417	10				
Rillito	315	32				
I.M.	255	25				
Mesaland	235	87				
Halcyon	203	65				
Sahuarita Village	176	33				
Three Points	162	22				
Lyn Lee	139	26				
Mirabell	110	25				
Rancho Sahuarita	85	16				Yes
Worden	46	9				
Despoblado	14	1				
Rincon Creek	4	8				
Midvale ³	N/A	N/A	1,500	Interconnect		
TOTAL Pumpage (Acre-Feet)		38,942				

1. Central Arizona Project and effluent allocations are a result of agreements between the City of Tucson and the provider(s). The amount of effluent will vary based on how much potable water is delivered in a given year.
2. This provider has since been purchased by Tucson Water.
3. Tucson Water has become the succession in interest for Midvale's Central Arizona Project allocation.

Table A-1: Other Water Providers in the Greater Tucson Region, Tucson Active Management Area Year 2000 (ADWR, 2003b).

AMA (MDWID, 2003). In 2000, MDWID provided 6 percent of all reported domestic water usage in the Tucson AMA. Prior to 1992, MDWID was operating as the privately owned Metropolitan Water Company. In the early 1990s, Tucson Water negotiated a purchase agreement to acquire the Metropolitan Water Company. However, because the service area was outside the jurisdictional boundary of the City of Tucson, there was an interest on the part of some Metropolitan Water Company customers to form a domestic water improvement district to retain local control. The City of Tucson agreed to complete its purchase of the Metropolitan Water Company and re-sell it to MDWID on the same day.

MDWID covers a 26 square-mile area in the northwest portion of the Tucson metropolitan area and includes portions of the Town of Marana, the Town of Oro Valley, and unincorporated Pima County. Review of Table A-1 indicates that MDWID served 8,633 acre-feet of water to 44,029 residential and commercial customers in 2000. An elected Board of Directors provides management oversight to MDWID.

In 2001, an Intergovernmental Agreement Relating to Effluent between MDWID and the City of Tucson allocated a portion of the City's effluent to MDWID. The amount of effluent owned by MDWID in any given year will vary depending on its service area deliveries (excluding water delivered for turf irrigation such as on golf courses) and other factors.

MDWID obtained an AWS designation from ADWR (see Appendix C: *Assured Water Supply Implementation* for more information about the AWS Program). By the end of 2003, MDWID had stored all of its Central Arizona Project allocation in recharge facilities located outside of its boundaries. Through paper-water accounting, however, MDWID is recovering a portion of its storage credits through ground-water pumping within its service area.

Town of Oro Valley

The Town of Oro Valley is located six miles north of the City of Tucson and covers a 24 square-mile area. It is one of the fastest growing communities in the region. The Town of Oro Valley's population for the year 2000 was 34,153; the service area pumped 9,085 acre-feet of ground water to meet water demand. The community has a town manager form of government with a mayor, vice-mayor, and town council. The local governing body purchased Cañada Hills Water Company and Rancho Vistoso Water Company in the 1990s, and these two former water companies constitute the core of the Town's water system.

In 2001, an Intergovernmental Agreement Regarding Potable Water and Effluent between the City and the Town of Oro Valley assigned the Town effluent derived from wastewater return flows that are associated with Oro Valley's potable water deliveries. This agreement is subject to the provisions of the 1979 Intergovernmental Agreement Relating to Effluent and 2000 Supplemental Intergovernmental Agreement Relating to Effluent between the City of Tucson and Pima County (see Appendix E: *Federal, State, and Local Regulations and Policies* for more information.). Like the MDWID effluent agreement, the amount of effluent owned by the Town of Oro Valley will vary annually depending on how much potable water they deliver in any given year; however, it does not include water delivered for turf irrigation such as on golf courses.

The Town of Oro Valley has an AWS designation. By the end of 2003, the Town had stored 12,000 acre-feet of its Central Arizona Project water allocation at a groundwater savings facility but to date has not recovered its storage credits.

Flowing Wells Irrigation District

The Flowing Wells Irrigation District dates back to the 1890s. The District's service area covers about four square miles, and it is partially located within the City of Tucson's boundary. The District pumped 2,879 acre-feet of ground water in 2000 and served a population of 15,109. The District has a Central Arizona Project allocation of 4,354 acre-feet but does not currently use its allocation. The District has not obtained an AWS designation.

Community Water Company of Green Valley

Community Water Company of Green Valley (Community) is located in the Tucson AMA about 40 miles south of Tucson in Green Valley. It was formed almost 30 years ago and is the larger of the two providers that serve the area. Community pumped 2,448 acre-feet of ground water in 2000 and served a population of about 15,286. It has a Central Arizona Project allocation of 1,337 acre-feet per year. Community currently does not have an AWS designation, so it is not eligible to accrue long-term storage credits. Community would need a recovery well permit to recover its existing credits; however, it can transfer credits to other entities. Even though it does not have an Assured Water Supply, Community continues to expand its service area by having new developments enroll as member lands of the CAGR. D.

MINING FACILITIES AND AGRICULTURAL USERS

Mining Facilities

ADWR regulates water use at mining facilities that use or have the potential to use more than 500 acre-feet per year. Water is used in almost all steps of the mining process. ADWR has conservation requirements to help mining facilities reduce overall consumption. Mineral extraction processes also have been modified in recent years to use water more efficiently. Ground-water use at these mines in 2000 was just under 43,000 acre-feet.

Three active mining operations extract copper, molybdenum, and silver in the Tucson AMA from open pit facilities. The ASARCO Mission Mine is located south of Tucson in the Sierrita Mountains. The Cyprus-Sierrita operation is located in the Sierrita Mountains south of the Mission Mine and west of Green Valley. The ASARCO Silver Bell mine is located in the northwest portion of Avra Valley in the Silverbell Mountains.

Mining companies in the Tucson region purchased farmland in the 1970s to secure water rights. The mines collectively have rights to pump 62,000 acre-feet of ground water per year in the Tucson AMA. The mines do not have Central Arizona Project allocations and are therefore dependent upon ground water to support their operations. Ground-water use varies from year to year based on conditions in the metals market.

Agricultural Users

ADWR regulates agricultural users by encouraging efficient irrigation practices. Agriculture in the Tucson AMA used about 100,000 acre-feet of water in 2000, and most of the water utilized was ground water. Other water sources included treated effluent and Colorado River water provided through the Central Arizona Project. Major regional farming operations in the Tucson AMA are located in the Cortaro Marana Irrigation District, Avra Valley Irrigation Drainage District, and Farmers Investment Company. The Cortaro Marana Irrigation District and Avra Valley Irrigation Drainage District are located in the Marana area while Farmers Investment Company is located near Green Valley. Major crops in these areas include cotton, barley, pecans, alfalfa, pasture grasses, sorghum, and wheat.

ADWR's Ground-Water Savings Program allows water providers to accrue storage credits at ground-water savings facilities where Colorado River water or effluent is used in lieu of ground water. Tucson Water has had agreements and storage permits with local agricultural users to provide Colorado River water for irrigation through this program. Other water providers also have participated in the ground-water savings program and have accrued paper-water storage credits which will be utilized later to support municipal uses.

CONCLUSION

Water use by sector has shifted over time in the Tucson AMA. Municipal use has replaced agriculture as the region's largest water user. Industrial use has remained fairly constant since the mid-1970s. More than 40 municipal and private potable water users rely on the same regional aquifer in the Tucson AMA. Tucson Water is the largest municipal provider and at one time, through special agreements with other water companies, was positioned to become the regional water provider. Upon becoming municipal providers, MDWID and the Town of Oro Valley have elected to manage their own water supplies.

Tucson Water is no longer in position to be a regional water provider within the Tucson AMA. The Utility has modified its assumptions regarding water resources and service commitments based on the actions taken by MDWID and the Town of Oro Valley regarding the Northwest Area Agreement and the stated position of these parties and the Town of Marana that they wish to become water providers. Most of the areas that Tucson Water currently includes in its projected potential service area are located to the south of the City. To this end, it becomes more important for the City's future boundary and the water service boundary to become the same to the greatest extent possible. The City has an obligation to consider not only the interests of Tucson Water's existing customers but also future residents. It is important for the City to work toward making the service area boundaries of the Utility match as closely as possible the jurisdictional boundaries of the City.

There will be a shared competition for additional supplies as water resources become increasingly limited. Local providers would have greater leverage in acquiring additional supplies if they formed a regional water cooperative. The long-standing competition between local interests should be replaced with a more collaborative ethic to ensure that water providers in the greater Tucson area have long-term water-resource sustainability.