

Water Resources in Pima County¹

What Are We Doing in the Water Business? Some would argue that Pima County is not in the water business since we don't operate a water company. But, we are very much in the water business in ways you may not expect.

The County is responsible for approving land use plans. Each time the Board of Supervisors approves a development, there is an impact to regional water resources because that development requires a water supply. Furthermore, Growing Smarter legislation requires the County to consider water resource impacts in approving land use plans.

Water is an important component of the Sonoran Desert Conservation Plan (SDCP). Approved by the Board of Supervisors in 1999, the plan identifies five key community values that Pima County is committed to preserve. One of those values is Riparian Resources. The majority of native wildlife species in the Sonoran Desert depend on riparian habitat for their survival. Unfortunately, we have changed the rich and diverse riparian corridors of Eastern Pima County. Riparian areas need water to thrive. Some have disappeared or been damaged in Pima County because of floodplain development, groundwater pumping and habitat loss due to erosion.

Pima County has statutory authority for flood control administered by the Pima County Regional Flood Control District. The District also has authority to construct and operate groundwater replenishment projects so long as they also have flood control benefits. The District can enhance wildlife, recreation and riparian habitats along watercourses and floodplains.

Pima County is the regional wastewater management agency. In 2007, the Pima County Regional Wastewater Reclamation Department produced 72,614 acre-feet of renewable water (effluent). That's a lot of water—about half of the City of Tucson's Central Arizona Project (CAP) allocation! This renewable water supply is the only water supply that grows in proportion to the population and will play an important role in our future water supply.

Pima County also uses water for many of its governmental activities such as public parks, roadway medians, community resources, riparian restoration projects and government buildings. Pima County strives to use renewable water wherever feasible. In 2007, Pima County used 907 acre-feet or 295 million gallons of reclaimed water to irrigate parks and landscaped areas.

We Have Water Policies? Yes! In 2001 the Board of Supervisors adopted the Comprehensive Plan Update including Regional Plan Policies for seven elements: land use, circulation, open space, growth area, environmental, cost of development and water resources. They can be found at: http://www.pimaxpress.com/Planning/ComprehensivePlan/PDF/Policies_Legend/Policies_2007_Reg_Policies.pdf In December 2007 the Board of Supervisors strengthened the water resource element regional plan policies. Resolution No. 2008-72 memorializes these water resource policies: http://www.rfcd.pima.gov/wrd/planning/pdfs/wrpolicyres2008_72.pdf . The water resources policies require staff to conduct water supply impact reviews on Comprehensive Plan amendments that are larger than four acres. The review evaluates five issues: water service and renewable water supply options; current and projected depth to groundwater and groundwater trend data; proximity to areas of known or potential ground subsidence; proximity to known groundwater-dependent ecosystems; and location within a hydrogeologic basin, including depth to bedrock.

The water resource policies also require that staff of the Development Services Department conduct a water resource impact assessment on any rezoning request that requires a site analysis. Depending

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on the projected water demand, applicants may be required to provide additional water resource information that will be considered in staff's assessment. Adverse impacts can be mitigated through rezoning conditions, but the ultimate land use approval decision rests with the Planning and Zoning Commission and the Board of Supervisors. As a result of the water resources policies, these decision makers will be able to more fully consider the water resource impacts of new development before land uses changes are approved.

How Does Pima County Promote Water Conservation? Although Pima County does not supply domestic water to the general public, we promote water conservation in many ways. The Board of Supervisors has approved water conservation ordinances aimed at new construction. Implementing water-conserving features during new building construction is more cost effective than retrofitting existing buildings. Changes to the landscape portion of the zoning code require new construction to have separate reclaimed-ready irrigation plumbing and irrigation with seasonal adjustments and rain sensors. There are also restrictions on large water fountains and water features, and turf may only be installed for functional purposes, such as play and picnic areas. For more information see Title 18, Chapter 73.030 of the Pima County Code found at <http://municipalcodes.lexisnexis.com/codes/pima/>

Changes to the plumbing code and residential code require waterless urinals and automatic faucets in commercial buildings, sub-water meters in multi-family construction so water use can be measured and billed accordingly, and new pools to have pool covers to reduce evaporation. The plumbing code is: <http://www.pimaxpress.com/Building/PDFs/2007/2006%20International%20Plumbing%20Code.pdf>.

The residential code is Appendix G of:

<http://www.pimaxpress.com/Building/PDFs/2007/2006%20International%20Residential%20Code.pdf>.

These water conservation ordinances were developed with input from the building community, local water providers and the Water Conservation Alliance of Southern Arizona (WaterCASA). WaterCASA is a non-profit collaboration of local water providers formed to promote the efficient use of water and to enhance the public's awareness and understanding of water conservation issues, methods and practices. Pima County is a WaterCASA member.

The Board also adopted a change to the Golf Course Zone Ordinance that prohibits the use of groundwater for new golf courses (see Title 18, Chapter 18.59 of the Pima County Zoning Code found at <http://municipalcodes.lexisnexis.com/codes/pima/>). Instead, only reclaimed water or renewable water (such as CAP water) may be used to irrigate newly-zoned golf courses.

Our Sonoran Desert. In 1999 the Board of Supervisors adopted the Sonoran Desert Conservation Plan (SDCP). The website is <http://www.pima.gov/sdcp/>. The SDCP is a long term vision for protecting the heritage and natural resources of Pima County and embodies five elements: Ranch Conservation, Historic and Cultural Resources, Riparian Resources, Mountain Parks, and Critical Habitat and Biological Corridors. One of these elements is riparian resources. Riparian areas in a desert environment are vital places. Although sixty to seventy-five percent of all species in Arizona rely on a riparian environment at some point during their life cycle, a number of streams and springs in and near Tucson have ceased to flow year round or are affected by a lower water table. Our streams and springs need protection as well as restoration.

The biological goals of the SDCP are designed to conserve critical and sensitive wildlife habitats through the protection of in-stream flows and water quality. Storm water runoff, CAP water and reclaimed water can be used to support riparian restoration in our river corridors and floodplains. Our challenge is to optimize the use of renewable water resources to protect and enhance the natural environment, while fostering a sustainable water supply for our growing urban environment.

Water... Too Much? Not Enough? When one thinks of the Regional Flood Control District, a picture of raging floods comes to mind. However, the Pima County Regional Flood Control District's statutory authority also allows it to build and operate groundwater replenishment projects that enhance wildlife,

recreation and riparian habitats along water courses and floodplains, while also providing flood control benefits. See <http://www.rfcd.pima.gov/district/purpose.htm>. The District's groundwater replenishment program includes two projects; the Lower Santa Cruz Recharge Facility that replenishes with Central Arizona Project (CAP) water and the Marana High Plains Environmental Restoration and Groundwater Replenishment Project using treated wastewater effluent.

The Marana High Plains Project functions as both a groundwater replenishment project and riparian restoration project. Another riparian restoration project constructed by the District and operated by the Stadium District is the Ed Pastor Kino Environmental Restoration Project (KERP). This 120-acre flood control basin captures urban storm water to restore and support riparian vegetation in the Ajo Detention Basin. It also provides irrigation water to the Kino Sports Complex. The Swan Ecosystem Restoration Project was recently completed and the Regional Flood Control District is working with other jurisdictions to improve smaller-scale water harvesting opportunities to decrease the need for supplemental irrigation.

Whose Effluent Is It, Anyway? Sounds like a simple question, but in the arid West, water is a complex subject! In 1989, the Arizona Supreme Court ruled in *Arizona Public Service v. Long* that the entity that treats wastewater has the right to use it. So why doesn't Pima County own the effluent? In 1979, the City of Tucson and Pima County entered into an agreement to merge the city wastewater system and the county wastewater system. The City transferred all their wastewater conveyance and treatment system assets to the County to operate as the regional wastewater management agency. Thus, the Pima County Wastewater Management Department came into existence. Recently this Department changed its name to the *Regional Wastewater Reclamation Department* to reflect the value of effluent as a renewable water resource.

In exchange for the wastewater conveyance and treatment assets, the County agreed that the City would have use of 90% of the effluent from the metropolitan treatment plants, leaving the remaining 10% for county to use. In 1983, the City entered into an agreement with the US Secretary of the Interior to make available 28,200 acre-feet of effluent to satisfy the Southern Arizona Water Rights Settlement Act (SAWRSA).

In 2000, the City and County agreed to supplement the original 1979 agreement. Key provisions of the 2000 Supplemental Agreement called for the reactivation of the Randolph Park Water Reclamation Facility; granted the county control over effluent in non-metropolitan plants for public uses; and allowed other water providers to enter into agreements with the City of Tucson for the share of effluent they contribute. The Supplemental Agreement also set aside a 10,000 acre-foot pool of effluent for riparian projects.

So whose effluent is it anyway? Below is a break down of how the effluent produced at Pima County wastewater facilities is allocated. Most of the effluent, 68,268 acre-feet, was produced at the Metropolitan-area wastewater treatment plants in 2007 and an additional 4,347 acre-feet was generated at the remaining outlying facilities. The following website details the County's use of effluent: http://www.pima.gov/wwm/reports/pdf/Effluent_gen_2007.pdf

- The US Bureau of Reclamation gets 28,200 acre-feet per year as part of SAWRSA. This effluent is discharged to the Santa Cruz River
- Pima County gets ten percent of the remaining metropolitan effluent, which was 4,009.1 acre-feet in 2007. Of this amount 907.1 acre-feet went to county uses on parks and roadway medians, 159.3 acre-feet was used on the Kino Environmental Restoration Project and Kino Sports Complex and 319.5 acre-feet went to the Marana High Plains Environmental Restoration and Recharge Project. The remaining effluent was discharged to the Santa Cruz River where it supported riparian areas along the river and recharged the groundwater to generate storage credits.

- The City of Tucson has the remaining 36,061 acre-feet effluent. Of this amount, 13,136 acre-feet is reused in the City's reclaimed water system. The remaining amount is discharged to the Santa Cruz River. Under separate intergovernmental agreements, a portion of the City's effluent is allocated by the City of Tucson to the Town of Oro Valley and Metropolitan Domestic Water Improvement District for their use.
- Under the 2000 Supplemental Agreement there is a Conservation Effluent Pool of 10,000 acre-feet reserved for riparian projects, but none of this pool of water was used in 2007 pending a separate agreement with the City of Tucson.

We are in a Drought! Water is life and in the desert this is especially important. Despite a rainy 2007 winter and an abundant 2008 summer monsoon season, drought conditions persist in Pima County. Sustained drought conditions affect the ecosystem, agriculture, ranching and urban water supplies. Last summer, Pima County declared a Drought Stage 1 which means the public is asked to reduce their water consumption, restaurants are asked to provide water only on request, and hotels are urged to conserve water. For more information on Pima County's Drought Management Plan see <http://www.pima.gov/drought/>. We must take steps now to mitigate the potentially devastating effects of the prolonged drought on our environment and our lifestyle.

The Governor of Arizona has established a statewide drought program. As part of this effort, county-level local drought impact groups have been formed to coordinate drought public awareness, provide impact assessment information to local and state leaders, and to initiate and implement local mitigation and response options. Pima County coordinates the local drought impact group that includes representation from local water providers, state and federal agencies, the agricultural industry and the Tohono O'odham Nation. Pima County's local drought impact group also monitors drought conditions and makes drought declaration recommendations for the Board of Supervisors' consideration.

Lead by Example... One of the most effective ways to promote water conservation is to lead by example. Pima County uses water in its day-to-day operations. We own seven downtown high rise buildings, operate 41 public parks, have surface and groundwater rights and operate over 500 groundwater wells. On May 1, 2007, the Pima County Board of Supervisors unanimously adopted Resolution No. 2007-84. This resolution establishes a series of far-reaching sustainability initiatives, many of which will enhance the sustainability of Pima County's own government operations. The resolution addresses a range of topics, including green purchasing, waste reduction, green building, renewable energy, and alternative-fuel vehicles. It also establishes specific goals for a water conservation and management plan, including:

- Reducing water use in all County facilities by 15% by 2025;
- Doubling the number of County parks served by reclaimed water by 2018 (subject to voter approval of bond funds to extend reclaimed water lines); and
- Maximizing County water resource assets including groundwater rights, surface rights and the production and use of effluent to sustain and protect the natural environment.

To implement the resolution, teams of County employees, representing a variety of disciplines and departments, prepared a "Sustainable Action Plan for County Operations." The plan includes more than 30 separate actions designed to promote water conservation and protect natural resources. The Board of Supervisors adopted the plan on August 18, 2008. To review a copy, please see <http://www.pima.gov/Sustainable/AUG08ActionPlan-1.pdf>. The plan is intended to be an adaptive plan that will be responsive to new ideas, technologies, partnerships, and shifts in available resources with the goal of taking us down an even *better* and *more sustainable* path.

So Now You Know... Pima County is very much in the water business!