



## **FACT SHEET**

# ***The Difference Between Effluent and Reclaimed Water***



### ***Large amounts of water are measured using “Acre Feet.”***

When discussing large amounts of water, we use the measurement of an acre foot. An acre foot is one acre covered by one foot of water, and is equivalent to 325,851 gallons.

An acre foot is enough water to supply approximately three Tucson-area households with water for one year. *The abbreviation of acre foot is AF.*

### ***Reclaimed water and effluent: What is the difference?***

Through the treatment of the community’s sewage, the Pima County Regional Wastewater Reclamation Department (RWRD) produces two related products at different facilities: effluent and reclaimed water.

Reclaimed water is treated to a higher standard than effluent. The City of Tucson takes effluent from the Roger Road Wastewater Reclamation Facility (WRF) and provides additional treatment at its Reclaimed Water Plant. This produces reclaimed water that’s used in a variety of ways.

In total, Pima County produces approximately 63,917 Acre Feet of effluent/reclaimed water each year.

***Reclaimed water is used for landscaping along roadways.***



***Wastewater Reclamation Facility treats effluent.***



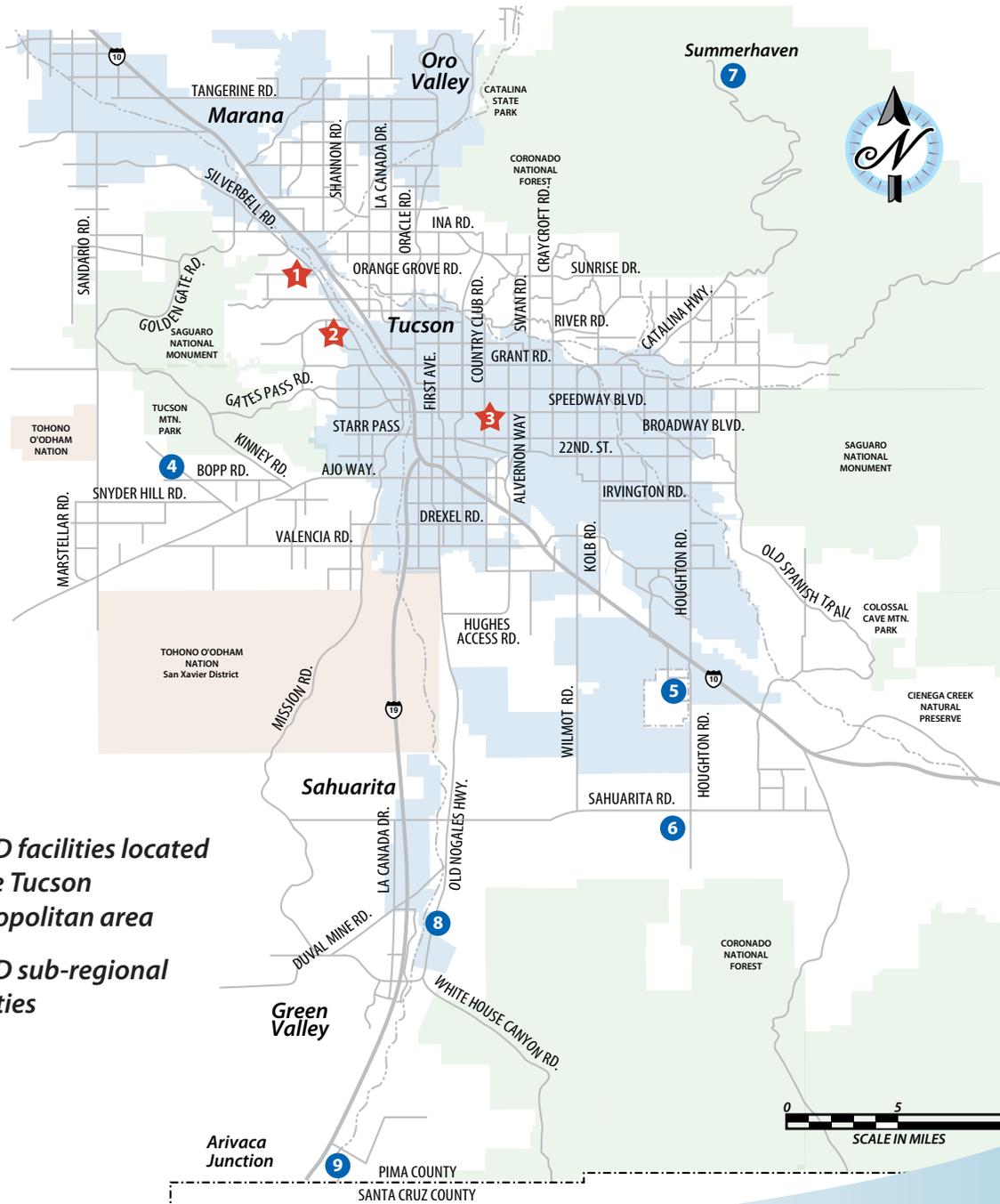


**PIMA COUNTY  
REGIONAL WASTEWATER  
RECLAMATION DEPARTMENT**

**How many wastewater  
reclamation facilities does Pima  
County operate?**

The Regional Wastewater Reclamation Department owns and operates nine wastewater reclamation facilities within Pima County.

- |                                |                         |
|--------------------------------|-------------------------|
| 1. Ina Road WRF                | 6. Corona de Tucson WRF |
| 2. Roger Road WRF              | 7. Mt. Lemmon WRF       |
| 3. Randolph Park WRF           | 8. Green Valley WRF     |
| 4. Avra Valley WRF             | 9. Arivaca Junction WRF |
| 5. Pima County Fairgrounds WRF |                         |



- ★ RWRD facilities located in the Tucson metropolitan area
- RWRD sub-regional facilities



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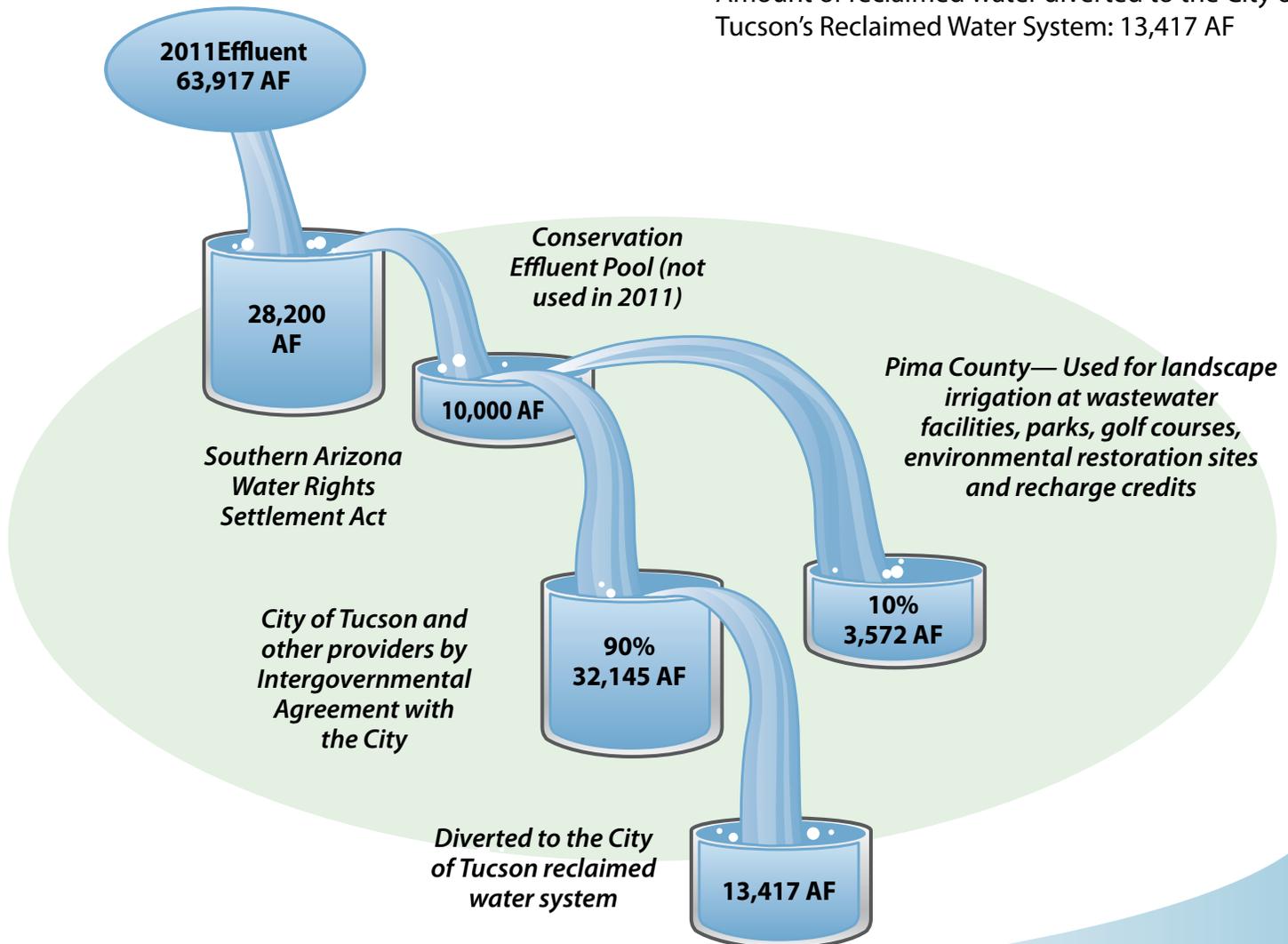
### ***Using Effluent and Reclaimed Water***

#### ***Distribution of effluent and reclaimed water throughout the community***

The figures used here are based on effluent/reclaimed water produced in 2011. Different communities receive this effluent based on a formula shown in the illustration below.

- Effluent/Reclaimed Water produced at RWRD's Wastewater Reclamation Facilities: 63,917 AF annually

- Amount of water owned by the U.S. Bureau of Reclamation, distributed through the Southern Arizona Water Rights Settlement Act (SAWRSA): 28,200 AF
- Amount of water set aside for the Conservation Effluent Pool: 10,000 AF
- Amount of water owned by the City of Tucson and other water providers: 32,145 AF
- Amount of water owned by Pima County: 3,572 AF
- Amount of reclaimed water diverted to the City of Tucson's Reclaimed Water System: 13,417 AF





**PIMA COUNTY  
REGIONAL WASTEWATER  
RECLAMATION DEPARTMENT**

## ***Rules governing effluent in Pima County***

In 1979, an intergovernmental agreement allocated 90% of the effluent produced by Pima County to the City of Tucson. The remaining 10% of effluent is allocated to Pima County.

In 1982, the U.S. Congress passed the Southern Arizona Water Rights Settlement Act (SAWRSA) in response to a lawsuit by the Tohono O'odham Nation. SAWRSA mandates that each year, 28,200 AF of effluent be set aside for the Tohono O'odham to compensate for the past pumping of groundwater from tribal lands. This amount is set aside before the City/County split.

The Conservation Effluent Pool (CEP) is a specific quantity of effluent – agreed upon by Pima County and the City of Tucson – that can be used for riparian habitat restoration projects. CEP water will be used only for mutually agreed-upon restoration projects. To date, the City and the County have not determined any CEP projects.

*Reclaimed water is used for landscaping along roadways, in parks and on golf courses.*



## ***How is reclaimed water used?***

Reclaimed water is used for the irrigation of turf facilities (parks, golf courses, etc.), road medians, and other public/private landscaping. Reclaimed water is also used to maintain man-made riparian habitats and wetlands.

Tucson Water's Reclaimed Water Plant will not be needed after 2014, when Pima County will begin operating a new facility that is being constructed under the Regional Wastewater Optimization Plan (ROMP). This facility will create reclaimed water that is of a significantly higher quality than the reclaimed water currently being produced by the City of Tucson's reclaimed water plant. The existing Ina Road WRF, through which the ROMP is being upgraded and expanded, also will produce a high-quality reclaimed water.





## **FACT SHEET**

# **Recharged Water and Water Banking**

### **What is recharged water?**

Water discharged into the Santa Cruz River from the Roger Road and Ina Road WRFs flows north. Along the way, some of that water seeps into the ground; this is known as recharge. Recharged water can be stored in the aquifer until it is needed in the future. This underground “banking” of water allows the entities that own the water to “withdraw” groundwater when it is needed. The “banked” water does not have to be withdrawn from the same area where it is recharged. This provides flexibility for entities that do not have access to the City’s reclaimed water system.

### **Which communities use effluent?**

The City of Tucson has entered into agreements with other water companies for the delivery of reclaimed water or for the “banking” of effluent.

Pima County and the Town of Oro Valley receive direct delivery of reclaimed water to turf facilities such as golf courses, ball fields, etc. The Flowing Wells Irrigation District, Metropolitan Water District, and Spanish Trails Water Company do not receive water through the City’s reclaimed water system; instead, they receive “credits” for “banking” water that can be used in the future. In addition to the smaller water companies that bank water, the City of Tucson also banks water.

*Effluent is recharged into the Santa Cruz River (right).*

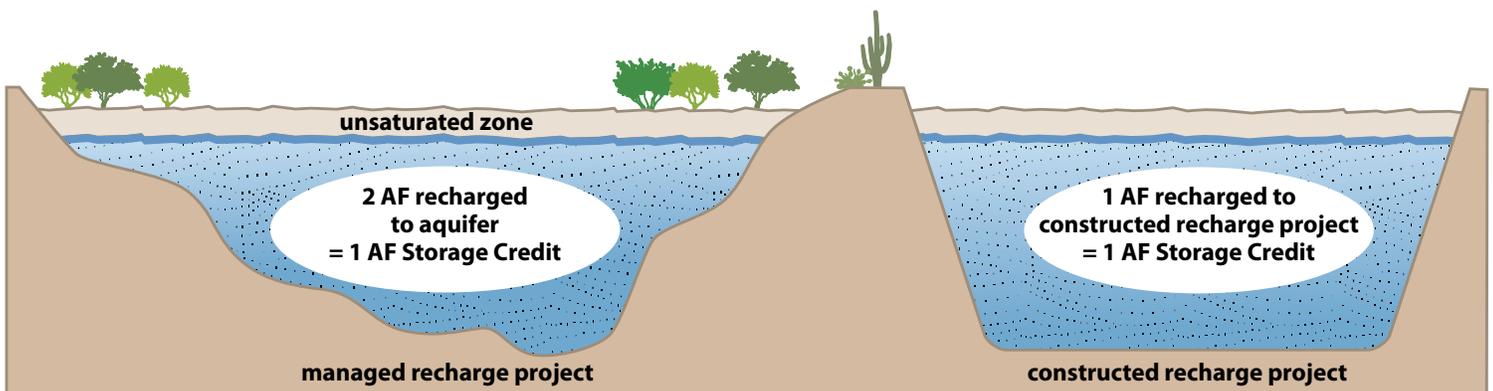
*Some water is “banked” in natural aquifers or constructed recharge projects (below).*

### **How do we benefit from recharged water?**

Pima County benefits from two types of recharge projects: managed recharge and constructed recharge.

The Lower Santa Cruz Managed Recharge Project (LSCMRP) allows Pima County to receive water credits for the effluent that naturally recharges into the Santa Cruz River. For every two AF that reach the aquifer, the parties involved in LSCMRP receive one AF of long-term storage credits.

Pima County’s constructed recharge project is the Marana High Plains Effluent Recharge Project (MHPERP). A channel diverts flows out of the Santa Cruz River into man-made basins for greater infiltration of water into the aquifer. This creates a riparian habitat outside of the Santa Cruz River channel and provides greater recharge of the aquifer. Pima County receives full credit for every AF that infiltrates into the groundwater via a constructed recharge project.





## PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT

### ***How does Pima County use its share of effluent and reclaimed water?***

Effluent and reclaimed water are important pieces of the community's water portfolio.

The highest percentage of the County's reclaimed water (1,126 AF) is delivered through the City of Tucson's reclaimed water system for irrigation, construction, and the sustaining of man-made riparian habitats outside of the Santa Cruz River channel.

Another 970 AF are used for aquifer replenishment. An additional 418 AF are delivered to the Marana High Plains Effluent Recharge Project.

Each year, 145 AF are reused in operations at the County's WRFs. Finally, Pima County's share is 912 AF of water from the Lower Santa Cruz Managed Recharge Project (LSCMRP).

*Reclaimed water sustains man-made riparian areas which benefit local wildlife and plants.*



### ***Annual Allocation of Community's Effluent/Reclaimed Water (acre feet)***



*Delivered via Reclaimed System- 32%*



*Aquifer Replenishment- 27%*



*Delivered to Marana High Plains Effluent Recharge Project- 12%*



*Reuse at Metro Wastewater Reclamation Sites- 4%*



*Pima County Share of Outflow from Lower Santa Cruz Managed Recharge Project- 26%*

145 AF

