CITY OF PRESCOTT
Everybody's Hometown

Annual Water Resources & Management Report

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INTRODUCTION

The Annual Water Resources & Management Report is an introductory guide intended to help citizens and City water customers become “water smart” and current with the usage of water in calendar year 2010.

Watson Lake

The report also answers questions such as:

What are the sources of our water supply?

Where may our water come from in the future?

How are we conserving water, and is it working?

Customers can use this report to become familiar with terms such as “Groundwater” and “Surface Water,” “Safe-yield,” “Acre-foot,” “Recharge,” and more...with the user-friendly glossary of water terms.

Helpful maps are also included identifying areas where the City’s water supply comes from and how our wastewater travels to treatment plants, and finally to recharge basins.

The City of Prescott appreciates your interest in our water future. The public will continue to be updated on a yearly basis through this and other water-oriented reports.

WATER GLOSSARY

Water management has a language all its own. In order to help our water customers better understand the process of building and maintaining a sustainable water supply, we've developed a short glossary of frequently used terms.

Willow Lake

Acre-foot (AF): Volume of water equivalent to 325,851 gallons or imagine the area of a football field that is one foot deep with water.

Alternative Water: Alternative water is water other than PrAMA groundwater. The City's current alternative water sources are surface water and treated effluent.

Aquifer: A geologic formation that is capable of storing water and transmitting water in usable quantities.

Basin/Sub-basin: A geographical area that contains one or more aquifers. These are legally defined.

Committed Demand: Water quantities that are held for recorded lots within subdivisions that have not been built yet (vacant lots).

Effluent: Wastewater that has been collected in a sanitary sewer for subsequent treatment.

Groundwater: Water beneath the land surface that fills the spaces between sands, gravels, and fractures in rocks. This is the water in aquifers that can be held in storage, pumped by wells, or discharged as springs.

Potable Water: Drinking water supplies.

Prescott Active Management Area (PrAMA): One of five geographical areas of the state where groundwater sources were determined to be stressed. The Arizona Department of Water Resources has greater regulation of water sources and of those who utilize those sources.

Recharge: Process whereby water on the land surface moves into the groundwater system (aquifer).

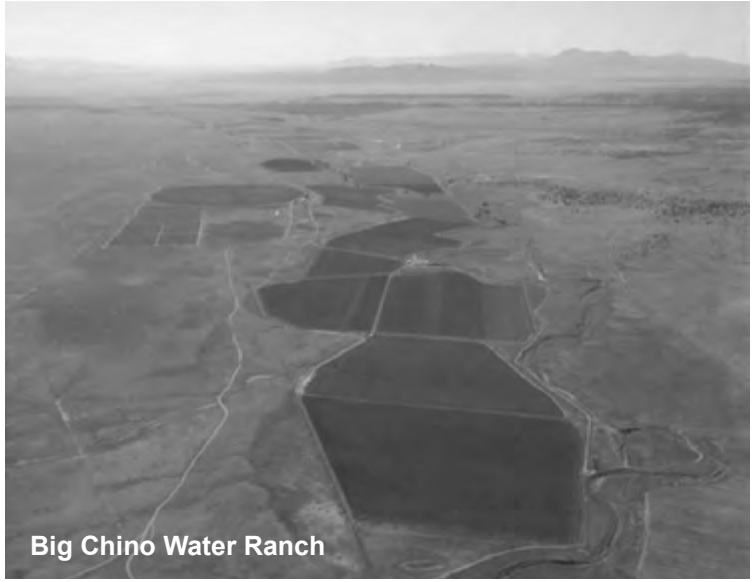
Safe-yield: Balance between the amount of water withdrawn from and recharged into an aquifer. Safe yield is legally defined.

Surface Water: Waters of all sources flowing in streams, canyons, ravines, or other natural channels and includes lakes, ponds and springs on the land surface. Surface water is defined by Arizona state law.

Water Portfolio: Similar to a financial portfolio this includes specific sources such as groundwater, surface water, and effluent and their respective quantities legally available for use by the City.

WATER FAQ'S

Decades of research resulting in thousands of pages of documentation have helped water experts advance their understanding of the complex physical and legal nature of the Prescott area's water resources. "Frequently Asked Questions" include only the most basic, pertinent facts for the casually inquisitive water customer.



Big Chino Water Ranch

WHERE DOES THE CITY'S DRINKING WATER COME FROM?

Potable (drinking) water is drawn from an aquifer known as the Little Chino sub-basin of the PrAMA. The City's supplies are pumped from six wells located in the Town of Chino Valley. (Figure 1; Page 5)

WHERE WILL FUTURE WATER SUPPLIES COME FROM?

The City of Prescott's future water supplies may come from a geographical area known as the Big Chino sub-basin, located about 22 miles north of the Little Chino sub-basin.

WHAT IS THE QUALITY OF OUR WATER?

Each year the City publishes a separate "Annual Drinking Water Quality" report which is mailed to all water customers and also available under "Documents" on the City website home page.

HOW IS OUR WASTEWATER TREATED AND WHERE DOES IT GO?

Most homes and business are connected to the City's sewer system and their wastewater is sent to one of two treatment plants. This wastewater is "cleaned" and then termed "treated effluent."

Treated effluent is delivered to and reused by customers such as golf courses which have contracts with the City. The remainder is delivered to the City's recharge basins near the airport where it penetrates into the Little Chino aquifer. (Figure 3; Page 6)

WHAT ROLE DO CITY LAKES PLAY IN OUR WATER SUPPLIES?

In 1998, the City purchased property and water rights to Watson and Willow Lakes for approximately $15 million with the intent of bolstering water supplies and expanding recreational opportunities.

The lakes represent the City's surface water supply. Water from the lakes is also delivered to the recharge facility in an effort to augment the aquifer. (Figure 1; Page 5) Complex legal restrictions and variable surface water flow as well as the city's desire to maintain sufficient volume for recreation, limit the amount of and time periods during which lake water that can be delivered to the aquifer.

WHICH SUPPLIES MAKE UP THE CITY'S "WATER PORTFOLIO?"

The portfolio consists of groundwater, surface water, and effluent. The groundwater quantity is 11,200 acre-feet per year and constitutes 70% of the portfolio. Recharged surface water and effluent are alternative water supplies and constitute the balance of approximately 5,500 acre-feet per year. The quantity of alternative water presently available for allocation to new development is 400 acre-feet.

WATER FAQ'S CONTINUED

HOW IS CITY WATER USED?

Water customers fall into one of eight utility billing categories. The majority of the City's supplies are delivered to residential customers (67%) followed by commercial use (19%). (Figure 2; Page 6)

WHAT WILL IT TAKE TO BRING THE PrAMA INTO "SAFE YIELD?"

In 1999, the PrAMA was declared to be out of safe-yield. Simply stated, the PrAMA is using more water than is being replaced. According to the State of Arizona, it will take a multipronged approach to bring the PrAMA into a state of safe-yield. Such an effort would include efficient use of current supplies, increased conservation, increased use of current alternative supplies (surface water and treated effluent), and additional alternative supplies (i.e. importation of supplies such as water from the Big Chino aquifer). These actions are applicable to all PrAMA water users, not just those living within the Prescott city limits.

ARE PRESCOTT'S CONSERVATION EFFORTS PAYING OFF?

The City of Prescott operates under a "water ethic" wherein local water supplies are used in the most efficient ways practicable. From 2006-2010, our customers have retrofitted shower heads and toilets, and removed turf, saving over 100 million gallons of water—almost 300 AF.

For opportunities to make your home, business, or lifestyle WaterSmart see:

www.cityofprescott.net/services/water/conservation.php

THIRSTY FOR MORE DETAILED INFORMATION ON WATER WITHIN THE PrAMA?

There's a veritable aquifer full of information on the internet. The following is a list of helpful links:

City of Prescott Water Management Policy (current)
www.cityofprescott.net/_d/water_mgmt_policy.pdf

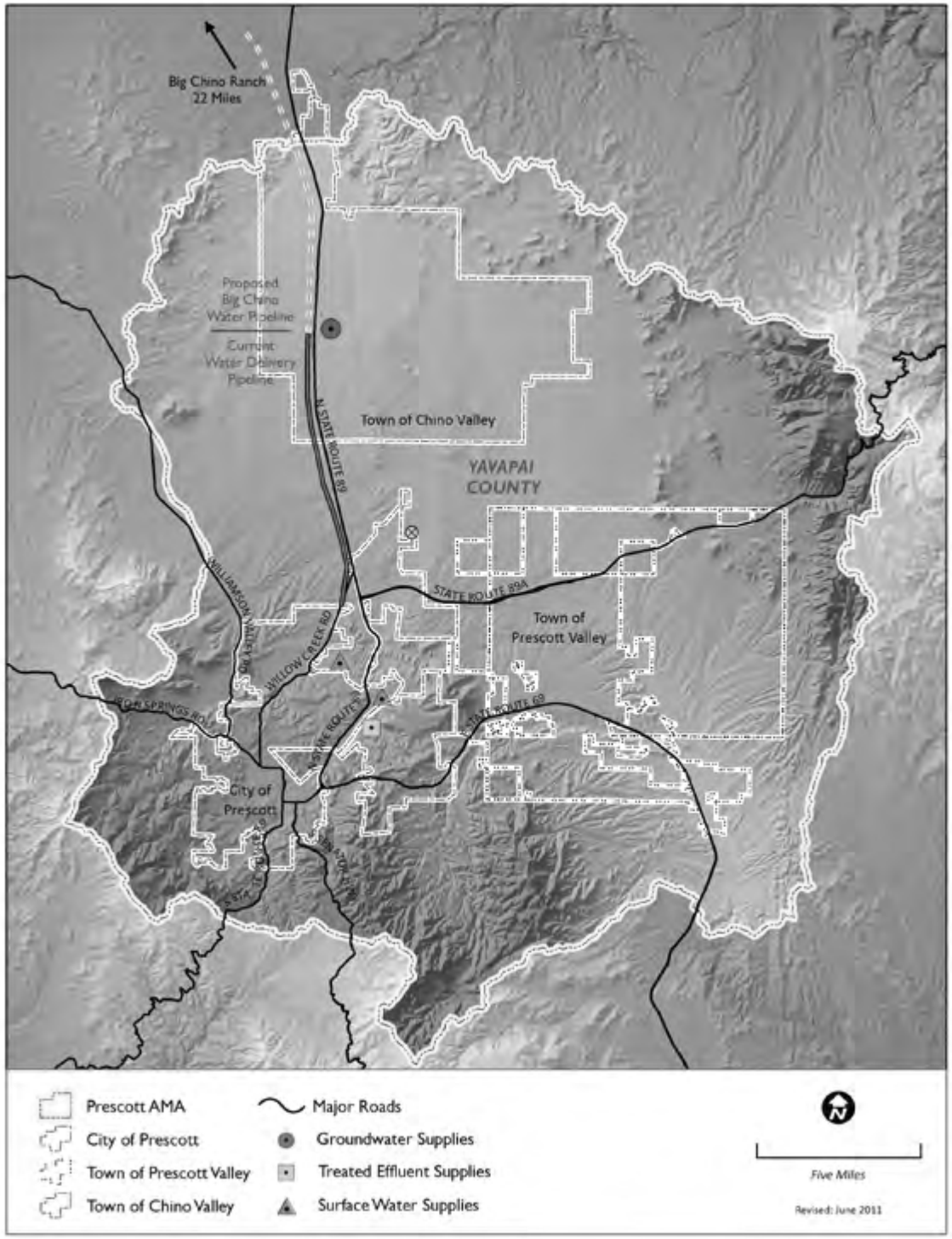
City of Prescott Water and Wastewater Rates & Capital Improvement Plans
www.cityofprescott.net/_d/ratereport2011_2010_2.pdf

City of Prescott Water and Wastewater System Improvement Projects
www.cityofprescott.net/services/construction/

City of Prescott Annual Drinking Water Quality Report (current edition)
www.cityofprescott.net/_d/2009drinkingwaterreport.pdf

Regional Water Conservation Program Report (Upper Verde River Watershed Protection Coalition)
www.uvrwpc.org/Downloads/Water Conservation Programs - Final Report.pdf

FIGURE 1: CITY OF PRESCOTT WATER SUPPLIES



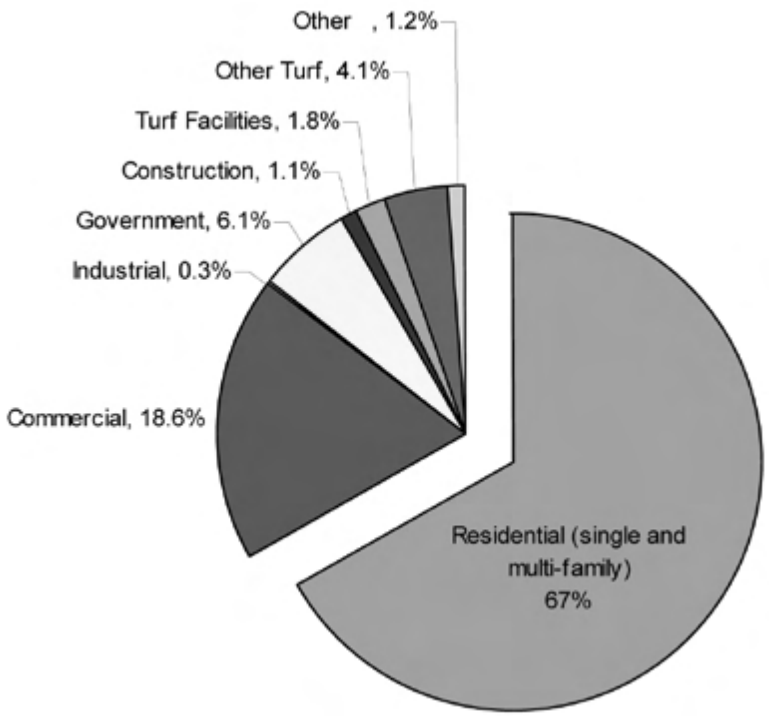


FIGURE 2: POTABLE WATER USE CUSTOMERS BY CATEGORY

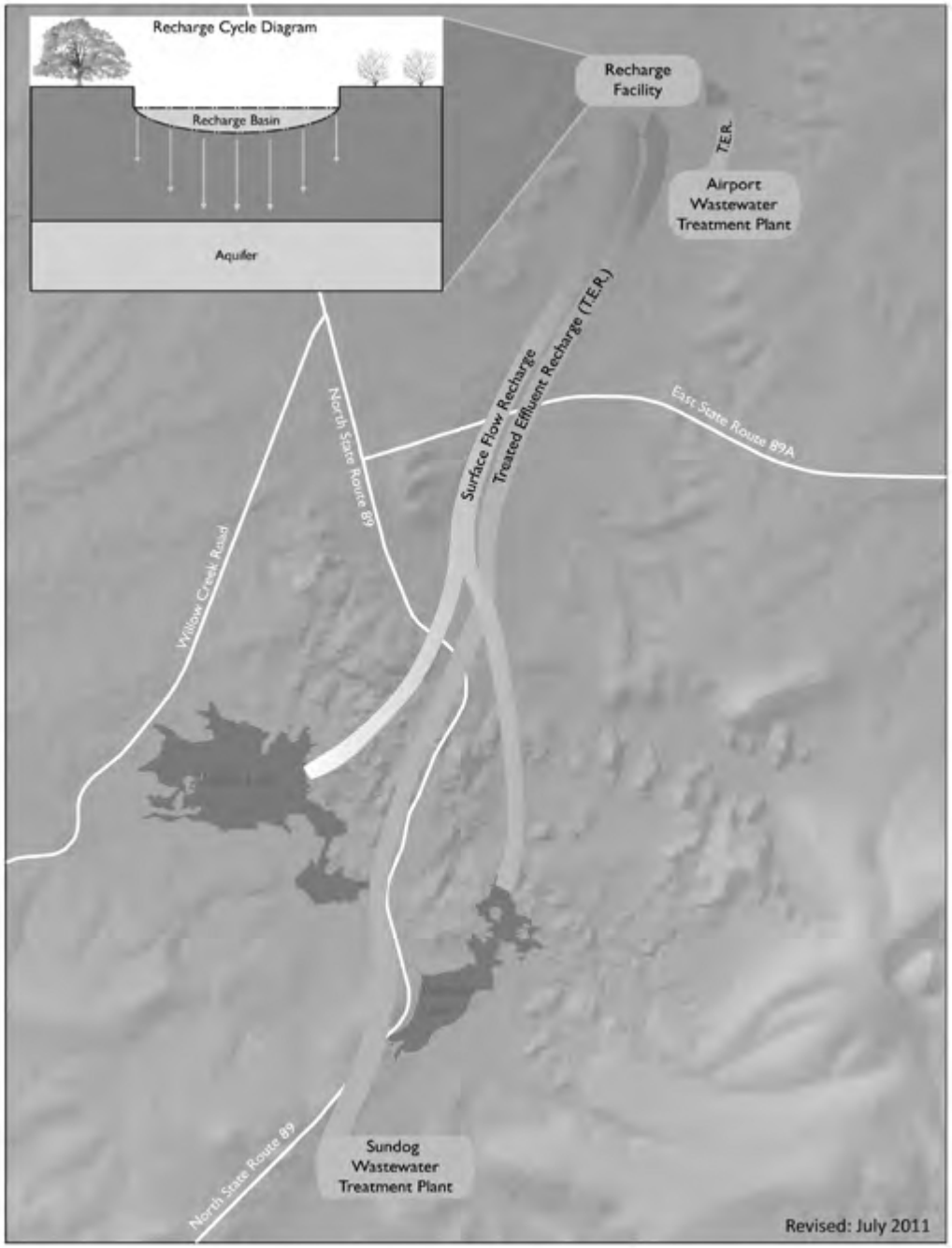



FIGURE 3: SURFACE WATER & TREATED EFFLUENT RECHARGE