

HOW YOU CAN KEEP IT CLEAN

Rain and excess water from home use (over watering, car washing, etc.) flow down gutters, into pipes and to ponding basins, canals, creeks or the San Joaquin River. This water contributes to groundwater recharge and ends up as our drinking water supply. That is why it's important to keep storm drains and stormwater clean. Pollution prevention is not just up to businesses, but individuals too. There are nearly three-quarters of a million people in the Fresno/Clovis area and we all need to do our part to help keep stormwater clean. Here are some simple things you can do at home:

GROUNDWATER POLLUTION PREVENTION TIPS

Conserve Water in Your Yard

- Over watering carries lawn & garden chemicals from your yard to the gutter and into the storm drain system.
- Summer nuisance flows in gutters cause slick algae growth and risk of injury to the public.

Be a Smart Gardener

- Buy the least toxic home & garden products, and only buy what you need.
- Follow label directions.
- Don't apply yard chemicals when rain is forecast.
- Take unwanted chemicals to a County household hazardous waste (HHW) collection event.

Maintain Your Vehicle

- Repair and prevent leaks, but if they happen use kitty litter to absorb them.
- Don't dump oil or antifreeze down storm drains. Call 621-1111 or visit www.ciwmb.ca.gov to find a recycling center near you.

Paint with Care

- Don't wash paint into the street.
- Water-based painting equipment should be rinsed in the sink.
- Oil-based paint should be avoided. Take unwanted oil-based paint, varnishes and used thinner to a HHW event.

Groundwater - The Most Important Resource You'll Never See

Our community relies on groundwater for most of its water needs. Replenishing the groundwater supply is an important part of managing this valuable natural resource.

WHY IS REPLENISHING GROUNDWATER IMPORTANT?

Because our community relies on groundwater for most of its water needs, over time the water table, or the depth at which groundwater can be found, has dropped. In the 1930's, groundwater in our area could be found as shallow as 30 feet, and now the average depth to groundwater is 128 feet*. As demand increases, more water is drawn out of the aquifer than is replaced.

Treated surface water is now part of our water supply, and makes up an average of 29.5% of water used in Clovis and 12.4% of water used in Fresno. The rest is groundwater.

HOW DOES THE GROUNDWATER SUPPLY GET REPLENISHED?

The replenishment of groundwater is called "recharge." Recharge closes the gap between the supply of groundwater and the demand the community puts on it. There are two types of recharge: natural and artificial.

Natural recharge occurs in streams, channels, and ponds. As water flows through streams and channels, or into ponds, water soaks into the soil and eventually makes its way to the groundwater table. Natural recharge is an important part of the hydrologic cycle.

Artificial recharge is a man-made means of recharge using constructed facilities. Examples of artificial recharge facilities are recharge basins, injection wells, and canals.

Artificial Recharge



Water from the Kings and San Joaquin rivers is moved through canals to recharge basins in the Fresno/Clovis area.



Once it reaches the basins, the water soaks through the soil to the groundwater aquifer.



*Provided by the City of Fresno Department of Public Utilities.

RESOURCES

Groundwater Recharge, Water Supply and Conservation, including watering schedules

- City of Clovis: www.ci.clovis.ca.us/ServicesAndDepartments/PublicUtilities/Water/Pages/WaterConservation.aspx
- City of Fresno: www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Default.htm
- Fresno Irrigation District: www.fresnoirrigation.com
- Groundwater Resources Association of California: www.grac.org
- U.S. Geological Survey: www.usgs.gov/science/science.php?term=513

General Water Information

- California Department of Water Resources: www.dwr.water.ca.gov
- Central Valley Water Awareness Committee: www.centralvalleywater.org

Water Pollution Prevention

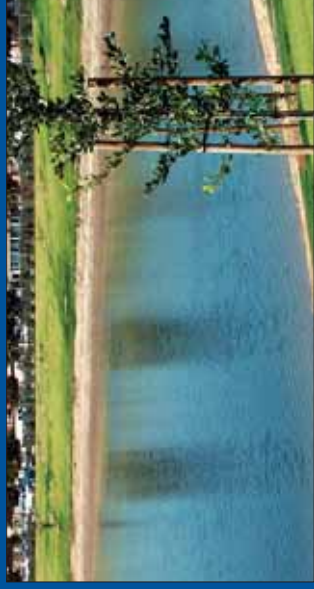
- County of Fresno Household Hazardous Waste Drop-Off: www.co.fresno.ca.us/DepartmentPage.aspx?id=5858
- Fresno Metropolitan Flood Control District: www.fresnofloodcontrol.org/clean_stormwater/pollution_prevention/pollution_prevention.html
- University of California Integrated Pest Management: www.ipm.ucdavis.edu

This information is presented by the following agencies, working together to accomplish groundwater recharge:



Since urbanization has covered once open land with pavement, roads and buildings, in many places rain water can no longer soak through the soil to the groundwater aquifer. To replace the lost natural recharge, artificial recharge facilities needed to be created.

Groundwater Recharge Partners



City of Clovis Clovis operates a year-round 85-acre recharge basin at Alluvial and Sunnyside.

City of Fresno Fresno has two year-round recharge sites, the 200-acre Leaky Acres at Ashlan and Freeway 168, and the 24-acre site near Chestnut and Church Avenues.

Fresno Irrigation District FID's 700-mile canal and pipeline system transports water used by agriculture, the cities of Clovis and Fresno, and for artificial recharge from the Kings and San Joaquin Rivers. FID operates four recharge basins in the Fresno/Clovis area that equal 81 acres, and owns approximately 500 acres total.

Fresno Metropolitan Flood Control District The District operates over 150 ponding basins which capture stormwater during the rain season in the Fresno/Clovis area. Eighty-eight of these basins are used for artificial recharge during dry weather.

Each year approximately 60,000 acre-feet of water is artificially recharged through the teamwork of these agencies. In addition, an average of 20,000 acre-feet of stormwater is recharged through the Flood Control District's ponding basins.

To help ease demand on groundwater, the cities of Clovis and Fresno each recently opened surface water treatment plants. Together they provide can provide up to 45 mil. gallons/day.

The Cities of Fresno and Clovis and the Fresno Irrigation District have purchased hundreds of acres of land and constructed permanent facilities for groundwater recharge. Additionally, stormwater basins located throughout the community have a secondary use as recharge basins. During summer months, irrigation water is diverted from canals into basins to recharge the groundwater supply. This is why you see water in basins during the summer, when there hasn't been any rain in months. Currently there nearly 90 stormwater retention basins used for summer groundwater recharge. Recharge also occurs during the rain season as stormwater captured in more than 150 basins in Clovis and Fresno percolates through the soil back to the aquifer.

HOW MUCH WATER DO WE USE?

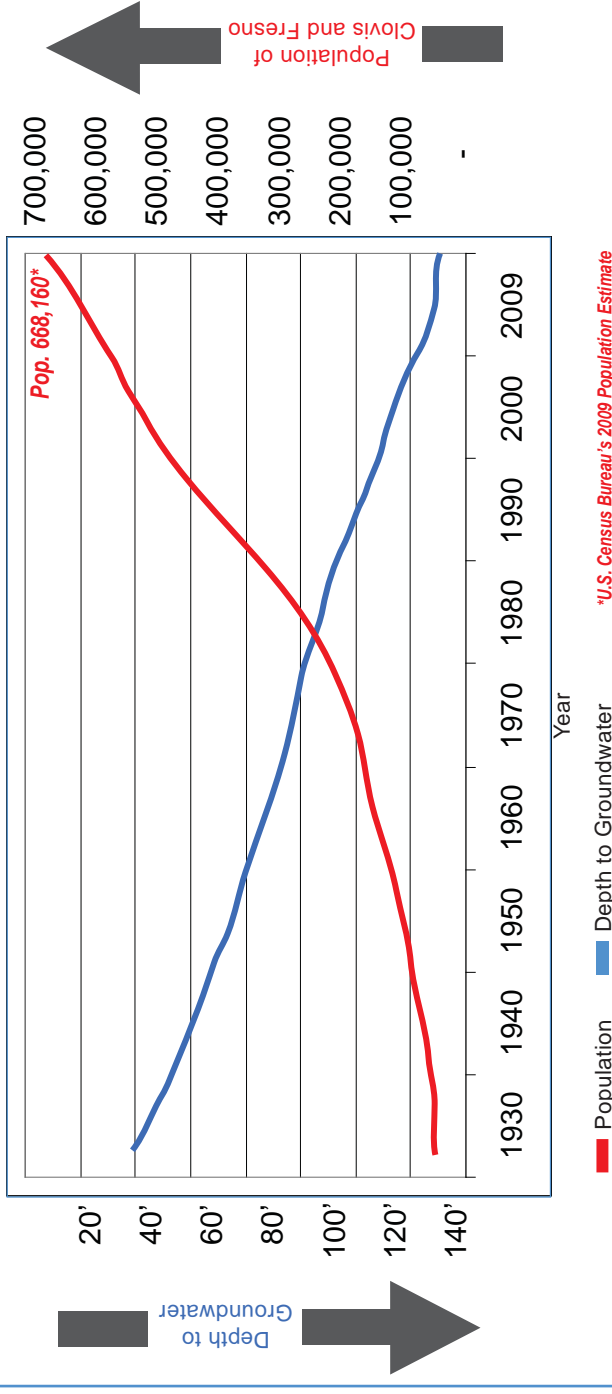
Historically, the typical family of four in the Fresno/Clovis area uses 325,851 gallons of water every year - enough water to cover an acre of land with one foot of water. The combined per-person average water usage in the Fresno/Clovis area, at 223 gallons, is one of the highest in California. Water use is as low as 50 gallons per person per day in some water-conserving coastal cities, such as San Francisco or Monterey (Source: USDA Forest Service, Pacific Northwest Region).

Water use is significantly higher in the summer months than in the winter months. Record-breaking temperatures during the summer of 2005 were accompanied by record water consumption that exceeded all previous levels because of the high demand on our water systems. During hot weather on a single day the City of Fresno pumped approximately 227 million gallons of water from our groundwater aquifer. To put this volume of water into perspective, it would:

- Be enough to fill Bulldog Stadium twice;
- Fill a one-acre column 697 feet high (taller than the 660' tall Trump Towers in New York).

Population Growth vs. Depth to Groundwater

As our population grows, the demand on groundwater supplies has increased. Since 1930 the average depth to groundwater has dropped dramatically.



DOES WATER CONSERVATION MAKE MUCH OF A DIFFERENCE?

YES! Conservation inside and outside of your home can reduce your household water consumption and save you money. Did you know that 60% of the water used at an average house is for landscaping? The City of Fresno and the City of Clovis offer free water leak surveys and water leak analyses for residential and commercial/industrial customers. Let them help you figure out where you can save water inside and outside. In Fresno call 621-5480, and in Clovis call 324-2609.

With more than 650,000 people in the Fresno/Clovis area, and an expected increase to 1.2 million by 2050*, careful water use will become more important every year and require each of us to play an active role in promoting and maintaining a reliable, safe and lasting supply of water for the future.

WATER CONSERVATION TIPS

Inside

- Repair dripping faucets - small drips can add up to 100-300 gallons lost per day.
- Wash full loads of laundry - this can save up to 300-800 gallons per month.
- Install low flow showerheads - they release 2.5 gallons/minute, compared to 5 gallons/minute with a traditional showerhead.
- Replace leaking toilet flapper valves that could cost you up to 200 gallons per year.

Outside

- Group plants with similar water needs.
- Water only as much as your landscape needs.
- Mulch! A depth of 2-3" around trees and bushes retains moisture.
- Mow your lawn higher and develop deep roots, which require less water.
- Inspect your irrigation system for leaks and repair them. More than 50% of your water can be lost with out-of-repair systems.

*Based on U.S. Census Bureau population estimates and California Department of Finance projections.