

**A Holistic Look
at the
City of Kerrville
Water Systems**



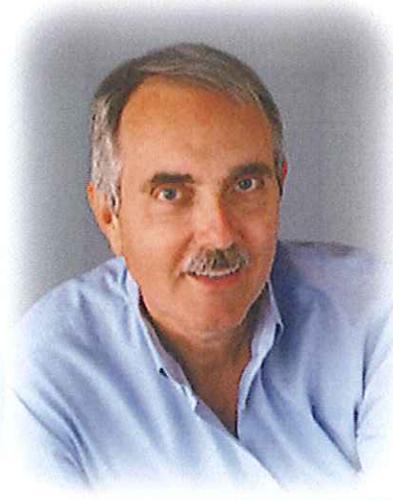
Mayor
David Wampler



Councilmember Place 1
Bruce Motheral



Councilmember Place 2
Stacie Keeble



Councilmember Place 3
Scott Gross



Councilmember Place 4
Gene Allen



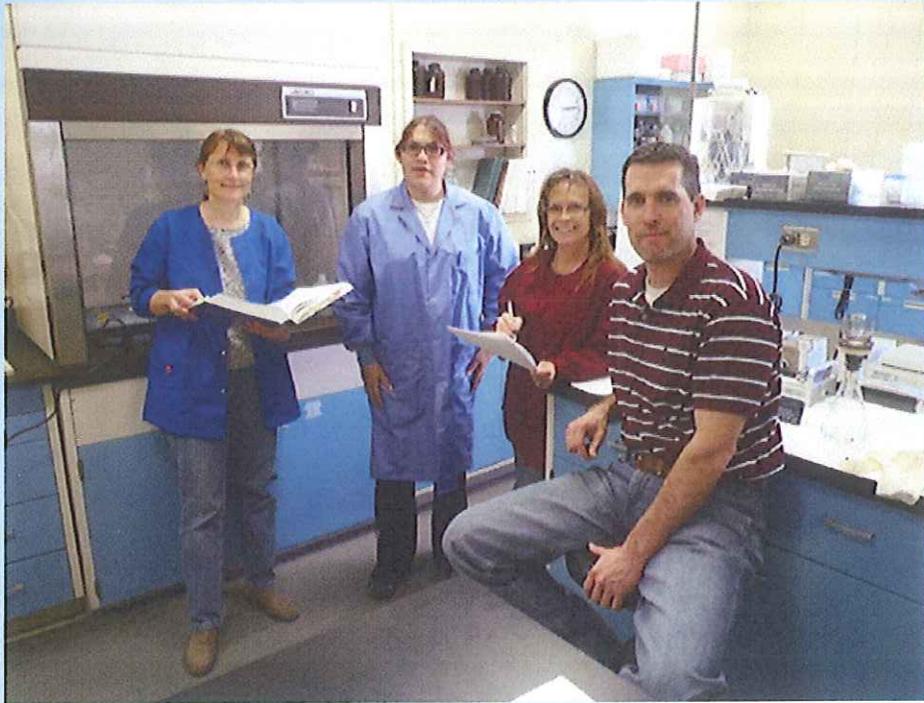
Kristine Ondrias, Assistant City Manager
Todd Parton, City Manager
Mike Hayes, City Attorney



Charlie Hastings, Public Works Director



Scott Loveland, Water/Wastewater Asst Manager
Shelley McElhannon, Utility Admin Secretary
Stuart Barron, Water/Wastewater Manager



LAB



SCADA

WATER DEMAND

- The City of Kerrville's water demand is between 3 to 8 million gallons a day, or 4,186 acre feet per year.
- Citizens produce approximately 3 to 10 million gallons of wastewater a day.

Sources of Water

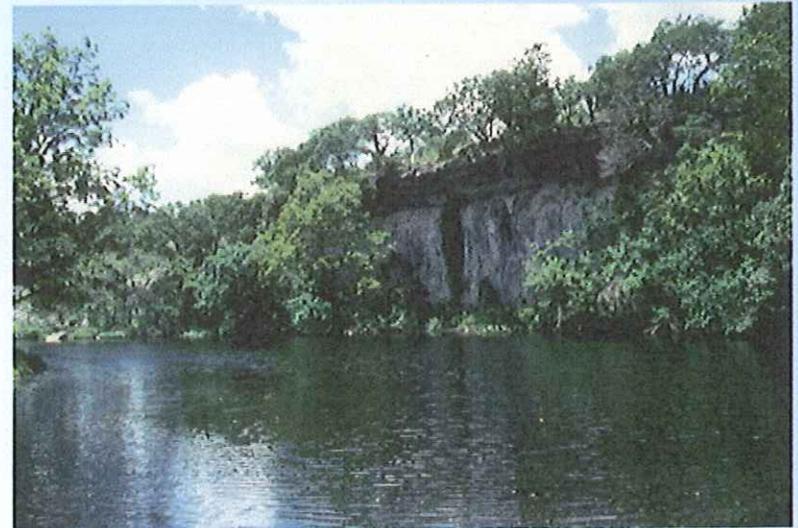
- Surface Water
- Groundwater
- Aquifer Storage & Recovery (ASR)

Sources of Water

- Surface water

Permit # 5394	= 2,169 acre foot a year
Permit # 3505	= 3,603 acre foot a year
Permit # 1996	= 225 acre foot a year
Permit # 18-2026A	= 54 acre foot a year

Total available	= 6,051 acre foot a year



Limitation of Surface Water

- Not available during floods
- Limited during drought
- Highly regulated by the State of Texas

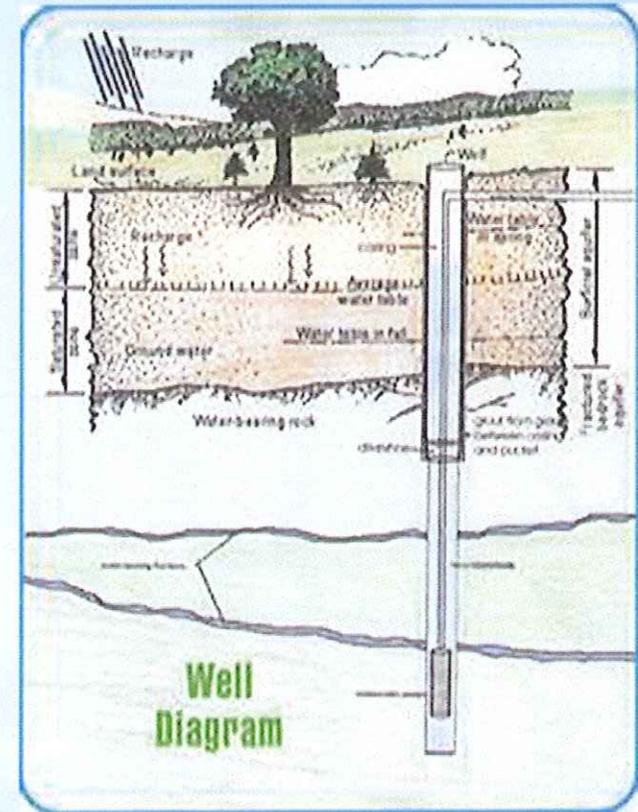
Sources of Water

- Groundwater

City operates 8 groundwater wells
Our annual groundwater permitted =
4,160 acre foot a year

Limitation of Groundwater

Limited amount available
Slow to recharge
Highly regulated by State and local government



Sources of Water

- Aquifer Storage & Recovery (ASR)



City of Kerrville (Upper Guadalupe River Authority) was the first City in the State of Texas to develop an ASR well system.

The City operates two ASR wells, where we store treated surface water in our ground water aquifer.

On February 28, 2011, we had 807.475 million gallons stored, 2,476 acre feet.

Limitations to ASR

Cost of well construction.

Inability to alternate between ASR water and ground water.

Water System



As of February 28, 2011:

- 15 pressure planes
- 9 booster pump stations
- 14 storage tanks
- 8 native ground water wells
- 2 ASR wells
- 238 miles of water pipe
- 9,535 active water meters

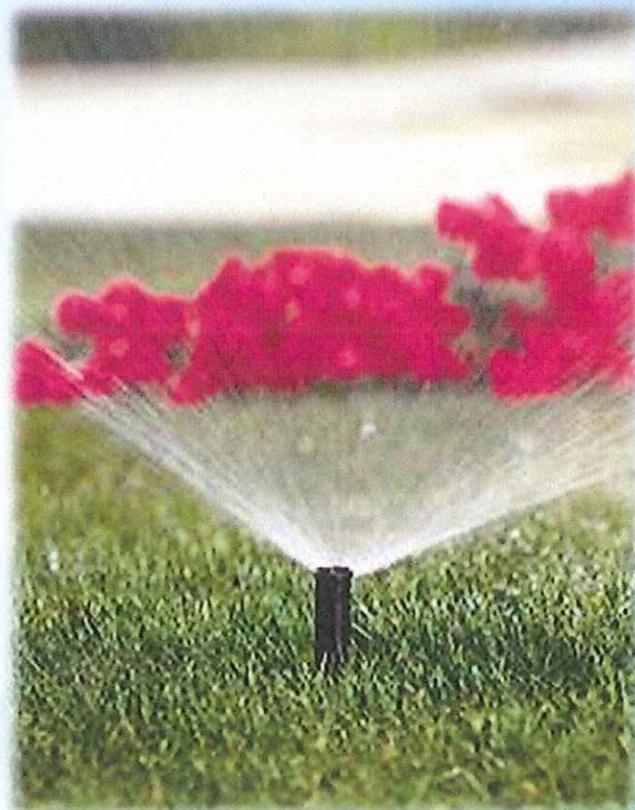


WATER PRODUCTION

FIRE PROTECTION



IRRIGATION



Water Restrictions

HOW & WHEN YOU CAN WATER					
Year Round Water Conservation (Mandatory)	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
	> 65% SOC 7 Day Avg.	> 75% SOC 7 Day Avg.	> 85% SOC 7 Day Avg.	> 95% SOC 7 Day Avg.	> 100% SOC 7 Day Avg.
Automatic & Hose End Sprinklers, and soaker hoses are permitted: 6:00 PM to 10:00 AM EVERYDAY	Automatic & Hose End Sprinklers, and soaker hoses are permitted: 6:00 AM to 10:00 AM and 8:00 PM to 12:00 AM MON & SAT ODD ADDRESSES TUE & SUN EVEN ADDRESSES	Automatic & Hose End Sprinklers, and soaker hoses are permitted: 6:00 AM to 9:00 AM and 8:00 PM to 10:00 PM MON & SAT ODD ADDRESSES TUE & SUN EVEN ADDRESSES	Automatic & Hose End Sprinklers, and soaker hoses are permitted: 6:00 AM to 9:00 AM MON & SAT ODD ADDRESSES TUE & SUN EVEN ADDRESSES	Automatic & Hose End Sprinklers, and soaker hoses are: PROHIBITED AT ALL TIMES PROHIBITED ON ALL DAYS PROHIBITED ON ALL DAYS	Automatic & Hose End Sprinklers, and soaker hoses are: PROHIBITED AT ALL TIMES PROHIBITED ON ALL DAYS PROHIBITED ON ALL DAYS
Hand-Held Hose w/ Nozzle, Drip Irrigation, or Bucket are permitted: ANYTIME EVERYDAY	Hand-Held Hose w/ Nozzle, Drip Irrigation, or Bucket are permitted: ANYTIME EVERYDAY	Hand-Held Hose w/ Nozzle, Drip Irrigation, or Bucket are permitted: 7:00 PM to 9:00 AM EVERYDAY	Hand-Held Hose w/ Nozzle, Drip Irrigation, or Bucket are permitted: 7:00 PM to 11:00 PM and 6:00AM to 9:00 AM EVERYDAY	Hand-Held Hose w/ Nozzle, Drip Irrigation, or Bucket are permitted: 7:00 PM to 11:00 PM and 6:00AM to 9:00 AM EVERYDAY	Hand-Held Hose w/ Nozzle, Drip Irrigation, or Bucket are: PROHIBITED AT ALL TIMES PROHIBITED ON ALL DAYS
FOR A COMPLETE UNDERSTANDING OF THE WATER MANAGEMENT PLAN, PLEASE REFER TO ORDINANCE 2010-08.					

WATER RECLAMATION

City of Kerrville customers produce approximately 3 to 10 million gallons of wastewater daily.

- 8,745 wastewater customers
- 188 miles of pipe
- 2,900 manholes
- 27 wastewater lift stations
- 1 wastewater treatment plant



Where does the rest of the 7 million gallons come from?

- Groundwater running into old manholes and broken pipes.
- Rain water running into old manholes and broken pipes.
- Water abusers:
 - leaky toilets
 - dripping faucets
 - long showers
 - not practicing conservation measures

WATER RECLAMATION

Wastewater permit main parameters:

- 5 mg/l Biological Oxygen Demand
- 5 mg/l Total Suspended Solids
- 2 mg/l Phosphorus
- 1 mg/l Ammonia Nitrogen
- Wastewater Discharges to the river

WATER RECLAMATION

Reuse water systems:

- Golf courses
- Athletic fields
- Animal shelter
- Plant operations
- Construction projects

Capital Improvement Projects

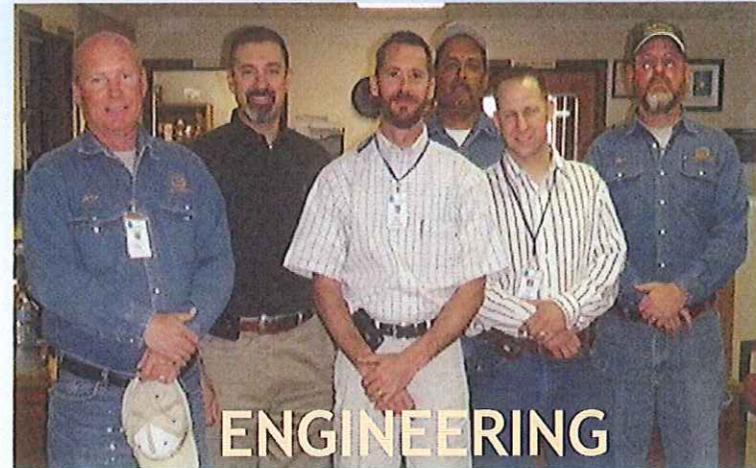
City Council funds new water and sewer projects on a yearly basis to achieve specific goals.

Projects completed in the last five years:

- Quinlan wastewater lift station
- Wastewater Treatment Plant
 - New headworks
 - New belt filter press
 - New facility storage building
- One-million gallon 'per day' module at the Water Treatment Plant
- 12" waterline installed between Peterson Regional Medical Center and the Kerrville State Hospital
- Ridgewood elevated water storage tank
- Holdsworth waterline extension
- Waterline extensions

Projects currently underway:

- Paint College Cove Water Tank
- Extension of water and sewer lines to James Avery
- New 'motor control center' at the Water Treatment Plant



Finance



- Total Revenue 2010 = \$ 8,874,500.00
- Annual Expenditures 2010= \$ 8,874,500.00
- Water Account = \$ 9,511.00
- Wastewater Account = \$ 8,707.00
- Total Debt 2010 = \$ 18,370,693.00
- Net Assets = \$ 44,003,020.85

A Holistic Look at the City of Kerrville Water Systems

Questions?

2011
Stuart Barron
Water/Wastewater Manager
(830)258-1230