



# Columbia River Water Resources Program Policy Advisory Group

## *Prospects for Municipal Water Conservation*

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East Wenatchee Water District





**East Wenatchee Water District**

**30 ft. tall - Volume 1,000,000 gal.**

**July 2005**



Arnie Clarke flying past Reservoir



Wenatchee

Chelan PUD

East Wenatchee

Regional Water Supply Source

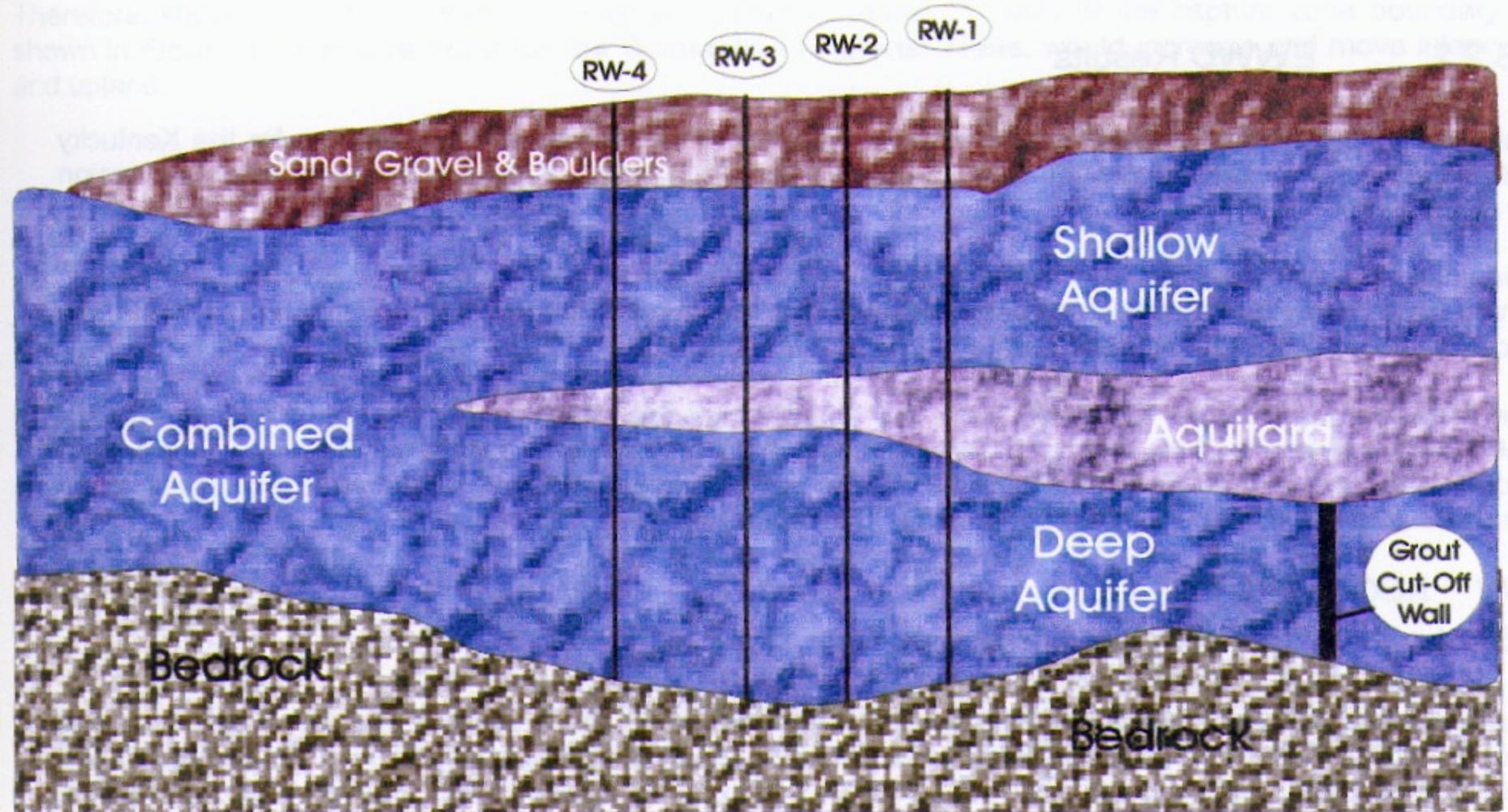
**FIGURE 4  
EASTBANK AQUIFER SITE PLAN**



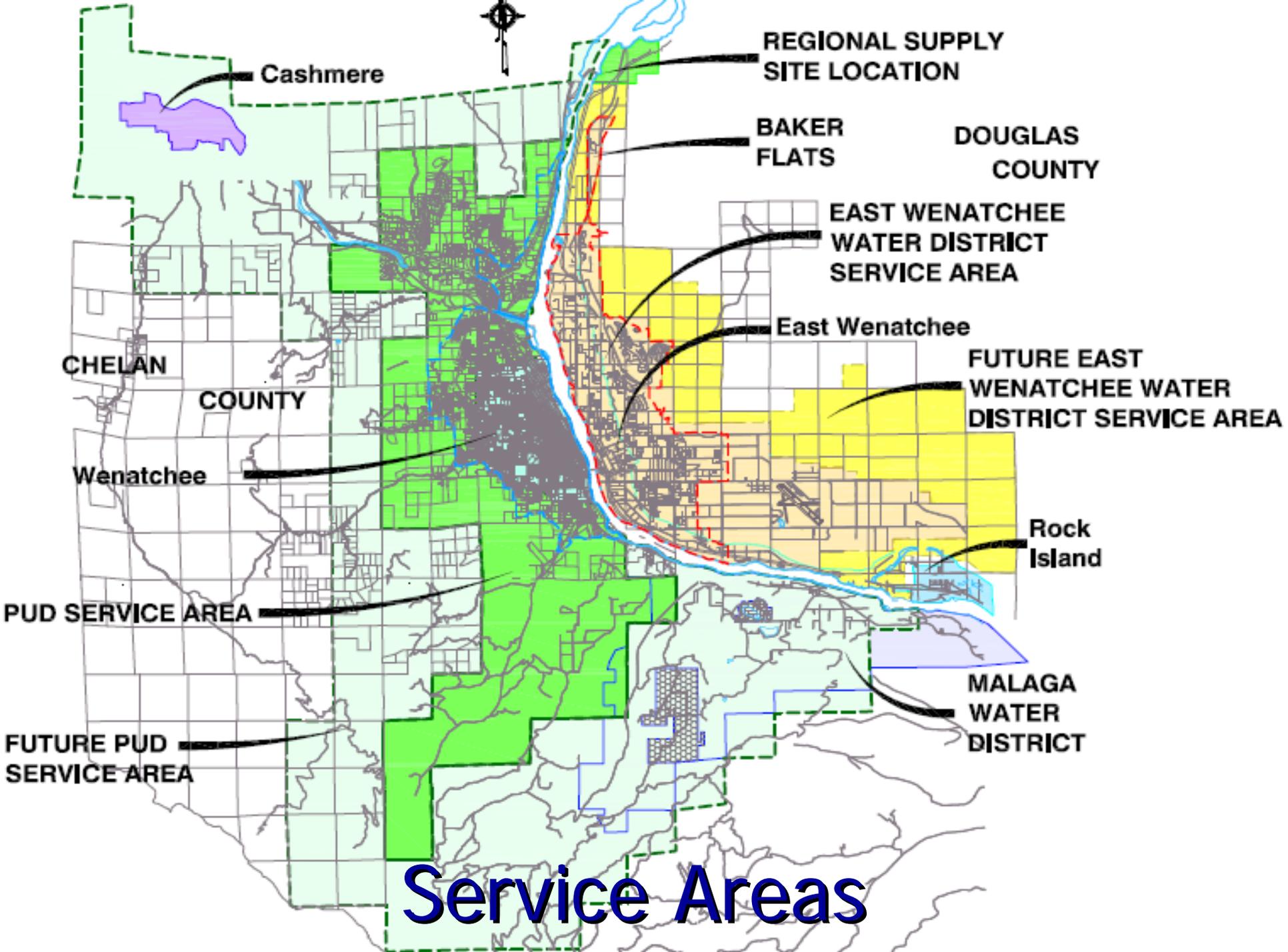
**LEGEND**

- RW -- Regional Well
- TH or CD -- Instrumented Monitoring Well (12 Total plus River)
- CT -- Constant Temperature or Hatchery Well
- LR -- Lincoln Rock State Park Irrigation Well

# Stratigraphic Cross Section at Wenatchee Regional Wells



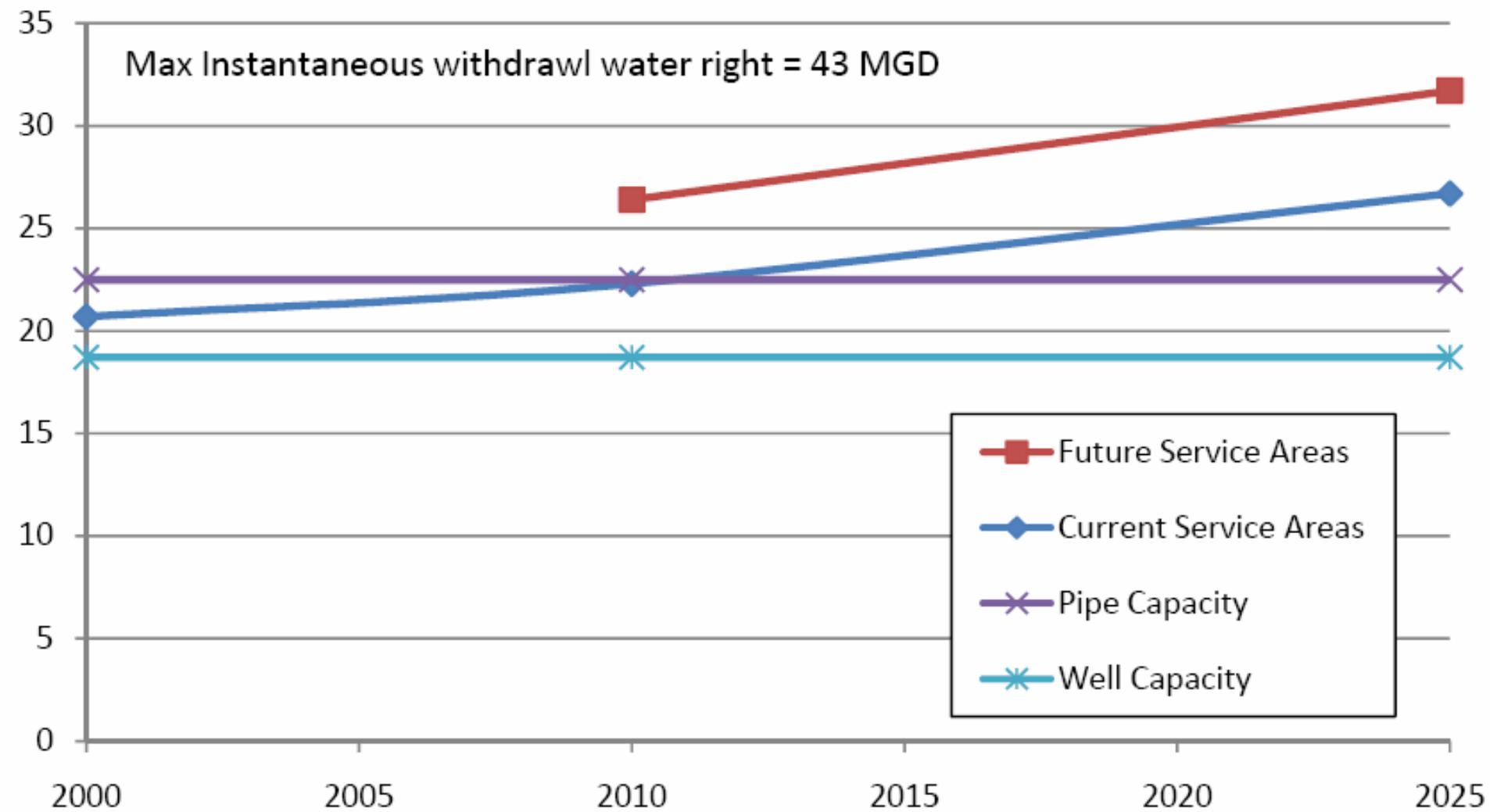
## Regional Aquifer



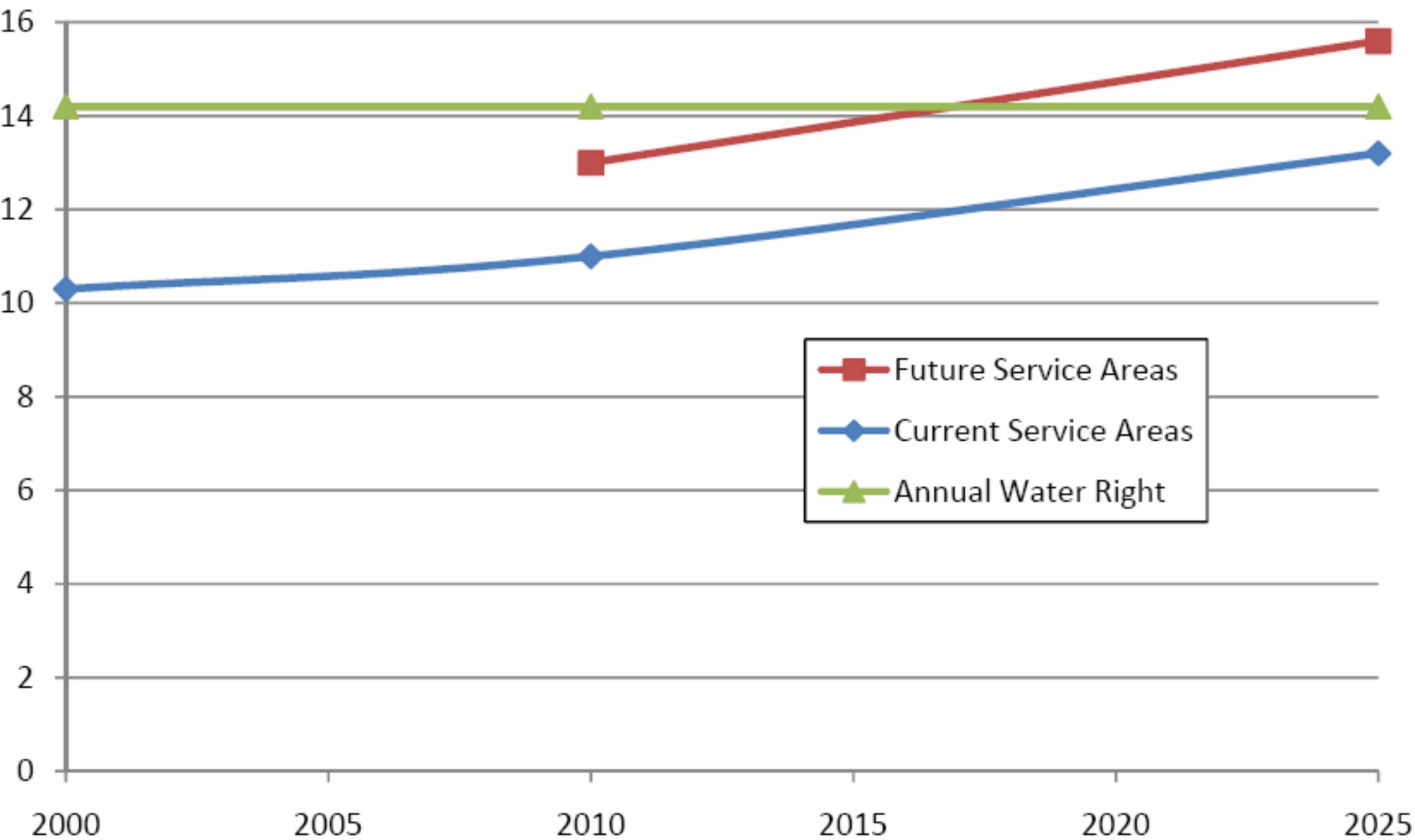
# Service Areas

# Regional Max Day (MGD)

Max Instantaneous withdrawal water right = 43 MGD



# Regional Annual Water Use (MGD)



**Table 4.1 - Past Conservation Performance**

Year	Number of Services	Yearly Supply (gal)	Avg per Service (gpd)	Gallons * Saved (gpd)	Change /svc/yr **
1994	6,353	1,153,570,000	497	0	
1995	6,495	1,144,547,000	483	95,362	-3.0%
1996	6,680	1,173,656,000	481	107,645	-0.3%
1997	6,844	1,174,199,000	470	187,743	-2.4%
1998	7,029	1,217,774,000	475	160,392	1.0%
1999	7,202	1,230,116,000	468	212,642	-1.4%
2000	7,355	1,153,162,000	430	499,589	-8.2%
2001	7,490	1,145,310,000	419	588,260	-2.5%
2002	7,665	1,145,872,000	410	673,779	-2.2%
2003	7,865	1,140,539,000	397	787,885	-3.0%
2004	8,075	1,144,111,000	388	882,569	-2.3%

\* Using 1994 as a baseline

\*\* Positive number indicates increase in usage, negative indicates decrease in usage

That is a 2.5% reduction per year.

- 1998 higher because average temp 3 degrees F higher than norm.
- 2000 lower because average temp 2 degrees F lower than norm.

# EWWD Water Conservation & Efficiency

District supports and actively promotes water Conservation and Water use Efficiency.

## Highlights:

- For the 2005 District Comprehensive Plan we adopted three goals and Objectives for the next six year period which were:
  1. Reduce unaccounted for water by 1 to 2 percent. (Water System Goal)
  2. Reduce per connection use by 2 to 3 percent. (Customer Goal)
  3. Promote public education and awareness of water conservation issues.
- We recently adopted these Goals by resolution as required by the Water Use Efficiency rule.
- We have been actively tracking system water loss (unaccounted for water) for a number of years and have made steady improvements. This is now a requirement for the Water Use Efficiency rule.
- We have recently implemented a water bill showing consumption history.

## **Water Use Efficiency Rule – Effective as of January 22, 2008**

### Water Use Efficiency Rule – Key Elements:

- Water Use Efficiency Planning Requirements - As part of our Comp Plan we must collect data, forecast demand, evaluate leakage, evaluate rate structures that encourage water use efficiency, and evaluate or implement water use efficiency measures.
- Distribution Leakage Standard – We must maintain leakage below 10%
  - ✓ Must be fully source and service metered.
  - ✓ Leakage =  $[(\text{Water Purchased} - \text{Authorized Consumption}) / (\text{Water Purchased})] \times 100$
- Water Use Efficiency Goal Setting and Performance Reporting – Must set water use efficiency goal through a public process and **report annually** on their performance to customers, and the DOH



18%+ in 1996

**Table 2.6 - Unbilled Water in Gallons**

	1999	2000	2001	2002	2003	2004	Avg 00-04
Construction meters	16,366,774	17,011,897	11,343,825	10,153,533	13,393,015	27,184,489	15,817,352
Public Works	653,229	1,779,268	978,750	629,068	813,824	676,940	975,570
Sewer Dept.	2,100,000	2,660,636	2,500,000	1,870,000	3,282,224	2,180,420	2,498,656
Flushing	2,333,361	410,730	3,334,517	14,057,831	1,365,950	761,908	3,986,187
District meters	31,960,139	3,631,364	2,243,425	792,880	6,245,016	8,616,748	4,305,887
<b>Total Unbilled</b>	<b>53,413,503</b>	<b>25,493,895</b>	<b>20,400,517</b>	<b>27,503,312</b>	<b>25,100,029</b>	<b>39,420,505</b>	<b>27,583,652</b>
Yearly Avg/day	146,338	69,846	55,892	75,352	68,767	108,001	75,572
Adjusted Avg / day *	222,556	106,225	85,002	114,597	104,583	164,252	114,932
Total Pumped	1,230,116,000	1,153,162,000	1,145,310,000	1,145,872,000	1,140,539,000	1,144,111,000	
Total Sales	1,004,951,576	1,011,521,148	1,004,743,520	1,026,077,976	1,013,466,696	1,043,795,104	
<b>Unaccounted for Water (leaks, etc)</b>	<b>171,750,921</b>	<b>116,146,957</b>	<b>120,165,963</b>	<b>92,290,712</b>	<b>101,972,275</b>	<b>60,895,391</b>	
	<b>14.0%</b>	<b>10.1%</b>	<b>10.5%</b>	<b>8.1%</b>	<b>8.9%</b>	<b>5.3%</b>	<b>8.6%</b>

\* Assumes that unbilled water is only used during 8 month irrigation, construction and street cleaning season.

8.3% in 2005

3.5% in 2006

6.6% in 2007

- Measure Construction Water
- Measure water used by other agencies: City, County, Sewer District...
- Measure water used for main flushing
- Replacing old water meters that under read!!
- Repair leaks quickly.
- Aggressive water main replacement program.



L-13 Blanik, manufactured by LET  
Aeronautical Works of Czech Republic





**Table 3.7 - Pipe Replacement by Year**

	Location	Diameter inch	Length feet		Location	Diameter inch	Length feet
1997	19th St to 9th St	12	8,000	2001	1st St, Kentucky to Grant	8	2,200
	4th St., Eastridge to Kentucky	18	4,200		2nd St, Joseph to Houston	8	1,100
	15th St., CC Dr. to Eastmont	8	900		S. Kentucky, 4th SE to Pearcot	18	1,380
	3rd St., Iowa to Kentucky	8	3,000		NE 8th, Grover to Iowa	8	1,340
	June, Grant to 5th	8	2,700			<b>Total</b>	<b>6,020</b>
	Keller, Grant to 3rd	8	1,300				
	<b>Total</b>		<b>20,100</b>	2002	11th St., Baker to Eastmont	8	1,500
					4th St, Eastridge to Jarvis	8	2,000
1998	Eastmont, Simon to 1st	18	900				
	Grant and Eastmont	12	500		<b>Total</b>	<b>3,500</b>	
	SR 28, 15th St	12	550	2003	Valley Mall Pkwy, Grant to 4th	12	1,000
	Catalina Drive	8	1,670		Grover, Shop to France	12	800
			Jackson, 11th to Briarwood		12	1,800	
	<b>Total</b>		<b>3,620</b>				
1999	Grant Rd., Quincy to Stark	12	1,800				
	5th St, Eastmont to 10th St	12	9,000		<b>Total</b>	<b>3,600</b>	
	Kentucky, 4th to 10th	12	2,600	2004	15th St, Baker to Shop	16	3,400
	6th SE at S. Mary	8	210		15th St, Eastmont to Shop	12	800
	Batterman Rd	6	1,200		Soden, Kentucky to Lee	8	1,930
	8th SE, Nile to golf course	8	2,150		David, 33rd to 34th	8	600
	Nile, Grant to 5th	12	3,000		Houston, 3rd to 4th	8	700
	<b>Total</b>		<b>19,960</b>				
					<b>Total</b>	<b>7,430</b>	
2000	SR 28, 31st to 35th	12	2,700	2005	Grant Rd, Kentucky to Nile	12	5,300
	Columbia, 23rd to 27th	8	3,000		3rd St, Eastmont to Baker	12	1,200
	Kentucky, 4th to Pearcot	18	1,300		Georgia, Grant to 1st SE	8	600
	<b>Total</b>		<b>7,000</b>				
					<b>Total</b>	<b>7,100</b>	

Only those projects built by the District are listed. Developer's projects not included.

Total 85,230 ft. of pipe = 16.1 miles

Only 3,400 ft. outside UGA

2006	Location		

# Pipe Replaced by Year

# Past and Future CIP Expenditures

- District has spent over \$15 million on projects in the last 10 years. (Does not include developer funded improvements.)
- District has identified \$13 million in projects over the next 6 years.
- Anticipate developers will spend up to \$12 million in developer impact improvements during the next 6 years.

Please Conserve Water

Our future depends on it!

Thank you!