



City of Austin Water Resource Overview

LCRWPG Region K Member Orientation

“Water Planning 101”

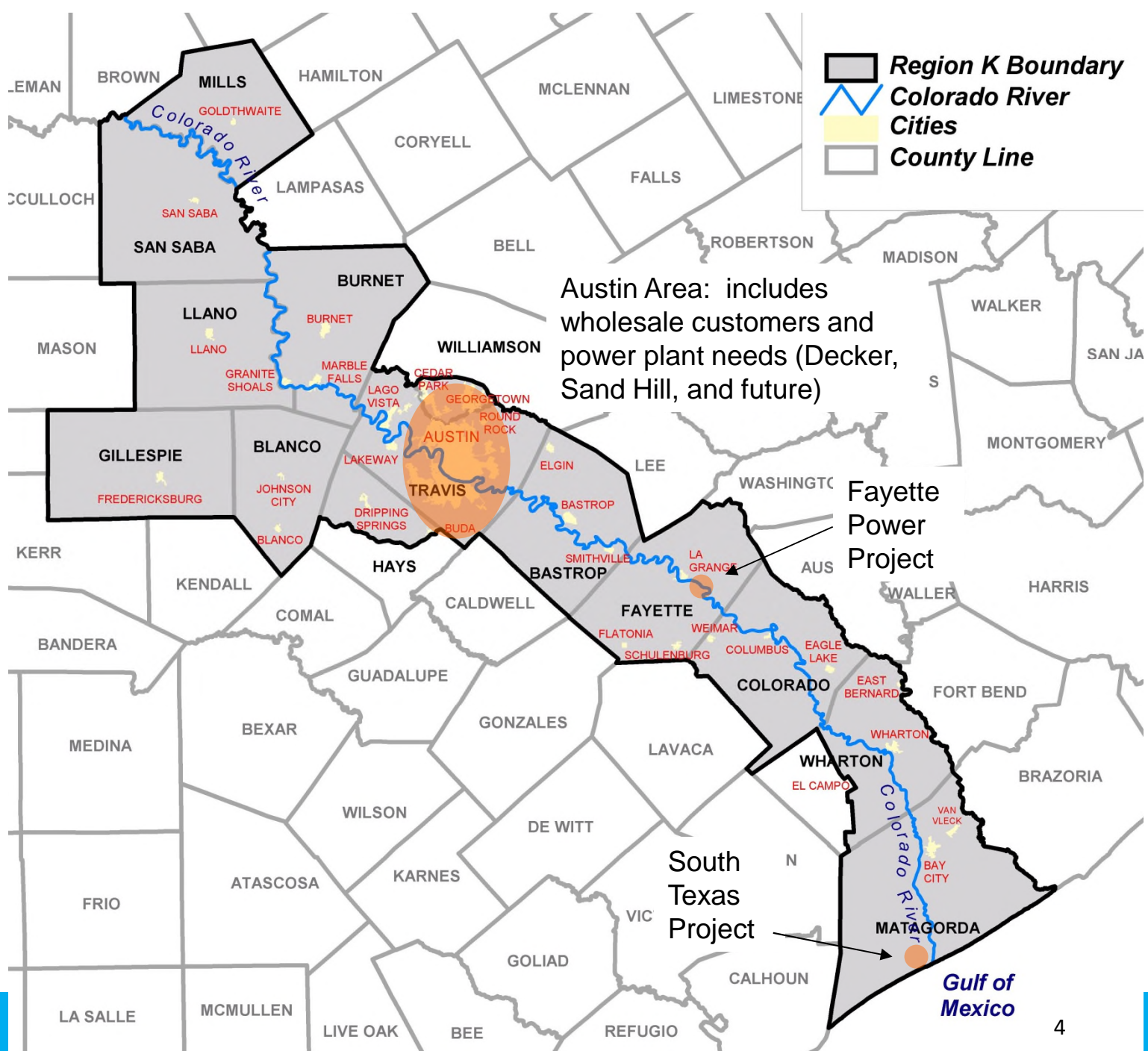
March 9, 2016

LCRA Dalchau Service Center- Montopolis

Outline

- System Overview
 - Service Area
 - Infrastructure Systems
 - Water Demands
- Water Supply and Agreements
- Water Conservation and Reuse
- Water Management Strategies
- Integrated Water Resource Plan (IWRP)

System Overview

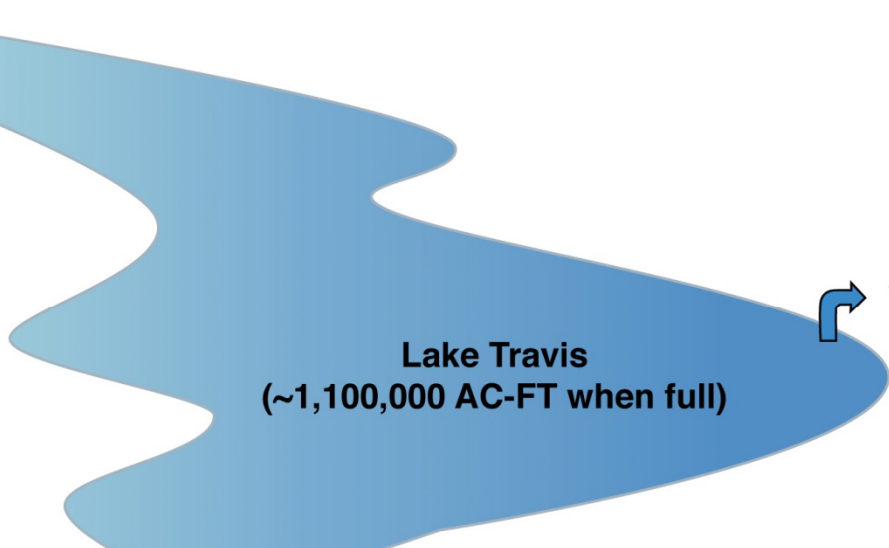


Austin Service Area

- Water served population ~1 million
 - Retail: ~94K Wholesale: ~58k
 - 2040 Projected: ~1.5 million (COA projection)
- Current Water Customers: ~225,000 (accounts)
- Service area: ~544 sq. mi. (Impact Fee Boundary)
- Retail and wholesale, inside and outside City limits
- Wholesale service includes municipal utility districts, cities, and private companies

Highland Lakes and Colorado River

Lake Buchanan



Lake Travis
(~1,100,000 AC-FT when full)

WTP 4



Mansfield Dam



Lake Austin
(~21,000 AC-FT)

Davis WTP



Ullrich WTP



Tom Miller Dam

Lady Bird Lake

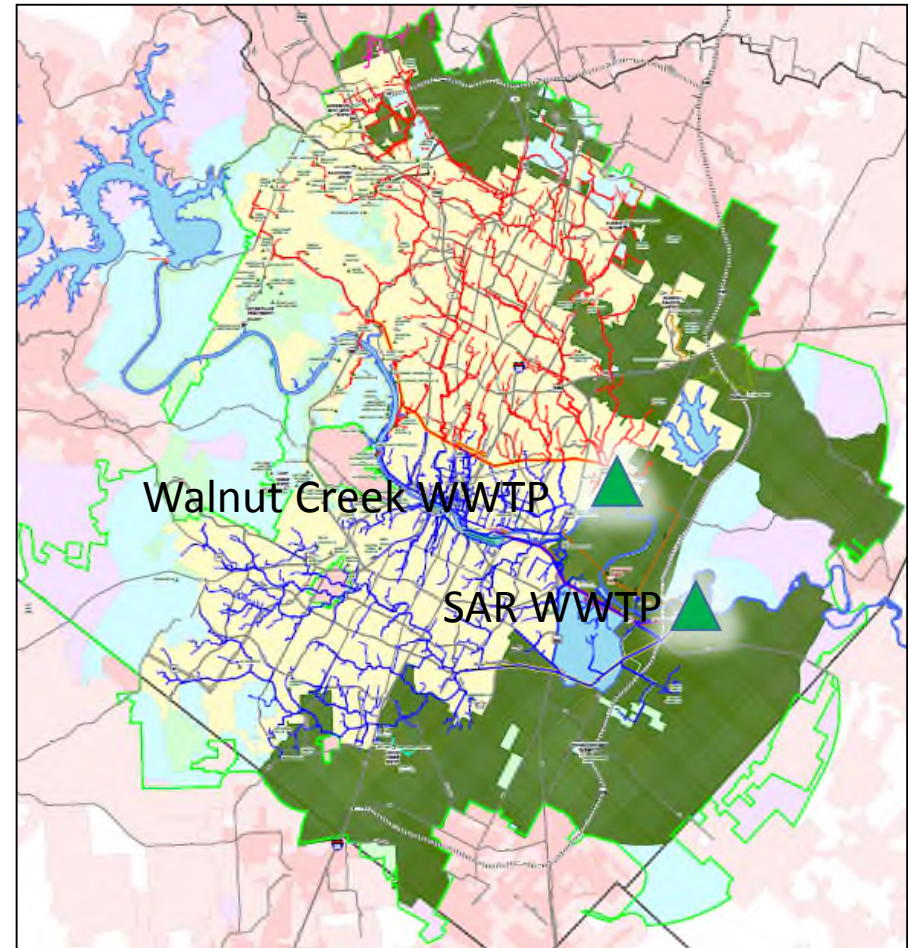
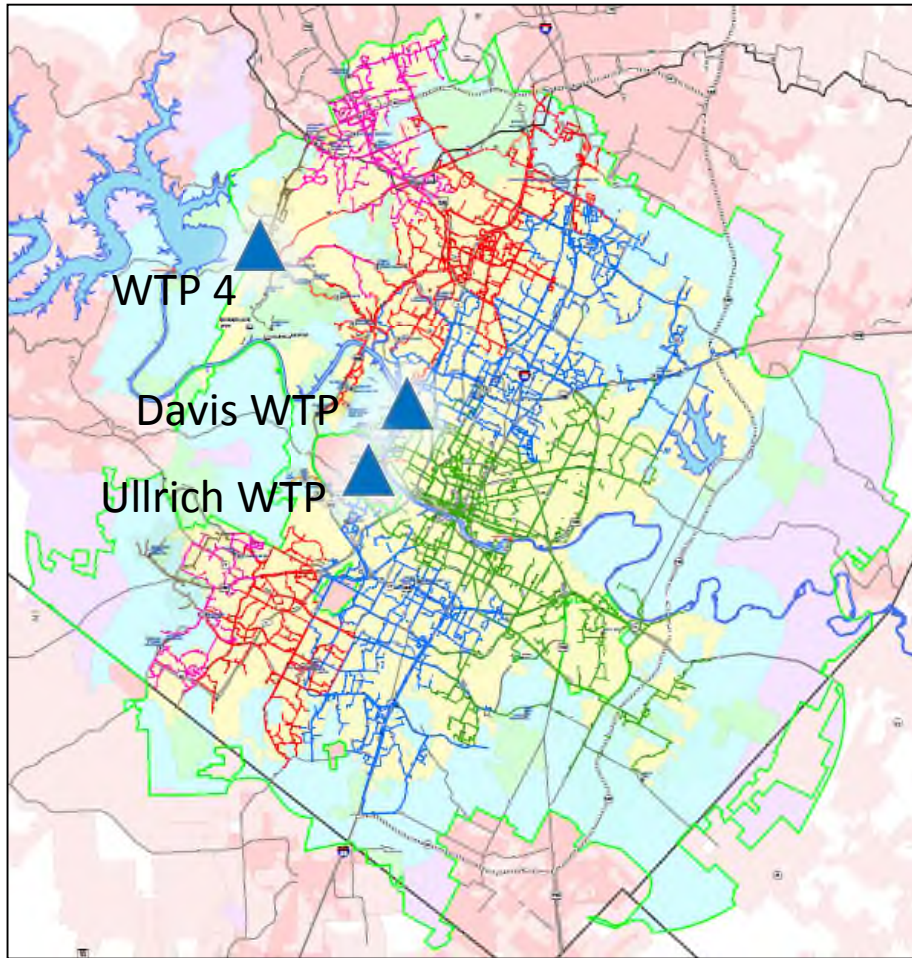


Longhorn Dam



Colorado River

Systems Overview



Municipal and Manufacturing Demands

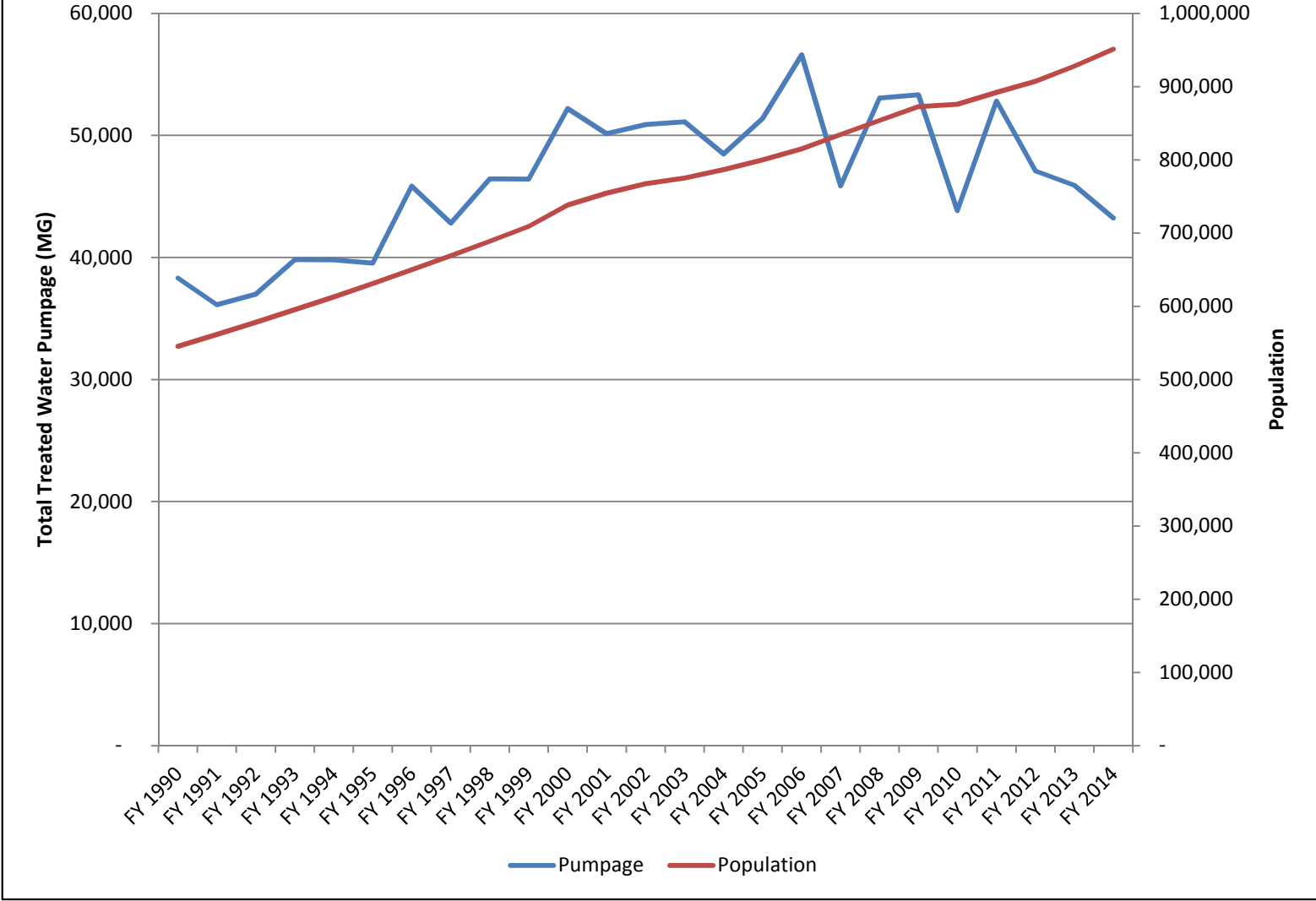
- Most recent 5-year average: 147,766 AF/yr
- Highest year: 170,116 AF/yr (2008)
- Recent 5-year average served population increase: ~22,000 per year

Year	Diversions (AF/yr)	Population Served
2011	168,334	891,997
2012	151,495	907,161
2013	142,027	928,026
2014	137,444	951,329
2015	139,500*	977,491

* Preliminary

1 acre-ft is 325,851 gallons

Austin's Water Demand and Population



COA Water Supply and COA and LCRA Agreements

Water Supply

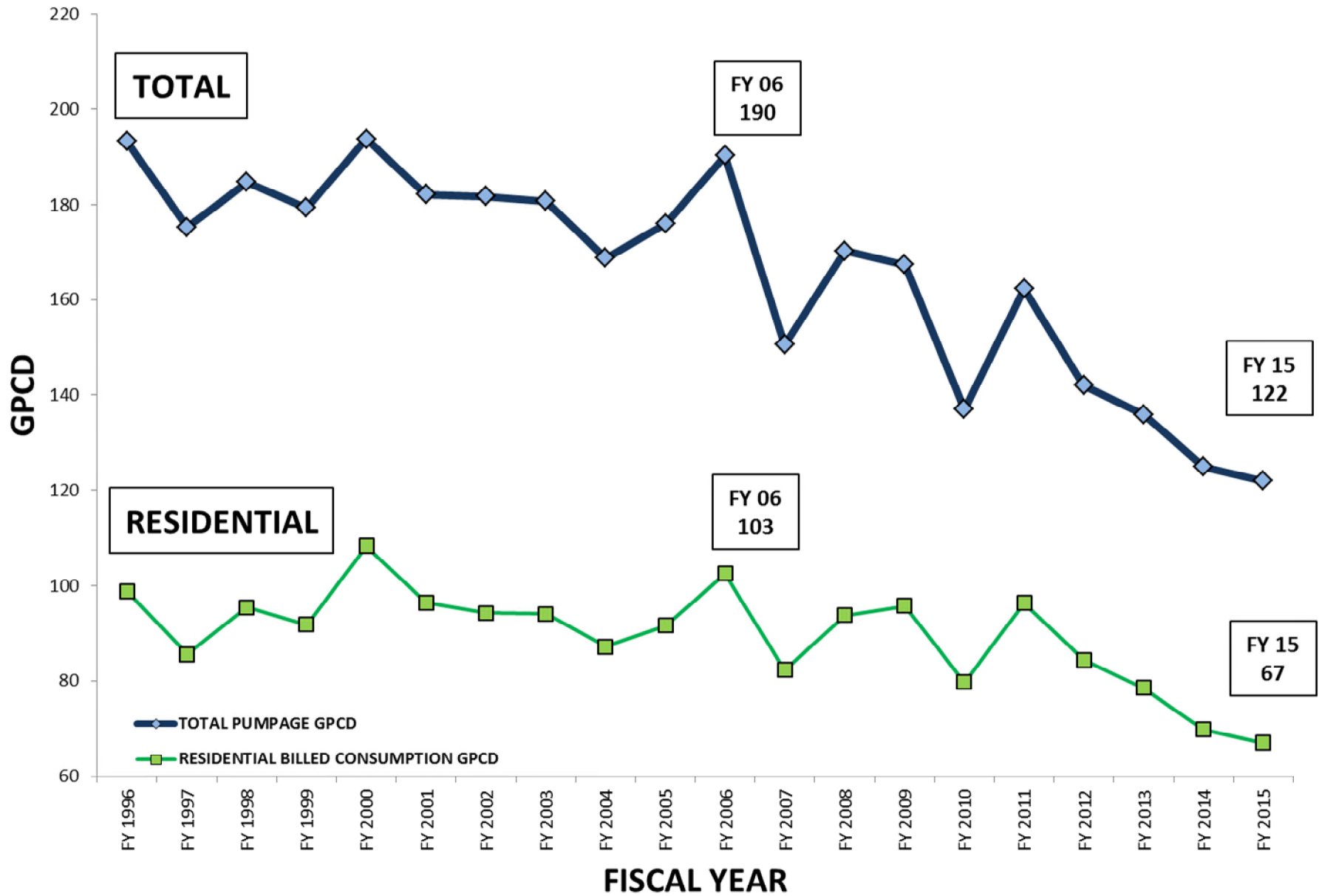
- Current supply:
 - Colorado River (surface water)
- Supply comes from a combination of:
 - State-granted water rights (run-of-river)
 - Water supply contracts with LCRA (providing firm water and firm back-up to ROR rights)

Recent Major COA and LCRA Water Supply Agreements

- **1999 Agreement**
 - Firm back-up for Austin's senior run-of-river rights and additional firm water totaling 325k AF/yr
 - Term extends through year 2050 with an extension option to year 2100
- **2007 Supplemental Water Supply Agreement**
 - Provides up to 250k AF/yr of additional supply through the year 2100 to be jointly planned, incrementally

Water Conservation and Reuse

WATER USE - GALLONS PER CAPITA PER DAY (GPCD)



Water Conservation

- Incentive Programs

- Rainwater Harvesting
- Pressure Reduction
- Commercial Rebates
- Landscape Conversion

- Free Equipment

- Showerheads & Aerators
- Drought Toolkit

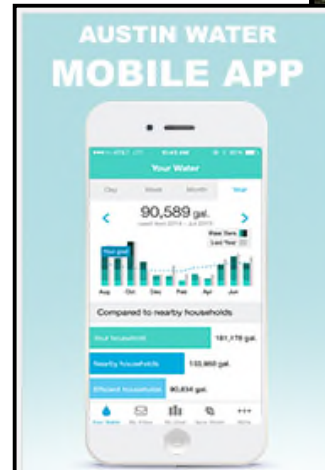
- Education & Outreach

- Irrigation Evaluations
- Speakers Bureau

- Home water use report software pilot program

- Dropcountr

- Tiered Inverted Block Water Rates



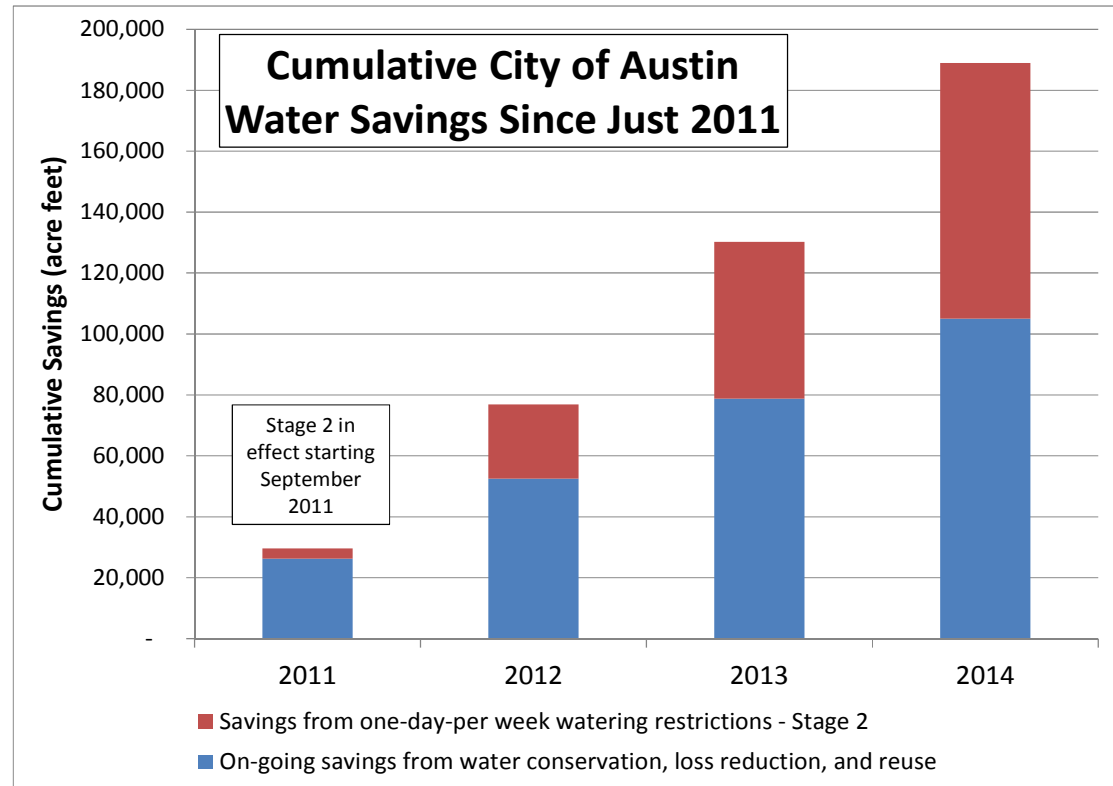
Water Conservation

- Design and Construction
 - Efficient plumbing fixtures required
 - Water efficient code updates
- Renewing Austin
 - Aging water main replacement program
- Leak Reduction Efforts
 - Targeted by historical data & subsurface testing
 - Main break response time improvement



Conservation Savings

- Austin has been in mandatory no more than 1-day per week watering nearly continuously since September 2011
- Annual water savings from conservation, reuse, and loss reduction totals over 26,000 AF (not including savings from 1-day per week watering restrictions)
- Combined these cumulative savings totaled more than 180,000 acre-feet for 2011 – 2014



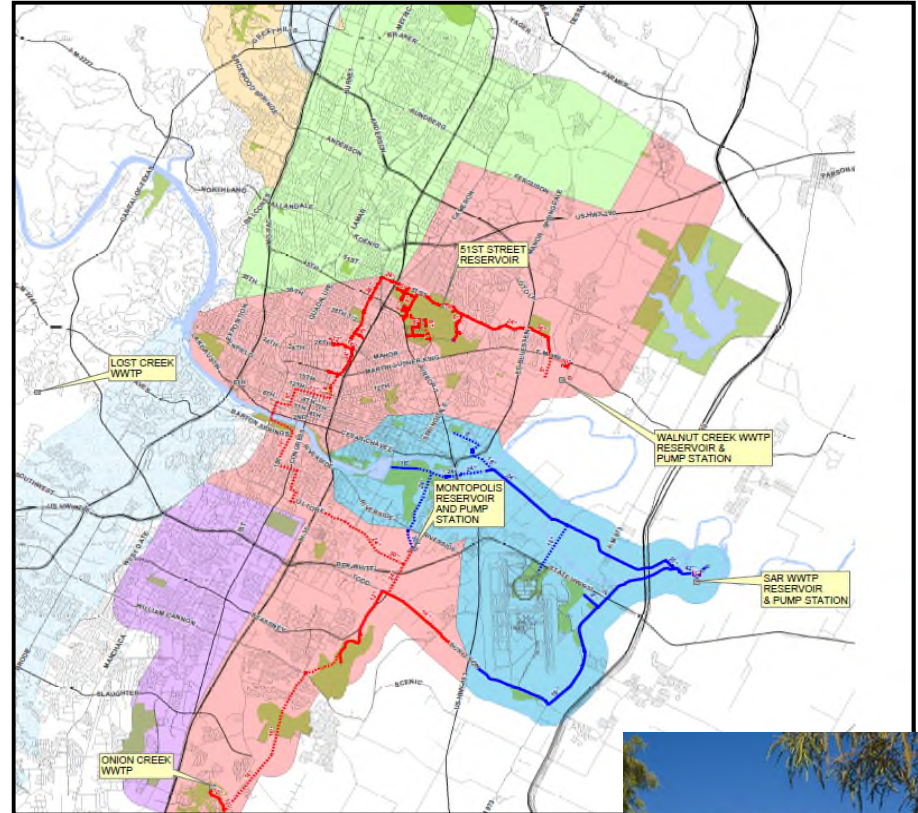
Reclaimed Water

- Highly purified wastewater effluent
- Major uses:
 - Irrigation
 - Cooling
 - Manufacturing
 - Toilet flushing
 - Laundry
 - Construction Activities



Water Reclamation Initiative

- Direct reuse system - “third utility”
- Annual use - ~1.2 billion gallons (~4k AF)
- Targeting expansion of the system in high use areas:
 - University of Texas recently connected
- System facilities:
 - Miles of transmission main : 51
 - Storage capacity: 4.2 million gallons
- Long-term (50-year + horizon):
 - 40k AF plus
 - Future expansion



Water Management Strategies

City of Austin Water Management Strategies (ac-ft/yr)

Adopted Region K 2016 Water Plan

COA Strategies	2020	2030	2040	2050	2060	2070
Municipal and Manufacturing						
Conservation - Leak reduction, landscaping, efficiency, etc.	22,969	24,559	28,317	31,220	33,822	36,899
Rainwater Harvesting	83	828	4,141	8,282	12,423	16,564
City of Austin Direct Reuse	5,429	10,429	20,429	22,929	25,429	27,929
Other Reuse - decentralized, graywater, etc.	1,000	1,000	1,500	2,000	2,500	3,000
Drought Management	16,516	19,260	22,206	24,484	26,524	28,937
Longhorn Dam Operation Improvements	3,000	3,000	3,000	3,000	3,000	3,000
Lake Long Enhanced Storage – COA Municipal and Manufacturing	20,000	20,000	20,000	20,000	20,000	20,000
Capture local inflows to Lady Bird Lake	1,000	1,000	1,000	1,000	1,000	1,000
Aquifer Storage and Recovery	10,000	25,000	25,000	50,000	50,000	50,000
Strategies for Drought Management						
Indirect Potable Reuse through Lady Bird Lake	20,000	20,000	20,000	20,000	20,000	20,000
Lake Austin operations	2,500	2,500	2,500	2,500	2,500	2,500
Alternate Strategies						
Down-dip brackish groundwater	0	5,000	5,000	5,000	5,000	5,000
Reclaimed water bank infiltration to Colorado Alluvium	0	15,000	20,000	25,000	30,000	30,000
Steam Electric						
Lake Long Enhanced Storage - COA Steam Electric	2,000	2,000	2,000	2,000	2,000	2,000
Additional LCRA Contracts	6,000	7,000	9,000	11,000	13,000	15,000
Direct Reuse - Steam Electric	3,500	7,500	7,500	8,500	9,500	10,500

Integrated Water Resource Plan



What is an IWRP?

Mid- and long-range plan for demand management and supply options for Austin

Holistic and inclusive approach to water management





Working with Council-appointed Task Force and other City departments

Questions and Discussion