

# Drinking Water Line of Business

**March 11, 2014 Discussion  
with the Council SPUN Committee**

Seattle  
 Public  
Utilities

# Structure of Presentation for Drinking Water LOB

- 1. Then and Now**
- 2. Overview**
- 3. Customer Services & Service Levels**
- 4. Drinking Water Investments**
- 5. Cost of Services**

# Drinking Water Then: The Great Seattle Fire

- **1888 - mayor proposes Cedar River for public water supply**
- **Private companies can't handle demand from population growth**
- **Special election set for July 1889 on \$1 million construction bond**
- **One month before vote, Great Seattle Fire left downtown in ruins**
- **Low flow from private companies contributed to the destruction**
- **Voters overwhelmingly authorized construction of Cedar River Supply**



# Drinking Water Then: Forward-Thinking Utilities

- **1901 - Cedar River pipeline in service.**
- **Development of protected water supply spurred by typhoid outbreaks.**
- **Cedar River supply eliminates need to drink contaminated lake water.**
- **In-city reservoirs constructed.**
- **Pipeline expanded three times over next 50 years.**
- **Water service begins to expanding cities east of Lake Washington.**



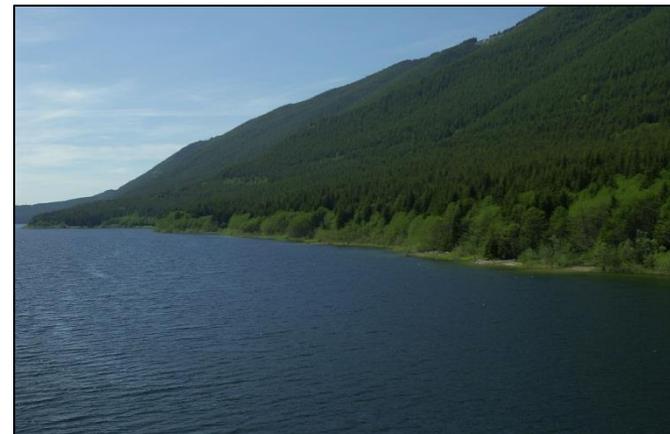
Volunteer Park Reservoir, 1900

# Drinking Water Now: Two Protected Supply Sources

- **South Fork Tolt River (Carnation) added as second source in 1960s**
- **100 percent ownership of Cedar Watershed, 66 percent of Tolt Watershed**
- **Protected from all uses, except tribal hunting**
- **SPU patrols and manages watershed forests**



Chester Morse Lake, Cedar River Watershed



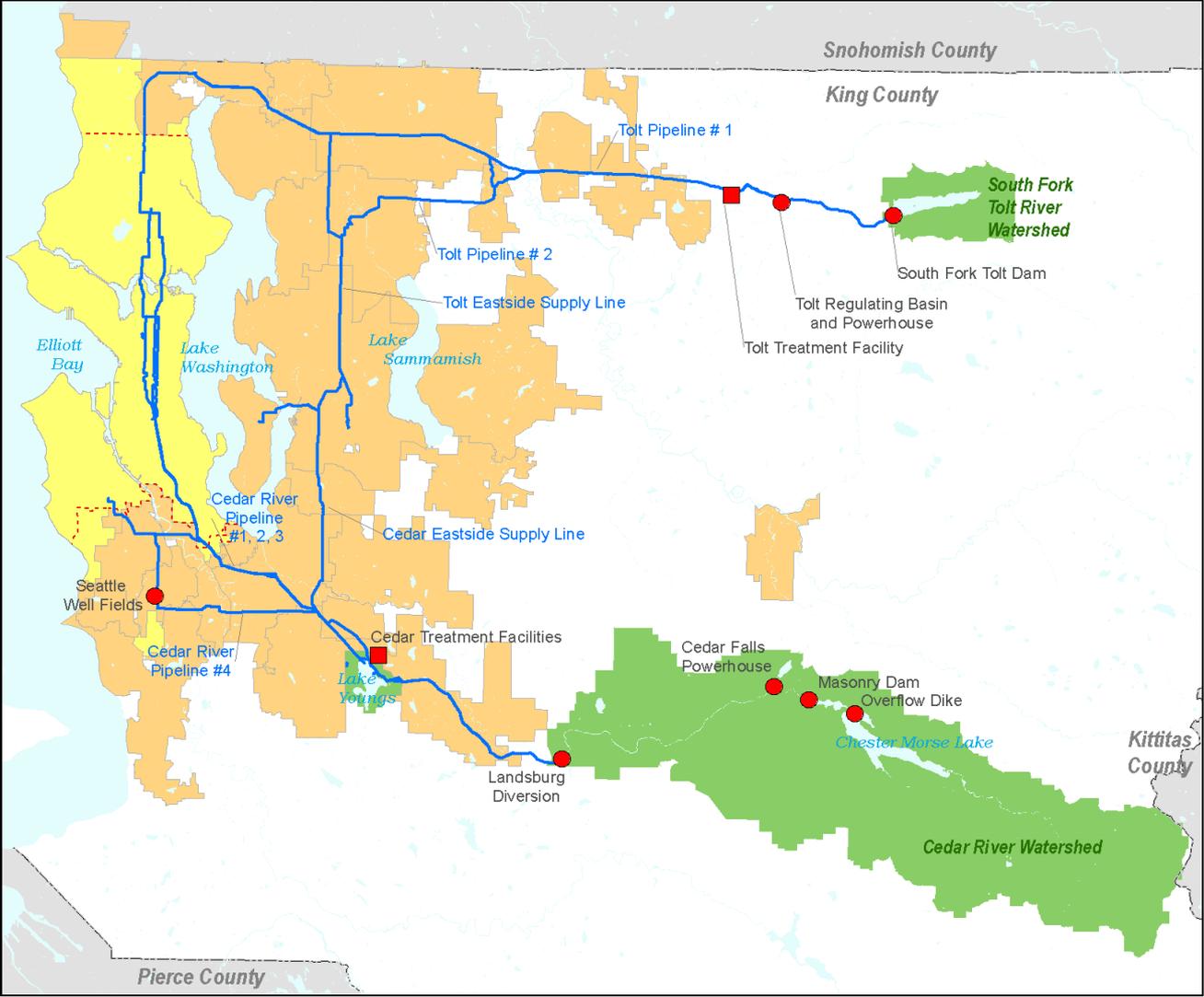
South Fork Tolt River Watershed  
(Carnation)

# Overview: Drinking Water Service Territory & Infrastructure



- **1.3 million customers**
- **Two watersheds**
- **193 miles of transmission pipelines**
- **1,680 miles of distribution mains**
- **400 million gallons of water storage**
- **Many pump stations, valves, fire hydrants**

# Overview: Seattle's Regional Water System

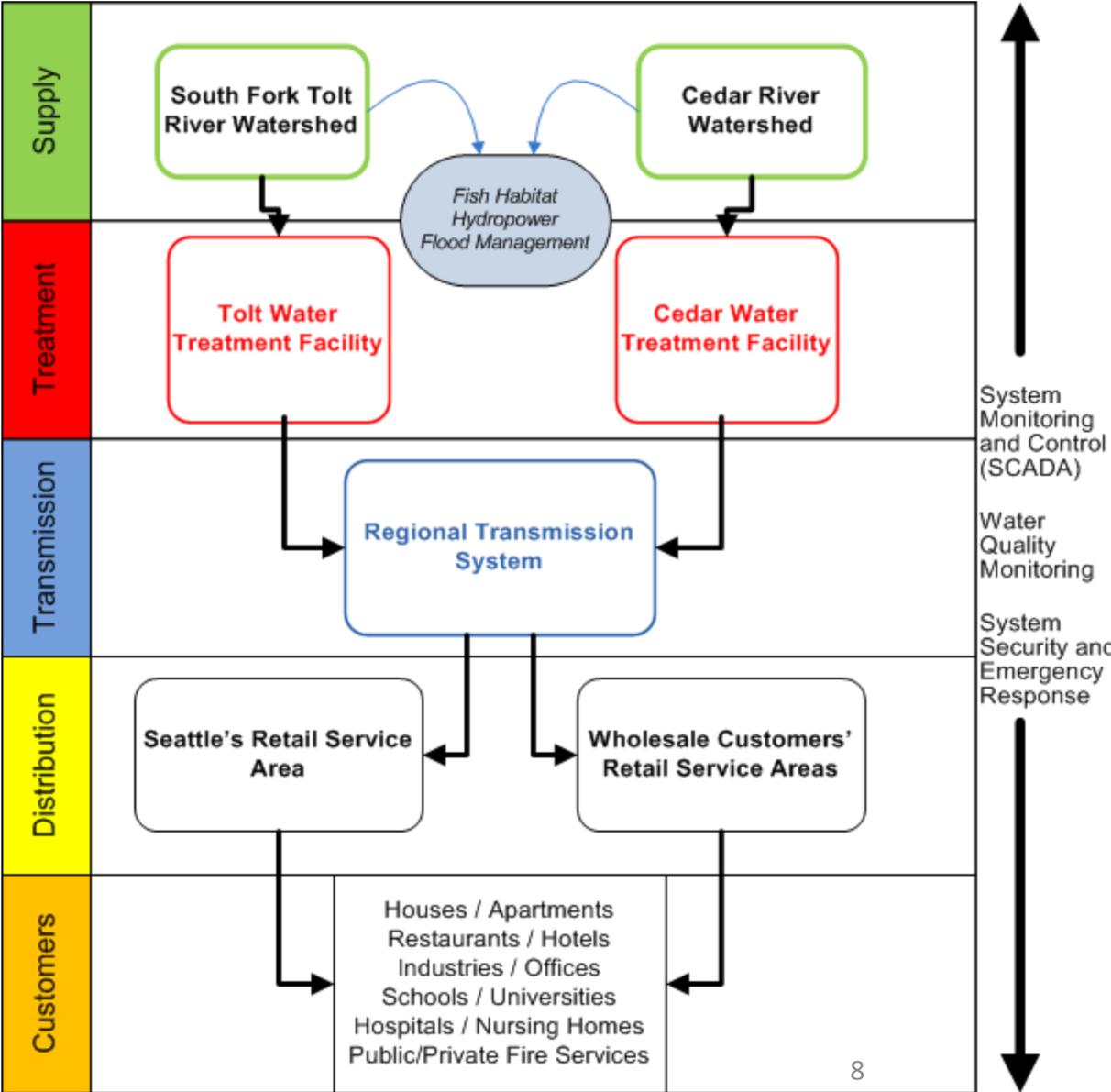


**Seattle Retail Service Area**

**Wholesale Customers**

**Watersheds**

# Overview: Drinking Water Process from Source to Tap



# Overview: Regulatory Drivers and Commitments

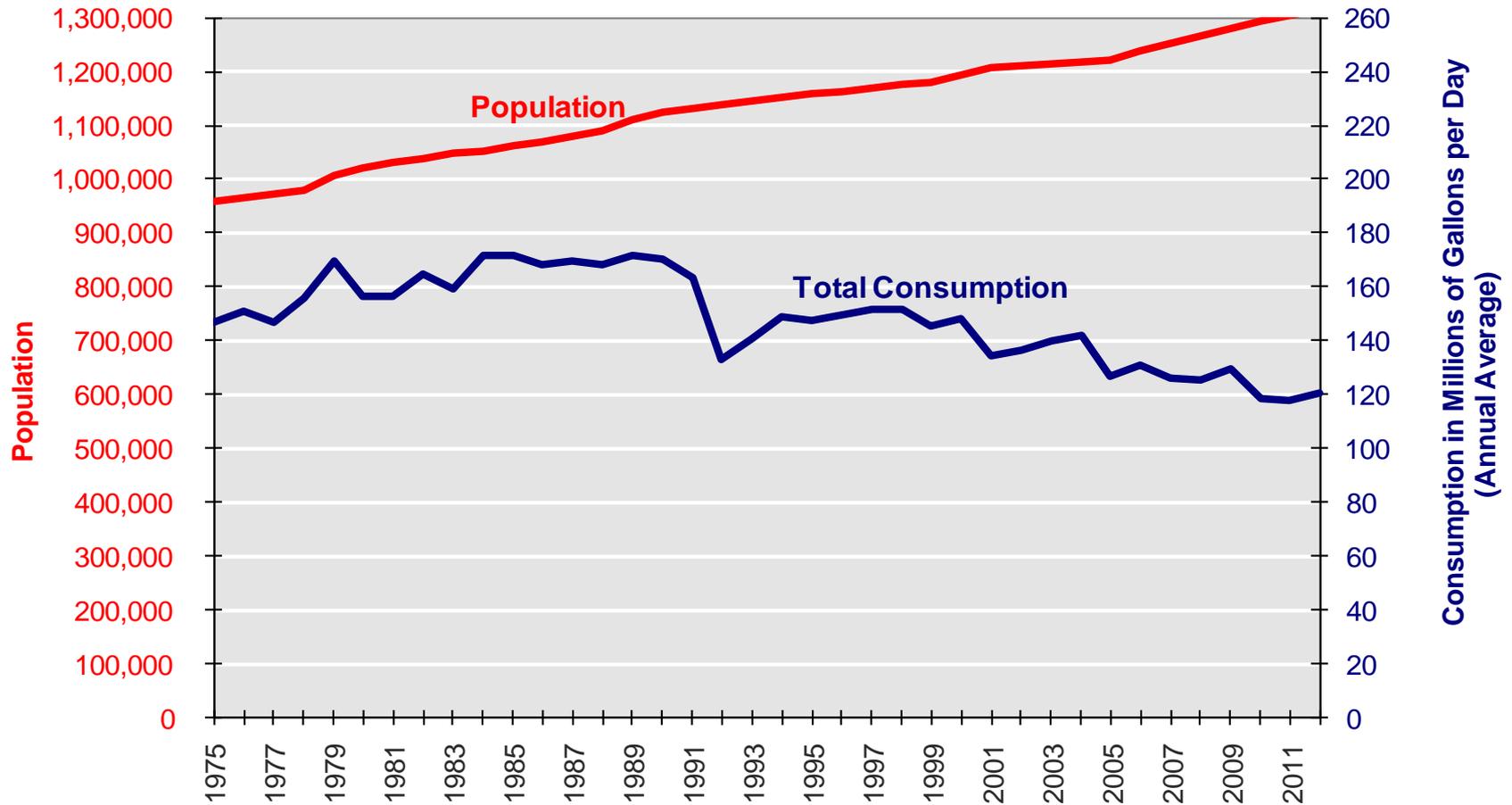
## Regulations:

- **State Dept of Health**
  - **Safe Drinking Water Act**
  - **Water System Design, including fire flow & pressure**
  - **Water Use Efficiency**
- **State Dept of Ecology**
  - **Water rights**
  - **Dam safety**

## Commitments:

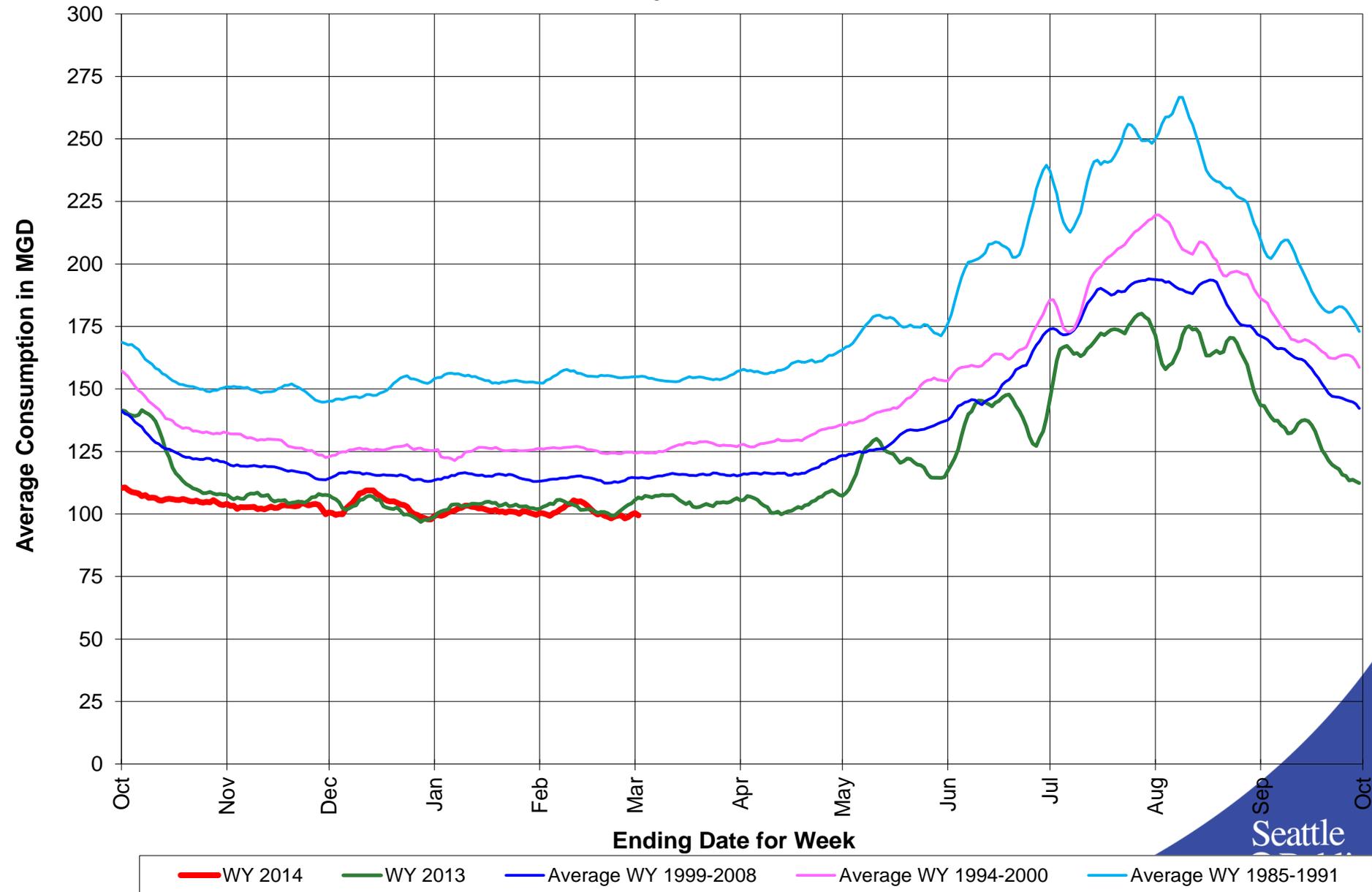
- **Wholesale water contracts**
- **Cedar River Habitat Conservation Plan**
- **Muckleshoot Indian Tribe Settlement Agreement**

# Overview: Water Consumption Over Time



# 24-hr Consumption, 7-Day Moving Average

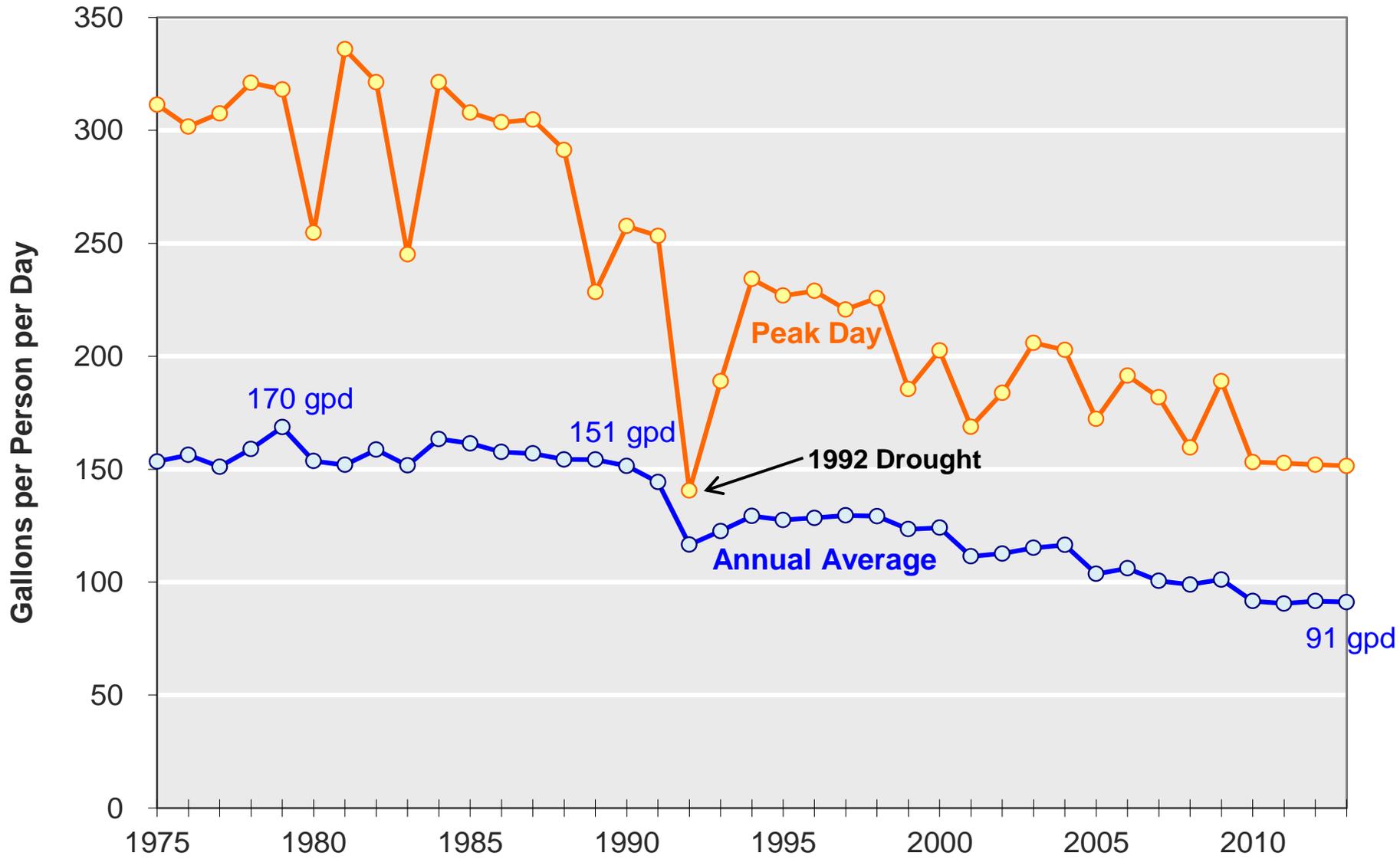
Through March 3, 2014



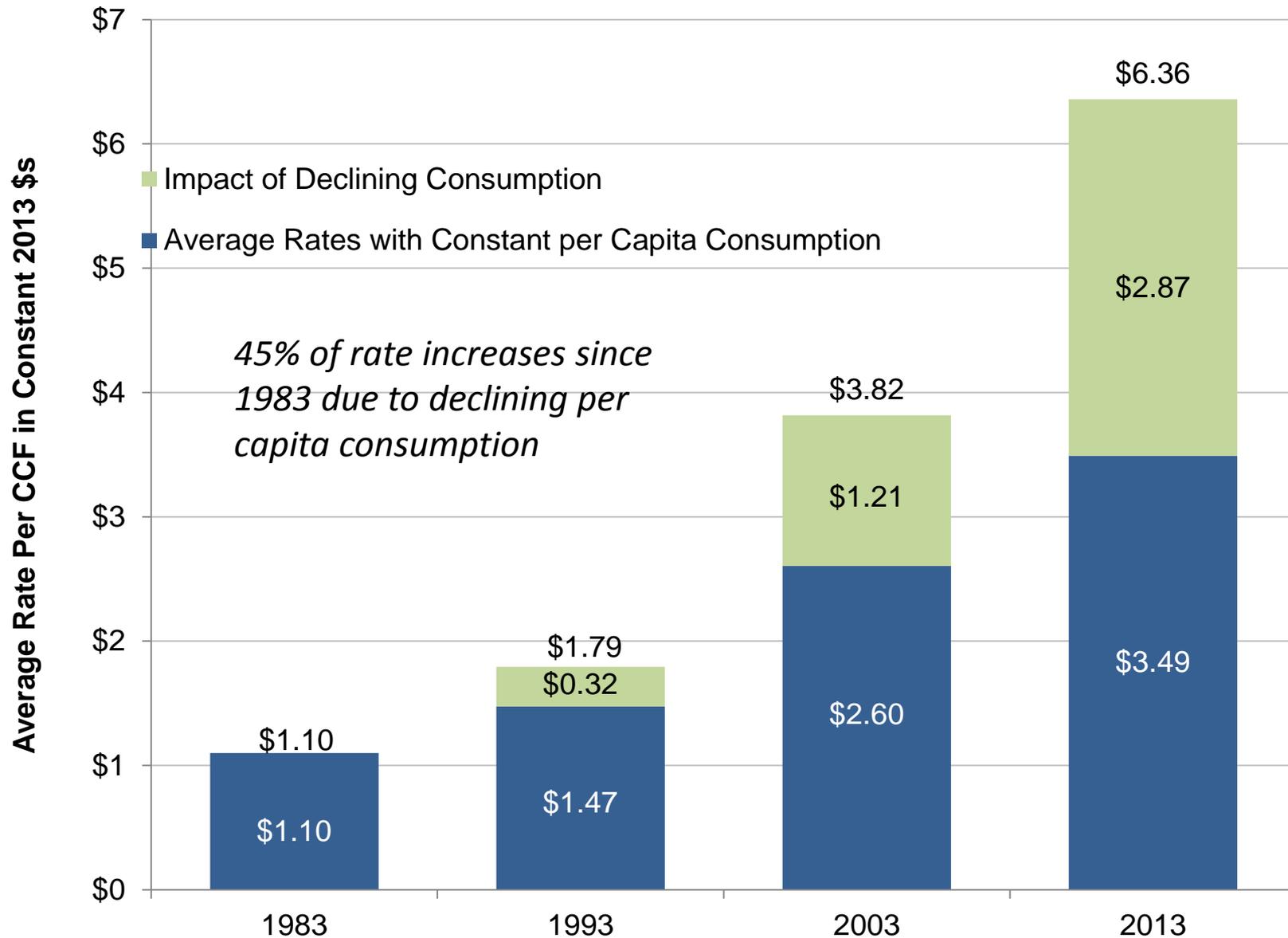
Notes: A. 7-day moving average is calculated using data from the day of and the previous 6 days.

# Peak Day & Annual Average Consumption in GPD per Person

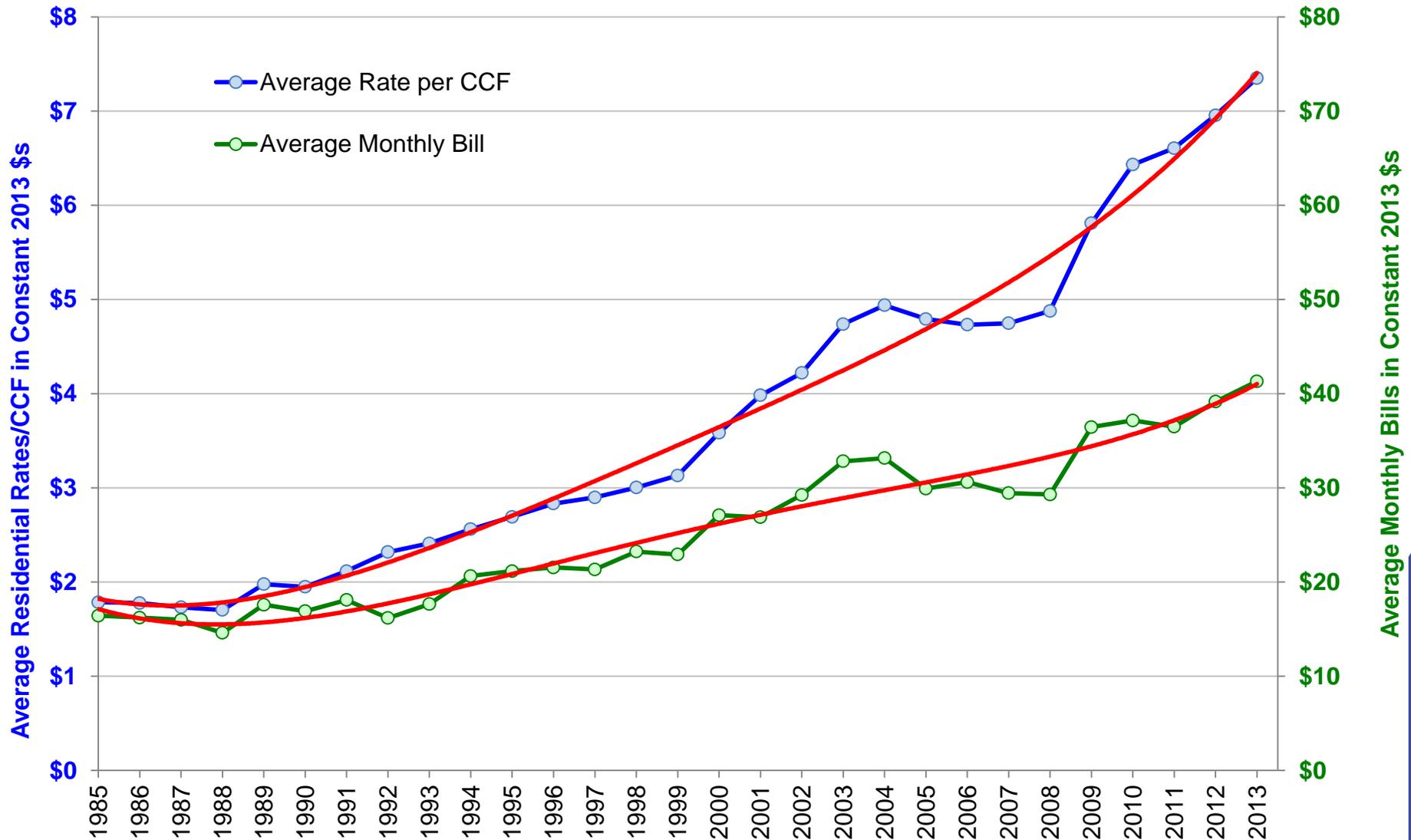
## Seattle Regional Water System: 1975-2013



# Portion of Rate Increases Due to Declining Consumption: 1983-2013



# Average Residential Rates and Bills in Constant 2013 \$s: 1985-2013



# Drinking Water Customer Services & Service Levels

## *Regional System*

- Supply drinking water that meets or exceeds Department of Health regulations
- Respond to 90 percent of high priority drinking water problems within one hour
- Provide in-stream water for fish and meet other tribal, regional, state, and federal commitments
- Achieve goals for water conservation & leakage loss

## *Retail System*

- Meet state requirements for water system pressure
- Limit yearly drinking water outages totaling more than four hours to less than 4 percent of retail customers

## *Wholesale Customers*

- Meet pressure and flow requirements of wholesale drinking water contracts
- Limit unplanned outages in transmission system to within the maximum agreed duration

# Are We Meeting Our Service Levels?

*The short answer is YES*

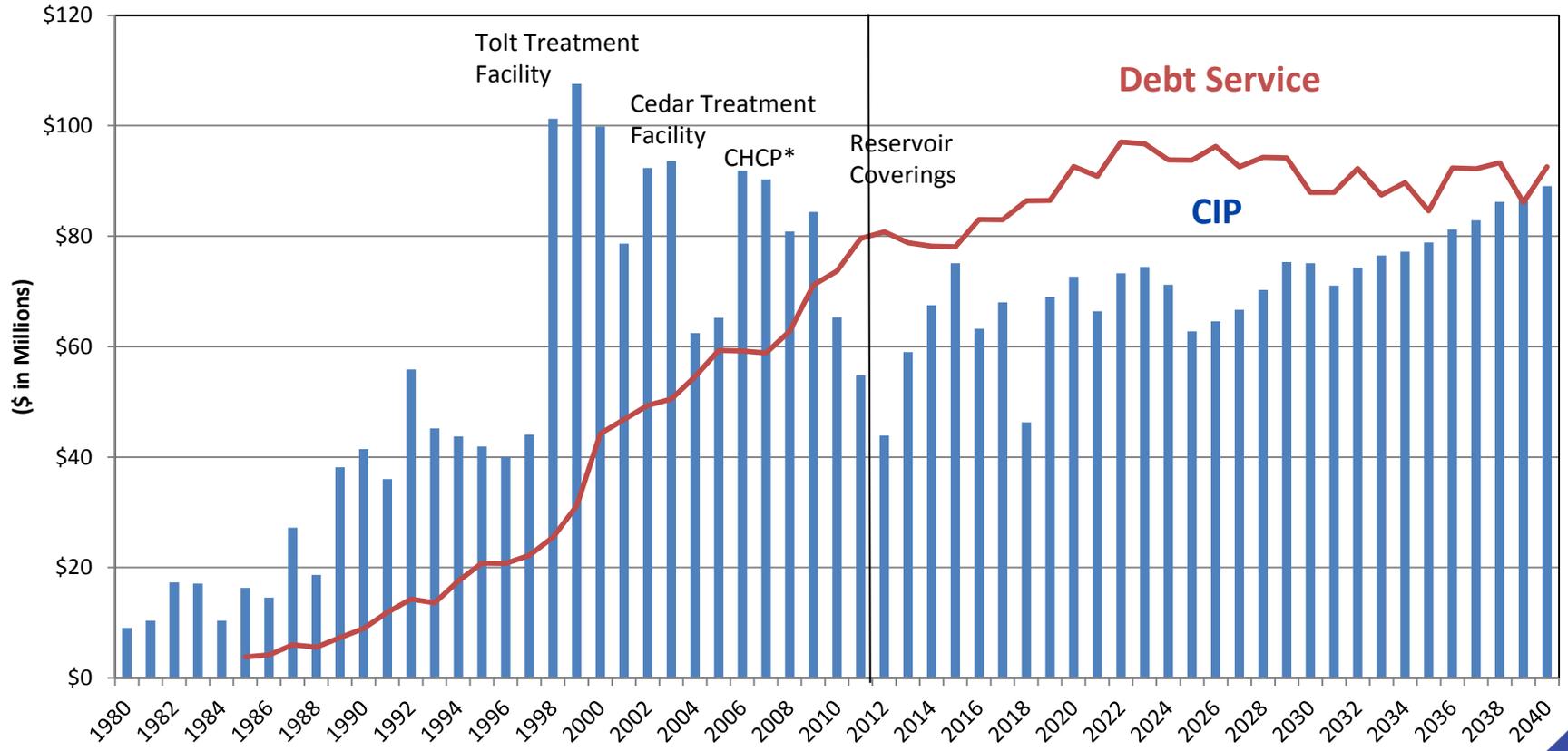
## The longer answer is:

- We have extremely high quality drinking water that we will continue to maintain and protect
- We have an abundant supply of water – enough until 2060 and beyond – for people and fish
- We have a transmission & distribution system that is very reliable
- We respond quickly when problems arise
- We meet our conservation and leakage loss goals



# Drinking Water Investments: Where We Are in Our Investment Cycle

(Graphic Uses 2011 Data)



\* Cedar Habitat Conservation Plan

# Drinking Water Investments: Completed

# Tolt & Cedar Water Treatment Facilities



**Tolt Water Treatment Facility**

# Covered Reservoirs



**Beacon Reservoir covering protected public health and added open space**



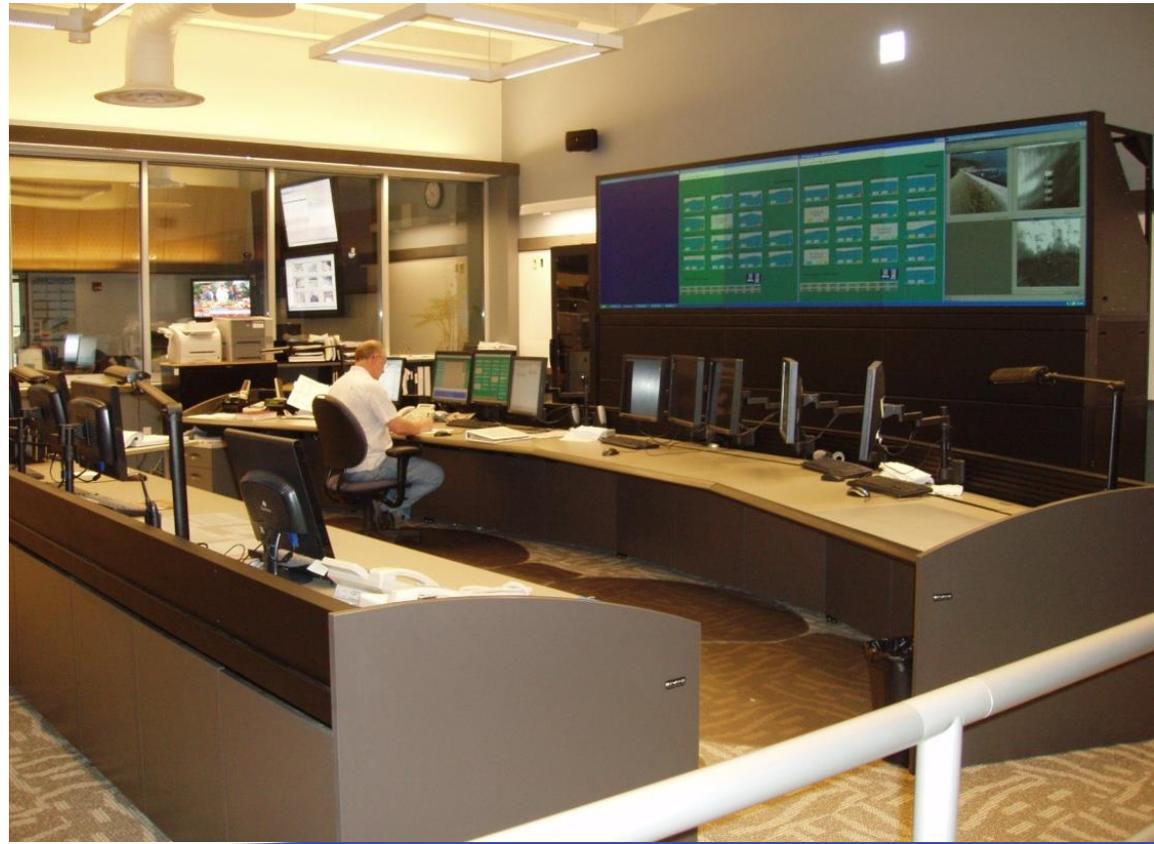
**Lincoln Reservoir covering in Cal Anderson Park**

# System Control Center Improvements

2004



Today



# Drinking Water Investments: Future

# Morse Lake Pump Plant



**Chester Morse Lake on Cedar River**

# Watermain Replacement & Rehab



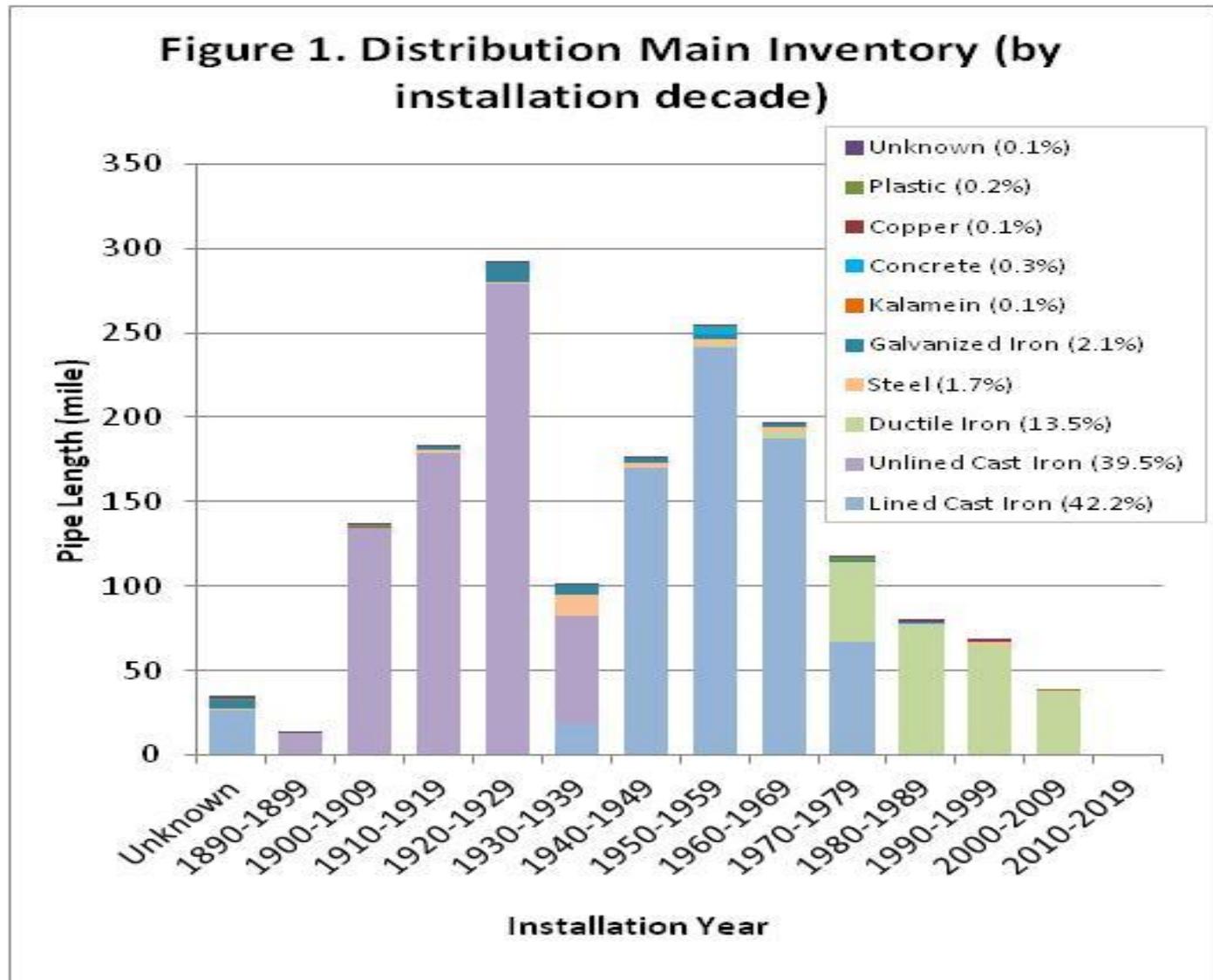
**University Village water main break - 2013**

# Watermain Replacement and Rehab - continued



Extreme case of tuberculation

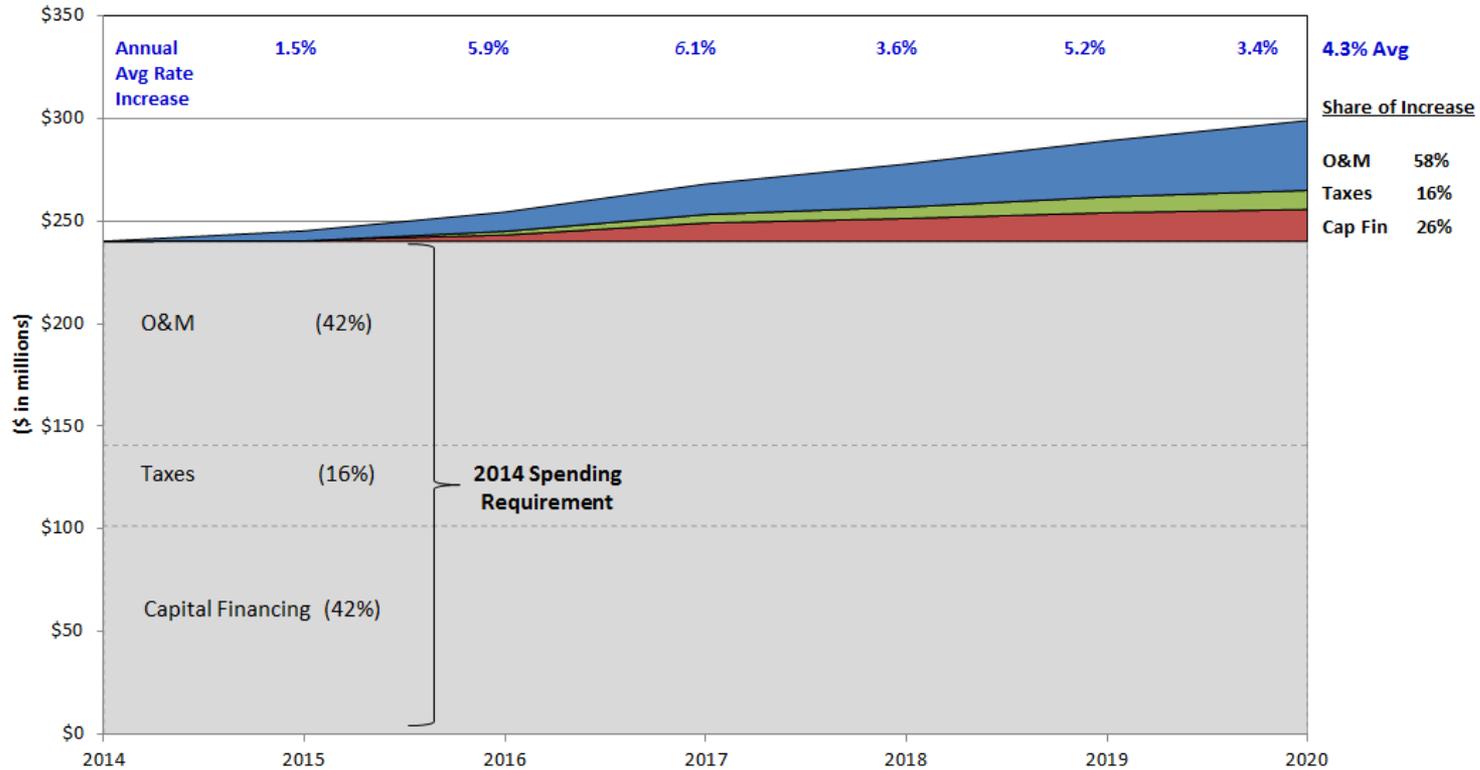
# Overview: Water Distribution Main Age



# Cost of Services: 2015-2020 Baseline

(= current services + meeting firm regulatory requirements)

## Water Fund 2014-2020 Spending Requirement



**Average annual baseline increase = 4.3% from 2015-2020**

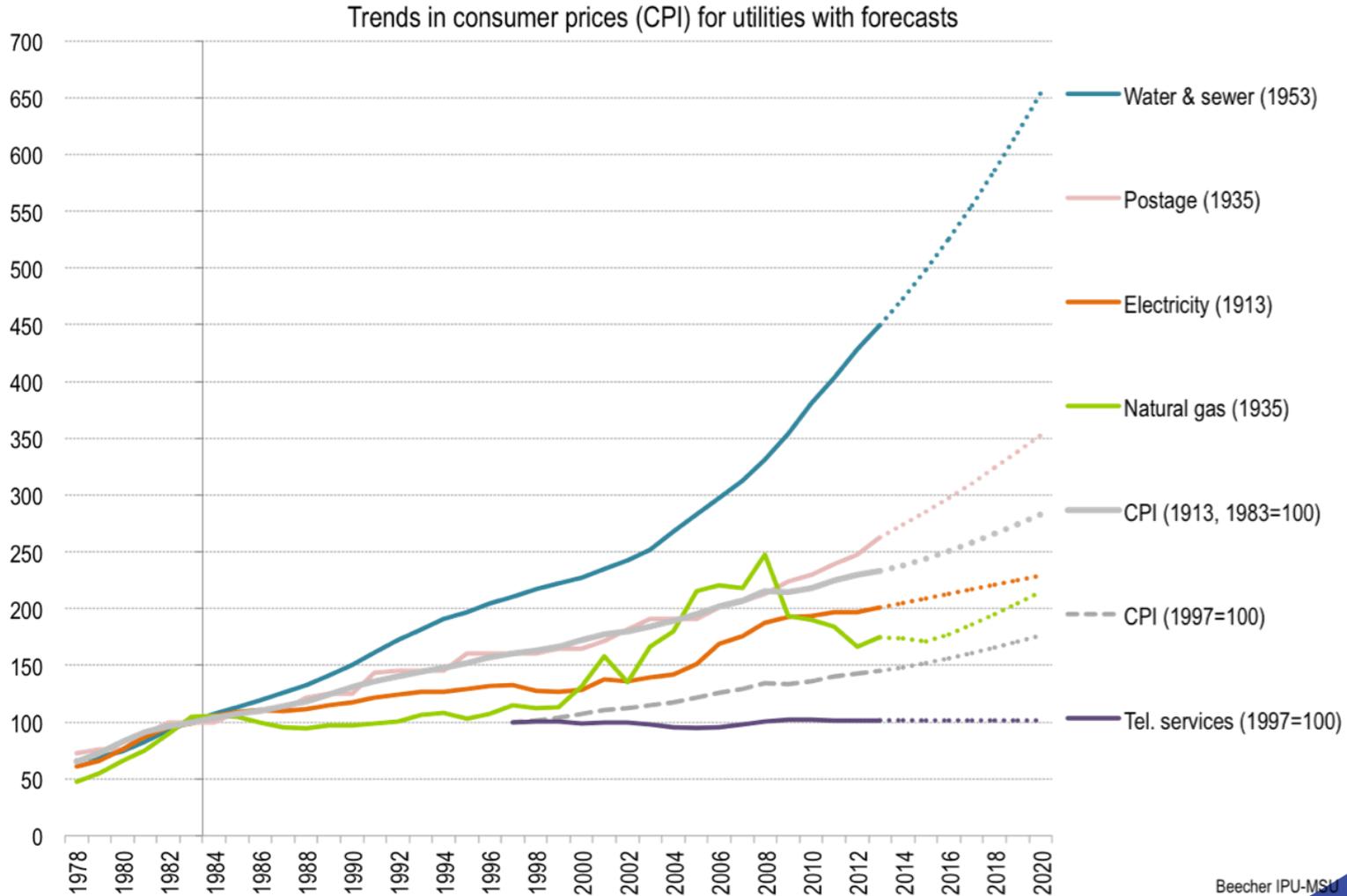
# Cost of Services

In 2020 baseline, average **cost per gallon of water** delivered to your home or business is slightly more than a penny a gallon

Typical residential monthly bill in 2014 = **\$38.93**

Typical residential monthly bill in 2014 for household on low income rate assistance = **\$19.46**

# Trends in Utility CPI



Beecher IPU-MSU