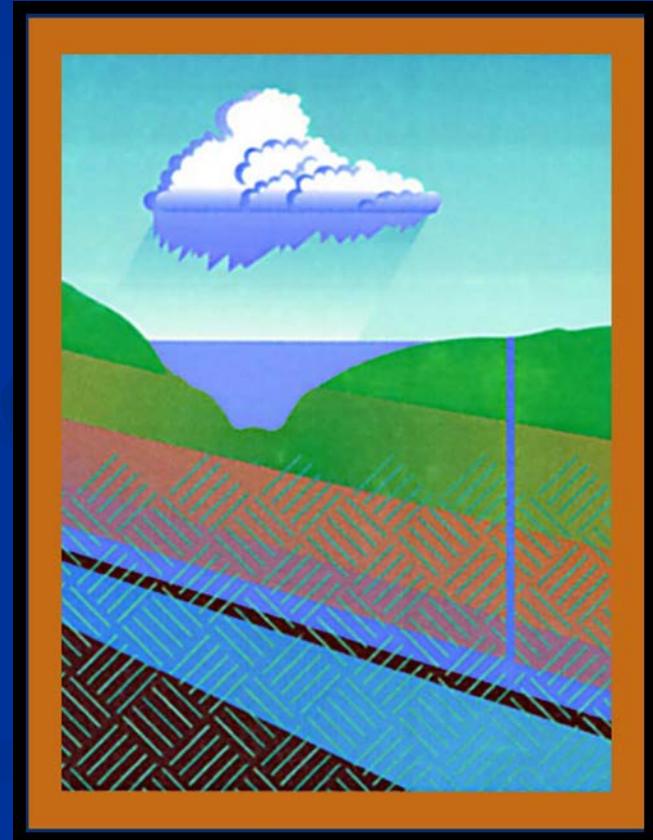


# Regional/Local Planning for Droughts

Governor's Water  
Conference

October 22, 2014



# Goals

## Conservation and Drought Mitigation

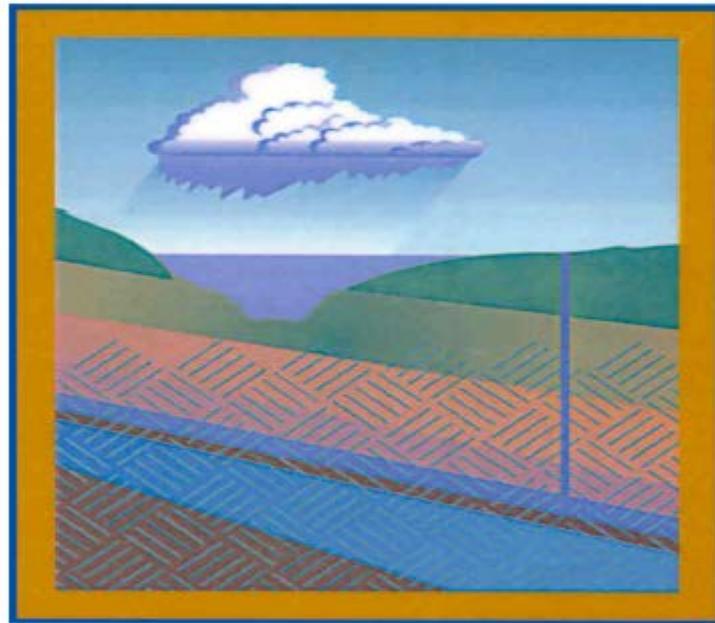
- Goal of the Plan is to encourage conservation and identify triggers of mandatory efforts during drought
- Identify possible alternative supplies for long term reliability

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# City of Norman

## Water Conservation Plan 2014

(As Amended 6-24-2014)



# Conservation Plan

- Source of Supply
  - Amount and Treatment
- Customers – History and Projections
- Customer Demands
- Water Pricing
- Water Management
  - City Efforts
  - Indoor/Outdoor
  - Education
- Drought Responses – Mandatory Conservation

# Conservation

- Metering Program and replacement
- Water Rates – inverted block rate
- Leak Repair and Tracking
- Education – schools, newspapers, bill stuffers, city website, articles, etc.
- Irrigation Ordinances – Rain sensors and freeze gauges

# Conservation

- City Efforts
  - Median irrigation
  - Westwood Golf Course
  - Griffin Park Lake
  - Street Sweeping water
- Water Reuse at the WRF
- Mandatory Odd/Even Irrigation

# Public Education

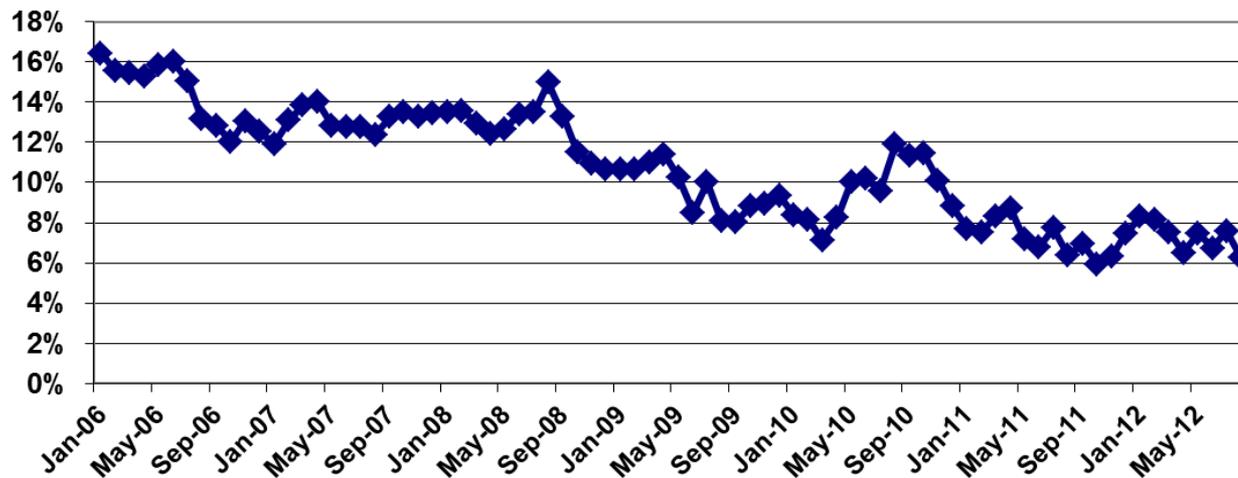


# Leak Detection and Unaccounted for Water

Everyone helps



## Unaccounted For Water



# Griffin Park Irrigation



# Water Reclamation Reuse



Saves  
7 million  
gallons  
per  
month of  
potable  
water



# Gray Water

City of Norman - Ordinance No. O-1112-24

February 28, 2012

## House Bill 1575

- Sponsored by: Scott Martin (House)  
Susan Paddack (Senate)
- Became effective November 1, 2011

# Gray Water

- **What is Gray Water:**
  - Household wastewater that comes from clothes washing machines, bathroom showers, bathroom sinks.
- **Gray water is not:**
  - Water from toilets
  - wastewater from kitchen sinks
  - wastewater from kitchen dishwashers
  - laundry water from the washing of material soiled with human excreta, such as diapers

# Gray Water

- What can be done with gray water?

A maximum of 250 gallons per day of private residential gray water originating from a residence may be discharged for the household gardening, composting or landscape irrigation of the resident **subject to certain conditions.**

# Drought



# Drought and Mandatory Conservation

- Triggered by Demand or Supply and Forecast
- Conservation Measures Clear and Understandable
- Several Progressive Steps
- Equally Distributed
- Enforceable

# Drought and Mandatory Conservation

## Step 1

Triggers	Restrictions
Common Sense	Odd/Even Watering Public Education

# Drought and Mandatory Conservation

## Step 2

Triggers	Restrictions
Demand > Supply	Irrigation 2x week
Lake Level	Splash pad reduced
COMCD	Commercial car wash only
Equipment/Distribution	Not establish new Landscape (CO)
	Hand watering permitted

# Drought and Mandatory Conservation

## Step 3

Triggers	Restrictions
Demand > Supply	Irrigation <b>1xweek</b>
Lake Level	Splash pad <b>OFF</b>
COMCD	Commercial car wash only
Equipment/Distribution	Not establish new Landscape (CO)
<b>Pressure issues</b>	Hand watering permitted
	<b>No construction water</b>

# Drought and Mandatory Conservation

## Step 4

Triggers	Restrictions
	Hand watering <b>ONLY</b>
Lake Level	Splash pad off
COMCD	Commercial car wash <b>w/ recycling only</b>
Equipment/Distribution	

# Drought and Mandatory Conservation

## Step 5

Triggers	Restrictions
Lake Level	<b>No outdoor watering</b>
COMCD	

# 10% Reduction = Specific Actions

- Reduce one laundry load per week
- Reduce shower time by 1 to 2 minutes
- Turn off the faucet while shaving
- Turn off the faucet while brushing teeth
- EPA 'water sense' label on items saves up to 20% of water use



2012

OCWP

*Task 3 – Develop & Evaluate Supply Alternatives*



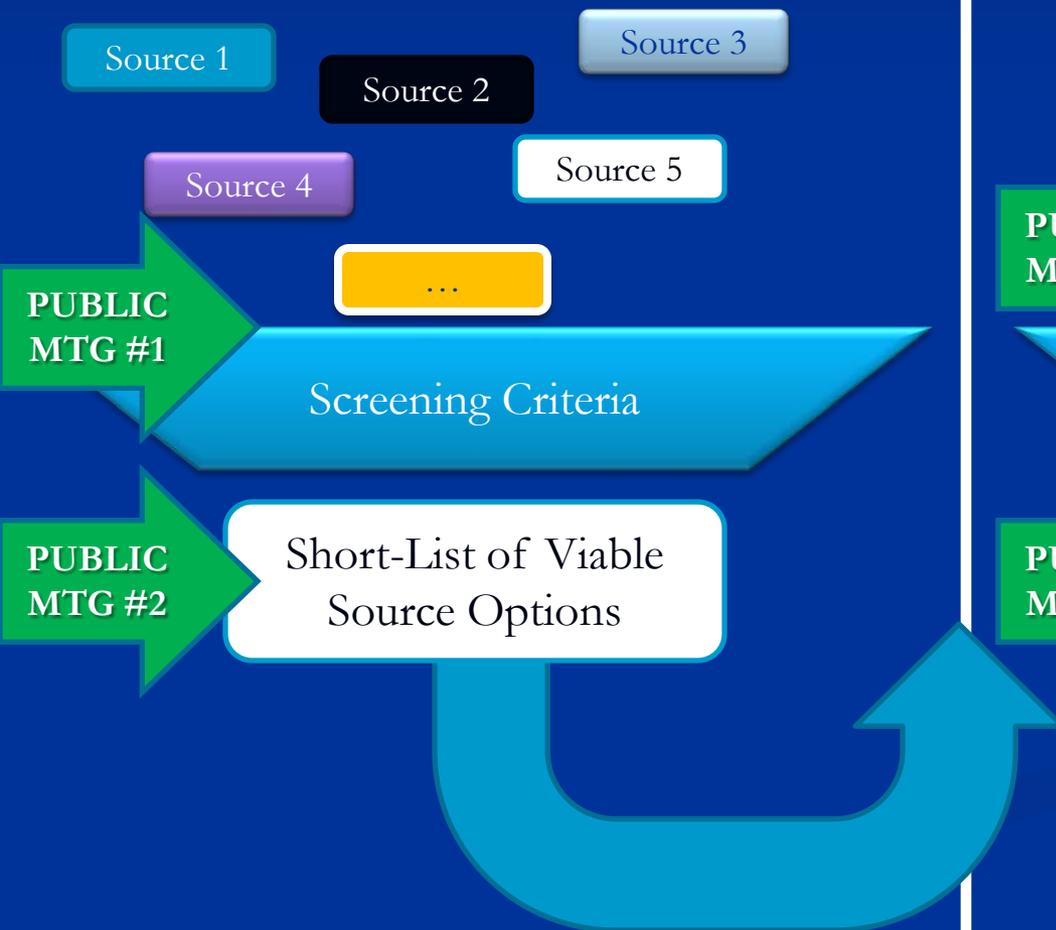
# 2060

## Strategic Water Supply Plan

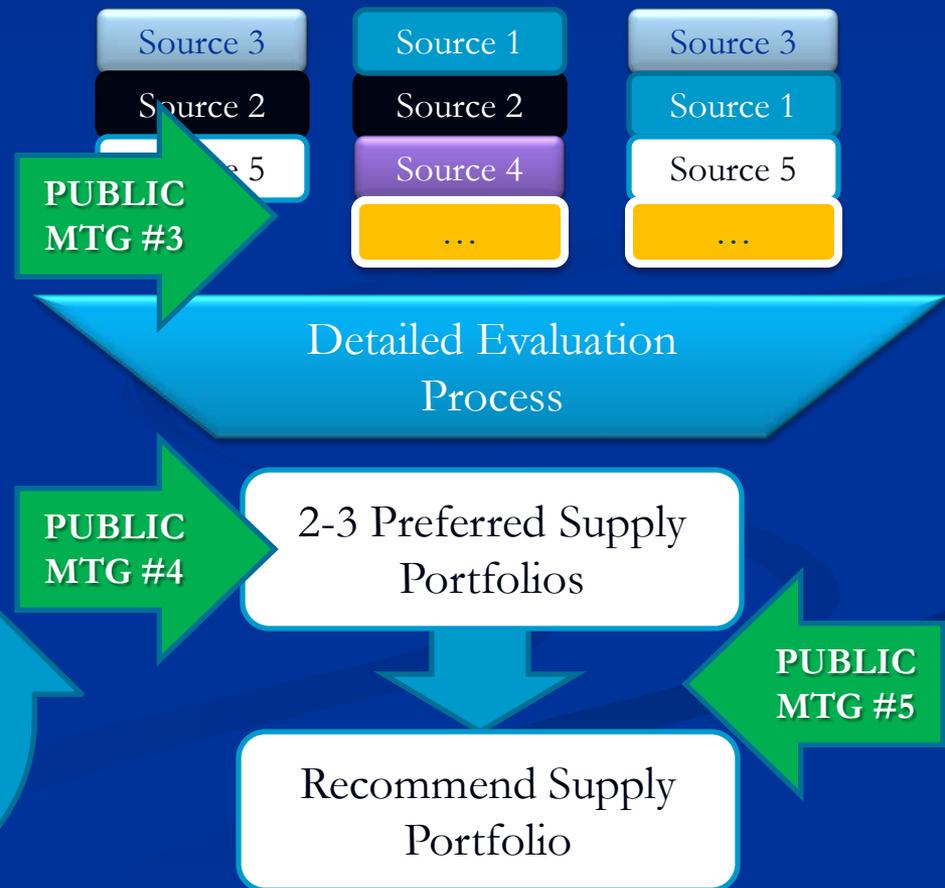


# SWSP Planning Process

## Source Options (Phase 1)

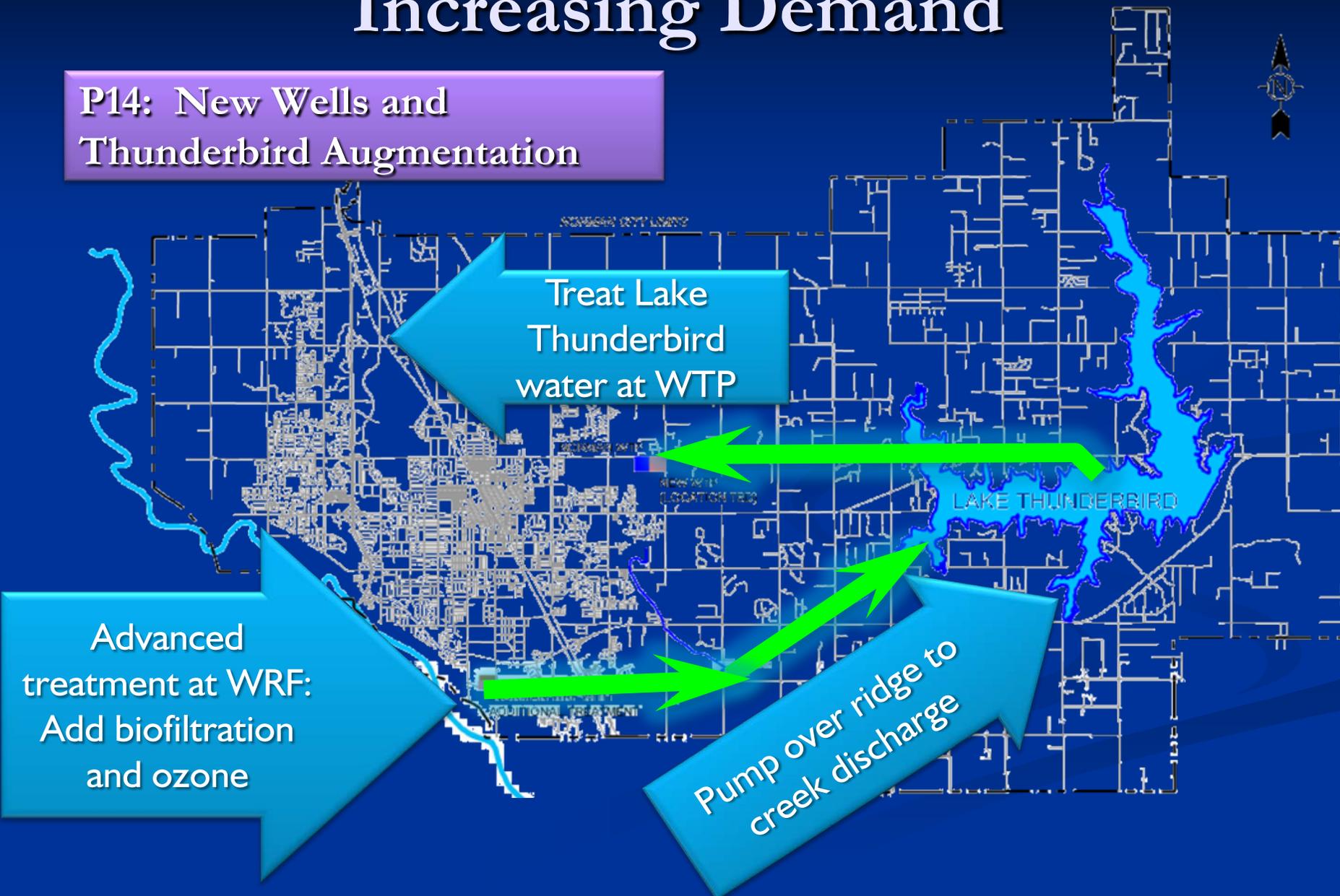


## Supply Portfolios (Phase 2)



# Key Difference: Source of Water for Increasing Demand

P14: New Wells and Thunderbird Augmentation



Treat Lake Thunderbird water at WTP

Advanced treatment at WRF: Add biofiltration and ozone

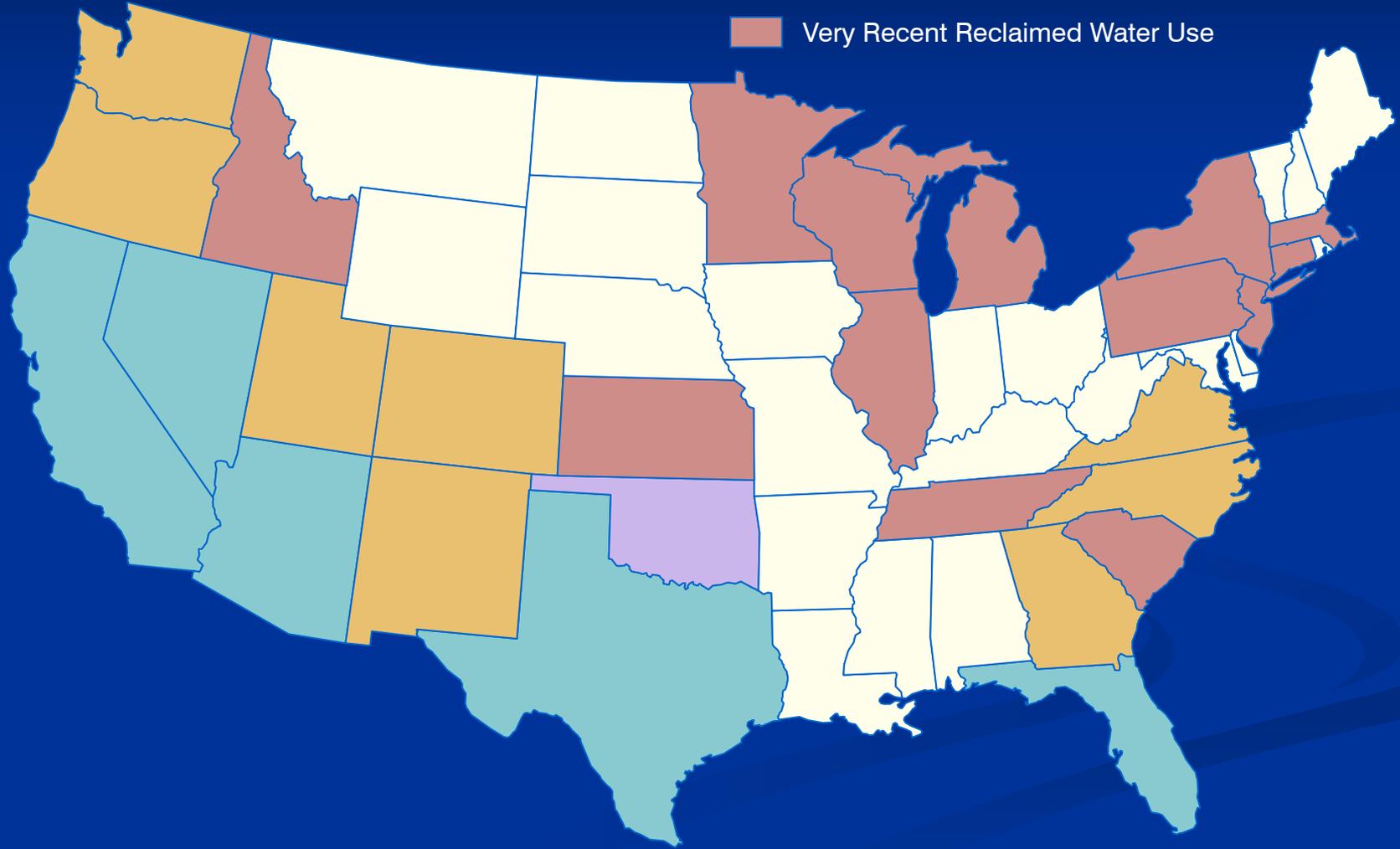
Pump over ridge to creek discharge

# A little reuse water history...

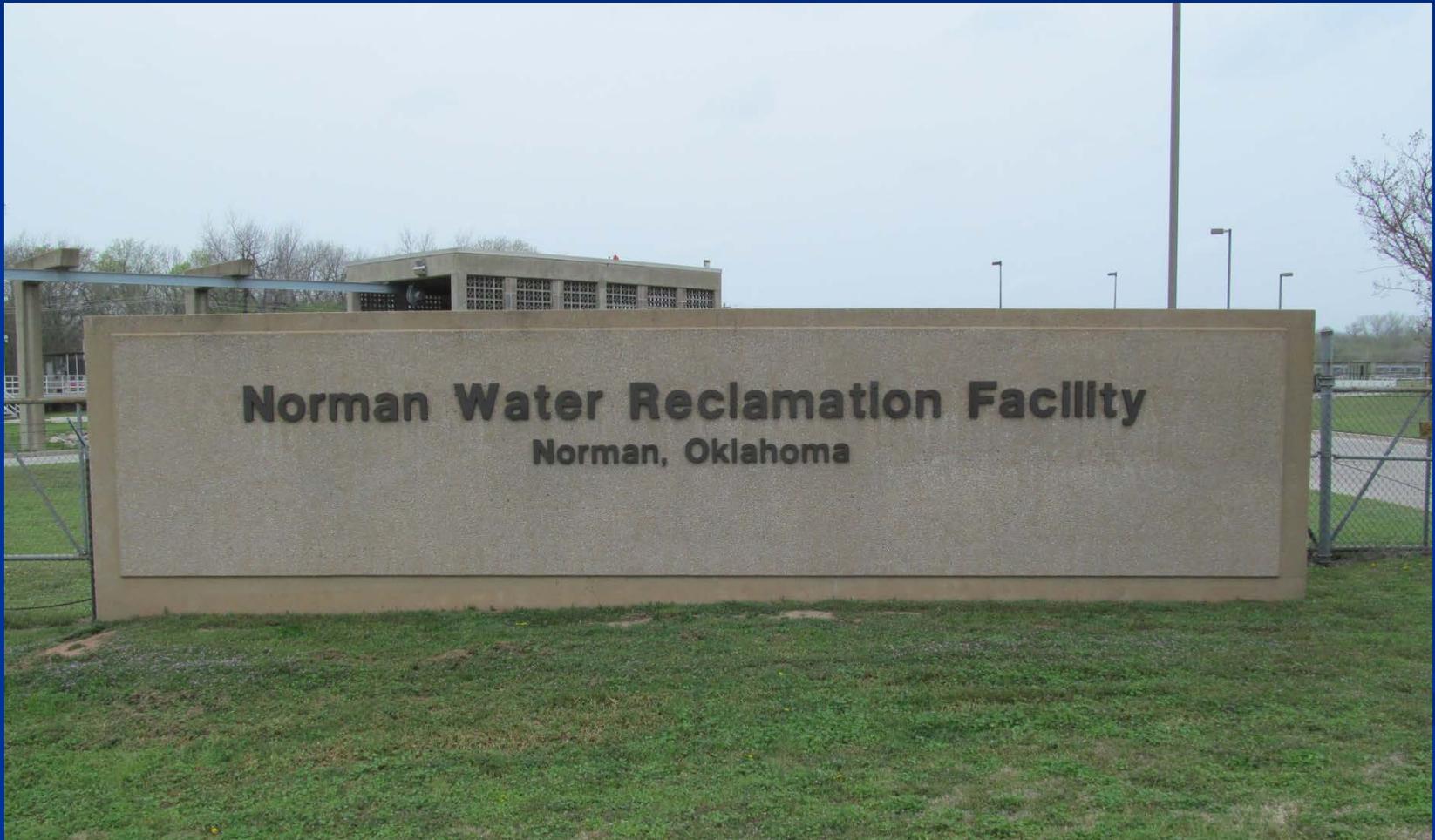
- 1918** - First regulations for reclaimed water adopted in California
- 1926** - First WW reclamation facility in the U.S. constructed at Grand Canyon National Park – toilet flushing, irrigation, cooling
- 1929** - Pomona, CA began using reclaimed water for landscape and garden irrigation
- 1932** - Large-scale landscape irrigation at Golden Gate Park
- 1942** - Bethlehem Steel in Baltimore, MD uses secondary effluent for cooling
- 1962** - First deliberate recharge of reclaimed water into potable groundwater supply in Los Angeles area
- 1976** - Direct injection of reclaimed water for groundwater recharge initiated by Orange Co. Water District

# National reuse trends

- Long-Term Reclaimed Water Use
- Somewhat Recent Reclaimed Water Use
- Very Recent Reclaimed Water Use

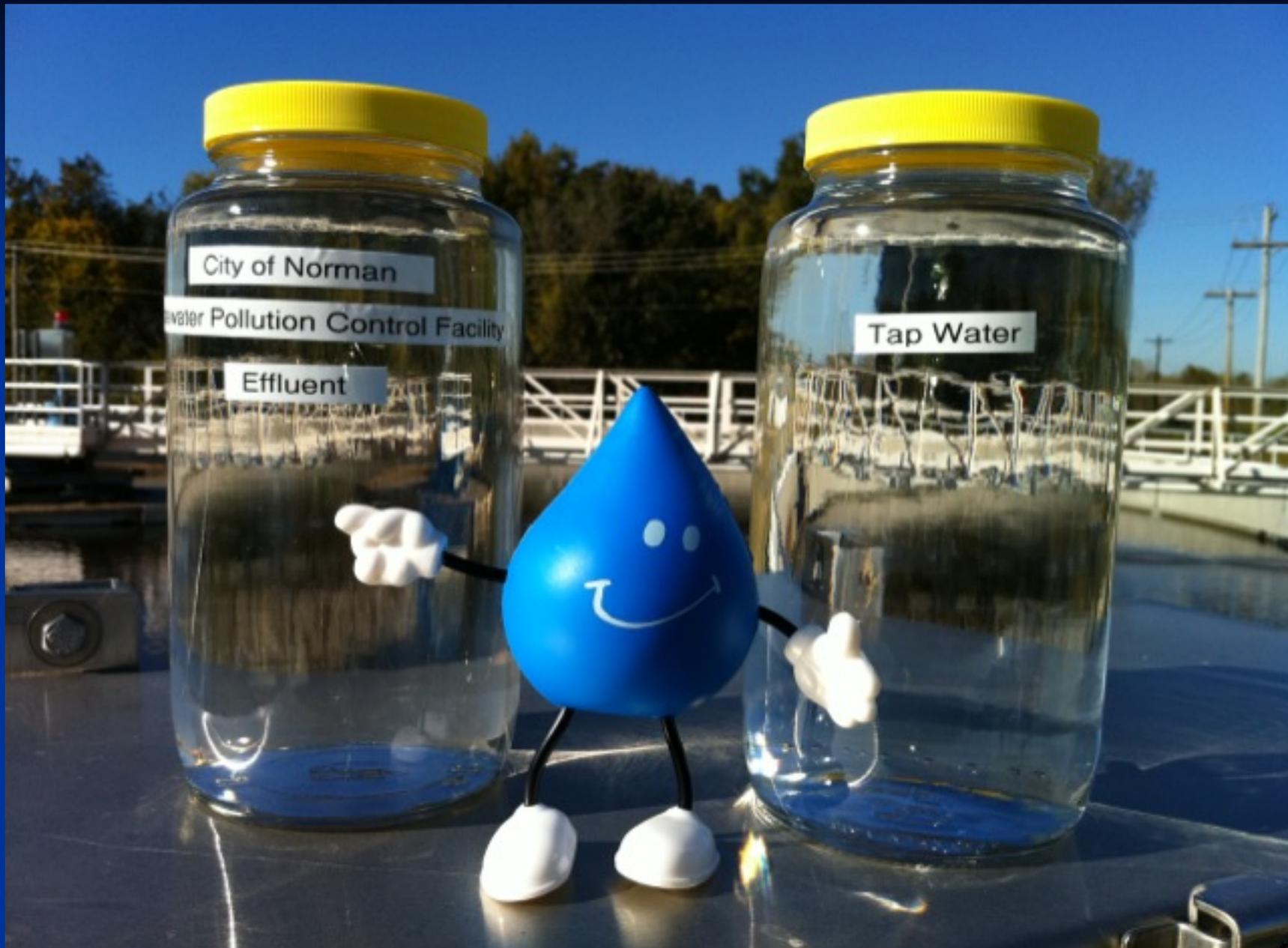


# What's in a Name



# Bio-monitoring or Visible Examples





**Make  
Every  
Drop Count**

