Welcome! We Will Begin Shortly.

- **Login or Audio Troubles**
  - Please type questions in chat window for help.
  - If you cannot hear the audio through the computer, you can listen in by calling:

    Dial in by phone

    +1 202-991-0477,,386990209# United States, Washington

    Find a local number

    Phone conference ID: 386 990 209#
- **Questions**
  - There will be a discussion/Q&A session at the end of the presentation.
  - Submit questions to the organizer and panelists via the chat window
- **Presentation Slides & Recording**
  - Presentation slides will be sent to all participants.
  - This session will be recorded.
- **Notes**
  - To improve audio quality, all attendees are muted upon entry.

Industrial, Commercial, and Institutional (ICI/CII) Water Conservation Programs

Kersey Manliclic, EPA WaterSense
Kathy Fonville, North Texas Municipal Water District
Ted Pick, North Texas Municipal Water District
Alicia Lee, City of Dallas
Annika Schiller, Plummer

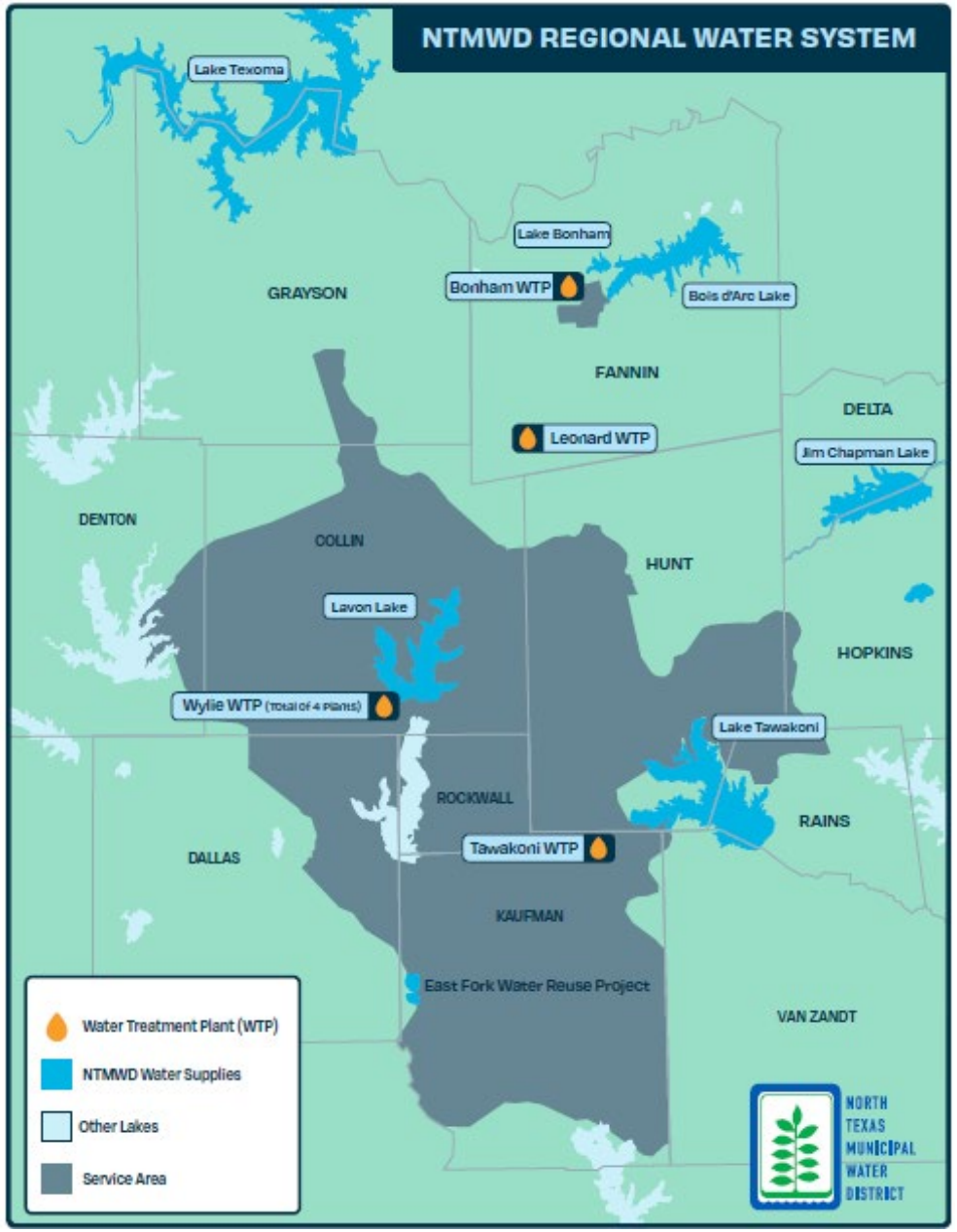
EPA WaterSense

June 25, 2025

North Texas Municipal Water District

In Texas, man-made reservoirs are needed to control flooding and to collect and store surface water for treatment and delivery to meet regional water needs.

Lavon Lake was constructed by the U.S. Army Corps of Engineers in the '50s to serve NTMWD communities and is the District's largest water source.



NTMWD Infrastructure

WATER SERVICES

- 20 MAJOR RAW AND TREATED WATER PUMP STATIONS
- 7 WATER TREATMENT PLANTS 946 MILLION GALLONS/DAY (MGD) CAPACITY
- 695+ MILES OF WATER TRANSMISSION LINES

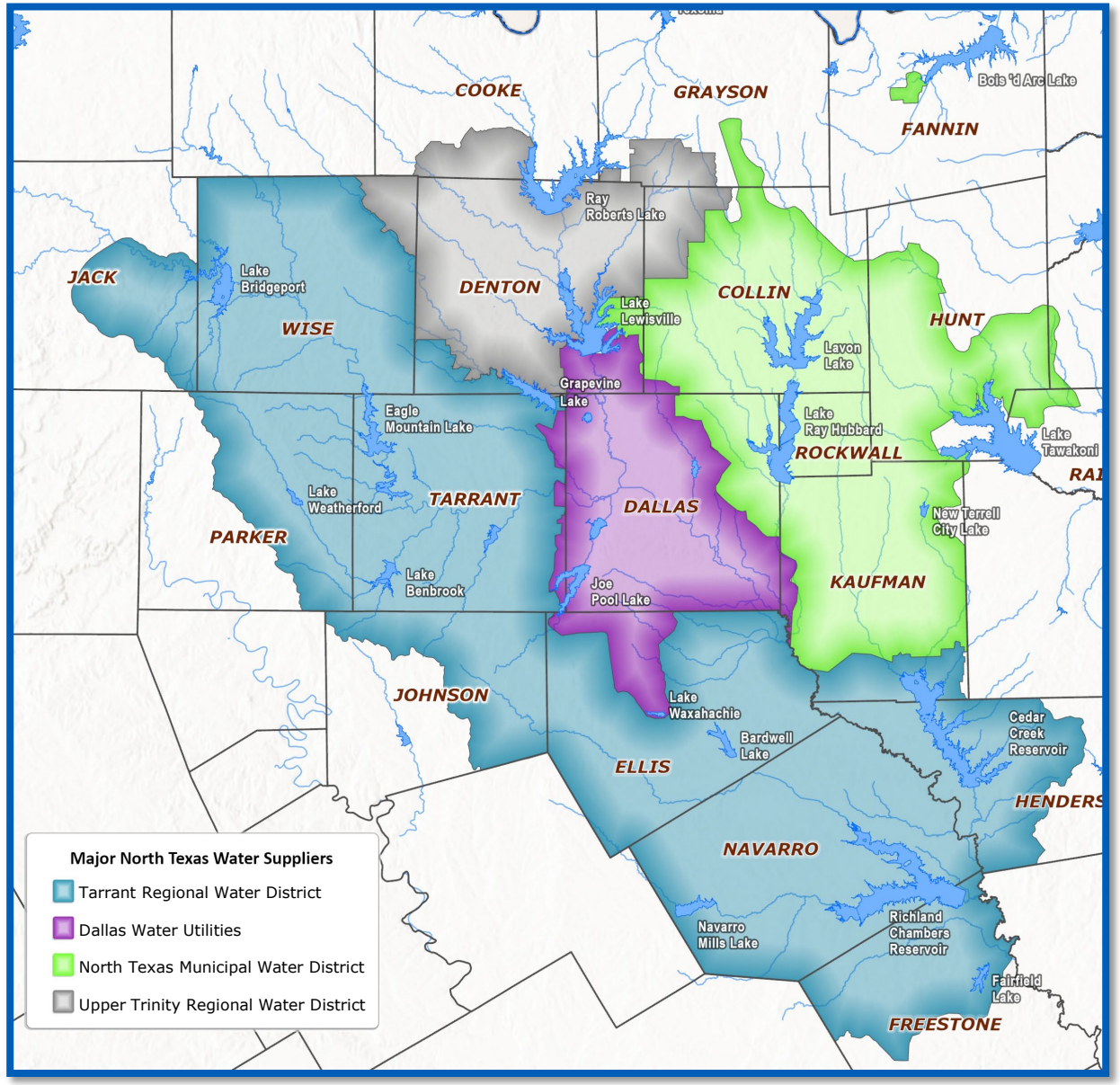
WASTEWATER SERVICES

- 12 WASTEWATER TREATMENT PLANTS
- 237+ MILES OF LARGE-DIAMETER WASTEWATER PIPELINES
- 163+ MGD WASTEWATER TREATMENT CAPACITY

SOLID WASTE SERVICES

- 3 TRANSFER STATIONS PERMITTED TO PROCESS UP TO 3,395 TONS OF SOLID WASTE PER DAY
- AROUND 1 MILLION TONS OF SOLID WASTE DISPOSED EACH YEAR

Regional Water Providers



Dallas Water Utilities

North Texas Municipal Water District

Tarrant Regional Water District

Upper Trinity Regional Water District

These four water providers serve approximately 200 communities and more than 7.5 million people.

Water is Essential for Economic Growth

Richardson

local profile

Anna's New 1,800-Home Community Set To Transform Northern Collin County

Construction is scheduled to commence in the fall of 2025

COMMUNITY IMPACT

DATA: McKinney sees $1.3B of new construction in 2024

McKinney

Fate

The Dallas Morning News

Three Collin County cities top list of nation's fastest-growing communities

WFAA abc

Small towns east of Dallas are growing fast, here's why

The charming towns of Royse City and Fate are growing quickly, offering small-town benefits and affordable housing.

Rowlett

Year	1956	1974	1994	2015	2030	2040	2060	2080
Population Served	32,000	200,000	800,000	1.6 M	2.5 M	3 M	4 M	4.5 M

Census Numbers Highlight Rapid Growth

Population Served by NTMWD

2020
2 Million

2024
2.3 Million

Fastest-Growing U.S. Counties (People Added), 2024

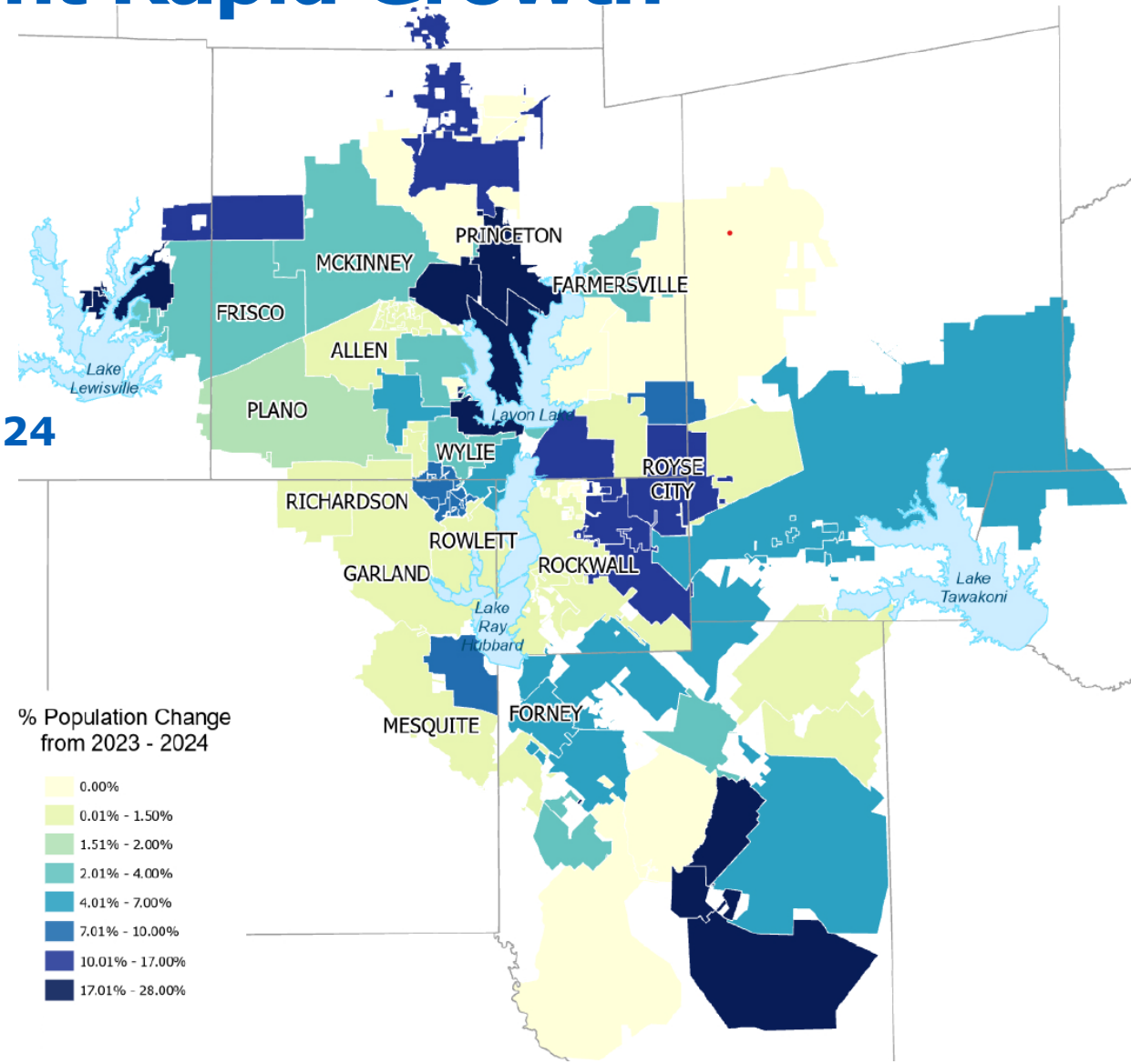
4. Collin County (+46,694)

Fastest-Growing U.S. Counties (%), 2024

2. Kaufman County (+6%)

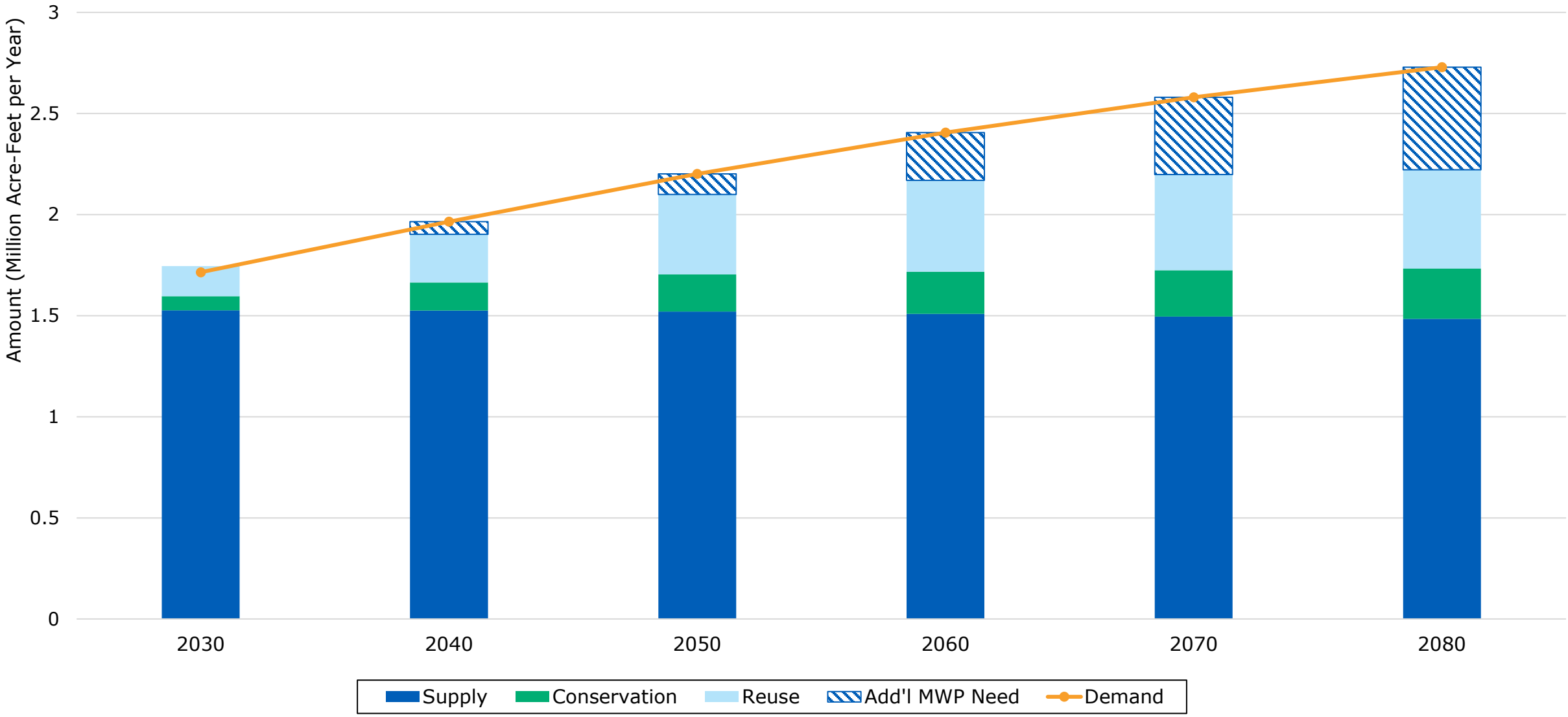
Fastest-Growing U.S. Cities (%), 2024

1. Princeton (+30.6%)
5. Anna (+14.6%)
8. Fate (+11.4%)
11. Melissa (+11%)



Source: U.S. Census Bureau

Long-Range Planning (LRP)



NTMWD Water Conservation Key Initiatives

Water Is Awesome
Regional Campaign

Residential Irrigation
Evaluation Program

Water My Yard
Weekly Watering Advice

Refresh of Youth
Education Program

Water Conservation
Visioning Project

Industrial, Commercial &
Institutional (ICI) Program

ABOUT WATER & ENERGY EFFICIENCY

At our core we are water and energy conservationists, and we operate in the real world where making the case to conserve water and energy makes economic sense for your business.

WEES PROVIDES A VARIETY OF IN-DEPTH SERVICES INCLUDING:

> EXAMINE EACH QUESTION IN TERMS OF WHAT IS ETHICALLY AND AESTHETICALLY RIGHT, AS WELL AS WHAT IS ECONOMICALLY EXPEDIENT

– ALDO LEOPOLD –

WHO WE ARE

328 Facilities

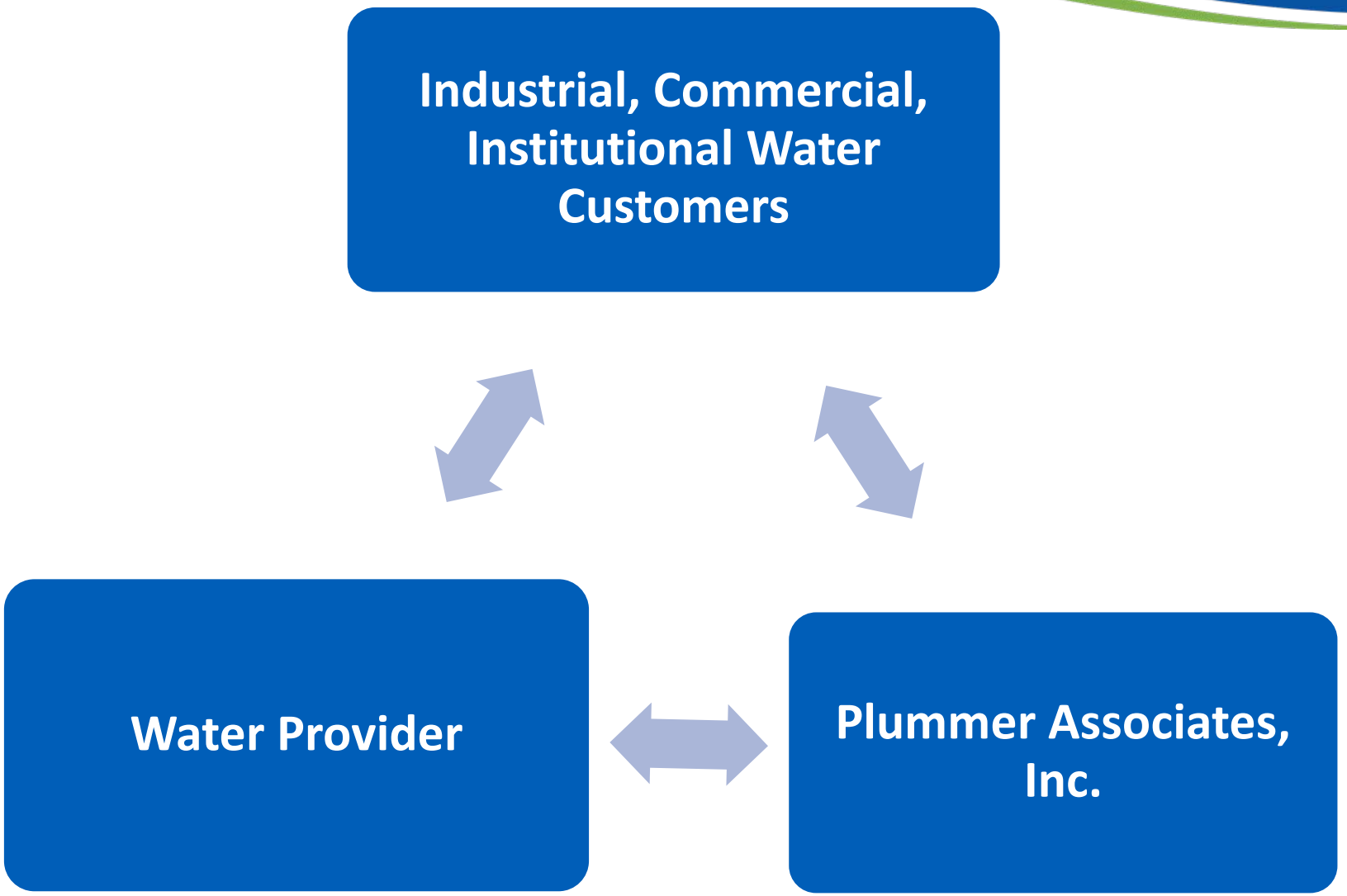
2,267 Buildings

1.1 Billion Gallons Saved Annually

Water Efficiency Opportunity Surveys

- Reduce Water Consumption
- Reduce loss and waste of water
- Extend life of current water supply
- Improve efficiency in use of water
- Efficient outdoor water use
- Recycling and reuse of water

Water Efficiency Opportunity Surveys



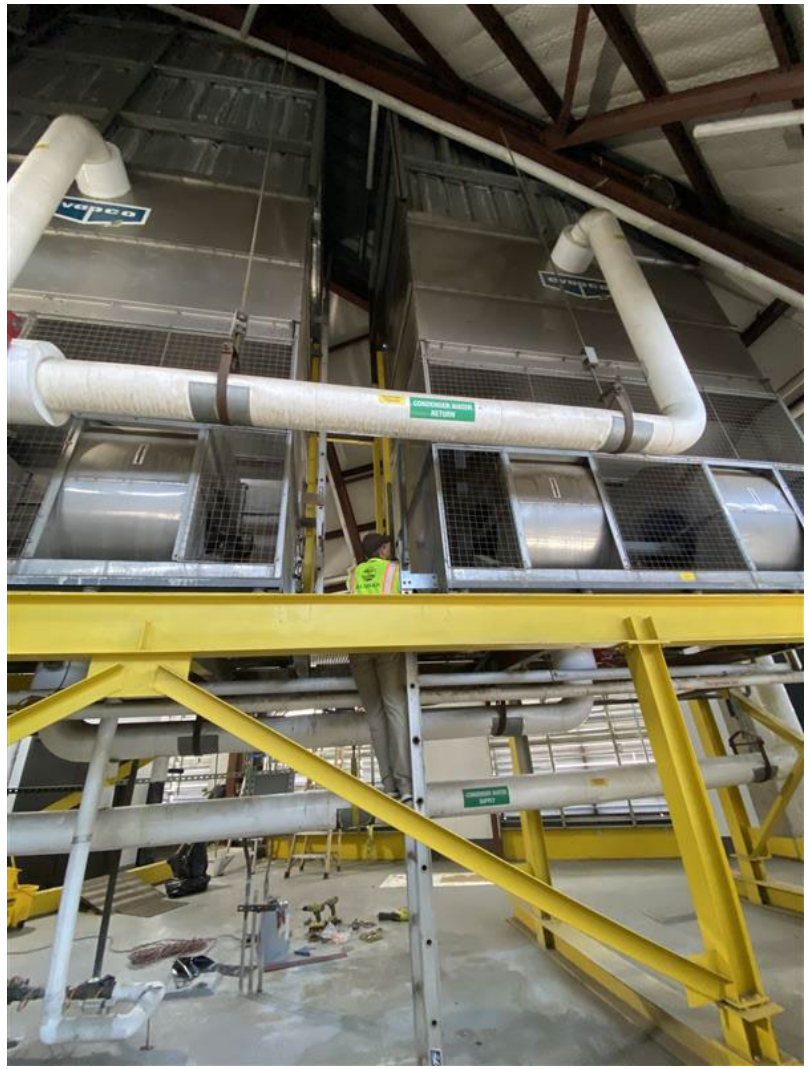
Who is the optimal survey customer?

- Industrial, Commercial, Institutional & Multifamily water account holders
- Facilities built prior to 2014, with preference to those built before 1994
- Water-using fixtures and systems have not been updated
- Looking for ways to improve water-using processes, fixtures, and equipment
- Includes cooling towers, boilers, irrigation, and reuse systems

Who are our survey participants?

- Restaurants
- Shopping Centers
- Medical Offices
- Warehouses
- Car Washes
- Apartments
- University Campuses
- K-12 Schools
- Hospitals
- Office Buildings
- Warehouses
- Manufacturing Facilities

And many more…



Four step process

Report

- Facility Information
  - Water/Sewer Rates
  - Historical water use
  - Water balance
- Fixtures
  - Fixture flow rates and use
- Additional Water Uses
  - Cooling Towers
  - Leaks and Losses
  - Irrigation
- Recommendations
  - Water savings in gallons and dollars
  - Project Cost
  - ROI

Three CASE STUDIES

SYNOPSIS OF PROCESS & RESULTS

WHEN: Summer 2023

WHERE: 30 buildings

WHY: Develop near-future and long-term sustainability cost-saving measures

HOW: Used results to identify more impactful areas

A. Fixtures:

Facility assessment for bond issue – Facility renovation

B. HVAC Equipment:

Cooling Tower Cost – Work with City, chemical treatment vendor, consultant to implement monitoring solutions

Recommendations

Recommended Conservation Measure	Estimated Annual Water Savings (gal/yr.)	Value of Estimated Annual Water Savings	Estimated Project Cost	Number of Proposed Retrofits	Simple Payback Period (yrs.)
DOMESTIC					
High Efficiency Toilet Retrofit	4,323,791	$42,991	$339,500	970	7.9
High Efficiency Urinal Retrofit	1,238,395	$12,199	$121,100	346	9.9
High Efficiency Lavatory Faucet Aerator Retrofit	492,996	$4,760	$2,178	242	0.5
High Efficiency Non-Lavatory Faucet Aerator Retrofit	1,573,210	$15,540	$14,454	1,606	0.9
High Efficiency Showerhead Retrofit	91,545	$753	$2,023	119	2.7
APPLIANCES					
Food Disposer(s)	8,206,414	$81,740	$21,300	71	0.3
HEATING, VENTILATION, AND COOLING (HVAC)					
Cooling Tower(s)	1,539,593	$15,205	$0	6	0.0
TOTAL WATER CONSERVATION RECOMMENDATIONS					
ALL	**17,465,944**	**173,188**	**500,555**	**3,360**	**2.9**

Higher education school

SYNOPSIS OF PROCESS & RESULTS

WHEN: Summer 2023

WHERE: 13 buildings

WHY: Develop near-future and long-term sustainability cost-saving measures

HOW: Used results to identify more impactful areas

Recommendations

Recommended Conservation Measure	Estimated Annual Water Savings (gal/yr.)	Value of Estimated Annual Water Savings	Estimated Project Cost	Number of Proposed Retrofits	Simple Payback Period (yrs.)
RECOMMENDED CONSERVATION MEASURES					
High Efficiency Toilets	2,748,098	$36,192	$40,725	181	1.1
High Efficiency Urinals	762,233	$10,039	$24,150	69	2.4
High Efficiency Showerheads	68,892	$907	$935	55	1.0
High Efficiency Lavatory Faucet Aerators	595,730	$7,846	$1,618	174	0.2
High Efficiency Kitchen and Handwash Faucet Aerators	41,492	$547	$465	50	0.9
Installation of Scrapper Baskets	133,056	$1,752	$500	2	0.3
Fixing of Leaking Fixtures	15,000	$198	$200	5	1.0
TOTAL WATER CONSERVATION RECOMMENDATIONS					
ALL	**4,364,500**	**$57,481**	**$68,593**	**536**	**1.2**

SYNOPSIS OF PROCESS & RESULTS

WHEN: Fall 2021

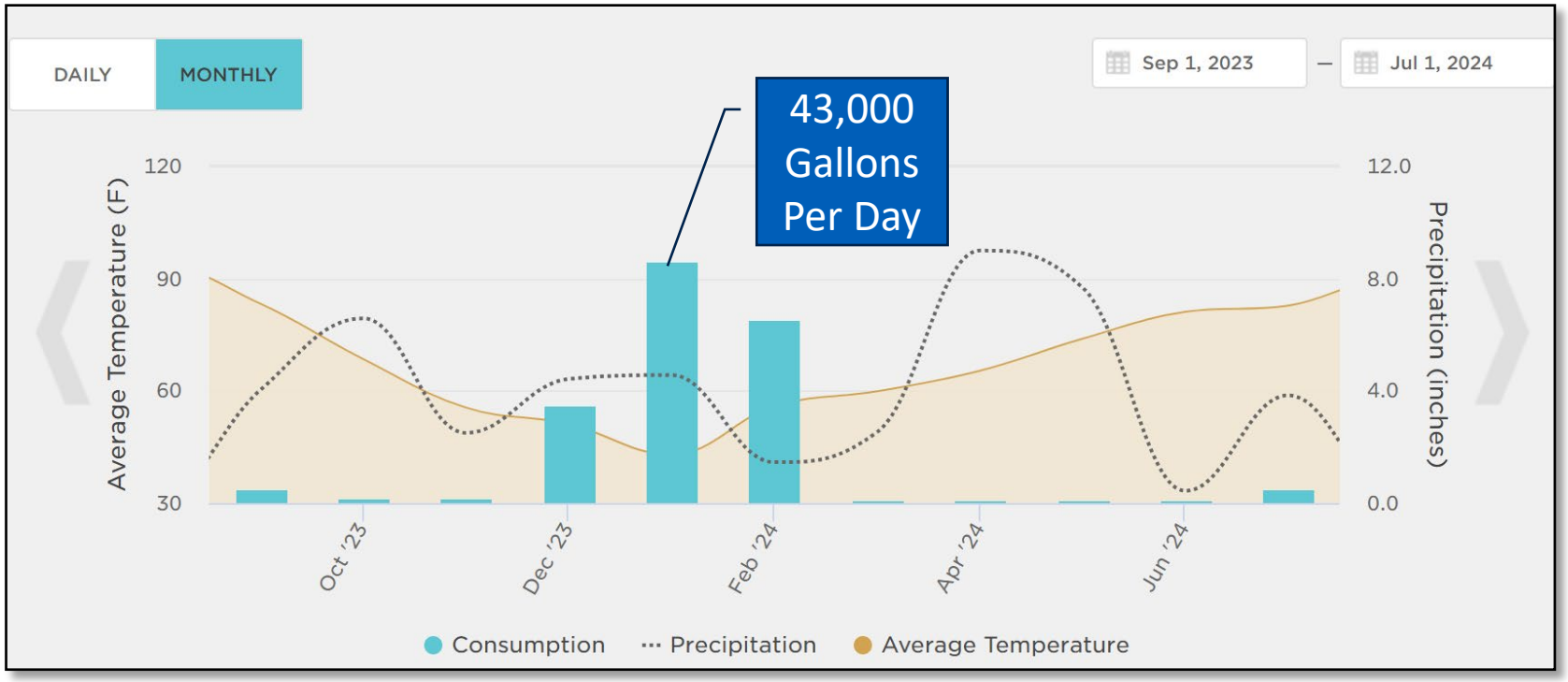
WHERE: 3 buildings

WHY: Evaluate the Efficiency of all buildings

Recommendations

Recommended Conservation Measure	Estimated Annual Water Savings (gal/yr.)	Value of Estimated Annual Water Savings	Estimated Project Cost	Number of Proposed Retrofits	Simple Payback Period (yrs.)
DOMESTIC					
High Efficiency Toilet Retrofit	750,750	$4,158	$85,500	380	20.6
Toilet Flush Valve Diaphragm Replacement	366,366	$1,993	$3,660	61	1.8
High Efficiency Urinal Retrofit	161,070	$950	$3,660	61	3.9
High Efficiency Lavatory Faucet Aerator Retrofit	150,804	$779	$837	90	1.1
High Efficiency Breakroom Faucet Aerator Retrofit	2,210	$62	$9	1	0.1
High Efficiency Kitchen Faucet Aerator Retrofit	1,820	$64	$9	1	0.1
High Efficiency Showerhead Retrofit	9,458	$45	$306	18	6.8
APPLIANCES					
Food Disposer(s)	124,800	$456	$300	1	0.7
HEATING, VENTILATION, AND COOLING (HVAC)					
Cooling Tower(s)	914,269	$26,556	$0	0	0.0
IRRIGATION					
Irrigation	4,694,609	$60,183	$46,946	0	0.8
TOTAL WATER CONSERVATION RECOMMENDATIONS					
ALL	**7,176,155**	**$95,245**	**$141,228**	**613**	**1.5**

Unexpected Benefits



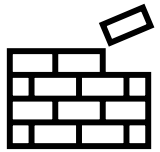
Discovered an underground leak this entity would have never found.

Created a key talking point for our program.

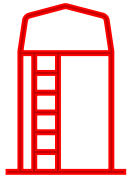
Led to speaking engagements on sustainability for local businesses.

Challenges

Distrust – Nothing is Free



Boundaries – No Authority



Silos – No Support

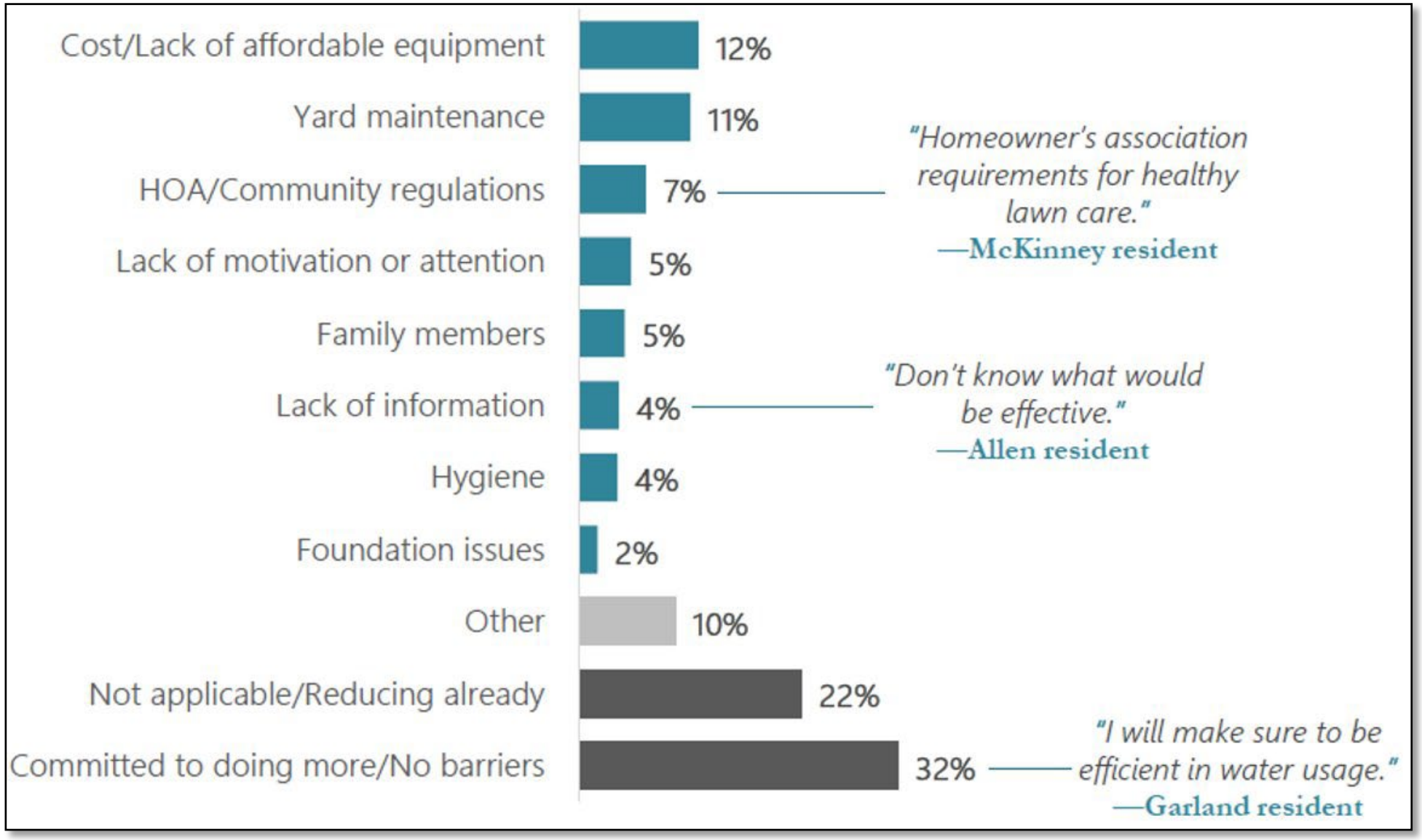
Return – No Follow Through

We in the [redacted] have discussed you very generous offer, but we don't currently feel it would benefit us or the City of [redacted]. We just recently installed new smart sprinkler controllers for the areas we water, all of which are actually City owned. In addition, we have no clubhouse, swimming pool, fountains, or other shared water-use facilities.

Good afternoon, Ted.
I'm doing well, and I hope you're doing well too.

We did get some recommendations enacted. Most recently, we are adding deduct and evaporation meters to our water feeds to more accurately monitor and correctly bill our water and sewer consumption.

Where to Next?



Two HOA Test Evaluations

Two HOA Test Evaluations – Results?

Potential water savings associated with the recommended action(s) are estimated at 1,285,302 gallons per year for an estimated financial savings of $9,563 per year. The return on investment is estimated at less than 3 months.

Potential water savings associated with the recommended action(s) are estimated at 4,187,217 gallons per year for an estimated financial savings of $39,360 per year. The return on investment is estimated at less than 3 months.

City of Dallas

Industrial, Commercial, and Institutional (ICI) Water Conservation Programs

EPA WaterSense Webinar Series

Alicia Lee, Water Conservation Manager
Office of Environmental Quality and Sustainability
June 25, 2025

Dallas Water Utilities Service Area

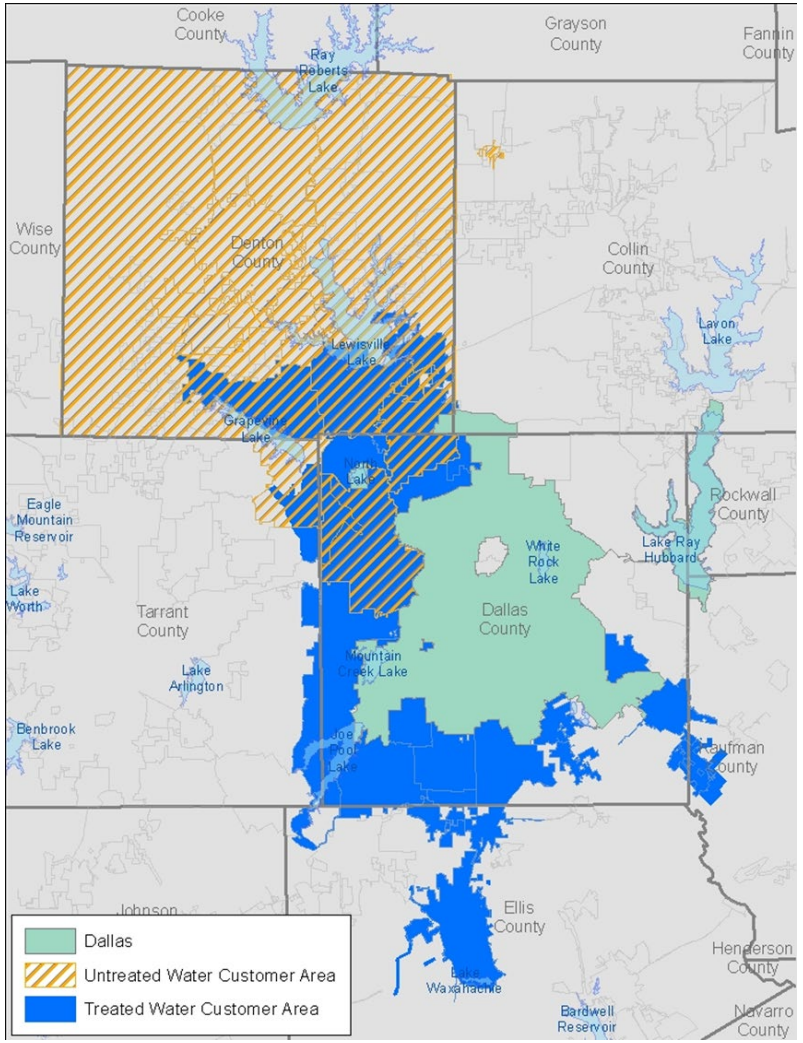
Provider of water, wastewater, and stormwater services

Population served: 2.6 million

- 1.3 million in the City of Dallas
- 1.3 million in 27 wholesale customer cities

Drivers of Water Use

- Population growth
- Economic conditions (jobs, new businesses, etc.)
- Household water use
- Outside watering
- System water losses
- Weather patterns



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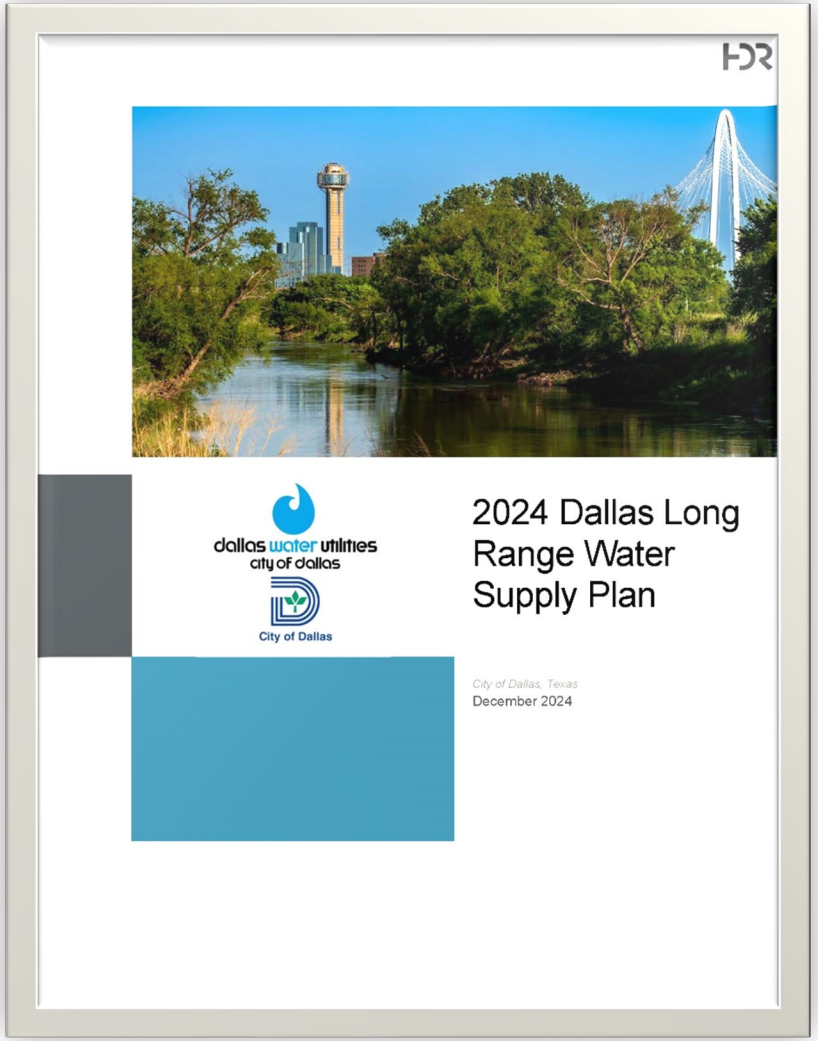
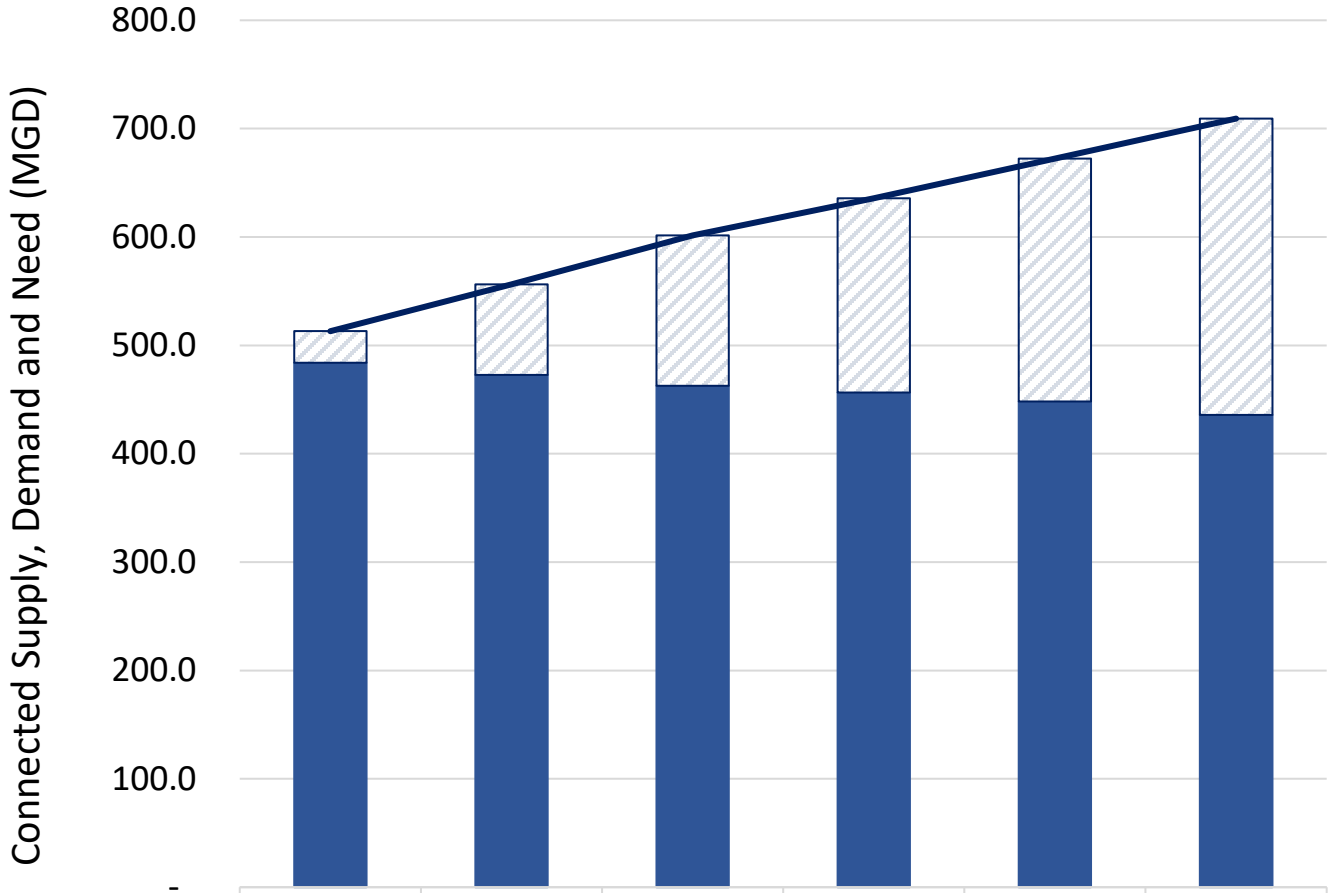
Long Range Water Supply Planning



- The current era of long-range water supply planning started due to the 1950s drought.
- Long Range Water Supply Plans (LRWSP) are updated approximately every ten years.
- The 1959 Plan was revised in 1975, 1989, 2000, 2005, 2014 and 2024.
- The 2024 LRWSP update evaluated:
  - Changes in population and demand projections
  - Changed conditions associated with current water supplies and recommended and alternate water management strategies
    - **Water Conservation remains essential to Dallas' long-range water supply strategy.**

2024 LRWSP: Water Supply Needs



	2030	2040	2050	2060	2070	2080
Need	29.00	83.60	139.00	179.50	223.90	273.50
Supply	484.1	472.8	462.6	456.4	448.4	435.8
Demand	513.1	556.4	601.6	635.9	672.3	709.3

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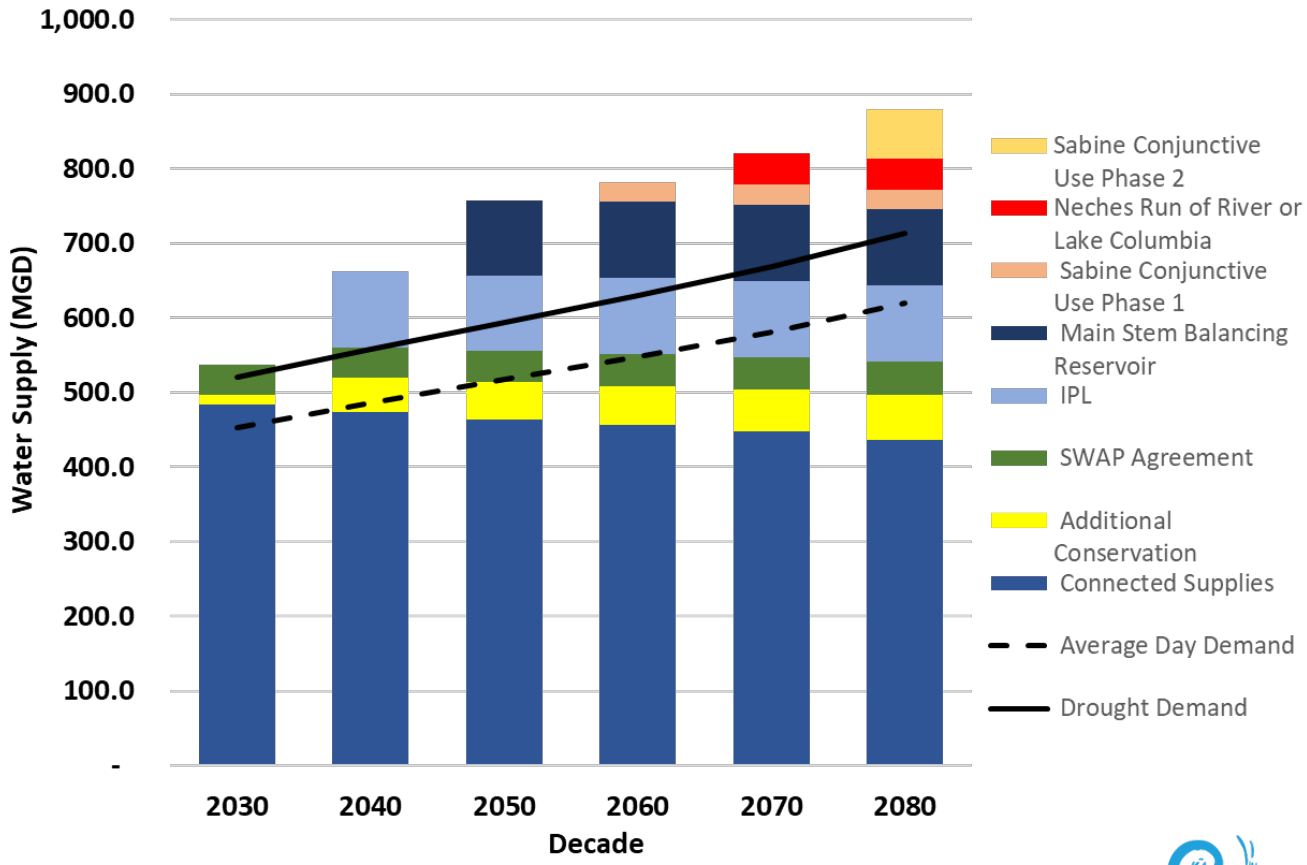
2024 Long Range Water Supply Plan

- Daily water demand **decreased by 6.3%, or about 45.5 million gallons, due to conservation and leak detection efforts**.
- 2024 LRWSP Recommended Strategies to meet 2080 system demands consist of:
  - 13% additional conservation
  - 33% indirect reuse
  - 23% connection to existing water supplies
  - 25% new surface water
  - 6% groundwater



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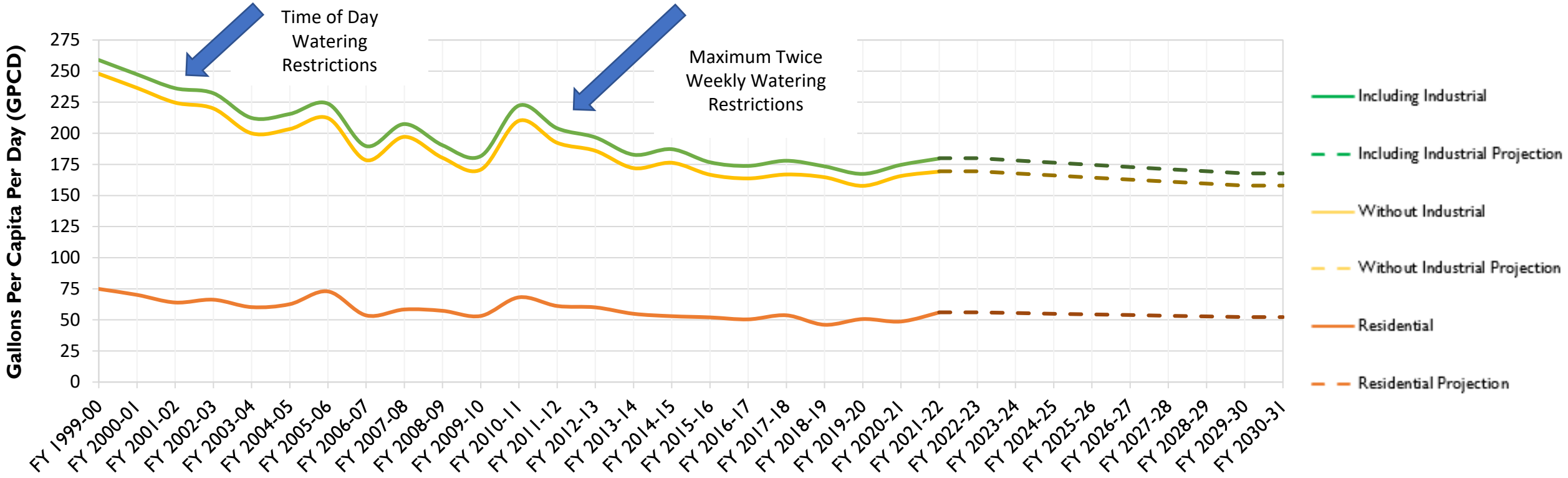
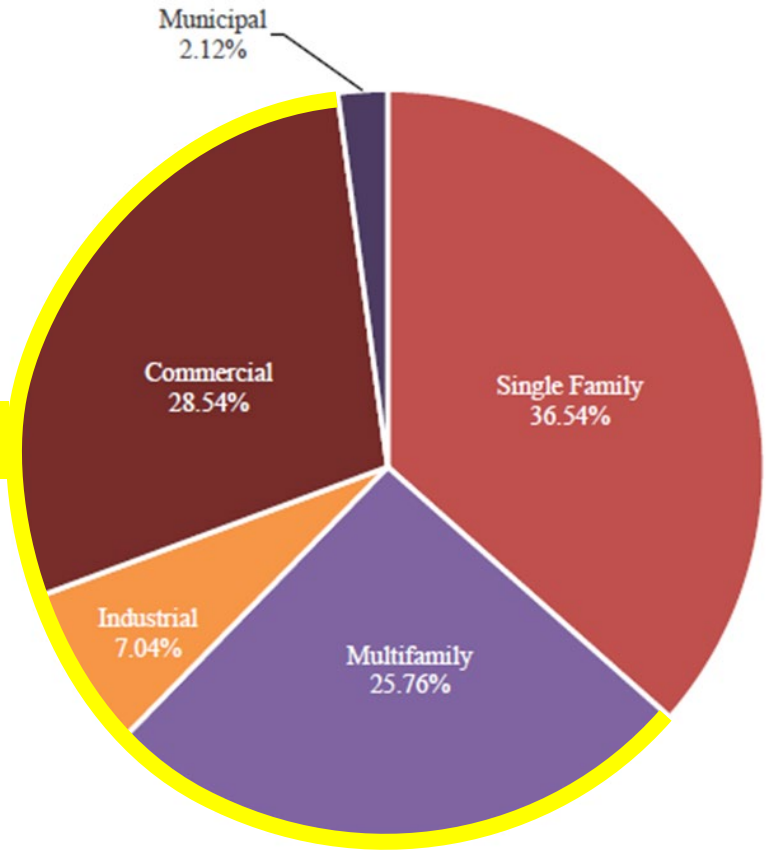
City of Dallas Water Use Trends



Annual Retail Treated Water Use

Annual Average Retail Treated Water Sales of 66.9 BG from FY15 – FY22



ICI Opportunities

Leading by Example

City Leadership and Commitment Grant

- Since 2007, awards have been granted to various City departments to work on projects at multiple City facilities and properties.
  - Dallas Public Library,
  - Parks and Recreation,
  - Dallas Fire and Rescue,
  - Building Services, and
  - Public Works.
- The program covers indoor plumbing upgrades, retrofits, landscape conversions, and other water process improvements that promote water conservation.
- The funding for the program is up to $200,000.
- To compete for this funding, interested departments must submit a proposal demonstrating potential water savings.

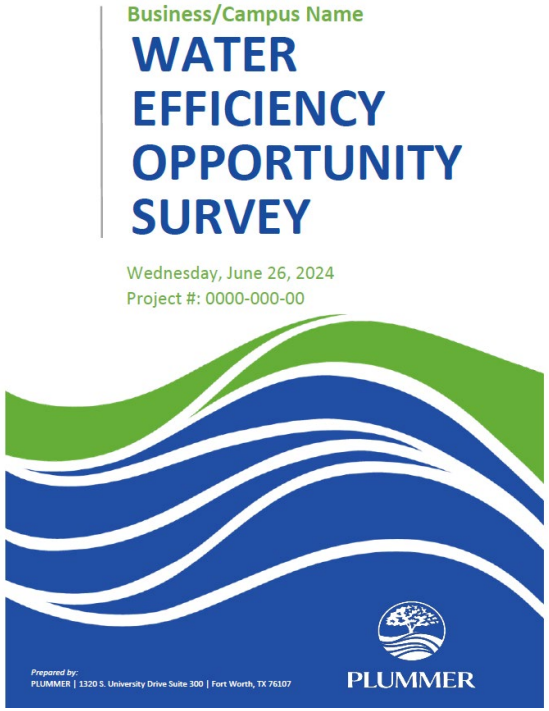
City of Dallas FREE Water Efficiency Assessments

Overview

- Currently, the Water Conservation program provides no-cost water efficiency assessments through the Industrial, Commercial, and Institutional (ICI) Program.
  - A complete analysis of water use at a facility
  - Recommendations for water efficiency measures to save water for both the facility and water provider.
  - Must be a commercial water account holder with Dallas Water Utilities

Program Goals

- Reduce water consumption.
- Decrease water, wastewater, and electricity costs.
- Minimize loss and waste of water.



City of Dallas ICI Assessments Program

- Launched in 2012
  - Conducted by a city-contracted consultant.
  - Over 1,000 buildings assessed in Dallas over 10 years.
  - A comprehensive written report with historical water use and recommendations is provided.
- Assessments include a full examination of:
  - Cooling Towers, Boilers & Other Thermodynamic Operations
  - Metering, Monitoring, and Measurement
  - Plumbing Fixtures, Fittings & Equipment
  - Food Service Operations
  - Laundry Operations
  - Laboratory & Medical Facilities
  - Swimming Pools, Spas & Fountains
  - Vehicle Washes

TABLE 1: RECOMMENDED CONSERVATION MEASURES

Recommended Conservation Measure	Estimated Annual Water Savings (gal/yr.)	Value of Estimated Annual Water Savings	Estimated Project Cost	Number of Proposed Retrofits	Simple Payback Period (yrs.)
High Efficiency Toilets	2,748,098	$36,192	$40,725	181	1.1
High Efficiency Urinals	762,233	$10,039	$24,150	69	2.4
High Efficiency Showerheads	68,892	$907	$935	55	1.0
High Efficiency Lavatory Faucet Aerators	595,730	$7,846	$1,618	174	0.2
High Efficiency Kitchen and Handwash Faucet Aerators	41,492	$547	$465	50	0.9
Installation of Scrapper Baskets	133,056	$1,752	$500	2	0.3
Fixing of Leaking Fixtures	15,000	$198	$200	5	1.0
Total	**4,364,500**	**$57,481**	**$68,593**	**536**	**1.2**

City of Dallas ICI Rebate Program

- Complements the efficiency survey initiative and serves as an incentive for customers to **implement** recommendations
- The City of Dallas water efficiency assessment is required for eligibility.
- Up to $100,000 available on a one-time basis.
- Rebate calculation:
    - 50% of installed costs (parts and external labor).
    - OR $0.96 per 1,000 gallons saved over 10 years (whichever is less).
- Pre-approval is ***required*** before starting any work.
- Rebates issued post-completion and city-contracted consultants' verification of equipment installation.
- All Industrial, Commercial, and Institutional water users served by the Dallas Water Utilities are eligible to apply.

Participation

- Water Efficiency Assessments
  - Multifamily Complexes and Condominiums
  - Downtown Towers/Plazas
  - Hospitals
  - School/College Campuses
  - Hotels
  - Municipal Buildings
  - Water Savings identified from Assessments: **789** MG/Yr

- Awarded Rebates:
  - Apartments
  - Manufacturing
  - Hospital
  - Water Savings from Rebates: **131** MG/Yr

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Multi-Family Property: A Case Study

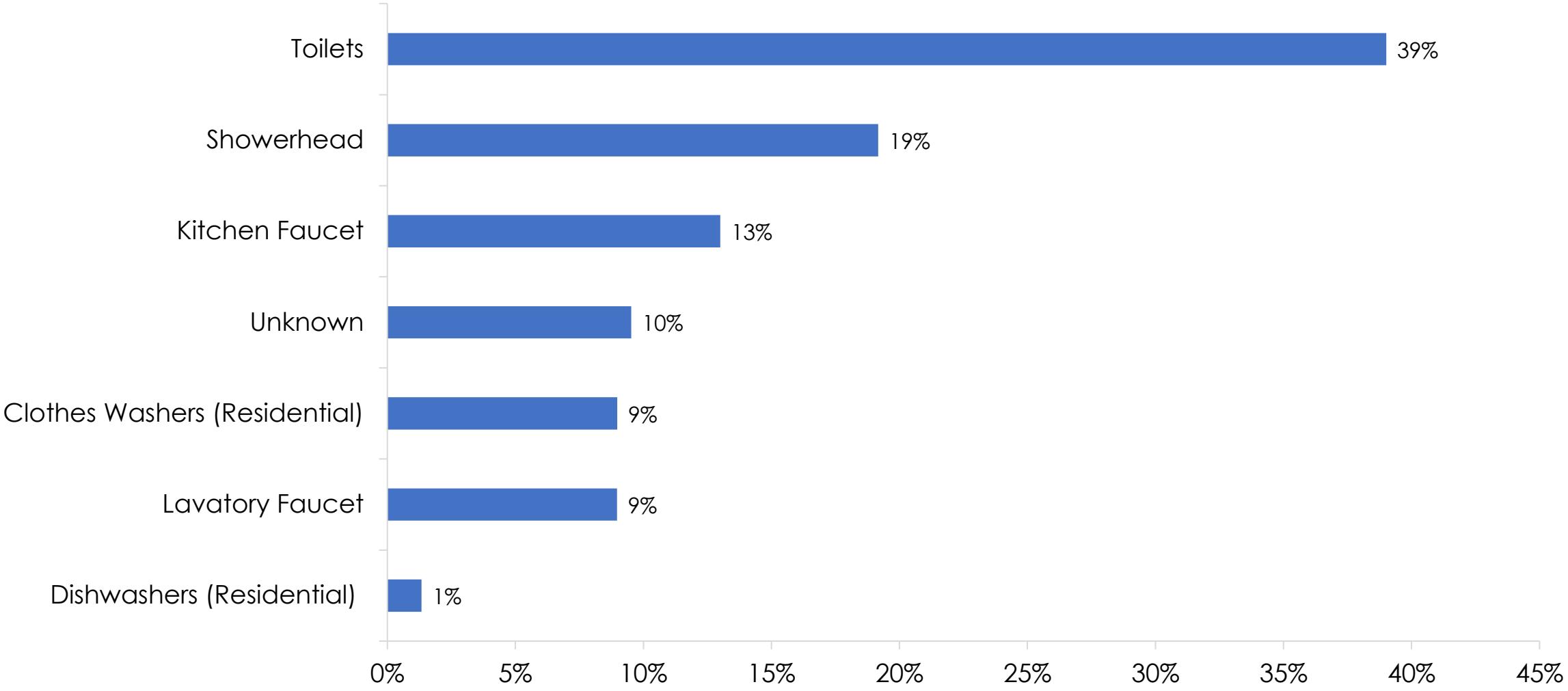
Presented By Annika Schiller,
Water and Energy Efficiency Analyst, Plummer

Multi-family Property

SYNOPSIS OF PROCESS & RESULTS

WHEN: Completed Retrofits Spring 2023
WHAT: Built in 1979, 424 units (26 Bldgs)
WHERE: 10 miles northeast of Downtown Dallas
WHY: Evaluate Water Efficiency and participate in the rebate program

Water Consumption



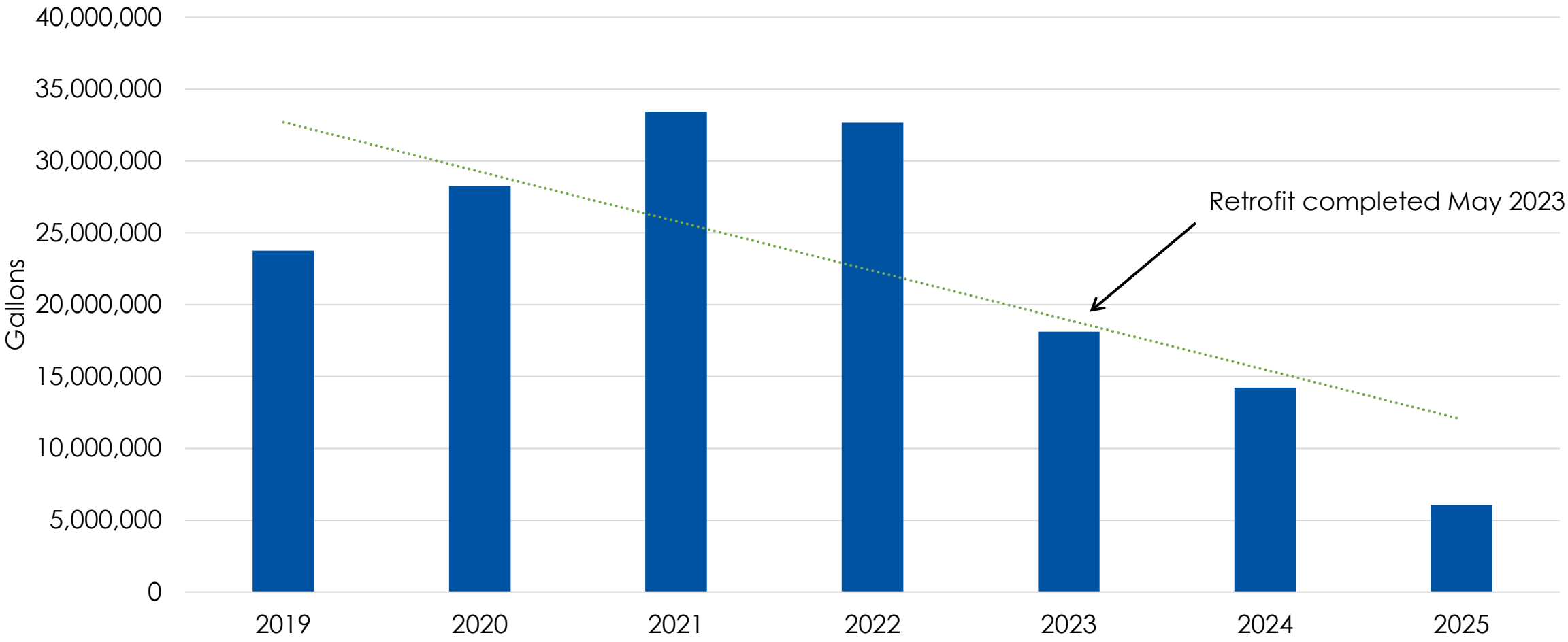
Recommendations

Recommended Conservation Measure	Estimated Annual Water Savings (gal/yr.)	Value of Estimated Annual Water Savings	Estimated Project Cost	Number of Proposed Retrofits	Simple Payback Period (yrs.)
RECOMMENDED CONSERVATION MEASURES					
High Efficiency Toilet Retrofit	4,551,699	$42,740.45	$188,300	538	4.4
High Efficiency Lavatory Faucet Aerator Retrofit	234,792	$2,204.70	$846	94	0.4
High Efficiency Kitchen Faucet Aerator Retrofit	194,839	$1,829.54	$864	96	0.5
High Efficiency Showerhead Retrofit	175,582	$1,648.71	$1,360	80	0.8
TOTAL WATER CONSERVATION RECOMMENDATIONS					
ALL	**5,156,912**	**$48,423.40**	**$212,130**	**808**	**4.4**

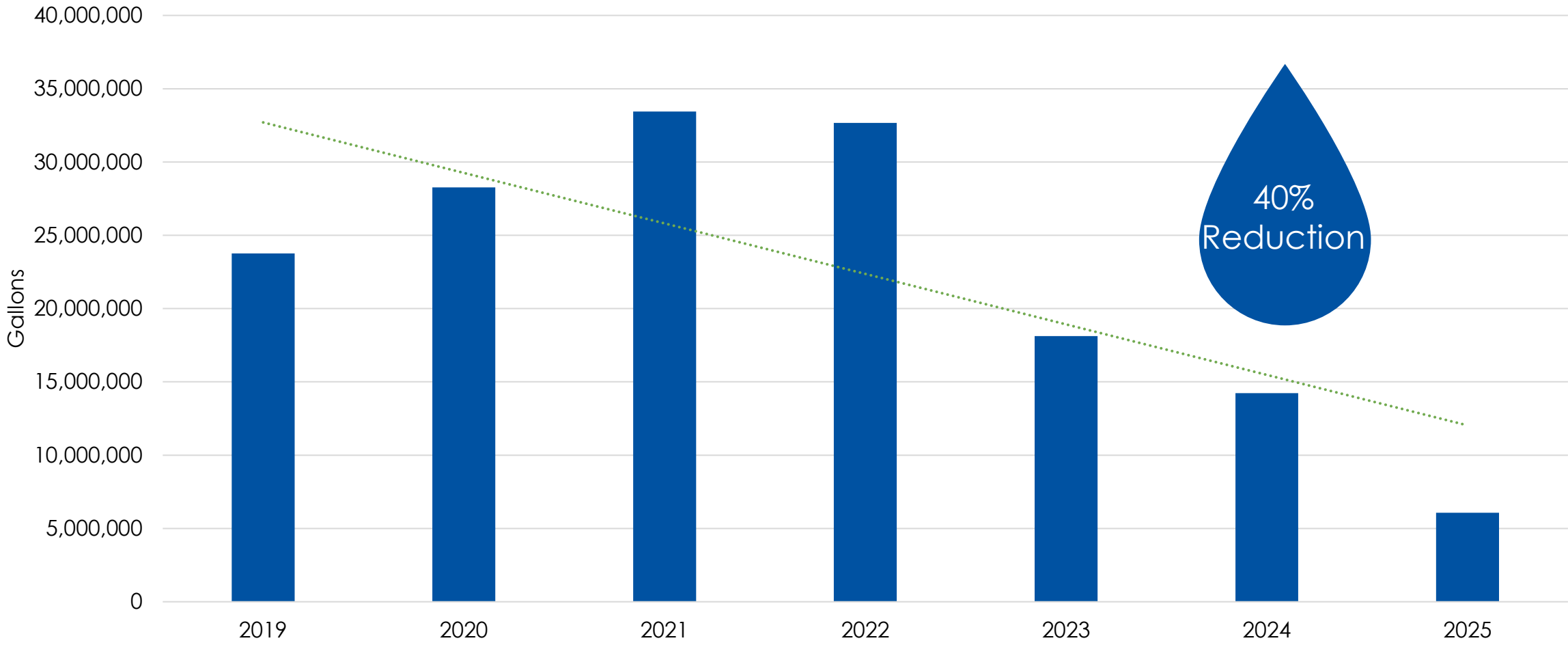
Rebate Calculations

Recommended Conservation Measure	Estimated Annual Water Savings (gal/yr.)	Value of Estimated Annual Water Savings	Estimated Project Cost	Number of Proposed Retrofits	Project Life	Potential Rebate
High Efficiency Toilets	4,551,699	$42,740	$188,300	538	10	$43,696
High Efficiency Aerators - Lavatory Faucets	234,792	$2,205	$846	94	5	$423
High Efficiency Aerators - Kitchen Faucets	194,839	$1,830	$864	96	5	$432
High Efficiency Showerheads	175,582	$1,649	$1,360	80	5	$680
Total	**5,156,912**	**$48,423**	**$212,130**	**808**		**$45,231**

Water Consumption

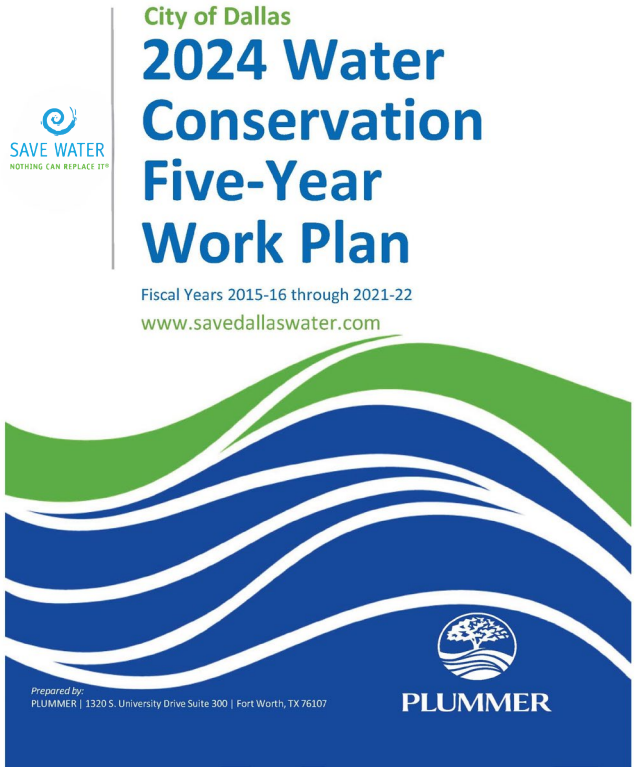


Water Consumption



Moving Forward

- **Water Planning and Conservation**
- The City Council approved the 2024 Five-Year Water Conservation Work Plan, which includes the following strategies:
  - **Increase participation** in current ICI programs.
  - **Establish an ICI Water Efficiency Partnership (WEP)** for ICI facility managers and leaders representing high-water-use industries.
  - **Consider developing an ICI Water Efficiency Training Program for ICI facility managers and leaders,** focusing on the EPA WaterSense program.



City of Dallas

Industrial, Commercial, and Institutional Water Conservation Programs

EPA WaterSense Webinar Series

Alicia Lee, Water Conservation Manager
Office of Environmental Quality and Sustainability
June 25, 2025

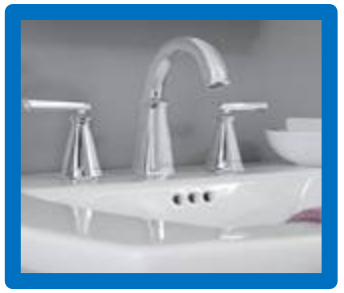
What is WaterSense?

- WaterSense is a voluntary program launched by EPA in 2006 that provides a simple way to identify water-efficient:
  - Products
  - Programs
  - Practices
  - Homes
- Products are independently certified for water efficiency **and** performance

WaterSense Labeled Products

Indoor products

Showerheads



Lavatory Faucets

NEW Point-of-use Reverse Osmosis Systems

Tank-Type Toilets

Flushometer Valve Toilets

Flushing Urinals

Outdoor products

Spray Sprinkler Bodies

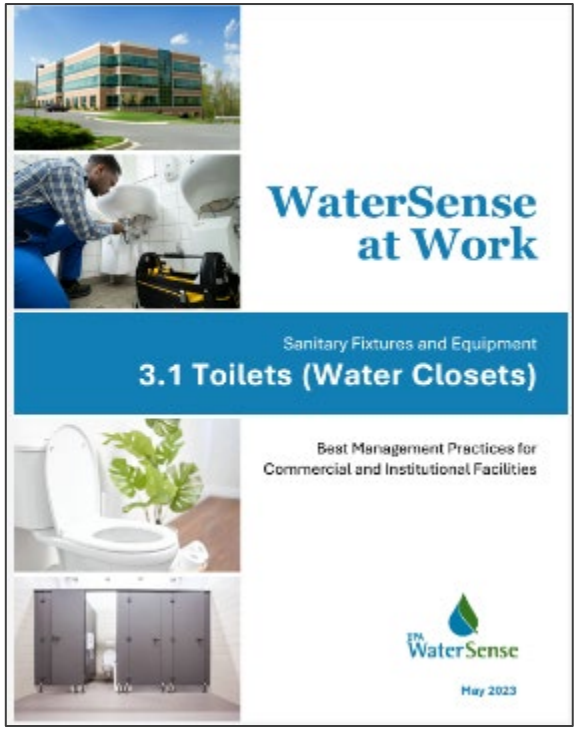
Weather-based

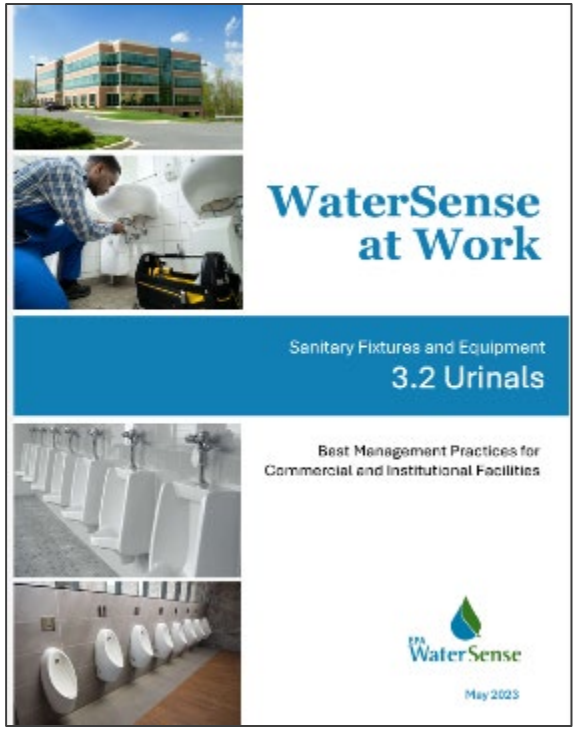
Soil Moisture-based

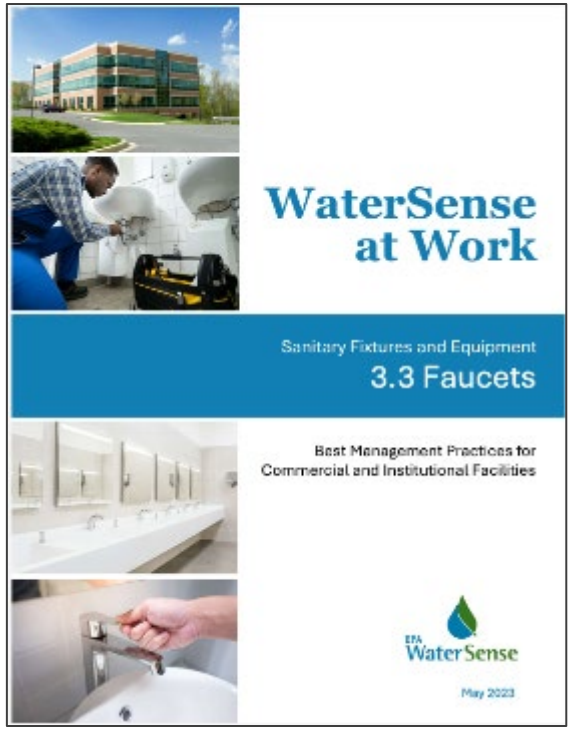
Irrigation Controllers

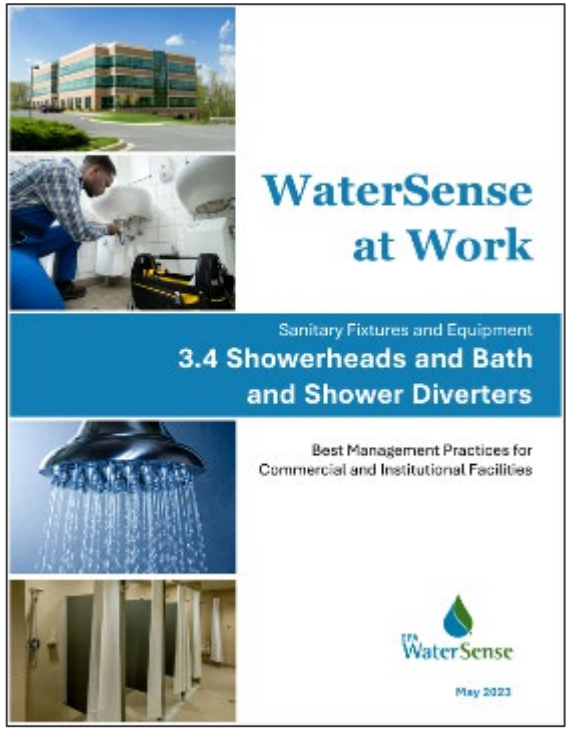
More than **45,000** product models have earned the label.

Best Management Practices









www.epa.gov/watersense/best-management-practices

Contact Us

WaterSense
www.epa.gov/watersense
Email: watersense@epa.gov

Kathy Fonville
Public Education Manager
North Texas Municipal Water District (NTMWD)
kfonville@ntmwd.com

Ted Pick
Public Education Specialist
North Texas Municipal Water District (NTMWD)
tpick@ntmwd.com

Alicia Lee
Water Conservation Manager
City of Dallas, Office of Environmental Quality and Sustainability
alicia.lee@dallas.gov

Annika Schiller
Water and Energy Efficiency Analyst
Plummer
achiller@plummer.com