



**NORTH
TEXAS
MUNICIPAL
WATER
DISTRICT**

Regional Service Through Unity
Meeting our Region's Needs Today and Tomorrow

Tacos and Texscape City of Heath

North Texas Municipal Water District

June 18, 2026



LEGACY OF SERVICE

"We decided we were all in this together. We couldn't do it separately."

~ from *Gift of Water, Legacy of Service: A History of North Texas Municipal Water District*

13 MEMBER CITIES

Allen | Farmersville | Forney | Frisco | Garland | McKinney | Mesquite

Plano | Princeton | Richardson | Rockwall | Royse City | Wylie

1951

Created by Texas
Legislature to
Provide Water Service

1956

Began Providing Treated
WATER to Member Cities

1970s

Expanded to
WASTEWATER Services

1980s

Expanded to
SOLID WASTE Service



NTMWD Infrastructure – How We Serve You



WATER SERVICES

 | **20**
MAJOR RAW AND TREATED
WATER PUMP STATIONS

 | **7**
WATER TREATMENT PLANTS
962 MILLION GALLONS/DAY (MGD) CAPACITY

 | **695+**
MILES OF WATER
TRANSMISSION LINES

WASTEWATER SERVICES

 | **11**
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





Where Our Water Comes From

Existing Sources

Lavon Lake	Lake Tawakoni
Bois d'Arc Lake	Jim Chapman Lake
Lake Texoma	Water Reuse, including
Lake Fork	East Fork Reuse Project

Our water treatment plants that produce potable water can handle **up to 946 Million Gallons Per Day:**

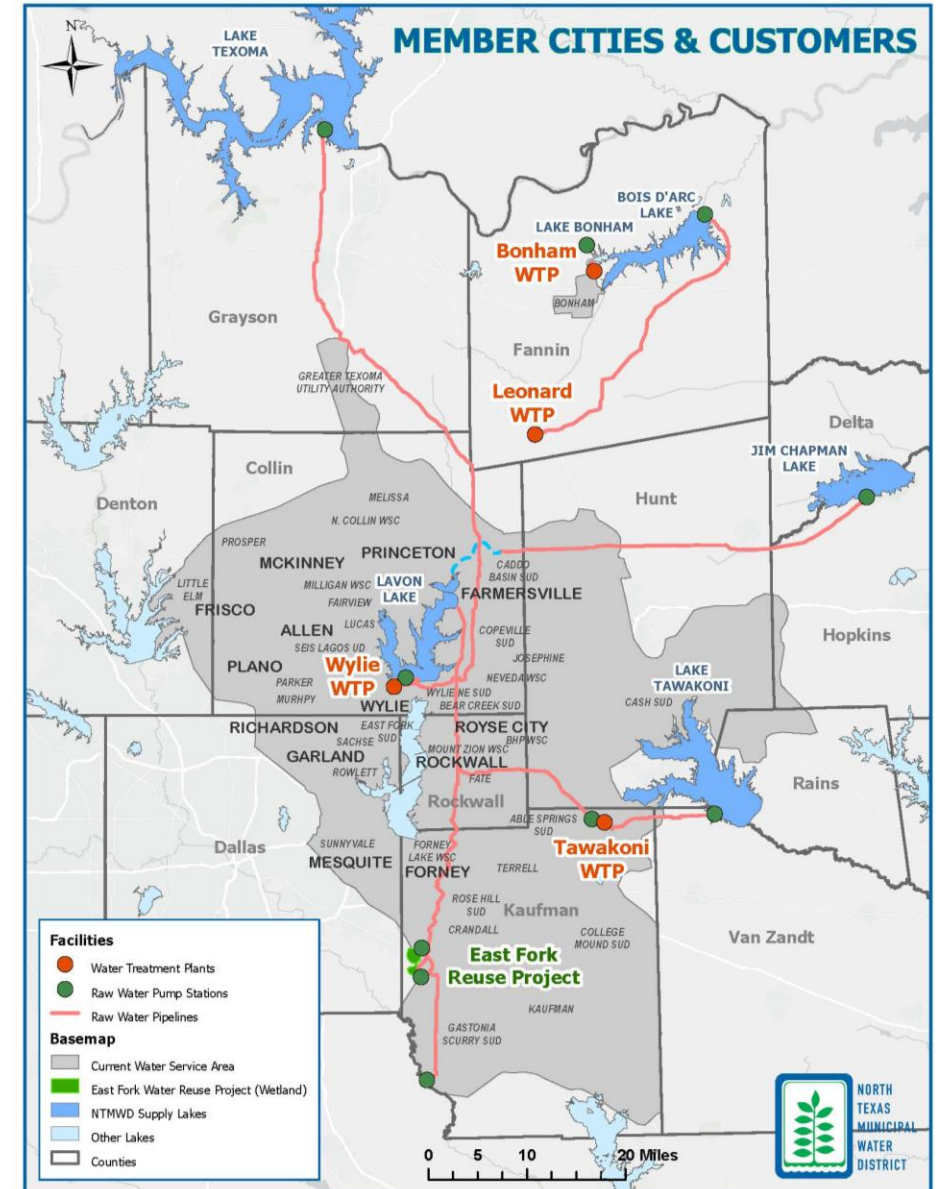
Wylie WTP

- Wylie I	70 MGD
- Wylie II	280 MGD
- Wylie III	280 MGD
- Wylie IV	210 MGD

Leonard WTP 70 MGD

Bonham WTP 6 MGD

Tawakoni WTP 30 MGD





Lavon Lake/Wylie Treatment Plant



Wylie Water Treatment Capacity

Wylie I	70 MGD
Wylie II	280 MGD
Wylie III	280 MGD
Wylie IV	210 MGD



Where does our water come from?



Lakes



Conservation



Reuse



Wholesale Rates Support Continued Reliable Service

- Each city shares in the cost of NTMWD's Regional Water System
- New infrastructure, new water supplies needed to meet rapid growth
- Regional infrastructure will cost billions over time
- The cost for new infrastructure and new water supplies is built into the wholesale rates we charge our Member Cities and Customers

Fiscal Year 2026 Wholesale Water Rate

Member Cities: \$4.14 (per 1000 gallons)

Customers: \$4.19 (per 1000 gallons)





The State of Water in Texas

Texas set to make \$20 billion investment in water after voters approve Proposition 4

Leaders must compromise on northeast Texas reservoir or water board gets final decision

How North Texas leaders are thinking about region's water future as challenges mount

Recent report shows data centers may negatively impact Texas' water supply



Report: Texas' economy at risk from water supply, infrastructure shortage



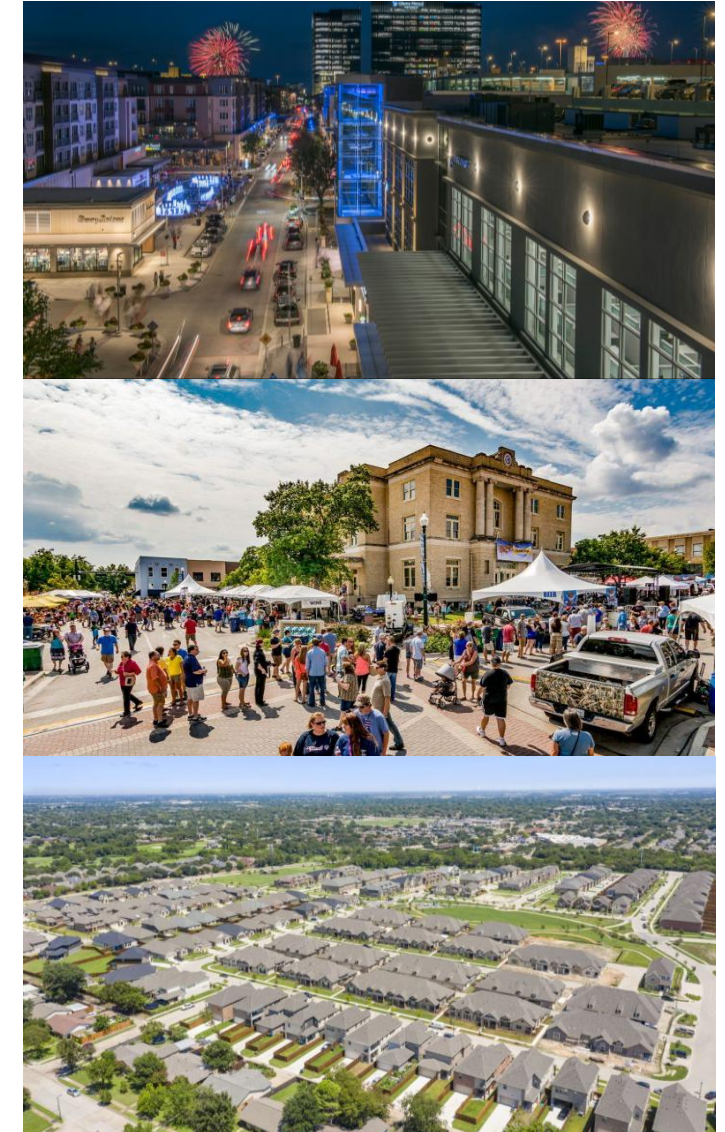


Water Use Rising in NTMWD Service Area

	'24-'25 Aug-Jul Billion gallons	'23-'24 Aug-Jul Billion gallons	'22-'23 Aug-Jul Billion gallons	'21-'22 Aug-Jul Billion gallons
Members	99.1	100.2	93.5	93.8
Customers	27.6	26.0	24.0	23.5
Total	126.7	126.2	117.5	117.3

Note: NTMWD Water Year = August-July

The period during which NTMWD assesses total Member City and Customer water consumption for accounting and administrative purposes.





The Drought of 2011 in North Texas





Census Numbers Highlight Rapid Growth

Population Served by NTMWD

2020
2 Million



2024
2.3 Million

Fastest-Growing U.S. Counties (People Added), 2025

2. Collin County (+42,966)

Fastest-Growing U.S. Counties (%), 2025

3. Kaufman County (+5.7%)

Fastest-Growing U.S. Cities (%), 2025

3. Princeton (+18.1%)

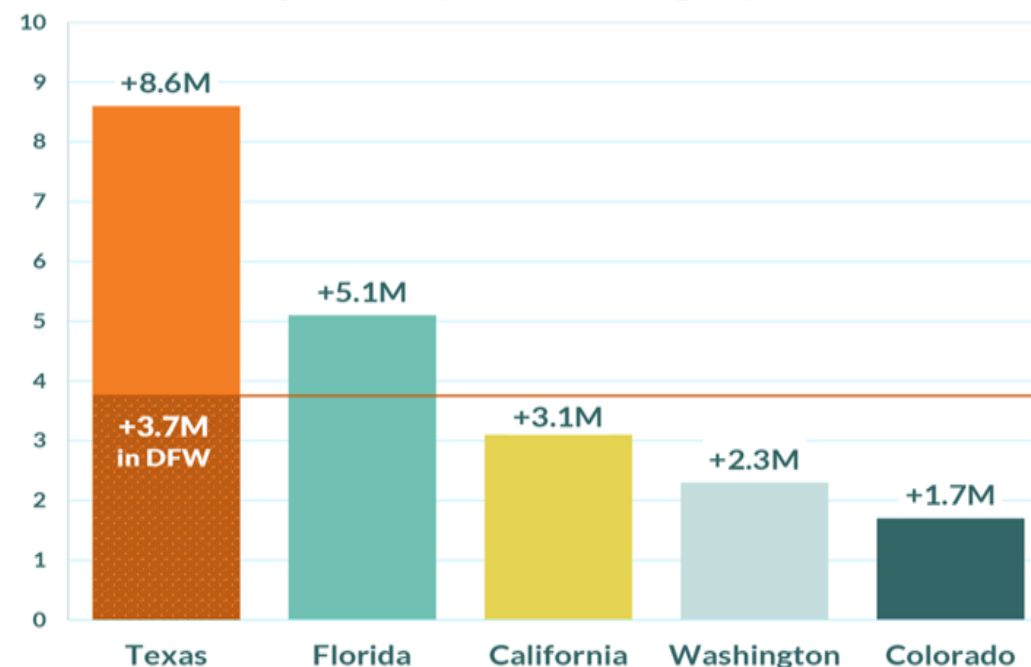
4. Melissa (+14.5%)

5. Anna (+10.2%)

8. Forney (+8.5%)

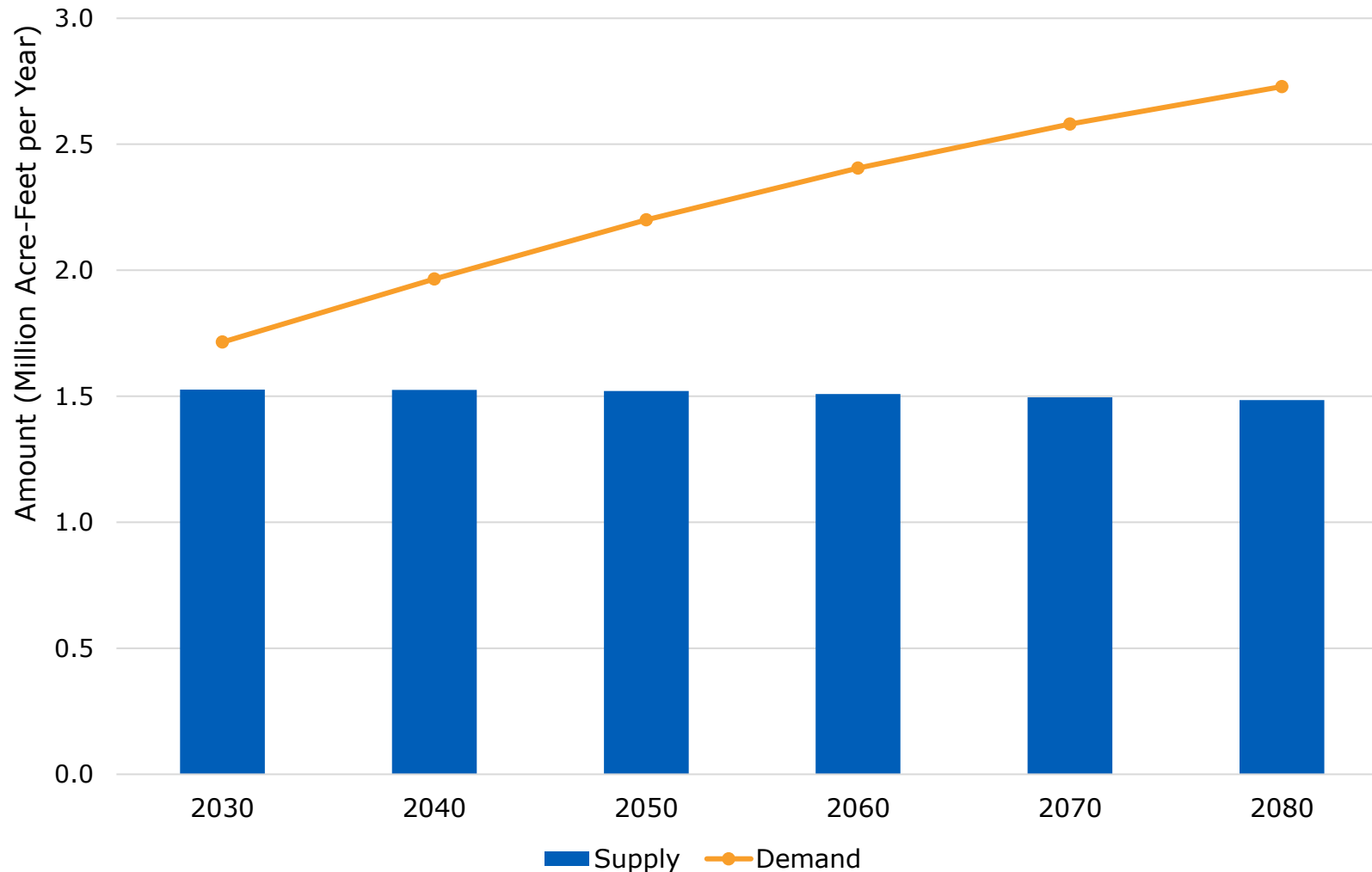
Sources: U.S. Census Bureau, University of Virginia Cooper Center,
North Central Texas Council of Governments

Projected Population Change by 2050





North Texas Major Water Provider Projected Water Demands Through 2080



72%
increase between
2030 and 2080
(1.24 million
acre-feet per
year)

Note: Includes water demands for NTMWD, Dallas Water Utilities, Upper Trinity Regional Water District, and Tarrant Regional Water District.

30%

of the water supplied
by NTMWD comes from
conservation and
reuse.

45%

of new water supplies in
North Texas by 2080
will come from
conservation and reuse.



Planning for the future...

NTMWD Water Conservation Program



Regional. Reliable. Everyday.



NTMWD Water Conservation Initiatives

- **Water is Awesome** Regional Campaign with City of Dallas and Tarrant Regional Water District
WaterIsAwesome.com
- **Water my Yard** An application for weekly watering advice:
WaterMyYard.org





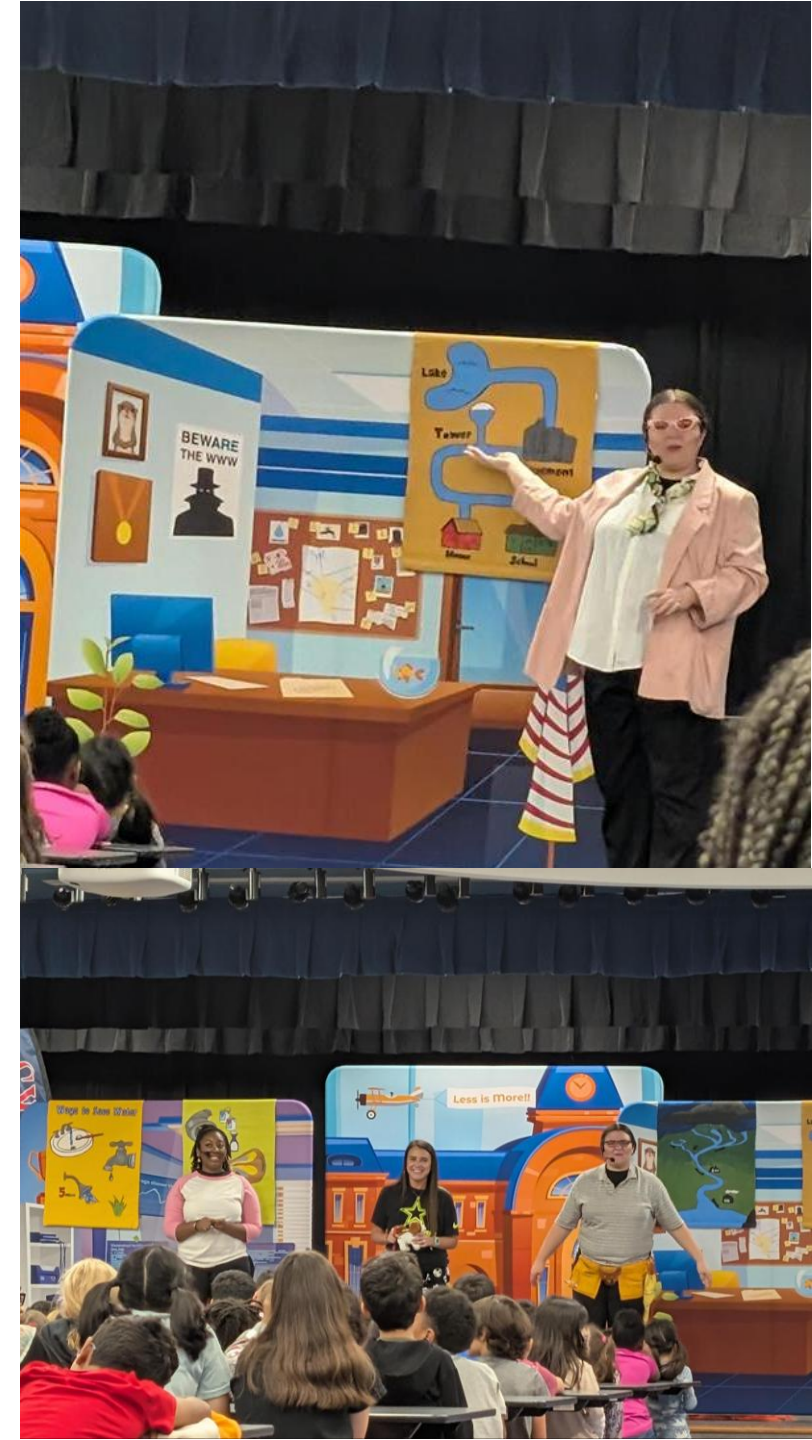
Youth Education Program

**Elementary School Program:
Water 4 Otter**

**Middle School Program:
Water Conservation Lab and Online Activity**

**High School Program:
Water Conservation Careers**

- Programs are fully funded by NTMWWD
- All educational materials provided
- Easy online scheduling
- Available to all schools in our service area





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Water Efficient Irrigation

Andrea Chick



Learning Objectives

- Irrigation Basics and Components
- Efficient Residential Irrigation
- Calculating Precipitation Rates
- Cycle and Soak
- Monthly Irrigation System Check Up
- Flag and Fix Common Issues





Irrigation Basics

Water early or late:
water between 10
PM and 6 AM to
reduce evaporation

Water deeply and
infrequently:
encourages deep
healthy root growth

Cycle and Soak:
allows water to soak
in and reduces runoff
and water waste

Measure in inches--
not minutes: turf
needs about 1 inch of
water per week or
less

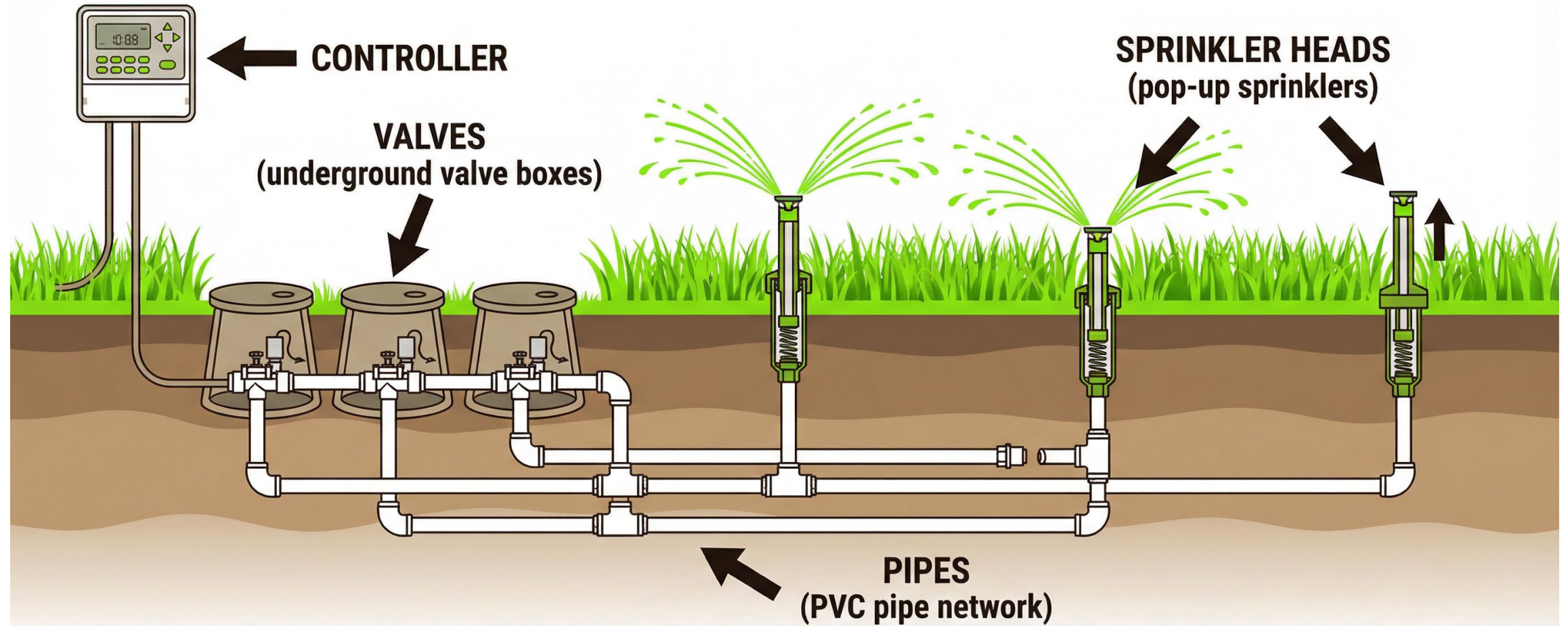
Check your system for
issues at least once a
month

Flag and fix broken or
clogged heads quickly

Efficient irrigation = using your system to supplement rainfall



IRRIGATION SYSTEM COMPONENTS





Irrigation Controller – Brain of the System

- ✓ Controls irrigation valves and water delivery
- ✓ Schedules when and how long watering occurs
- ✓ Promotes efficient water when properly programmed and

❖ Incorrect programming can result in significant water waste ❖





Types of Controller

Two types of controllers:

- Conventional Stand-Alone Controllers
 - Programed with fixed schedules
 - Manually programmed
- Smart Irrigation Controllers
 - Use sensors or local weather data to tailor watering schedules
 - Wi-Fi connected and may be adjusted through an App or web-based interface

*If you need clear, step-by-step guidance for programming your irrigation controller, the best source is the **manufacturer support pages** that provide both written instructions and video tutorials.*



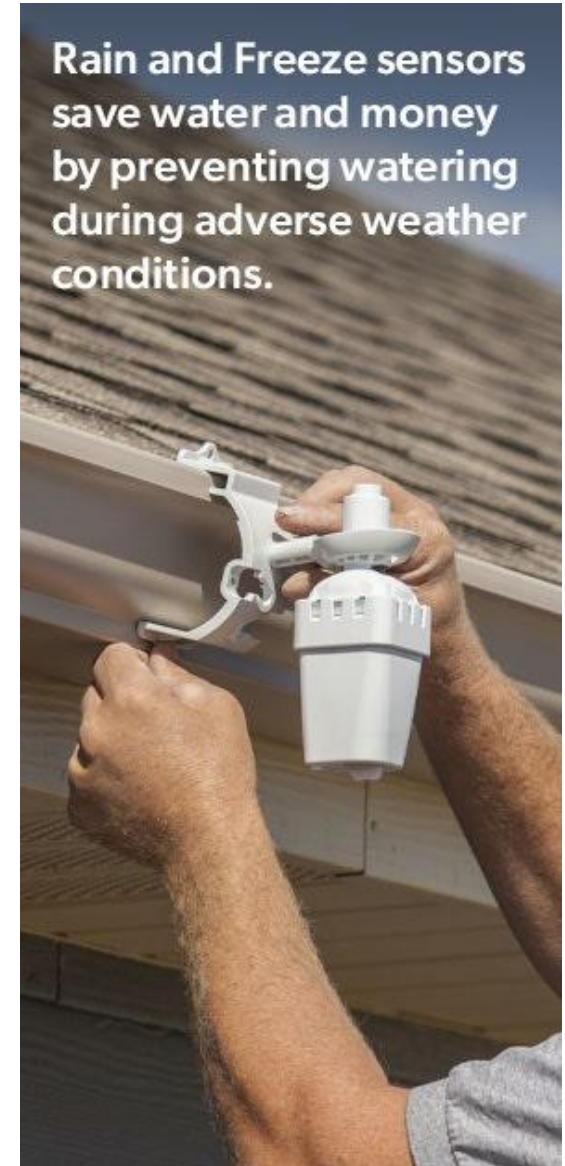


Sensors

Interrupt the irrigation system based on site environmental conditions:

- **Rain Sensor** – Shuts off irrigation during rainfall
- **Freeze Sensor** – Prevents irrigation during freezing temperatures
- **Wind Sensor** – Shuts off irrigation during high winds
- **Soil Moisture Sensor** – Prevents irrigation when adequate moisture is already present in the soil

Rain and Freeze sensors save water and money by preventing watering during adverse weather conditions.





Sensors

The State of Texas and most municipalities requires a rain/freeze sensor.

- Verify the sensor is properly installed and free of obstructions
- Test and clean the sensor seasonally to ensure it is functioning correctly
- Replace sensor batteries annually





Efficient Irrigation – 1, 2 Zero

Think 1, 2... zero when running your irrigation system

- Water **once per week** when your lawn needs water
 - Use a **moisture meter or screwdriver test** to check soil moisture before watering
- During hot, dry summer weather, water **no more than twice per week**
- **Skip watering** after rainfall or when rain is in the forecast
- Follow your city's **assigned watering schedule days**
- Most lawns need **little to no irrigation in fall and winter** unless conditions are unusually dry



Measure in Inches – Not Minutes

- Warm-season turf grass needs about **1 inch of water per week**
- To determine the amount of water in inches instead of minutes, you will need to know the precipitation (application) rate of each sprinkler zone
 - Fixed/Pop-up spray heads = 1.65 inches per hour*
 - Rotor heads = .75 inches per hour*
 - Multi-stream heads = .45 inches per hour*



**These are average estimates for participation rate.*

*To find your exact precipitation rate, you will need to conduct a **catch can test**.*

See handout for conducting a catch can test.



Precipitation (Application) Rate

- Measures how much water an irrigation system applies to a landscape over time. Typically expressed in **inches per hour (in/hr)**
- Understanding precipitation rate helps determine how long to run your irrigation system
- Knowing your system's precipitation rate can improve watering efficiency and reduce water waste





Precipitation (Application) Rate

- Determined by many factors including:
 - Nozzle flow rate
 - Sprinkler head spacing
 - Type of sprinkler head (spray, rotor...)
- Also affected by the five S's
 - Soil type
 - Shade
 - Slope
 - Species of plants
 - Season





Calculating Inches per Hour

- Calculation for a typical in-ground irrigation system, we assume that a typical application rate for a zone is:
 - **Fixed/Pop-up spray heads = 1.65 inches/hour**
 - **Rotor heads = .75 inches/hour**
 - **Multi-stream heads = .5 inches/hour**
- The application rates above are calculated using the following formula:

Run Time = Amount of water needed x 60 (minutes) / Precipitation Rate

EXAMPLE:

Pop-up spray head (application rate of 1.65 inches/hour) needs ½ an inch of water:

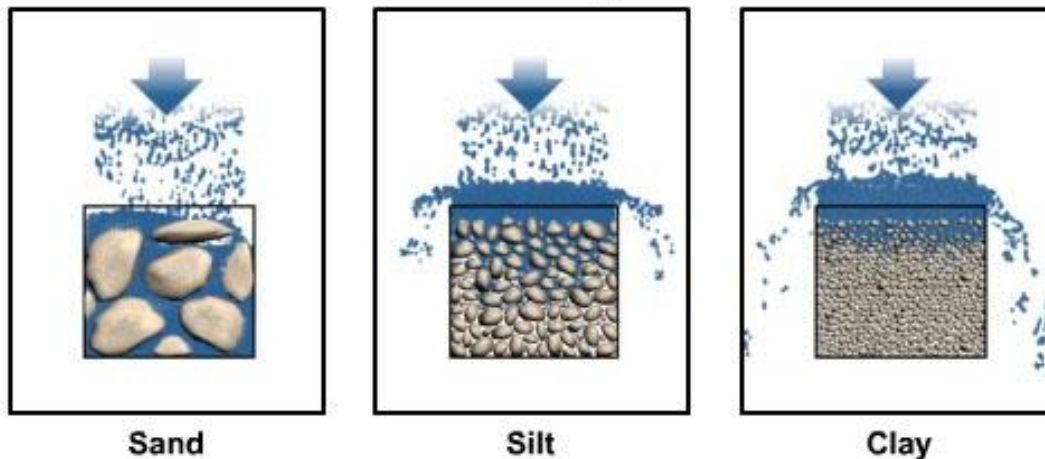
.5 inch of water multiplied by 60 minutes divided by 1.65 equals about **18 minutes.**



Why Cycle and Soak in North Texas



Infiltration Variations by Soil Texture



- North Texas is dominated by **Blackland Prairie clay**
- Clay has a very low infiltration rate of less than **per 0.3 inches/hour**
- Standard sprinkler heads deliver water at **1.5–2.0 inches per hour**, far faster than the soil can absorb
- **RESULT:** Up to 75% of applied water will runoff your yard into the street



How Cycle and Soak Works

- The method **splits each zone's total watering time into shorter run cycles** separated by **soak periods of 30 to 60 minutes**

Example for a zone than needs to run for 18 minutes.

Initial Soak:

Run zone for 6 minutes to help water start soaking into the dry clay soil.

Deep Soak:

Run second cycle for 6 minutes after a 45-minute "soak" period to allow water to infiltrate deep into the soil.

Final Soak:

Final 6 minutes of watering after 45-minute soak period to encourage roots to grow deeper

Water is Awesome – DIY Sprinkler Check and Repair





Checking Your Irrigation System

FIND IT, FLAG IT, FIX IT!

- Inspect your irrigation system **at least once per month**
- Look for **wet/dry spots, pooling water, or unusually green/brown areas**
- Run each zone for **3 minutes** and inspect sprinkler performance
- Identify heads that are **broken, clogged, misaligned, or blocked**





Irrigation Repair... It's easier than you think.



Adjust sprinkler.



Replace or clean nozzles.



Fix broken heads.



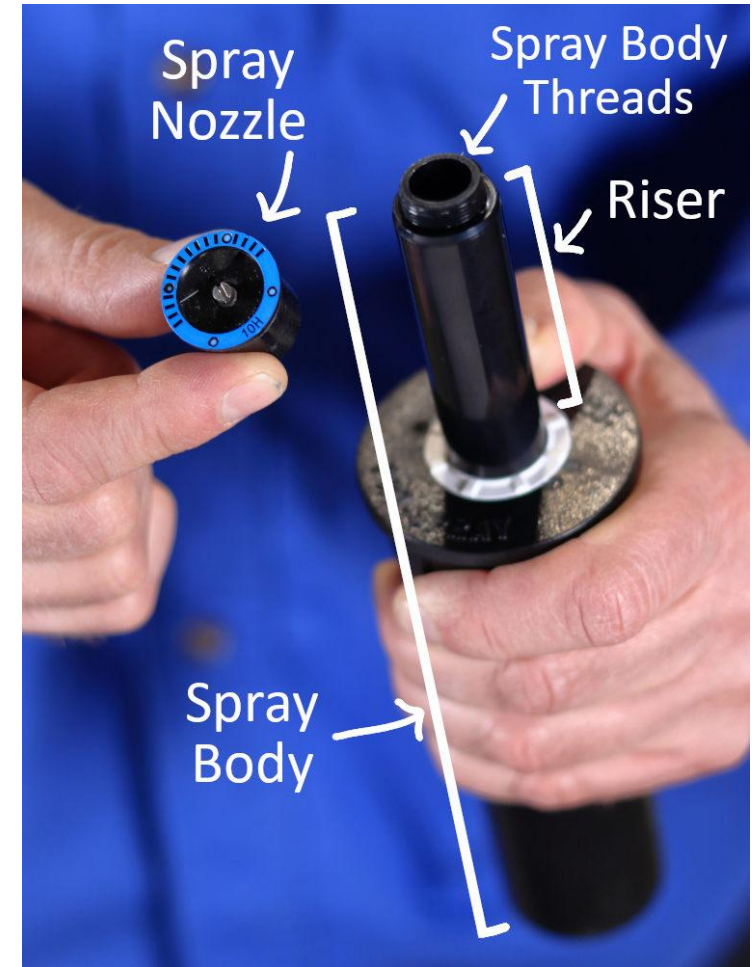
What You See	Likely Issue	Solution	Time
Spraying sidewalk/driveway	Misaligned spray direction	Rotate head to reposition	5 min
Weak or spotty spray	Clogged filter or nozzle	Clean filter screen and nozzle opening	10 min
Won't rotate	Debris or broken gear	Clean filter; replace if broken	15 min
Water shooting straight up	Broken nozzle	Replace head	15 min
Leaking at base	Cracked body, loose fitting, stripped threads	Tighten or replace head	15 min
Head won't pop up	Debris in mechanism	Clean and lubricate	10 min
Entire zone won't turn on	Electrical or valve problem	Call professional	N/A

Most common finding: Most homeowners think they need to replace heads when they actually just need adjustments or cleaning.



Parts of an Irrigation Spray Head

- Spray Nozzle
- Spray Body Thread
- Riser
- Spray Body (under the ground)





Fixed or Pop-Up Sprav Nozzle

- 10 = 10 ft spray throw radius
- H = Half circle arc spray
- 8 = 8 ft spray throw radius
- VAR = Variable arc spray (0 to 360°)
- HE = High Efficiency





Quick Fix: Adjust Spray on Fixed/Pop Up Heads

- Adjusting the spray **pattern (arc)**:
 - Must be adjustable nozzle head
 - Manually pull up the spray nozzle to expose the riser – you may need a screwdriver to pull up the nozzle adjustment
 - Use your hand to turn the riser until the water is spraying in the correct direction – this will make a clicking noise
 - Rotate the riser so the water is spraying only on the turf and not sidewalks or fences





Quick Fix: Adjust Spray on Fixed Heads

- Adjusting the spray **radius**:
 - Manually pull up the spray nozzle to expose the riser
 - Grip the riser with one hand
 - Use a small flat head screwdriver and turn the screw on the top of the head to increase or decrease the spray radius





Quick Fix: Broken or Clogged Sprinkler Heads





Quick Fix: Clogged Filter or Nozzle

- Pull up on the nozzle and riser from resting position
- Hold the riser place with your hand or vise gripe plyers
- Unscrew nozzle using your hand
- Remove nozzle
- Pull out the filter





Quick Fix: Clogged Filter or Nozzle

- Rinse with clean water and use a soft brush if needed.
- Reassemble the sprinkler head.
 - Replace the filter
 - Replace the nozzle
- If the nozzle is broken it will need to be replaced
- Turn on system to ensure sprinkler head is working properly.





Quick Fix: Replacing Broken Sprinkler Nozzle

- Pull up on the nozzle and riser from resting position
- Hold the riser place with your hand or vise gripe plyers
- Unscrew nozzle using your hand
- Remove nozzle
- Check the nozzle for damage





Quick Fix: Replacing Broken Sprinkler Nozzle

- Choose the Right Replacement Nozzle
 - Select a new nozzle that matches the specifications of your sprinkler system. Nozzles are rated by their spray distance and pattern
 - Take existing nozzle with you to ensure you purchase the correct replacement nozzle
- Reassemble the sprinkler head
 - Replace the filter
 - Replace the nozzle
- Turn on system to ensure sprinkler head is working properly
- Realign sprinkler head so it is only spraying on plant material and not sidewalk or other



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Free subscription at
WaterMyYard.org

- Allows subscribers to customize settings based on their specific irrigation system types/zones
- Promotes keeping your system turned off and only using it when necessary to supplement current rainfall
- There's even a smartphone app for it





Water Is Awesome

HOMEOWNER'S GUIDE TO
LANDSCAPING EVENT

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WATERING
ADVICE

DO-IT-YOURSELF
BROCHURES

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WaterIsAwesome.com

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THANK YOU