Water Supply, Conservation, and Drought: A Look at What’s Ahead
February 25, 2014

Current TRWD reservoir storage capacity: 71.6%
TRWD remains in Stage 1 drought restrictions initiated June 3.

TRWD Water Supply and Drought Conditions Update
- Moderate drought conditions are persistent across North Texas. [source](http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?TX)
- Rainfall remains sparse in 2014. For the year, rainfall amounts are 3.65 inches below normal. Since September 2013, we are 4.96 inches below normal.
- The climb in reservoir storage we experienced in the latter part of last year has tapered off. And reservoir levels have remained steady the last two weeks, with storage capacity at 71.6 percent.
- Demands of our primary customers are currently averaging 91% of normal water use for the year, currently ranging from 206-232 mgd and averaging 218.5 mgd for the previous week.
- It’s way too early to make any predictions about where water supplies will be heading into the summer. A chart of potential water supply storage scenarios is included at the end of this document.

Water Conservation and Drought Plan Updates
As you are aware, updated water conservation and drought contingency plans are required to be submitted to the TCEQ and TWDB by May 1, 2014.

Much has transpired since the previous drought plan updates. Meetings with Dallas Water Utilities, North Texas Municipal Water District, Upper Trinity Regional Water District, and Tarrant Regional Water District have resulted in regionalization of the drought response measures.
- Highlights include:
  - Total of three drought stages in all plans.
  - Stage 1 = twice per week, Stage 2 = once per week, Stage 3 = no outdoor watering; watering with a handheld hose, soaker hose, or drip irrigation will be allowed any time, any day with possibly some time of day restrictions in the latter stages.
  - Restrictions on commercial industries, i.e. power washers and car washes, were pushed back into Stage 3.
More information on water conservation and drought contingency plan requirements:

- Texas Commission on Environmental Quality: http://www.tceq.state.tx.us/permitting/water_rights/contingency.html
- Texas Water Development Board: https://www.twdb.texas.gov/conservation/municipal/plans/index.asp

A draft copy of the updated drought contingency plan is attached. More modifications are expected, but this is something that you can use as guidance for now.

On the conservation side of things, we are in the process of updating the information in the TRWD water conservation plan.

Yes. There is an effort underway in Fort Worth to make the twice per week restrictions permanent. If you haven’t read the recent article in the Star-Telegram, “Fort Worth watering limits could become permanent”, (02-18-2014) – now would be a good time. You can find a link to the article on SaveTarrantWater.com.

Please contact us or your water provider if you have questions about your water conservation and/or drought contingency plans. Phone: 817-335-2491.

Overview of 2013 Water Savings:

With twice-per-week mandatory watering restrictions in place all summer, we should all have a better idea of the savings (and revenue impacts) that can be attributed to a mandatory watering schedule.

Here’s a brief look at TRWD water demands for 2013:

- Based on a model developed by Plummer comparing projected demands with actual demands, the estimated water savings due to conservation and drought restrictions was approximately 30.7 billion gallons or about 95,000 acre-feet.
- Water demands of primary customers amounted to 311,827 acre-feet. The lowest annual water use since 2009.
- Per capita water use was approximately 165.5 gallons. (Includes total water use divided by population). Again, very similar to 2009, with a notable exception: we had about 10 inches less rainfall in 2013.

Other water conservation statistics 2007-2013:

- Cumulative savings of 103.1 billion gallons, which amounts to 316,244 acre-feet.
- Annual savings ranging from 8.0 to 30.7 billion gallons, with savings on an annual basis averaging 14.7 billion gallons.
• An average savings of 40.3 mgd. At the 2013 rolling average consumption rate (176 gallons per capita per day), 40.3 million gallons per day could support an additional 228,975 people.

• On average, the savings observed from all water conservation measures implemented to date is approximately 45,177 acre-feet per year.

**TRWD Water Conservation Activities Update**

**Weather stations and weekly lawn watering advice.** TRWD is in the process of installing two additional weather stations at the Eagle Mountain Pipeline balancing reservoir and the Kennedale balancing reservoirs. A weather station is already in place at the National Weather Service office in Fort Worth.

Evapotranspiration data from the weather stations along with MPE (multisensor precipitation estimator) rainfall data across Tarrant County will allow us to provide real-time watering recommendations for residents in Tarrant County.

The ET data from the TRWD weather station and 11 other weather stations across North Texas is already being used to provide weekly watering advice on the Lawn Whisperer’s Facebook page. Station locations can be found on the Texas ET Network (http://texaset.tamu.edu/dallas1.php).

Based on climate observations in 2013, Tarrant County residents did not have to water their lawn 33 weeks last year; needed to turn on their sprinklers only one-day-a-week for 13 weeks; and needed to water twice-per-week for 6 weeks. The twice per week recommendation is provided when watering recommendations exceed 0.50 inches.

We will ultimately place the weekly watering information on SaveTarrantWater.com web site and give people an opportunity to sign up to receive the weekly recommendations via email.

TRWD will be hosting an **Efficient Irrigation Seminar** at the Bob Duncan Center in Arlington. The workshop for irrigators and landscapers will be held March 7 from 7:45 a.m. – 12 p.m. The course is approved for three CEU credits from TCEQ and TNLA. Cost is $20. More information and a link to the registration page is available at: http://www.savetarrantwater.com/Pages/2014%20efficient%20irrigation%20seminarflyer_new.pdf
The chart above represents different tracking scenarios of our water supplies starting Jan. 1.
The black line represents real-time water levels through mid February.
The blue line represents average water supplies expected at least half the time.
The orange line is a 1 in 4 year drought scenario.
The red line is a 1 in 10 year drought scenario.
The dashed line represents a worst case scenario – 1 in 100 year drought.
Background

- TRWD requires all customers to initiate Stage 1 of its Drought Contingency Plan when combined storage capacity in its water supply reservoirs declines to 75%.

- Combined storage capacity is based on water levels in four reservoirs: Lake Bridgeport, Eagle Mountain Lake, Cedar Creek and Richland-Chambers Reservoirs.

- Those reservoirs are used to supply approximately 98% of all Tarrant County residents and businesses – about 1.8 million people in all.

- TRWD’s primary customers include the cities of Fort Worth, Arlington, Mansfield and the Trinity River Authority, which serves the mid-cities area.

- In Stage 1, our goal is to reduce water use by at least 5% over what we would normally use.

Key Stage 1 Drought Measures

- Limit outdoor watering with hose-end sprinklers and automatic irrigation systems to no more than twice per week at each service address.

- No outdoor watering with hose-end sprinklers and outdoor irrigation systems between 10 a.m. and 6 p.m.

- Prohibits using water in a wasteful manner, such as allowing runoff to flow from property a distance of more than 50 feet, or other types of waste, including failing to repair broken sprinkler heads or fix outdoor leaks.

- Watering by hand or using soaker hoses or drip irrigation is allowed anytime, any day of the week.

Other Key Points:

- Watering on a twice per week schedule right now is probably overdoing it.

- We offer weekly watering advice on the Lawn Whisperer’s Facebook page. The updates, provided every Monday, are based on the previous week’s climate conditions.
Current recommended watering schedule involves watering about once a week - adding no more than 0.5” total – if it hasn’t rained. That represents about half of our watering needs during the hottest months of the summer.

Here’s the schedule TRWD will be promoting (based on the schedules established by a majority of Tarrant county cities):

**KNOW YOUR WATERING SCHEDULE**

**MONDAY**
No watering allowed

**TUESDAY & FRIDAY**
Non-residential sites (apartments, businesses, parks, common areas)

**WEDNESDAY & SATURDAY**
Residential addresses ending in 0, 2, 4, 6, 8

**THURSDAY & SUNDAY**
Residential addresses ending in 1, 3, 5, 7, 9

Links and other resources:

Practical water advice and landscape tips by the Lawn Whisperer on Facebook (https://www.facebook.com/TxLawnWhisperer)


[2012 is shaping up to be warmest year on record](https://www.fortworthstar-telegram.com/2012-12-17/2012-shaping-up-warmest-year-record) (Fort Worth Star-Telegram, 12-17-2012)

[Texas ‘drought rearing its ugly head again’](https://www.fortworthstar-telegram.com/2012-11-29/texas-drought-again) (Fort Worth Star-Telegram, 11-29-2012)

See [U.S. Drought Monitor](https://www.droughtmonitor.gov) for latest updates on drought progress
There are more ways to be water efficient to help us get through this drought. See trwd.com and SaveTarrantWater.com for updated lake level information and tips on conserving water outdoors.