

Water Resources Council (WRC)

October 3, 2019



North Central Texas Council of Governments

**Environment
& Development**

www.nctcog.org/WaterResources

1. Welcome and Introductions.

2. Service Awards Presentation.

- Ms. Fiona Allen, Trinity River Authority
- Mr. Tim Fisher, City of Denton
- Mr. Terry Kelley, Johnson County Special Utility District

Action Item

3. Meeting Summary.

- The July 9, 2019 meeting summary will be presented for approval.

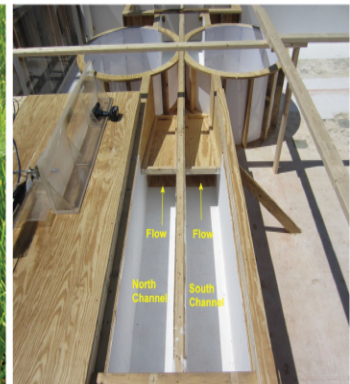
Presentation

4. Tarrant Regional Water District's Service Area Survey.

Dustan Compton, TRWD

Gian Villareal, CDM Smith, Inc.

Doug Varner, CDM Smith, Inc.

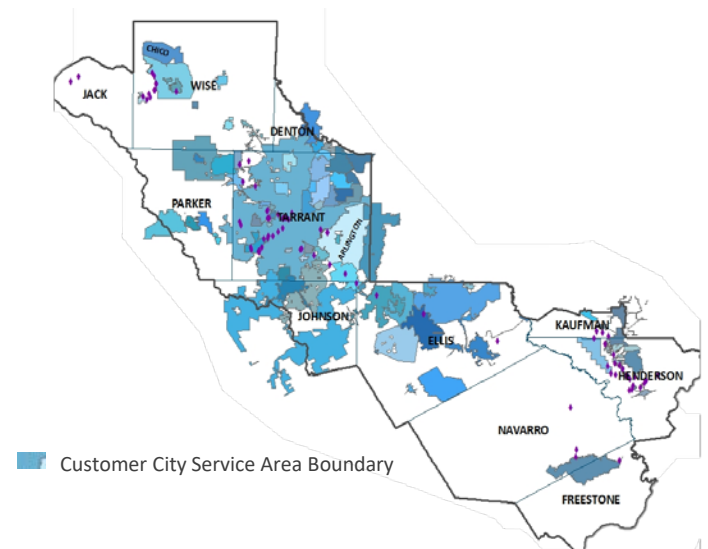


TRWD Service Area Demand Study



TRWD Service Area Demand Study Overview

- Study to estimate the current and future water demand across TRWD service area
- Capture the spatial growth in housing and commercial activities across the region
- Exploring the impact of factors known to influence water use, including:
 - lot size
 - household size
 - commercial development
 - indoor plumbing fixtures
 - conservation behaviors
- Study included a survey of the general population to understand attitudinal shifts in the key impactors



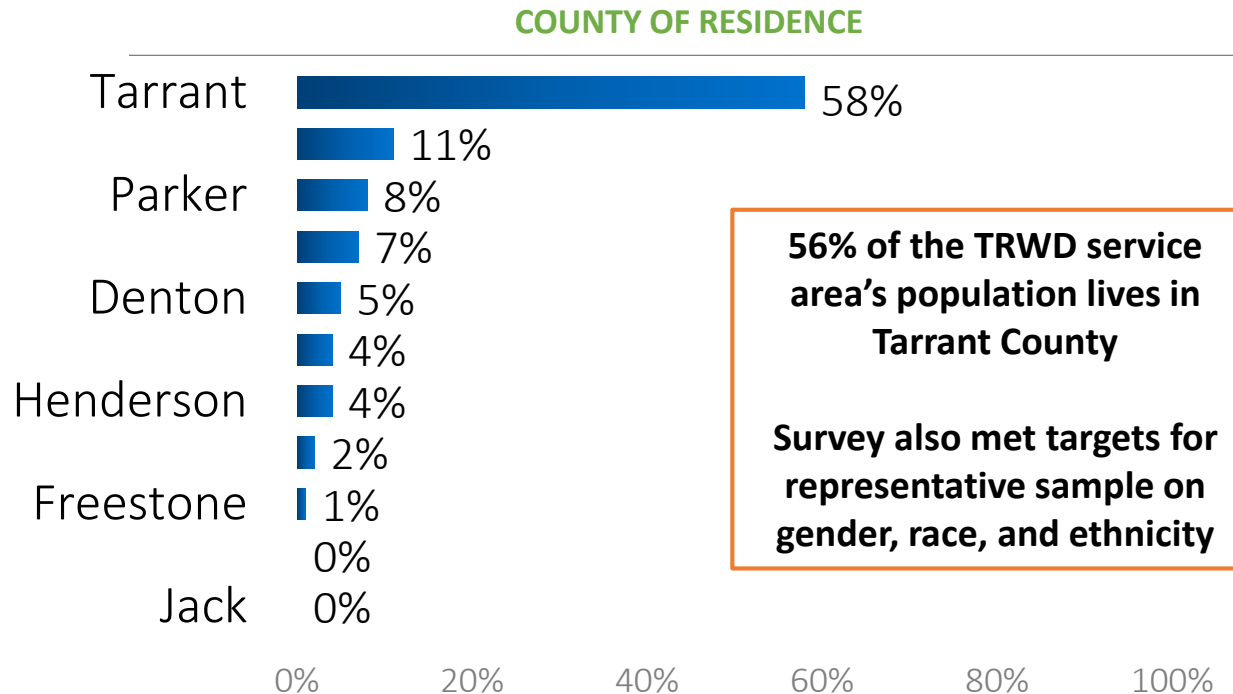
Focus of
Presentation

Survey Details

- 15-minute online survey among residents of TRWD's service area
- Collaboration between TRWD, CDM Smith, and SIR
- Objectives:
 - Understand how differences in generations and demographics impact
 - housing preferences and
 - water sustainability
 - Support development of demographic and water demand forecast scenarios
 - Understand awareness and attitudes about water use and conservation
- Survey respondents met the following qualifications:
 - Ages 16+
 - Reside in TRWD's service area, which includes parts of the following counties: Denton, Ellis, Freestone, Henderson, Jack, Johnson, Kaufman, Navarro, Parker, Tarrant, and Wise
- Survey executed April 15 to May 9, 2019
- 806 completed surveys

Three in Five Respondents Live in Tarrant County

On average, residents have lived in the region for 19 years



56% of the TRWD service area's population lives in Tarrant County

Survey also met targets for representative sample on gender, race, and ethnicity

Respondents were segmented by their birth year in order to analyze results through SIR's generational lens

Generational segments of n=200 were targeted in this survey for appropriate statistical analysis

		(born prior to 1965)	(born 1965–1980)	(born 1981–1996)	(born after 1996)
		BOOMERS	GEN X	MILLENNIALS	GENERATION "Z"
SIR's Institute for Tomorrow (IFT) <i>Generational Mindsets</i>	OUTLOOK	Optimistic	Skeptical	Confident	Protective
	WORK ETHIC	Driven	Free Agent	Goals	Self-taught
	VIEW OF MONEY	Spenders	Debtors	Savers	Frugal
	VIEW OF LEADERSHIP	Pay your dues	Competence	Egalitarian	Pluralistic
	WORK/LIFE BALANCE	Work is Life	Work to Live	Integrated	TBD
	MEDIUM	TV	Computer	Mobile	VR?
	ORIENTATION	Self-centered	Self-reliant	Collective Self	Self-aware
		n = 198	n = 200	n = 203	n = 205

Results further analyzed by minority group and income level

DEMOGRAPHIC	GROUP	SAMPLE PROPORTION	CENSUS (2017 American Community Survey)
GENDER	Male	48%	49%
	Female	52%	51%
RACE	White	85%	85%
	Black or African-American	11%	11%
	Other	4%	4%
ETHNICITY	Hispanic or Latino	11%	14%
	Not Hispanic or Latino	89%	86%

ANNUAL HOUSEHOLD INCOME

Average total household income

\$75K



Key Findings



Results Related to Water Source Knowledge

- Positive opinion of North Texas water
- Mostly uninformed about local water management and TRWD
 - Two in five respondents are unsure of the source of their drinking water
 - Most respondents do not know or are unsure who manages their source water
 - Most respondents do not know/are unsure who provides drinking water to their home
- Minorities and lower income households are less sure of their source(s) of drinking water

Future Housing Types

- Homeowners favor detached homes with large yards, especially as they age and have families
- Gen Z higher interest in city apartment living
- Gen Z's lower interest in rural/suburban detached home living may be a generational trend or a life-stage preference
- Minority respondents are more likely to want to live in the **city in condo or apartment**, while white respondents more likely want to live in a **small town or rural area in a detached home**
- Therefore, prudent to test a future scenario that models the water demand impact from a shift in current housing types towards urban, high-density preferences of Gen Z and minority populations

Ideal Outdoor Area by Generation – Grass Lawns

IDEAL OUTDOOR AREA	GEN Z	MILLENNIAL	GEN X	BOOMER+
Mostly a traditional grass lawn	33%*	33%*	23%	15%
Mix of lawn and landscape beds	33%	40%	46%*	51%*
Overall grass lawn preference	66%	73%	69%	66%
Mix of non-landscaped area with few trees/shrubs	21%*	12%	11%	11%
Mostly native or drought-tolerant landscaping	5%	10%	12%	19%*
No or very few shrubs or trees, mostly hardscape	4%	2%	6%	2%
No landscape area at all	5%	2%	3%	3%

*Statistically significant



Future of Outdoor Irrigation

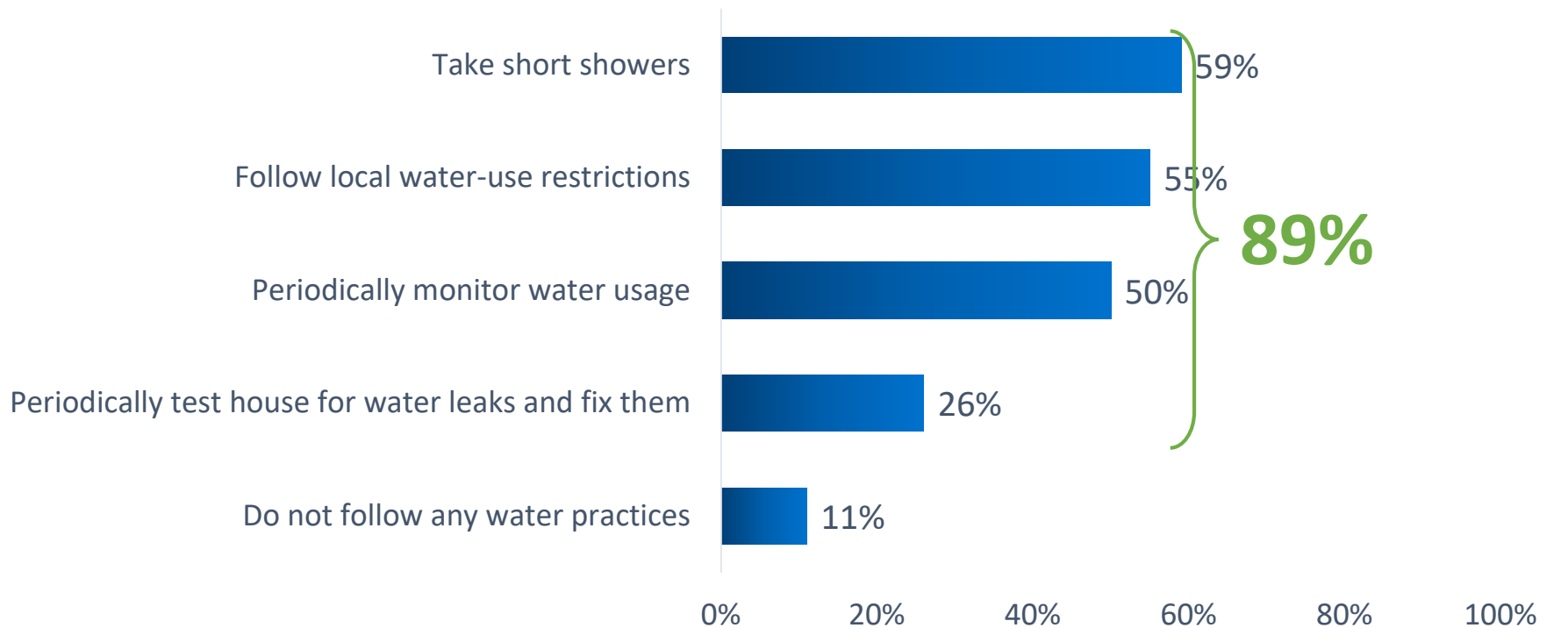
- Preferences for large lawns that are all or partially grass
- Continued efforts on best irrigation practices could decrease water usage
- In absence of programs, assume the current level of water use from lawn irrigation and outdoor area watering to continue
- Future scenario should be developed based on Gen Z's preference for homes with smaller irrigation needs



Conservation Attitudes

- All generations of residents state that water conservation is important
 - Boomer+ respondents are most likely to feel water conservation is important
 - No significant differences in race or income regarding importance of environmentalism or water conservation, or self-reported ratings of water conservation behaviors
- Almost four in five respondents feel water conservation is going to become more important in the future
- Older generations currently perform the most water conservation behaviors

Self-Reported Water Conservation Behaviors

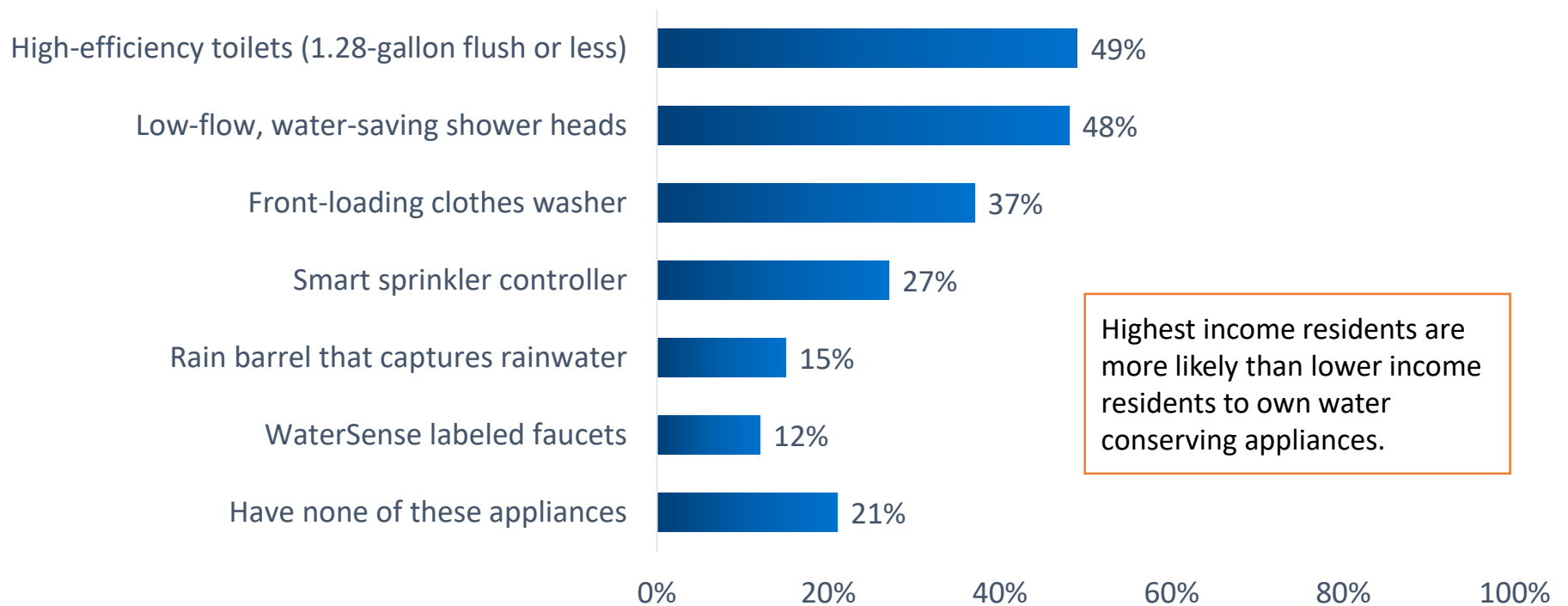




Summary of Self-Reported Water Conservation Behaviors

- Nearly nine in 10 residents say they currently follow at least one conservation water use practice
- Only 1 in 2 follow water use restrictions
- Lower income residents are more likely than higher incomes residents to not follow any water conservation practices

Water Savings Fixtures and Appliances



Highest income residents are more likely than lower income residents to own water conserving appliances.

Gen Zs Results....

- Gen Zs have high importance ratings for conservation, but are least likely to behave environmentally (through either having water saving fixtures or exercising water saving behaviors)
- Common attitude/behavior gaps noted in numerous research on Gen Zs and Millennials

ATTITUDES

- 80% say that the environment is important
- 67% say water conservation is important

BEHAVIORS

- Only 46% say they conserve water
- Least likely of generations to perform any water conservation behaviors
- Least likely of generations to perform any environmental conservation behaviors

*Results are consistent with other research



Projecting to the Future



Projecting Behaviors and Preferences

- Millennials and Gen Zs will be the majority population in the future, and will be making economic decisions that impact the landscape
- By weighting the original survey data to match 2040 projected demographics for the TRWD area, we can create a “future survey” with projections for future resident conservation attitudes

TRWD Service Area Demographic Information – Now to 2040

Gen Z, Hispanic, and non-White segments are set to increase significantly in the next 20 years

DEMOGRAPHIC	GROUP	CURRENT CENSUS*	2040 PROJECTIONS**
GENDER	Male	49%	47%
	Female	51%	53%
GENERATION	Gen Z (born before 1996)	13%	44%
	Millennials (born 1981–1996)	30%	24%
	Gen X (born 1965–1980)	31%	20%
	Boomers + (born prior to 1965)	26%	12%
RACE	White	85%	63%
	Black or African-American	11%	18%
	Other	4%	19%
ETHNICITY	Hispanic or Latino	14%	22%
	Not Hispanic or Latino	86%	78%

*2017 American Community Survey

**Texas Population Projections, Texas State Data Center 2014

Future Implications

- With the projected demographic increase in Gen Zs and minority groups:
 - Conservation importance and personal performance ratings are projected to be on the decline in the future
- With this small but significant change in attitudes and behaviors, water usage rates may increase with time
- Higher conservation knowledge leads to higher water conservation attitudes and behaviors
- Knowledge-based campaigns in the area could turn this projection around
- Shift towards more urban living, which implies smaller lots and more multifamily living

Next Steps

- Incorporate survey results for preferences in housing, lot size, etc. into 2040-2070 projections for demographics for the TRWD service area
- Demographic projections get translated to water use per household
- Assess impacts from various scenarios for water conservation levels for future generations





Questions

Discussion

5. Final 2019 Water Quality Management Plan (WQMP).

- Draft endorsed by NCTCOG's Executive Board on August 22, 2019
- Final version approved by TCEQ on September 9, 2019 and available online under "Water Quality" banner at: <https://www.nctcog.org/envir/natural-resources/water-resources>

6. FY2020 Water Resources Council Membership.

- Approved via electronic vote on August 21, 2019
- Approved by NCTCOG's Executive Board on September 26, 2019
- Based on new by-laws
- Membership webinar

Discussion

7. Risk and Resilience Assessment and Emergency Response Plans.

- Members are asked to share their updates.

Discussion

8. Supplemental Environmental Projects (SEP) Update.

- Application approval takes time and funding submittals are intermittent and unpredictable.
- Application can be specific about what SEP projects will be funded.
- SEP funds can be used as a match for non-point source 319 projects.
- Cannot use funds on a project that is under TCEQ enforcement.
- Promote program through newsletters, Chambers of Commerce meetings, and signage.

9. Environmental Working Group (EWG) Information

- Members are asked to provide input on the validity of the data and information.

Other Business and Roundtable Discussion

10. NCTCOG Updates.

- Water for North Texas Resource Library - Next meeting of Advisory Group RESCHEDULED to November 20, 2019
- Conversion of Frognot Water Supply Corporation.
- Solid Waste Call for Projects Opens October 14.

11. Future Agenda Items.

The committee can request future agenda items.

Other Business and Roundtable Discussion

12. Roundtable.

13. Schedule for the Next meeting

- The next WRC meeting is scheduled for:
Wednesday, January 15, 2020
10:30 a.m., Centerpoint Two
William Pitstick Conference Room

14. Adjournment.

Staff Contacts:

▶ Elena Berg

Environment and Development
Planner

eberg@nctcog.org

817-608-2363

▶ Cassidy Campbell

Senior Environment and
Development Planner

ccampbell@nctcog.org

817-608-2368

▶ Tamara Cook

Senior Program Manager of
Environment and Development

tcook@nctcog.org

817-695-9221

▶ Edith Marvin

Director of Environment and
Development

Emarvin@nctcog.org

817-695-9211