



Growing the Numbers in a Growing City: Communicating a Water Education Message

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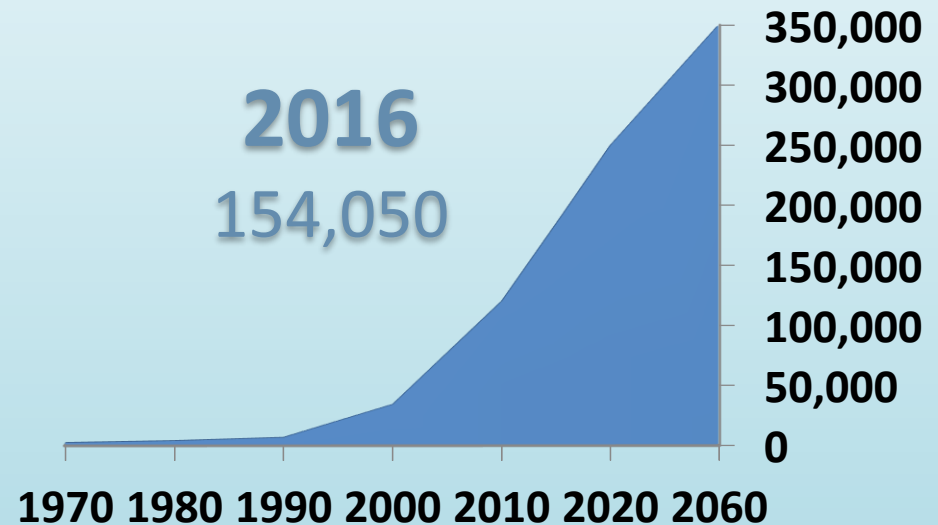


Introduction

- Public water suppliers & municipalities frequently need to communicate rapidly changing information to public regarding water supply
 - Team members may not have public information educational backgrounds
 - Creating effective communications can be challenging
 - Part of effective communications involves understanding the local demographic base

The Challenge: Frisco

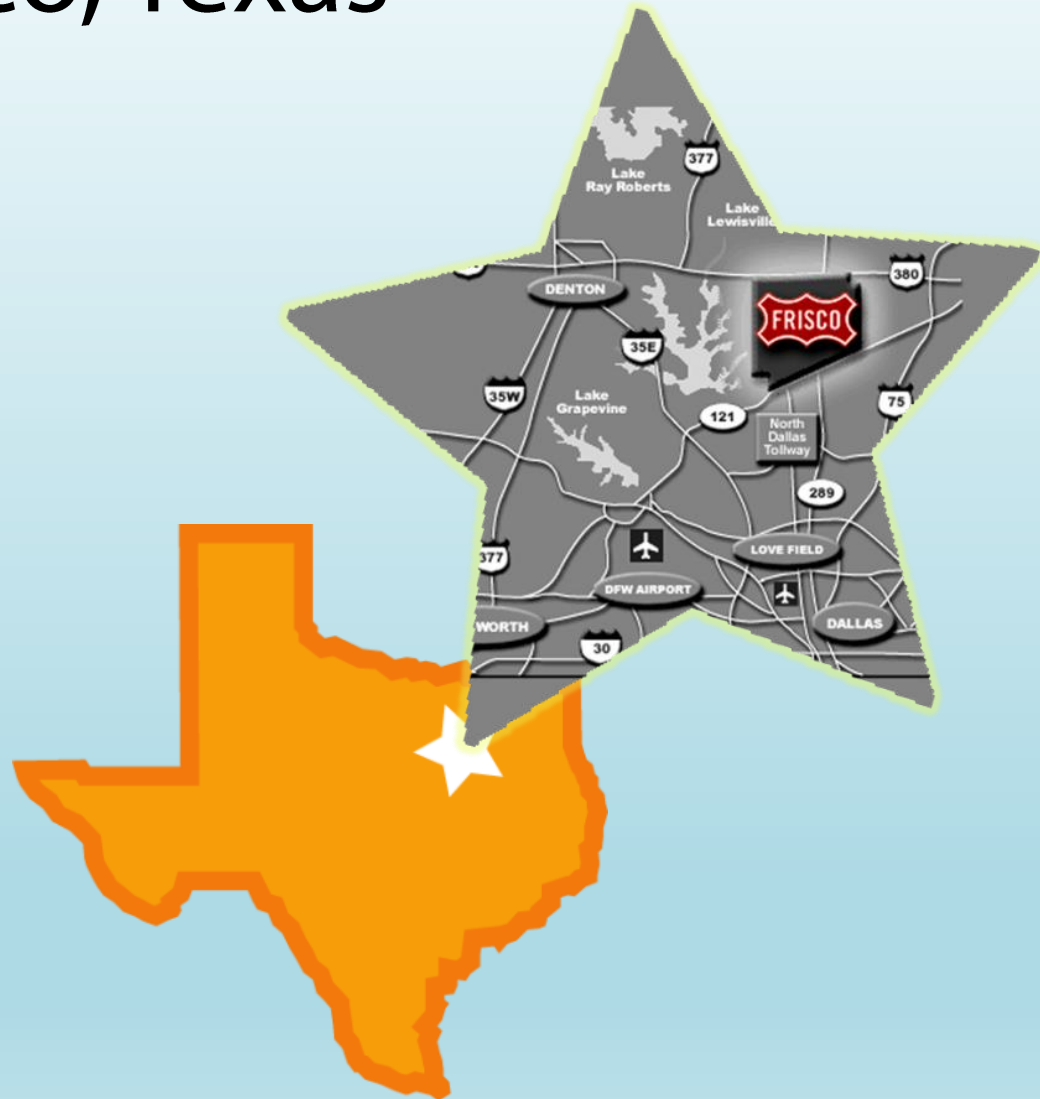
- Growing community
 - 4.8 % compound annual growth rate (2010-15)
 - Demographic with high outdoor water use
 - With increasing population & development, water use and drought conditions placed additional burden of education on new water customer





Frisco, Texas

- Population 154,680 (April 2016)
- 70 square miles across Denton & Collin County
- Bordered by McKinney, Plano, Allen



North Texas Municipal Water District

**49 Customer Cities, Towns,
and Water Supply
Corporations**

1.6 million people

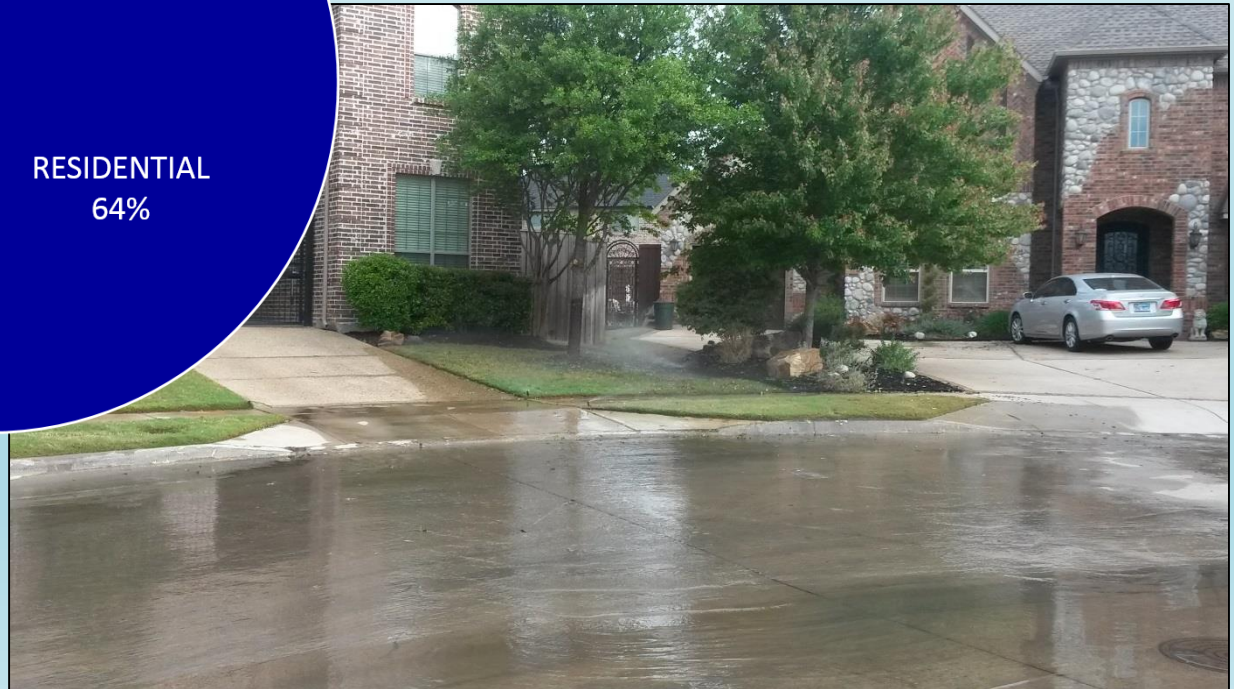
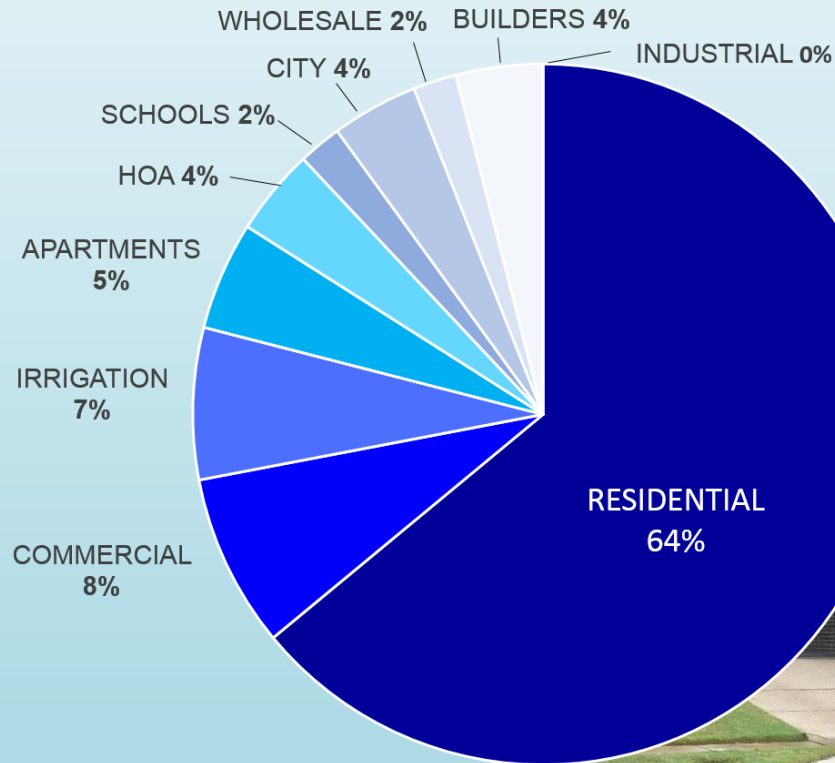
- **13 Member Cities**

Allen	Plano
Farmersville	Princeton
Forney	Richardson
Frisco	Rockwall
Garland	Royse City
McKinney	Wylie
Mesquite	

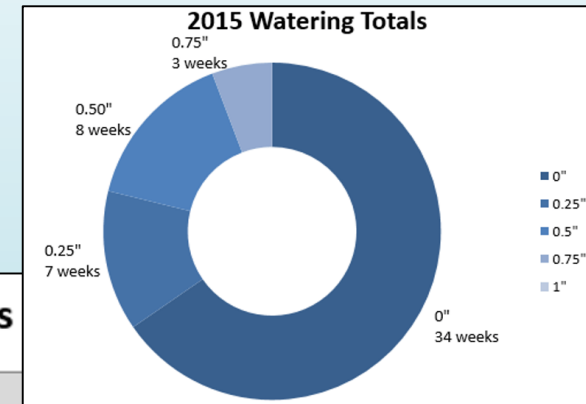
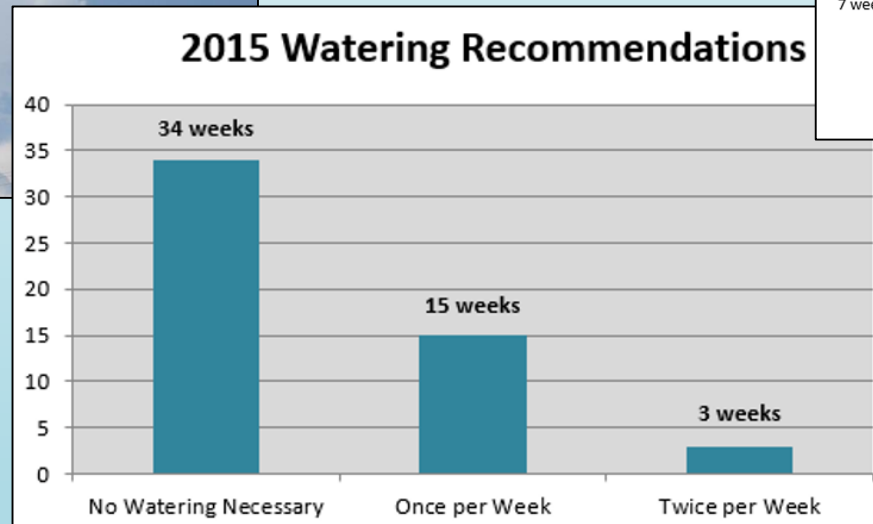
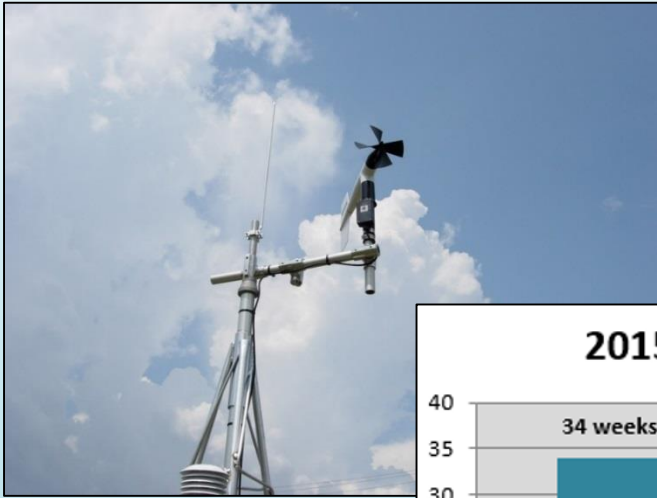


Typical 2015 Water Usage

50,000 Water Customers



Weather Station and Watering Recommendations



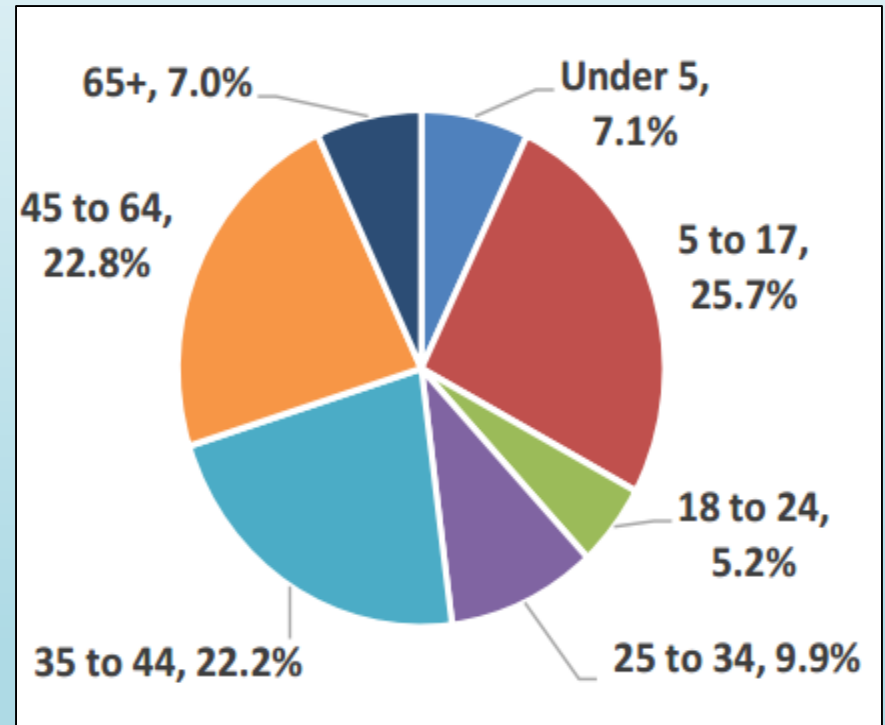
Penman Montieth Equation (Allen, *et al.*, 1998):

$$\lambda_v E = \frac{\text{Energy flux rate}}{\Delta + \gamma (1 + g_a / g_s)} \quad \Longleftrightarrow \quad ET_o = \frac{\text{Volume flux rate}}{(\Delta + \gamma (1 + g_a / g_s)) L_v}$$

$$\lambda_v E = \frac{\Delta(R_n - G) + \rho_a c_p (\delta e) g_a}{\Delta + \gamma (1 + g_a / g_s)} \quad \Longleftrightarrow \quad ET_o = \frac{\Delta(R_n - G) + \rho_a c_p (\delta e) g_a}{(\Delta + \gamma (1 + g_a / g_s)) L_v}$$

Frisco Community: An Introduction

- 49.0 percent zoned as single family residential
- Median age 34.5 years
- 42.5 percent married couples report more than one child in household
- Families account for 81.6% of households in Frisco



Population of Frisco, 2014 American Community Survey.


The Growth Factor

- Median house-hold income \$109,956
- 60% Frisco professionals employed in technology, science, and/or management
- Average-single family home appraising approx. \$317,600 (Frisco EDC, 2015)



WaterWise Newsletter

- E-newsletter sent weekly
 - Primary vehicle for watering recommendations
 - Educational articles
 - Upcoming events and workshops
 - Changes and updates about water supply
- >15,600 subscribers
- Powered by Mailchimp
 - Customizable templates shared by multiple departments in the city



Upcoming Workshops: Native Pollinators


Bring your lunch, and "buzz" on over to learn more about some of our most important pollinators. WaterWise Brown Bag workshops offer abbreviated educational programs designed to fit into your lunch hour. This free workshop

Monday, September 21, 2015

Free Sprinkler System Check-ups

Need some assistance with your automatic sprinkler system and controller? A licensed irrigator from the City of Frisco can guide you through your sprinkler system operation and evaluate its water use efficiency. To schedule your FREE checkup, please send an e-mail to waterwise@friscoTexas.gov.

[read more](#)



Water Waste Violations

Did you see water waste?

It is always important to be good stewards of our water resources. The anonymous [report water waste form](#) sends a real-time automatic response to the City of Frisco's water patrol units.

As a reminder, over-seeding and watering cool season grasses such as winter rye or fescue is not permitted and could result in a water violation. It is important to allow our perennial grasses to go dormant during the winter months and allow our lakes an opportunity to recharge.

continue to use water wisely for the long-term protection of


[read more](#)

Upcoming Texas SmartScape Events

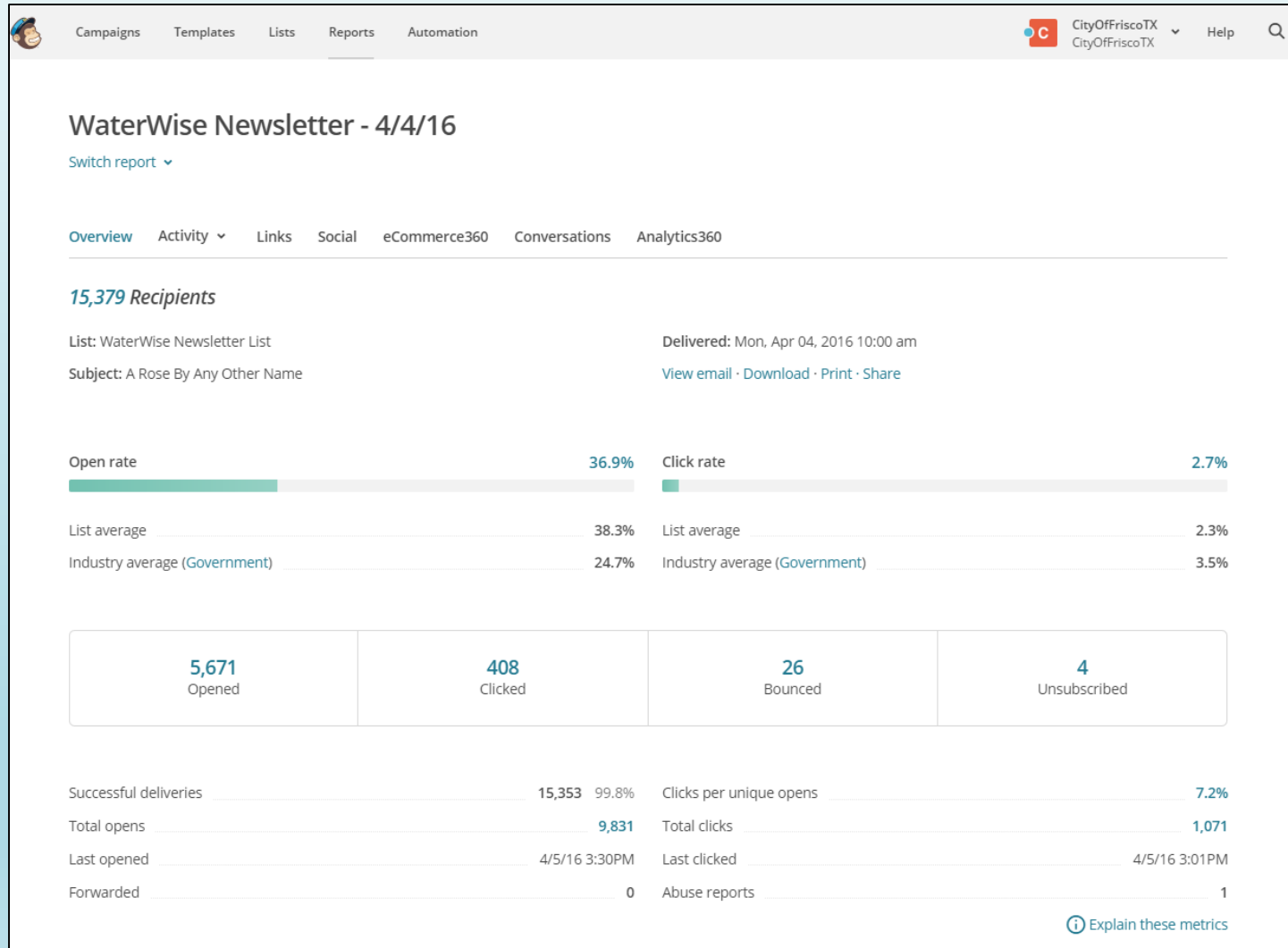
The City of Frisco is teaming up with Texas SmartScape™ and local plant nurseries to offer you special deals and great savings on select varieties of low-water-use plants that will thrive in the Texas heat. In addition to the discounts on select native and adapted plants, you can talk with a master gardener, plant expert, or irrigation specialist and get ideas and tips for landscaping in North Central Texas.

This year's events in Frisco are scheduled for:

Plant native. Native or adapted trees will be unaccustomed to our hot summers, cold winters. [A&M](#) Forest Service both provide online resources for native and adapted tree species.

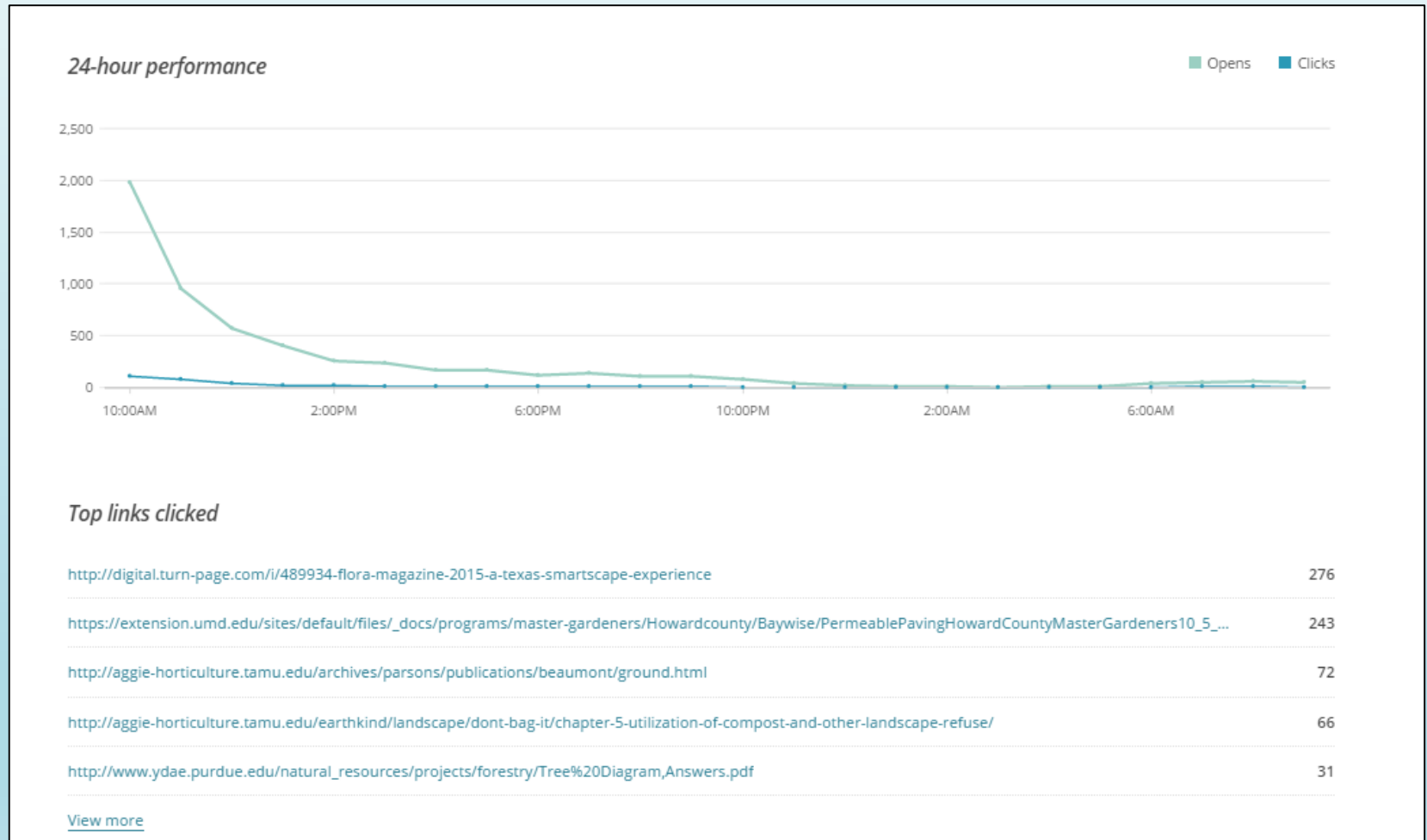


Mailchimp Analytics



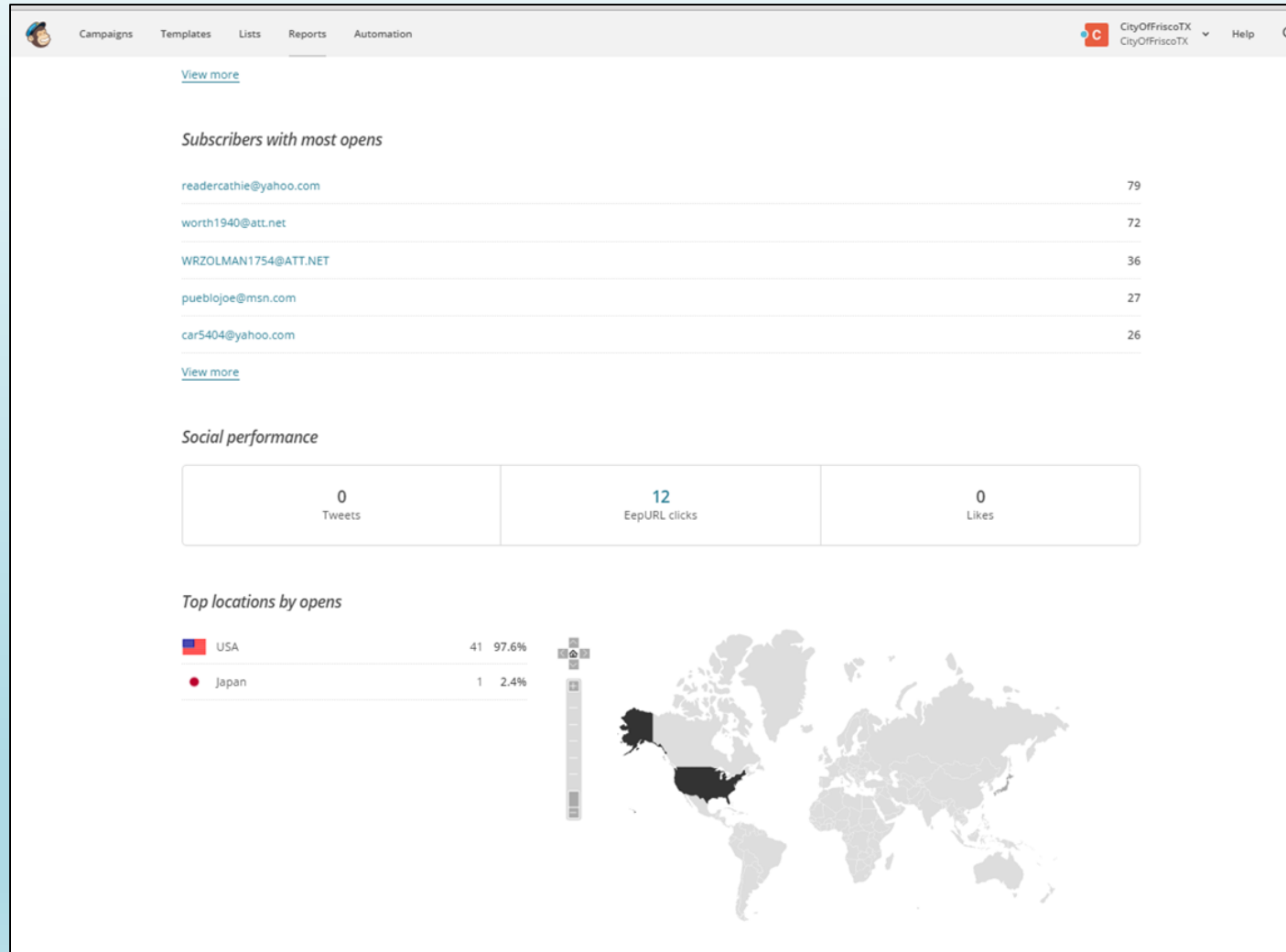
Mailchimp Analytics Report for WaterWise Newsletter, edition 1/4/16.

Mailchimp Analytics



24-hour performance and top links clicked for WaterWise Newsletter, edition 1/4/16.

Mailchimp Analytics



Ranked subscriber opens, WaterWise Newsletter, edition 1/4/16.

Communicating with a City

Top links clicked

http://www.friscotexas.gov/departments/publicworks/water/Documents/Updated%20BMP%20Map%20front%20and%20Back.pdf	622
http://friscotexas.gov/wateringwisely	261
http://www.friscotexas.gov/departments/publicworks/water/lawnGarden/Pages/CycleandSoak.aspx	228
http://www.txsmartscape.com/plant_search/getplantdatasingle.asp?plant=249	109
http://uvalde.tamu.edu/herbarium/forbs-common-name-index/frog-fruit/	70
View more	

Mailchimp's top links clicked for hyperlinks embedded in article, edition 8/3/2015.

- Analytics track audience interaction with each publication
 - Helps to identify effective communication
 - Trending interests

Step to the Side

Is your home's side yard a landscaping pain – requiring seemingly endless replacements of plants and sod?



Side yards can be a challenging location to landscape. These areas tend to be small, oddly sized, and often receive inconsistent amounts of sunlight due to the proximity of other nearby homes.

While side yards often present some unique landscaping challenges, you can use the limitations of the space to your advantage - instead of fighting it.

In Frisco, side yards are generally not used for much other than to serve as passageways from the front yard to the back. Why not enhance the functionality for this purpose by adding hardscape? Consider installing stepping stones surrounded by crushed granite to create a more accessible passageway that will also reduce the need for supplemental irrigation.

For visual appeal, line the area with interspersed mulch beds of varying sizes planted with species adapted to the variable conditions. Is your side yard exposed to the sun? Plant tough, drought-tolerant species that thrive in full sun, such as **frog fruit** (*Phyla nodiflora*) or **snake herb** (*Dyschoriste linearis*). If partial or full shade is an issue, stick with shade-loving natives such as **white sagebrush** (*Artemisia ludoviciana*) or adapted species like **mondo grass** (*Ophiopogon japonicus*). Check out the [Texas Smartscape plant database](#) to explore other shade-loving ideas.

When selecting plants for a side yard, focus on smaller species that grow lower to the ground, such as ground covers, short ornamental grasses, or small shrubs. Larger species such as trees (even if attractive at first) will likely outgrow a small side yard space, potentially resulting in excessive pruning or eventual removal or replacement. Starting with plants that are a good long-term fit for a small space will save money in the long run.

What Worked

- Bring the information to them
 - Send it at a time when they will open it
 - Different for every city & depending on program
 - Determine most important information, and minimize reader's need to “hunt” for it
 - Recommendations provided in simplified format
 - Hyperlinks to more detailed information about setting controller
 - Program linked to sprinkler checkup program



edition 9/8/13.

University of North Texas in 2013. While there, she

What worked

- Average visit to internet web page less than one minute (Liu, *et al.*, 2010)
- Information short & simple
 - Highlighted bullet points draw attention to key points
 - Text broken up
- Easy access to more detailed information through hyperlinks
- Click rates from hyperlinks can be used to identify trending questions



Mailchimp's click rate map displaying percent click rate for hyperlinks embedded in article, edition 8/3/2015.

Growing the Numbers

- Maintaining a high subscription rate essential
- Opportunities for sign ups provided at city-sponsored events (workshops, outreach events, HOA presentations)
- Irrigators receive subscription requests after sprinkler checkups
- Block Captain volunteers collect sign-up sheets
- Optional sign-up on UB new resident portal website
 - 2,407 new resident subscribers in 2015

Interdepartmental partnership

- “High” water bills 2015
- Utility Billing received increased calls
 - Newsletter information guided readers to resources to address high water bills, & help them learn more about water use

High Water Bill?

Have you been experiencing higher than usual water bills this summer?

Under the drought conditions last year, watering was permitted only once every two weeks. With loosened drought restrictions and a return to the once-per-week watering schedule, many residents have begun to apply additional water to their lawns and landscapes.



If your sprinkler controller has been re-set to operate at a once-per-week watering schedule, then you may be applying twice as much water as you did in summer 2014. This means that your resulting water bill could be nearly twice as high as last summer!

Likewise, residents that water twice-per-week (as a reminder, in Frisco, [this is only permitted during weeks when weather station data indicates that twice-per-week watering is needed](#) – only two weeks this year so far!) could see water bills as much as four times higher than the previous summer, depending on the settings of their sprinkler controller.

The best thing you can do is water *only when watering is necessary*, by following Frisco's watering recommendations. If only one day of watering is recommended in a given week, running sprinkler

WaterWise Newsletter, “High Water Bill?” dated 9/8/15.

Final points

- Opportunities for interdepartmental partnership
- Because of communication efforts, water usage in Frisco has dramatically decreased, despite ever-increasing population growth
- Residential per capita water usage decreased from 299 GPCD in 2000 to 169 GPCD in 2015

Questions?

References:

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Allen, R. G., Pereira, L. S., Raes, D., & Smith, M. (1998). Crop evapotranspiration-Guidelines for computing crop water requirements-FAO Irrigation and drainage paper 56. *FAO, Rome, 300(9)*, D05109.

Anderson, J., & Rainie, L. (2012). Millennials will benefit and suffer due to their hyperconnected lives. The Pew Research Center's Internet and American Life Project.

City of Frisco. Planning and Development Department. Development Activity Report: Frisco Facts 2015.

Liu, C., White, R. W., & Dumais, S. (2010, July). Understanding web browsing behaviors through weibull analysis of dwell time. In *Proceedings of the 33rd international ACM SIGIR conference on Research and development in information retrieval* (pp. 379-386). ACM.



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