



# REDUCING RESIDENTIAL WATER WASTE FROM LANDSCAPE OVERWATERING

FUNDING PROVIDED BY CITY OF COLLEGE STATION  
AND BRAZOS VALLEY GROUNDWATER CONSERVATION DISTRICT



**WATER MANAGEMENT &  
HYDROLOGICAL SCIENCE**

# WATER WASTE FROM OVERWATERING: CAUSES

- Failure to shut irrigation system off after rainfall provides sufficient water
- Watering too long or often
- Poor system design
- Leaks



# WHY FOCUS ON RESIDENTIAL WATER USE

- EPA study has shown that **30-50%** of residential water is wasted due to overwatering



# INTERVENTIONS TO REDUCE OVERWATERING



BVWaterSmart website and network



BV weekly watering recommendations



Provide water budgets to College Station homeowners



Free irrigation system inspections for College Station homeowners



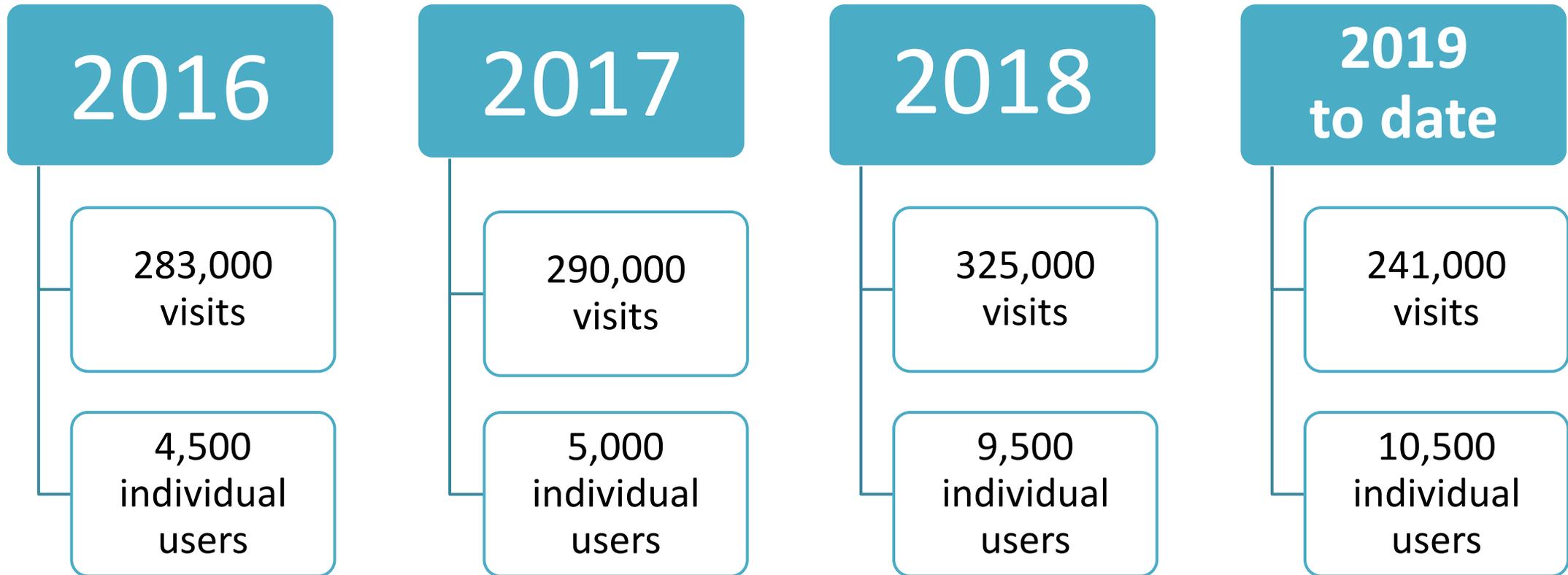
Workshops for College Station homeowners

# BVWATERSMART PROGRAMS: TCEQ & TWDB AWARDS

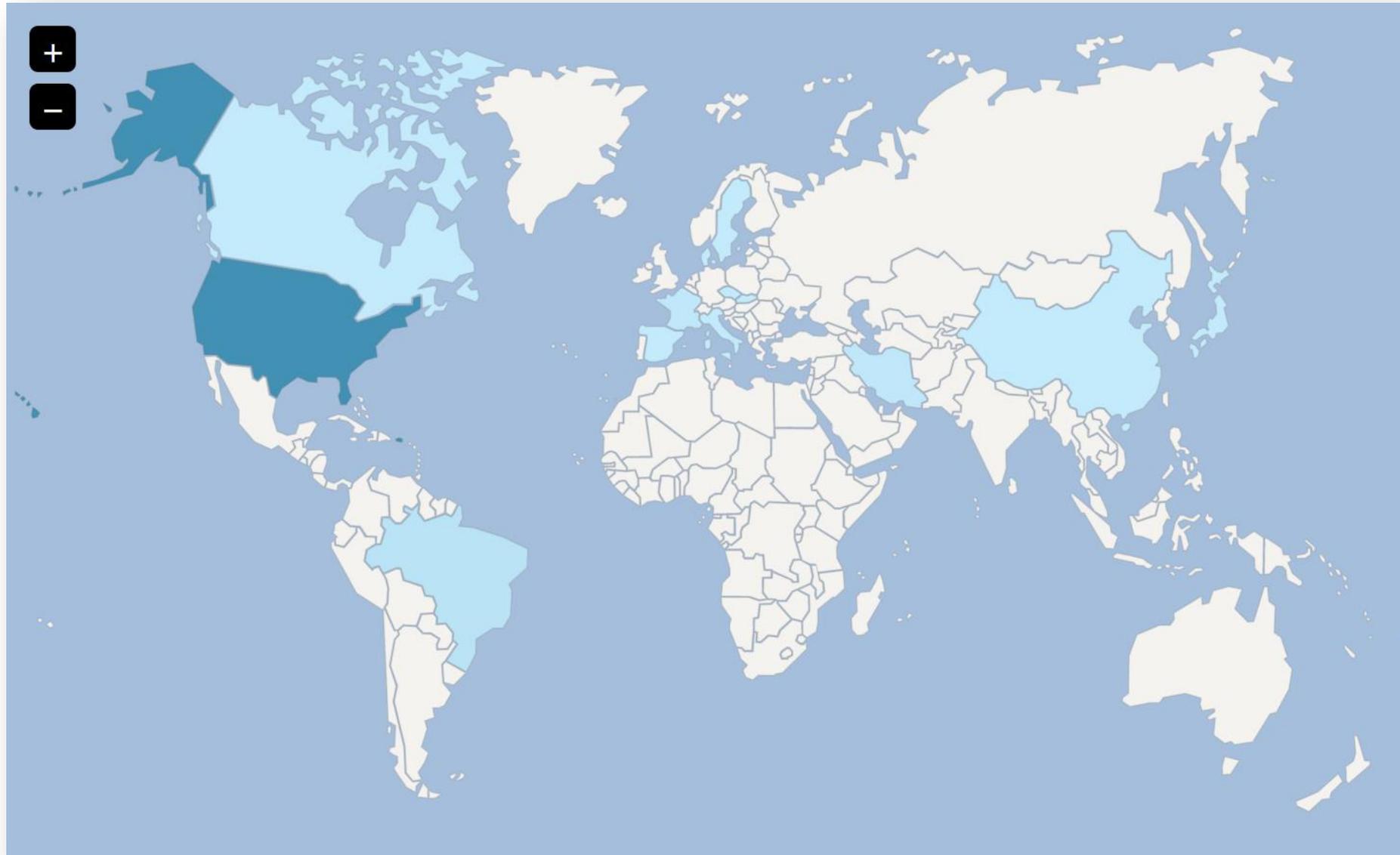
- Real time rainfall network available in Brazos County
- Irrigation system recommendations
  - Real-time/updated daily
  - Off/on recommendations
  - Neighborhood based irrigation run times
- Sign-up for daily/weekly notifications
- Monthly water budget suggestions
- Public service videos from KBTX



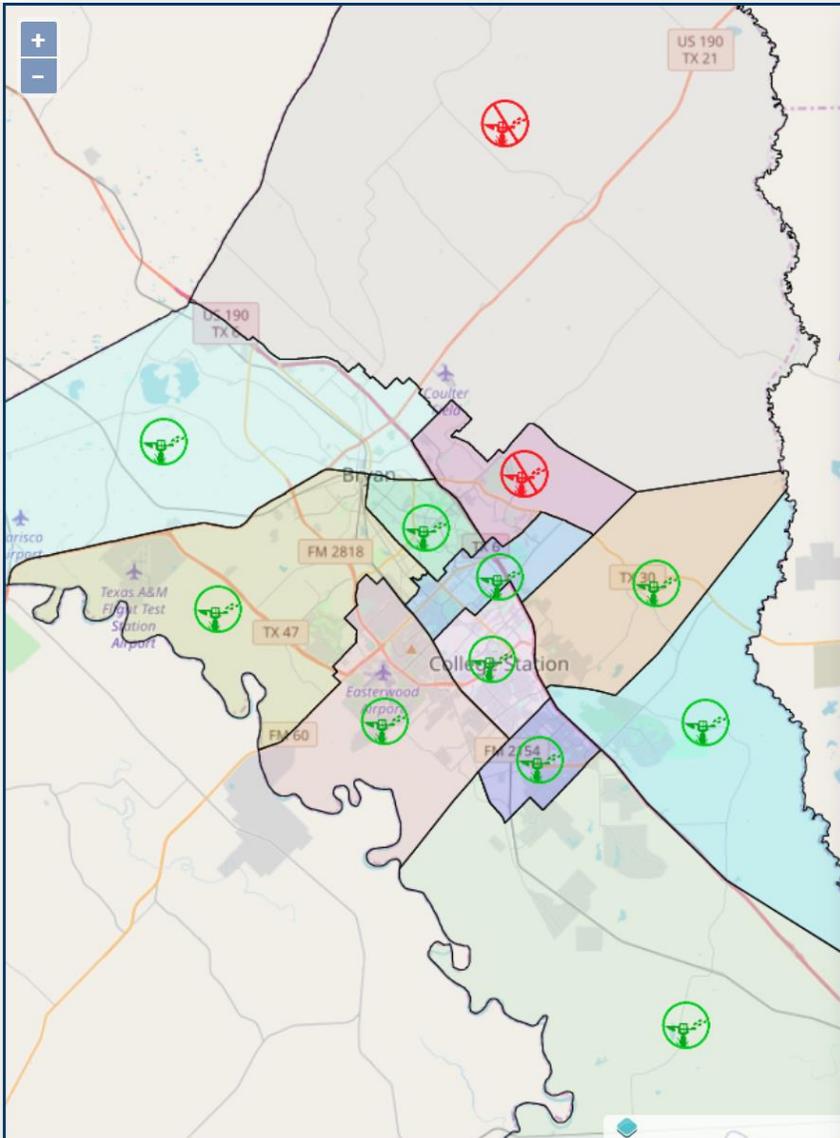
# BVWATERSMART WEBSITE HITS AND USERS



# VISITORS ON 6/26/2019



# REAL-TIME WATERING RECOMMENDATIONS: 6/26/2019



### WIXON VALLEY

Rainfall past 24 hours: 0.00 inches.  
Rainfall past 7 days: 1.05 inches.

**RAINFALL IN YOUR NEIGHBORHOOD THIS PAST WEEK PROVIDED ALL OF YOUR LAWN WATER NEEDS.**

Multi-stream	Rotor
	
No irrigation this week	No irrigation this week

Pop-up	Shrub Spray
	
No irrigation this week	No irrigation this week

### PEBBLE CREEK

Rainfall past 24 hours: 0.00 inches.  
Rainfall past 7 days: 0.56 inches.

**YOUR NEIGHBORHOOD RECEIVED SOME RAIN THIS WEEK BUT IT WAS NOT ENOUGH FOR YOUR LAWN. ADJUST YOUR IRRIGATION SYSTEM.**

Multi-stream	Rotor
	
20 minutes Twice a week	15 minutes Twice a week

Pop-up	Shrub Spray
	
7 minutes Twice a week	7 minutes Twice a week

## WEEKLY WATERING RECOMMENDED SUBSCRIBERS: 625 NOW

- Working to increase subscriber numbers—BVGD helps
- Examine reduction in waste from College Station subscribers
- Could extend examination to Bryan

RANDOM SAMPLE OF 30 CUSTOMERS				
Year	2013	2014	2015	2016
Volume (gal)	2,455,000	2,553,000	2,544,000	1,572,000

## PROBLEM/OPPORTUNITY

- Some people do not respond to the interventions
  - “Set it and forget it”
  - High-end water users
- Targeting high-end water users
- Pilot study using technology to reduce water waste
  - Smart irrigation controllers
  - Add rainfall detectors to existing controllers

# WHAT IS A SMART IRRIGATION CONTROLLER?

- WiFi-based
  - Weather information
  - Adjusts watering accordingly
- Challenges
  - Most rely on National Weather Service weather stations
  - Not as accurate at the neighborhood level



# PILOT STUDY OF SMART IRRIGATION CONTROLLERS

- 10 controllers targeting high-end water users
- Preferred brand: Rachio
  - Compatible with the BVWaterSmart weather station network
- BVCGD purchase controllers
  - **Controllers become property of homeowner**
  - Installation by licensed irrigator
- Timeframe
  - Implement by mid-August
  - Early testing in September and October
- Expected cost
  - Controller, programming, and installation: \$470/unit
  - One-time BVWaterSmart software update: \$2,000

