



Community Resilience Planning and Tech Tools

Mat Heyman
National Association of Counties
July 14, 2018

Improving Resilience: It Takes a Community!

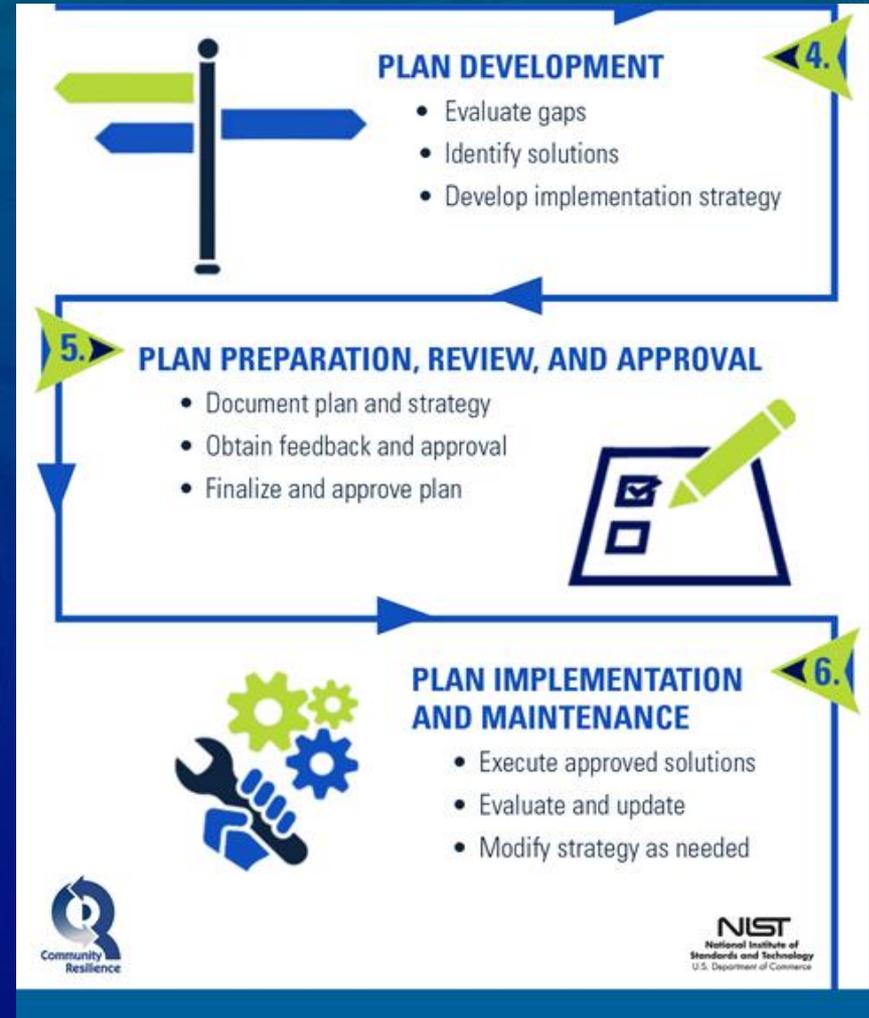


Strengthen communities' abilities to prepare for anticipated hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions



Planning Steps for Community Resilience

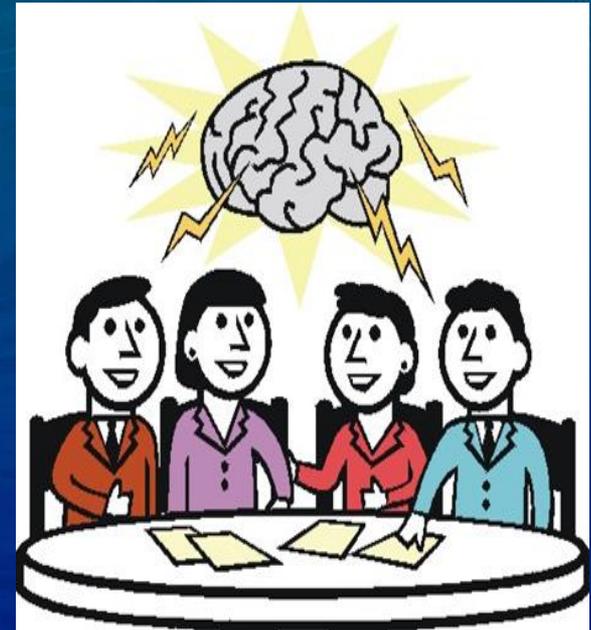
SIX-STEP GUIDE TO PLANNING FOR COMMUNITY RESILIENCE



Using the Guide

Current users include:

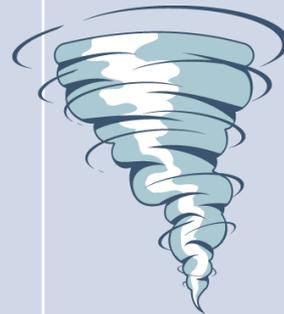
- Fort Collins/Larimer County, CO
- Boulder County, CO
- Salt Lake County
- Nashua, NH
- Bozeman, MT
- Delaware Dept of Transportation
- Others...



NIST Disaster and Failure Studies

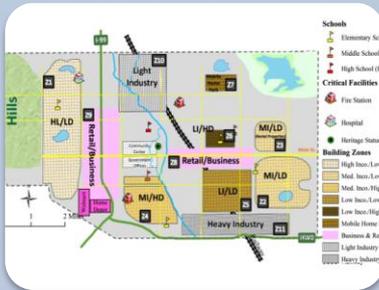


Earthquakes	Hurricanes	Construction/ Building	Tornadoes	Fires
<p>San Fernando, CA (1971)</p> <p>Mexico City, Mexico (1985)</p> <p>Loma Prieta, CA (1989)</p> <p>Northridge, CA (1994)</p> <p>Kobe, Japan (1995)</p> <p>Kocaeli, Turkey (1999)</p> <p>Maule, Chile (2010)</p> <p>Christchurch, NZ (2011)</p>	<p>Camille, MS/LA (1969)</p> <p>Alicia, Galveston, TX (1983)</p> <p>Hugo, SC (1989)</p> <p>Andrew, FL (1992)</p> <p>Mitch and Georges, LAC (1998)</p> <p>Katrina and Rita (2005)</p> <p>Irma, Harvey and Maria (2016)</p>	<p>Skyline Plaza Apartments, Bailey's Crossroads, VA (1973)</p> <p>Willow Island Cooling Tower, WV (1978)</p> <p>Kansas City Hyatt Regency, Kansas City, MO (1981)</p> <p>Riley Road Interchange, East Chicago, IN (1982)</p> <p>Harbor Cay Condominium, Cocoa Beach, FL (1981)</p> <p>L'Ambiance Plaza, Hartford, CT (1987)</p> <p>Ashland Oil Tank Collapse, Floreffe, PA (1988)</p> <p>U.S. Embassy, Moscow, USSR (1987)</p> <p>Murrah Federal Building, Oklahoma City, OK (1995)</p> <p>World Trade Center Disaster, New York, NY (2001)</p> <p>Dallas Cowboys Indoor Practice Facility, May 2009</p>	<p>Jarrell, TX (1997)</p> <p>Spencer, SD (1998)</p> <p>Oklahoma City, OK (1999)</p> <p>Joplin, MO (2011)</p> <p>Moore OK (2013)</p>	<p>DuPont Plaza Hotel, San Juan, PR (1986)</p> <p>First Interstate Bank Building, Los Angeles, CA (1988)</p> <p>Loma Prieta Earthquake, CA (1989)</p> <p>Hillhaven Nursing Home (1989)</p> <p>Pulaski Building, Washington, DC (1990)</p> <p>Happyland Social Club, Bronx, NY (1990)</p> <p>Oakland Hills, CA (1991)</p> <p>Watts St, New York City (1994)</p> <p>Northridge Earthquake, CA (1994)</p> <p>Kobe, Japan (1995)</p> <p>Vandalia St, New York City (1998)</p> <p>Cherry Road, Washington, DC (1999)</p> <p>Keokuk, IA (1999)</p> <p>Houston, TX (2000)</p> <p>Phoenix, AZ (2001)</p> <p>Cook County Administration Building Fire (2003)</p> <p>The Station Nightclub, RI (2003)</p> <p>Charleston, SC, Sofa Super Store Fire (2007)</p> <p>Witch Creek & Guejito, CA, WUI Fire (2007)</p> <p>Amarillo, TX, WUI Fire (2011)</p> <p>San Francisco, CA (2012)</p>



NIST Center of Excellence

Individual and Multiple Hazards, Locations



Centerville

**Earthquake
Tornado**

Seaside, OR

**Earthquake
Tsunami**

**Memphis
TN, MSA**

**Earthquake
Flood**

Galveston, TX

**Hurricane
-Surge
-Waves
-Wind**



Disaster Resilience Grants

- **Advance disaster resilience principles** in designing buildings and infrastructure systems, or
- **Facilitate development of building codes, standards** to reduce impact from windstorms (hurricanes and tornadoes) and coastal inundations, wildland fires and earthquakes, or
- **Develop innovative measurement methods and technologies** to collect, evaluate building and infrastructure performance data after a hazard event.
- **12 awards in 2017, new competition just under way**



NIST Contacts

Website:

<http://www.nist.gov/el/resilience/>

Guide:

<http://www.nist.gov/el/resilience/guide.cfm>

Or google “NIST Resilience Planning Guide”

E-mail: matthew.heyman@nist.gov or
resilience@nist.gov



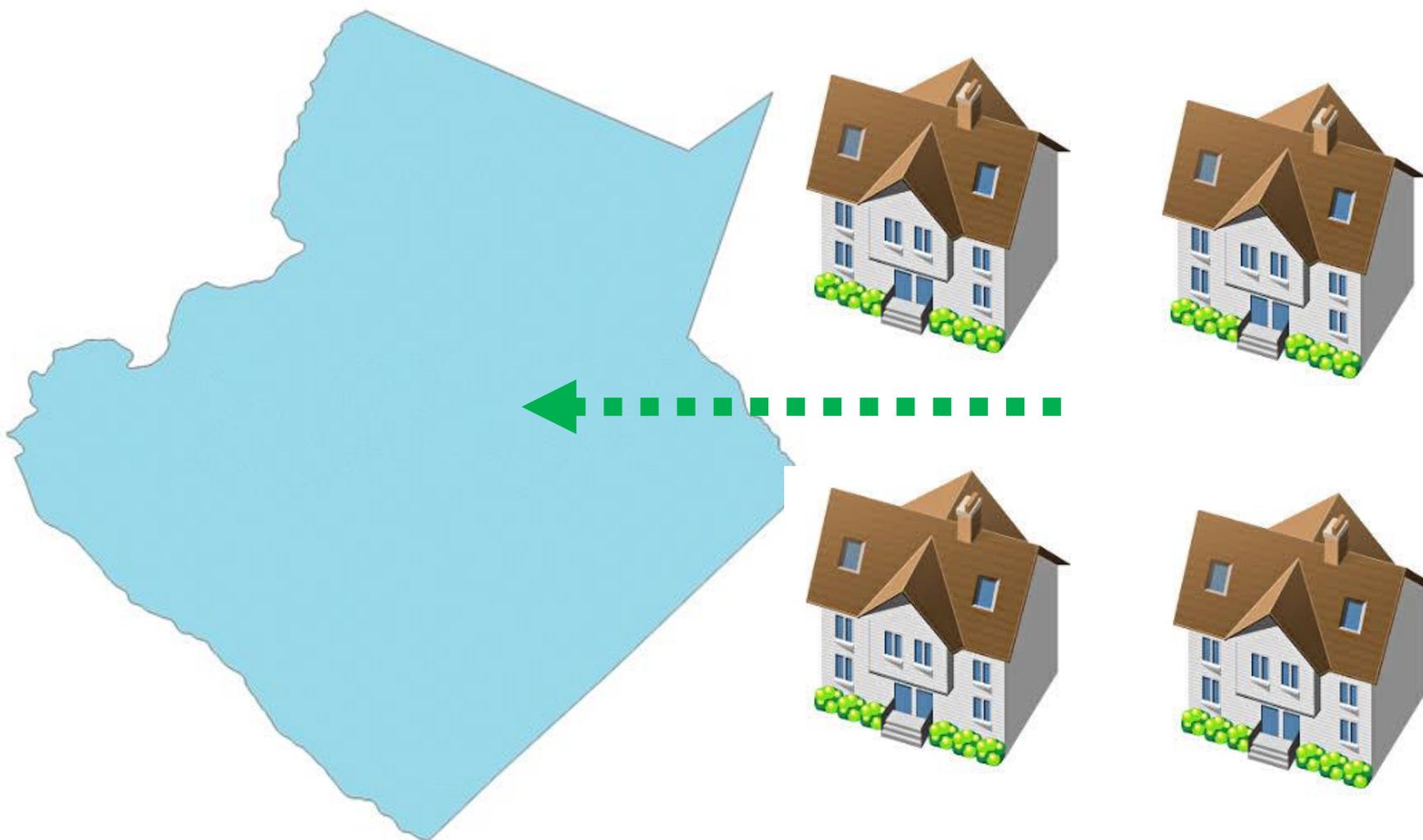


Smart Cities

DMA & AMI Pilot Study

Saturday, July 14, 2018

Advanced Metering Infrastructure (AMI)



Apps for phone, tablet and/or computer

Automated alerts for usage “events”

Ability of customer to closely monitor and manage their own water use

Reduction in calls to GCDWR Customer Service

The Internet of Things (IoT)



Background



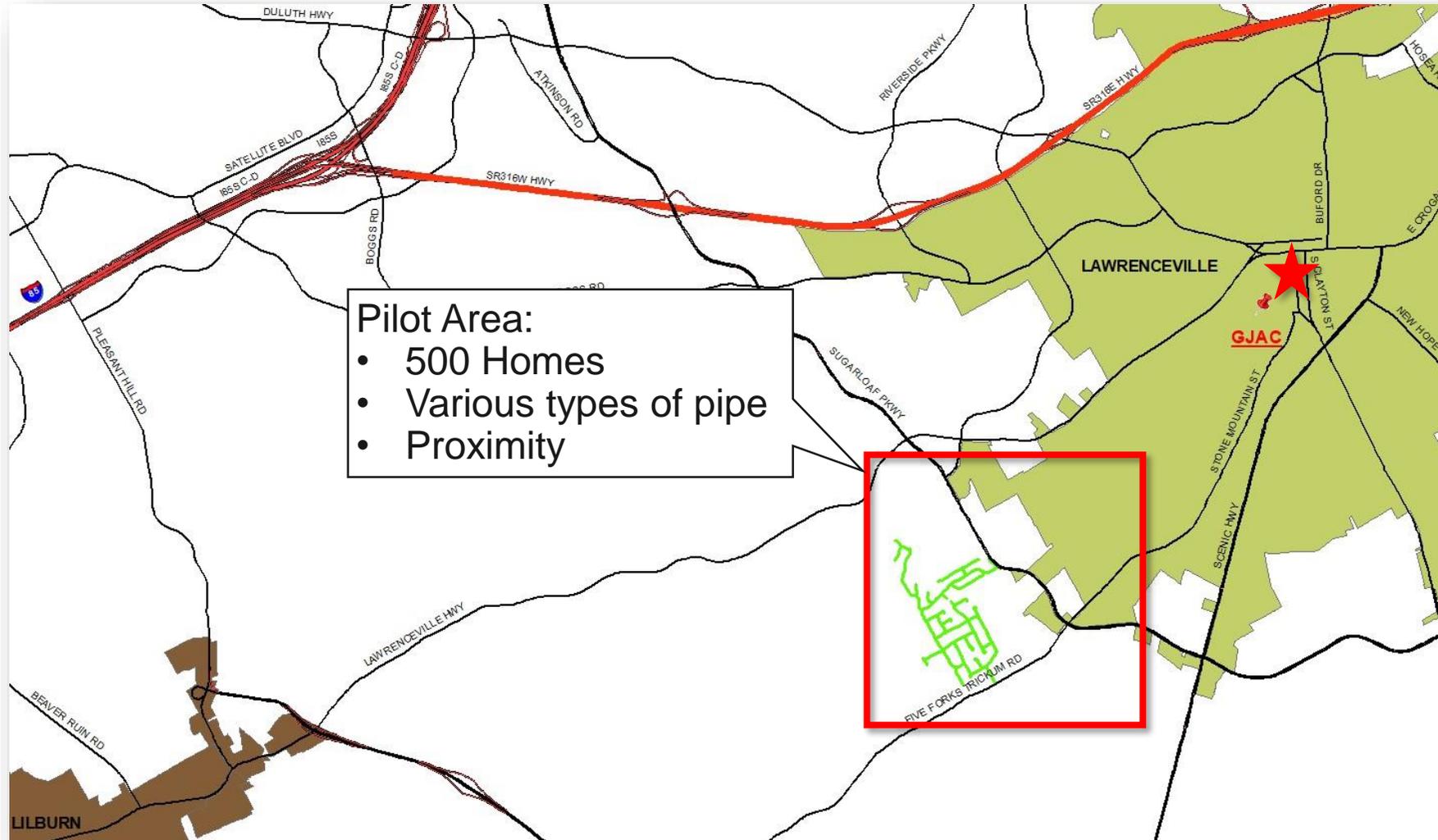
Partnership with CH2M (now JACOBS), AT&T,
and Qualcomm

Smart Cities Team Challenge is a Global initiative
led by NIST

Innovative use of the Internet of Things (IoT)

Gwinnett County selected as a utility partner

Pilot Area



Pilot Project Benefits



Conserving Water

- Utility System Leaks
- Customer Leaks



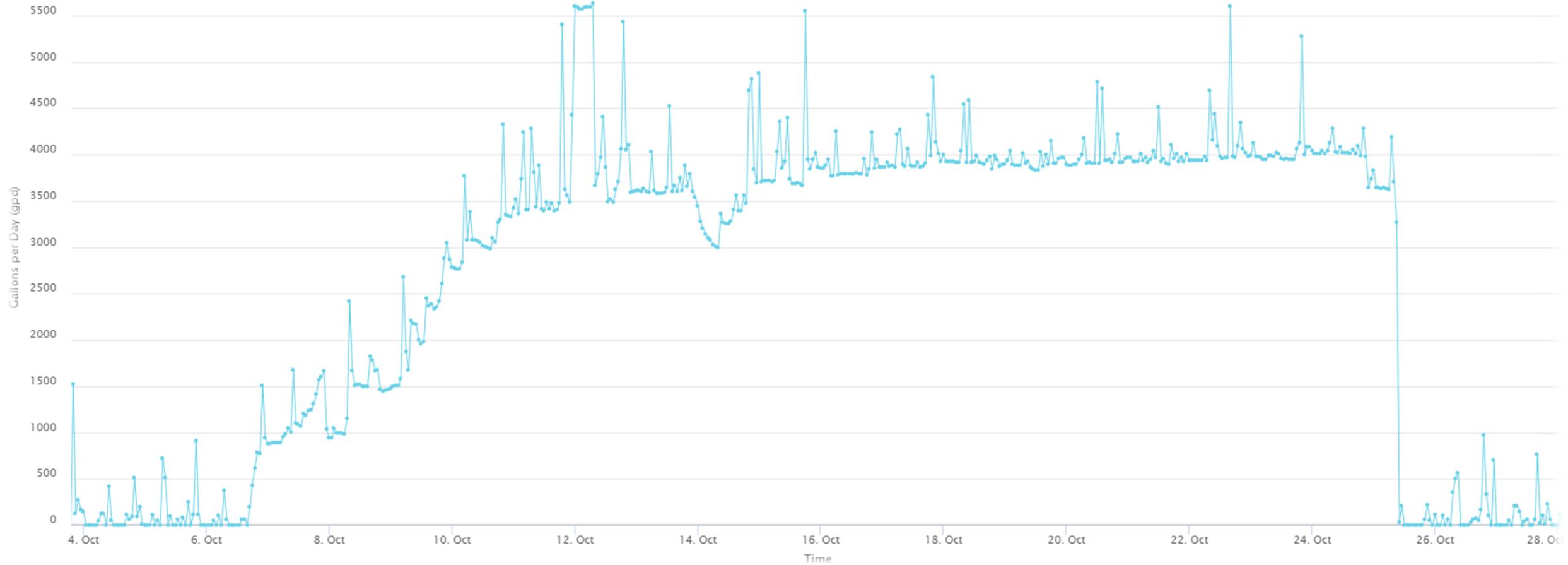
Environmental Stewardship

Drought Preparedness & Resilience

Utility System Water Loss



Customer Losses



Continued Partnerships



Gwinnett
Water Resources



at&t