

TALK OF  **THE TOWN**

Water – More Than Just a Bill

Tuesday, April 20th, 2021

**THANK
YOU**

AGENDA

Presentation 45 min

- **Water Billing**
- **Advanced Metering Infrastructure**
- **Surface Water Treatment**
- **Utility Billing Ad Hoc Committee**

Q&A 15 min

Questions from
the audience
and online

Open House 30 min

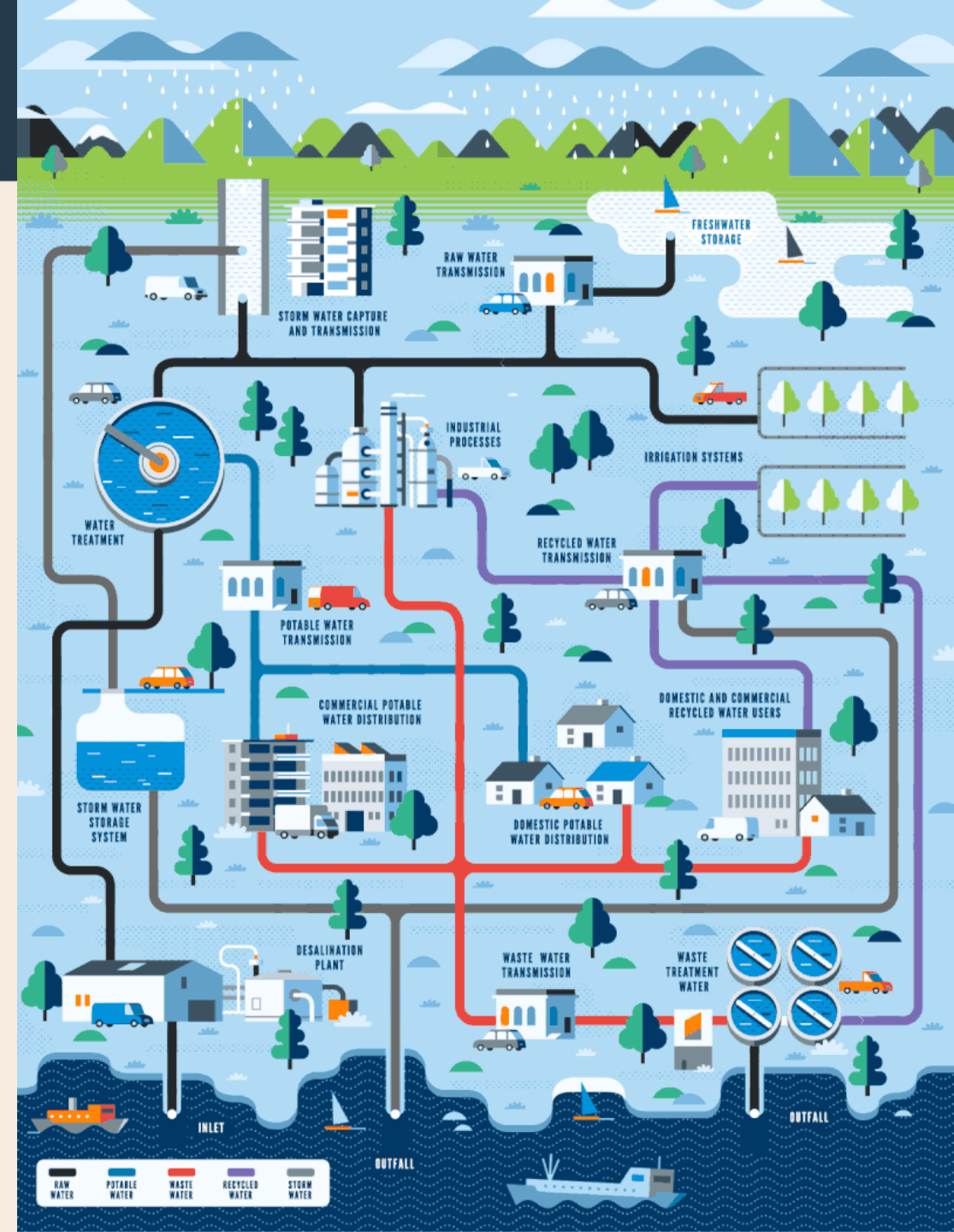
Meet with staff
and elected
officials for
more detailed
information

MORE TO WATER THAN A BILL...

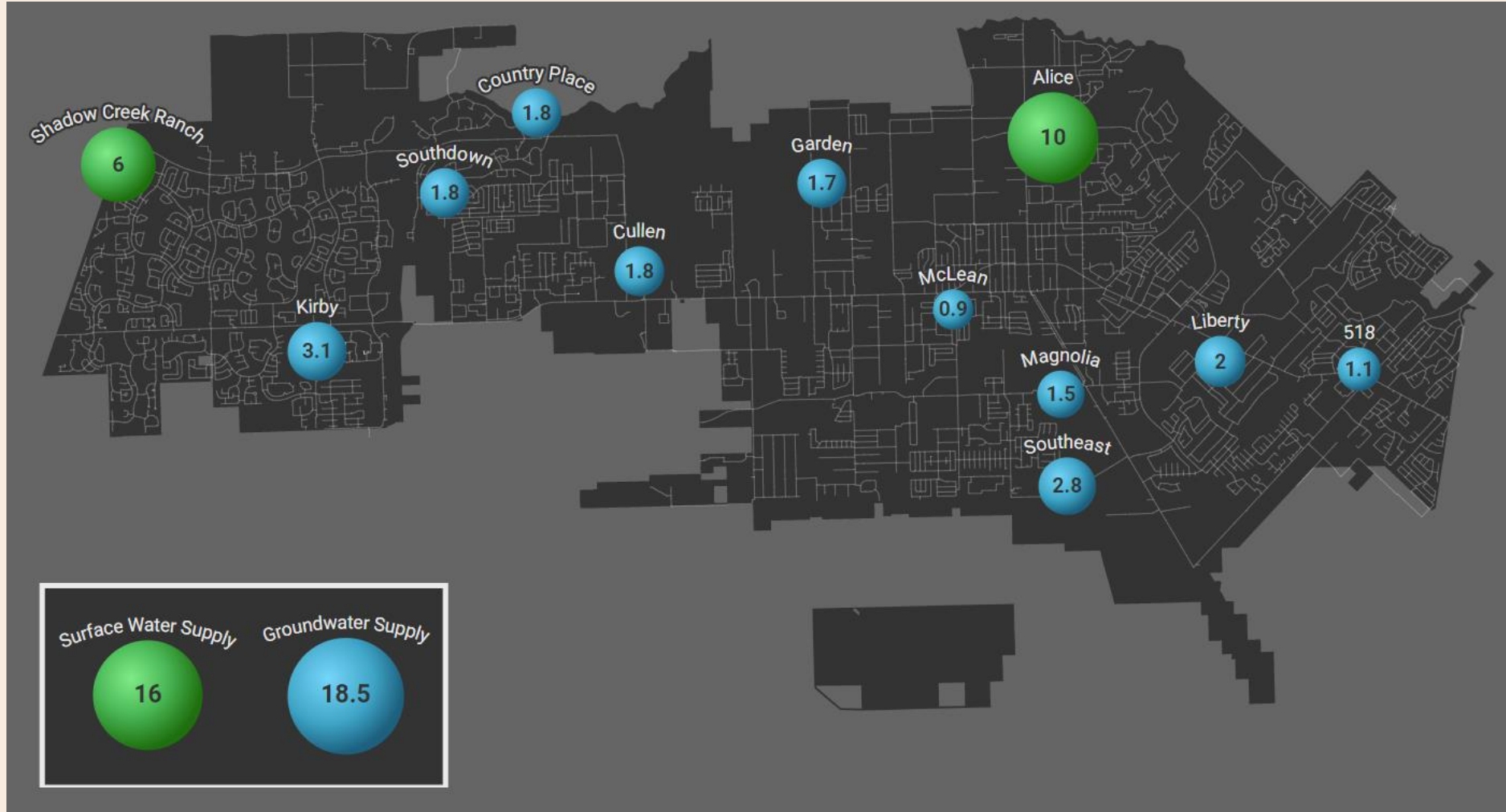
Water is the most **essential service** for a community.

Providing **high-quality**, reliable **water** 24/7 is a **complex process** that requires **massive** infrastructure **investments**, **significant** human **resources** for continuous upkeep, and an intent **focus** on the long-term **future** to stay up to date and ahead of **growing demands** of Pearland.

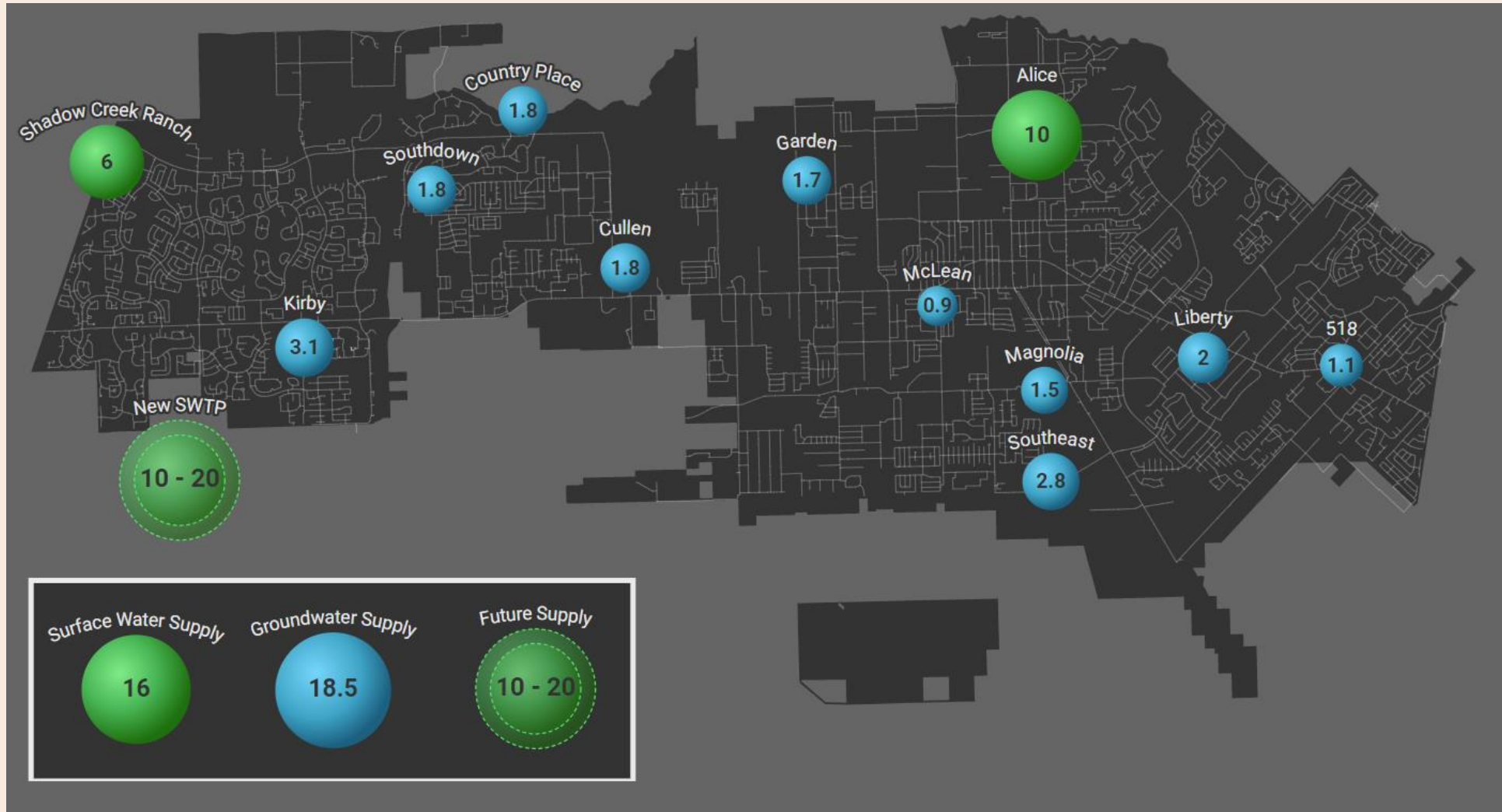
It is a **\$56.7M per year business**.



EXISTING WATER SOURCES



FUTURE WATER SOURCES



DID YOU KNOW...



GALLONS USED

- **LAUNDRY** 25 gallons per day
- **TOILETS** 2.6 gallons per flush
- **SPRINKLER** 17 gallons per minute
- **POOL** 7,000 gallons lost annually
- **DISHWASHER** 11 gallons per wash
- **BATHROOM** 36 gallons per day (tub)
1 gallon per minute (sink)

Source: American Water Works Association

COVID-19 AND WATER

How the Coronavirus Pandemic is Affecting Water Demand

July 6, 2020
By Heather Cooley

Changes in Water Demand

The COVID-19 pandemic has imposed massive health and economic burdens on communities around the world, and no sector of society is going untouched, including the vitally important water sector. The full extent of impacts of the coronavirus pandemic on the water sector are still emerging, but one area that has come to the fore is the effect on

[US home water use up 21% daily during COVID-19 crisis - TechRepublic](#)

[Coronavirus lockdown caused dramatic changes in water consumption, research finds \(phys.org\)](#)

Home / Earth / Environment

NOVEMBER 11, 2020

Coronavirus lockdown caused dramatic changes in water consumption, research finds

by Joe Stafford, University of Manchester



A detailed microscopic image showing numerous small, spherical water droplets of varying sizes, some larger and more prominent than others, set against a light blue background. The droplets are clustered together, creating a textured, bubbly appearance.

[US home water use up 21% daily during COVID-19 crisis](#)

by N.F. Mendoza in Innovation on June 2, 2020, 9:24 AM PST

A report from the smart-water monitoring company Phyn chronicled the spike in US water use from pre-pandemic, Feb. 1, to midcrisis, April 30.



TechRepublic

How IoT devices are playing a major role in water conservation

WATCH NOW

INTERNET OF THINGS

The graphic features a green background with various icons representing IoT technology and water conservation, including a water tap, a laptop, a smartphone, a Wi-Fi symbol, and a cloud labeled 'IoT INTERNET OF THINGS'.

The average US home used nearly 729 additional gallons of water in April than it did in February.

[How the Coronavirus Pandemic is Affecting Water Demand - Pacific Institute \(pacinst.org\)](#)

WHITE PAPERS, WEBCASTS, AND DOWNLOADS

- Get started free on IBM Cloud
White Papers from IBM
[GET STARTED](#)
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Live Event from Telstra
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METER TRANSITION



Old-style meters measured water by passing over a **disc that rotates** and turns gears.

Over time these **mechanical components wear down** and a **system-wide change** out was **planned** as meters reached the end of usable life.

As meters failed during the window of the scheduled change out, water **bills were conservatively estimated** based on previous usage, rather than ordering additional old-style meters.

WHERE WE HAVE BEEN



UTILITY BILLING MANDATE

MANDATE FOR UTILITY BILLING STAFF:

Despite turnover in all the group's leadership positions in the last year, **the Utility Billing Division must continuously and proactively seek out ways to improve processes**, both internally and externally, to provide exceptional services. **Status quo**, which is based on past practices, **is not acceptable**.

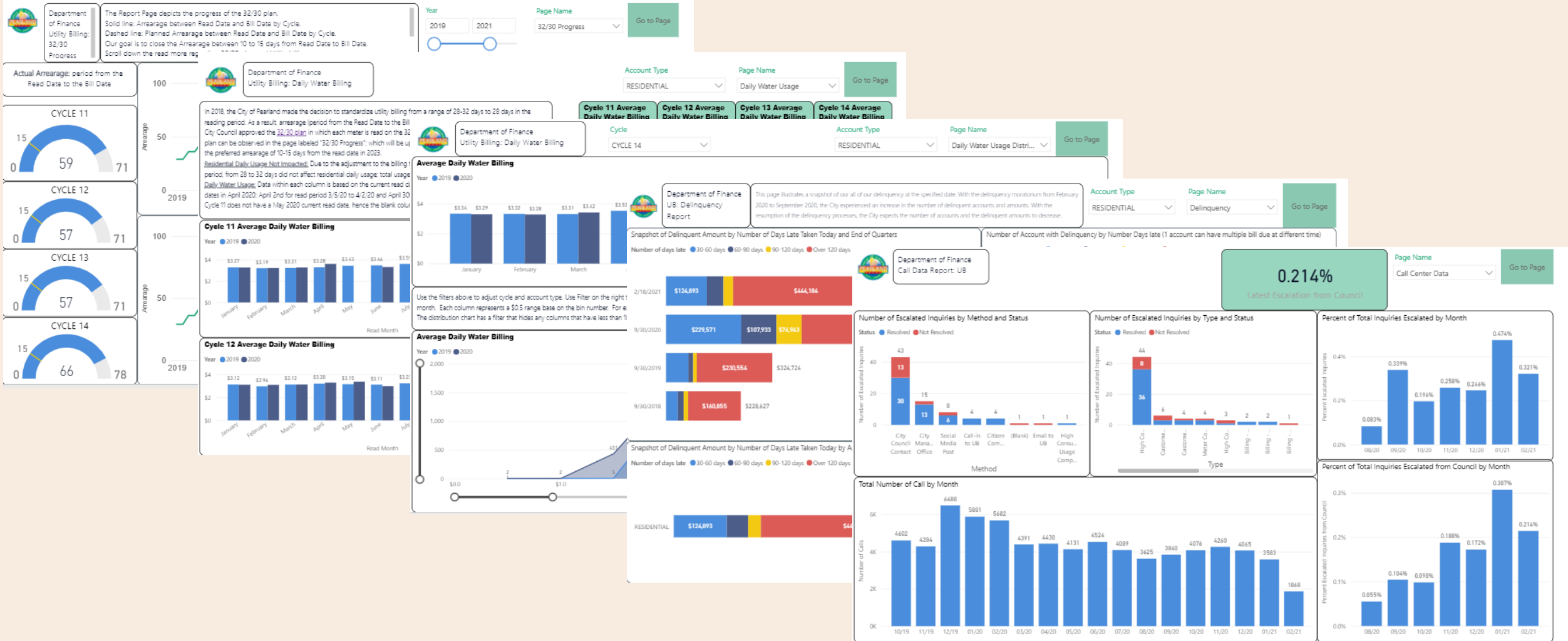
ADDING TO OUR MANDATE, FROM THE AD HOC ADVISORY COMMITTEE:

"Every customer-client **interaction** in UB **is an opportunity** for **problem solving** and systemic **improvement** as well as for **rebuilding relationships** with users."

PROGRESS REPORT



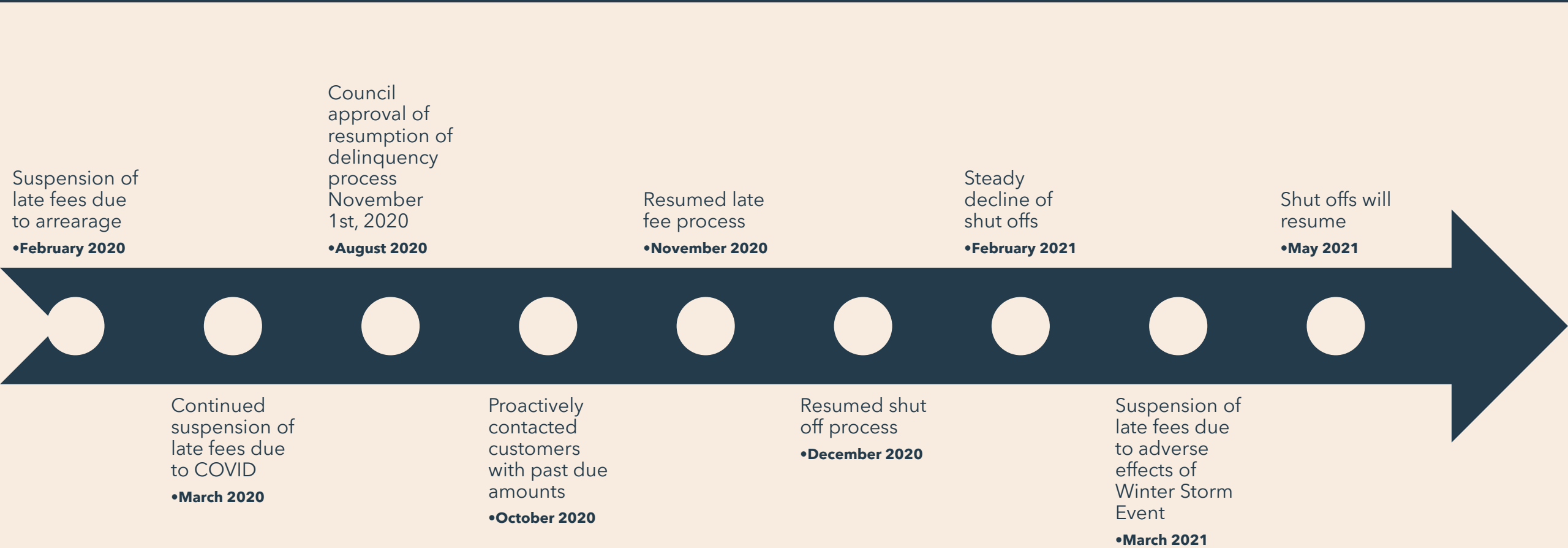
DASHBOARDS



HIGH CONSUMPTION USAGE MONITORING

- Continue to **identify** and contact the **top 50 highest consumption accounts** in each billing cycle based on previous “unbilled” month’s usage after each billing cycle’s monthly meter reading.
- Identified **accounts receive a courtesy** phone **call** or **email** to advise of the upcoming bill’s usage.
- Staff offers a **meter profile**, a **water analysis** from the customer’s new Badger water meter of their **recent 40 days consumption**.
 - The usage **analysis provides** the **daily** and **hourly usage** for the **40 days** consumption.

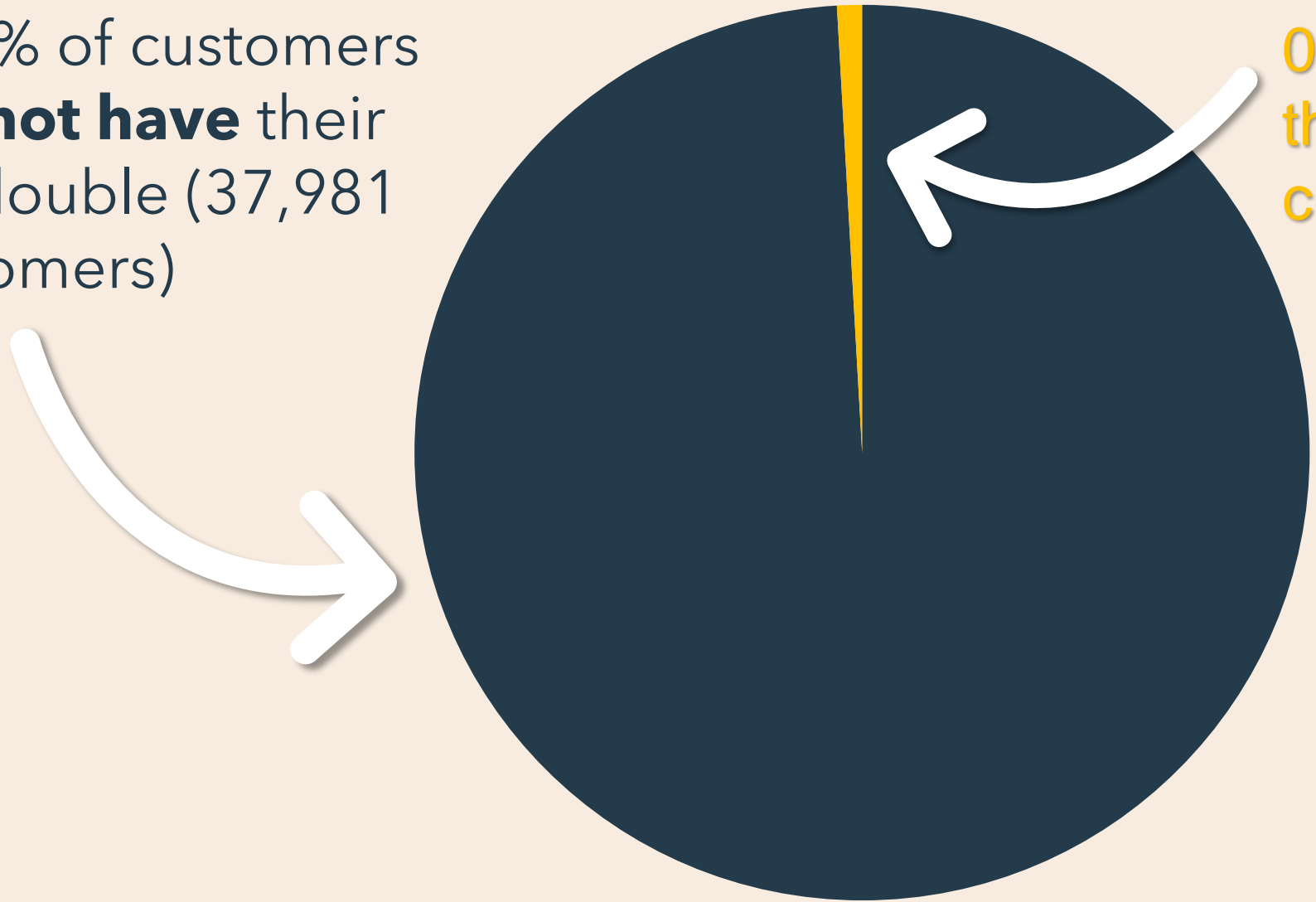
RESUMPTION OF LATE FEES AND STANDARD DELINQUENCY PROCESSES



UNDERSTANDING EXCEPTION BILLS

99.1% of customers **did not have** their bill double (37,981 customers)

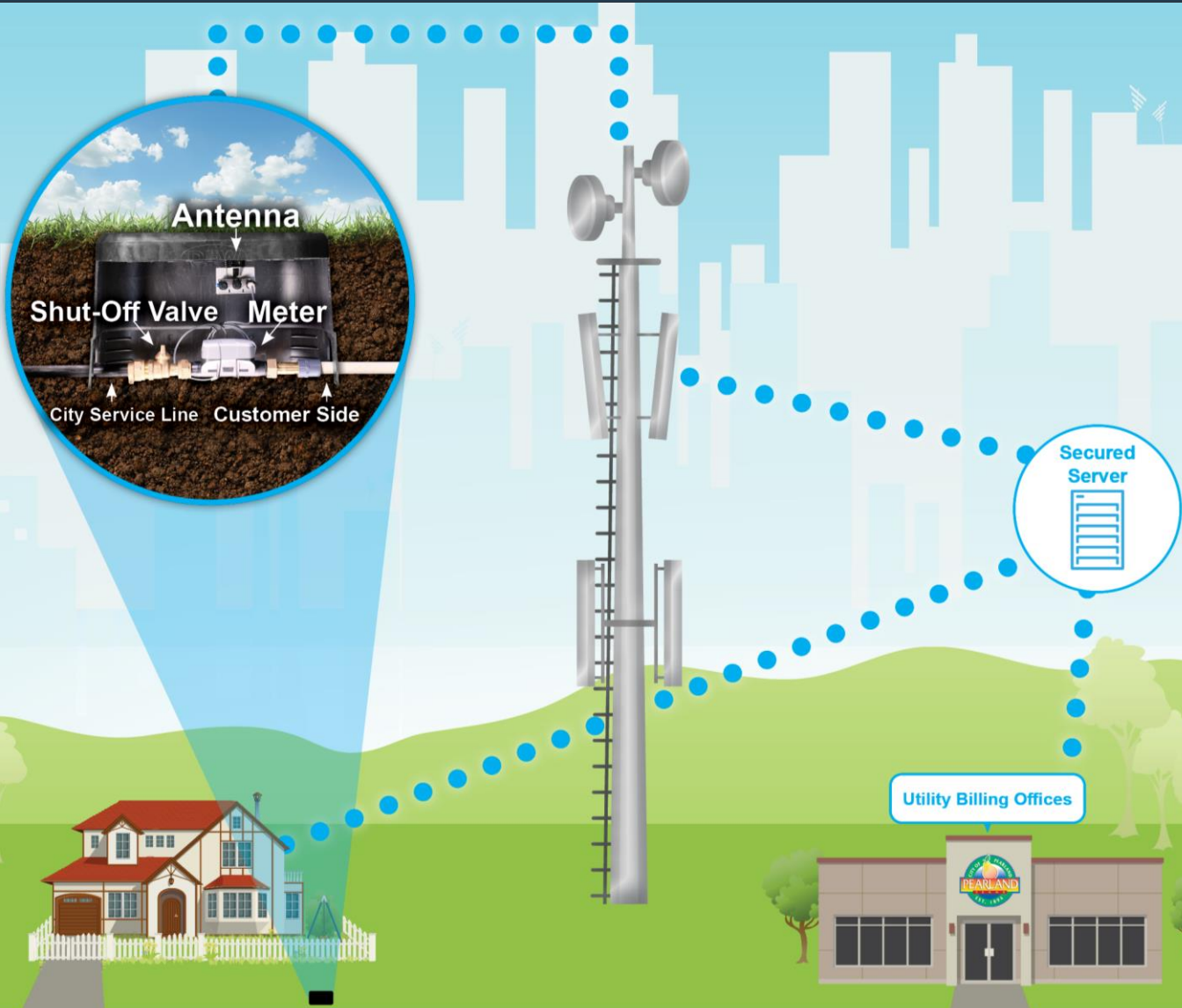
0.9% of customers had their bill double (341 customers)



UTILITY BILLING GOAL

Utility Billing will **continue to rebuild the trust with our customers, through transparency** tools; to view their **usage** with meter **profiles** in preparation for the AMI system and the customer portal.

ADVANCED METERING INFRASTRUCTURE (AMI) – THE FUTURE

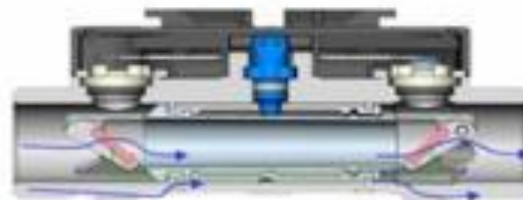


AMI – ULTRASONIC METERS



Ultrasonic Measurement Technology

- E-Series Ultrasonic meters use transit-time technology
- How it works:
 - Measures the time differential between signal sent upstream and a corresponding signal sent downstream. The differential is directly proportional to the velocity of the water.
 - Internal clock calculates the time between the two, and since the distance is known, the microprocessor can calculate the velocity
 - Velocity x Cross Section Area = Volume



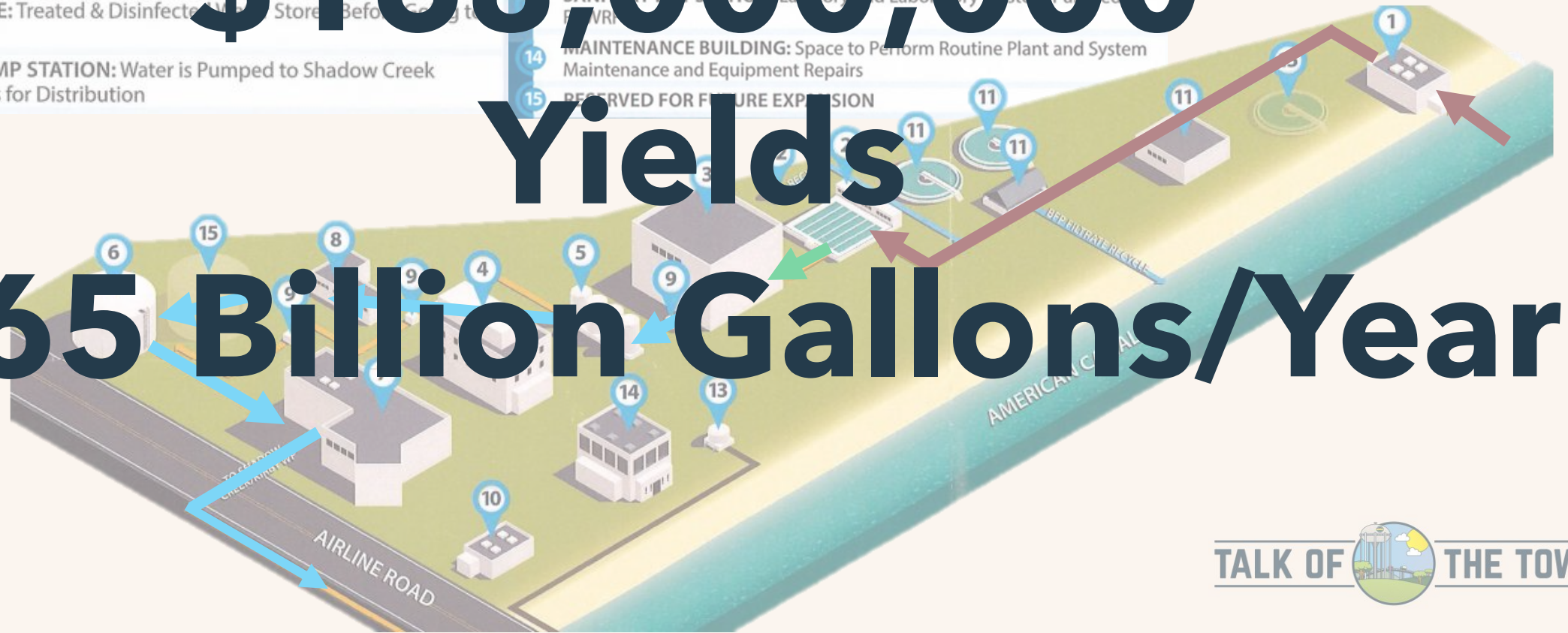
SURFACE WATER TREATMENT

- 1 RAW WATER INTAKE & PS: Up to 10 MGD Raw Water from American Canal (Phase I)
- 2 PRE-TREATMENT: Coagulant Mixed with Raw Water to Remove Solids
- 3 FILTRATION BUILDING: Clear water from Pre-Treatment is Filtered through Membranes
- 4 OPERATIONS BUILDING: Control Room & Lab for Plant Monitoring & Control
- 5 GAC ADSORBERS: Polishes Treated Water for Taste and Odor
- 6 GROUND STORAGE: Treated & Disinfected Water Stored Before Going to HSPS
- 7 HIGH SERVICE PUMP STATION: Water is Pumped to Shadow Creek Ranch & Kirby WTPs for Distribution
- 8 DISINFECTION BUILDING: Houses Chlorine & Chlorine Dioxide Systems for Taste & Odor, DBP prevention, & Disinfection
- 9 DISINFECTION POINTS: Various Disinfection Points Provided to Optimize Water Quality
- 10 ELECTRICAL BUILDING: Houses Electrical Service Gear
- 11 SOLIDS PROCESSING: Sediment from Pretreatment & Other Waste Streams is Concentrated, Dewatered, & Sent to Landfill
- 12 RETURN FLOW PLANT: Recycle Water in Plant to Improve Efficiency
- 13 SANITARY LABORATORY: Laboratory and Laboratory Waste Purification
- 14 MAINTENANCE BUILDING: Space to Perform Routine Plant and System Maintenance and Equipment Repairs
- 15 RESERVED FOR FUTURE EXPANSION

\$168,000,000

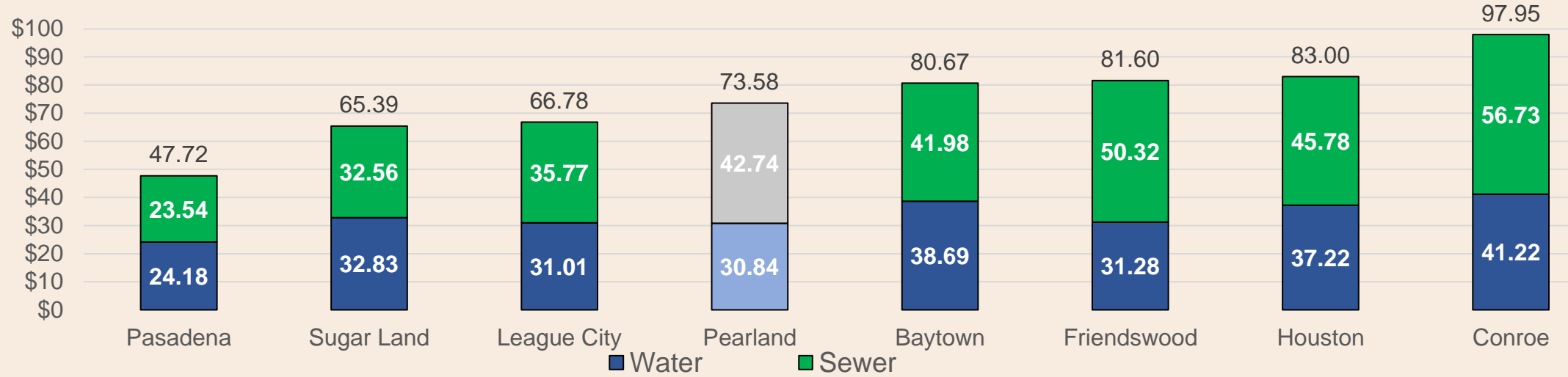
Yields

3.65 Billion Gallons/Year

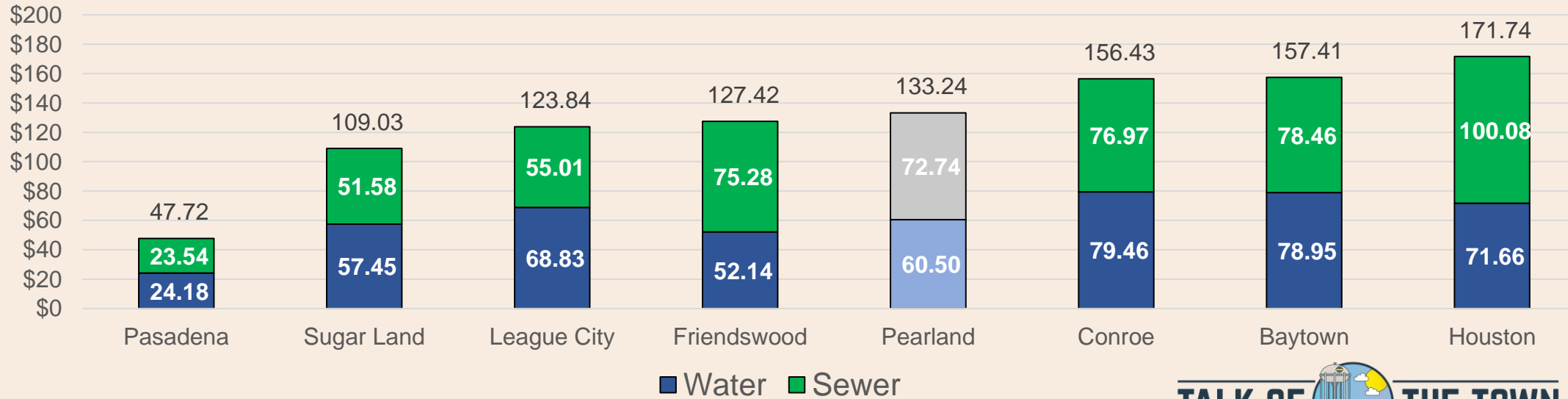


COMPARING WATER RATES - RESIDENTIAL (5/8")

6,000 gallons
Water/Sewer



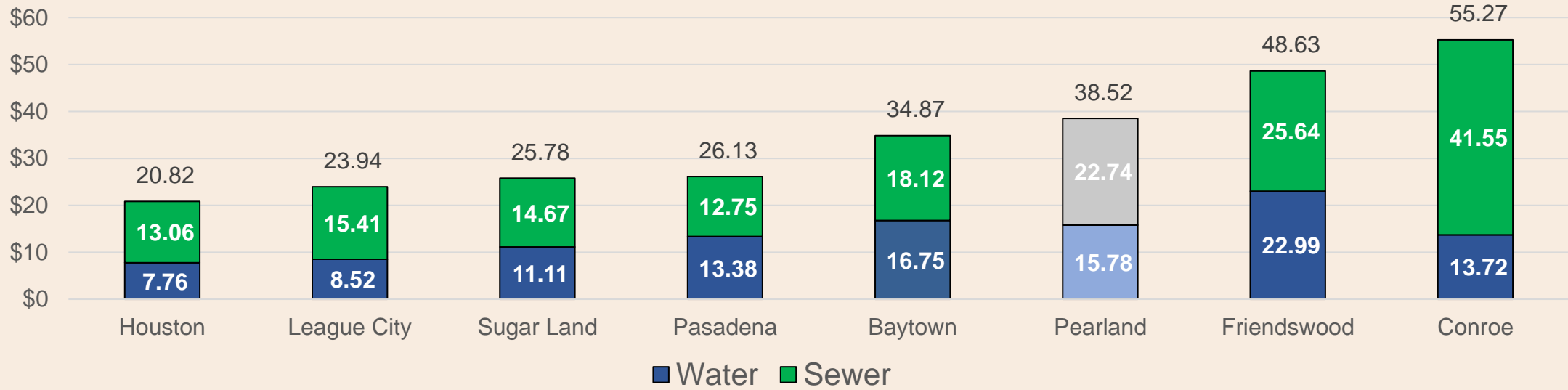
12,000 gallons
Water/Sewer



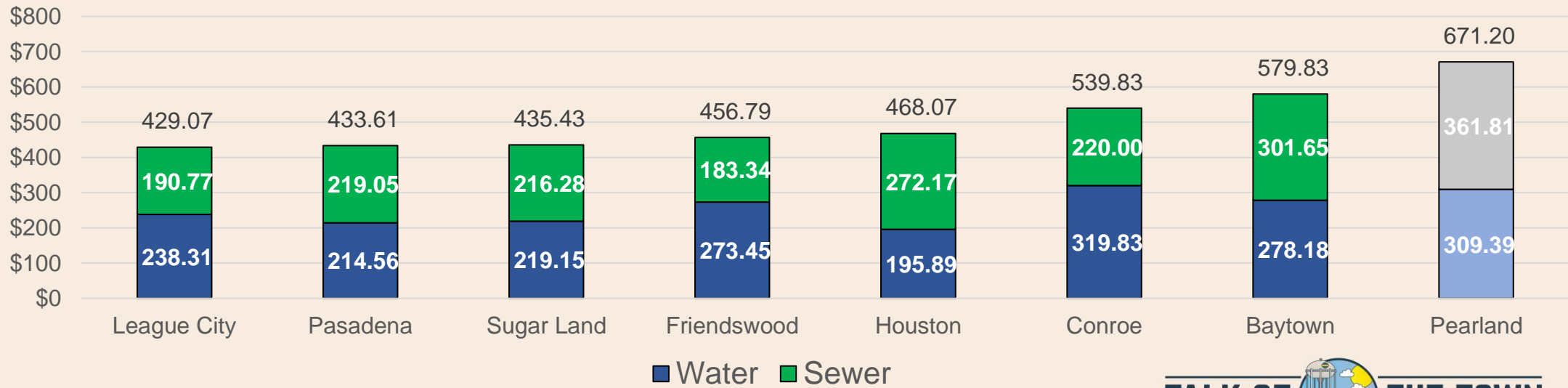
*Price do not include trash service fee

COMPARING WATER RATES - COMMERCIAL

Small Office
(5/8") - 358
Gallons
Water/Sewer



Commercial
(2") - 38,267
Gallons
Water/Sewer



*Price do not include trash service fee

CITIZEN'S ADHOC ADVISORY COMMITTEE

Q-E-A

OPEN HOUSE



**THANK
YOU**