Water Meters and Automatic Meter Reading

Council Presentation
April 18, 2017

Objectives

1. Identify components of the City of Corpus Christi's automated meter reading (AMR) program.
2. Outline the number of service connections and sizes.
3. Illustrate types of meters and registers.

Automatic Meter Reading (AMR)

Meter Transmission Unit (MTU)

Data Collection Unit (DCU)

Utility Billing Office (HTE)

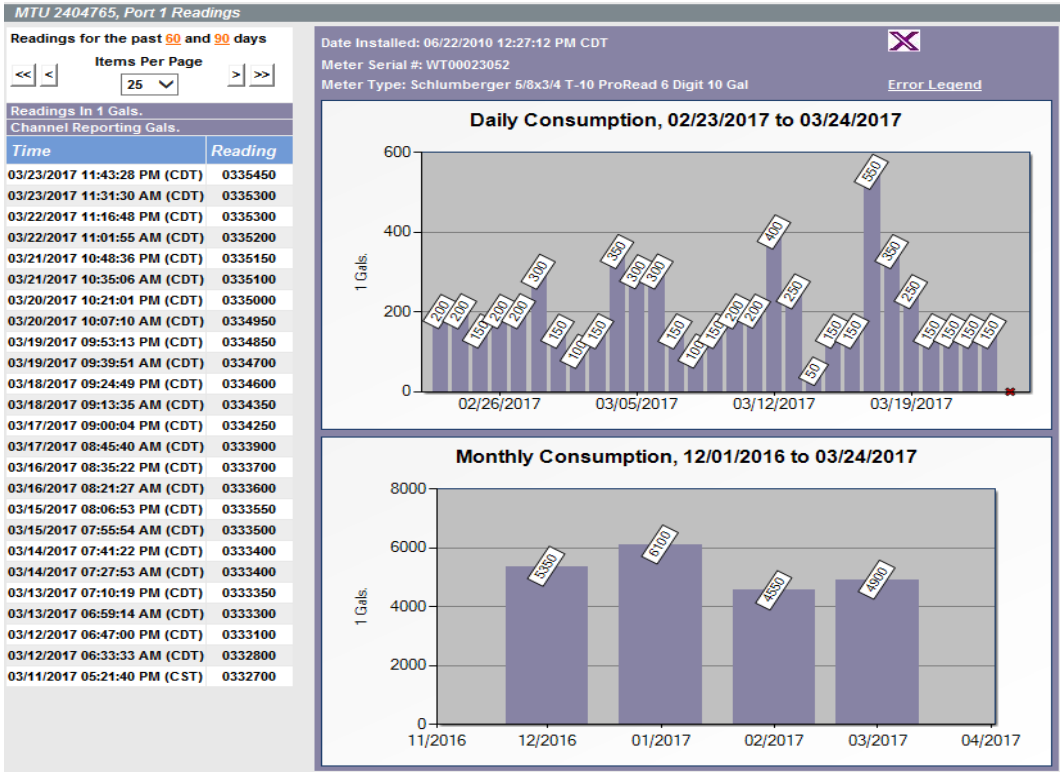
STAR Database

Meter Transmission Units (MTU)

- Meter Transmission Units (MTUs) are programmed with the type of meter, size, and service location.

- MTUs carry a full warranty for the first ten years and prorated warranty for the following ten years.

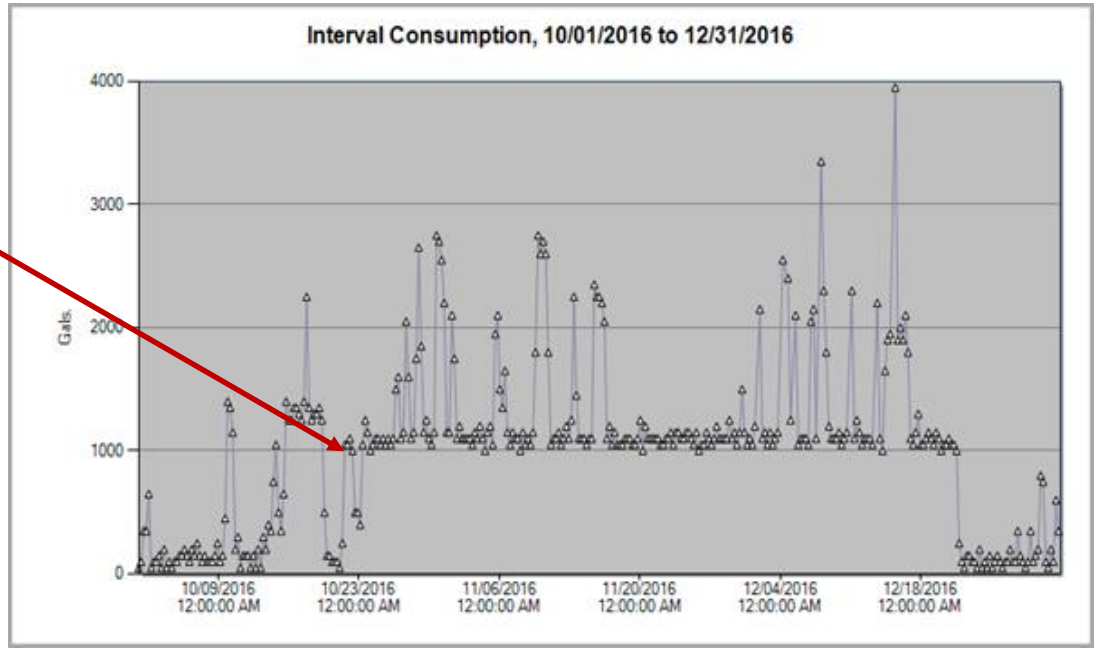
STAR Database



STAR Database

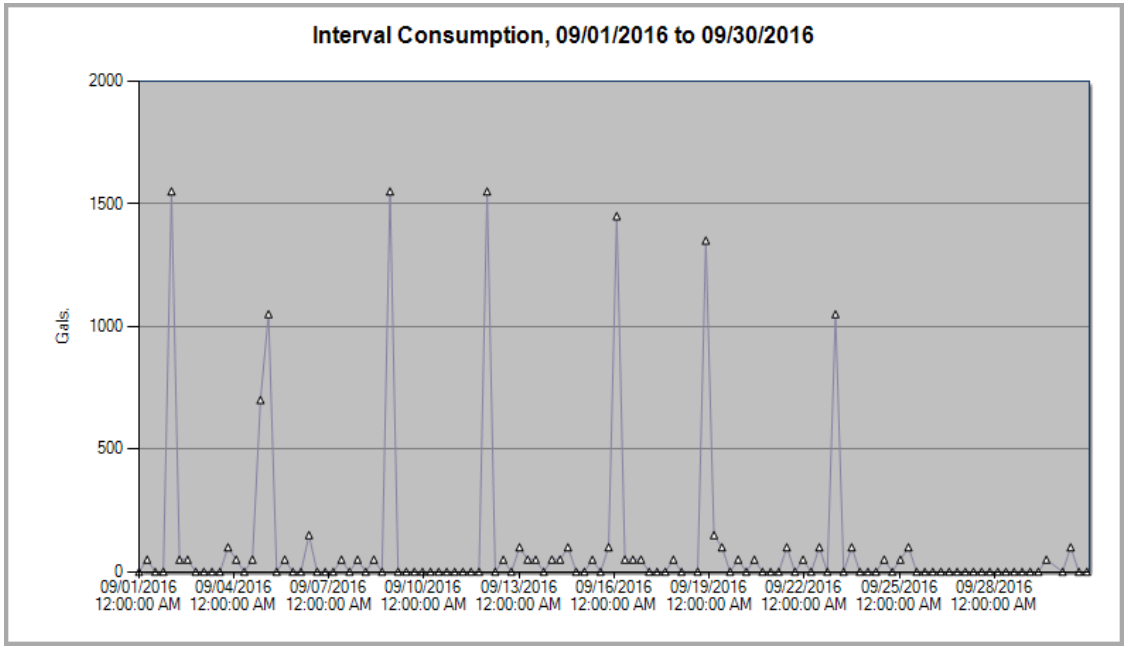
Constant Consumption

Water use never returning to zero points to a possible leak

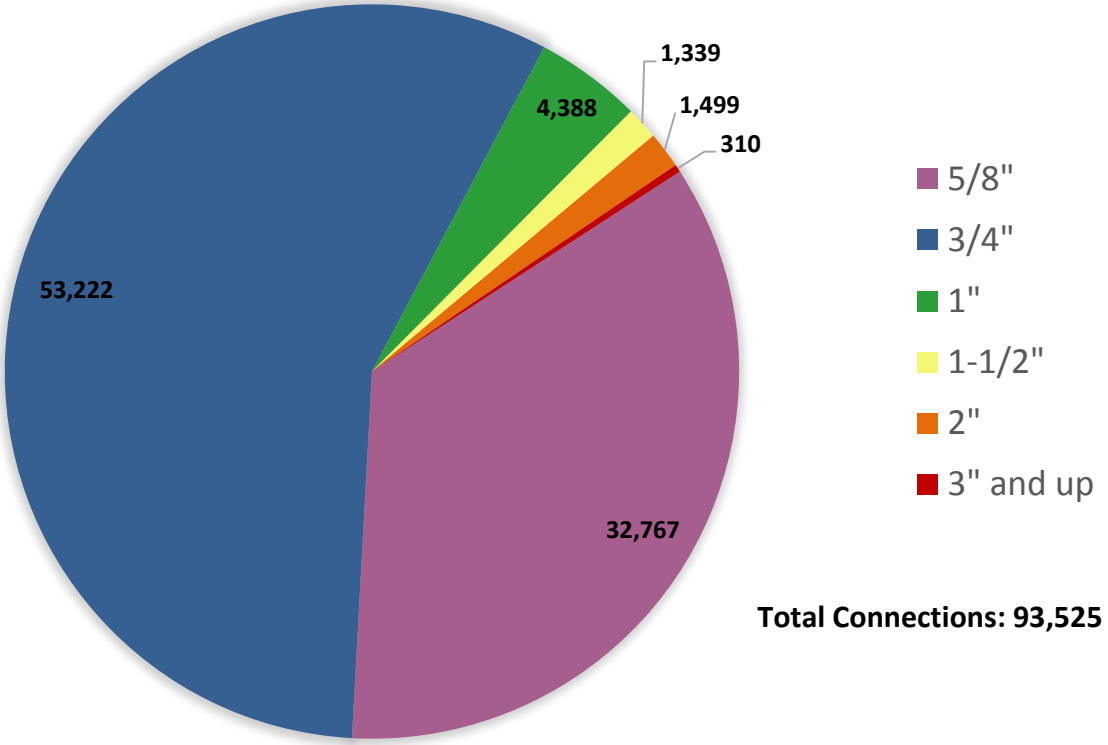


STAR Database

Sprinkler System



Distribution Meter Statistics



Total Connections: 93,525

Types of Meters

- Positive Displacement Meter
  - Most common, especially among residential applications.
- Current/Velocity Meter
  - Mostly commercial and industrial accounts.
- Compound Meter
  - Utilized in applications where both low and high flow exist such as hospitals and apartment complexes.

Positive Displacement Meter

The City utilizes Neptune T-10 meters with ⅝”, ¾” and 1” connections

Advantages

- ✓ Reliability
- ✓ Excellent low flow accuracy.
- ✓ Accurate over broad range of flows.
- ✓ Inexpensive

Disadvantages

- X Limitations at high flows due to pressure loss.
- X Limitations in size due to forces on ball and disk.

Turbine Meter

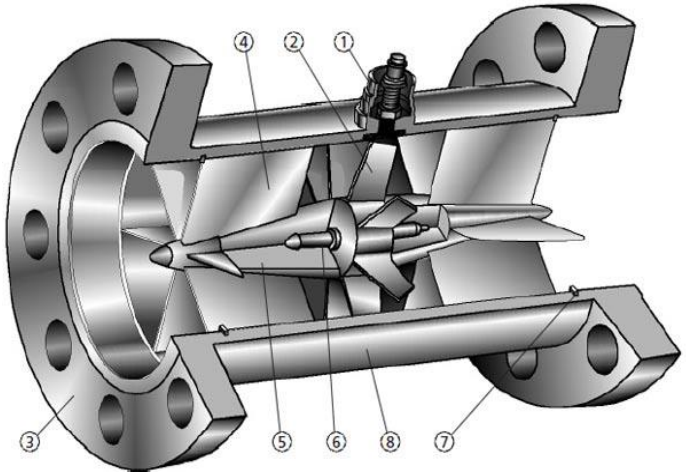
The City utilizes a Neptune High Performance Turbine (HPT) meters with connections that are 1-½” and larger.

Advantages

- ✓ Turbine meters are accurate at variable, intermediate and high flow
- ✓ Durable at increased velocities associated with high flows.
- ✓ Low pressure loss

Disadvantages

- X Slightly less accurate at low flows
- X A straight run of pipe upstream and downstream of the meter needs to be installed to allow homogenization of the flow pattern



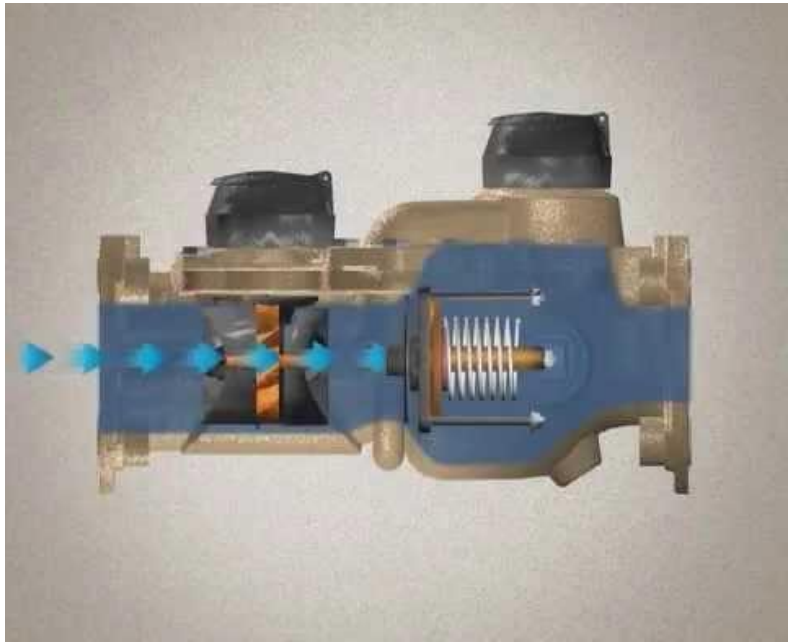
Compound Meter

Advantages

✓ Allows accurate measurement at both high and low flows

Disadvantages

X Cost prohibitive for many applications



Registers

- Registers record the volume of water passing through the meter

- Neptune ProRead registers are used on both T-10 and High Performance Turbine (HPT) Neptune meters.
  - Less Expensive
  - Durable
  - Measures flows to 1/10th of a gallon