## Charles County DPW's Use of GIS to Streamline Business Practices

Charles County Department of Public Works – Utilities MSGIC Spring Quarterly – Hagerstown, MD



#### Topics

Brief History

Development of Enterprise Environment Process Efficiencies

Cost and Revenue Implications



### Charles County, Maryland

- Approximately 150,000 Residents
- County Department of Public Works
  - Utilities maintains and operates
    System
- 30,000+ Water/Wastewater
  Connections

Process for maintenance:

- Use of Hard copy plan sets
- Heavy reliance on institutional
- Knowledge
- · Time lost to researching and
- Investigating





# Charles County Department of Public Works - Utilities

Implementation:

Comprehensive conversion of water, wastewater, and reclaimed systems All attribute information found on plans included in geodatabase Connectivity from each customer to treatment facility/water tower Image attachment for easy access to source documents Access to data via web



## Charles County Department of Public Works - Utilities

Use GIS exclusively as management of their Infrastructure

Use Esri's ArcGIS Platform

Desktop and Field Use

Primary Access via the Web

Some examples where County Uses GIS:

Water Billing Analysis

Network Analysis

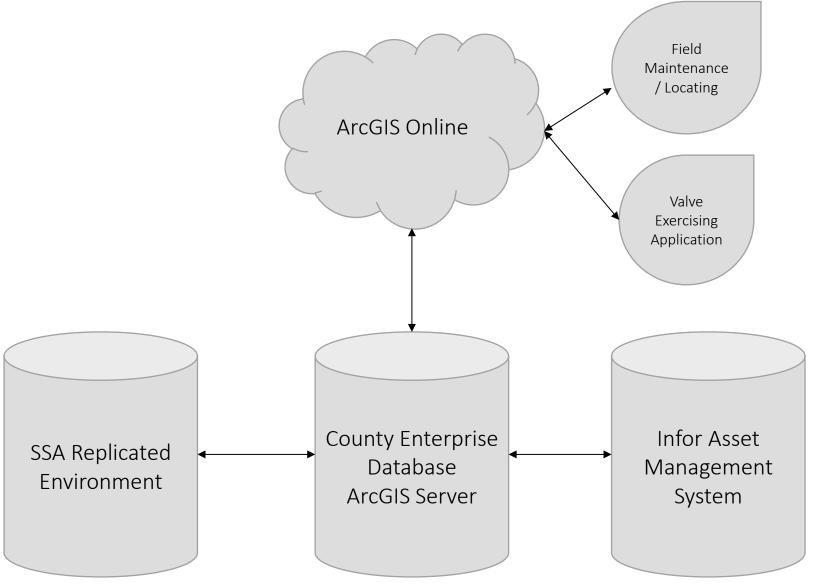
Valve Isolation

Asset Management (Infor EAM 11 Integration)

Project Status and Administrative Communication



#### Enterprise Environment





#### Web Access to Data

Uses responsive MD iMAP Template Mobile web app uses Twitter Bootstrap Includes:

Water Billing Analysis

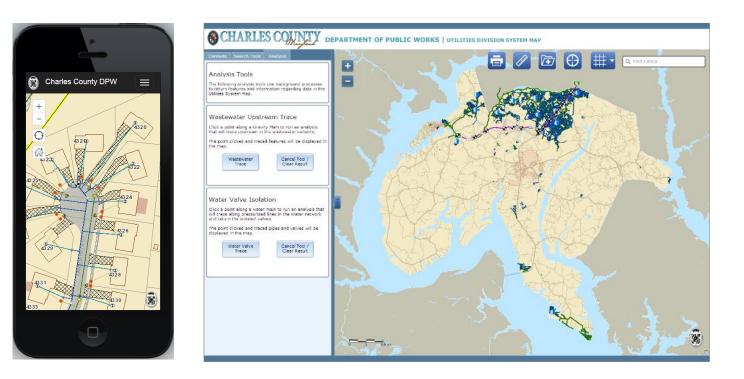
Network Analysis

Valve Isolation

Search Tools – Zones, Sewersheds, Asset Management Data

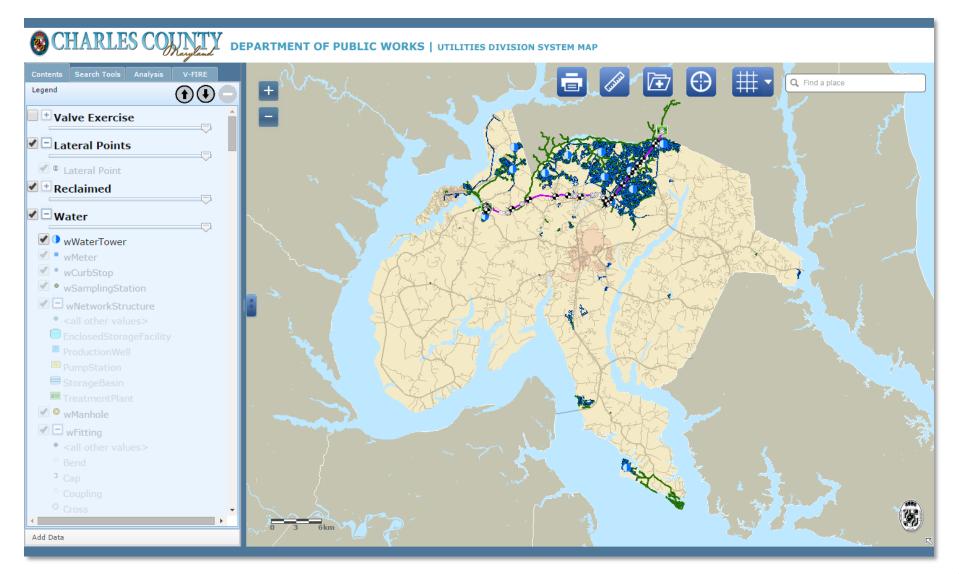
Print Functionality

Geocoder



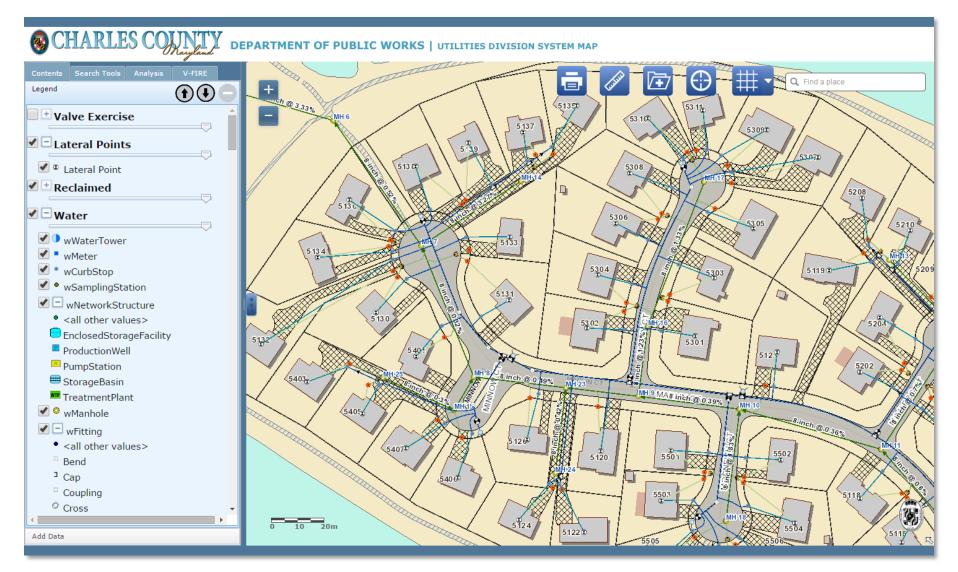


#### **DPW Web Application**



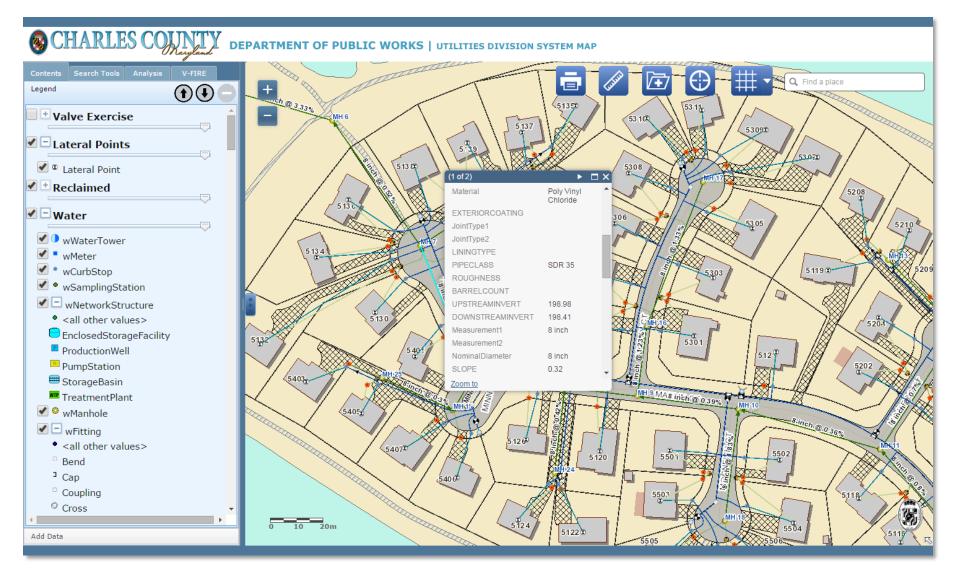


#### DPW Web Application



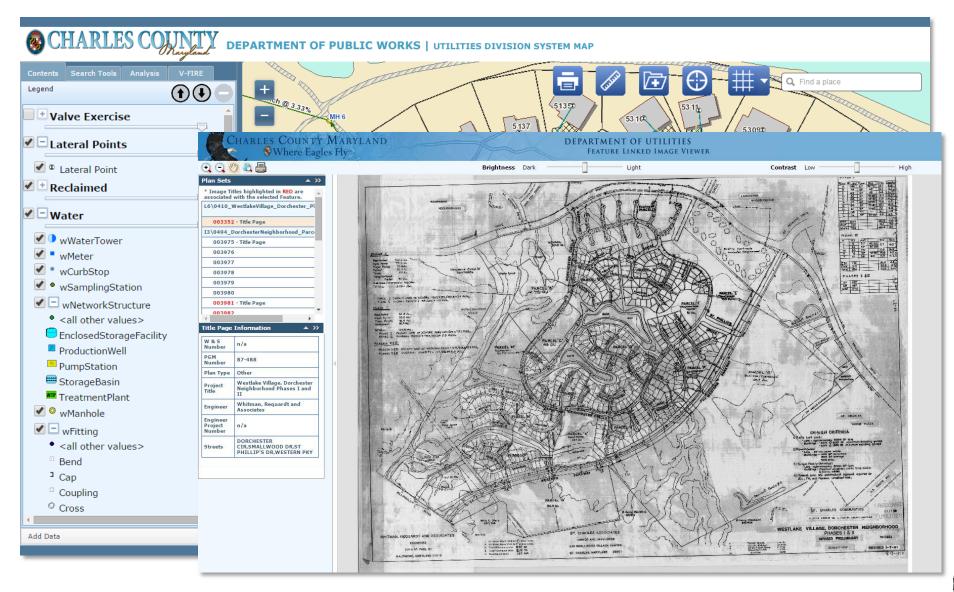


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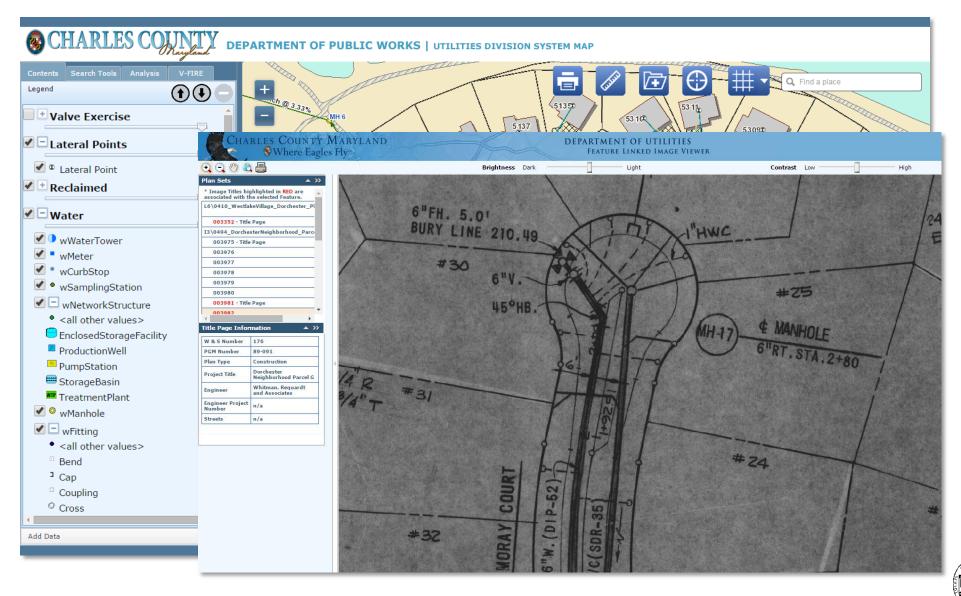


#### Image Association with ArcGIS for Server



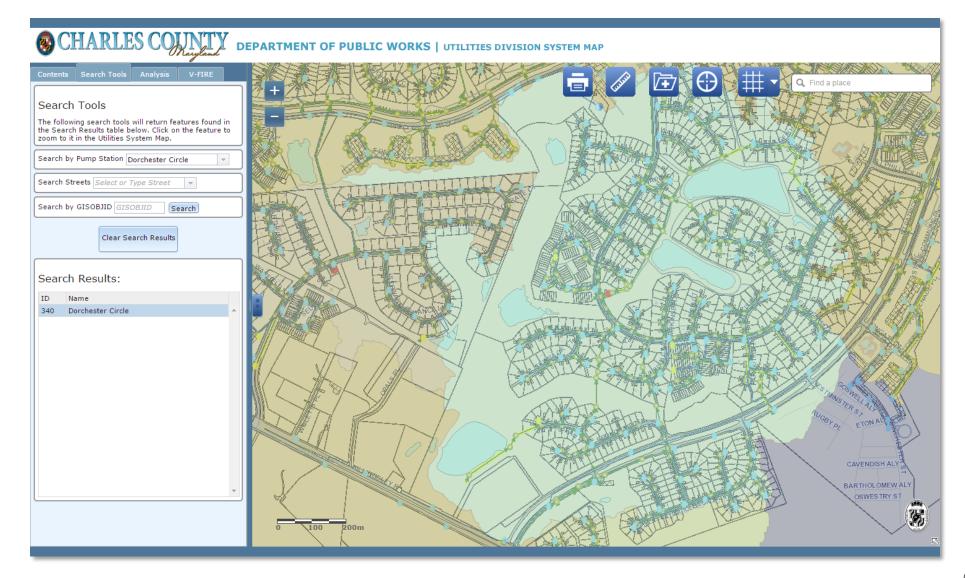


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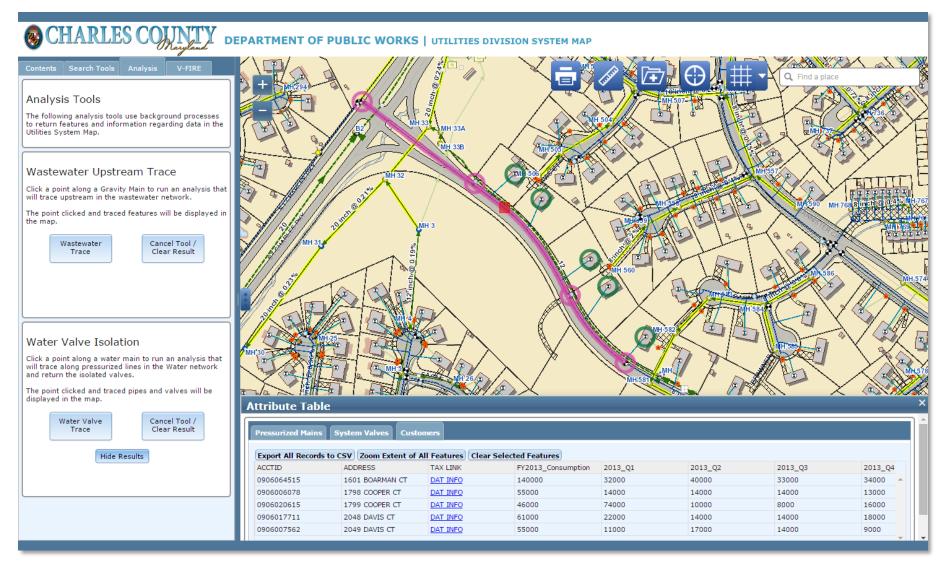


#### Search Functionality



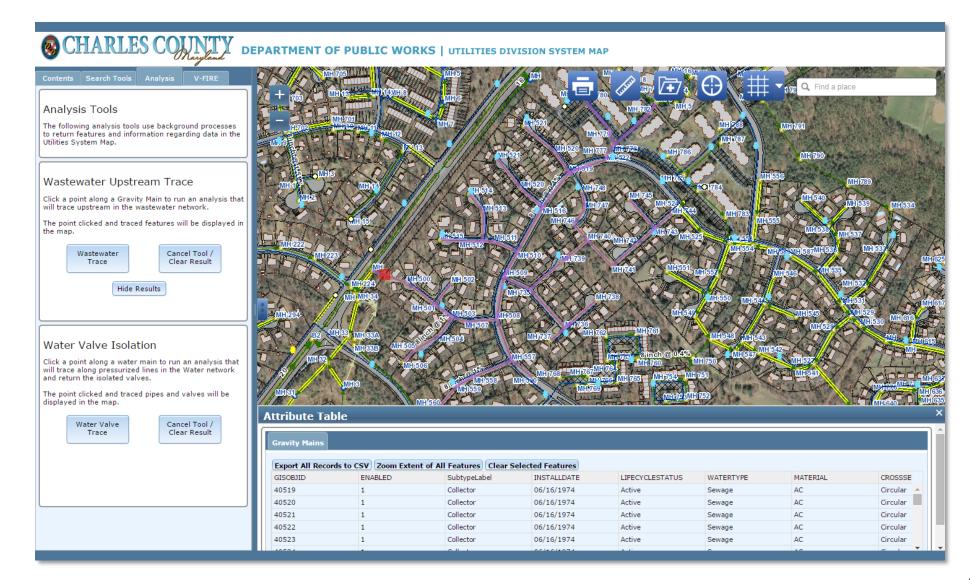


#### Water Valve Isolation Analysis



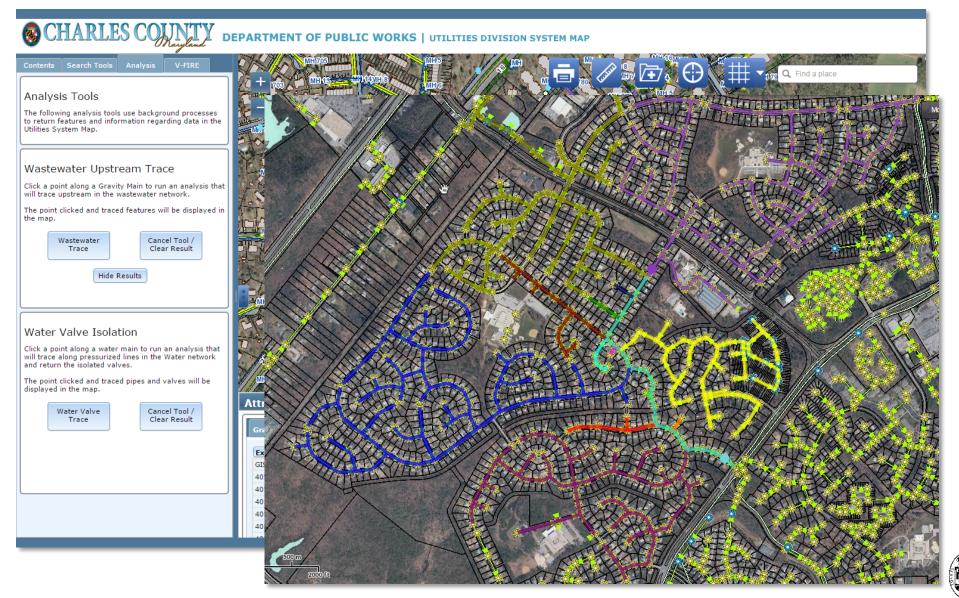


#### Sewer Tracing and Flow Modeling



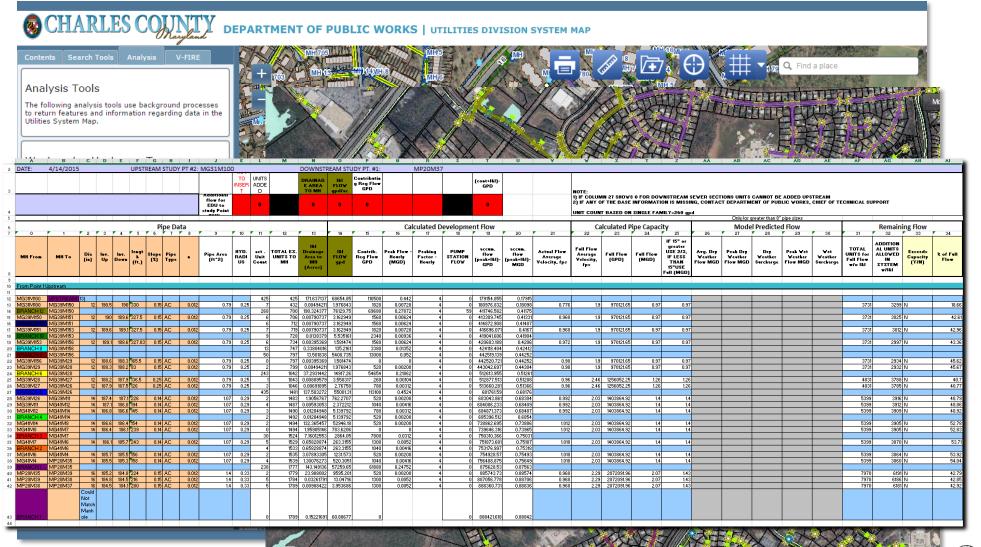


#### Sewer Tracing and Flow Modeling





#### Sewer Tracing and Flow Modeling





#### Water Meter Analysis for Low Water Flow





#### Water Billing Record Analysis





- Field Crew exercising every valve in the County
- Use of GIS for both field collection and management of teams and status

#### FIELD CREWS USE:

Panasonic Tough Pad

Customized ArcPad Application using ArcGIS Online Data/Disconnected Editing

#### WEB APPLICATION USES

ArcGIS Online Feature Service for Real-time Updating

Charting for Project Status, i.e. What was completed:

To Date

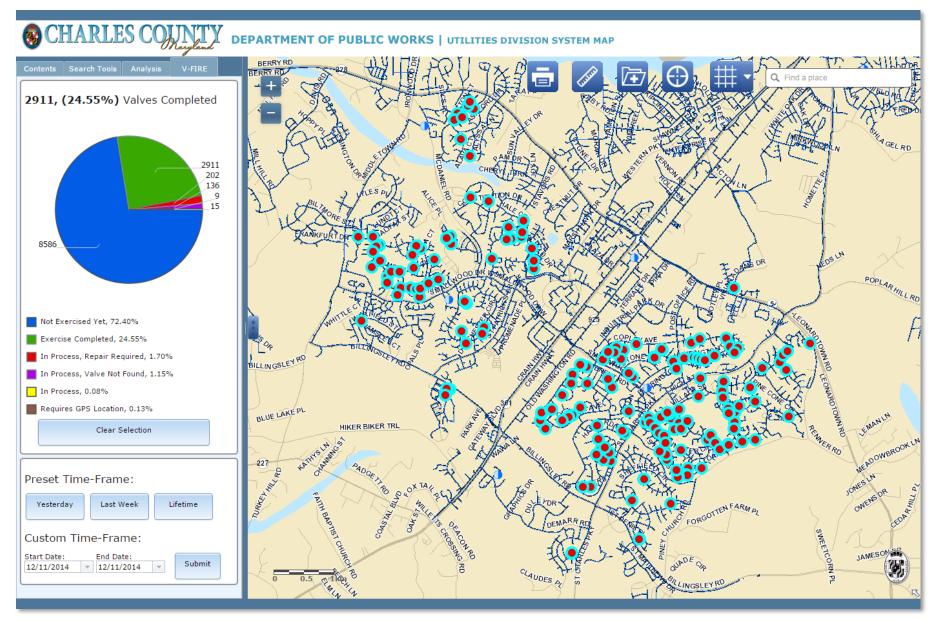
Yesterday

Last week

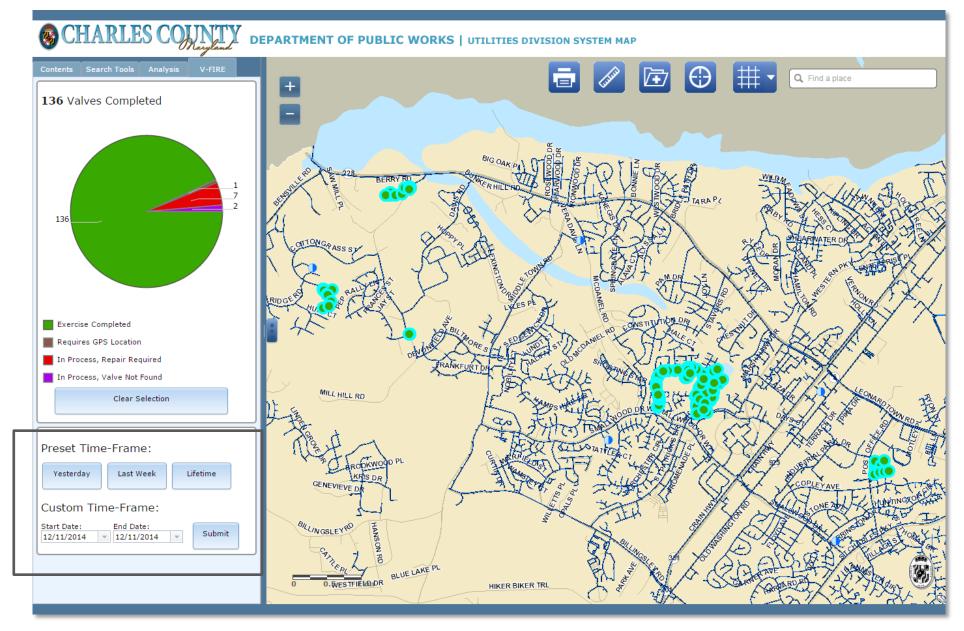
Custom Dates

Map Interaction with Chart to locate features collected of a certain status

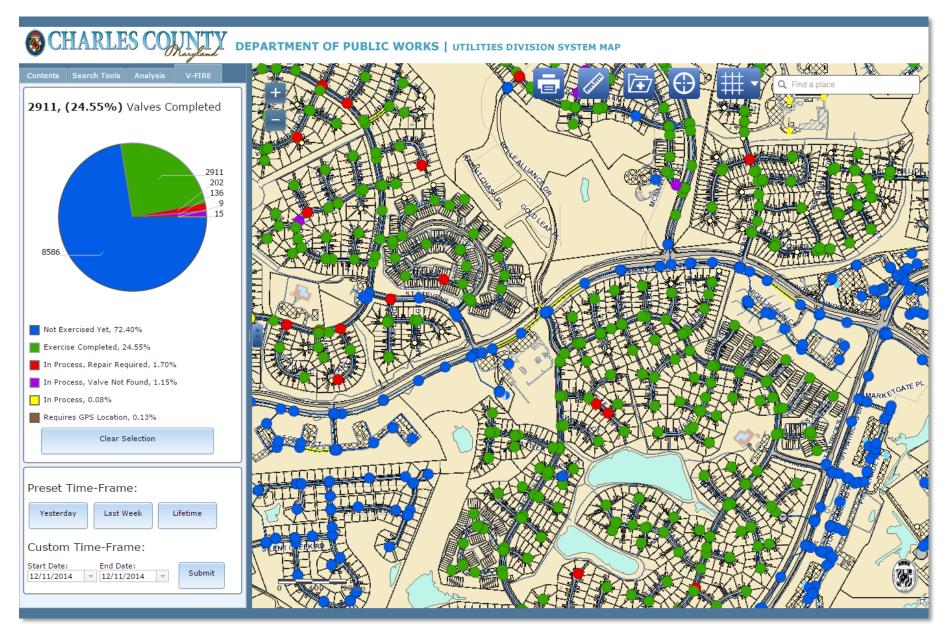














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