

Barton & Loguidice

County of Saratoga, New York



Asset Management Implementation for Saratoga County Sewer District

NYWEA-NEWEA

Joint Spring Technical Conference

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Introductions

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Executive Director
Saratoga County Sewer District

Agenda



Project Background



Introduction to Asset Management



Design and Build



Roadblocks and Lessons Learned



Questions

Agenda



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Questions

Why Asset Management?



Protect
ecosystems
and public
health



Avoid
enforcements
and penalties

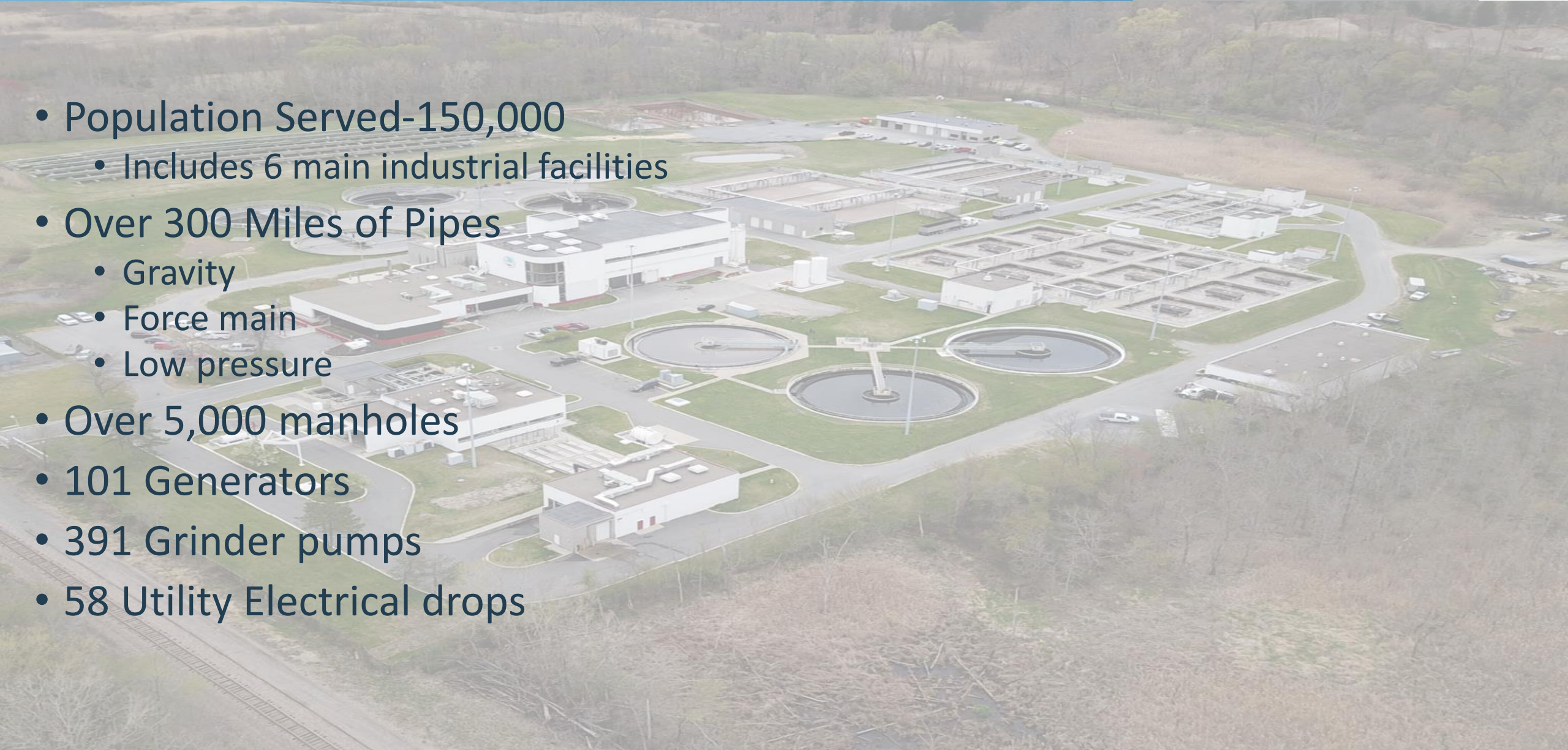


Minimize
long-term
ownership
costs



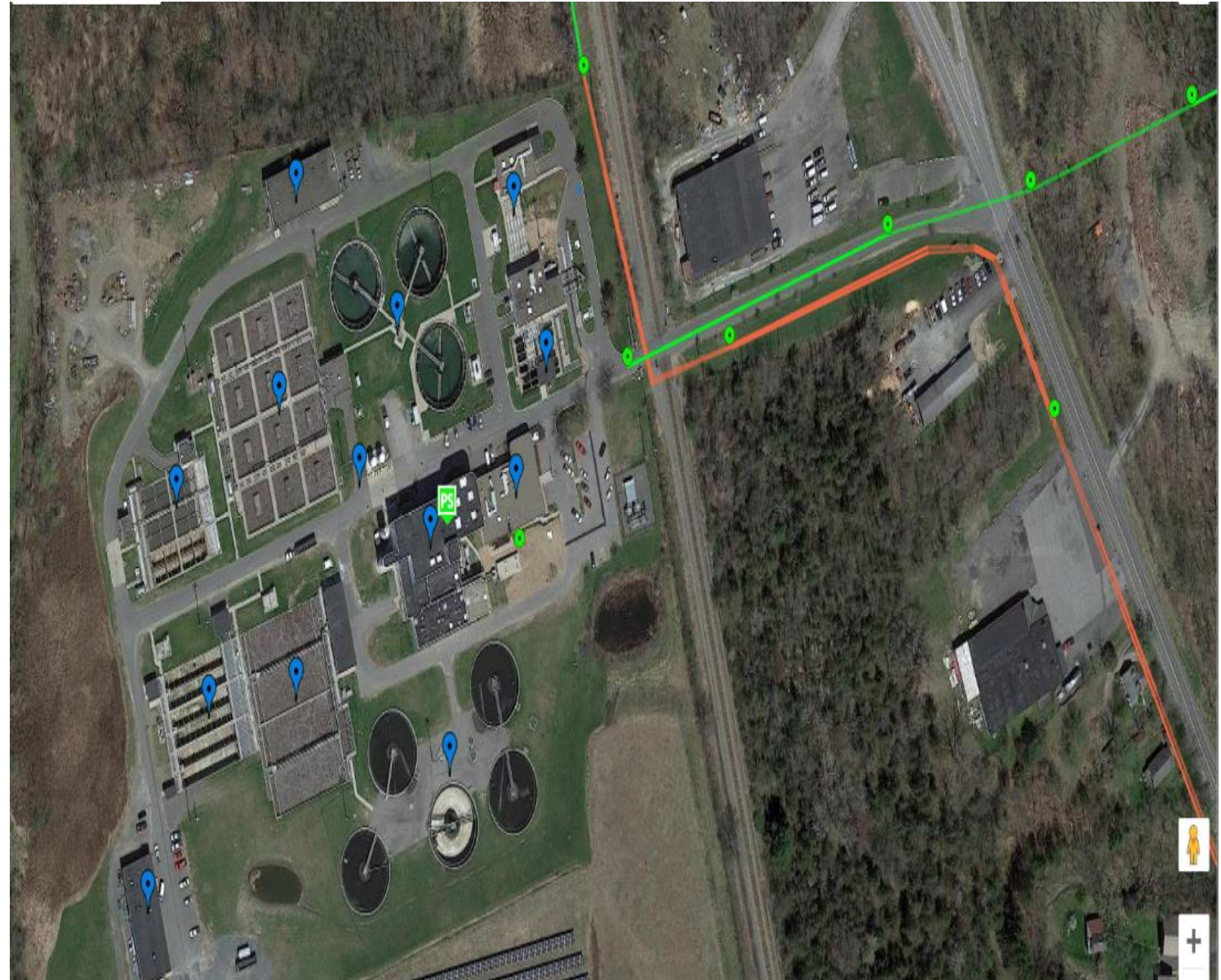
Maintain
economic
advantage

Saratoga County Sewer District

- Population Served-150,000
 - Includes 6 main industrial facilities
 - Over 300 Miles of Pipes
 - Gravity
 - Force main
 - Low pressure
 - Over 5,000 manholes
 - 101 Generators
 - 391 Grinder pumps
 - 58 Utility Electrical drops
- 
- An aerial photograph of the Saratoga County Sewer District facility. The image shows a large industrial complex with several large circular tanks, numerous rectangular buildings, and a network of pipes and roads. The facility is surrounded by green grass and trees, with a road and some parking areas visible. The overall scene is a detailed view of a large-scale wastewater treatment plant.

SCSD Needs

- Cloud Based System
- Ease of Use
- CMMS & AM Solution
- Asset information paired with pre-existing GIS
- DEC future requirement
- Mobile interface



Agenda



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Questions

What is Asset Management?

- In the context of **municipal wastewater systems**, **asset management** is managing assets in a way that **protects the public health and the environment**. It minimizes **the life-cycle cost** of the assets while continuing to deliver the expected **levels of service**.

Benefits

- Supports effective information transfer and knowledge retention
- Improves communication between staff, regulators, and the community
- Improves public confidence through transparency and education
- Identifies risk management techniques and strategies
- Creates rigorous and defensible decision-making tools
- Lowers costs through more efficient asset ownership

Agenda



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Questions

Asset Management Platform Selection

- RFP Process
- Platform Requirements
 - Size of municipality
 - Ease of use
 - GIS integration
 - Functionality based on current SOPs
 - Price and licensing

Utility Cloud



Danielle Grennon

My Default Dash

Custom View	Map	My Work	Assets
Work Orders	Route Dashboard	Power BI	Asset Classes
Compliance	Workflow Classes	Work Scheduler	Work Queues
Users	Accounts	Audit Trail	Message Service
Security Roles	Stakeholder Roles	Asset Icons	Analytics
Business Lines	File Manager	List Definitions	Sequences
Work Report	User Access	Map Asset Lists	Jobs
Asset Labels	Store	Order List	Letters

Work Orders (0)

You have no open work orders

Global Work (0)

You are not a stakeholder
[Click here to edit work schedules](#)

My Messages

Welcome

You have no messages. Messages are distributed automatically when producing reports or manually using the Message Service tool tile.

5/24/2023 1:41:32 PM

- Operation Management Software
- Utilities Handling –Wastewater, sewers, natural gas, etc..
- More than 39,000 users globally
- Desktop and mobile platform
- REST API for app connections
- Designed for flexibility and security
- In app IT ticket submissions

Submit a ticket

866-255-3563

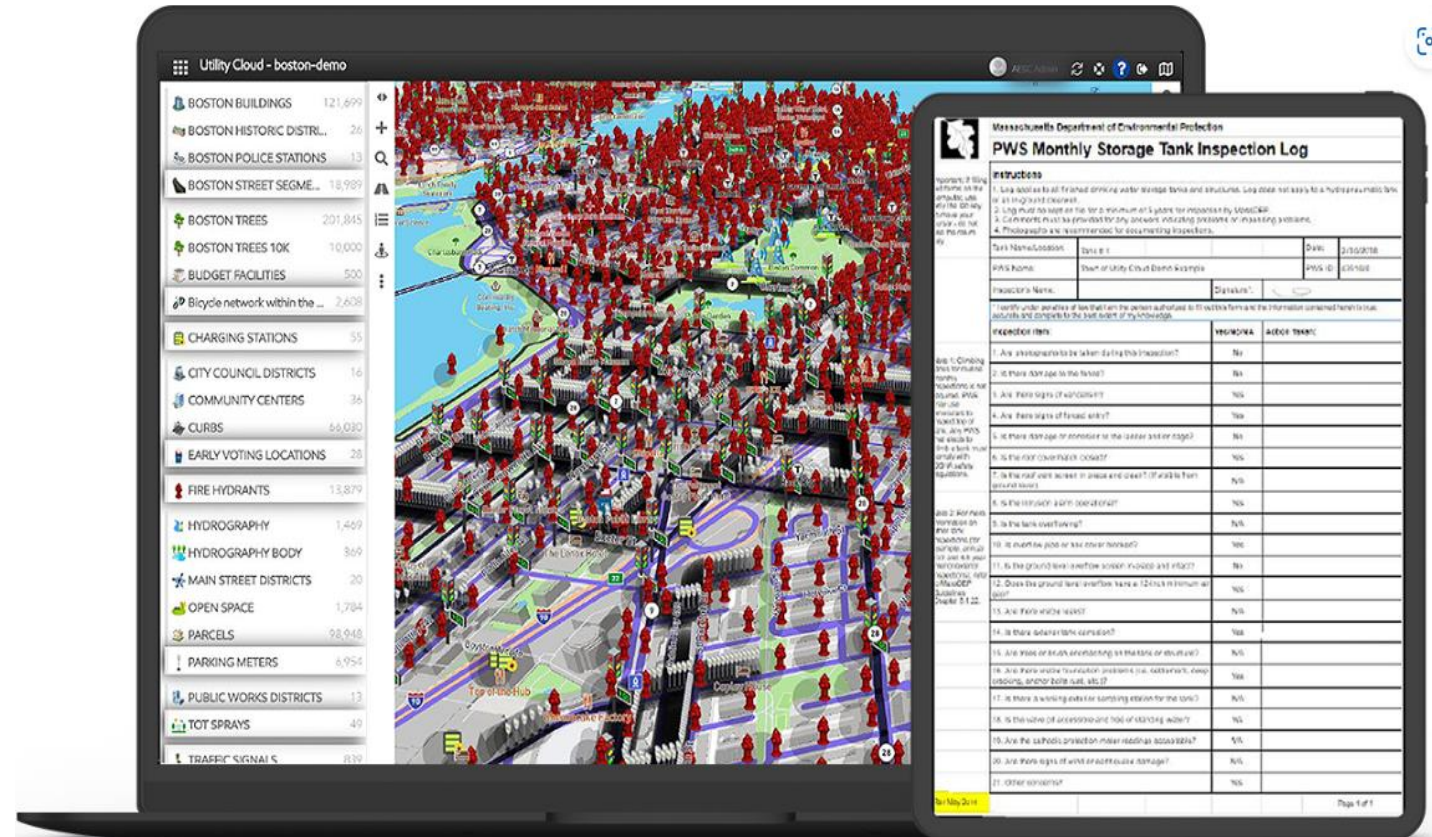
Kick-Off Meeting



- What was done?
 - Overall meeting with all project participants
 - Demonstration of Utility Cloud capabilities
- Why was it important?
 - Set the stage for the project
 - Involve all stakeholders
 - Identify the asset management needs
 - Initiate a shift in culture

SCSD Daily Operations

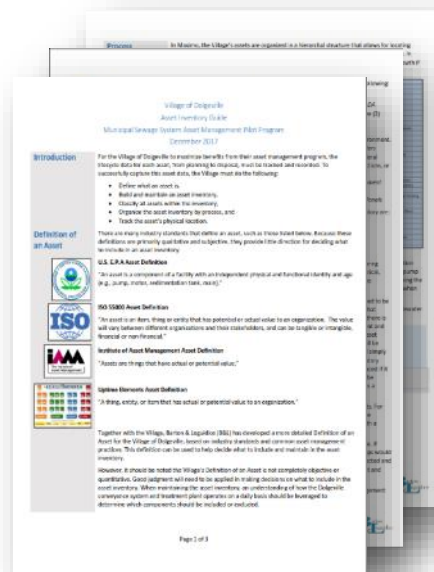
- Field Work
- Scheduled Work
- Route Work Orders
- Field Work Requests
- Emergency Calls*
- Adding New Assets
- Updating Existing Asset



Inventory of Critical Assets



Asset Inventory Guide provides specific guidance for building and maintaining asset inventories



The Village of Dolgeville's Definition of an Asset

To be cataloged as an asset, the equipment/component must satisfy one or more of the following:

- Any necessary component in the conveyance or treatment of wastewater.
Examples: Valves, Piping, Tanks, Pumps, Blowers, Aeration Diffusers, Controls, SCADA
- Any piece of equipment with an estimated useful life equal to or greater than three (3) years.
- Any piece of equipment with an estimated value greater than \$3,000.
- Any component or piece of equipment that provides a safe and healthy work environment.
Examples: Exhaust Fans, Gas Detectors, Eyewash Stations, Odor Control, Unit Heaters
- Any component or piece of equipment required to comply with local, state, or federal regulatory standards, or equipment that requires documented calibrations, inspections, or other activities.
Examples: Fire Extinguishers, Flow Meters, Sampling Equipment, Chemical Containment
- Any necessary component or piece of equipment in the supply of electricity.
Examples: Motors, Circuit Breakers, Transfer Switches, Generators, Switch Gears, Panels

Other questions to consider when deciding whether to include an item in the asset inventory are:

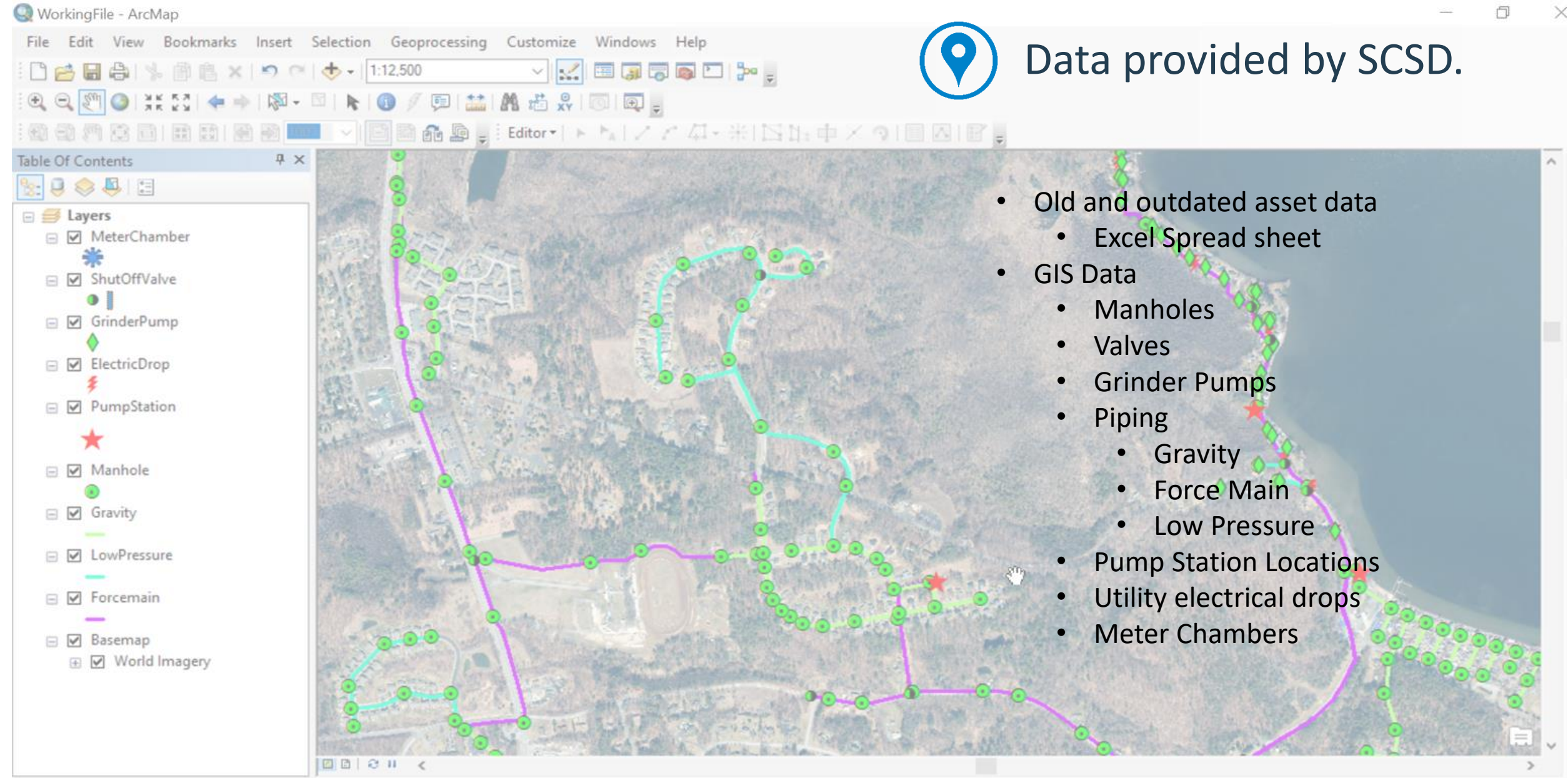
- Is the asset repairable or replaceable?
- Does it require maintenance?
- Is it inspected?
- Does it require individual tracking for reliability or performance purposes?

Inventory of Critical Assets

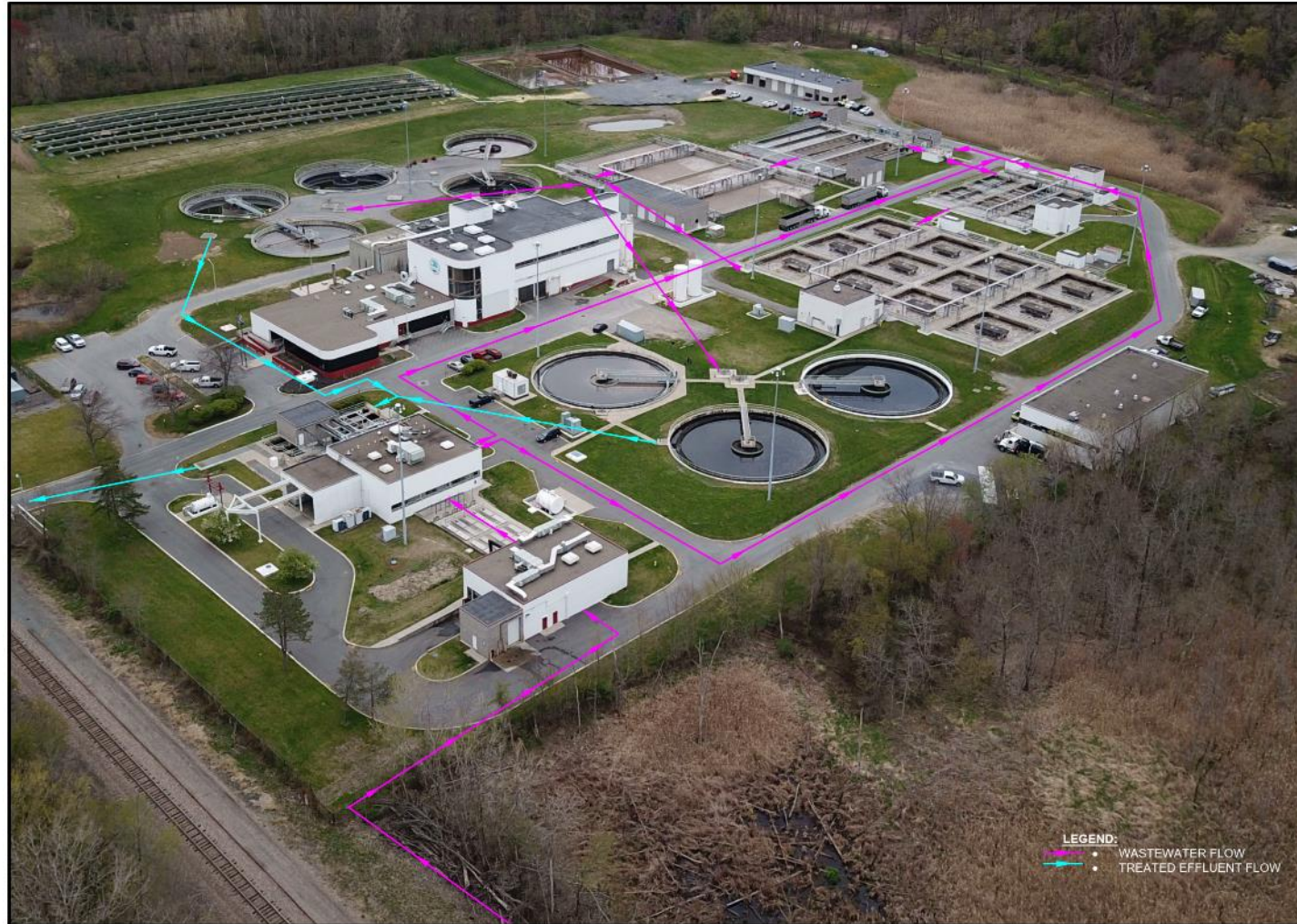


Data provided by SCSD.

- Old and outdated asset data
 - Excel Spread sheet
- GIS Data
 - Manholes
 - Valves
 - Grinder Pumps
 - Piping
 - Gravity
 - Force Main
 - Low Pressure
 - Pump Station Locations
 - Utility electrical drops
 - Meter Chambers



Inventory of Critical Assets



LEGEND:
• WASTEWATER FLOW
• TREATED EFFLUENT FLOW

SARATOGA COUNTY SEWER DISTRICT #1
1002 HUDSON RIVER ROAD, MECHANICVILLE, NEW YORK

P.O. Box 650 Mechanicville, New York 12118
URL: <http://www.saratogacounty.gov/department/water-wastewater/>

Telephone: (518) 464-7346
Fax: (518) 662-6390



Field Collection of Critical Assets



- Tablet with preloaded access database
- Assets and attributes collected in database
 - Asset Names
 - Location with Hierarchy Format
 - Make
 - Model
 - Serial Number
 - Year Installed
 - Asset Specific Information

Asset Class Development

Factors to consider when developing a new asset class

- Preventative Maintenance and inspections
- Cost
- Size
- Repairs and Replacements

The screenshot displays a web application interface for searching asset classes. At the top, there is a search bar with the text "Search Asset Classes" and a magnifying glass icon. To the right of the search bar are two checkboxes: "Active Only" (checked) and "Include Community Classes" (unchecked), followed by a "Create" button with a dropdown arrow. Below the search bar, the text "Search Results (24 Asset Classes found)" is displayed. On the right side of the results area, there is a "25 Records" dropdown menu and a hamburger menu icon. The main content area is a grid of 12 asset class cards, arranged in two rows of six. Each card contains an icon, a title, a description, and statistics. At the bottom of each card, there is an "Asset Class ID" and an "Export" button.

Asset Class ID	Export
55415081	Export
55415409	Export
55414826	Export
55415683	Export
55415074	Export
55415073	Export
55415082	Export
55415212	Export
55415076	Export
55415162	Export
55415207	Export
55415623	Export

Task 2: Inventory of Critical Assets



GIS Synchronization

Esri Online Subscriptions

Pump Station (Completed)



Manholes (Completed)



Grinder Pump (Completed)



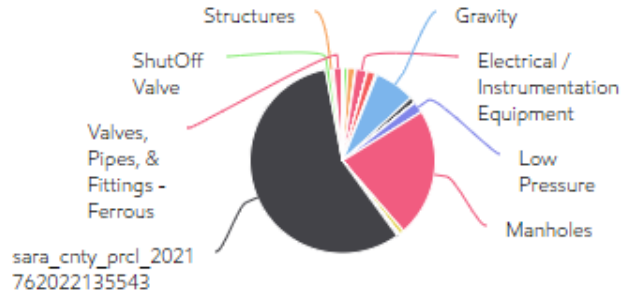
Meter Chamber (Completed)



Gravity Line (Completed)



Assets 37885



Esri Online Subscription

Active

Name

Pump Station

Interval

Weekly

Feature Server

PumpStation

Feature Layer

PumpStation

Asset Class

Pump Station

Unique Key: (Pick one from below to make unique values on both systems, if you pick to create, we will create the asset class and attributes in UC and will assign it here)

UCID

Data Policy

Esri Wins

Attributes to sync:

Asset Description: (Use text and attribute (column) names from shape file enclosed in "<" and ">" to instruct Utility Cloud to write the value using the values from the specified column(s). For example you might use one or more columns to make up the asset description.)

<Name> Pump Station

Security



Security groups were set up and system users were placed in the appropriate group in order to manage access.

Work Order Notifications

Send notifications via
 Email SMS

Notify Andrew Marsden when a work order:

- is assigned to them **on creation**
- is assigned to them and is **updated**
- is assigned to them and is **completed**
- is **due**
- is assigned to them and is **closed**

Work Order Summaries

Send a summary detailing **open** work orders

- Daily
- Weekly**
- Monthly
- Quarterly
- Yearly

Send next report on Send next report at

05/29/2023 8:00 AM

Send a summary detailing **completed** work orders
 Send a summary detailing **due** work orders

- Daily
- Weekly**
- Monthly
- Quarterly
- Yearly

Send next report on Send next report at

02/13/2023 8:00 AM

Localization

Prefers **English (US)** for site language

Prefers **Eastern Standard Time** for a time zone

Roles

[Admin](#)

Role Exceptions

[Can View Shared Workflows](#)

[Copy Workflows](#)

[Create Workflows](#)

[Edit Workflows](#)

[View Workflows](#)

Work Orders

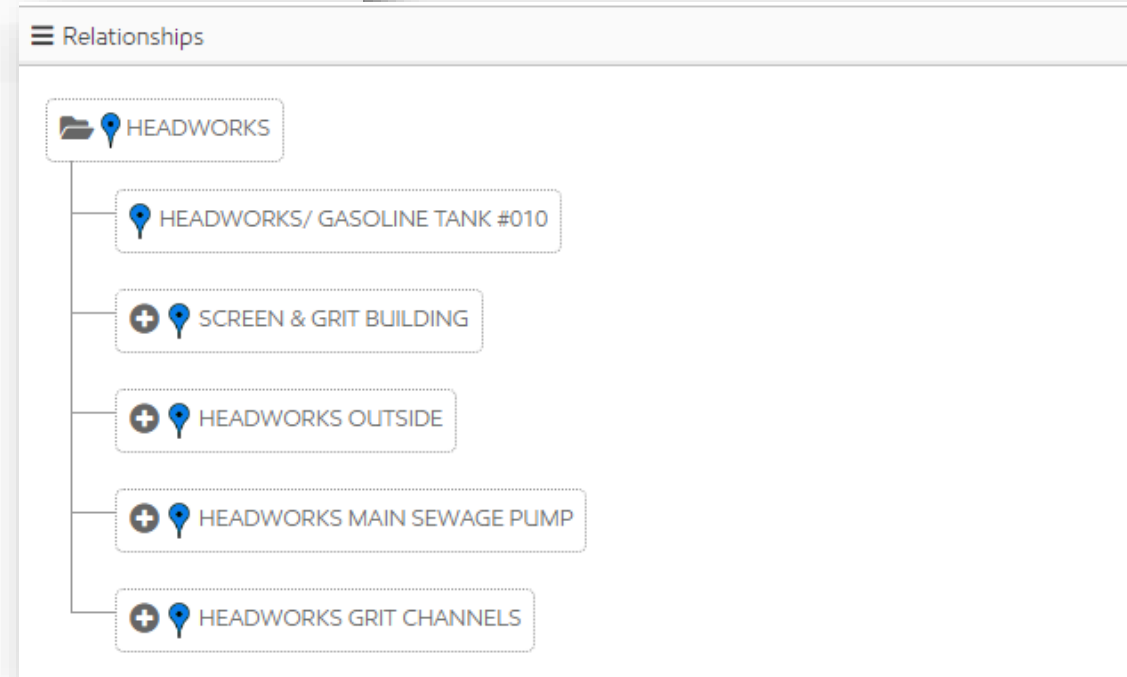
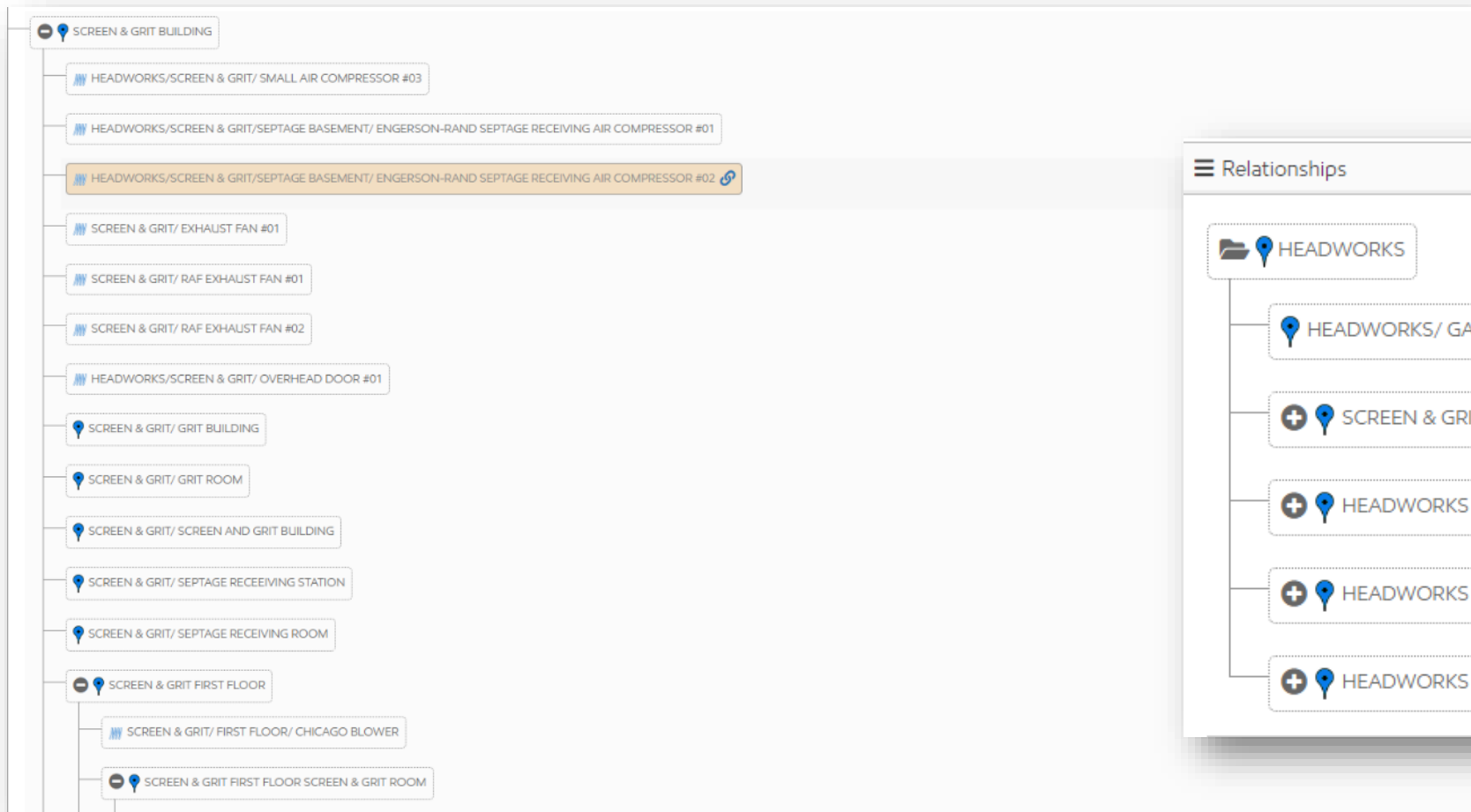
Notify Andrew Marsden:

when a work order is assigned to them **on creation**
when a work order is assigned to them and is **updated**
when a work order is assigned to them and is **completed**
when a work order is assigned to them and is **due**
when a work order is assigned to them and is **closed**
detailing assigned work orders **Weekly**
detailing their completed work orders **Never**
detailing their due work orders **Weekly**

Development on Hierarchies



Hierarchies were developed to enable ease of search and cost roll up



Work Flow Classes

- What is a workflow class?
- Triggers
- Scheduling Work
 - Auto Schedule
 - Manual Schedule
- View and Manage Work

The screenshot shows the 'General' tab of the Workflow Class Builder. It includes a 'Required' checkbox (unchecked) and an 'Active' checkbox (checked). There is a 'Title' field with a red error message 'Field Title is required.' Below this are fields for 'Units', 'Key', 'Description', and 'Group ID'. A 'Type' dropdown menu is open, showing options like 'Text', 'Signature', 'Telephone', 'Text', 'Time', 'True/False', and 'Users'. The 'Users' option is currently selected.

The screenshot shows the 'Workflow Class Builder' interface for 'Manhole Inspection (Non-linear)'. It features a 'MANHOLE INSPECTION - PREVIEW' section on the left with input fields for 'Inspector', 'Manhole Type', 'Picture - Outside' (with a camera icon and a note 'Photo of manhole cover with landmark(s)'), 'Cover Condition', 'Inside Wall Material', 'Wall Condition', 'Rim to Invert Depth (ft)' (with a minus sign), 'Inflow Type', 'Number Of Pipes' (with a minus sign), and 'Direction of Flow'. On the right, there is a table listing the fields and their types.

TITLE	KEY	TYPE
Inspector	-	Users
Manhole Type	-	Multiple Choice
Picture - Outside	-	Photo
Cover Condition	-	Multiple Choice
Inside Wall Material	-	Multiple Choice
Wall Condition	-	Multiple Choice
Rim to Invert Depth (ft)	-	Number
Inflow Type	-	Multiple Choice
Number Of Pipes	-	Number
Direction of Flow	-	Multiple Choice
Picture - Inside	-	Photo
Requires WO	-	True/False
Flow Condition	-	Multiple Choice
Inspection Comments	-	Text

Work Flow Classes

Workflow Class Search
Search Workflow Classes

Search Workflow Classes Active Only Include Community Workflow Classes

Search Results (62 Workflow Classes found)

25 Records

<p> Air Relief Maintenance</p> <p>Change Out Air Relief Saratoga Wastewater Structures, Manholes Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213655 Export</p>	<p> check oil</p> <p>check oil level Saratoga Wastewater Pump Station, Conventional Pu... Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213554 Export</p>	<p> Check Valve Maintenance</p> <p>Saratoga Wastewater Mechanical Equipment, Valves, ... Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213653 Export</p>	<p> Corrective Action</p> <p>Saratoga Wastewater Pump Station, Conventional Pu... Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53212335 Export</p>	<p> Easement Clearing</p> <p>Saratoga Wastewater Gravity, Low Pressure, Forcemain Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213291 Export</p>	<p> Emergency Pump Station Visit</p> <p>Saratoga Wastewater Pump Station Non-linear Available as Work Order Trigger Count: 1</p> <p>Workflow ID 53212505 Export</p>
<p> fire extinguisher inspections</p> <p>inspect ALL fire extinguishers to ... Saratoga Wastewater Pump Station, Valves, Pipes, & Fi... Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213498 Export</p>	<p> Generator Block Heater</p> <p>Saratoga Wastewater Generators Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213517 Export</p>	<p> Generator Fueling</p> <p>Generator Fueling Saratoga Wastewater Generators Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213068 Export</p>	<p> Grease Bearing(s)</p> <p>Saratoga Wastewater Conventional Pumps, Motors, M... Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213432 Export</p>	<p> Grease Belt Press</p> <p>Saratoga Wastewater Mechanical Equipment Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53212589 Export</p>	<p> Grinder Pump Electric Drop</p> <p>Saratoga Wastewater Electric Drops Non-linear Available as Work Order Trigger Count: 0</p> <p>Workflow ID 53213202 Export</p>



















Map Navigation

The screenshot displays the Utility Cloud interface for Saratoga County Sewer District. The top navigation bar includes options like 'Add Asset', 'Walk', 'Find', 'Clear', 'All Assets', and 'Traffic'. A sidebar on the left lists various asset categories such as 'Reports', 'My Work Queues', 'My Default List', 'Wastewater', 'Actuators', 'Child Hierarchy Locations', 'Conventional Pumps', 'Electric Drops', 'Electrical / Instrumentation Equipment', 'Electrical Switchboards', 'Fluid Measurement Instruments', 'Forcemain', 'Generators', 'Gravity', 'Grinder Pumps', 'LOCATIONS', 'Low Pressure', 'Manholes', 'Mechanical Equipment', and 'Meter Chamber'. The main map area shows an aerial view of a wastewater treatment plant with several blue location pins. A pink line highlights a path on the map, and a green line highlights a specific asset. A blue callout box is overlaid on the map.

Asset Symbols can be customized to display a different color when work is due.

- Add Assets
- Walk a Scheduled linear Workflow
- Search assets and addresses
- Access Reports
- Toggle Layers
- View your scheduled work
- View and Navigate to asset detailed information

Monitoring

Search Route Name		All Routes		
Route	Open/In Progress Work Orders	Status	Current Compliance	
My Work	0	N/A	-	
All Work	125	N/A	-	
  Pump Station Electrical	1 of 1		-	
  Grease GBT's	2 of 2		-	
  HVAC Air Filter Replacement	14 of 24		42%	
  Grease Belt Press	2 of 2		-	
  Lab vacuum pump oil change	1 of 1		-	
  Southwest (Eric) Pump Station Check	18 of 18		-	

Showing 1 to 9 of 11 entries (filtered from 20 total entries)

- Monitoring

- Workflow Reports
- Administrative Rights
- Email Notifications
- Power BI Reports
- Analytics and KPIs
- Percentage completed within scheduled maintenance routes

Agenda



Project Background



Introduction to Asset Management



Design and Build



Road Blocks and Lessons Learned



Questions

Road Blocks and Lessons Learned

- Lessons Learned

- GIS Options

- Realistic Schedule and Expectations

- Internal Workflow

- Defining Asset Levels

- Road Blocks

- Speed Issue

- Utility Cloud Ticket Process

- Workflow Class Customization

- Storage of O&M Manuals

- Data Clean up Based on Collection

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Road Blocks and Lessons Learned



Questions



Questions?
Thank you!

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The experience to
listen
The power to
solveSM

BartonandLoguidice.com

