

General

InfiniteGIS is hosted on Amazon Web Services (AWS), cloud based servers and built on ESRI technology. As core software is updated and improved, InfiniteGIS will be kept up to date. InfiniteGIS is available to any one, any where, any time, on any device with Internet access.

The CLIENT will have it's own InfiniteGIS application with a GIS portal having a look and feel similar to that of the CLIENTS website. The GIS portal page will have access to asset management reporting pages and the GIS map. If desired, any of the included applications and map could be made available to the general public. It is assumed that most of the asset management applications will require a login to gain access.

Asset Management Applications

All asset management applications will include the following if desired unless noted otherwise:

- Asset location in GIS map
- Attribute editing
- Edit location in GIS map
- Asset creation in GIS map
- Inspection – unique to each asset
 - Issues needing attention will generate repairs needed records
 - Dynamic layer of inspections is updated to show where inspections were performed and provides a means to search for inspections in the map

Repairs

- Record who worked on repair – calculates labor cost
- Record materials used for repair – calculates materials cost and updating inventory
- Record equipment used for repair – calculates equipment cost
- Dynamic layers of repairs are updated to show needed and completed repairs - also provides a means to search for repairs in the map
- Include multiple repairs to a single repair activity.
- Indicate if follow-up is required to repair concrete, asphalt or topsoil
- Dynamic layer displays where follow-up repair is needed
- Attachments; Photos, PDF documents, etc.
- Asset Management reports pages (outside the GIS map) Listing of all inspections performed with tools to filter list by date range
- Listing of repair activity with tools to filter list by date completed range or Work Order Number
- Includes access to details of the repair activity showing issues repaired, labor, materials and equipment
 - Listing of repairs made with tools to filter list by repair and/or date completed range
 - Includes access to details of the repair showing labor, materials and equipment
 - Lists can be exported to Microsoft Excel

	Item ID	Description	Date	Invoice	QTY In	QTY Out	Unit Cost	Total Value
Details	303-002P	Manhole Rings-Plastic 2"	5/8/2019	Repair		1	\$5.54	
Details	101-400	Pipe 6"	5/7/2019	Repair		20	\$7.00	
Details	303-002	Manhole Rings 2"	4/8/2019	Repair		2	\$15.20	
Details	303-002P	Manhole Rings-Plastic 2"	4/8/2019	1234	20		\$6.00	\$120.00
Details	101-500	Pipe 8"	4/1/2019	Repair		5	\$9.00	
Details	101-500	Pipe 8"	3/27/2019	Repair		4	\$9.00	
Details	307-8P/P	Fernco 8" Plastic/Plastic	3/19/2019	Repair		1	\$27.60	
Details	303-002	Manhole Rings 2"	3/19/2019	Repair		1	\$15.20	
Details	109-100	Valve Boxes-Complete	3/18/2019	Repair		1	\$195.00	
Details	303-002	Manhole Rings 2"	2/12/2019	Repair		1	\$15.20	
Details	303-002	Manhole Rings 2"	1/31/2019	Repair		2	\$15.20	
Details	307-10P/P	Fernco Plastic/Plastic	1/31/2019	Repair		3	\$23.26	

STRUCTURE REPAIR

Date Repaired: 8/29/2018

Repair: Replace Lid

Labor: \$ 30.00 Material: \$ 60.80 Equipment: \$ 200.00

Comments:

Save Cancel

LABOR				
Name	Rate	Hours	Total	
John Smith	\$30.00	1.00	\$30.00	X

Add Cancel Select Staff... Hours:

MATERIALS				
Material	Unit \$	Qty.	Total	
303-002 - Manhole Rings 2"	\$15.20	4	\$60.80	X

Add Cancel Select Material... Qty:

EQUIPMENT				
Description	Rate	Hours	Total	
Back Hoe	\$200.00	1.00	\$200.00	X

Inventory Management

- Track inventory items used for repairs
- Inventory is automatically updated when items are used for repair

Staff Management

- Assign staff to identified repair needs
- View assigned work order task by staff member
- Track staff for recording labor costs when performing repair activities
- View historical labor costs for repair activities

Equipment Management

- Track equipment costs when performing repair activities
- View historical equipment costs for repair activities

Water Utility

InfiniteGIS is an integrated system that provides tools to view water distribution facilities in an interactive map. Clicking on the map will display details about features where the user clicked. Features with asset management tools will include a button that opens the asset management application.

Asset Management Application Included:

Water Valve

- Symbolized by use: main, hydrant, service, etc.
- Inspection (issues indicated will generate repairs needed)
 - » If exercised is checked, date exercised is updated in the valve attributes

Hydrant

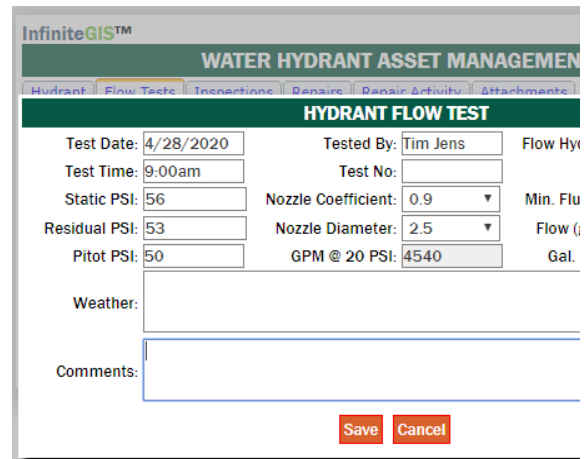
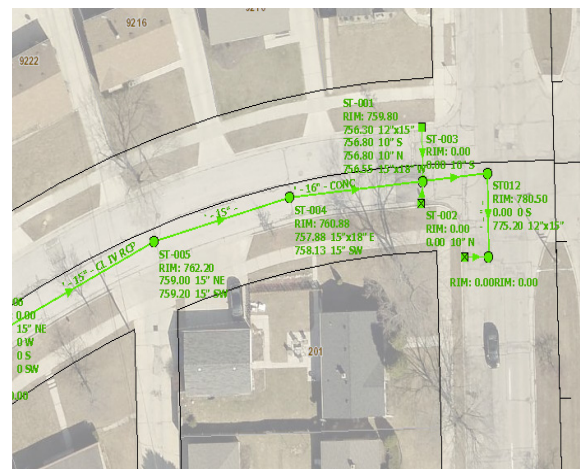
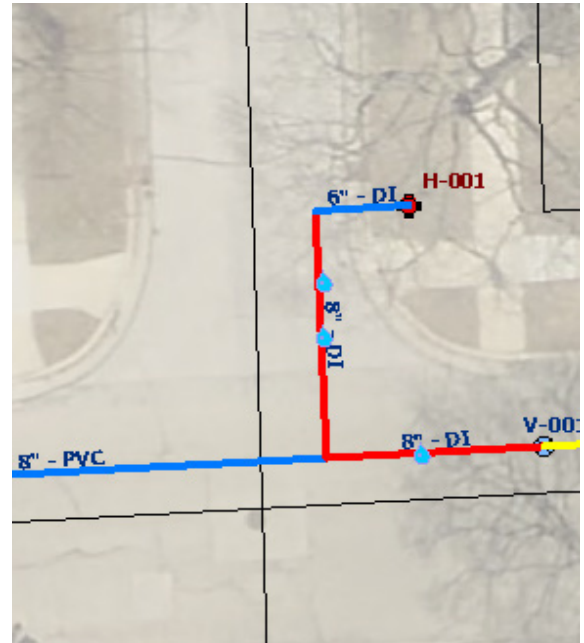
- Inspection
 - » If flushed is checked, date flushed is updated in the hydrant attributes

Flow Test

- Flow GPM is automatically calculated based on data entries.

Water Pipe

- Symbolized by purpose: main, lateral, hydrant lead, etc.
- Inspections of water pipe are not applicable
- Pipe break – specialized repair record are like typical repair records on other assets
 - » Relates break point to a pipe
 - » Breaks per 100 foot layer dynamically changes color of pipe to indicate multiple breaks on a segment
- Asset Management reports pages
 - » Listing of pipe breaks with tools to filter list by date range and/or street
 - » List can be exported to Microsoft Excel



Water Meters

- Symbolized by purpose: deduct, sewer only, system, water and sewer, water only
- Attribute editing – Details about the location, contact information, change out and flow test cycles, meter installed, register installed
- Water meter change out
 - » Provides list of available meters to install and sets meter coming out to repair status
 - » Updates meter date installed on meter point
 - » Register change out
 - » Provides list of available registers to install and sets meter coming out to repair status
 - » Updates register date Installed on meter point
- History
 - » List of tests performed on installed meter
 - » List of meters installed at current location
 - » List of registers installed at current location
- Attachments; photos, PDF documents, etc.
- Asset Management reports pages (outside the GIS map)
 - » All meter and register pages include links to view the installation location history
 - » All meter history pages also include flow test history
 - » In-stock inventory pages include tools to filter by size, manufacturer, model and/or invoice
- Includes function to add a new meter/register to inventory
 - » Installed inventory pages include tools to filter by size, manufacturer, model and/or date installed range
 - » Repair status inventory pages include tools to filter list by size, manufacturer, model and/or date removed range.
- Meters include the ability to record a flow test and return the meter to “in-stock” status or retire the meter
- Registers include the ability to retire the register
 - » Retired inventory pages include tools to filter list by size, manufacturer, model and/or date removed range

The screenshot displays the 'InfiniteGIS™ WATER METER ASSET MANAGEMENT' interface. It features three tabs: 'Details', 'History', and 'Attachments'. The 'Details' tab is active, showing the following information:

- INSTALLATION DATA**
 - Owner: AC ACQUISITIONS LLC
 - Address: 125 S BATH ST
 - Phone: [Empty field]
 - Email: [Empty field]
 - Purpose: Water Only (dropdown menu)
 - Parcel ID: 4171521000
 - Property Type: Residential (dropdown menu)
 - Comments: [Empty text area]
- Cycles in Years**
 - Change Out: 10
 - Flow Test: 5

The same general capabilities from water utility are applicable.

Sanitary Sewer

Clicking on the map will display a details about the features where the user clicked. Features with asset management tools will include a button that opens the asset management application.

Asset Management Application Included:

Sanitary Sewer Structure

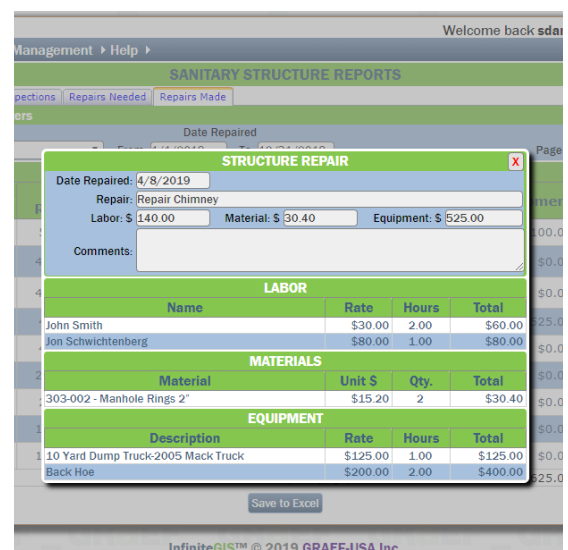
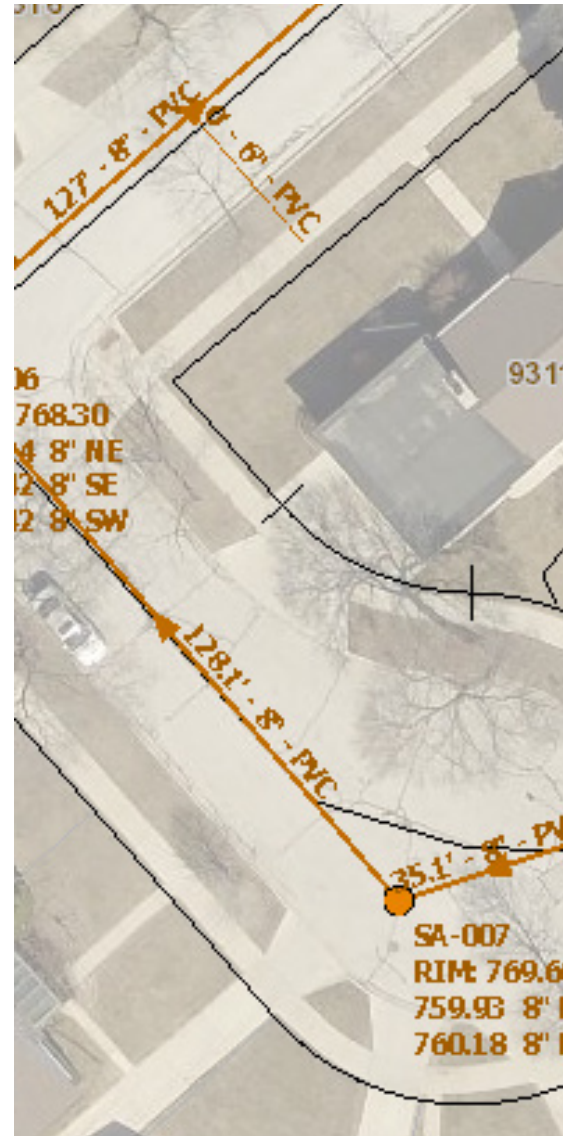
- Symbolized by type: manhole, lift Station, clean out, etc.
- Inverts in the structure are listed with the structure attributes
 - » Inverts are dynamically displayed from pipe attributes when the pipe data indicates that either the upstream or downstream invert is at the structure
 - » Invert data is editable from the structure form and includes a calculate function for calculating an invert elevation by subtracting the measure down input value from the structure rim elevation
- A dynamic layer displays manholes with a drop invert when the downstream end of a pipe connected to the manhole indicates that its invert is a drop invert.

Sanitary Sewer Pipe

- Symbolized by purpose: main, force main, lateral, etc.
- Inspections of sanitary sewer pipe are not currently applicable however, asset management applications to track pipe cleaning in detail and record pipe conditions from televising reports is a future development

Storm Sewer Structure

- Symbolized by type: manhole, inlet, catch basin, culvert, outfall, etc.
- Inverts in the structure are listed with the structure attributes
 - » Inverts are dynamically displayed from the pipe data when the pipe data indicates that either the upstream or downstream invert is at the structure
 - » Invert data is editable from the structure form and includes a calculate function for calculating an invert elevation by subtracting the measure down input value from the structure rim elevation



Inspections

If the structure is an outfall, end section or pipe end, an additional form is made available for illicit discharge inspection

Storm Sewer Pipe

- Symbolized by type: main, lead, lateral, under-drain, etc.
- Inspections of storm sewer pipe are not currently applicable

Storm Retention Pond

- Asset management applications for retention ponds are a future development and will include an inspection form based on DNR requirements

Poles and Attached Assets

- A pole/mount is the foundational GIS point feature for all other assets that are mounted to a pole; street signs, light fixtures, traffic signals, electric transformers, etc.
- All assets on a pole/mount are managed through the pole/mount asset management application
- Multiple assets of the same type can be added to a pole/mount
- Dynamic layers representing assets on a pole/mount are provided for searching, visualizing, selecting and accessing the pole/mount asset management application
- Signs
 - » If the condition of a sign is set to repair or replace, a repair record is automatically created for tracking repair costs

Pole/Mount
Signs
Light Fixtures
Attachments

SIGN DATA

Sign No:

Date Installed:

MUTCD Code:

Size:

Material:

Height:

Legend:


Legend Ext:

Sheeting: Rating: Facing:

Condition: Bent Rusted

Date Inspected: Faded Repair Mount

Inspected By: Owner: Status:



Urban Forestry

- Trees are symbolized by major grouping: Coniferous, Deciduous, Deciduous Ash, Stump, Vacant.
- Tree points can be empty planting spaces.
- Since Trees are a unique asset that isn't typically repaired like other assets, inspection attributes are included as tree attributes. As a living, growing thing, the conditions of a tree change over time.
- Among the 70+ tree attribute values, are Pruning Need with Due Date and Treatment Need with Due Date. These are used to dynamically display a layer of trees with Pruning Needs and Treatment Needs by year due.

Maintenance

- Record maintenance activity on a tree.
- If maintenance activity includes pruning or treating, and new due dates are provided, the due dates are updated in the tree attributes.

InfiniteGIS™

TREE ASSET MANAGEMENT

Tree
Maintenance
Attachments

TREE DATA

Tree ID: <input type="text" value="45"/>	Address: <input type="text"/>	Side of Street: <input type="text" value="Select..."/>
Date Inspected: <input type="text"/>	Street Name: <input type="text" value="N 92nd St"/>	<input type="text" value="Select..."/>
Species: <input type="text" value="Maple Spp."/>	Cross Street: <input type="text" value="W Dixon St"/>	<input type="text" value="Select..."/>
Diameter: <input type="text" value="4"/> <input type="button" value="Calculator"/>	Location: <input type="text" value="Select..."/>	Year Planted: <input type="text"/>
Height Class: <input type="text" value="Select..."/>	Growth Space: <input type="text" value="Select..."/>	Crown Spread: <input type="text"/>
Dead Wood: <input type="text" value="Select..."/>	Condition: <input type="text" value="Select..."/>	Memorial Tree: <input type="checkbox"/>
Clearance Issue: <input type="text" value="Select..."/>	Utilities: <input type="text" value="Select..."/>	Owner: <input type="text" value="Select..."/>
Pruning Need: <input type="text" value="Select..."/>	Due Date: <input type="text"/>	Status: <input type="text" value="Select..."/>
Treatment Need: <input type="text" value="Select..."/>	Due Date: <input type="text"/>	Location Source: <input type="text" value="Select..."/>
Other Need: <input type="text" value="Select..."/>	Due Date: <input type="text"/>	Source Date: <input type="text"/>
Comments: <div style="border: 1px solid #ccc; height: 40px; width: 100%;"></div>		

Special Conditions

<input type="checkbox"/> Basal Suckers	<input type="checkbox"/> Improperly Mulched	<input type="checkbox"/> Poor Location
<input type="checkbox"/> Basal Wound	<input type="checkbox"/> Improperly Pruned	<input type="checkbox"/> Poor Structure
<input type="checkbox"/> Cavity/Decay	<input type="checkbox"/> Large Leader Decay	<input type="checkbox"/> Raised Planter
<input type="checkbox"/> Codominant Trunks/Stems	<input type="checkbox"/> Leaning	<input type="checkbox"/> Root Damage
<input type="checkbox"/> Concreted Cavity	<input type="checkbox"/> Lightning Struck	<input type="checkbox"/> Root Rot
<input type="checkbox"/> Consider Removal	<input type="checkbox"/> Lost Main Limb/Leader	<input type="checkbox"/> Suckers Present