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# QUANTIFYING GIS

ASSET MANAGEMENT & GIS IN THE CITY OF GREENSBORO

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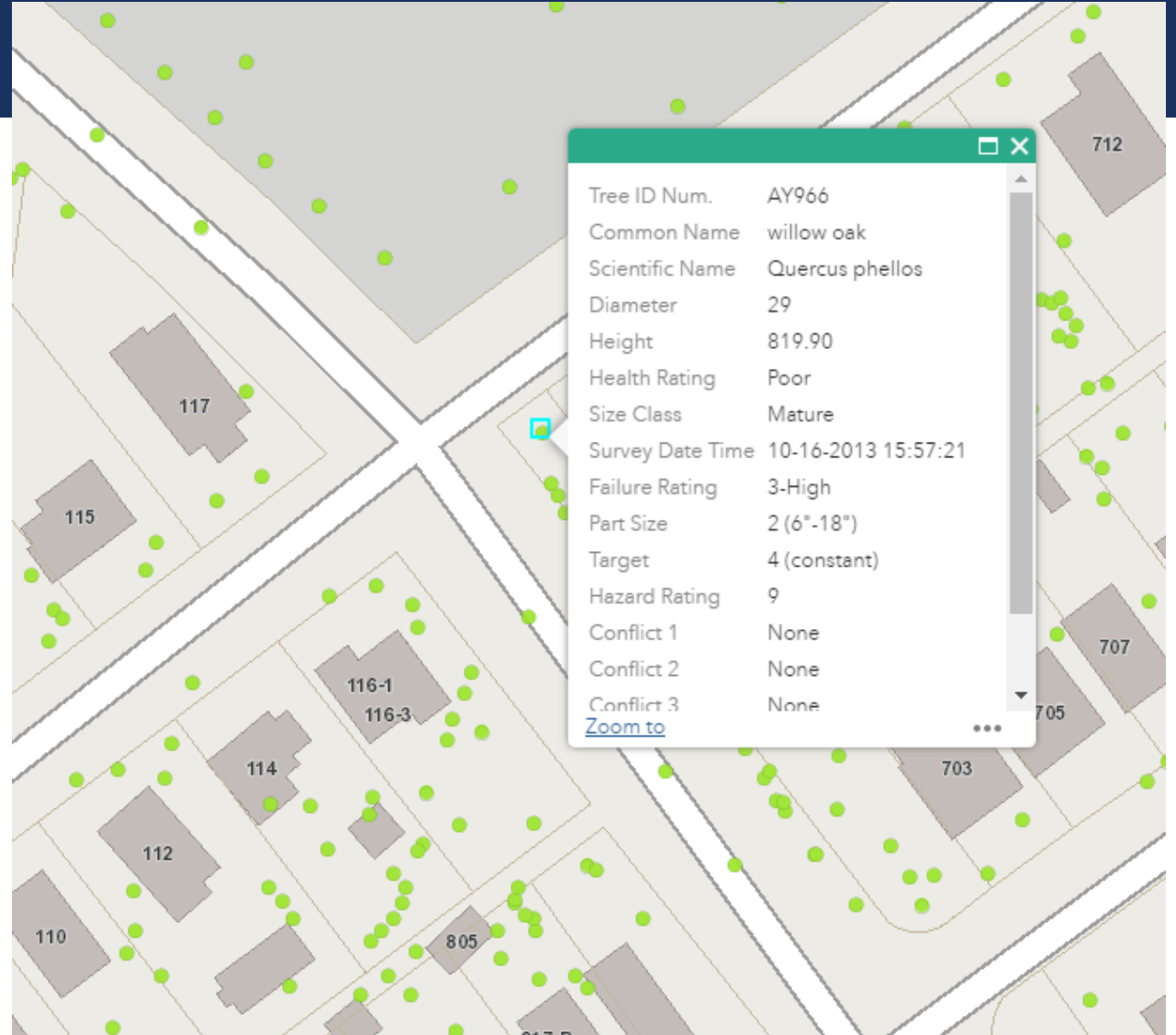
# WHAT IS THE VALUE OF GIS?



# LOCATION

- GIS allows editors to create and maintain spatial features, often times just to know where something is and create a record of a feature.

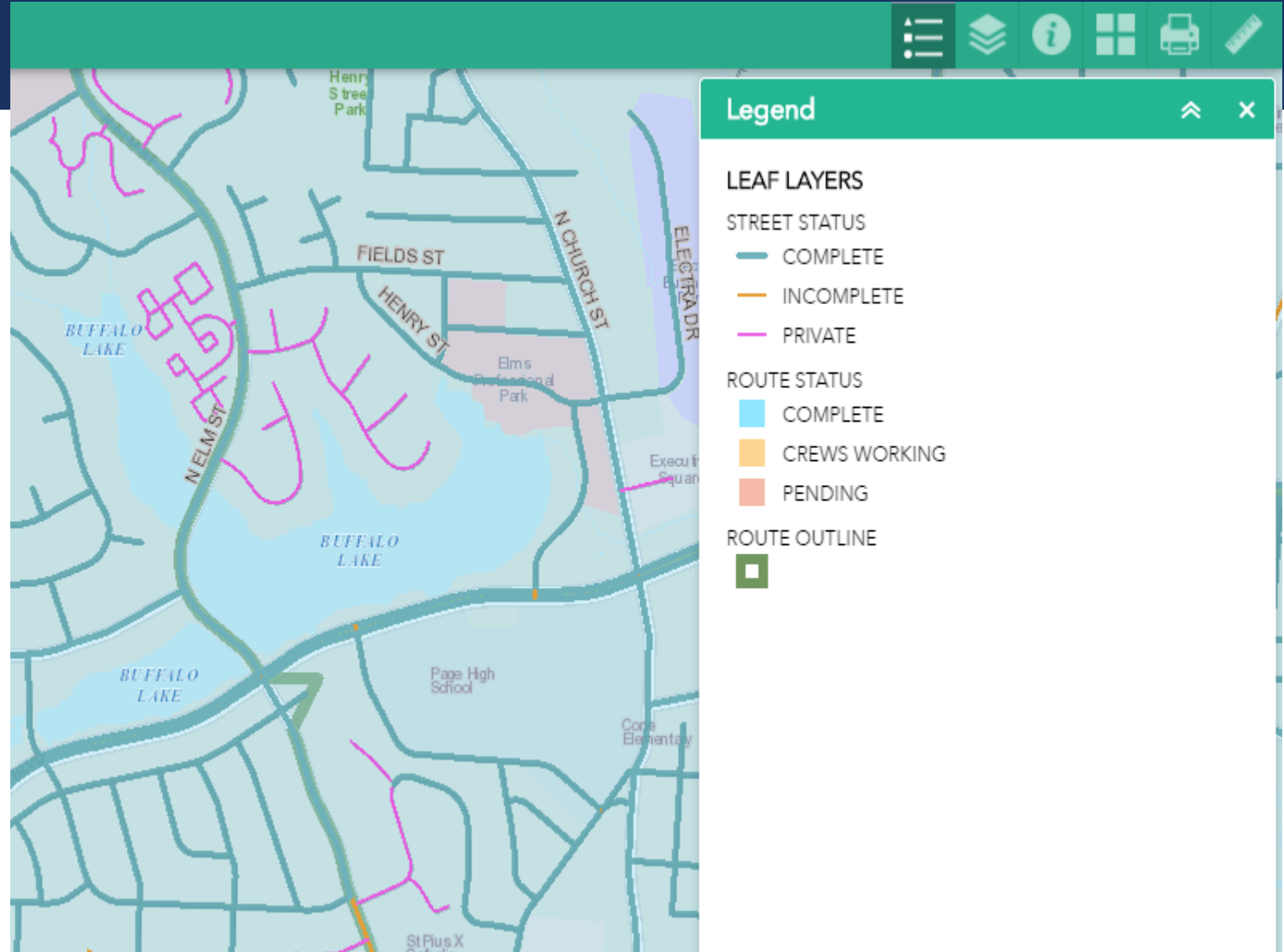
“Where are the trees in Aycock?”



# SERVICES

- Citizens can discover information related to services provided by local government.

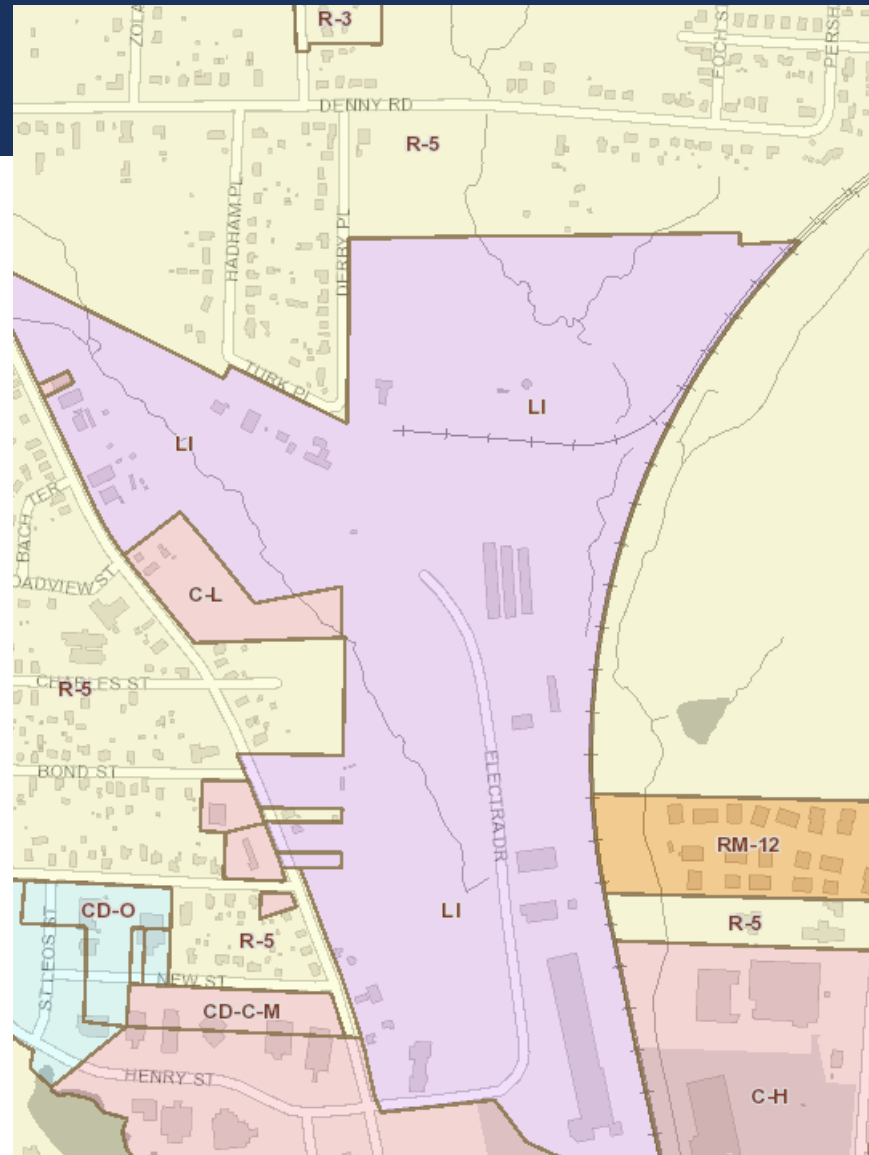
“When will my leaves be picked up?”



# DECISIONS

- GIS can assist decision makers in solving difficult issues, like where to develop land.

“Where can I build my light industrial warehouse?”



Layer List

Operational Layers

- Development Services Layers
- Parcel Ownership
- Transportation Layers
- Contour Layers
- Water Feature Layers
- Comp Plan Layers
- Census Tract
- Zoning Layers
- Historical Annexations
- 2010 Aerial Photo
- 2014 Aerial Photo

# REVENUE

- GIS can have a direct impact on revenue generated by a local government. Especially with regards to property tax.

“How much should we assess this property for?”

Oblique Photos	
Parcel Number	0104585
PIN	8834698216
Ownership History	<a href="#">Card Image</a>
Owner	NICKELSTON, JAMES BRADLEY ; BEANE, ASHLEY DAWN
Mail Address	701 WALNUT CROSSING DRIVE
Mail City	WHITSETT
Mail State	NC
Mail Zip	27377
Property Address	701 WALNUT CROSSING DR
Legal Description	7 PH 1 PB 153-71 WALNUT CROSSING
Deed	<a href="#">006292-00062</a>
Plat	<a href="#">153-71</a>
Condo	
Total Assessed Value	144000
Total Building Value	114000
Total Out Building Value	
Total Land Value	30000
Total Deferred Value	0
Bldg Card	1
Appraisal	SFR



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WHAT HAPPENS WHEN YOU COMBINE  
ALL THESE THINGS WITH YOUR OPERATIONS?

# ASSET MANAGEMENT

Cityworks®



# WHAT IS ASSET MANAGEMENT?

- An asset is anything a city might own and/or maintain. Buildings, streets, parks, water/sewer infrastructure, etc.
- EAM provides the ability to locate an asset.
- Once located work can be generated against an asset.
- Work orders can be managed using GIS to determine who needs to perform the work and when.
- Tracks costs of labor, inventory, and maintenance
- Reports total costs for the purposes of budgeting, fiscal planning, legislative compliance, and reimbursements
- Asset Management is all the work a City does!



# GREENSBORO AND ASSET MANAGEMENT



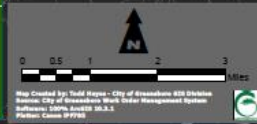
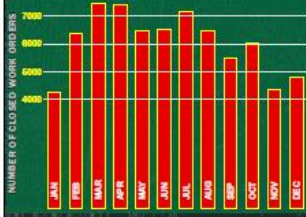
- Greensboro began using Infor's EAM product (formerly DataStream) in 2003
- Departments were slowly integrated over the years, with Water Operations going live in 2016.
- EAM is highly integrated with the City's Contact Center and Financial software packages.
- Houses more than 900,000 GIS assets
- Generates more than 5000 work orders per month
- EAM was moved to the Cloud in 2015, but integrates directly to GIS on premise.
- EAM cost is \$425,000 year in software maintenance

# WHO USES ASSET MANAGEMENT?

- **Contact Center** – Generates the bulk of work orders, takes calls from citizens and staff
- **Transportation** – Sidewalks, signs, signals, markings, parking meters, parking decks
- **Water Resources** – Water treatment facilities, storm water, water operations
- **Field Operations** – Streets, solid waste collection, leaf and snow removal
- **Engineering** – Buildings maintenance
- **Parks & Recreation** – Park maintenance and equipment, project management
- **Fire** – Inventory for fire equipment
- **Police** – Taxi license management
- **IT** – Fiber management and telecom equipment

# CLOSED WORK ORDERS - 2016

## City of Greensboro - Asset Management



# CONTACT CENTER

- The Contact Center is a 411 operation that fields more than 3000 calls per week.
- More than 2000 are related to a GIS asset and typically a CSR will use GIS to locate the asset and start a work order
- EAM notifies the appropriate staff a work order has been created and work is assigned and begun
- When work is completed, the Contact Center is notified in case a the requesting party needs notification

Contact Center Map

Layers Legend Tips

- Address Points
- Parking Meters
- Street Lights
- Street Sign
- Street Sign Position
- Traffic Signal Location
- Bus Stop
- Streets
- City Site Assets
- City Sites
- Parcels
- Council District

Enter Street Address  
227 TAYLORS LANDING AVE Ok Clear

Street #1  
Ok Clear

Street #2

Find Street #1

Find Street #2

X Coordinate 1804491.3549412964

Y Coordinate 855493.0633499286

GISObjectID 894387

Layer ADDRESS POINTS

Assign To 13520

Route THU-A-RED: RES #167 SMITH

Parcel Owner DR HORTON INC

Update Request

Zoom In Zoom Out Pan Last Extent Next Extent Identify Select Clear

Aerial

# SEE CLICK FIX

SeeClickFix

Get the App

Government

Learn More

Greensboro, NC

[Change location]

Follow this Place

Issues

Answers

Neighbors

Watch Areas

Report an Issue



Looking to get your government on SeeClickFix?

Check the "who's watching" section below to see who's already here!

GET STARTED!

Search Issues...

Search

## ISSUES



**Graffiti** - Acknowledged

1457 East Cone Boulevard Greensboro, North Carolina

Graffiti on both sides of the old Pizza Hut

about 6 hours ago · Reported by G.F. Pinson · Share · Flag

2 votes

FIX IT!

Acknowledged by: Greensboro, NC



ACKNOWLEDGED City of Greensboro (Verified Official)

Code Compliance Case Number 201703155 has been created. Thank you.

44 minutes ago · Flag

Write a comment...



**Streets and Sidewalks** - Open

601 North Greene Street Greensboro, North Carolina

There are large pot holes near the inner section of Greene St. & Smith St.

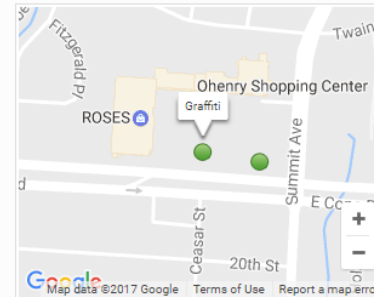
The Ride of Silence will go through here in a little more than a week and these holes may pose a danger to participants. These holes pose a general risk to all cyclists traveling through the area anyway. Can something be done to fill these holes?

1 vote

FIX IT!

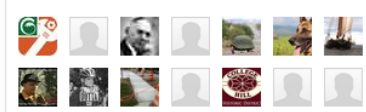
about 2 hours ago · Reported by Greensboro, NcCollaborativeNeighbor · Share · Flag

Write a comment...



## TOP USERS

more



## WHO'S WATCHING

more

City of Greensboro (PLUS)

Greensboro Contact Center 373-CITY (PRO)

Center for Housing and Community Studies

# WATER RESOURCES OPERATIONS

- Water is the largest and most prolific user of EAM and GIS.
- More than 500,000 assets
- More than 30 monthly reports
- Links to multiple custom applications for reporting, analytics, and field collection
- Largest inventory of parts
- Uses Z coordinates for locations

AssetClass	AssetCount
Force Main	486
Gravity Main	40945
Sewer Manhole	40707
Sewer Service Line	83771
Sewer Valve	289
Bridge	70
Combination Inlet	4810
Culvert	1699
Curb Inlet	27908
Grate Inlet	12719
Open Channel	8059
Pipe Inlet/Outlet	11808
Spillway	1436
Store Pipe	69230
Storm Manhole	10809
Swale	5354
Yard Inlet	5097
Pressurized Main	56061
Water Backflow Preventer	1288
Water Blow Off	1468
Water Hydrant	16477
Water Service Line	96634
Water Valve	40574
<b>TOTAL</b>	<b>537699</b>

# WATER RESOURCES

- Acoustics Test for obstructions

Verizon LTE 10:01 AM 100%

Maps

Sewer Line: SS23829  
SS23829

Acoustic Tests Details

**Tested SS23829 on July 21, 2015**

Line Asset ID	SS23829
Score	5
Dist to Obstruction (ft)	
Date Tested	

# WATER RESOURCES

- Hydrant Repairs

The screenshot displays the Infor EAM interface. At the top, the navigation bar includes 'infor EAM' and a menu with options: Work, Materials, Equipment, Purchasing, Operations, and Administration. Below this is a toolbar with various icons for navigation and actions. The main content area is titled 'Hydrant Repairs' with a subtitle 'View open hydrant repair work orders and show out of service hydrants'. The central part of the screen shows a map of a residential area with streets labeled 'LEWELLYN DR' and 'ROBIN HOOD DR'. Several hydrant locations are marked with red dots on the map. A pop-up window titled 'Firehouse Work Order 4333836' is open, displaying the following details:

Field	Value
Work Order	4333836
Hydrant ID	HY050-040
Description	Hydrant HY050-040 repair from Firehouse (THREAD)
Priority	High
Date Created	4/13/2017
Status	New
Problem Code	Firehouse Defect

At the bottom of the pop-up window, there are two buttons: 'Open Work Order' and 'Open Equipment', along with a page indicator '1 of 3'.



# QUANTIFIABLE IMPACTS OF ASSET MANAGEMENT & GIS

- Regulatory Compliance (ex: Sanitary Sewer Overflow Reporting)
- Accountability to City Council Goals (GDOT, FOD, and the Contact Center)
- State Funding Reimbursement Reporting (directly tied to Powell Bill and State Bill reimbursements totaling more than **\$6M per year**)
- Improved Customer Service (ex: Contact Center and SeeClickFix mobile app)
- Day-to-day management of work performed by hundreds of City staff (no. of work orders and labor costs)
- Reducing costs and increasing service-up-time with preventative maintenance

## SUMMARY

- EAM and GIS allow for quantifiable results that can equal money saved, revenue earned, services rendered, cost avoided, and resources better allocated.

**QUESTIONS?**

