

# The Underutilization of GIS & How to Cure It

Adam Carnow – Esri

## Seasonal Tornado Density

Federal Emergency Management Agency  
Region V  
Chicago, Illinois, USA  
By Thomas Griffin

Contact  
Jesse Rozelle  
jesse.rozelle@fema.dhs.gov

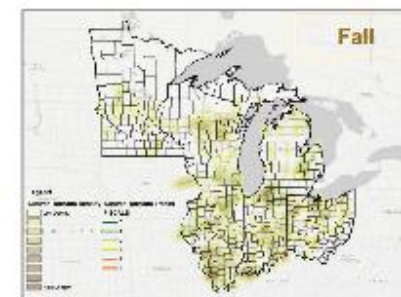
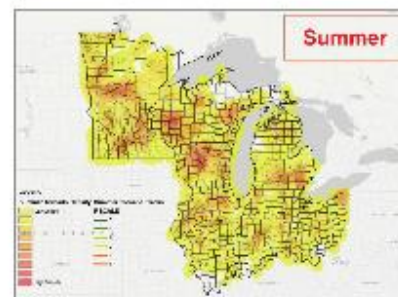
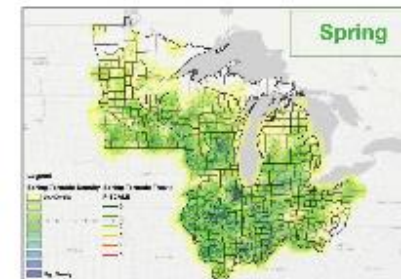
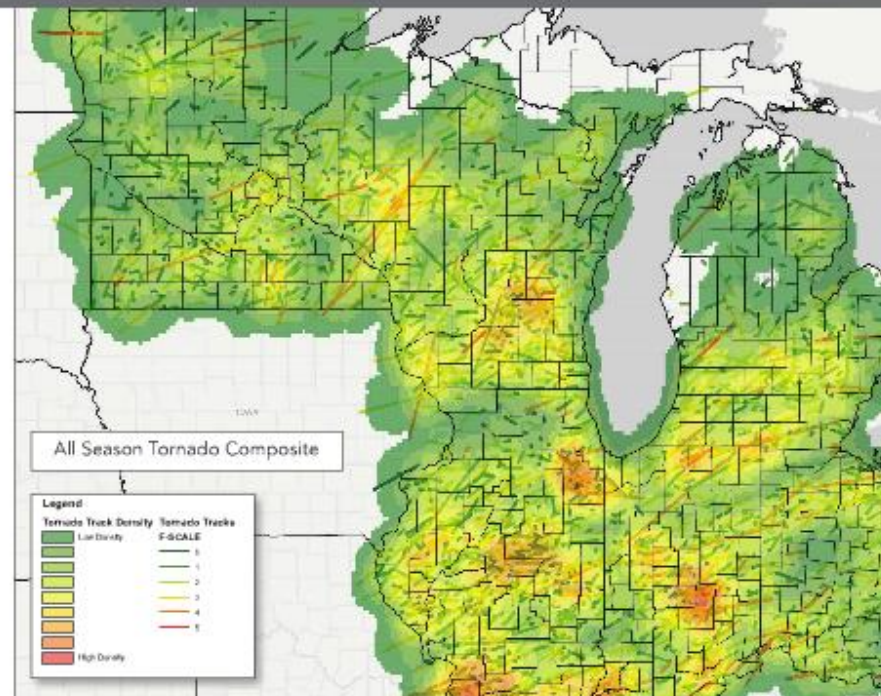
Software  
ArcGIS 10 for Desktop

Data Sources  
Esri, NOAA, FEMA

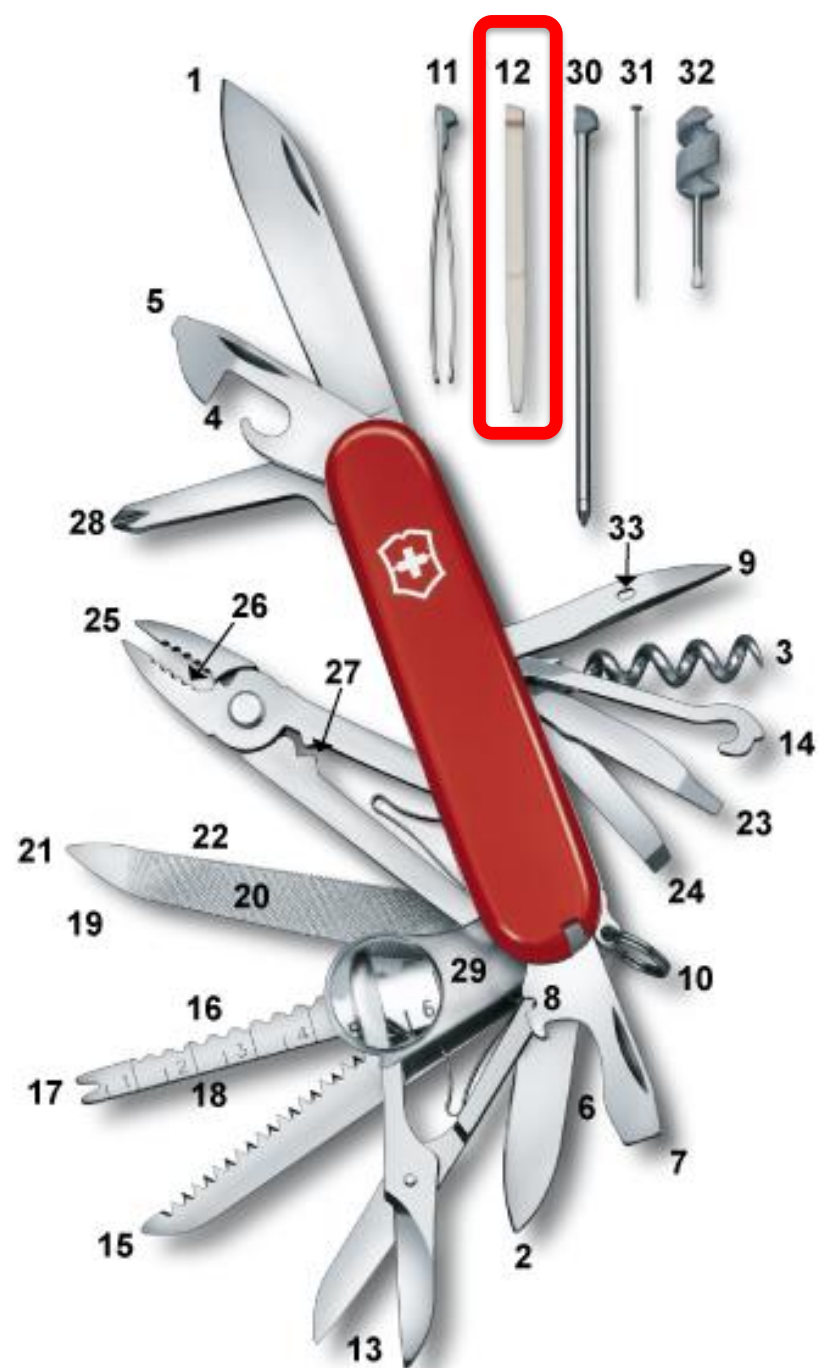
This seasonal tornado density map displays an analysis for Federal Emergency Management Agency (FEMA) Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin). Data was taken from the National Oceanic and Atmospheric Administration (NOAA) website about every recorded tornado since 1951. The track for every tornado that entered a Region V state was collected, and a line density was created. The data for these tornadoes also included information on when each tornado occurred, allowing the tornadoes to be further analyzed based on the season in which they occurred.

The purpose of this map was to identify any possible trends, take a closer look at relevant data, and tell a story through the use of GIS. Though tornadoes are very difficult to predict with any degree of accuracy, interesting assumptions can be deduced quickly and easily by looking at the data when it is visually represented. For instance, the map shows that tornadoes occurring during the winter months tend to be farther south where the weather is warmer, while tornadoes occurring during the summer months tend to spread farther north. The ability to see and understand this type of information better using GIS is potentially life-saving and is being used within FEMA more and more every day.

Courtesy of Federal Emergency Management Agency Region V.

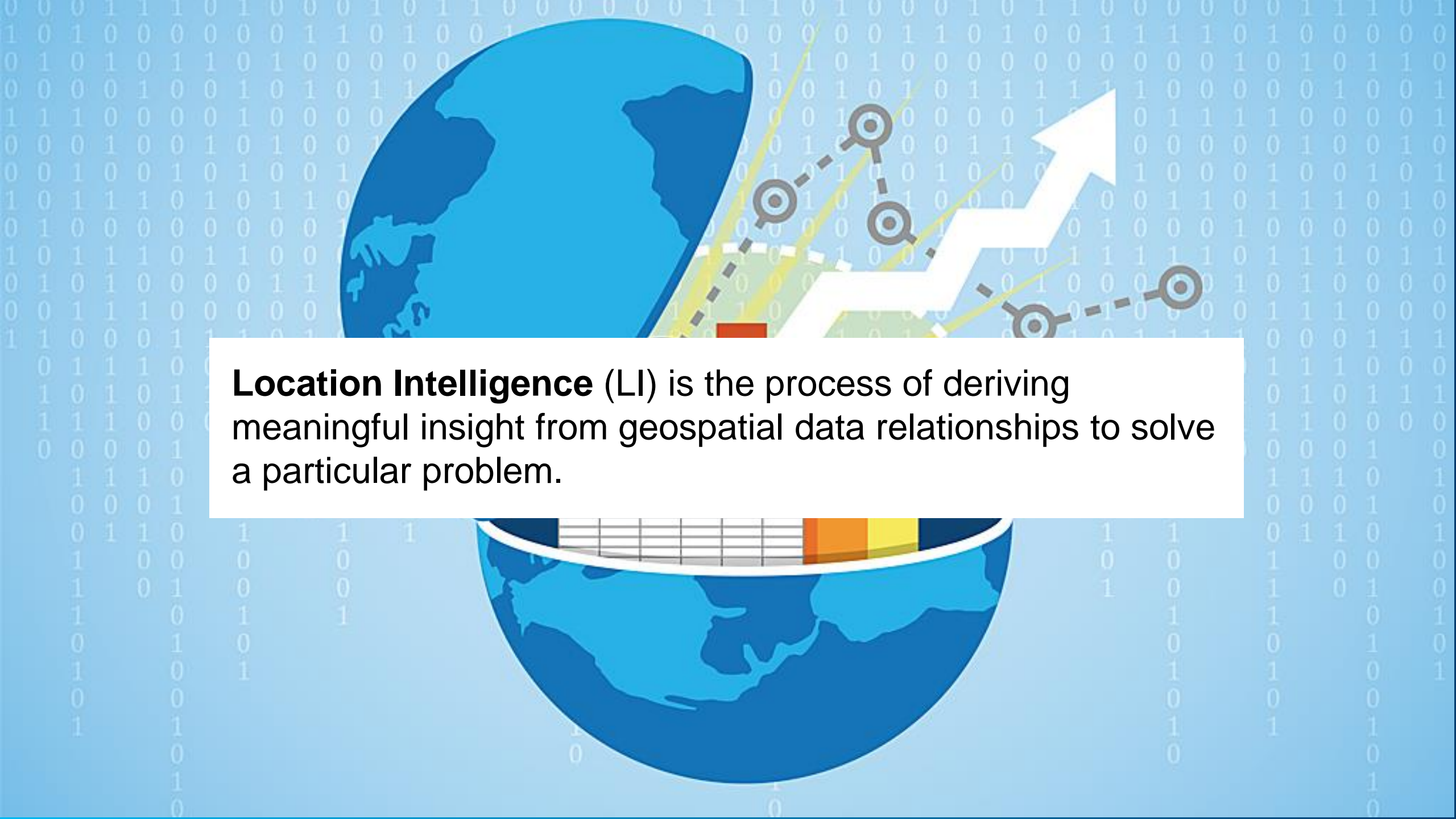






**Business Intelligence (BI)** is the set of techniques and tools for the transformation of raw data into meaningful and useful information for business analysis purposes.

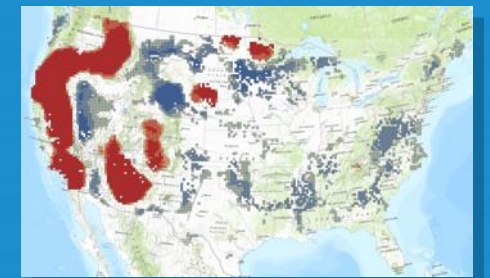
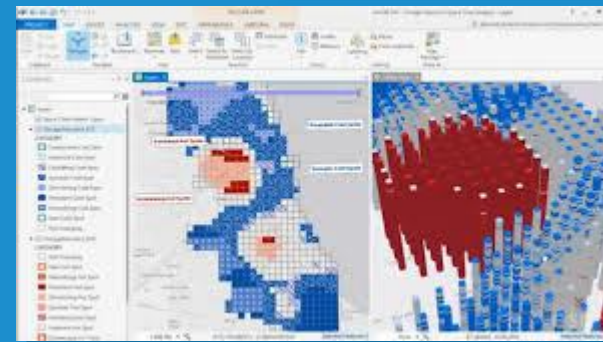
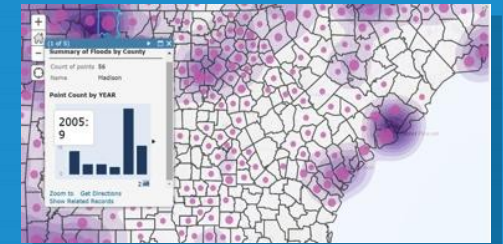
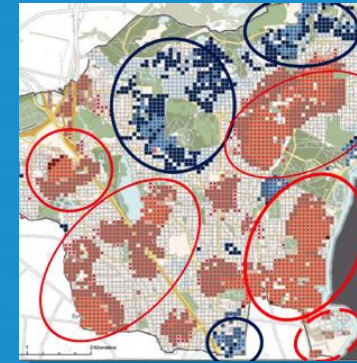
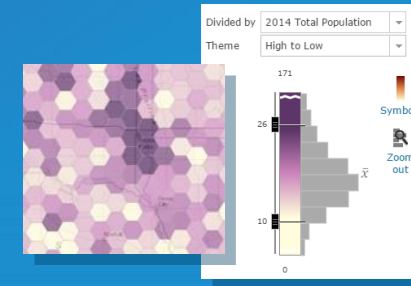




**Location Intelligence (LI)** is the process of deriving meaningful insight from geospatial data relationships to solve a particular problem.

# GIS was Created to Perform Spatial Analysis

- Understanding Where
- Measuring Size, Shape & Distribution
- Determining How Places are Related
- Finding the Best Locations & Paths
- Detecting & Quantifying Patterns
- Making Predictions







**STOP  
UPDATING**

**START  
EVOLVING**

Benjamin Niaulin

<http://www.slideshare.net/benjaminniaulin/stop-updating-start-evolving-the-digital-workplace-truth>

**#DigitalWorkplace**

**We're stuck in a routine...**



**We want to help you transform...**





Spatial Analysis



Apps



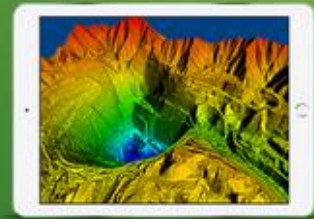
Content



Real-Time GIS



Big Data



Mapping and Visualization



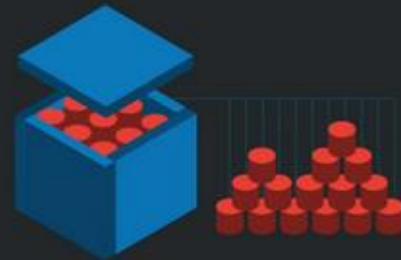
Imagery and Remote Sensing



3D



CAD



Data Management



Geodesign



Community Engagement

## PRIORITIES

Season 2, Episode 9  
*Cloud Services*state**scoop**

# Government leaders report feeling overwhelmed by demands of civic engagement

New survey results show that managing the data and expectations of their communities is often more than than government officials are ready for.

By *Jason Shueh*

DECEMBER 19, 2017 6:20 PM

BIO ▾

WEBINAR

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JANUARY 23, 2018 | 1-2 PM EST

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Cloud data center traffic will represent 95 percent of total data center traffic by 2021, says Cisco.



By [Steve Ranger](#) | February 6, 2018 -- 11:16 GMT (03:16 PST) | Topic: [Cloud](#)

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**VERITAS**  
The truth in information.

0

258

1605



**This is not a battle between On-Premises and The Cloud...**

Former HCA

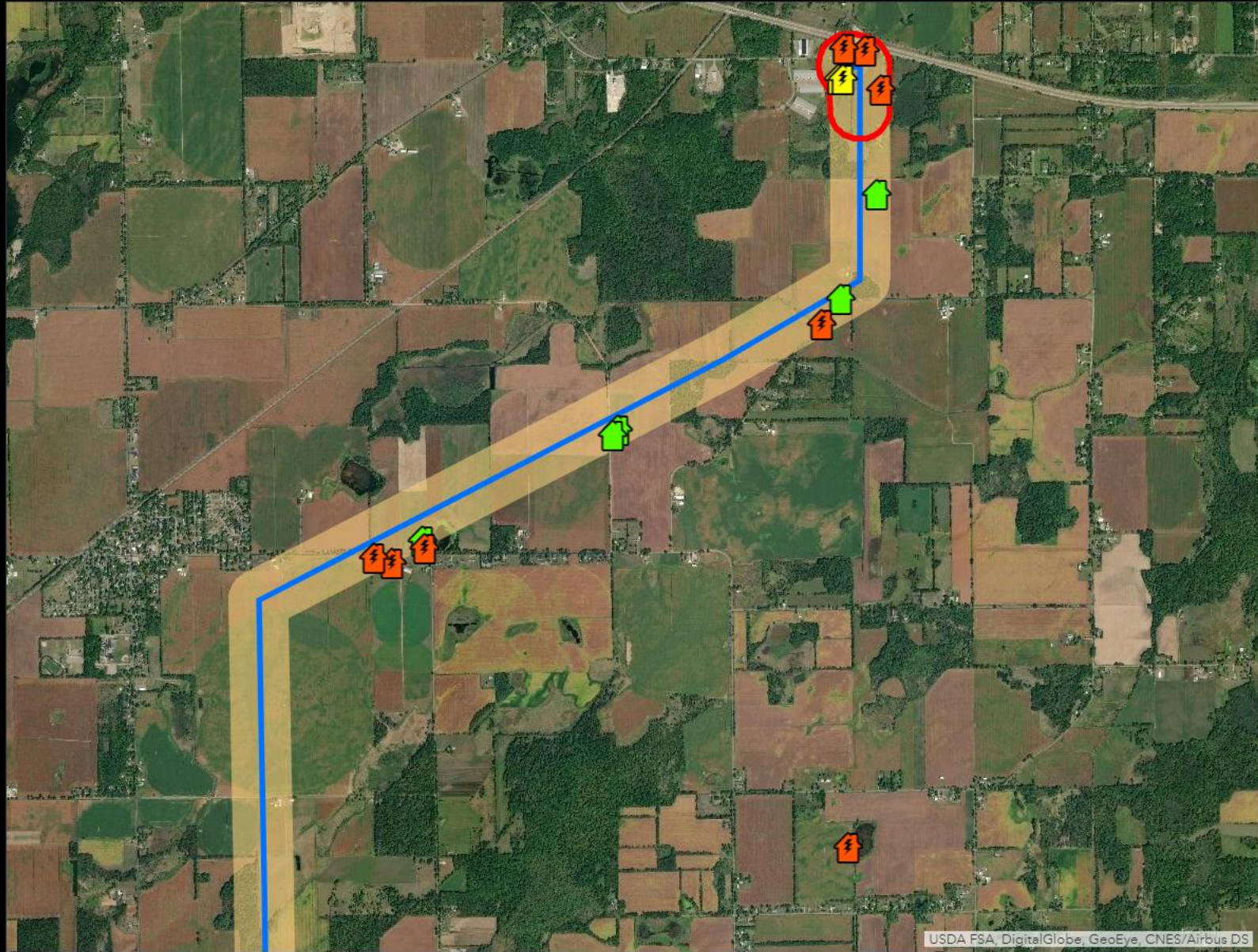
2

Last update: a few seconds ago

Potential HCA

10

Last update: a few seconds ago



New Structure

8

Last update: a few seconds ago

ID: 3  
Structure Type: Residence  
Reported: November 13, 2015

ID: 1  
Structure Type: Residence  
Reported: November 10, 2015

ID: 10  
Structure Type: Reported: December 13, 2016

ID: 9  
Structure Type: Apartment  
Reported: December 12, 2016

ID: 8  
Structure Type: Reported: June 14, 2016

ID: 7  
Structure Type: Manufacturing  
Reported: March 30, 2016

ID: 6  
Structure Type: Apartment  
Reported: March 29, 2016

ID: 5  
Structure Type: Prison  
Reported: January 28, 2016

ID: 4  
Structure Type: Reported: December 8, 2015

ID: 3  
Structure Type: Reported: December 7, 2015

Last update: a few seconds ago

Last update: a few seconds ago

ID: 8  
Type: Business  
Reported: December 13, 2016

ID: 7  
Type: Apartment  
Reported: November 16, 2016

ID: 6  
Type: Residence  
Reported: January 29, 2016

ID: 5  
Type: Residence  
Reported: November 13, 2015

ID: 4  
Type: Residence  
Reported: November 10, 2015

ID: 3  
Type: Garage  
Reported: November 10, 2015

ID: 2  
Type: Reported: November 10, 2015

ID: 1  
Type: Reported: November 10, 2015

Last update: a few seconds ago

USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS

It's about providing different services...different experiences...



Service Outages [Network]

**10**  
**Node Outages**

Last update: a few seconds ago

Outage List [Network]

**Outage ID: 20**

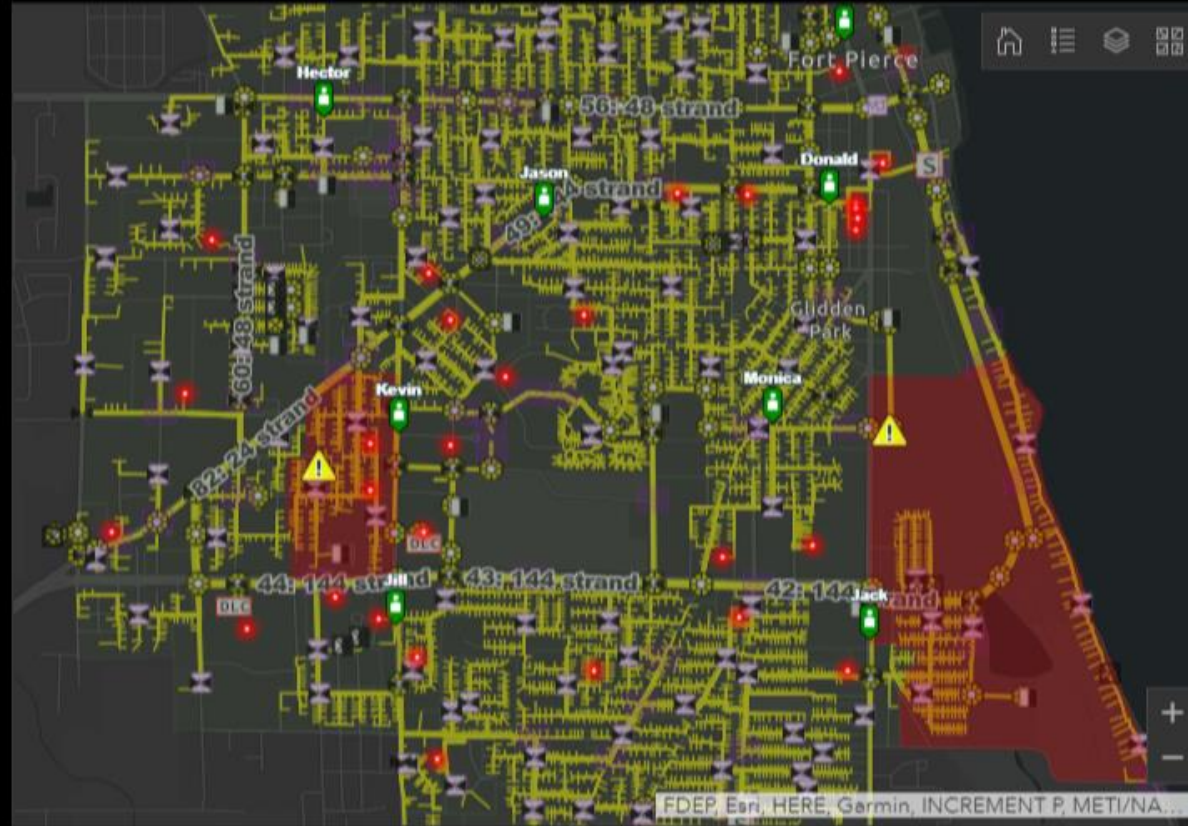
Node #12  
VoIP Subs: 6  
Broadband Subs 6  
Time to Restoration: **45 minutes**

**Outage ID: FDP-F-1315**

Node #68  
VoIP Subs: 7  
Broadband Subs 4  
Time to Restoration: **45 minutes**

**Outage ID: FDP-F-194-F-88-F-88**

Node #74  
VoIP Subs: 0  
Broadband Subs 5  
Time to Restoration: **45 minutes**



Damage Assessments [Operations]

**10 Report(s)**

Last update: a few seconds ago

1 of 10

Report Details [Operations]

**Report Information**

ID: 10  
Asset Type: Pole  
Asset Condition: Pole Down  
Hazard Type:  
Recommendation: Need New CATV Pole  
Comments:

Last update: a few seconds ago

[Billing]

VoIP Subscribers  
**93 / 848**  
without Service

[Billing]

Broadband Subscribers  
**96 / 1,118**  
without Service

Trouble Tickets [Customer Care]

**Reported**  
**34**  
**Trouble Tickets**

Last update: a few seconds ago

Trouble Tickets [Customer Care]



Field Technicians [Operations]

- Jack is assigned to Trouble Ticket #9
- Jason is assigned to Trouble Ticket #6
- Hector is assigned to Trouble Ticket #3

Last update: a few seconds ago

**It's about providing different services...different experiences...**

### New Service Requests

# 5 New Request(s)

### New Service Requests List

Requested: 12/12/2018, 12:10 PM

TV:  
Phone:  
Internet:  
Speed:

#### FL Home Goods

Requested: 9/12/2017, 4:02 PM

TV: Yes  
Phone: Yes  
Internet: Yes  
Speed: Greater than 1 Gpbs

#### Virginia Spa & Resort

Requested: 9/12/2017, 4:02 PM

TV: Yes  
Phone: Yes  
Internet: Yes  
Speed: Up to 500 Mpbs

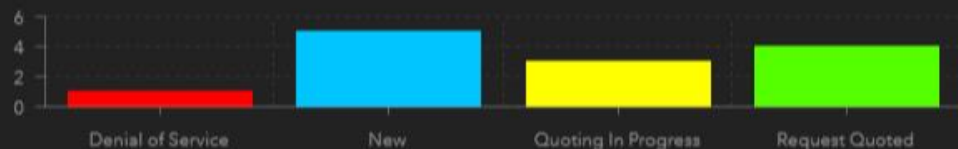
#### EastCentral Brewery

Requested: 9/12/2017, 4:02 PM

TV: No  
Phone: Yes  
Internet: Yes  
Speed: Up to 25 Mpbs

#### Law Offices of Hunter & West

### Business Service Requests Status



### Legend

#### Field Engineers

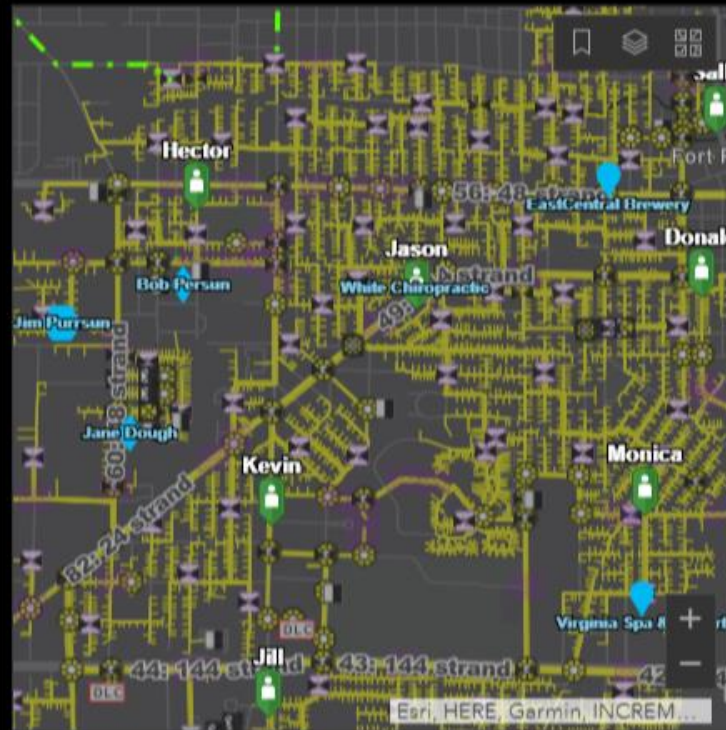
- Not Working
- On Break
- Working

#### Business Service Requests

- New
- Quoting In Progress
- Request Quoted
- Denial of Service

#### Quoted Service Requests

- 



Sites For Telecom Attachment Surveyed This Week

# 341 Site(s)

Last update: a few seconds ago

### Quoted Requests

# 4 Quote(s) Completed

### Quoted Service Requests List

#### Fort Pierce Clocks & More

Completed: 9/16/2017, 1:06 PM

Cost to Serve (\$) 5,678.2  
Quote Response Time (days): 2

#### Jack's Famous Coffee

Completed: 9/15/2017, 4:31 PM

Cost to Serve (\$) 6,843.43  
Quote Response Time (days): 2

#### Jim Man

Completed: 9/12/2017, 6:57 PM

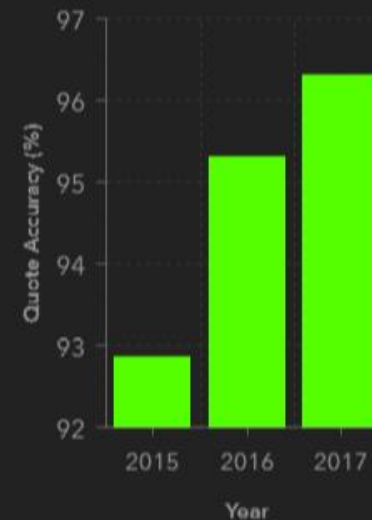
Cost to Serve (\$) 20,714.3  
Quote Response Time (days): 4

#### Miller Craft Beer

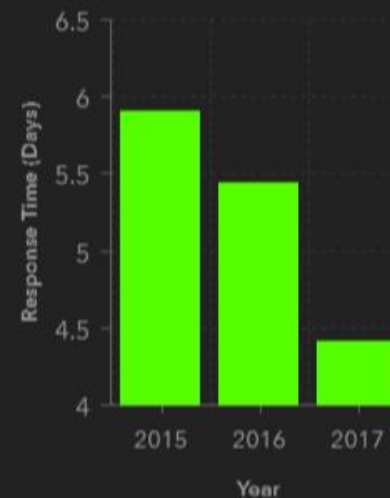
Completed: 9/12/2017, 6:42 PM

Cost to Serve (\$) 10,384.72  
Quote Response Time (days): 3

### Service Request Quote Accuracy



### Service Request Quote Response Time



# It's about providing different services...different experiences...

- Enterprise/SMB Sales Report
- Network Maintenance & Project Report
- Network Outage Report**
- Net Promoter Score (NPS) Report
- Market Share & Churn Report

### Executive Outage Report by Region

Select Region All Regions

# Total Outages

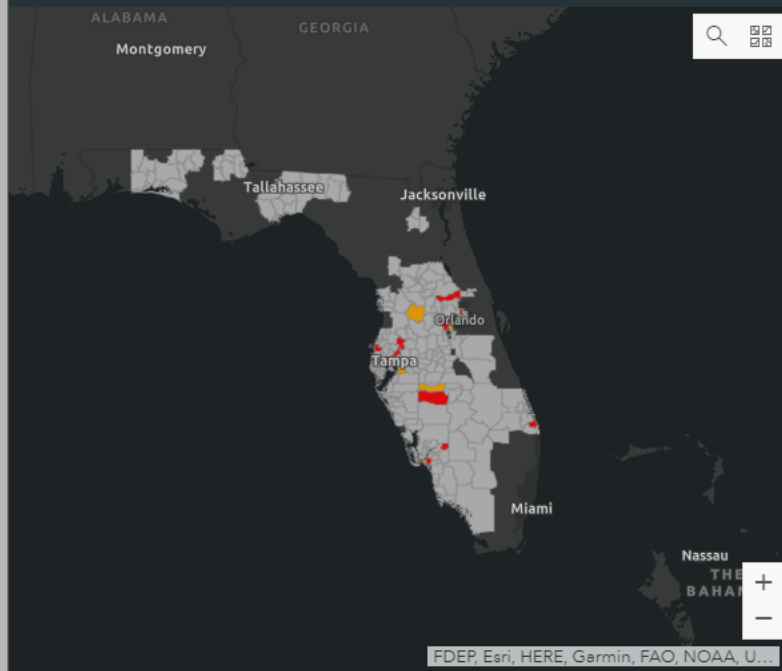
# 26

### Legend

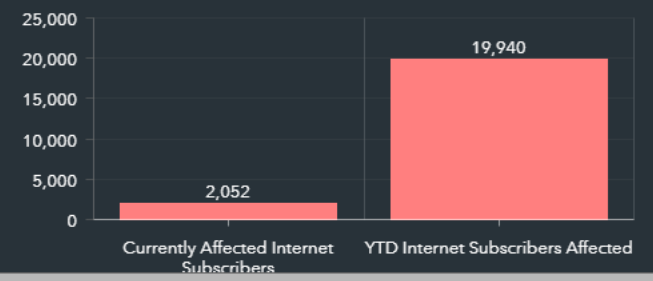
#### Executive Outage Overview

- Service Affecting Outage
- Non-Service Affecting Outage
- No Outage

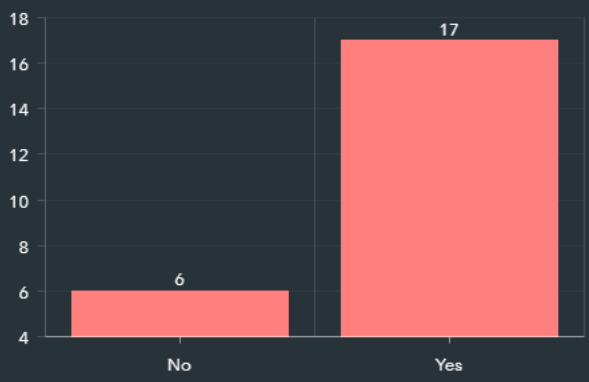
### Region Map



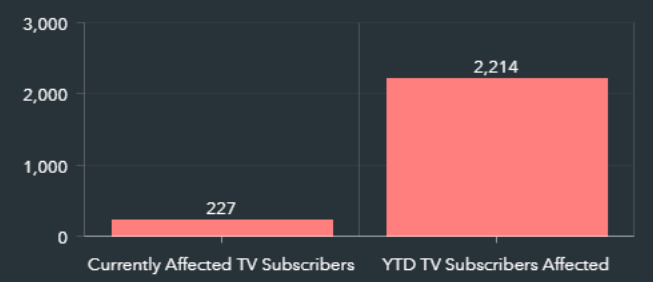
### Internet Subs



### Current Service Affecting Outages



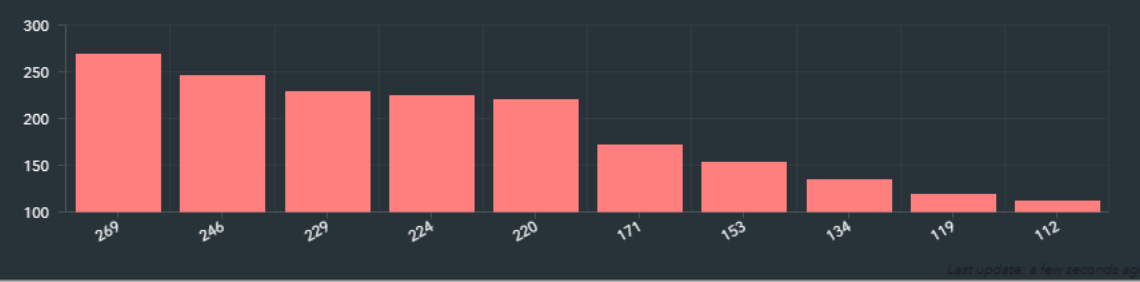
### TV Subs



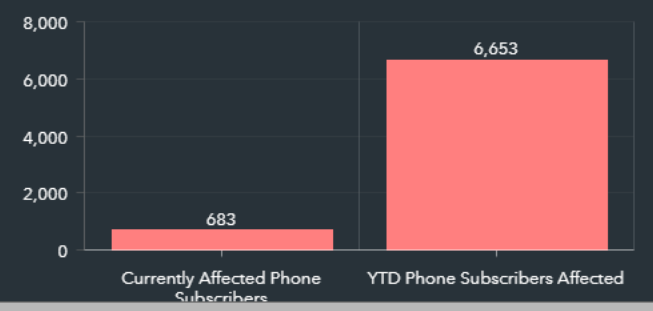
# Total Subs Affected

# 2,279

### Top 10 Service Affecting Outages



### Phone Subs



# It's about providing different services...different experiences...

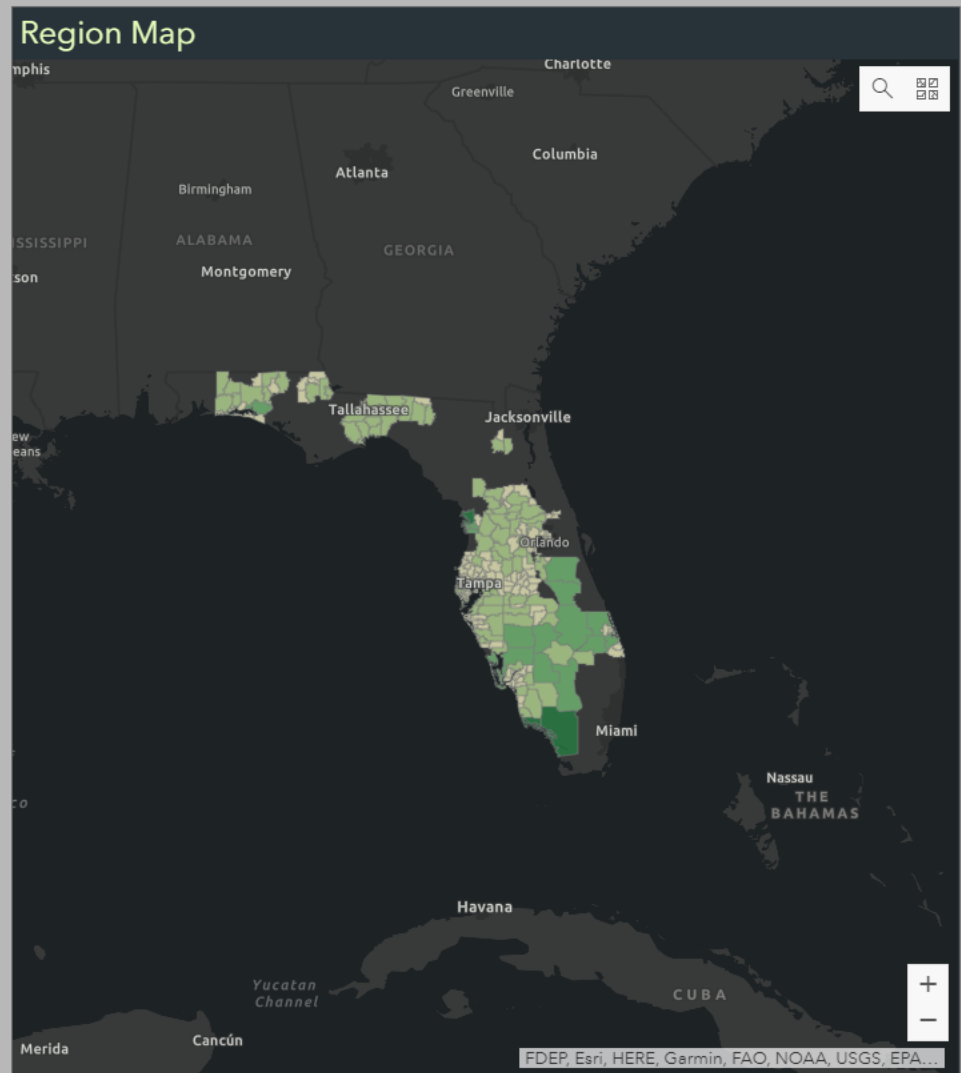
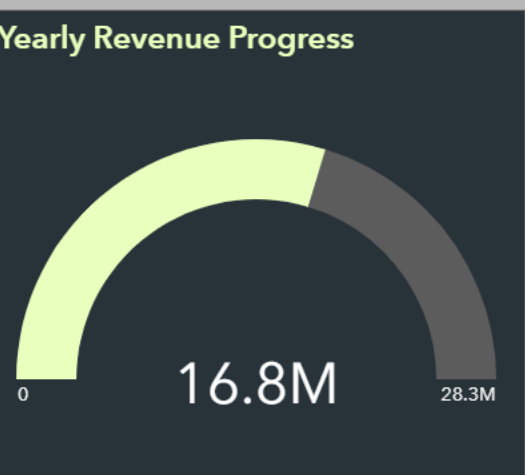
- Enterprise/SMB Sales Report
- Network Maintenance & Project Report
- Network Outage Report
- Net Promoter Score (NPS) Report
- Market Share & Churn Report

### Executive Sales Report by Region Dashboard

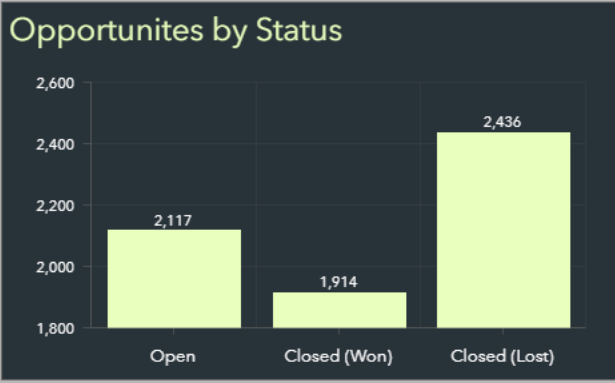
Select Region All Regions

Total Revenue YTD  
**\$16,771,304**

Forecasted Revenue for the Year  
**\$28,295,622**



Total Opportunities  
**6,467**



Regions with Negative Revenue

Tampa-St. Petersburg-Clearwater, FL	Total Revenue: <b>\$-46,024</b> Forecasted Revenue: \$78,241
Orlando-Kissimmee, FL	Total Revenue: <b>\$-44,918</b> Forecasted Revenue: \$76,361
Cape Coral-Fort Myers, FL	Total Revenue: <b>\$-29,412</b> Forecasted Revenue: \$-50,000
Fort Walton Beach, FL	Total Revenue: <b>\$-28,543</b> Forecasted Revenue: \$-8,523
North Port-Bradenton-Sarasota, FL	Total Revenue: <b>\$-28,002</b> Forecasted Revenue: \$-47,603

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# ⚠️ 6 Alarm(s)

Last update: a few seconds ago

### Alarm List

- Cell Site 214  
**Generator Fuel Low - Physical Violation** at 6/26/2014, 2:11 PM
- Cell Site 591  
**Generator ON - Processing Error Alarm** at 6/26/2014, 2:11 PM
- Cell Site 7888  
**Generator ON - Integrity Violation** at 6/26/2014, 2:11 PM

### Alarm Types



### Field Technicians

- Tyler West is Working  
Last Updated on 11/7/2018, 10:26 AM
- Randy Frantz is Working  
Last Updated on 2/4/2018, 9:34 AM
- Patrick Huls is Not Working  
Last Updated on 2/4/2018, 9:34 AM
- Greg Hunt is Not Working  
Last update: a few seconds ago

### Work Orders

- Work Order 42466  
Assigned as of 8/27/2018, 8:12 PM
- Work Order 12345  
In Progress as of 2/4/2018, 8:43 AM
- Work Order 633463  
Completed as of 2/4/2018, 12:29 PM
- Work Order 12345  
Last update: a few seconds ago

### Damage Assessments

# 10 Report(s)

Last update: a few seconds ago

1 of 10

### Report Information

Work Order ID:

Asset Type:

Pole

Asset ID:

Asset Condition:

Pole Down

Hazard Type:

Recommendation:

Need New CATV Pole

Comments:

### Additional Pole Information

Number of Poles: 1

### Lowest 10 Performing Sectors



### Top 10 Performing Sectors



### Data Consumed (Mb)



### Current Connections

# 388,464 Devices

Mobile Customers

# 58,369

without service

Business Customers

# 5,133

without service

# It's about providing different services...different experiences...

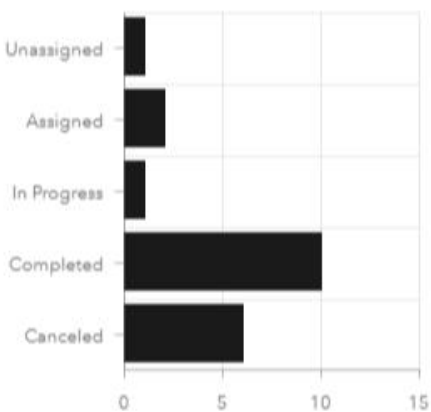
# Total 20 Assignments

Last update: a few seconds ago

### Work Order Type



### Work Order Status



### Legend

#### Assignments

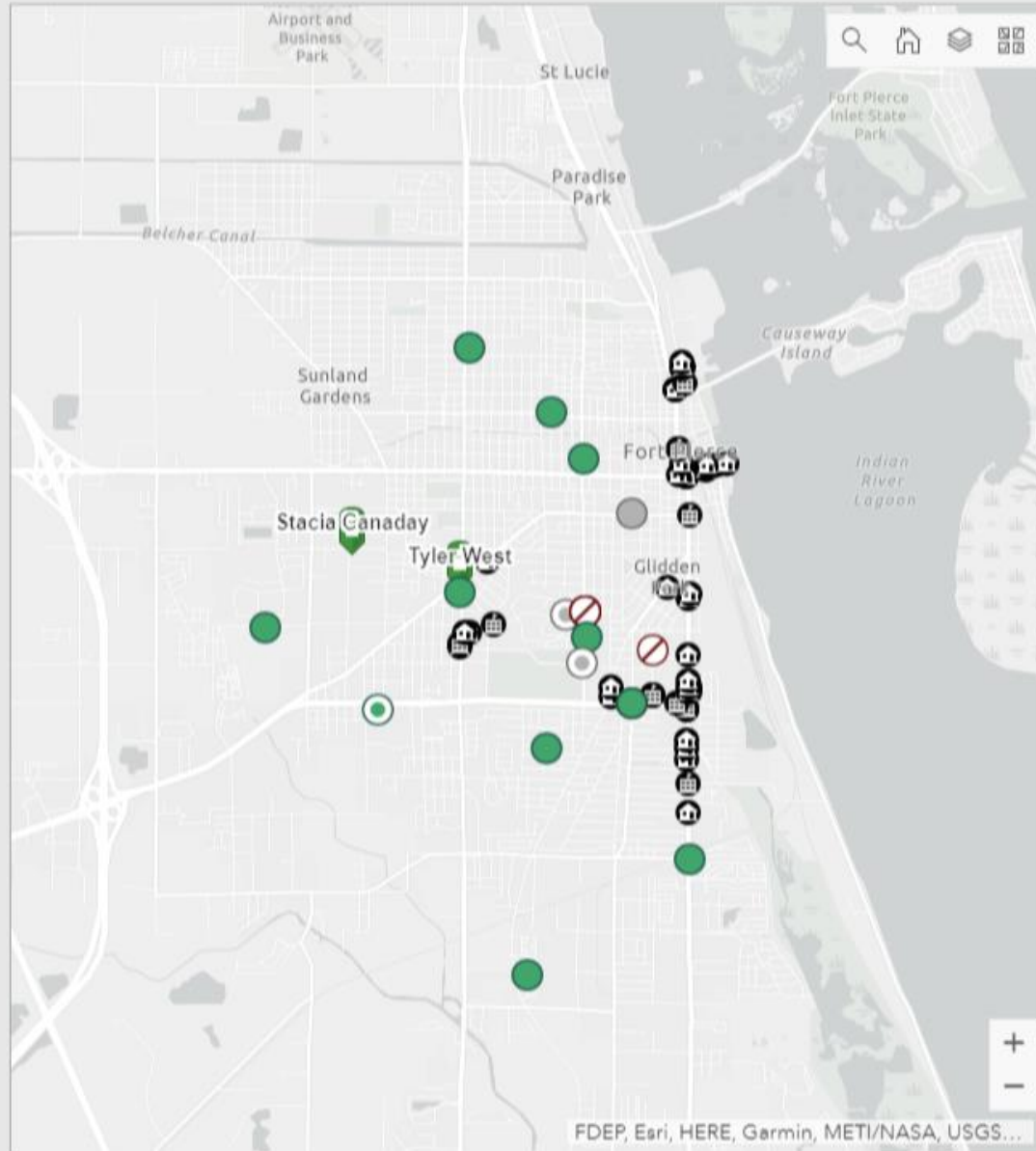
- Unassigned
- Assigned
- In Progress
- Completed
- Declined
- Paused
- Canceled

#### Workers

- Not Working
- On Break
- Working

#### New Customers

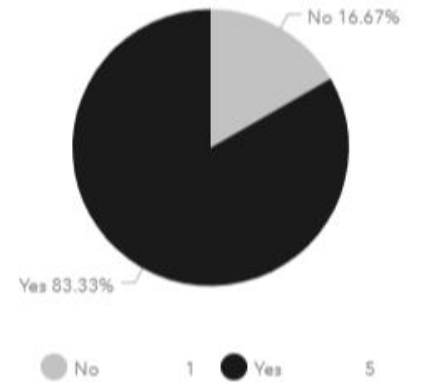
- Residential
- Business



FDEP, Esri, HERE, Garmin, METI/NASA, USGS...

# New Customers 53 This Week

### Install Window Met?



### Worker Status

- Tyler West is Working  
Last Updated on 2/22/2019, 3:26 PM
- Three GIS is Not Working  
Last Updated on 6/27/2018, 4:01 PM
- Hui Yee Long is Not Working  
Last Updated on 1/5/2018, 3:28 AM
- Stacia Canaday is Working  
Last Updated on 8/30/2017, 9:52 AM

Last update: a few seconds ago

# It's about providing different services...different experiences...

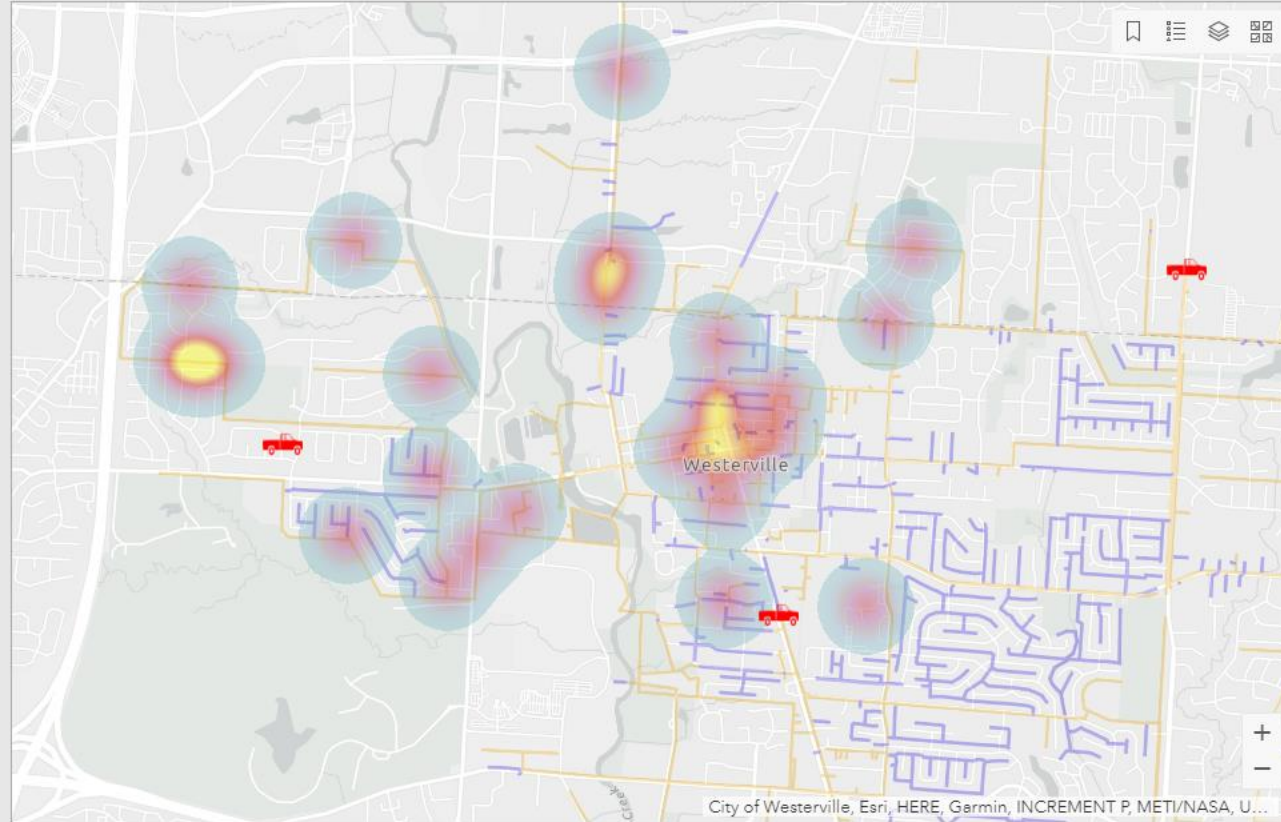
# Active Outage

# 23

## Events

Last update: a few seconds ago



### % of Customers without Power



Residential

# 409


Commercial

# 54

Industrial

# 4

### All Current Outages

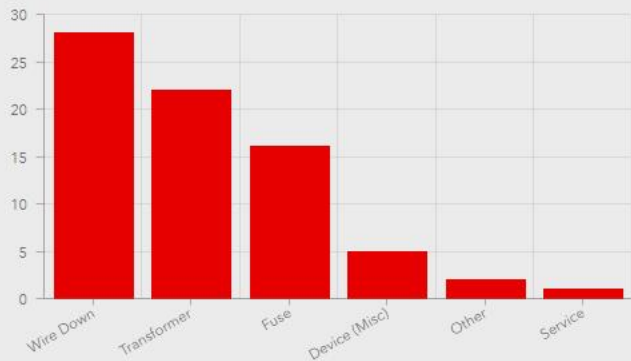
 **Outage ID: 456040**  
**Caused by Wire Down**  
 Total Meters Affected: 90  
 Outage Occurred on March 25, 2019

 **Outage ID: 456045**  
**Caused by Wire Down**  
 Total Meters Affected: 180  
 Outage Occurred on March 25, 2019

 **Outage ID: 234039**  
**Caused by Fuse**  
 Total Meters Affected: 25  
 Outage Occurred on March 25, 2019

 **Outage ID: 234044**  
**Caused by Transformer**

### Damaged Facilities



### Total Damage Reports from Field

# 25

Last update: a few seconds ago

### Damage Reports

-  **Report ID: 22**  
Severity: **Urgent**  
Reported on February 3, 2015 by wpl.admin
-  **Report ID: 19**  
Severity: **Low**  
Reported on January 28, 2015 by
-  **Report ID: 43**  
Severity: **Medium**  
Reported on January 20, 2015 by
-  **Report ID: 1155**  
Severity: **Urgent**  
Reported on January 15, 2015 by

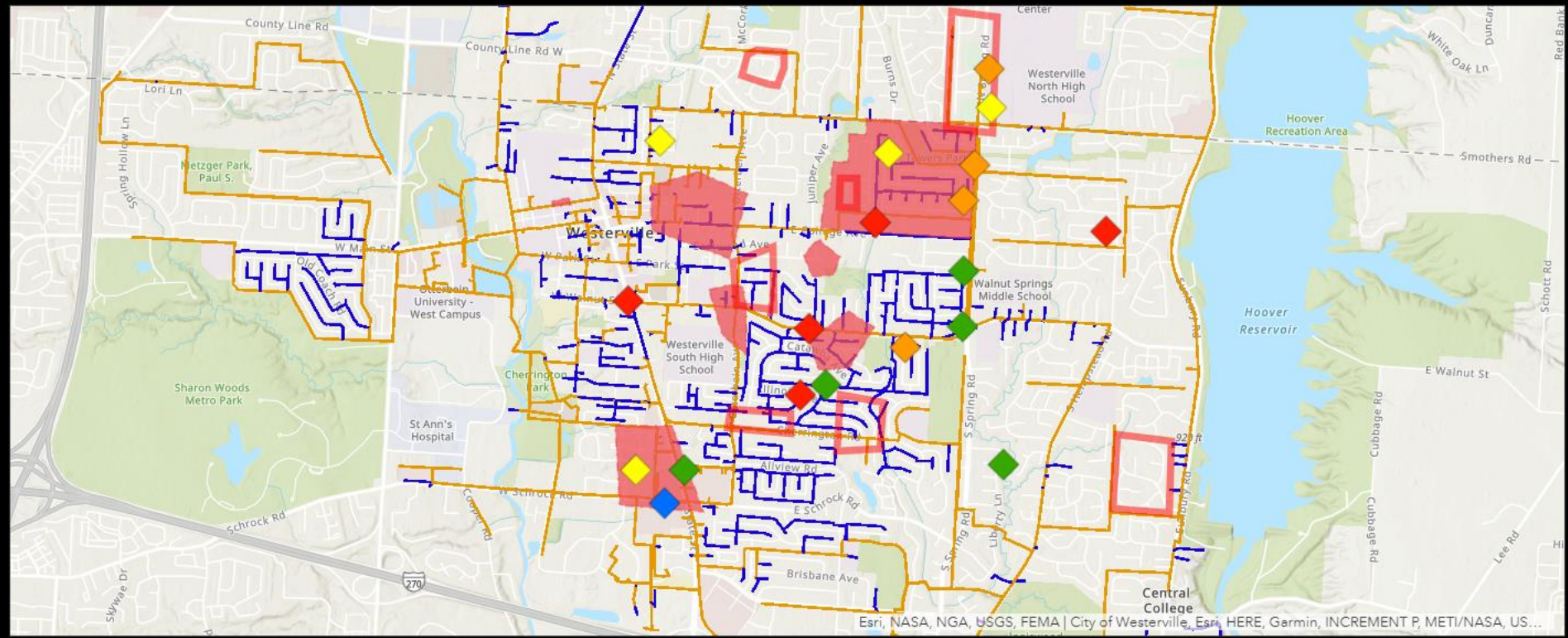
# It's about providing different services...different experiences...

Total Damaged Assets

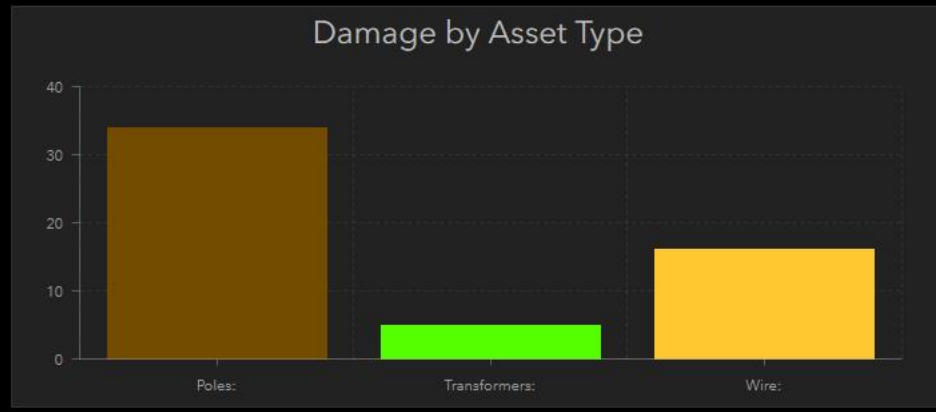
# 33

- Urgent Damage**
- Date: 8/13/2014, 3:03 PM  
 Staff: pdemer.wpl  
 Notes: Police on site live wires
  - Date: 7/31/2014, 3:37 PM  
 Staff: pdemer.wpl  
 Notes: Police on site live wires
  - Date: 7/18/2014, 6:11 PM  
 Staff: pdemer.wpl  
 Notes:
  - Date: 4/21/2014, 9:59 AM  
 Staff: pdemer.wpl  
 Notes: some debris on the

- All Damaged Assets**
- Urgent  
 Notes: Police on site live wires  
 Date: 8/13/2014, 3:03 PM
  - Urgent  
 Notes: Police on site live wires  
 Date: 7/31/2014, 3:37 PM
  - Low  
 Notes: lot of debris on the lines  
 Date: 7/29/2014, 10:05 AM
  - Urgent  
 Notes:  
 Date: 7/18/2014, 6:11 PM



- Damaged Poles**
- 2 | Urgent  
 7/31/2014, 3:37 PM
  - 3 | Medium  
 7/16/2014, 6:32 PM
  - 5 | High  
 6/20/2014, 2:42 PM
  - 2 | Medium  
 6/13/2014, 5:42 PM
  - 2 | High  
 5/26/2014, 5:26 AM
  - 2 | High  
 5/22/2014, 1:09 PM
  - 5 | Medium  
 5/1/2014, 12:09 PM
  - 3 | High  
 4/23/2014, 10:45 AM



- Damage Extent**
- Transformers out  
 4/17/2014, 12:23 PM
  - Line on road  
 4/17/2014, 12:22 PM
  - 4/16/2014, 4:52 PM
  - It's bad  
 4/16/2014, 11:50 AM
  - Large wind event  
 4/12/2014, 1:21 AM
  - Flooding on road  
 4/12/2014, 1:21 AM
  - Roads impassable  
 4/12/2014, 1:21 AM

**It's about providing different services...different experiences...**



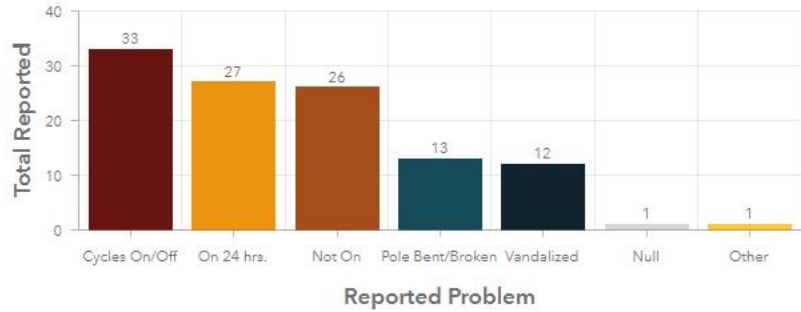
# Total Reported Issues

 **113**

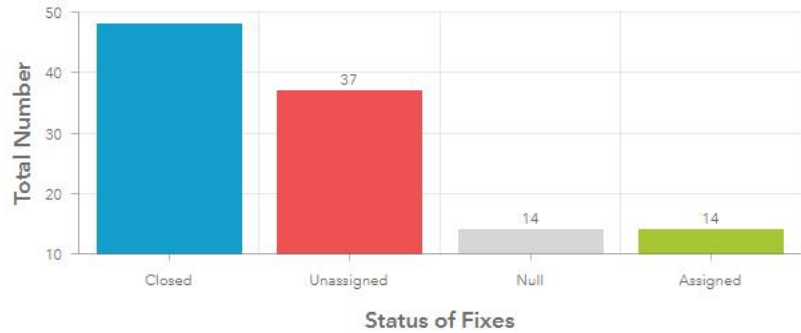
Last update: a few seconds ago

Total Reported | Reported Last 30 Days | Reported Last 60 Days | Reported Last 90 Days

## Type of Problems Reported

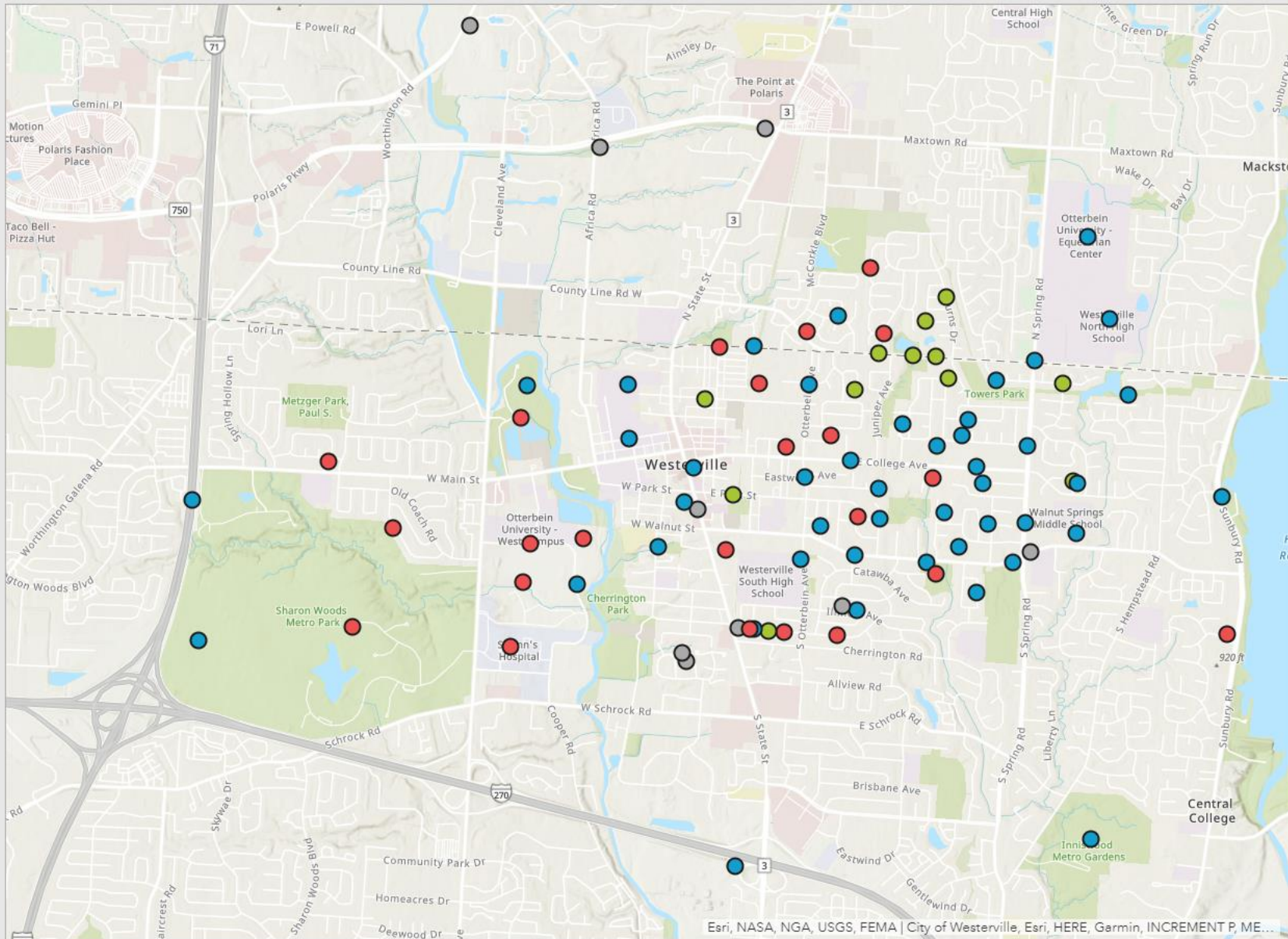


Last update: a few seconds ago



Last update: a few seconds ago

Status Chart | Completed Last 30 Days | Completed Last 60 Days | Completed Last 90 Days



**It's about providing different services...different experiences...**



**WHAT they want, WHEN they want, WHERE they want, RIGHT AWAY...**

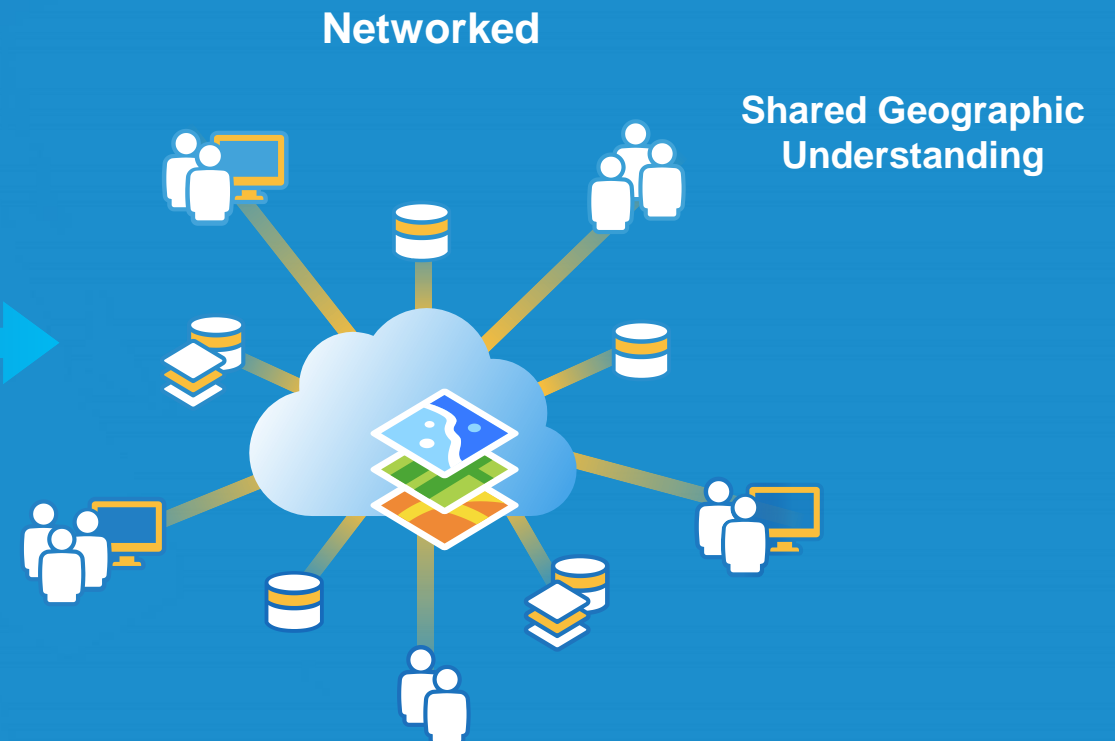
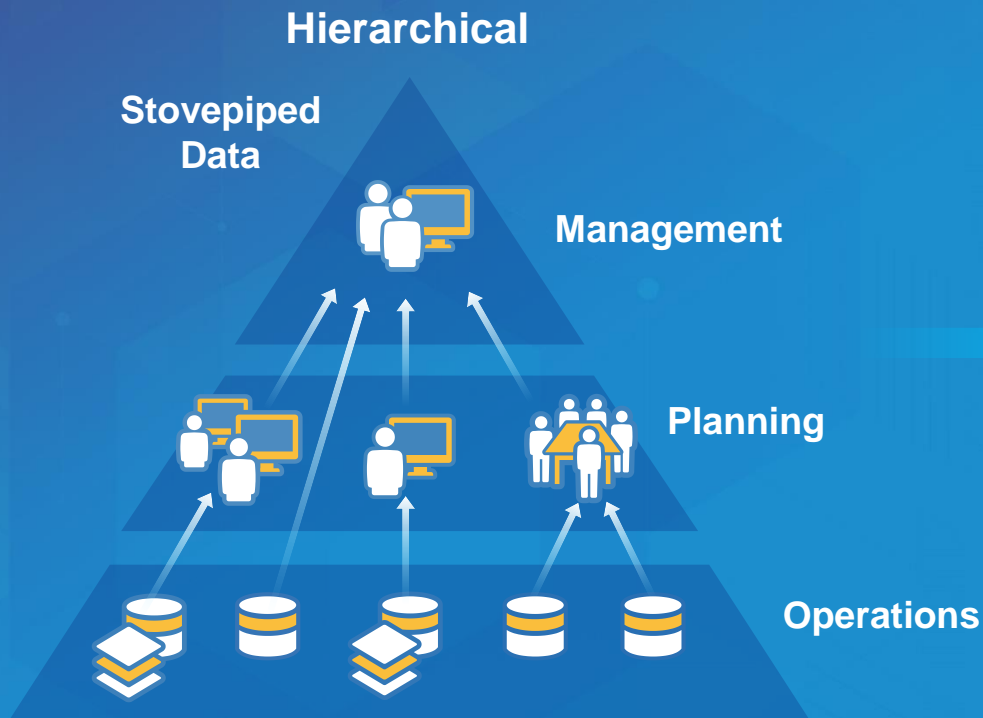
# THE AVENGERS



Use **GROUPS** to enable staff to collaborate...

# Web GIS Transforms Organizations

Creating Shared Information & Facilitating Collaboration



Opening Access & Engaging Everyone



Using easy-to-use, focused apps that are **MOBILE & READY-TO-GO...**

## Goal:

Give everyone alternatives, but keep them in a known, controlled and secure environment, while using the latest and most authoritative data.



**We want to help the business get the work done...**



By giving them choices...





Time for us to WAKE UP...

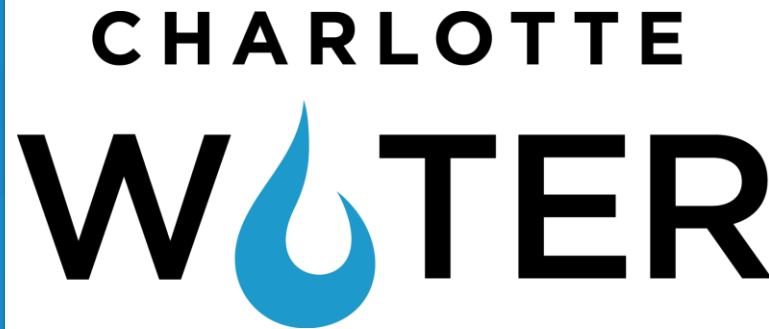


Time for us to TRANSFORM...



Government of South Australia

Department for Communities  
and Social Inclusion



Walgreens

Store Location: 9372  
Address: 674 Far Hills Ave.

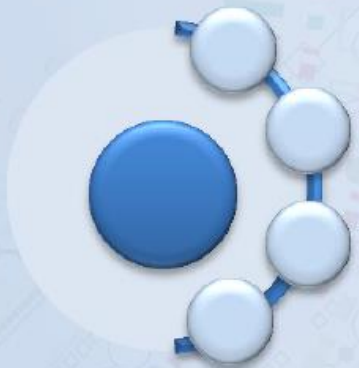
Distance: 9.4  
Customer: Yes  
Store Locator: 184

Lot: 395  
Size: 485 a  
County: Warren

# **DCSI** Geospatial Strategy

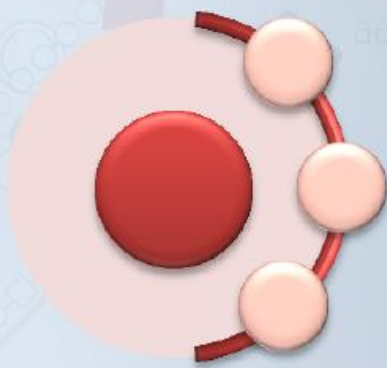
## Coordinate

Facilitate collaboration



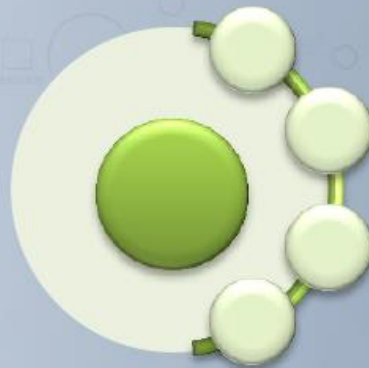
## Simplify

Improve business practices



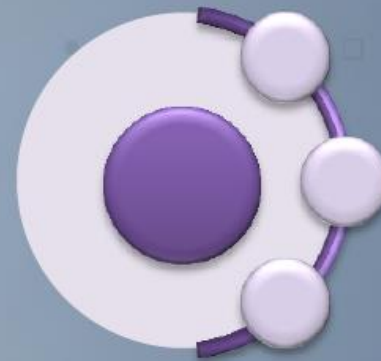
## Innovate

Smarter service offerings



## Enable

Informed decision makers





**Charlotte Water Map Room before their GIS implementation**



**Charlotte Water Fitness Center in their old Map Room**



**Hartsfield-Jackson**  
Atlanta International Airport®





Ingrid Bruce  
GIS Manager, City of Rancho Cucamonga



# Los Angeles GeoHub

LA Metro Bus Routes

The GeoHub is the City's new public platform for exploring, visualizing, and downloading location-based Open Data. You can also analyze and combine Open Data layers using maps, as well as develop new web and mobile applications. Let's make our great City even better, together!

[Find Data](#)

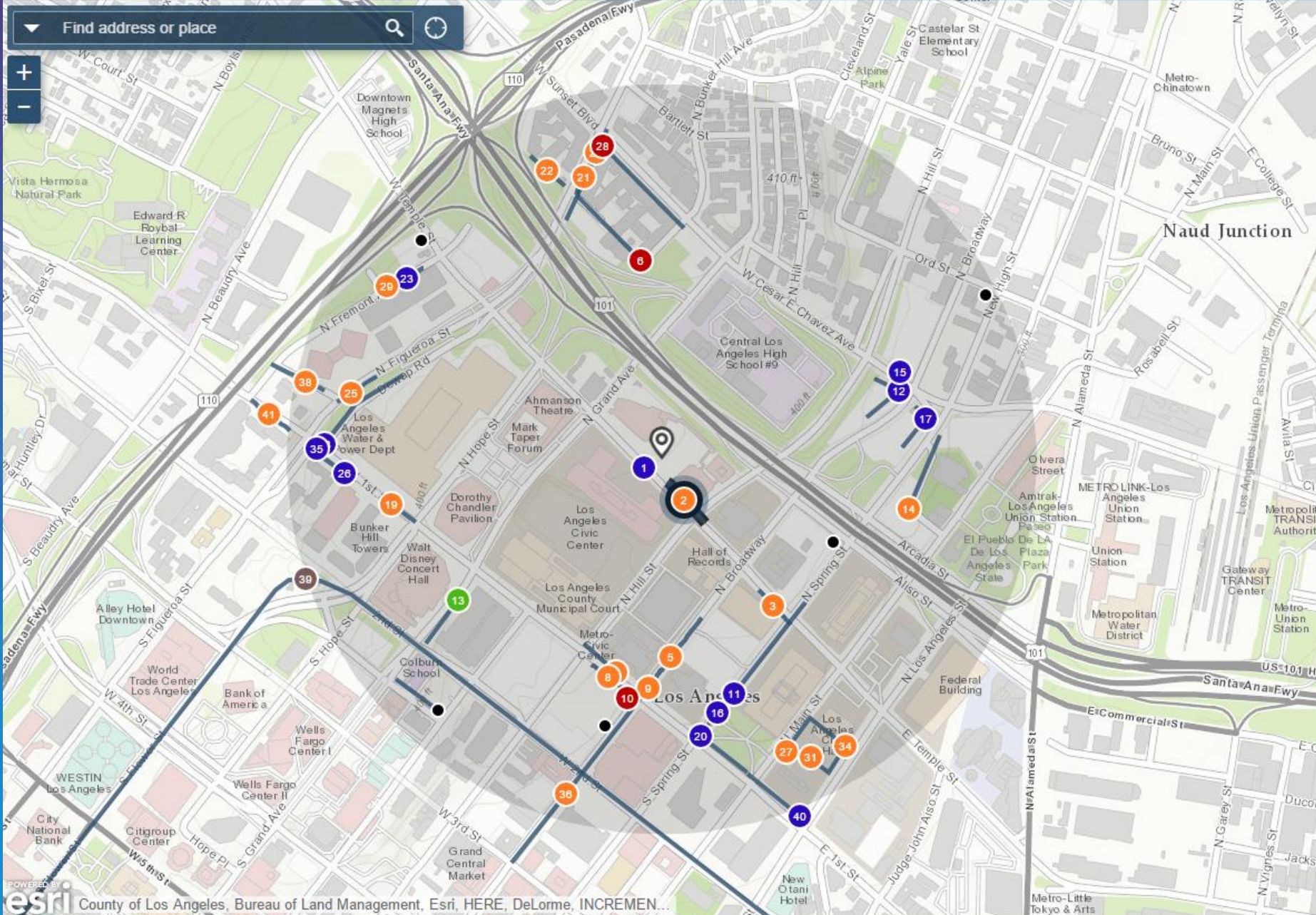
# Street Wize

Legend

Current Work

Upcoming Work

Find address or place



# 41

Projects

Search Radius (0.5 mi)

**2** City Capital Improvement Projects  
0.06 MILES Remaining: 11 months

ID	18977-4
Agency	Bureau of Engineering
Category	BOE CIP
Type	Capital Improvement Project - SSRP N07 Broadway & Pico BI
Description	Secondary Sewer Renewal Program.
Contact Name	Mary Thomas
Contact Phone	(213) 485-1552
Start Date	Oct 07, 2015
End Date	Aug 31, 2017
Status	In Progress
Report	<a href="#">More info</a>

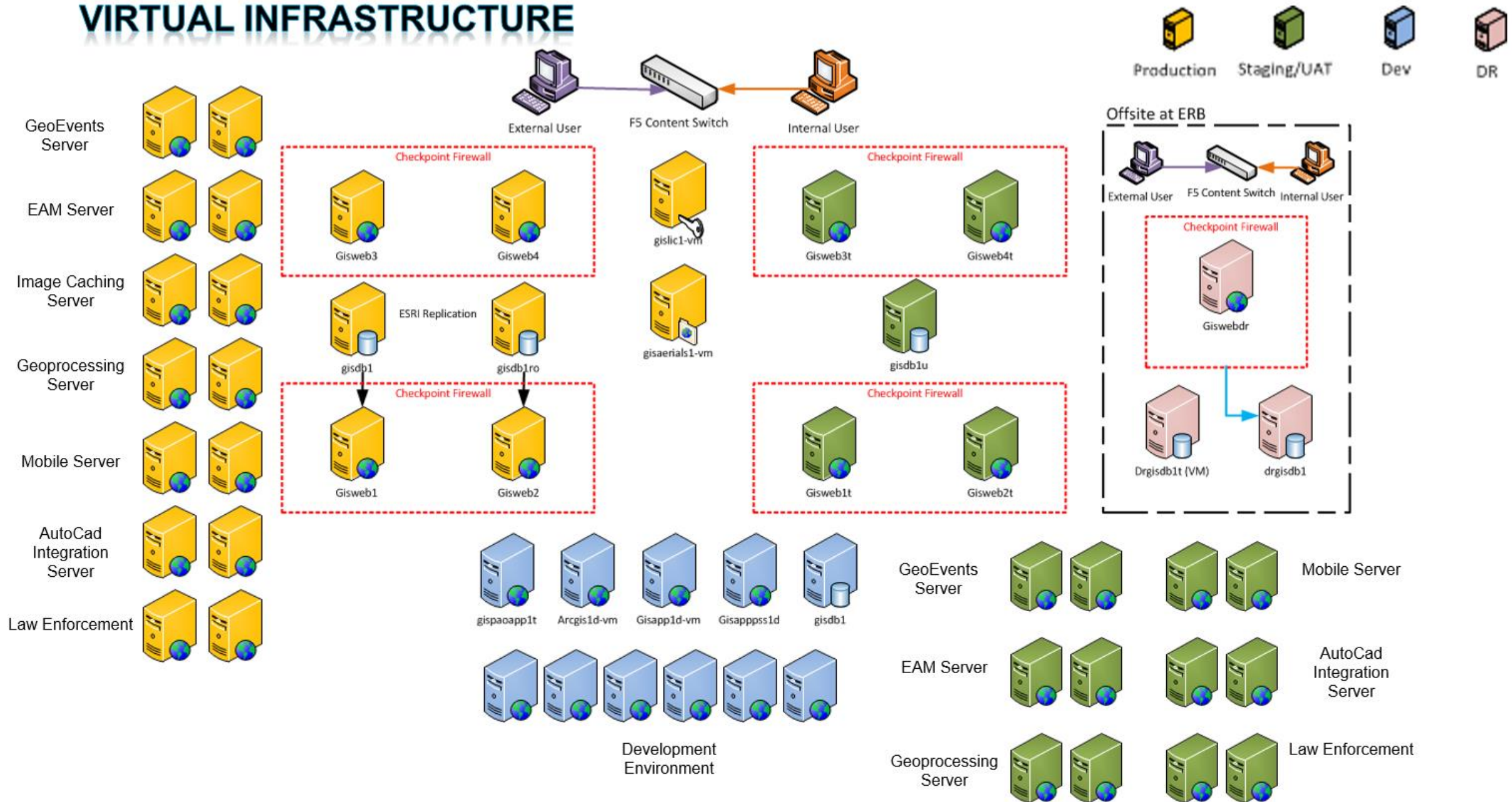
**3** City Capital Improvement Projects  
0.24 MILES Remaining: 11 months

**4** Sewer & Stormdrain Permits  
0.25 MILES Remaining: 1 year



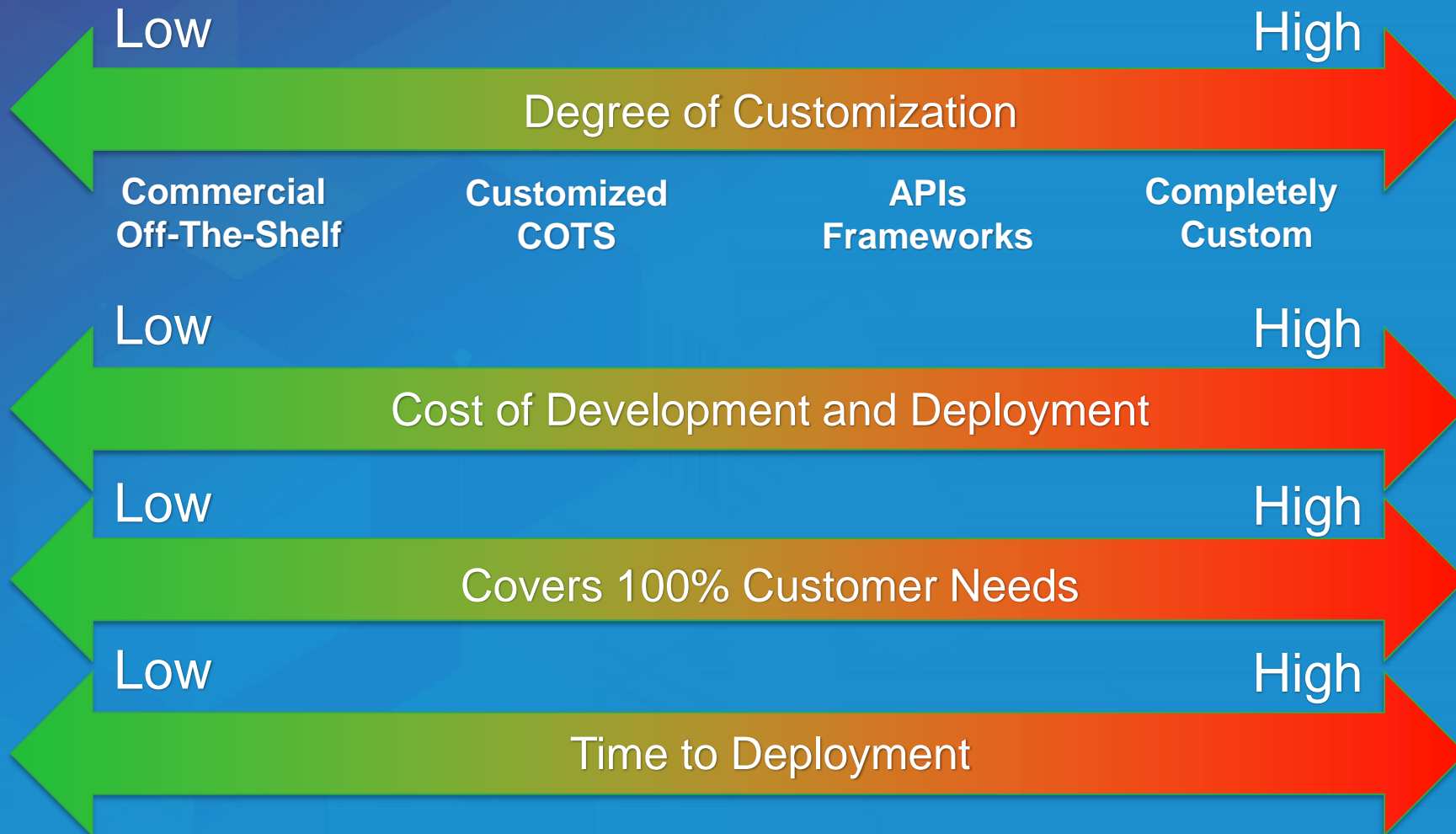
Do we need to rebrand GIS to Location Intelligence?

# VIRTUAL INFRASTRUCTURE



If you're going to raise your game, you need to upgrade your infrastructure...

# Commercial off the Shelf or “COTS”



**YOU WERE SO PREOCCUPIED WITH WHETHER OR NOT YOU COULD**

**YOU DIDN'T STOP TO THINK IF YOU SHOULD**



# The Underutilization of GIS Technologies – 2011

**...Generally, people outside of GIS think of GIS just as “maps” or a graphic product, or the younger brother of CAD...**

- **Promote the System**
- **Get a “GIS Health Check-Up”**
- **Use a Best of Breed approach**
- **Consider Software as a Service (SaaS) i.e., cloud**
- **Set GIS up as the Central Hub**



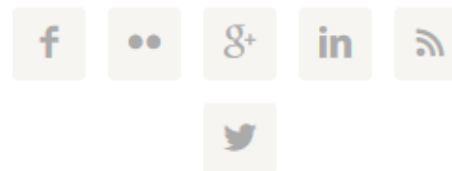
## Mapping the Cause: Using GIS to Determine Potential Causes for Cancer

AUGUST 27, 2015 BY [TROY LAMBERT](#)

*White Paper* [White Paper Reveals 12 Hidden Gems in GeoExpress Software](#)

Much talk lately in the tech world is related to Big Data and how useful it really is. The debate centers not only around making relationships, but how to determine which relationships are significant. How do we make all the demographic data we've gathered meaningful?

CONNECT WITH GISUSER



**GEOGRAPHIC INFORMATION SYSTEMS**

CUSTOMIZABLE REAL-WORLD GRADUATE DEGREES  
AND CERTIFICATES FOR BUSY ADULTS.



**GIS is often seen as “maps” or a visual graphics product, and the more advanced capabilities are ignored because they remain unknown to key departments and decision makers.**

Much talk lately in the tech world is related to Big Data and how useful it really is. The debate centers not only around making relationships, but how to determine which relationships are significant. How do we make all the demographic data we've gathered meaningful?



# GIS Should be about Digital Transformation



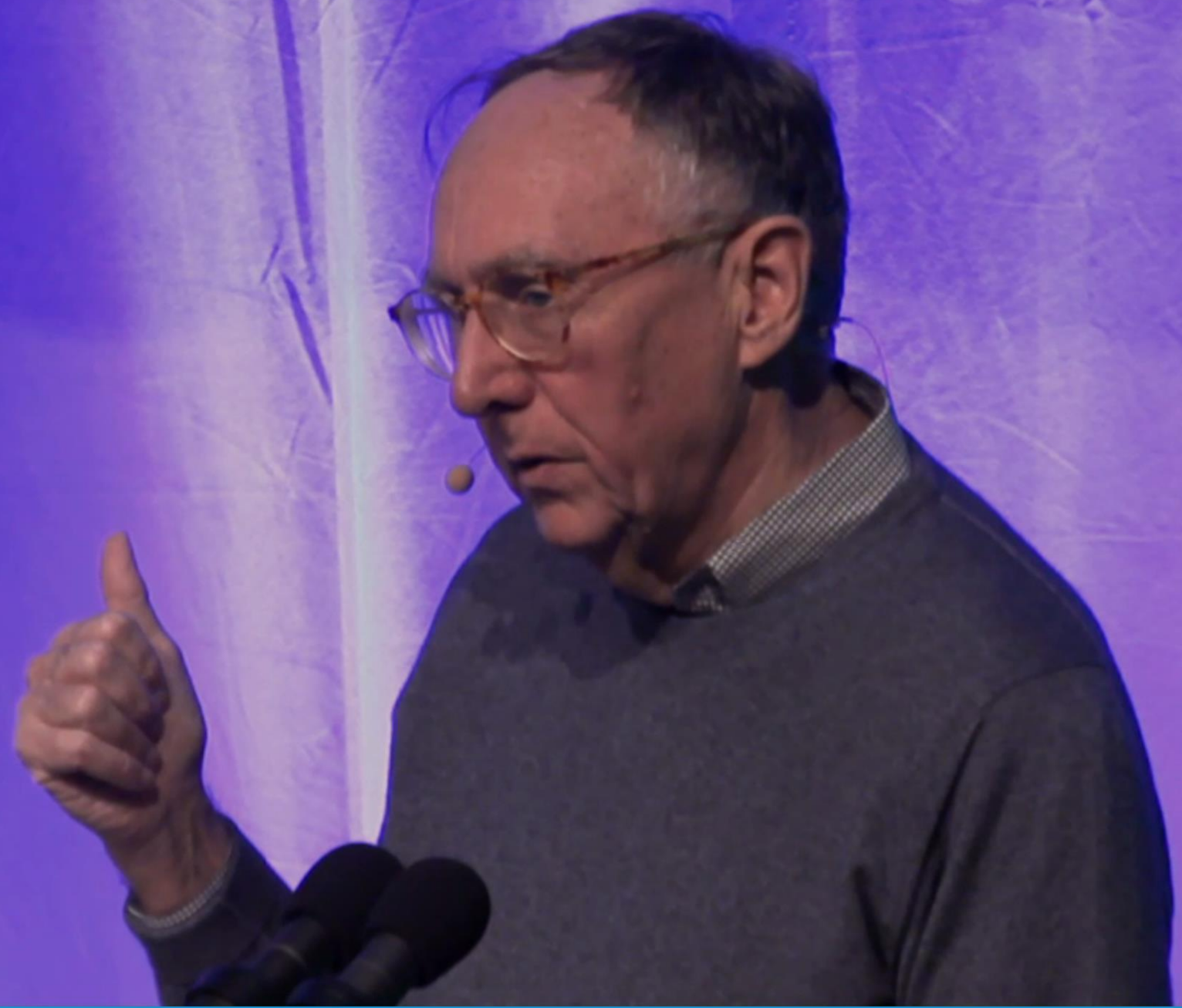
Posted for [Esri](#)



# GIS Should be about Digital Transformation



**GIS is about discovery. It's not about replicating maps that have been around for years. It's about visualizing trends for better decision making. It's about using spatial analytics to provide insight. An Enterprise GIS is not a series of spatially enabled or map-based applications. It is a location intelligence platform. Who cares about making maps faster? Enterprise GIS can transform the business by lowering costs and hassles, greatly improving decision making, and communicating to executives in ways they have never seen before.**



# ArcGIS Common Patterns of Use

## Mapping & Visualization



Understand locations and relationships with maps and visual representations

## Data Management



Collect, organize, and maintain accurate locations and details about assets and resources

## Field Mobility



Manage and enable a mobile workforce to collect and access information in the field

## Monitoring



Track, manage, and monitor assets and resources in real-time

## Analytics



Discover, quantify, and predict trends and patterns to improve outcomes

## Design & Planning



Evaluate alternative solutions and create optimal designs

## Decision Support



Gain situational awareness, and enable information-driven decision making

## Constituent Engagement



Communicate and collaborate with citizens and external communities of interest

## Sharing & Collaboration



Empower everyone to easily discover, use, make, and share geographic information

# GIS Maturity Assessment Matrix

	Mapping & Visualization	Data Management	Field Mobility	Monitoring	Analytics	Design & Planning	Decision Support	Constituent Engagement	Sharing & Collaboration
Elections	Green	Green	Red	Red	Red	Red	Red	Yellow	Red
Emergency Management	Green	Green	Green	Yellow	Yellow	Red	Yellow	Yellow	Red
Fire	Green	Green	Red	Yellow	Yellow	Yellow	Red	Yellow	Red
Health & Human Services	Yellow	Yellow	Red	Red	Red	Red	Red	Yellow	Red
Land Records	Green	Green	Yellow	Yellow	Green	Red	Green	Green	Yellow
Law Enforcement	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow
Parks & Recreation	Green	Green	Red	Red	Yellow	Red	Yellow	Yellow	Yellow
Planning & Development	Green	Green	Red	Yellow	Green	Yellow	Yellow	Green	Yellow
Public Works	Green	Green	Green	Yellow	Yellow	Red	Yellow	Yellow	Yellow
Transportation	Green	Green	Red	Yellow	Yellow	Red	Red	Yellow	Red
Utilities	Green	Green	Green	Yellow	Yellow	Red	Yellow	Yellow	Green

**Green = Meeting Need, Yellow = Partially Meeting Need, Red = Not Meeting Need**





# Keys to Success

Follow Best Practices

- **People**
- **Data**
- **Process**
- **Technology**



AN ESRI  
WHITE PAPER

DECEMBER 2018

## Architecting the ArcGIS Platform: Best Practices

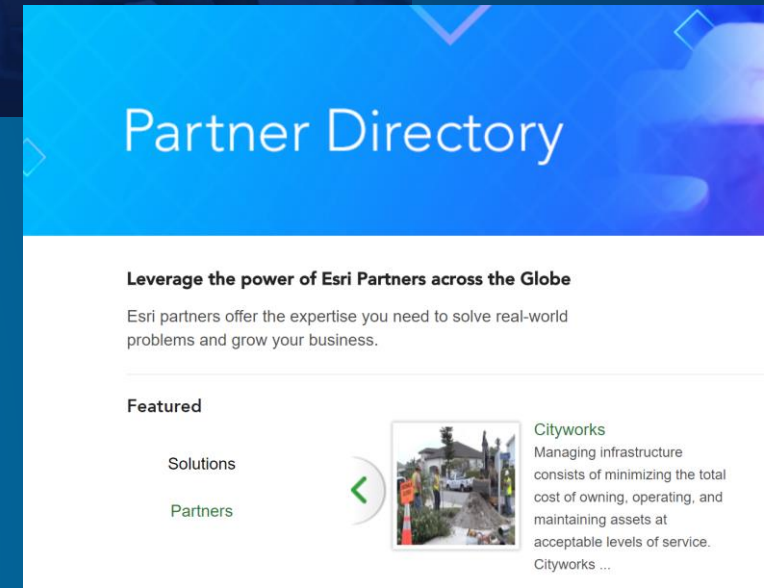
380 New York Street  
Redlands, California 92373-8100 USA  
909 793 2853  
info@esri.com  
esri.com



# Develop Strong Partnerships

## Esri Team and Esri Partners

- **Esri Team**
  - Account Team (Manager and Solution Engineer)
  - Subject Matter Experts
  - Training Consultant
    - Workforce Development Plan
  - Technical Support
    - Premium Support
  - Professional Services
    - Packages, Rent-a-Tech, Projects
  - Esri Enterprise Advantage Program (EEAP)
- **Esri Partners**
  - Specialties (ArcGIS Online, ArcGIS for Local Government)
  - ArcGIS Marketplace



# Develop Strong Partnerships

## Develop and Grow Your Internal Team

- Executive Champion(s)
  - Alleviate their Pain
  - Support their Vision
- IT Leadership
- Align the GIS Plan with the IT Plan & the Organization's Plan
- Enable collaboration and empower others
- Mindset of a GIS Consulting Firm
- Market Spatial Analysis
- Measure and document the impact (ROI)

GIS Project ROI and Benefits Report		
Project Name:		
Department or Division:		
Project Manager/Sponsor:		
Project Completion Date:		
Executive Summary: (Concisely state the problem and its impact on the organization then describe the solution.)		
Describe current workflow or limitation: (Be as detailed as needed)		
Describe proposed enhancement: (Be as detailed as needed)		
Current Workflow Costs: (Enter values in left column (see wage notes below). Values in right column are current values.)		
Hours to complete current workflow	6.0	Current
Hourly wage rate*	25.00	Current
Annual occurrence of workflow	75	
Other workflow costs (consumables/travel exp., etc.)	\$50.00	
Enhanced Workflow Costs		
Hours to complete workflow after enhancement	2.0	Enhanced
Hourly wage rate*	25.00	Enhanced

### THE LANGUAGE OF SPATIAL ANALYTICS

Using *The Science of Where* to understand our world—mapping where things are, how they relate, what it all means, and what actions to take.

**Understanding where**

- Understanding where things are (location maps).
- Understanding where the variations and patterns in values are (comparative maps).
- Understanding where and when locations and values change.

**Measuring size, shape, and distribution**

- Calculating individual feature geometries.
- Calculating geometries and distributions of feature collections.

**Determining how places are related**

- Determining what is nearby or coincident.
- Determining and summarizing what is within an area(s).
- Determining what is closest.
- Determining what is visible from a given location(s).
- Determining overlapping relationships in space and time.

**Finding the best locations and paths**

- Finding the best locations that satisfy a set of criteria.
- Finding the best allocation of resources to geographic areas.
- Finding the best route, path, or flow along a network.
- Finding the best route, path, or corridor across open terrain.
- Finding the best supply locations given known demand and a travel network.

**Detecting and quantifying patterns**

- Where are the significant hot spots, anomalies, and outliers?
- What are the local, regional, and global spatial trends?
- Which features/objects are similar, and how can they be clustered, classified, and identified?
- Are spatial patterns changing over time?

**Making predictions**


- Given a success case, identifying, ranking, and predicting similar locations.
- Finding the factors that explain observed spatial patterns and making predictions.
- Interpolating a continuous surface and trends from discrete sample observations.
- Predicting how and where objects spatially interact (attraction and decay).
- Predicting how and where objects affect wave propagation.
- Predicting where phenomena will move, flow, or spread.
- Predicting what-if.

THE SCIENCE OF WHERE™

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**It's time to seize the opportunity in front of you.**



Don't aspire to make a living,  
aspire to make a difference.

Denzel Washington

# Thank You!

**Adam Carnow**

[acarnow@esri.com](mailto:acarnow@esri.com)



**@SpatialAce**

**GeoNet**

The Esri Community

**LinkedIn**