



# GIS at the City of Flagstaff

4/8/2025

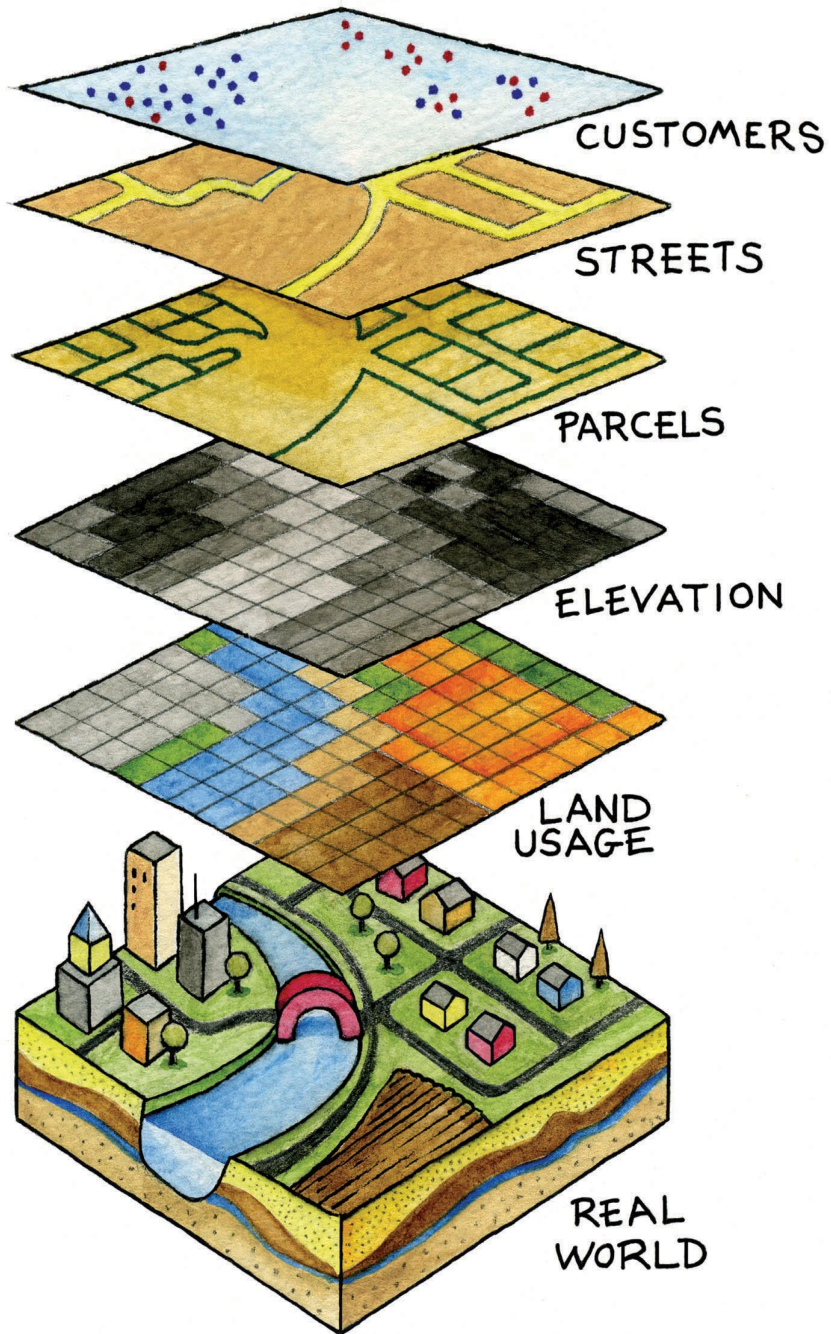
# WHAT IS GIS?

GIS is a technology that is used to create, manage, analyze, and map all types of data.

GIS helps users understand patterns, relationships, and geographic context.

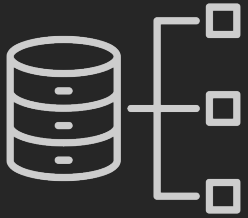
The benefits include improved communication, efficiency, management, and decision-making.

From: <https://www.esri.com/en-us/what-is-gis>





Mapping and Visualization



Data Management



Spatial Analysis



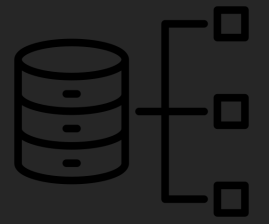
Communication

# WHAT DOES GIS DO?



# Mapping and Visualization

## Mapping and Visualization



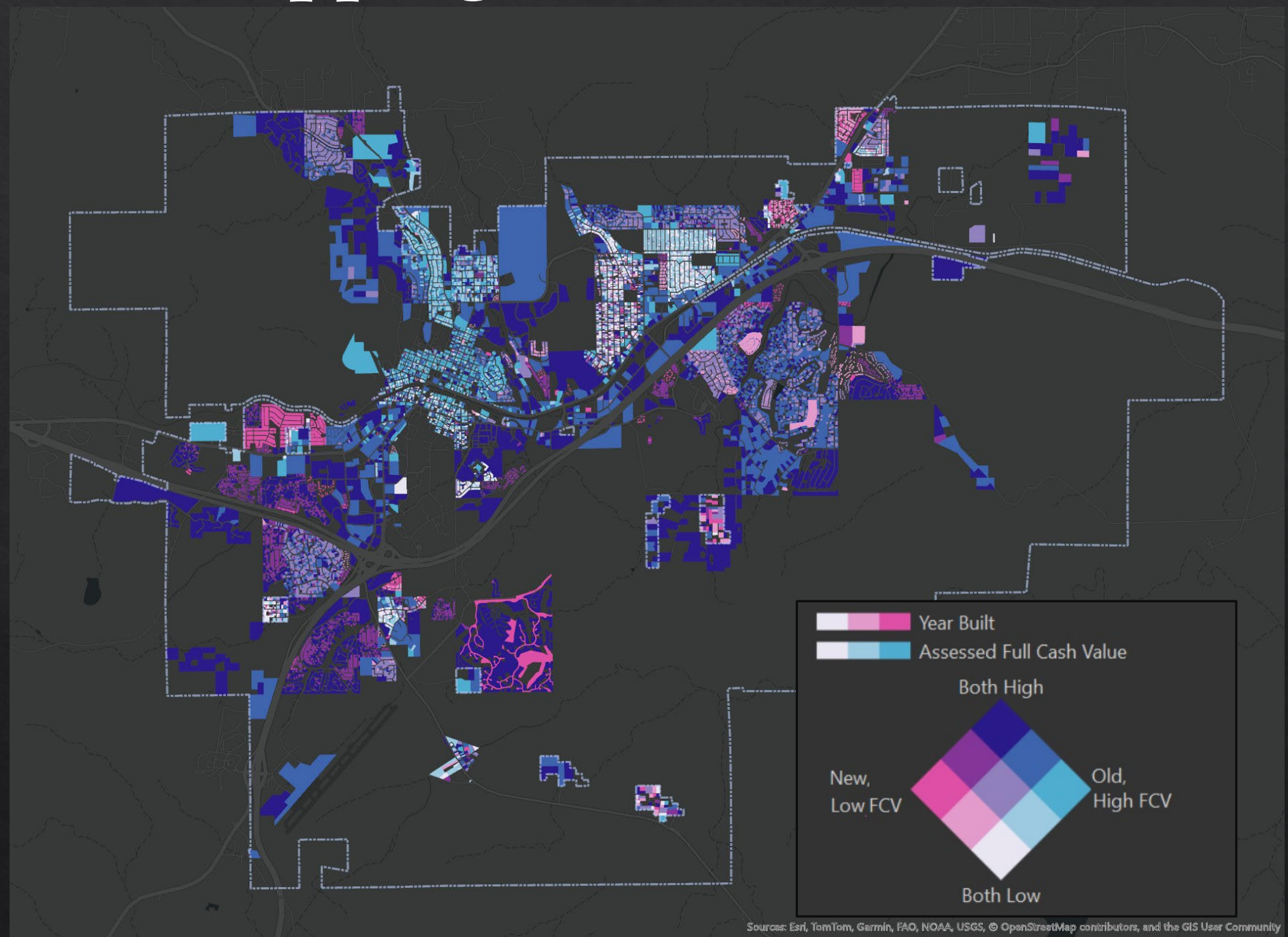
## Data Management



## Spatial Analysis



## Communication

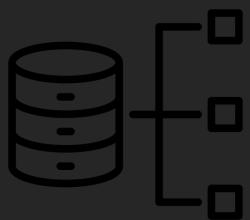


Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



# Mapping and Visualization

Mapping and Visualization



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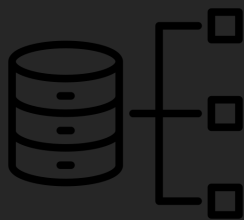
Communication





# Mapping and Visualization

Mapping and Visualization



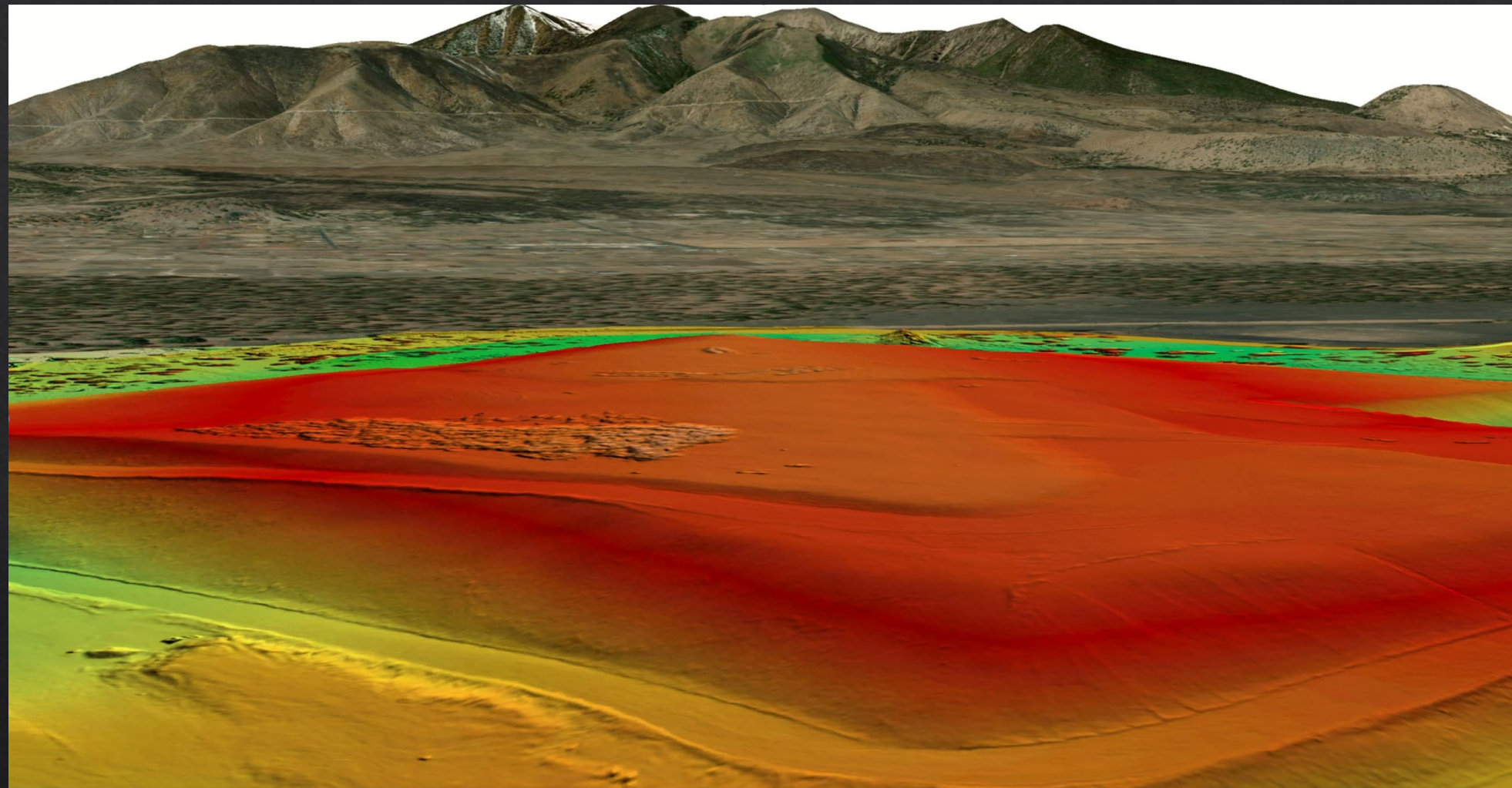
Data Management



Spatial Analysis



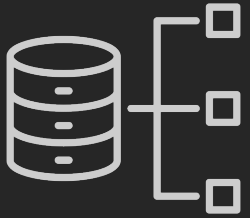
Communication



# Data Management



Mapping and Visualization



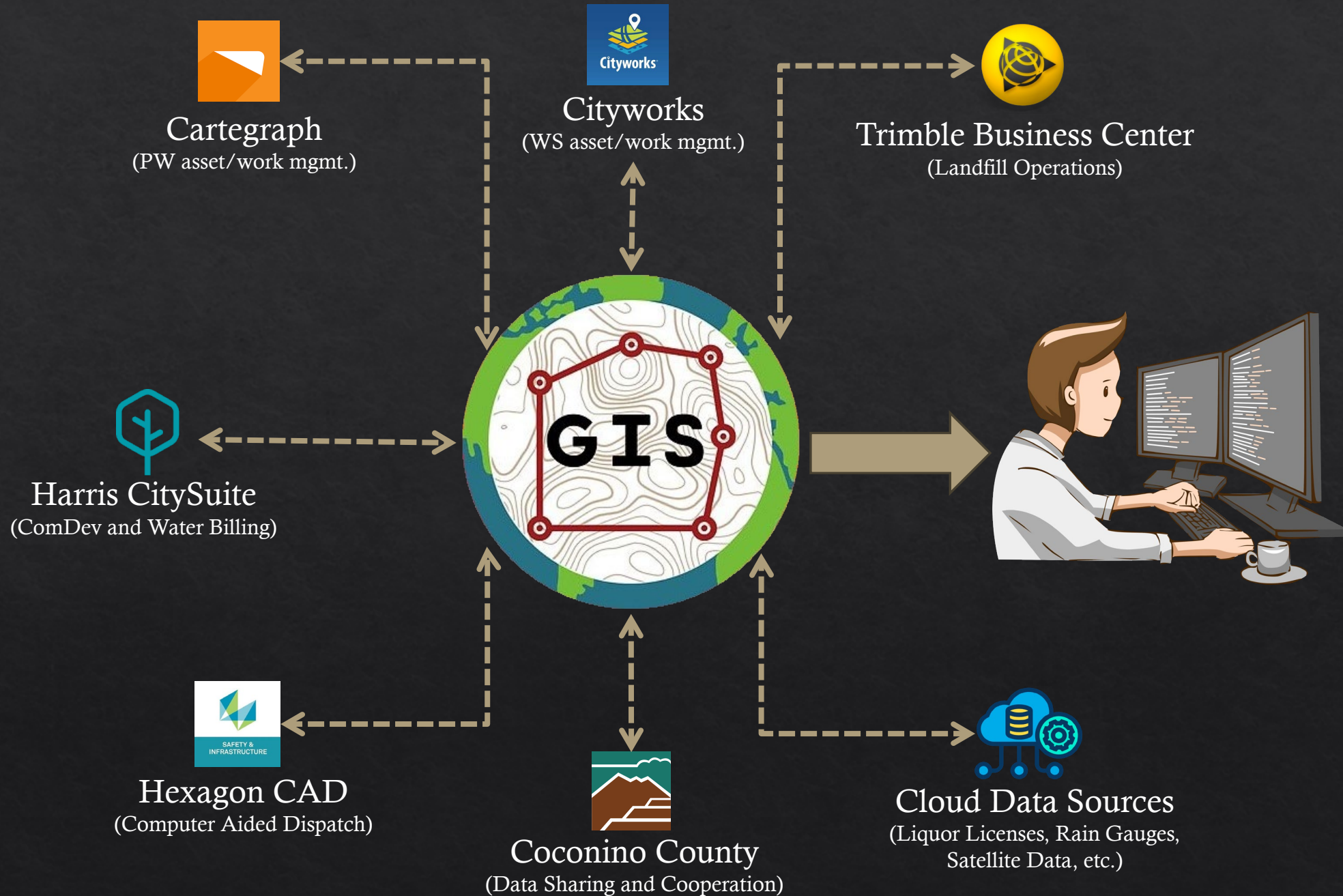
Data Management



Spatial Analysis

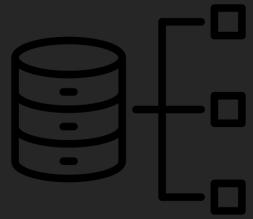


Communication





Mapping and Visualization



Data Management



Spatial Analysis

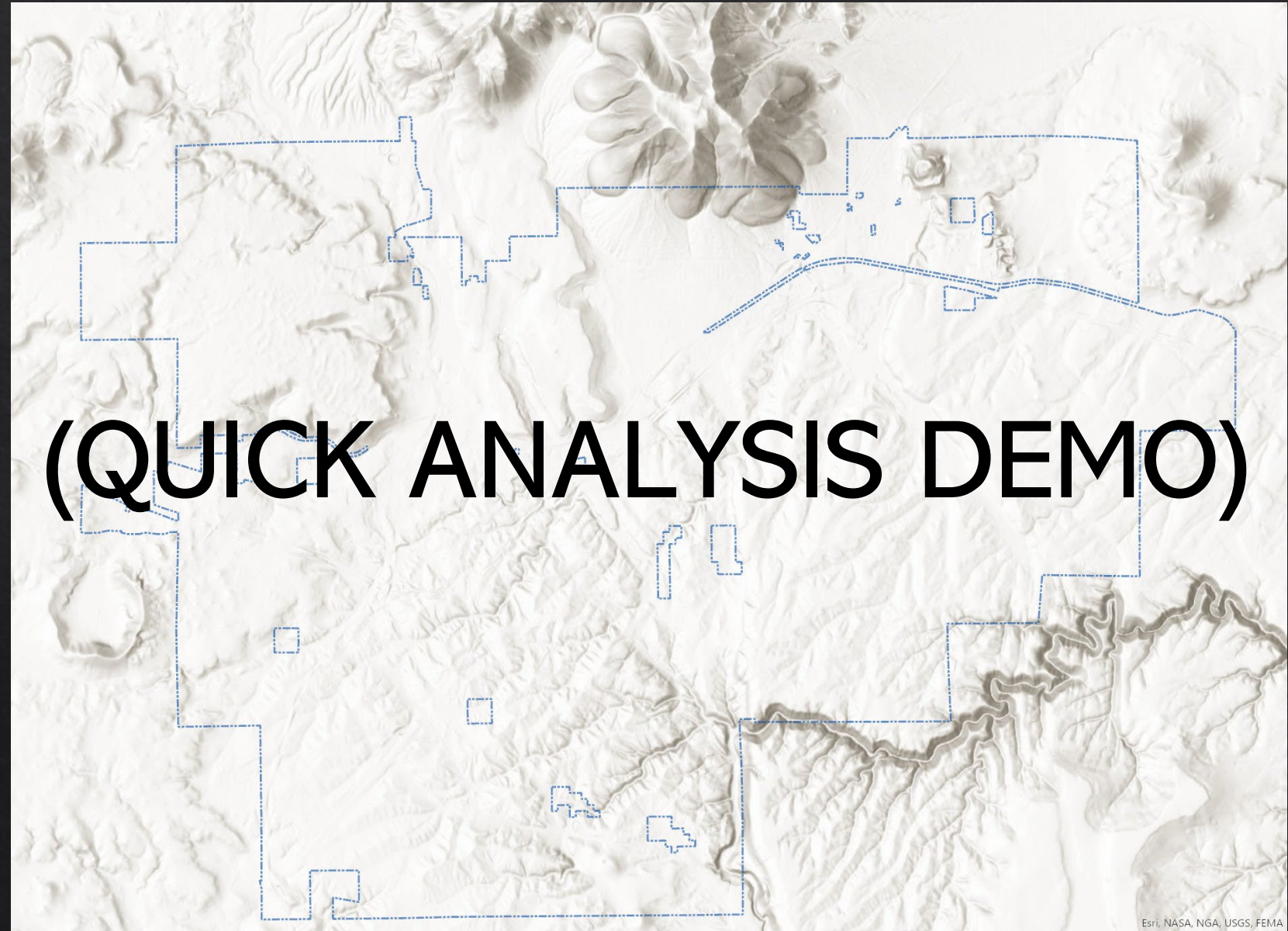


Communication

# Spatial Analysis

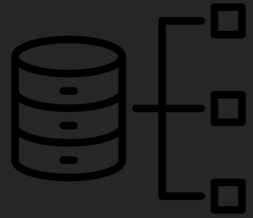
## “Choosing the Right Location”

City of Flagstaff





Mapping and Visualization



Data Management



Spatial Analysis

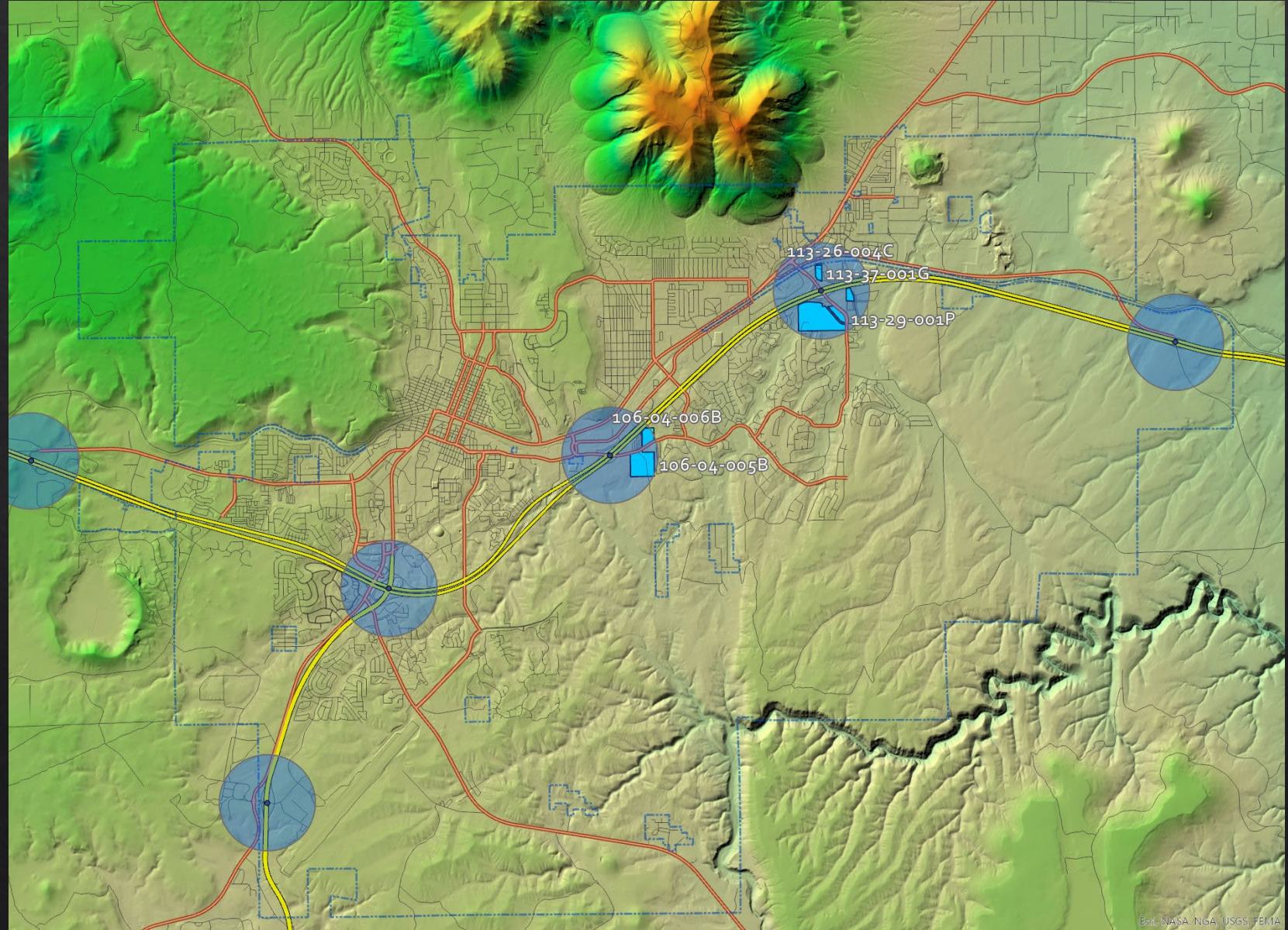


Communication

# Spatial Analysis

## “Choosing the Right Location”

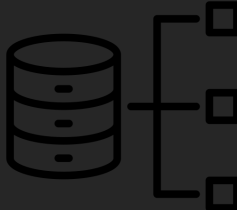
Vacant Parcels – Industrial & Commercial Zoning – 5+ acres – Flat Parcels (>75% of parcel <15% slope) – Streets – ½ mile Interstate Ramp



# Communication



Mapping and Visualization



Data Management



Spatial Analysis



Communication

### CAD Fire Calls GIS Dashboard

Filter calls by - (calls in the last five years)

- Responding Agency: FFD
- Station: Showing All Stations
- Unit: Showing All Units
- Month: Showing All Months
- Year: 2024
- ESZ: Showing All ESZs
- Calls Outside FFD: Showing All ESZs Outside City Limits
- District: Showing All Districts
- Billable Calls - Outside City Limits: Showing All Billable Calls
- Call Type: Showing All Call Types
- Call Subtype: Showing All Call Subtypes
- Call Time Hour Range: 0 - 23
- Owner Classification: Showing All Owner Classifications
- Cancelled/Arrived: Showing All Calls

Call Count **17k**  
Adjusts with applied filters

Month	Station Calls
Jan	~1300
Feb	~1350
Mar	~1250
Apr	~1300
May	~1450
Jun	~1550
Jul	~1650
Aug	~1550
Sep	~1650
Oct	~1550
Nov	~1250
Dec	~1150

County of Yavapai, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS | City of Flagstaff  
Powered by Esri

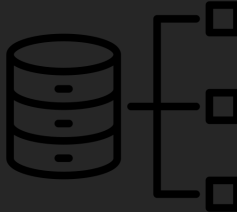
Call Locations Map | Fire Call Table (export table)

Station Calls by Month | Station Calls by Unit | Calls by Hour

# Communication



Mapping and Visualization




Data Management




Spatial Analysis



Communication



**City of Flagstaff Public Works APWA Accreditation Status**  
<https://www.apwa.org/resources/accreditation/>

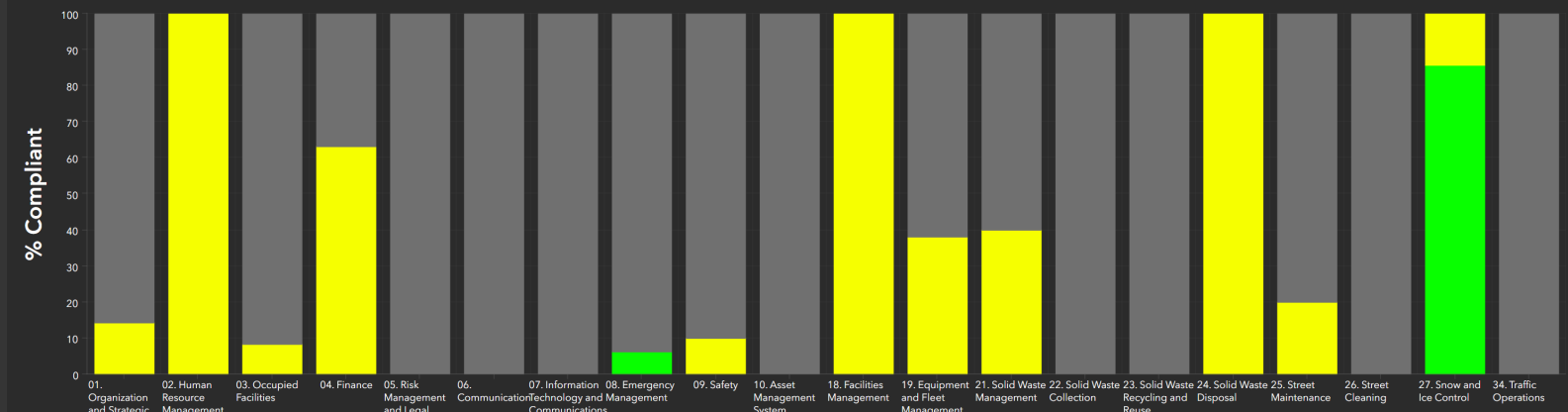


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**Compliance Status On:**

- 3/4/2025
- 2/13/2025
- 11/22/2024
- 10/4/2024

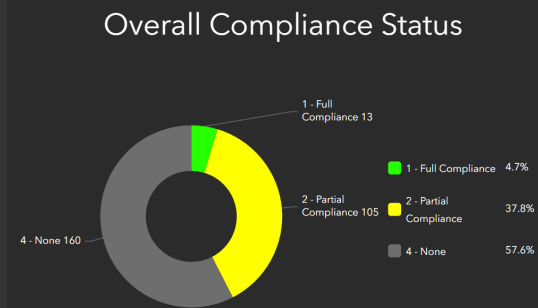
### Compliance Status by Chapter



Chapter	1 - Full Compliance	2 - Partial Compliance	3 - Non-Compliance	4 - None
01. Organization and Strategic Planning	0	15	0	85
02. Human Resource Management	0	100	0	0
03. Occupied Facilities	0	10	0	90
04. Finance	0	65	0	35
05. Risk Management and Legal Review	0	0	0	100
06. Communication	0	0	0	100
07. Information Technology and Management Communications	0	0	0	100
08. Emergency Management	5	5	0	85
09. Safety	0	10	0	90
10. Asset Management System	0	0	0	100
18. Facilities Management	0	100	0	0
19. Equipment and Fleet Management	0	38	0	62
21. Solid Waste Management	0	40	0	60
22. Solid Waste Collection	0	0	0	100
23. Solid Waste Recycling and Reuse	0	0	0	100
24. Solid Waste Disposal	0	100	0	0
25. Street Maintenance	0	20	0	80
26. Street Clearing	0	0	0	100
27. Snow and Ice Control	55	45	0	0
34. Traffic Operations	0	0	0	100

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### Overall Compliance Status



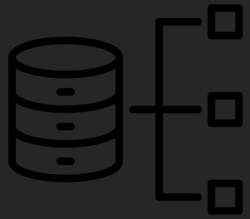
Compliance Status	Count	Percentage
1 - Full Compliance	13	4.7%
2 - Partial Compliance	105	37.8%
4 - None	160	57.6%

### Compliance Status of Individual Tasks

Task	Compliance Status	APWA Due	APWA Modified	Dashboard Import Date
1.1 Mission, Vision, and Values Sta...	Partial Compliance	11/1/2024	12/5/2024	3/4/2025
1.2 Description of Agency	None	11/15/2024	11/1/2023	3/4/2025
1.3 Review Process	None	11/29/2024	11/1/2023	3/4/2025
1.4 Policies and Procedures	None	12/13/2024	11/1/2023	3/4/2025
1.5 Code of Ethics	None	12/27/2024	11/1/2023	3/4/2025
1.6 Strategic Plan	None	1/10/2025	11/1/2023	3/4/2025
1.7 Relationship of Agency's Strat...	None	1/24/2025	11/1/2023	3/4/2025
2.1 Classification Plan	Partial Compliance	11/1/2024	7/30/2024	3/4/2025



Mapping and Visualization



Data Management



Spatial Analysis



Communication

# Communication



Take Action

Programs

Carbon Neutrality Plan

Local Impacts

Resilience and Adaptation

Climate Emergency

More ▾



## Flagstaff's Climate Program

### Latest Updates

- The City of Flagstaff would like to help protect your home from flood damage through the Flood Prevention Assistance Program! You can apply for up to \$7,500 to purchase floodproofing materials. → [Learn more.](#)
- Learn about the [Climate Resilience Project](#), an initiative with the Flagstaff Public Library.
- Home Weatherization Rebates Applications are CLOSED → [Learn more.](#)

### Taking climate action as a community.

The climate is rapidly changing. What are we doing about it?

The City of Flagstaff has set goals to reach carbon neutrality by 2030. To get there, we'll need to take strong action across the Flagstaff community.

Join us in taking climate action, building community resilience, and achieving a higher quality of life for all community members.

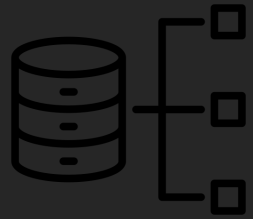
### Get Involved



# Communication



Mapping and Visualization



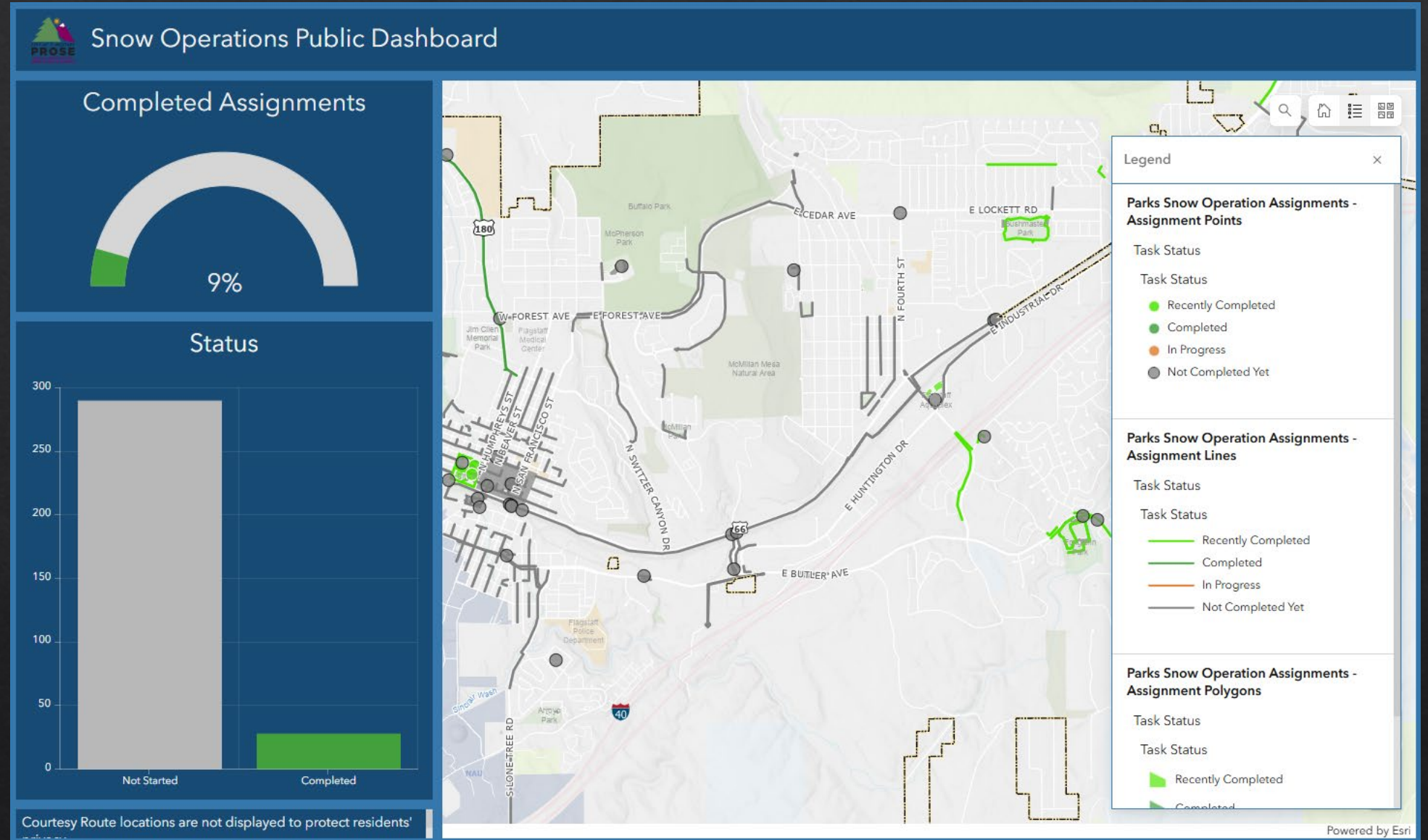
Data Management



Spatial Analysis



Communication



**Choosing the  
Right Location**



**Finding the  
Closest Facility**



**Keeping Track  
of Things**



**Planning for  
the Future**



**Responding to  
Emergencies**



# HOW IS GIS USED?

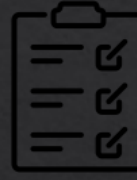
## Choosing the Right Location



## Finding the Closest Facility



## Keeping Track of Things



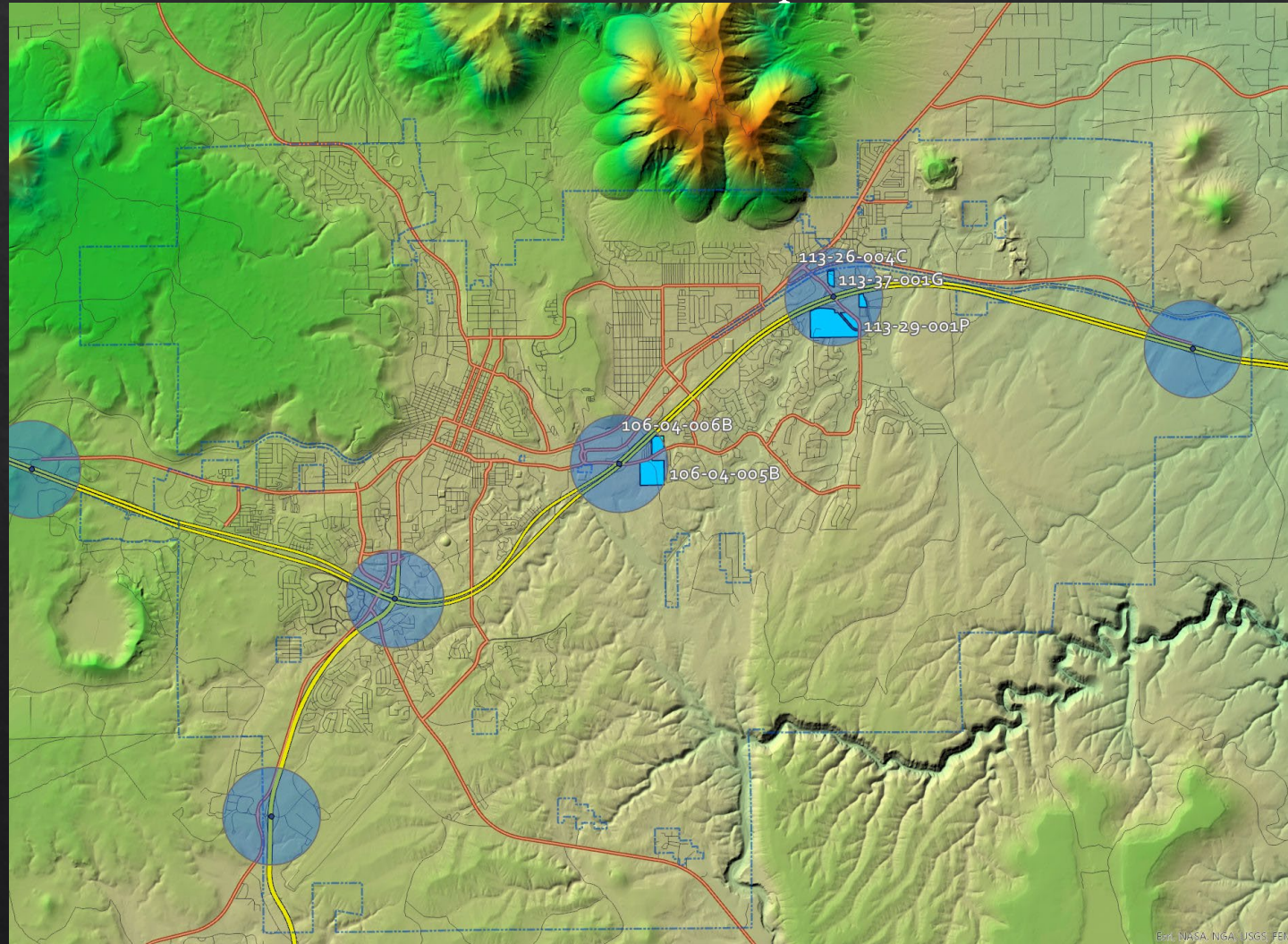
## Planning for the Future



## Responding to Emergencies



Vacant Parcels – Industrial & Commercial Zoning – 5+ acres – Flat Parcels (>75% of parcel <15% slope) – Streets – ½ mile Interstate Ramp



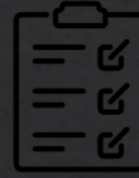
## Choosing the Right Location



## Finding the Closest Facility



## Keeping Track of Things



## Planning for the Future



## Responding to Emergencies



**Closest Fire Station Web App**

Search for your address

**Find the Closest Fire Station and Hydrant**

Input	Output
<b>Route to Station</b>	
The result is drawn on the map.	... X
<b>Route Result</b>	
The closest fire station is Fire Station #2. The distance to the station is 1.59 miles and estimated travel time is 2.73 minutes.	
<b>Closest Hydrant</b>	
The result is drawn on the map.	... X
<b>Hydrant Result</b>	
The closest hydrant is highlighted on the map and is 145.6 feet away from the location selected.	

The screenshot displays a web application interface for finding the closest fire station and hydrant. The main map shows a grid of streets in Flagstaff, AZ, with numerous orange circular markers representing fire stations and hydrants. A blue dashed line indicates the route from a selected location to the closest fire station. The results panel on the left provides detailed information about the route and the closest hydrant.

## Choosing the Right Location



## Finding the Closest Facility



## Keeping Track of Things



## Planning for the Future



## Responding to Emergencies



**Asset Management** | Dashboard | Requests | **Work** | Assets | Resources | Reports | Scenarios

Try the new UI! | Search | 15 | RS

Back | Home > Work > Task: 35436 | Create + | Reports | Actions

Task ID <b>35436</b>	Activity <b>STREET LIGHT - REPAIR</b>	Asset <b>Light Fixture 996</b>	Priority: <b>None</b>	Start Date: <b>11/1/2022</b>	Complete Task <input checked="" type="checkbox"/>
			Status: <b>Completed</b>	Stop Date: <b>11/1/2022</b>	Enter Resources <input type="button" value=""/>

Total Cost	Productivity	Labor	Equipment	Material	Other	
<b>\$271</b>	Cost per Unit <b>\$0.00</b>	Labor Hours <b>1</b>	Labor Cost <b>\$25</b>	Equipment Cost <b>\$16</b>	Material Cost <b>\$230</b>	Other Cost <b>\$0</b>

- Map
- Location
- Task Setup
- Task Details
- Estimated vs Actual Costs
- Labor
- Equipment
- Material
- Other
- Attached Files

### Equipment

<input type="checkbox"/>	11/1/2022	S3070s	AERIAL LIFT M2-106 FREIGHTLINER	0.25 hr	\$15.75
--------------------------	-----------	--------	---------------------------------	---------	---------

Selected 0 | 1 - 1 of 1

### Material

Material Log Advanced Filter

Date	ID	Description	Quantity	Cost
11/1/2022	691	SL lamp 55LPS (\$200)	1 ea	\$200.00
11/1/2022	703	SL PEC (\$30)	1 ea	\$30.00

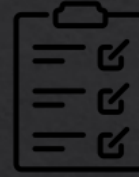
Choosing the  
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of Things



Planning for  
the Future



Responding to  
Emergencies



# Flagstaff Regional Plan 2030

[Interactive Map Introduction](#)

[Future Growth Illustration](#)

[Transitions](#)

[Road Network Illustration](#)

[Great Streets](#)

[Future Trails](#)

[Significant Natural Resources](#)

[Concentration of Natural Resou...](#)

[Cultural Resource Sensitivity](#)

[Heritage Resources](#)

## Interactive Map Introduction



The Flagstaff Regional Plan 2030 applies to the 525-square-mile FMPO planning area. The Plan is used for decision making so that Flagstaff City government is accountable for publicly derived policy outcomes and goals. It also provides the basis for policies and regulations to guide

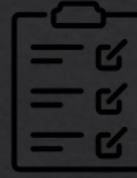
# Choosing the Right Location



# Finding the Closest Facility



# Keeping Track of Things



# Planning for the Future



# Responding to Emergencies



## CITY OF FLAGSTAFF EMERGENCY OPERATIONS DASHBOARD

Public Safety Map

SWCC Situation Report

### Incident Summary: Affected Addresses, Structures, & Evacuation Zones

0.5 Miles

Input location  
111-03-001B

Addresses

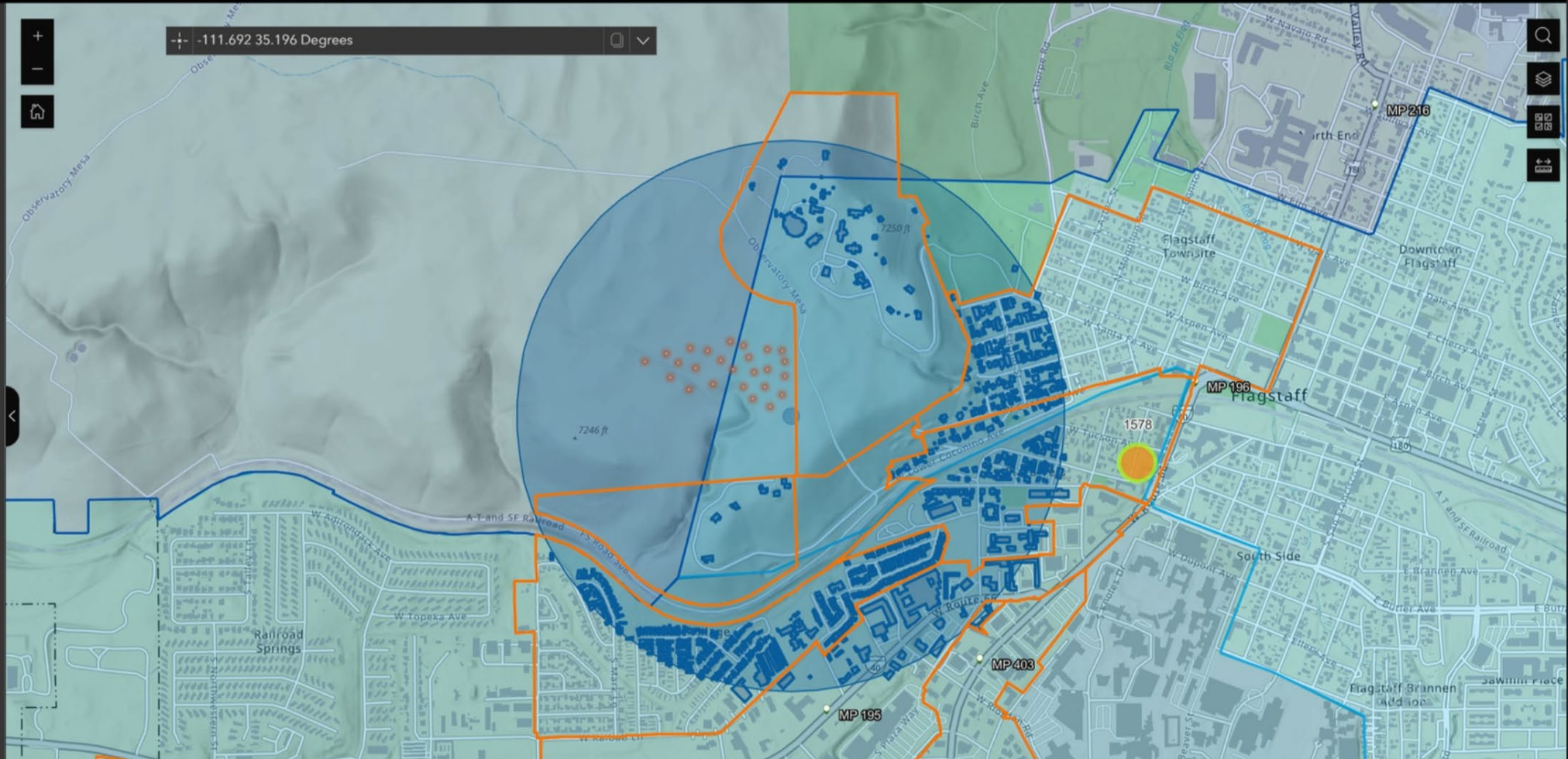
Affected Addresses 913

Structures

Structures at Risk 695

Evacuations Zones

- Lowell Observatory 0.01 mi >
- Flagstaff Mesa 0.11 mi >
- La Plaza Vieja 0.2 mi >
- Flagstaff Townsite 0.22 mi >
- West Village 0.28 mi >
- W Route 66 0.36 mi >
- Milton Commercial 0.49 mi >



# 1988:

City of Flagstaff buys it's first Esri License:  
One single use license installed on one  
computer in CD to start drawing parcels.

*At the time, Flagstaff is  
Esri customer #348.*

Current worldwide usage of Esri software:

- 350,000+ organizations
- 50% of Fortune 500 companies
- 12,000 National Gov't Agencies
- 30,000 Cities and Local Gov't
- All 50 US states
- 7,000+ Universities
- 15,000 Nonprofits

Esri, 2025

<https://www.esri.com/en-us/about/media-relations/fact-sheet>

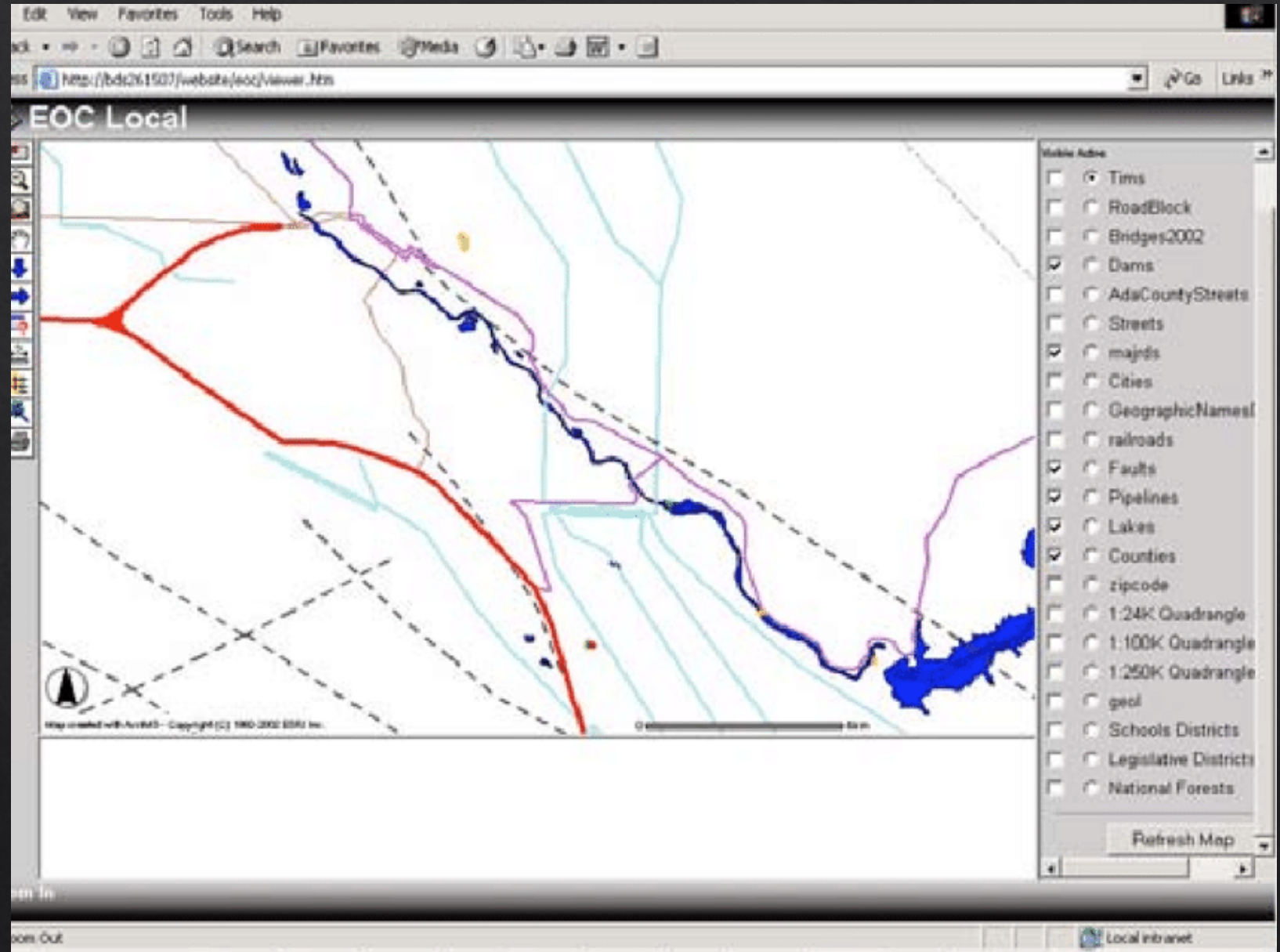
<https://www.esri.com/en-us/about/about-esri/overview>



# 2006:

City GIS has grown to have 4 server-based databases, including Land and Utilities, as well as some early aerial imagery of the City and some General data, like census tracts.

ArcIMS is deployed: An early internal web-application had been developed to look up parcel information

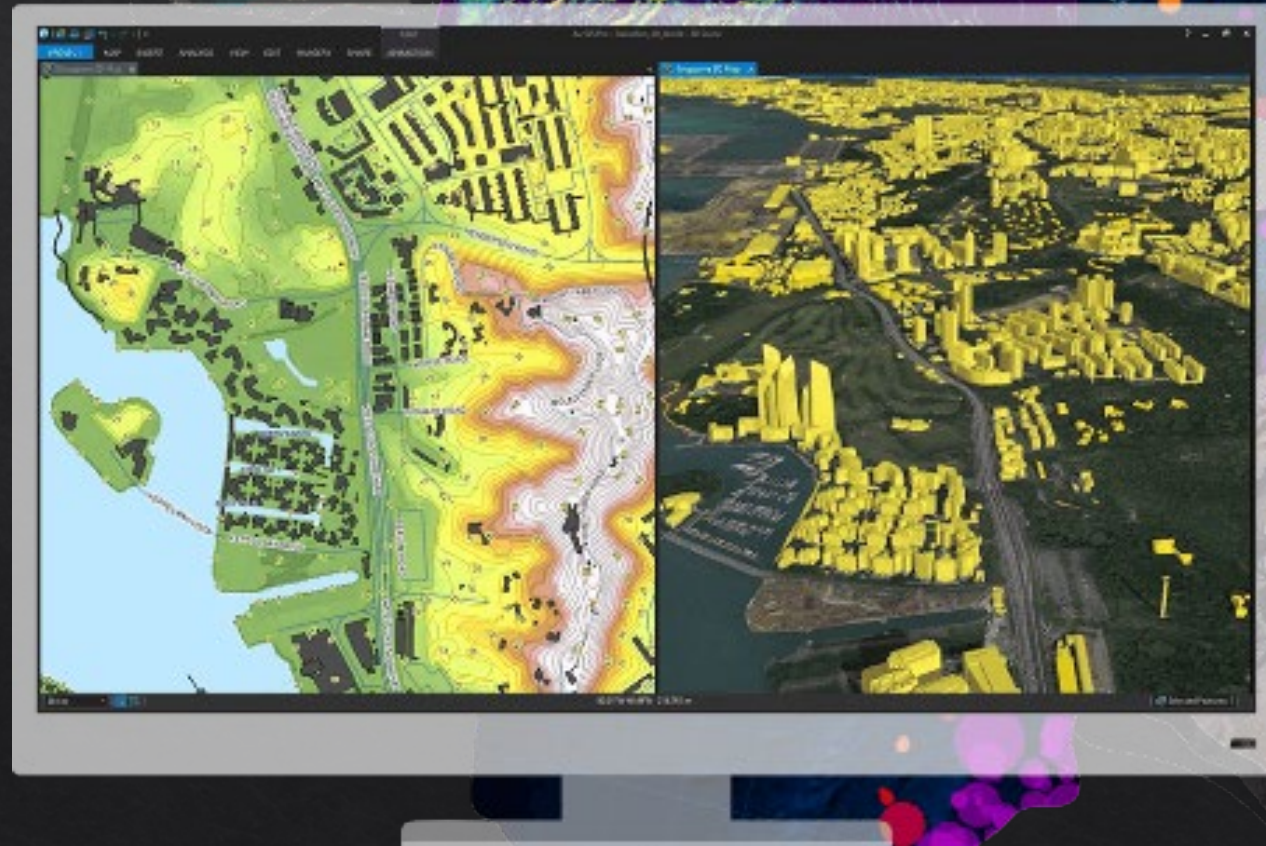


# 2025:

City GIS continues to grow:

- 22 Enterprise Databases
- ~900 Datasets
- Billions of records

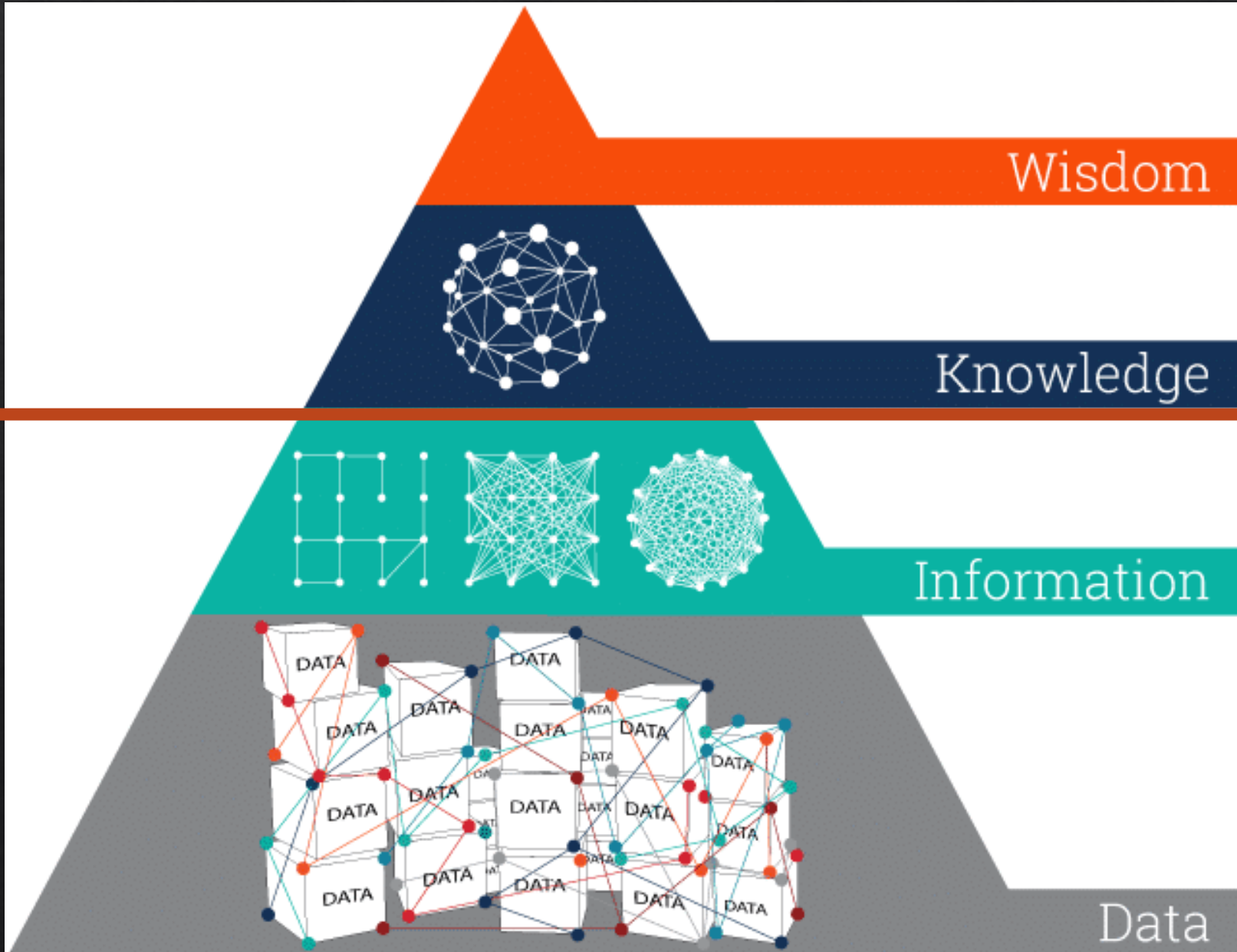
The City of Flagstaff runs on the most current ArcGIS Enterprise architecture available, allowing for dozens of online maps, dashboards, and applications, hosted internally and to the public.



# The Data, Information, Knowledge, Wisdom Pyramid

PROACTIVE

REACTIVE



Wisdom

Knowledge

Information

Data

Know “WHY”

Knowledge turned into decisions and action.

Know “HOW”

Information put in context.

Data that has been organized into a useful format.

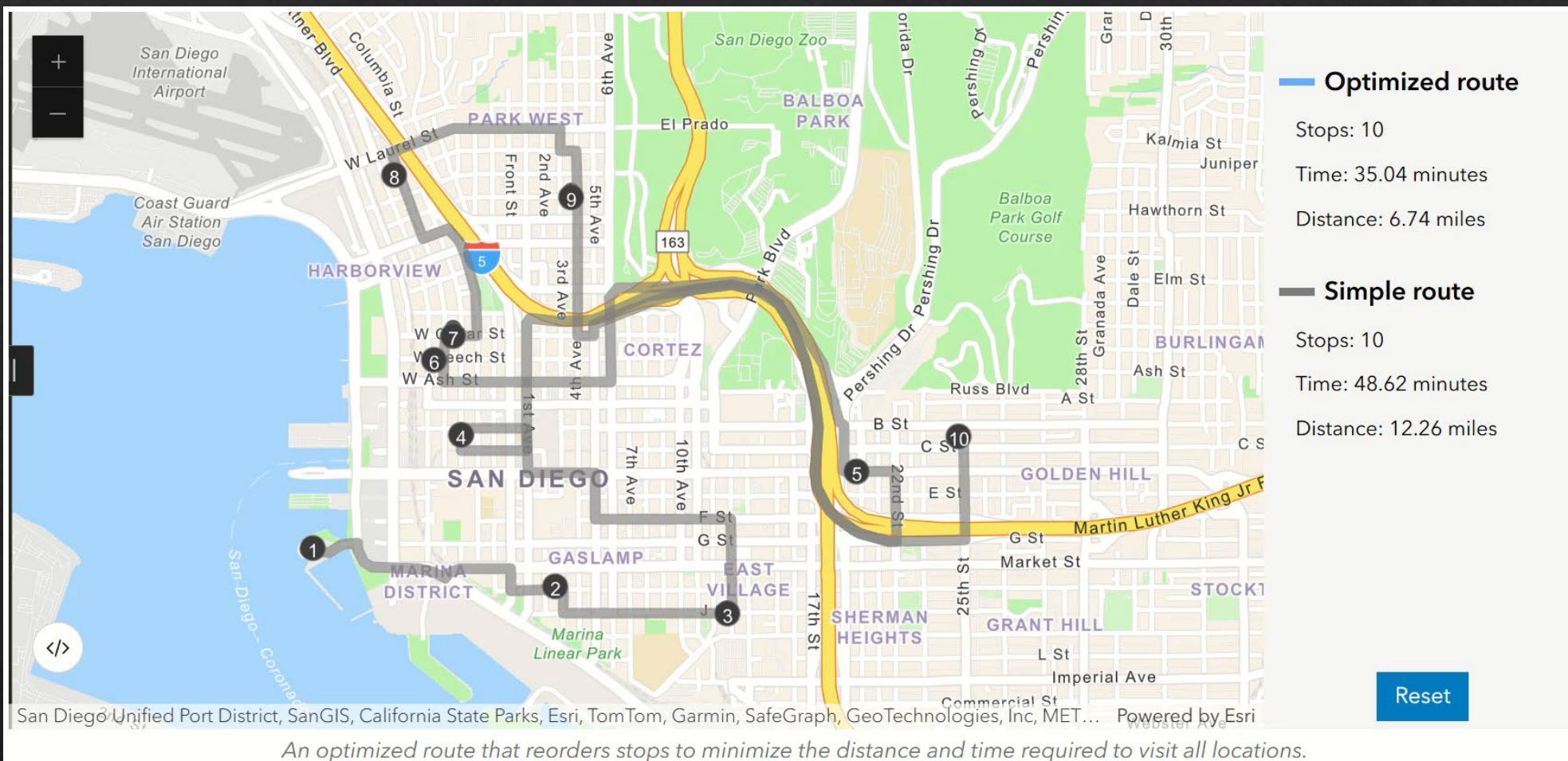
Know “WHAT”

Simple signals and other inputs



# Future Directions of GIS

## Route Optimization & Planning





# Future Directions of GIS

## Real Time Vehicle Tracking



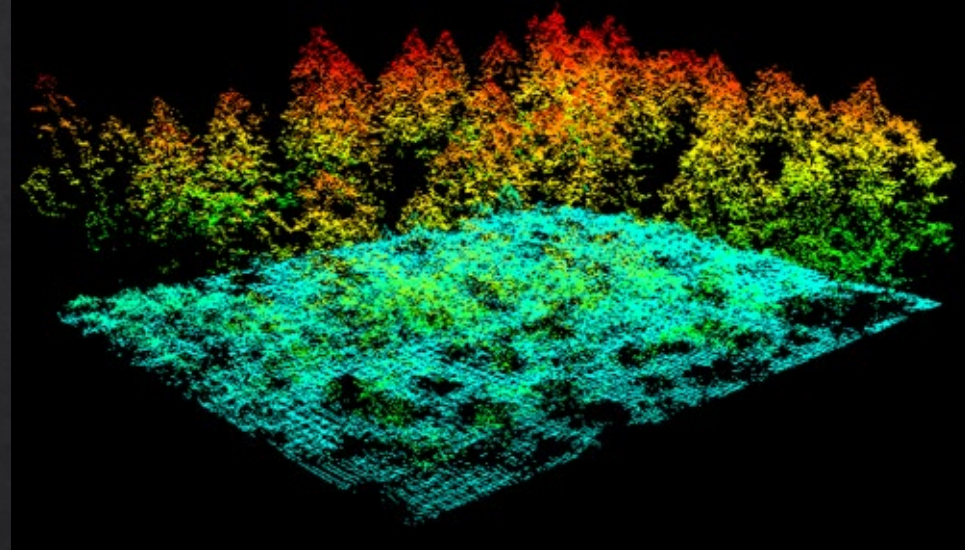


# Future Directions of GIS

## Drone Program



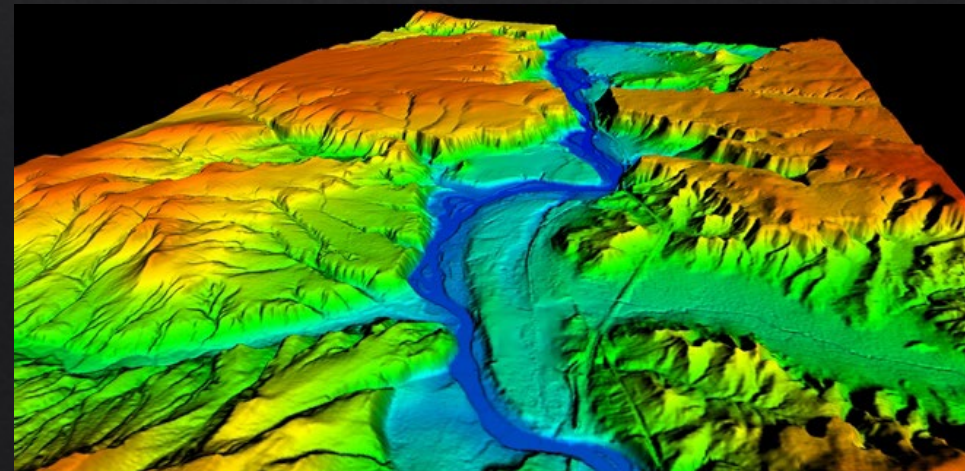
Video and Imagery



Point Clouds and 3D Models



Elevation and Contours



Digital Terrain Models

Live Demo:

<https://gis.flagstaffaz.gov>

# Questions & Answers

