



# Introduction to ArcGIS Online Spatial Analysis

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# Topics

- **Introducing ArcGIS Online Spatial Analysis**
- **ArcGIS Online Spatial Analysis Workflow**
- **Using ArcGIS Online Analysis to Solve Problems**

The background of the slide is a vibrant blue gradient. On the left side, there is a complex geometric pattern composed of overlapping triangles in shades of purple, teal, and yellow. A yellow triangle in the lower-left quadrant contains a faint, light-colored map of the state of Indiana.

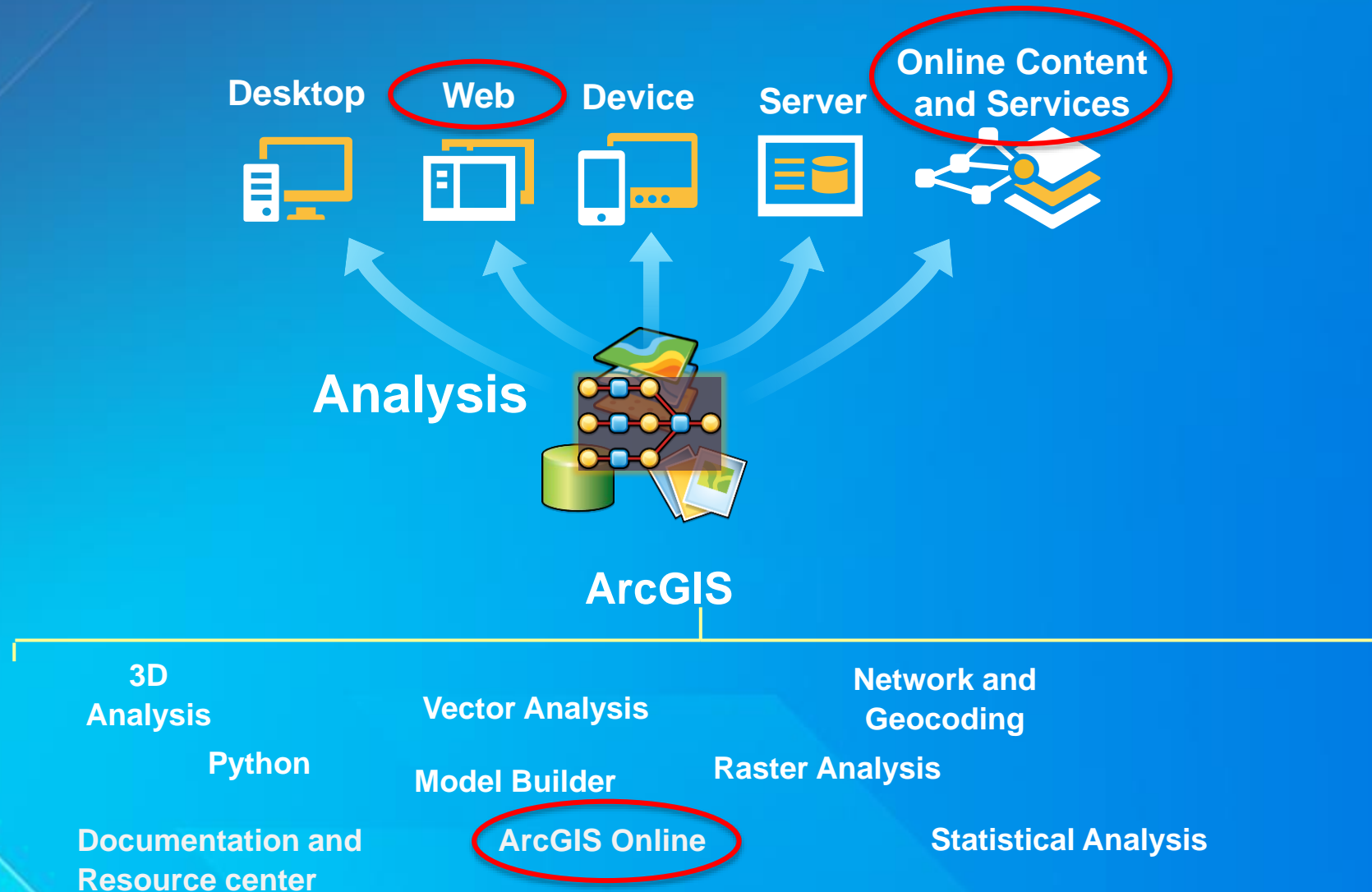
# Introduction

# ArcGIS: a complete GIS platform

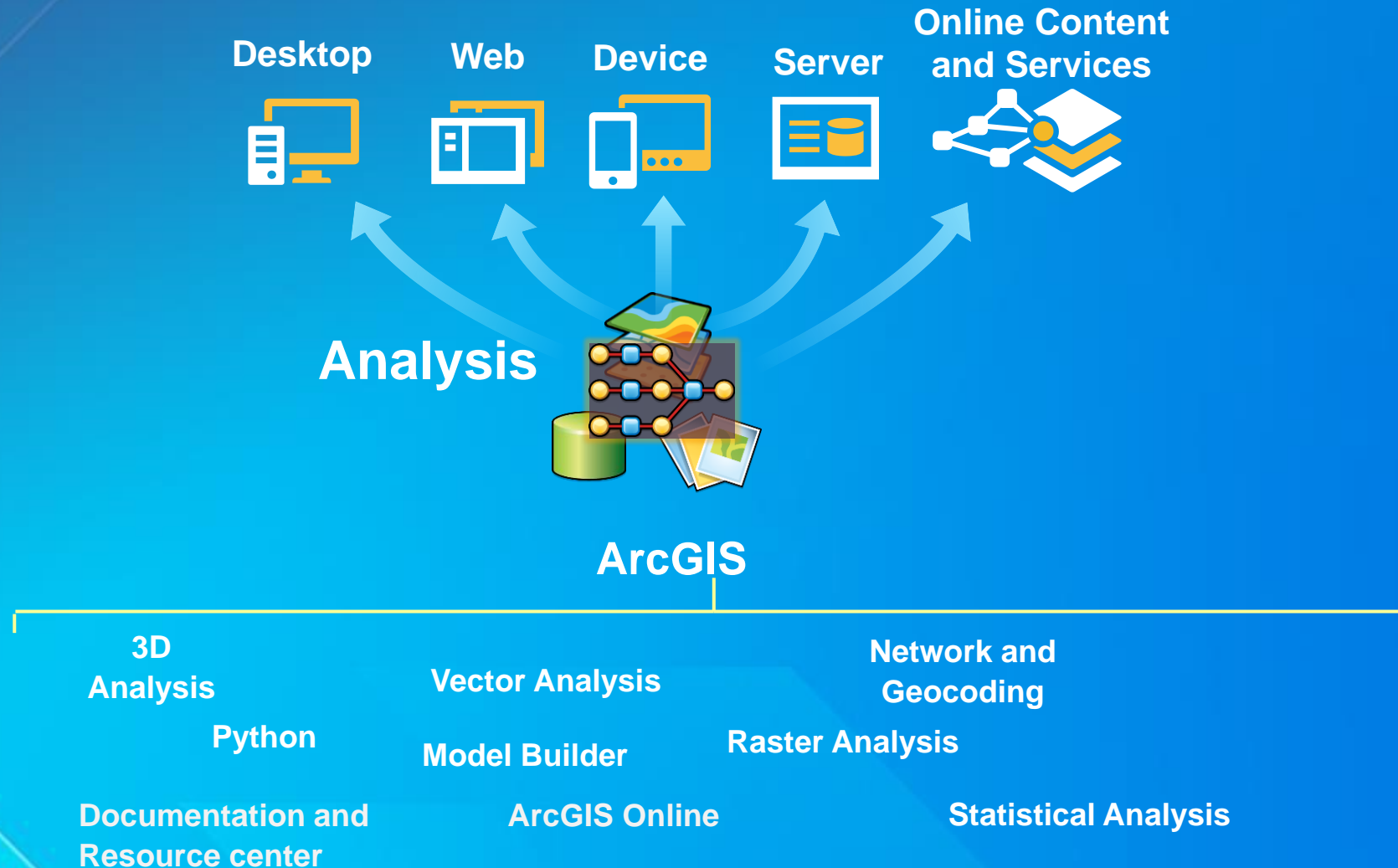
- Online
- Desktop
- Server
- Mobile
- Developer
- Solutions



# Across the ArcGIS Platform



# Across the ArcGIS Platform

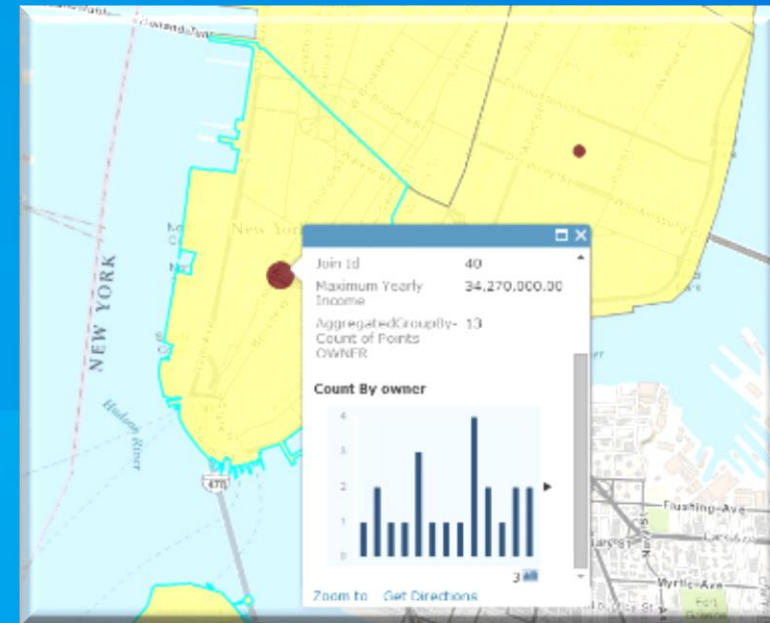




# ArcGIS Online Spatial Analysis

Gain Geographic Insight with ArcGIS Online Analysis Tools

- Integrate analytics into ArcGIS Online for your organization's workflows
- Use analysis tools quickly, easily, and intuitively to:
  - Discover relationships, patterns, and trends in data
  - Answer questions in a meaningful way



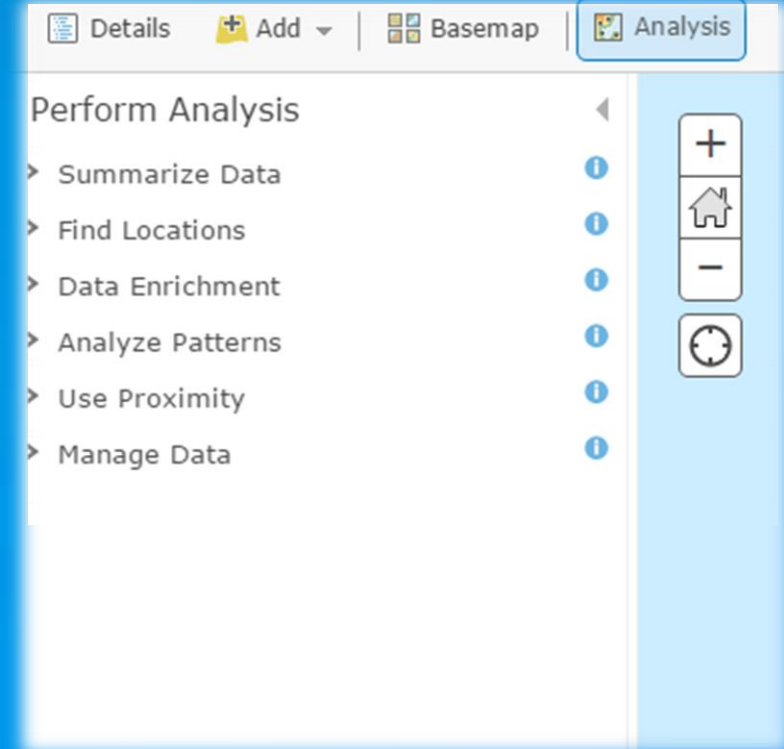
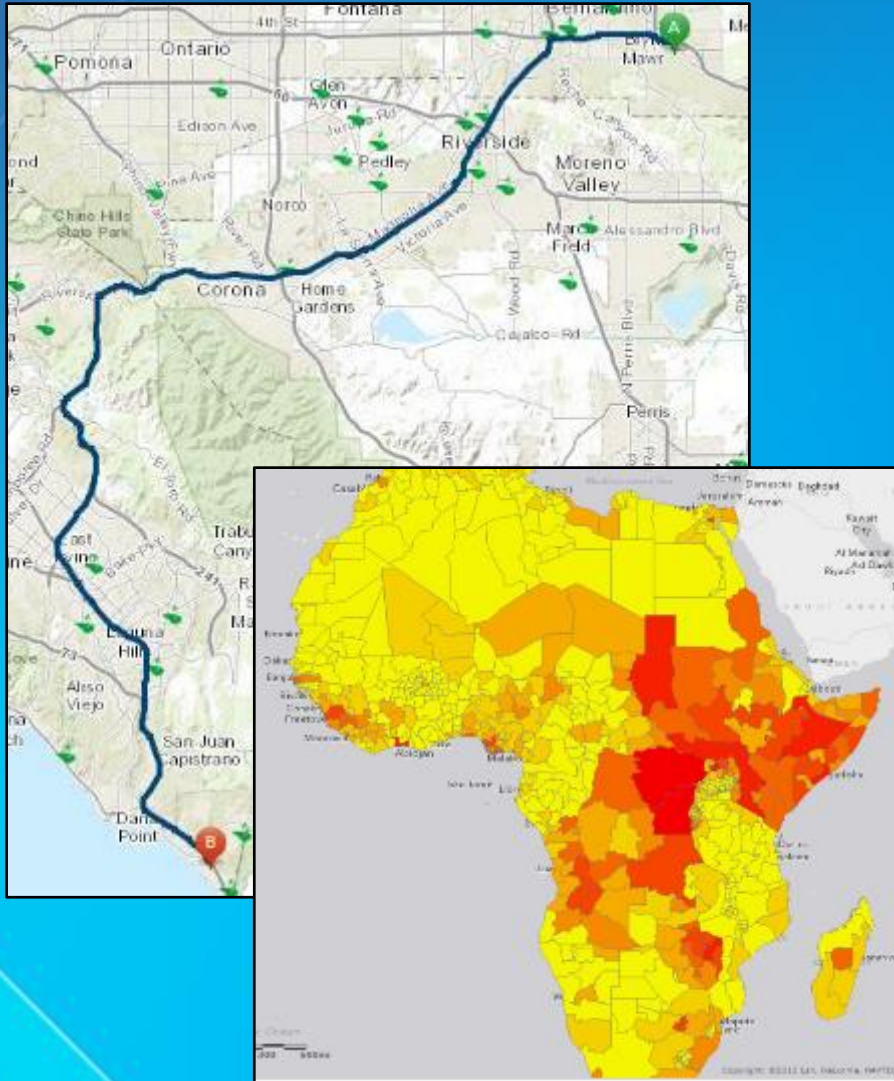
# What do you need?

- Be a member of an ArcGIS Online Organization
- Possess the custom roles to:
  - Create items
  - Publish hosted features
  - Spatial Analysis
    - Network Analysis
    - Geoenrichment
- Credits



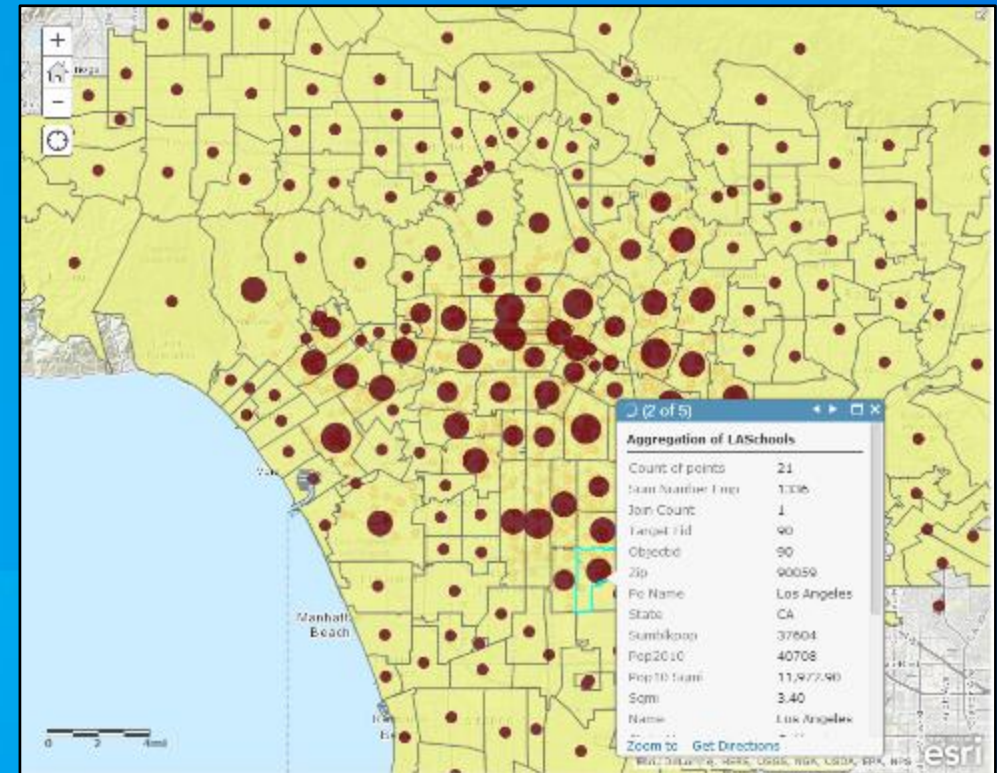
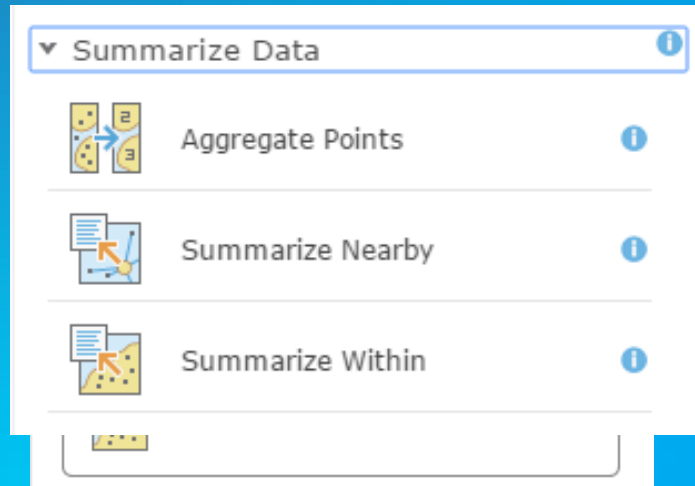


# Spatial analysis tools



# Summarize Data

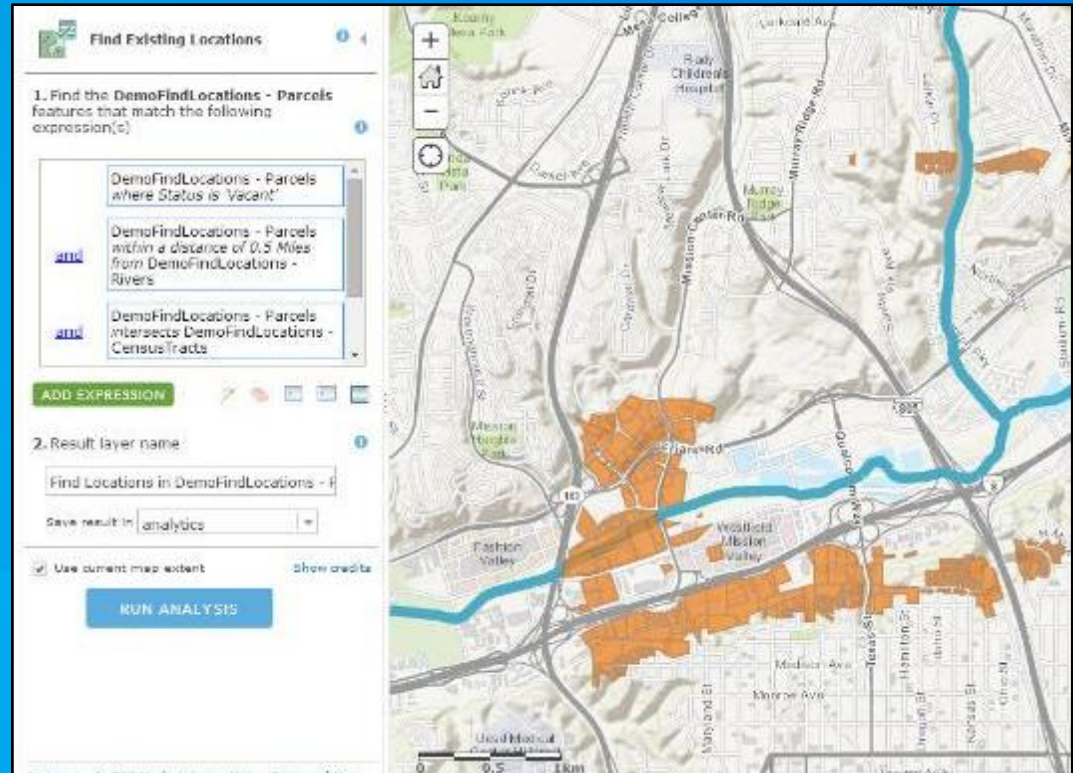
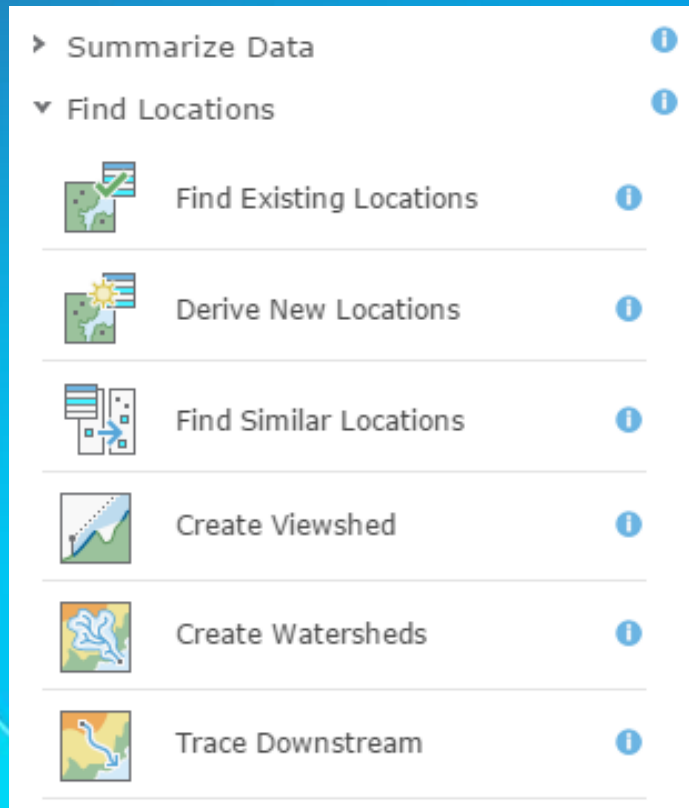
- Calculate summary statistics for features and attributes



Number of schools by zip code

# Find Locations

- Find features based on specified criteria

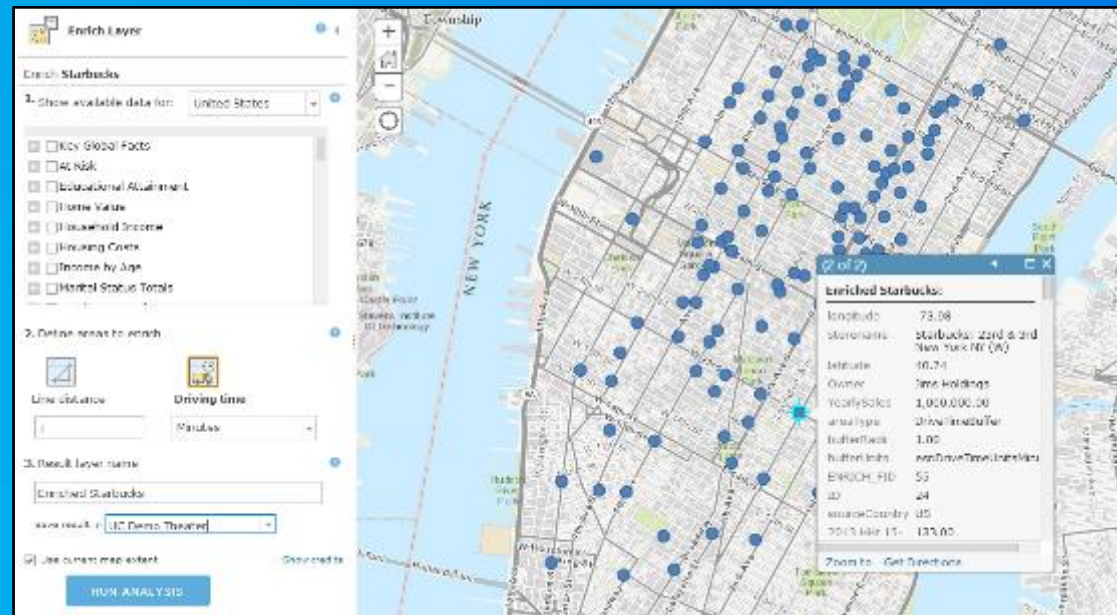
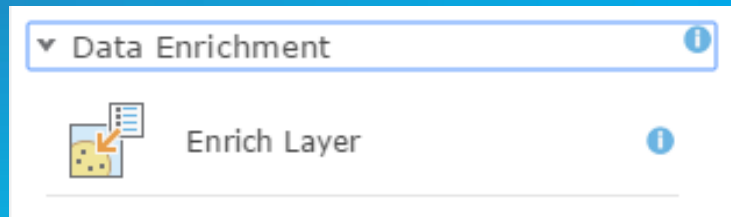


*Vacant parcels, 0.5 miles from river, inside census tracts*



# Data Enrichment

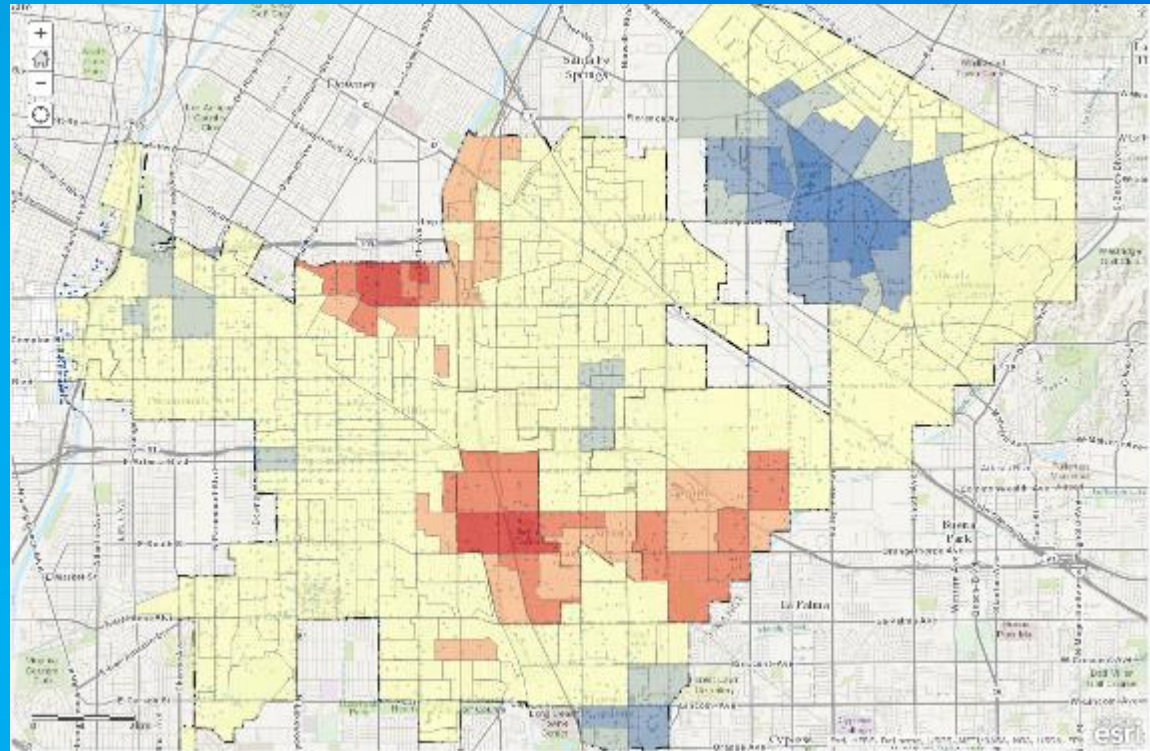
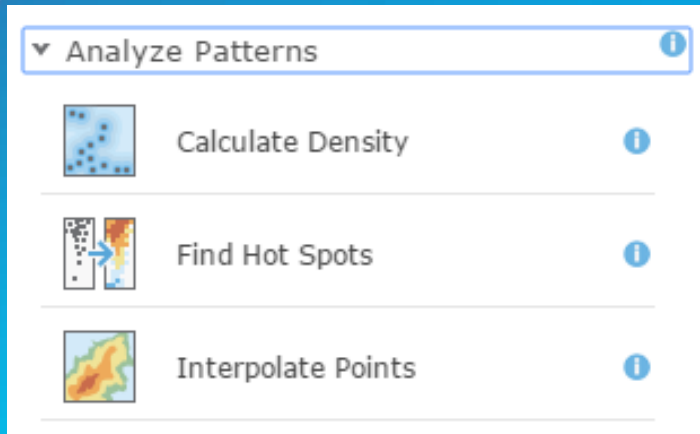
- Explore the character of areas
- Add detailed demographic data and statistics to your analysis



*Who lives in the neighborhood surrounding each starbucks store?*

# Analyze Patterns

- Identify, quantify, and visualize spatial patterns in your data

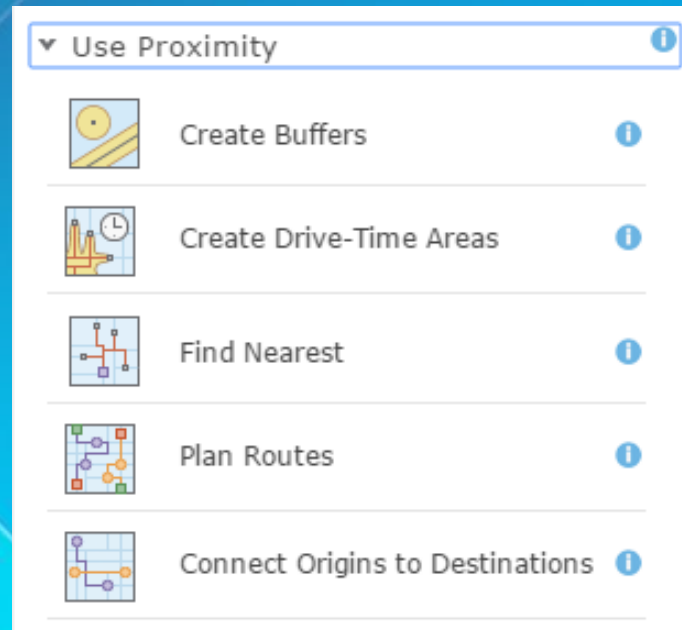


*Property crime rate in LA county*

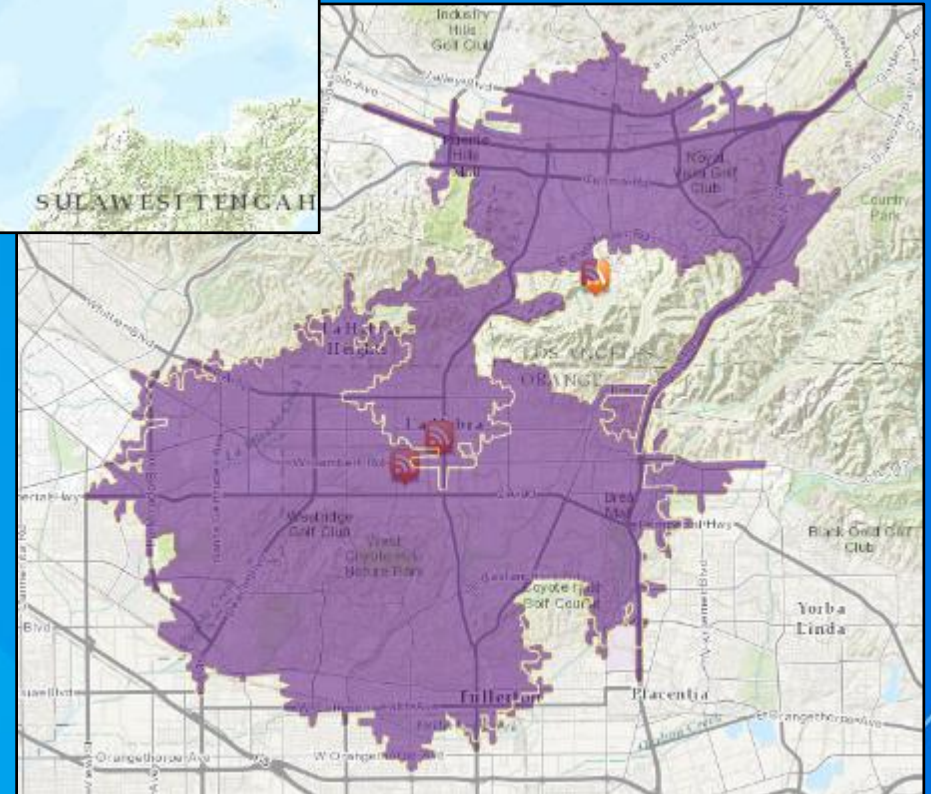


# Use Proximity

- "What is near what?"



*Earthquake events  
Create buffers*

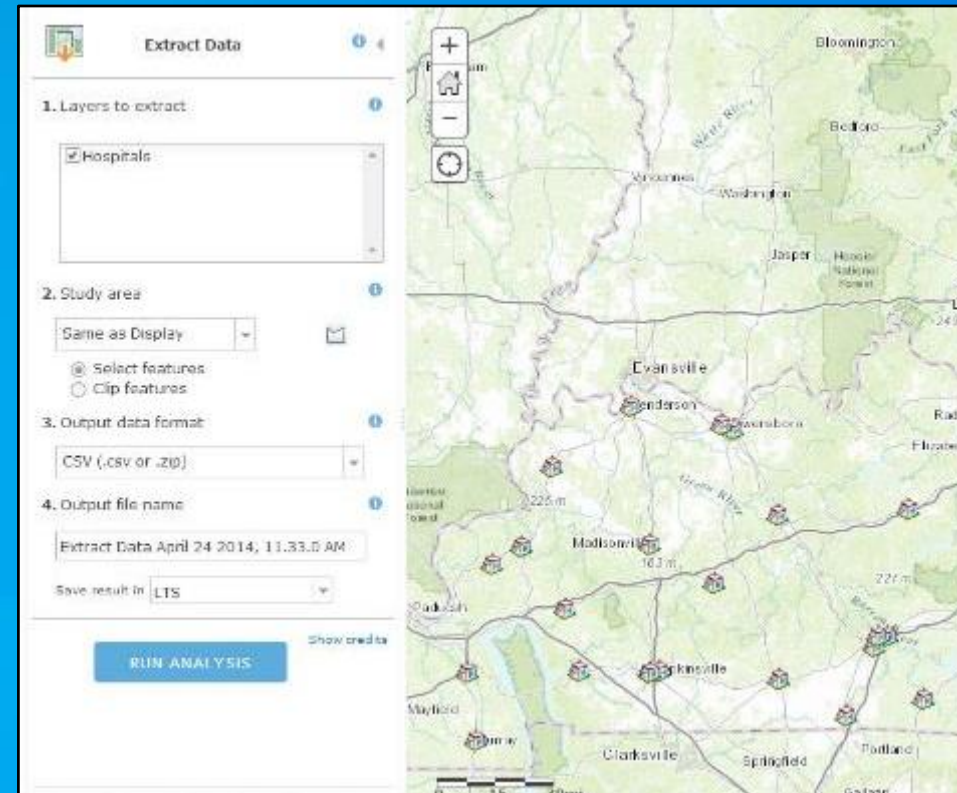
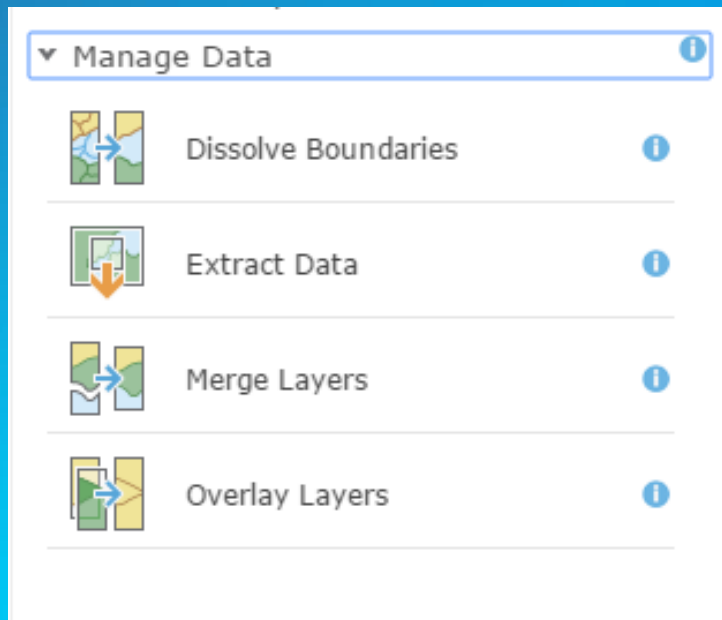


*Drive-time areas*



# Manage Data

- Manage geographic data, and combine prior to analysis

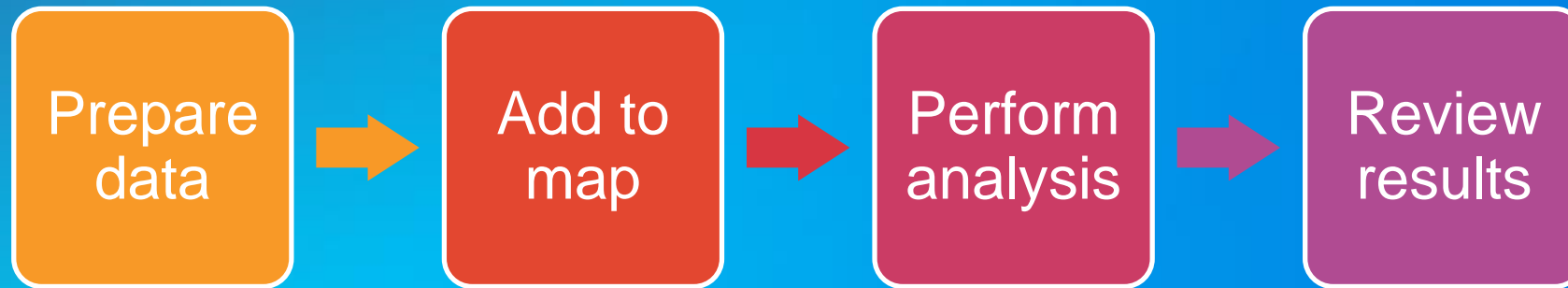


*Ohio hospitals—extract data*



# ArcGIS Online Analysis Workflow

# ArcGIS Online Analysis Workflow



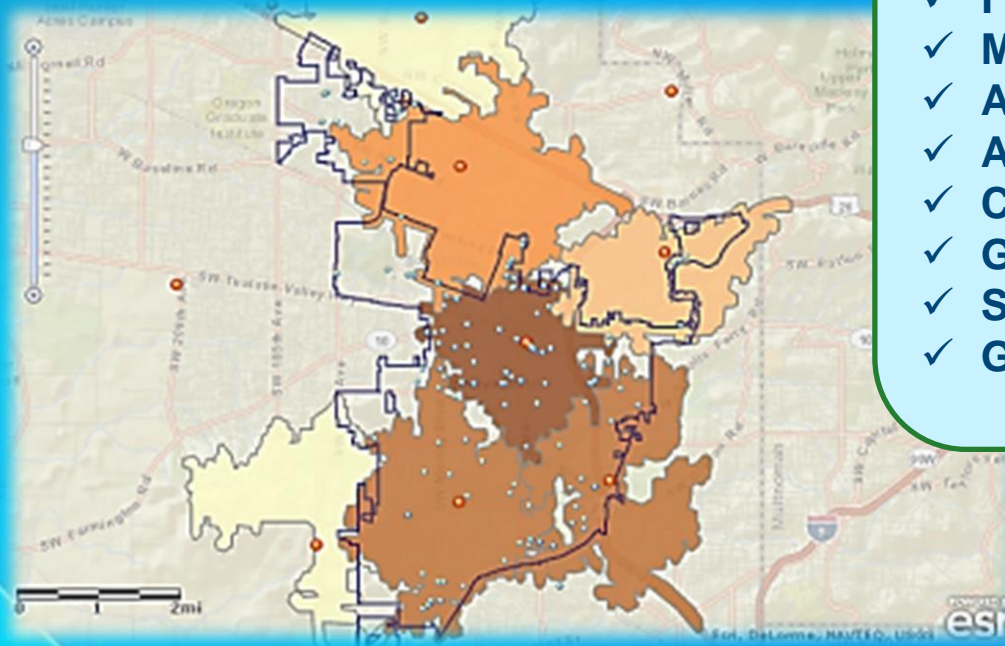
# Assemble data

Prepare  
data

- Evaluate analysis needs
- Search local and online resources
- Create, publish, and filter data

## Supported data types

- ✓ Feature service
- ✓ Map service with feature layers
- ✓ ArcGIS Online Map Notes
- ✓ ArcGIS Online Route layers
- ✓ Comma-separated values (CSV) file (.csv)
- ✓ GPS exchange format file (.gpx)
- ✓ Shapefile (.zip)
- ✓ GeoRSS web feed

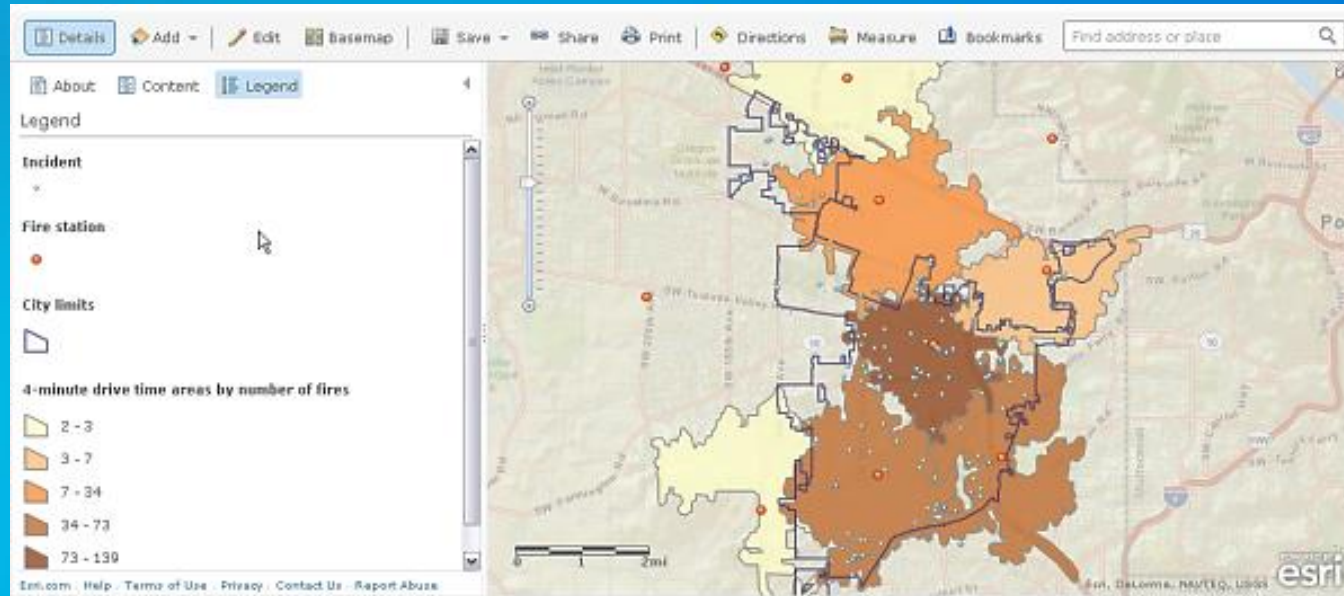




# Update map

- Bring data into ArcGIS Online map viewer
- Optionally
  - Set symbology, map display extent, and bookmarks
  - Save map

Add to  
map



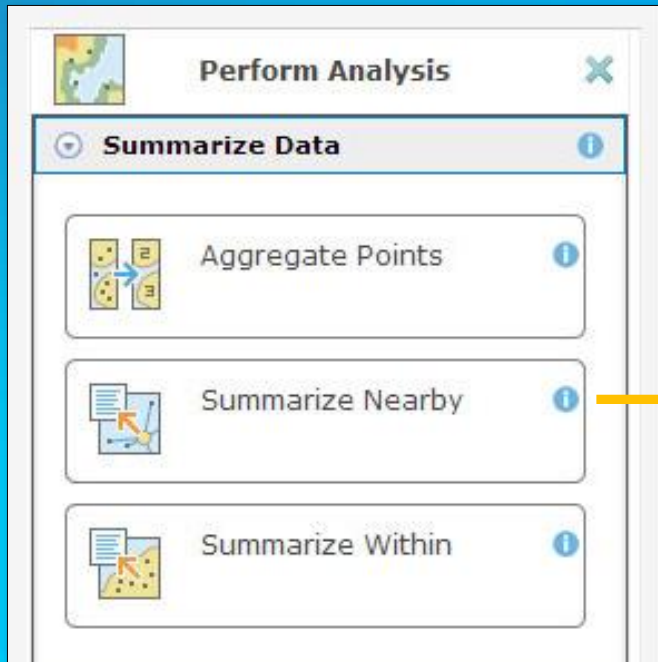
**NEW**

Living Atlas Analysis Layer don't need to be added to map

# Analyze data

Perform  
analysis

- Determine appropriate tool(s)



### Summarize Nearby

Finds features that are within a specified distance of features in the analysis layer. Distance can be measured as a straight-line distance or a drive-time distance (for example, within 10 minutes). Statistics are then calculated for the nearby features. For example:

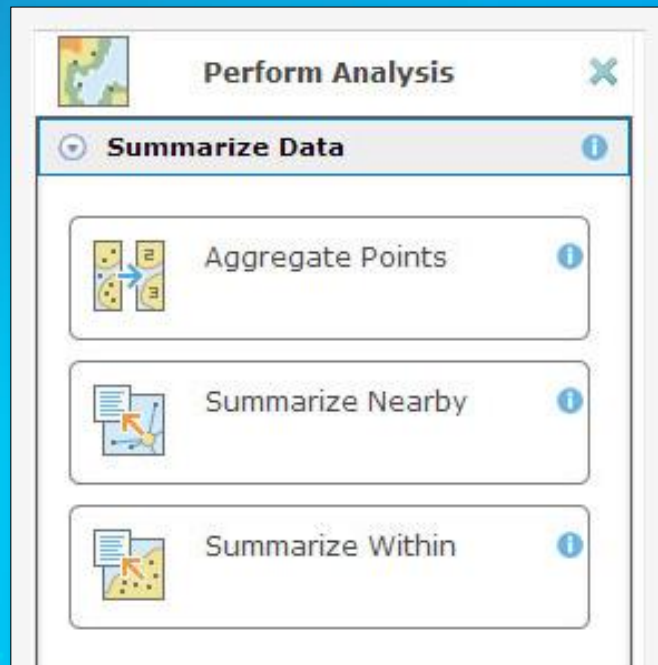
- Calculate the total population within five minutes of a proposed new store location.
- Calculate the number of freeway access ramps within five minutes of a proposed new store location to use as a measure of store accessibility.



# Analyze data

- Determine appropriate tool(s)
- Apply parameters

Perform  
analysis



**Summarize Nearby**

Find what is nearby Fire station

1. Choose layer to summarize

Incident

2. Find nearest features using a

Line distance   Driving distance   Driving time

4   Minutes

To output multiple areas for each point, type sizes separated by spaces (2 3 5 8).

☐ Use typical traffic conditions for

Monday   12:00 PM

See availability.

3. Add statistics from Incident

☒ Count of points

Field   Statistic

4. Choose field to group by (optional)

Field

5. Result layer name

4-minute drive time areas by numb

Save result in

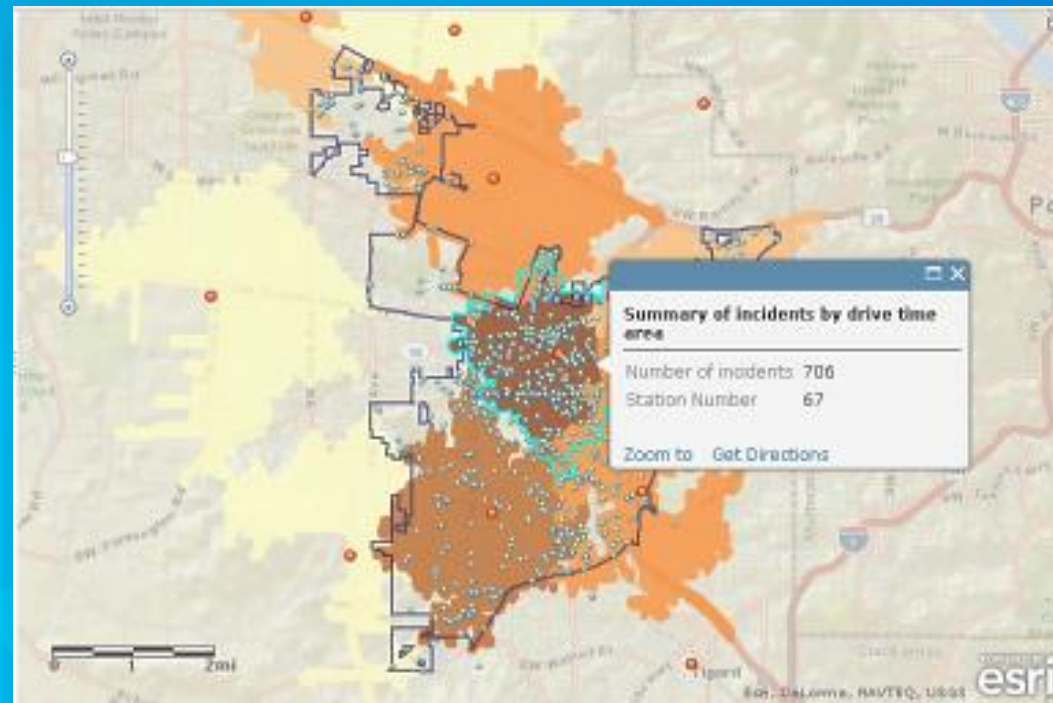
☒ Use current map extent   Show credits

Run Analysis

# Use and review results

Review  
results

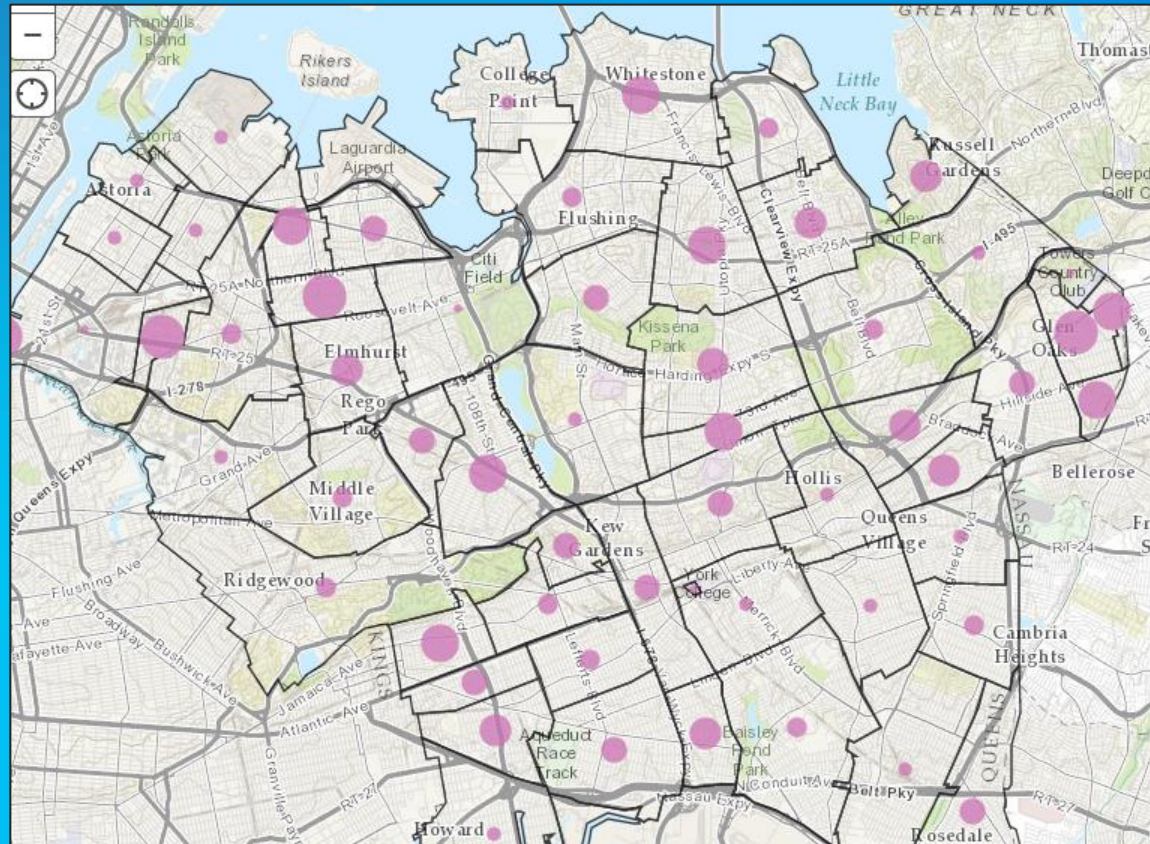
- Added to web map
- Published as hosted feature services within the organization
- Share the results



# Using ArcGIS Online Analysis to Solve Problems

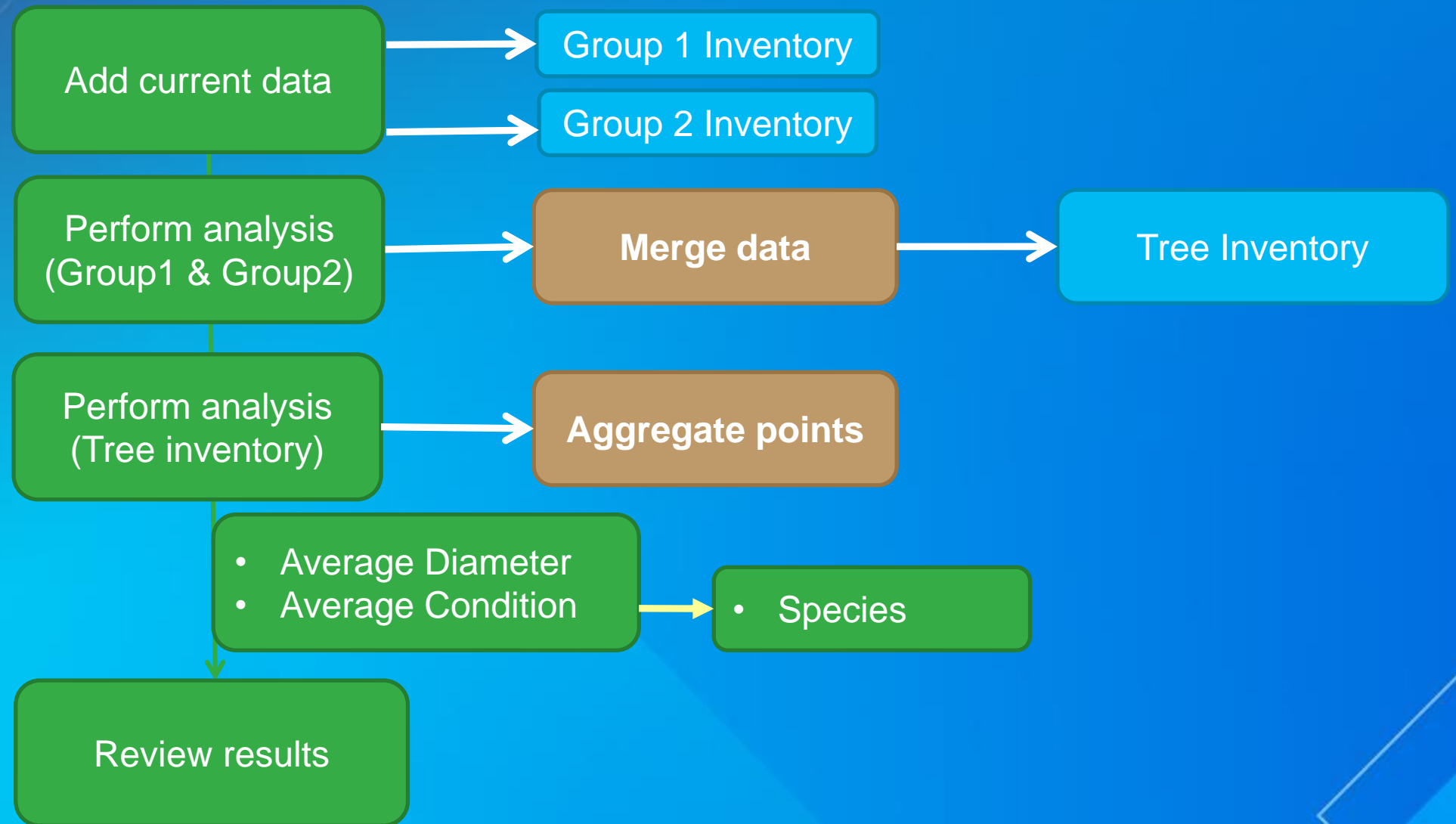
# Scenario

Volunteer Tree Inventory:  
Is replanting required in any area?



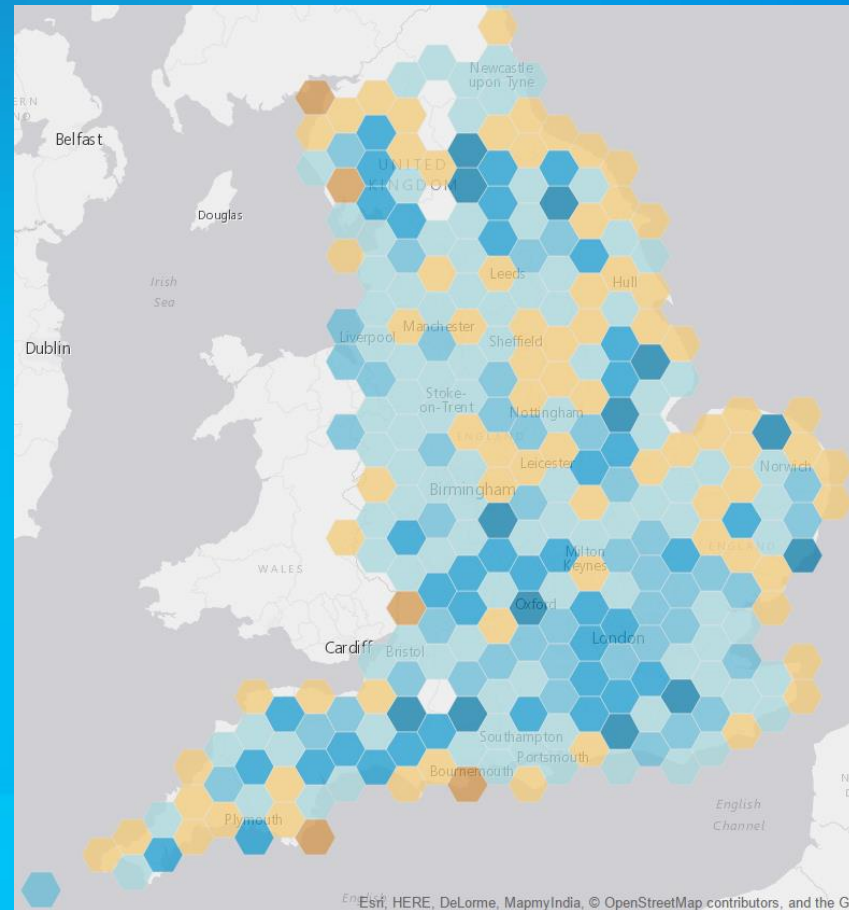


## Demonstration review



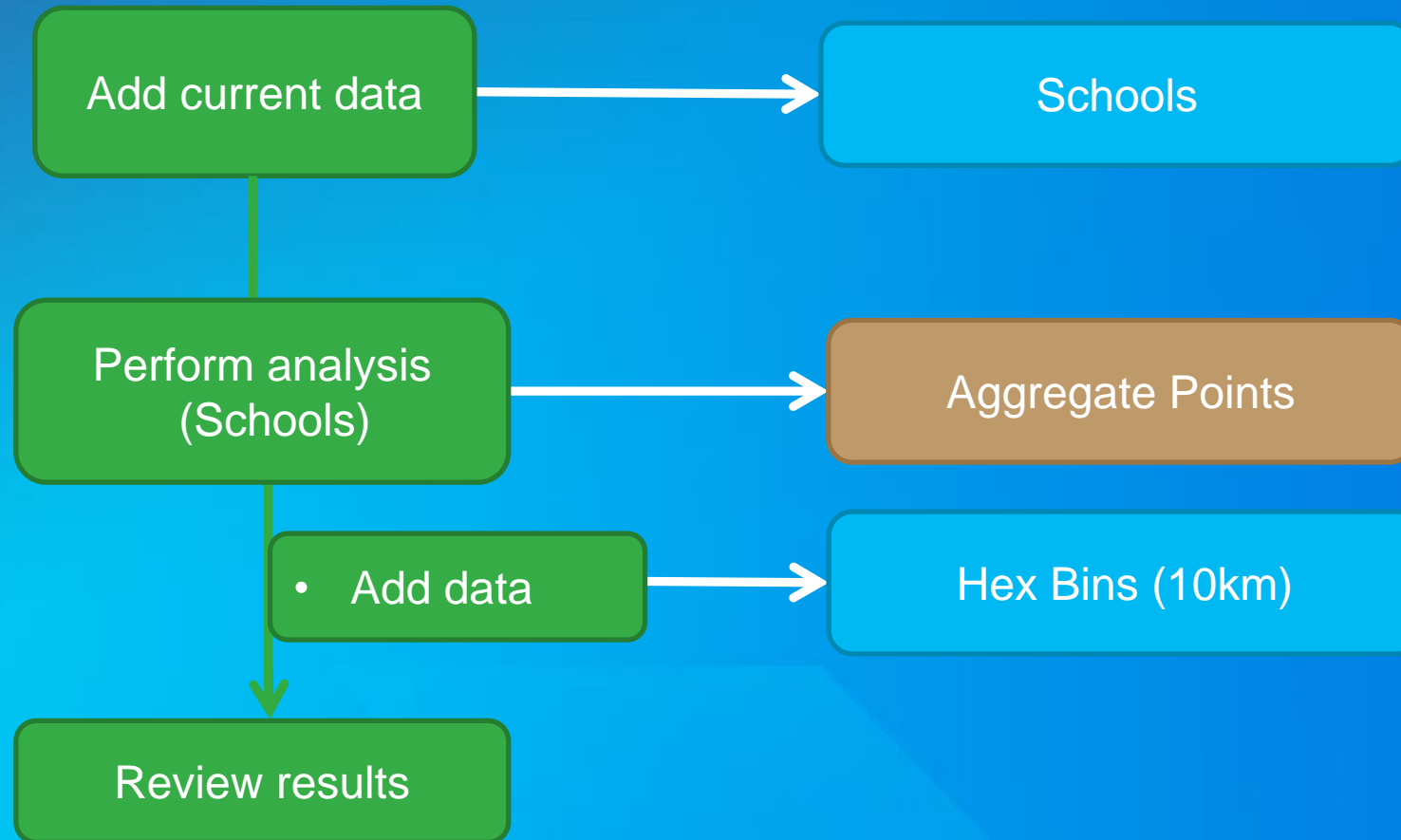
# Scenario

Which neighborhoods have under-performing schools?



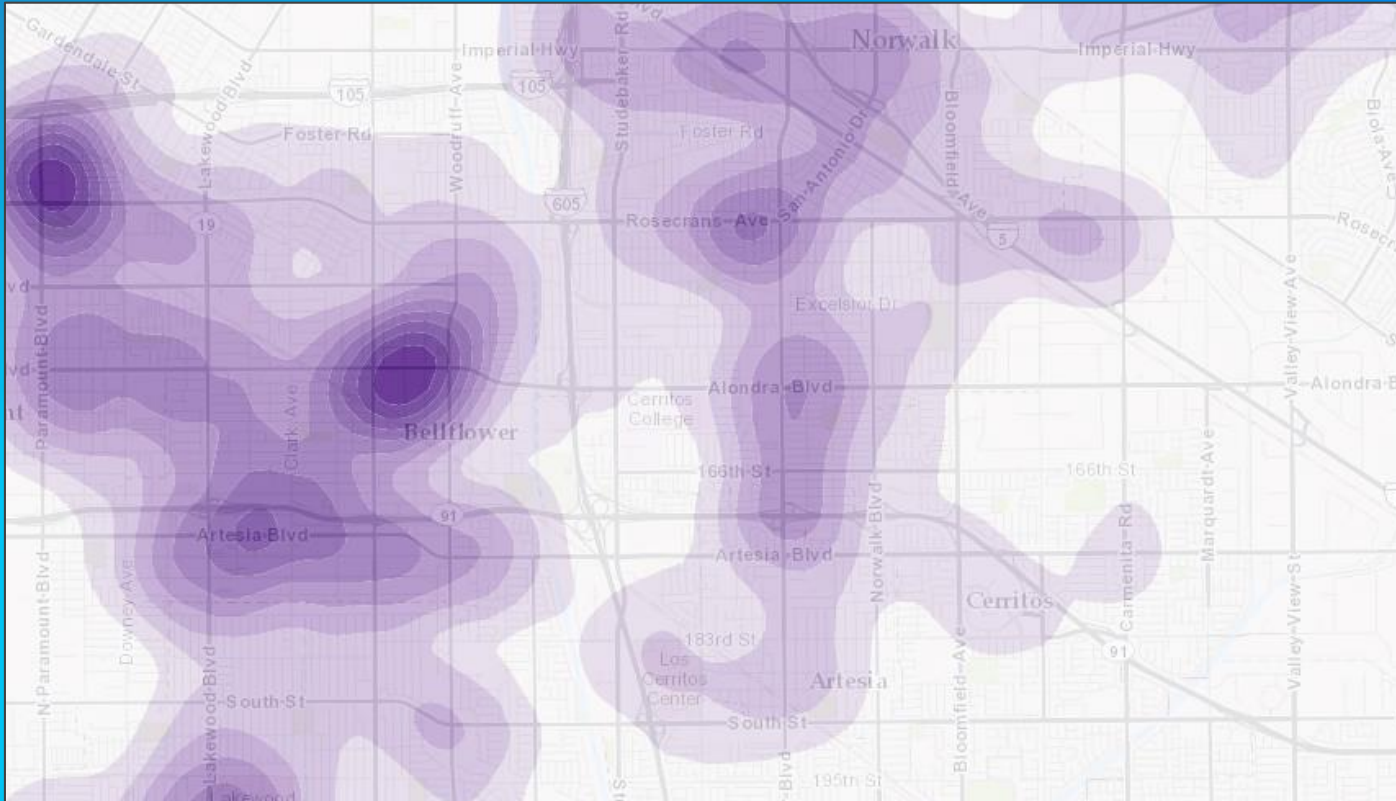


## Demonstration review

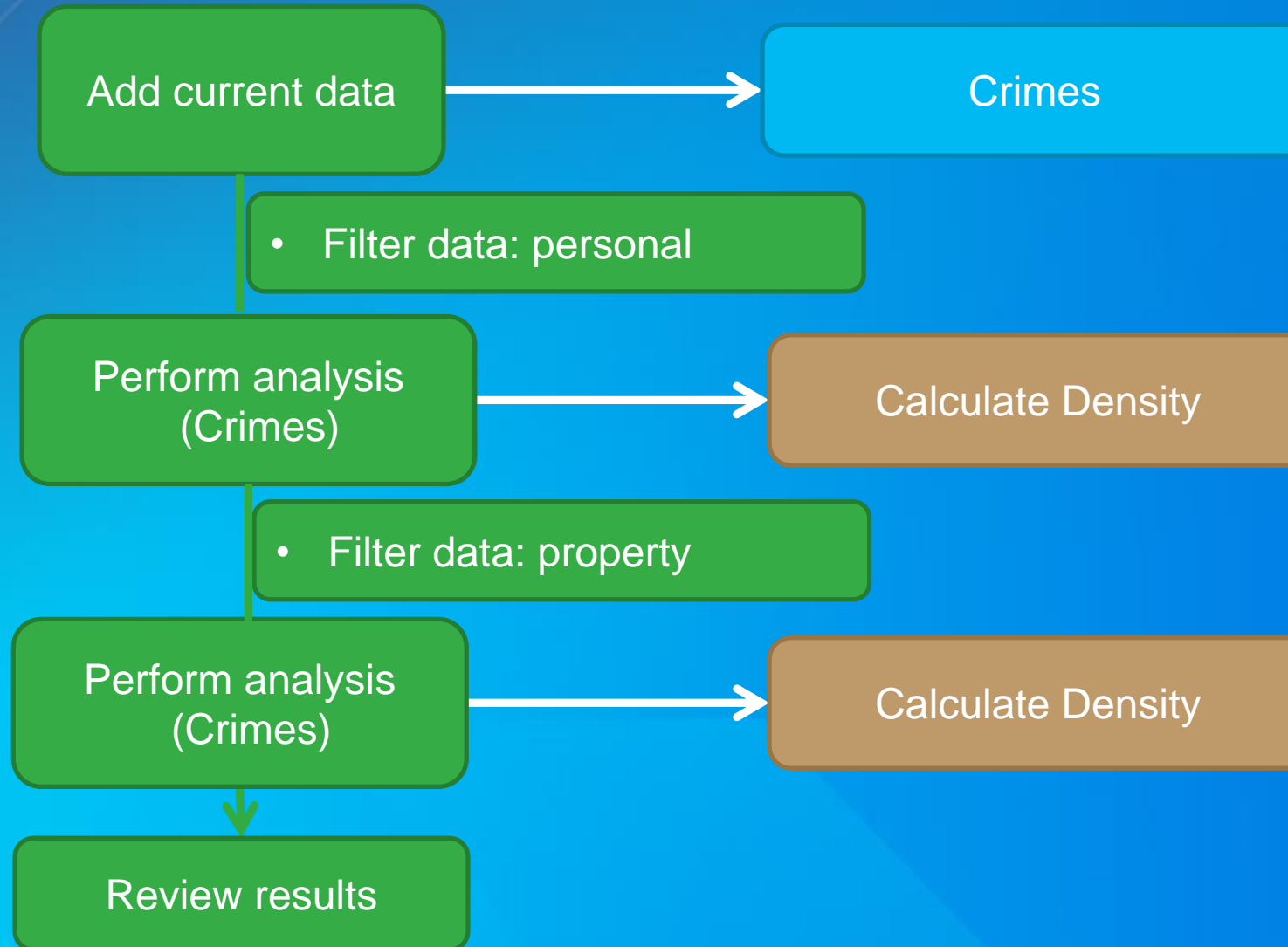


# Scenario

- Is the pattern of personal and property crimes much the same?

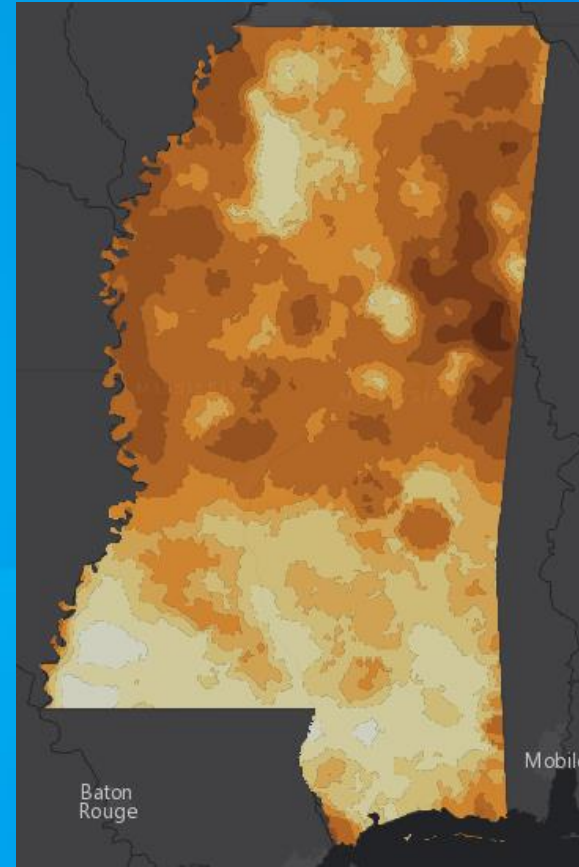
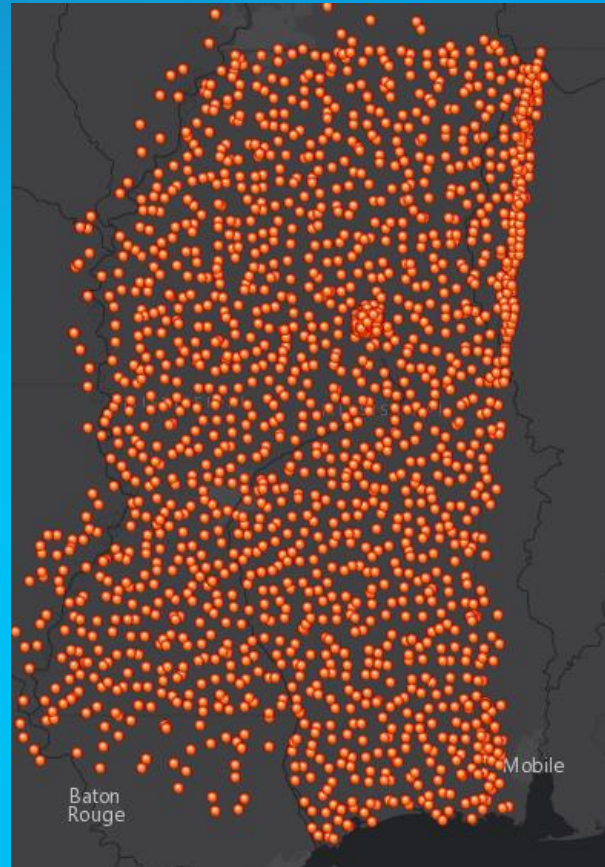


## Demonstration review

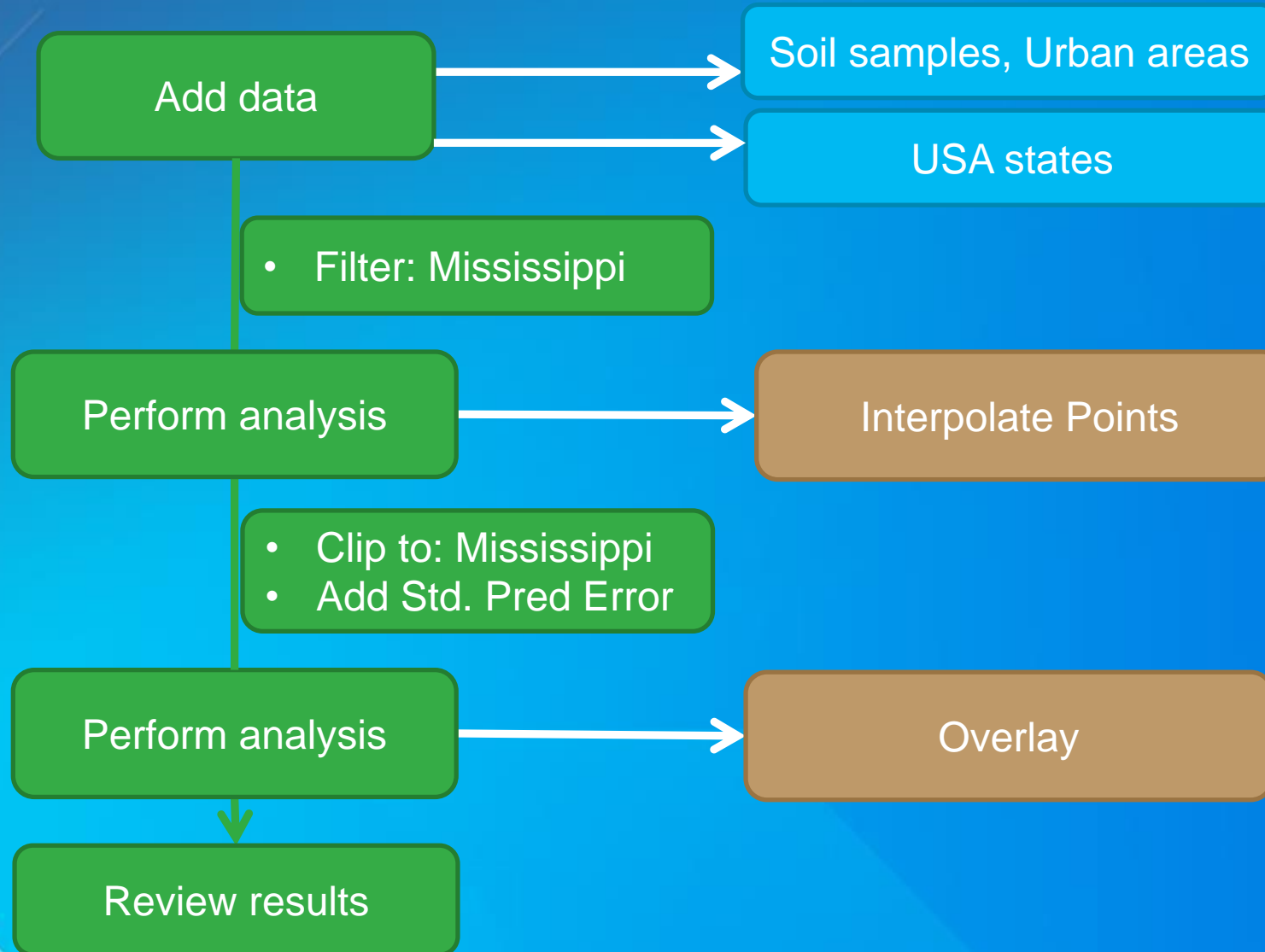


## Scenario

- Is lead in soils a problem in urban areas across the state?



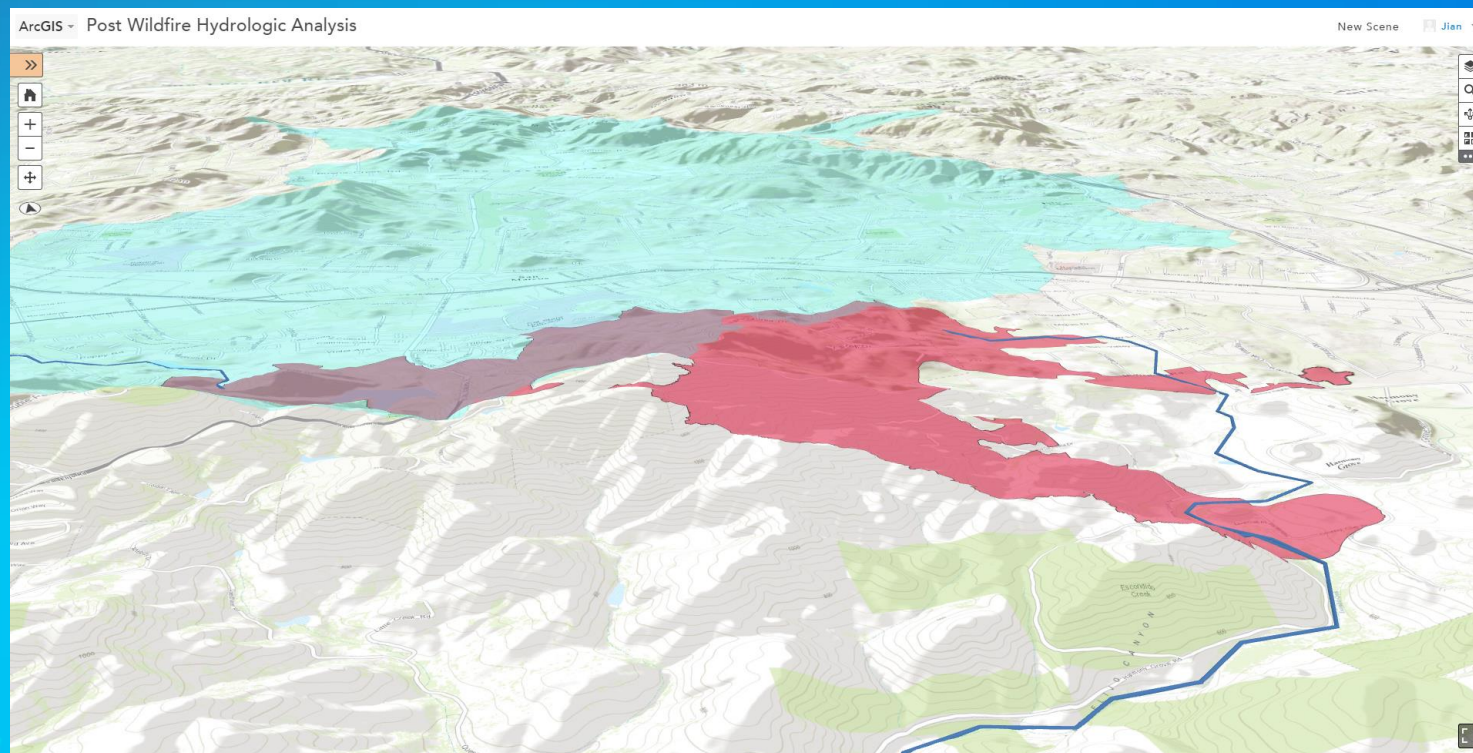
## Demonstration review





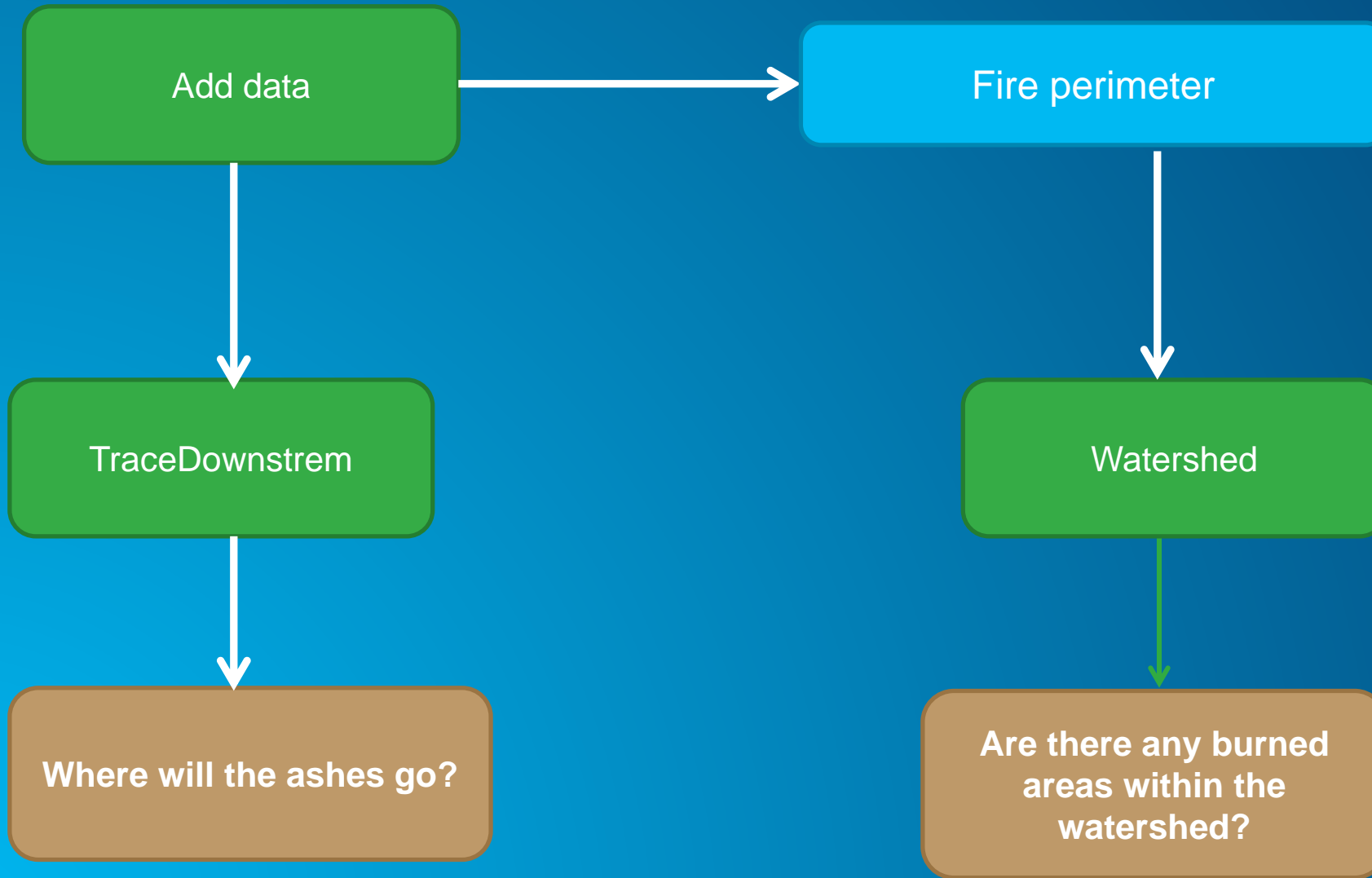
# Scenario

## Post wildfire hydrologic analysis

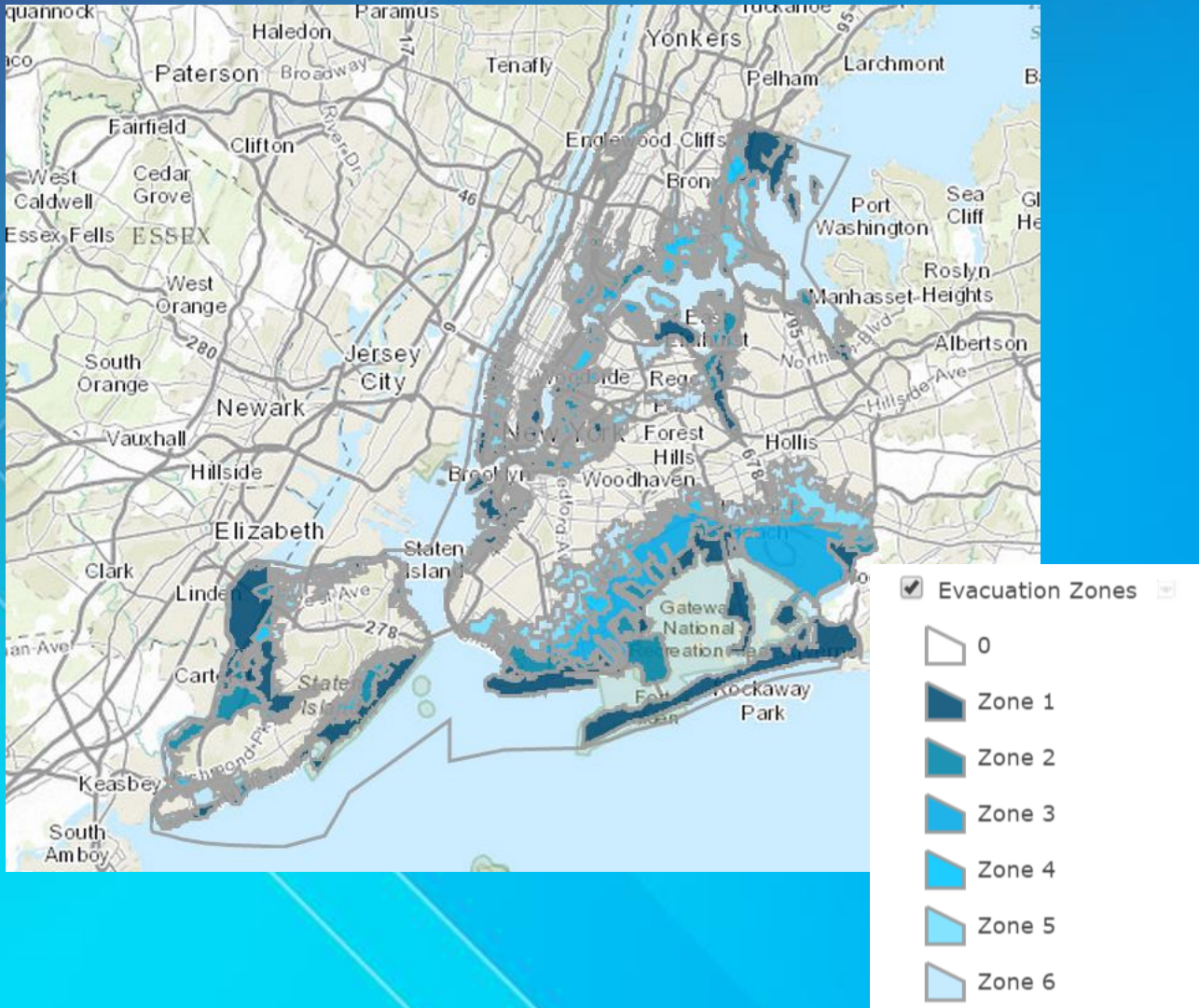




## Demonstration review



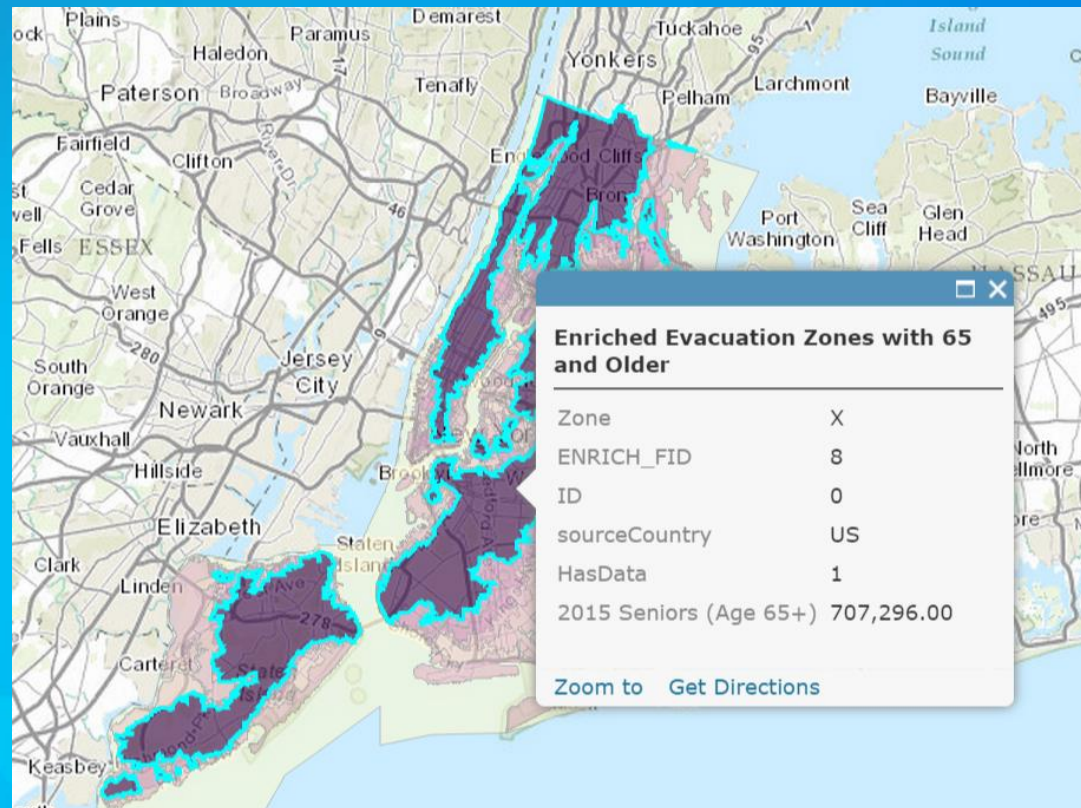
# Scenario



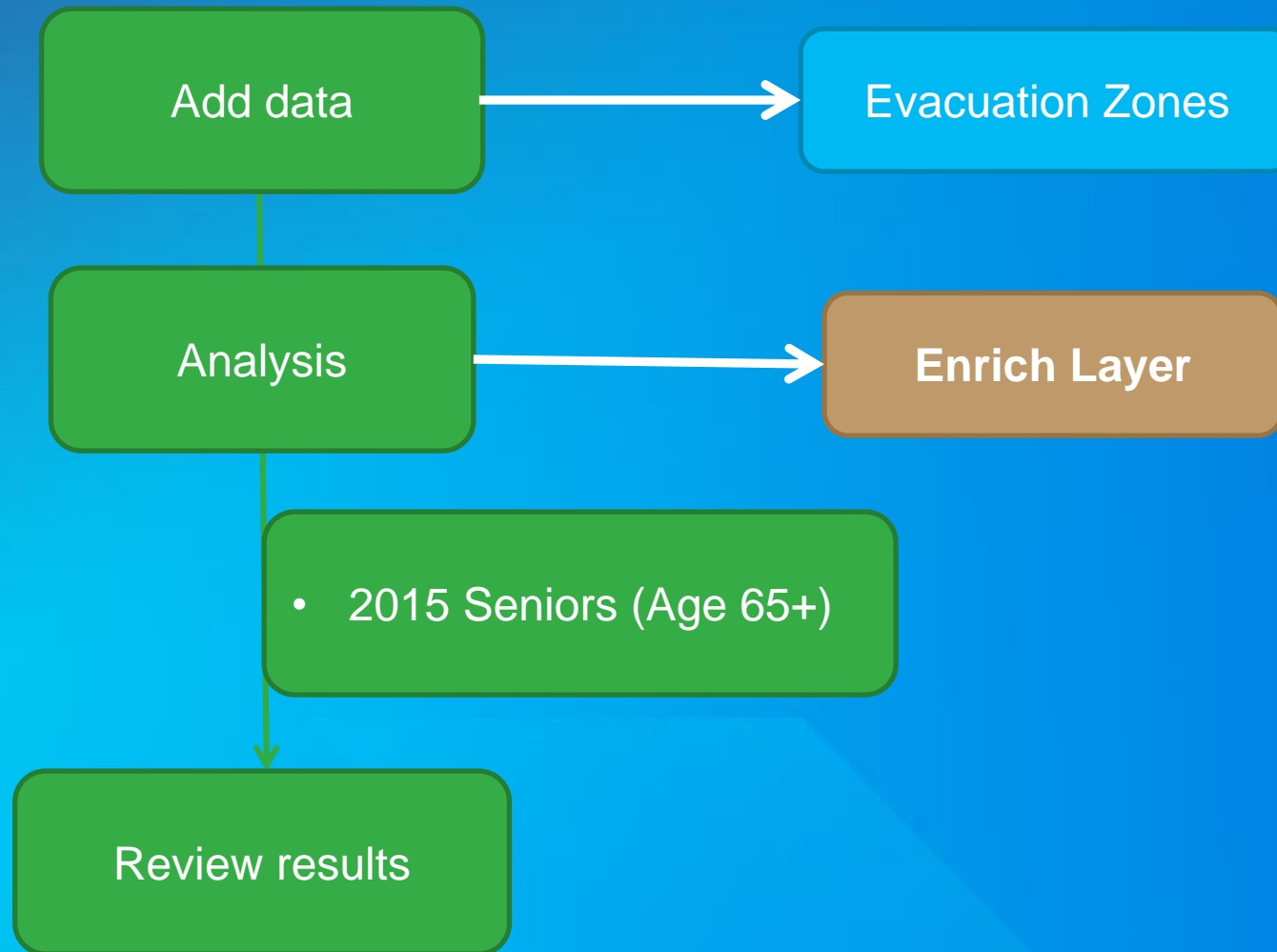
- Hurricane evacuation zones are areas of the NY city that may be inundated by storm surge or isolated by storm surge waters. There are six zones, ranked by the risk of storm surge impact, with Zone 1 being the most likely to flood. In the event of a hurricane or tropical storm, residents in these zones may be ordered to evacuate.

# Scenario

What is the senior population in each hurricane evacuation zone?



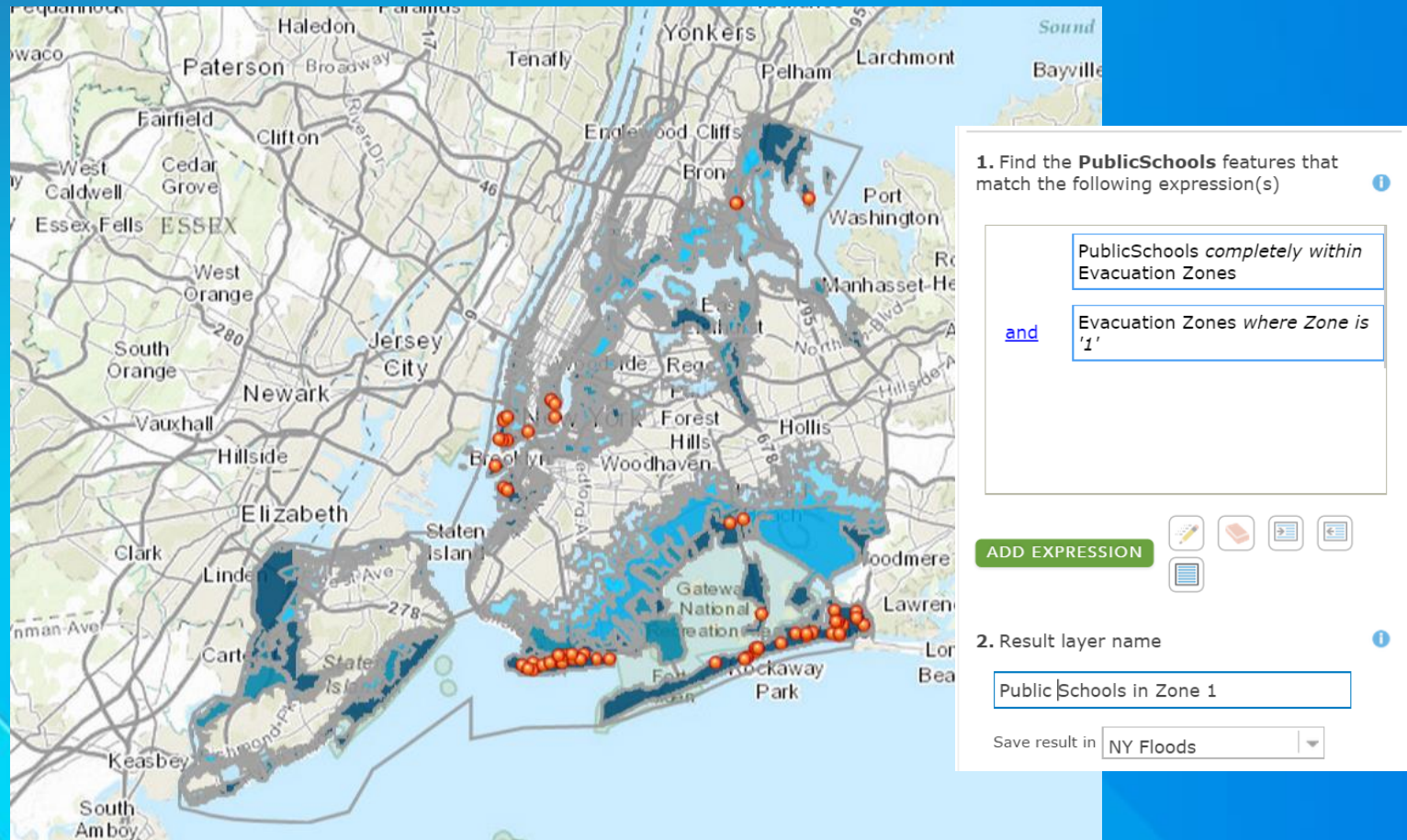
## Demonstration review



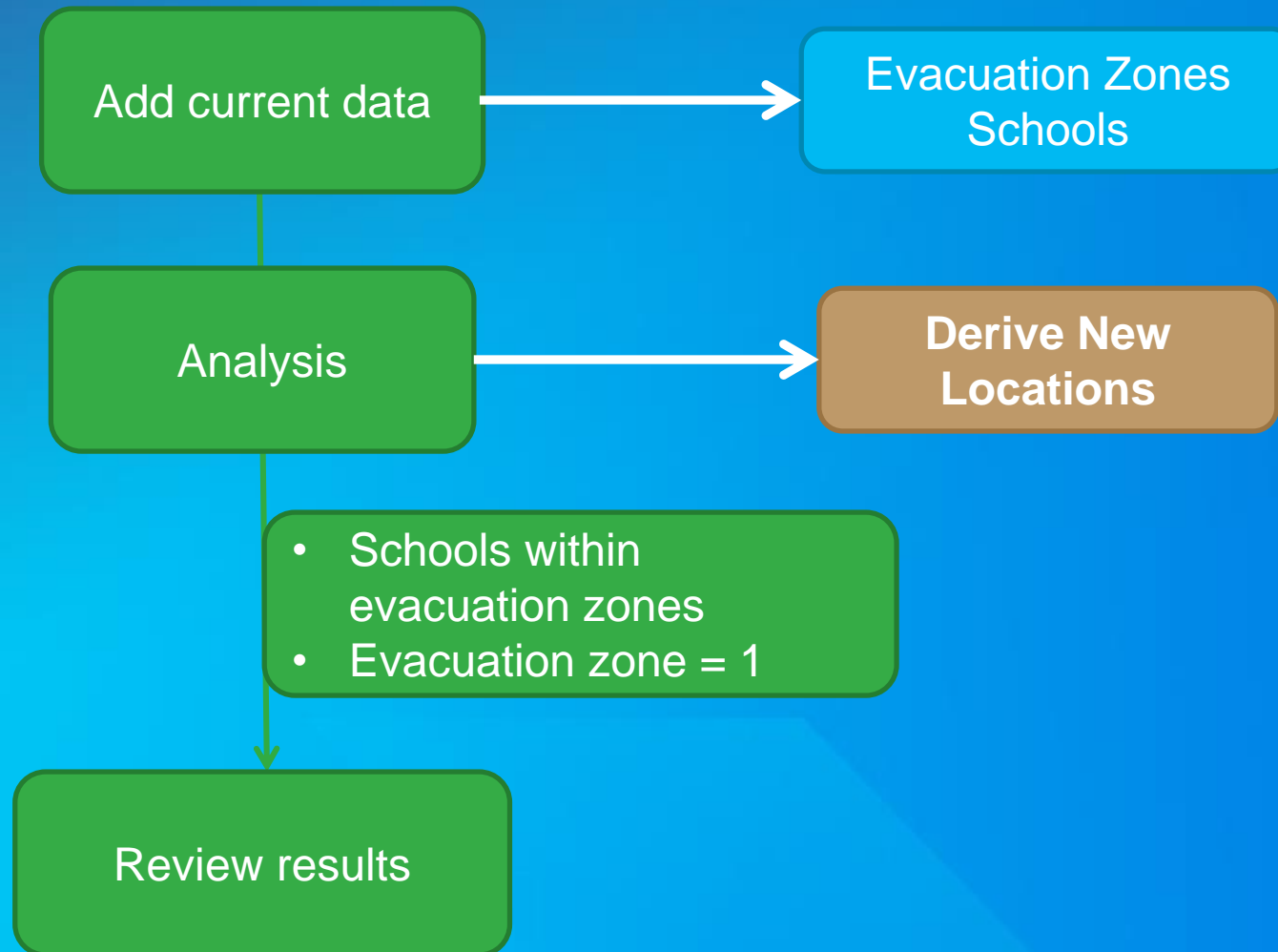


# Scenario

- Schools that are located in evacuation zone 1

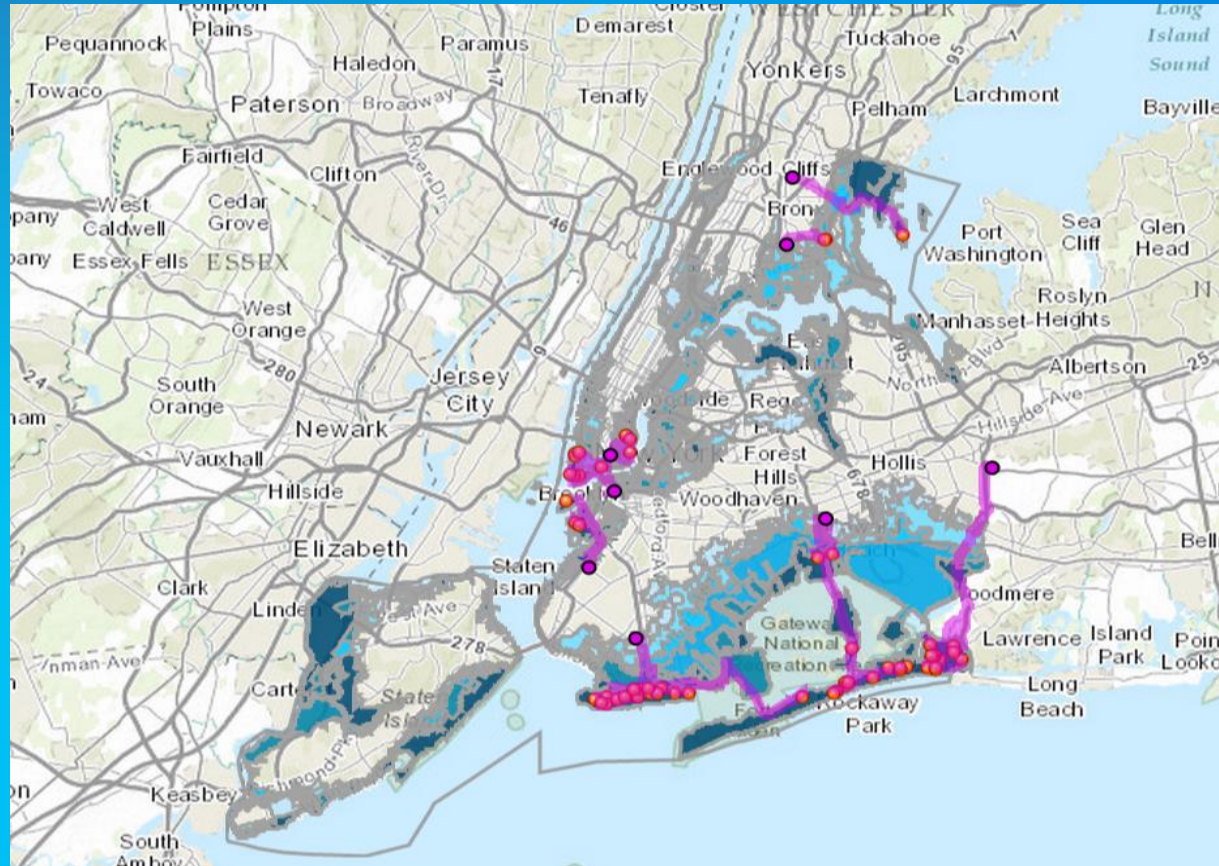


## Demonstration review



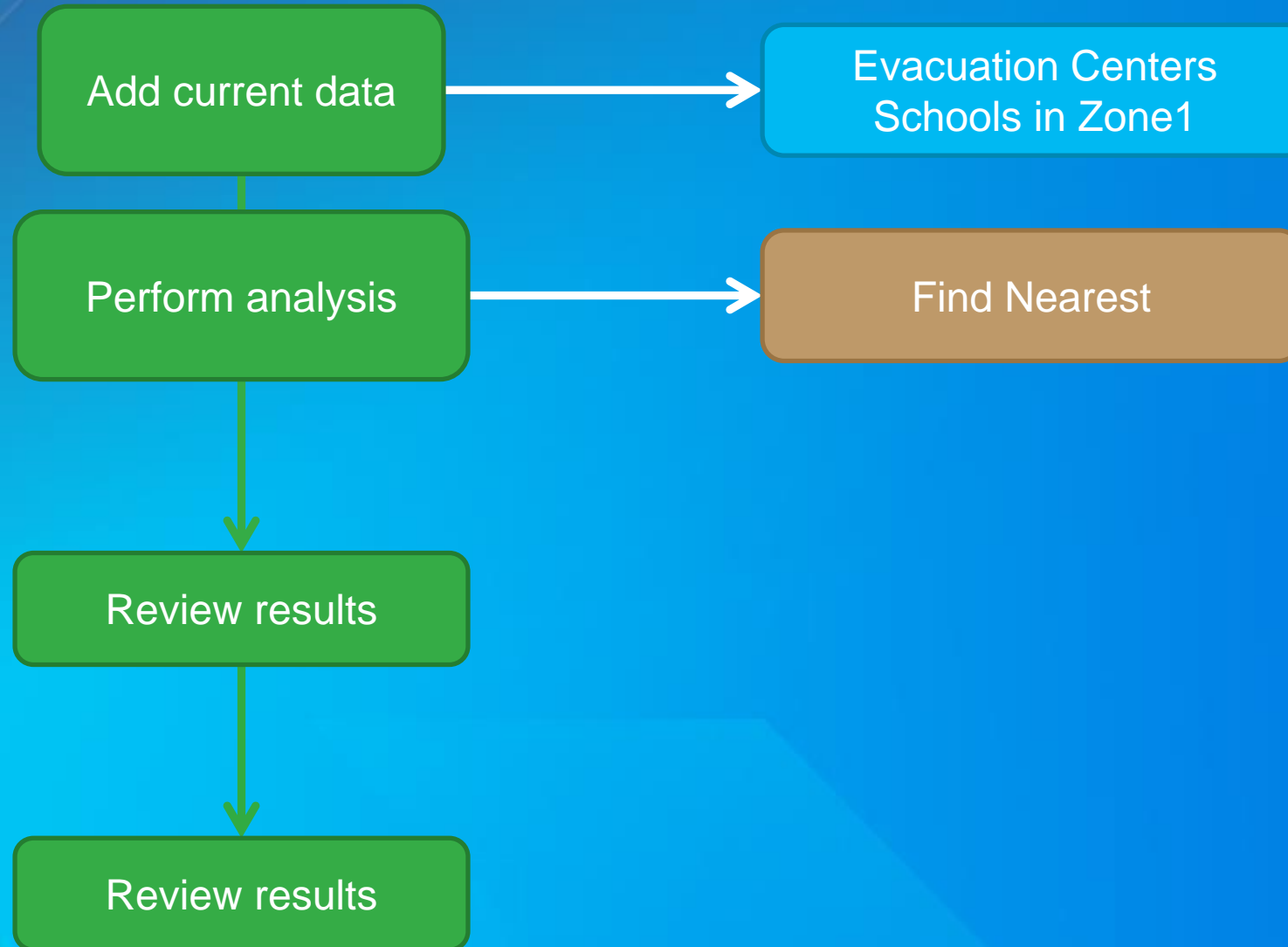
# Scenario

- The nearest evacuation centers from schools in zone 1





## Demonstration review






# Scenario

## Summarize public schools in evacuation zones – in a web application

Analysis

 Summarize Within

Specify the polygon feature layer to be summarized

Evacuation Zones

Next

Analysis

For Features within **Evacuation\_Zones**

1. Choose layer to summarize

PublicSchools

2. Add statistics from **PublicSchools**

☒ Count of points

Field

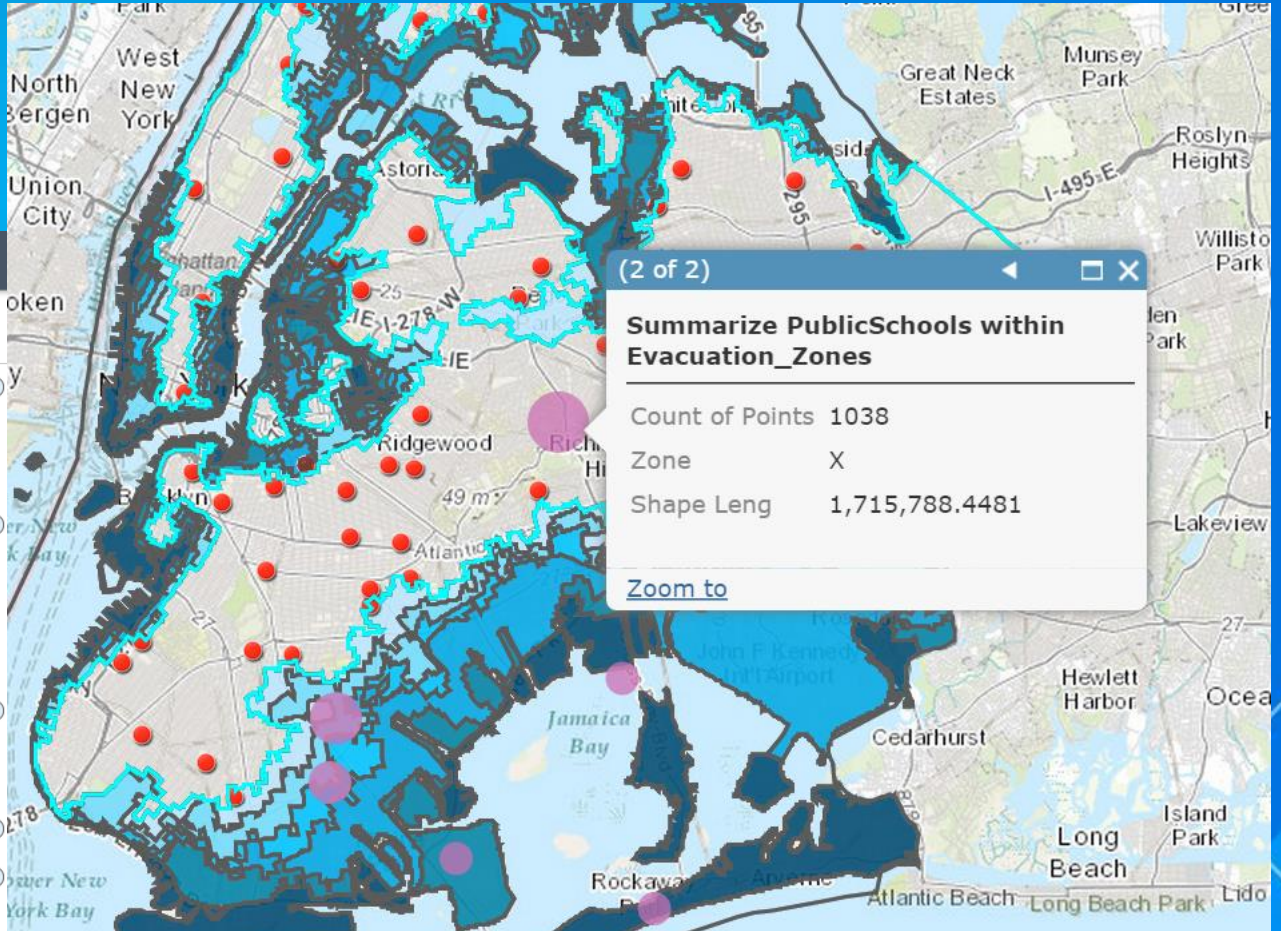
Statistic

3. Choose field to group by (optional)

Field

☐ Add minority, majority

☐ Add percentages



(2 of 2)

Summarize PublicSchools within Evacuation\_Zones

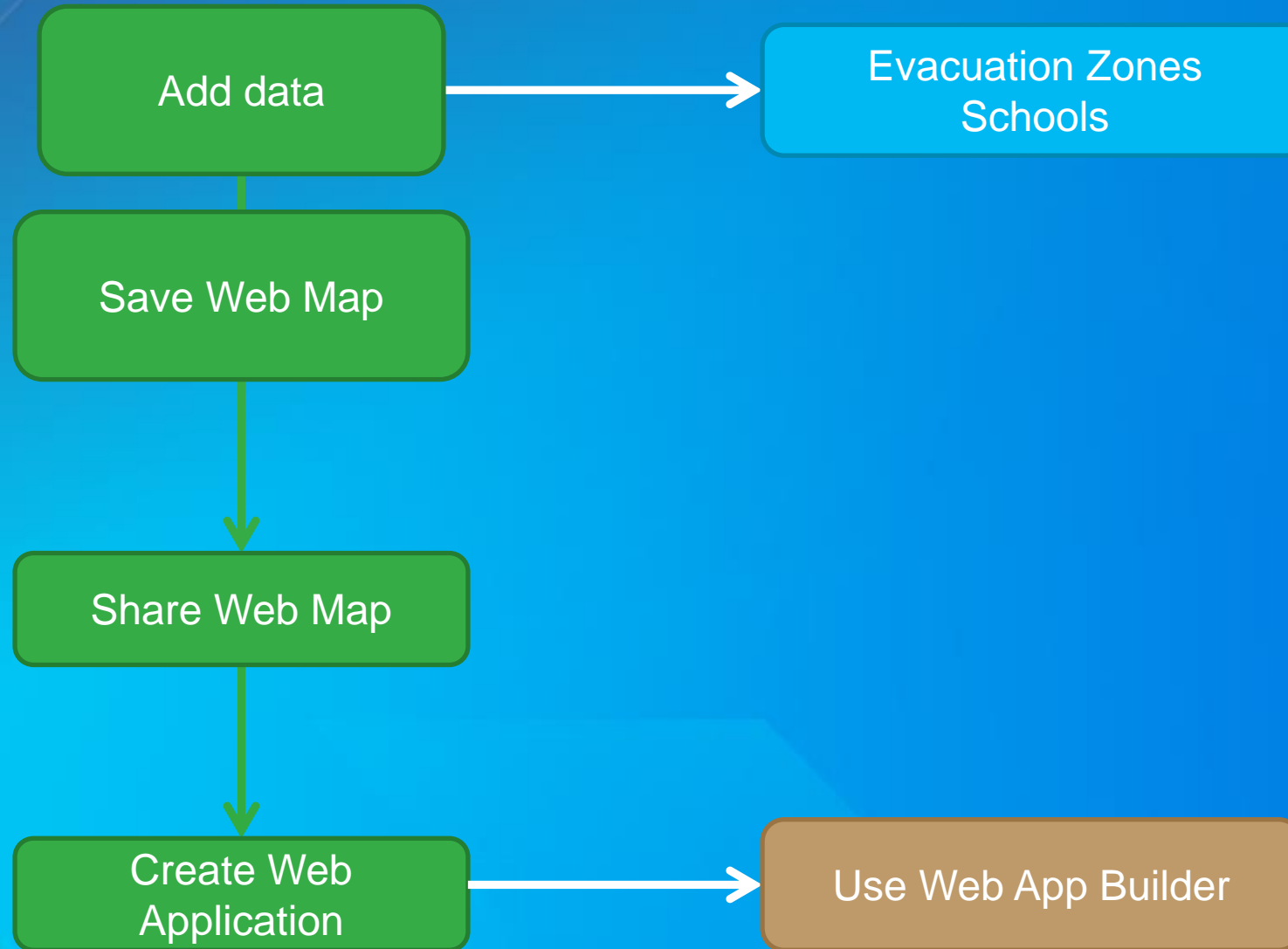
Count of Points 1038

Zone X

Shape Leng 1,715,788.4481

[Zoom to](#)

## Demonstration review



# Summary

- Spatial analysis adds valuable insight by providing hosted tools that work with your data in your ArcGIS Online organization
- Perform spatial analysis online is easy and intuitive
- Using ArcGIS Online spatial analysis to discover geographic relationships, patterns, and trends

# More Resources

- **Online Documentation**
  - Pop-up help
  - **ArcGIS Online web help**
    - [Perform Analysis](#)
    - [ArcGIS Online Spatial Analysis REST API help](#)
    - [ArcGIS Online Spatial Analysis Credits Estimator](#)
- **ArcGIS for Professionals web site**
  - [Analysis case studies and examples](#)
- **Free online course (starts Sept)**
  - [Going Places with Spatial Analysis](#)
- **Free training seminars online**
  - [Gain Geographic Insight with ArcGIS Online Analysis Tools](#)
  - [Spatial Analysis with ArcGIS Online](#)



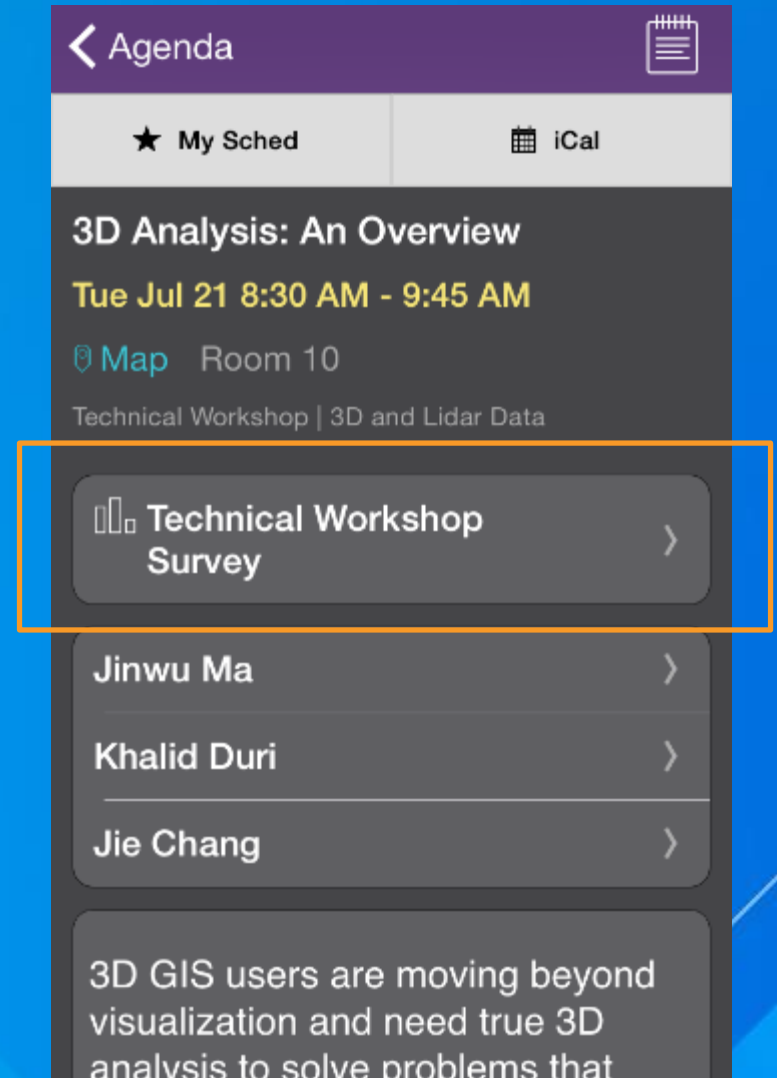
# Thank you...

## Introduction to ArcGIS Online Spatial Analysis

- Please fill out the session survey in your mobile app
- Select [enter session title here] in the Mobile App
  - Use the Search Feature to quickly find this title
- Click “Technical Workshop Survey”
- Answer a few short questions and enter any comments

Paper – pick up and put in drop box

Some paper surveys available for those without devices





Understanding our world.