

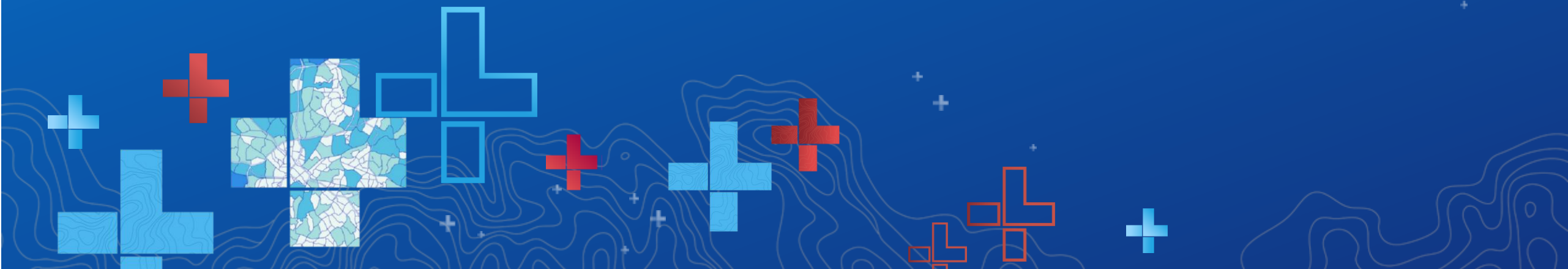


Spatial Analysis in ArcGIS Online: An Introduction

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"He who asks a question remains a fool for five minutes. He who does not ask remains a fool forever."

Chinese proverb



**What are the estimated
rainfall totals in
unmeasured locations?**

**Where are the greatest
concentrations of crimes?**

**When and where will
whale migration paths
intersect shipping routes?**

**Where are the hot spots of
cancer deaths?**

**What are the best
locations for wildfire
evacuation centers?**

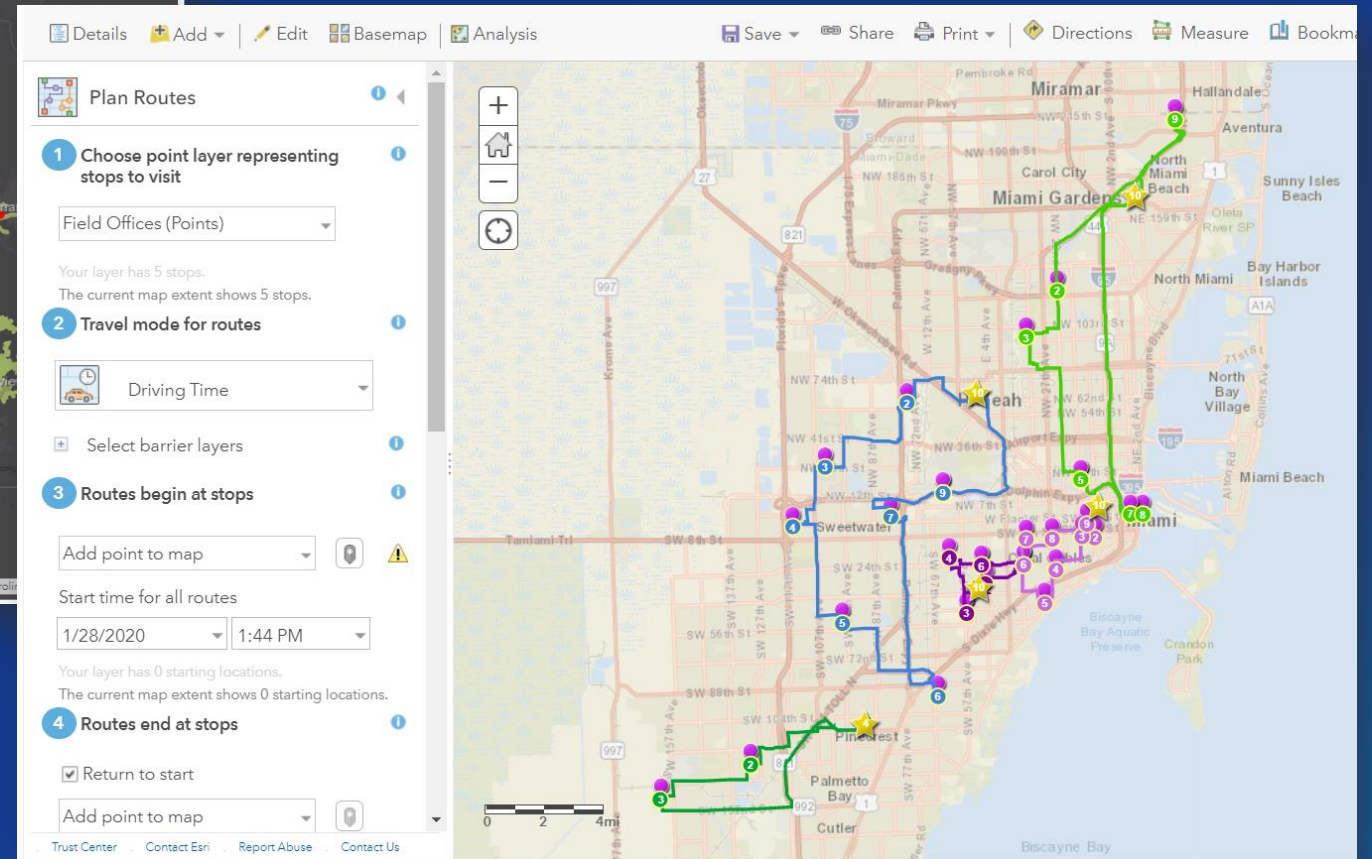
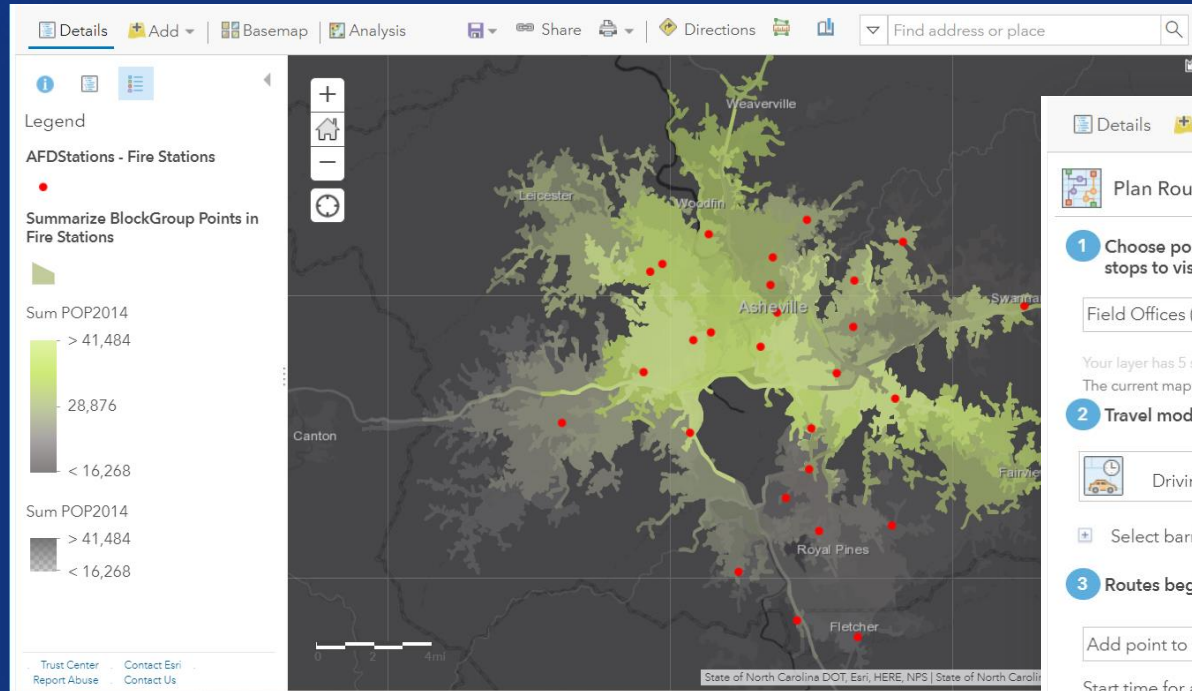
**What is the percentage of
each parcel that is in a
floodplain?**

**Which locations are within
a 5-minute drive of hazmat
response units?**

**What is the center of the
disease outbreak?**



Spatial Analysis hosted in the cloud



Accessible across the platform

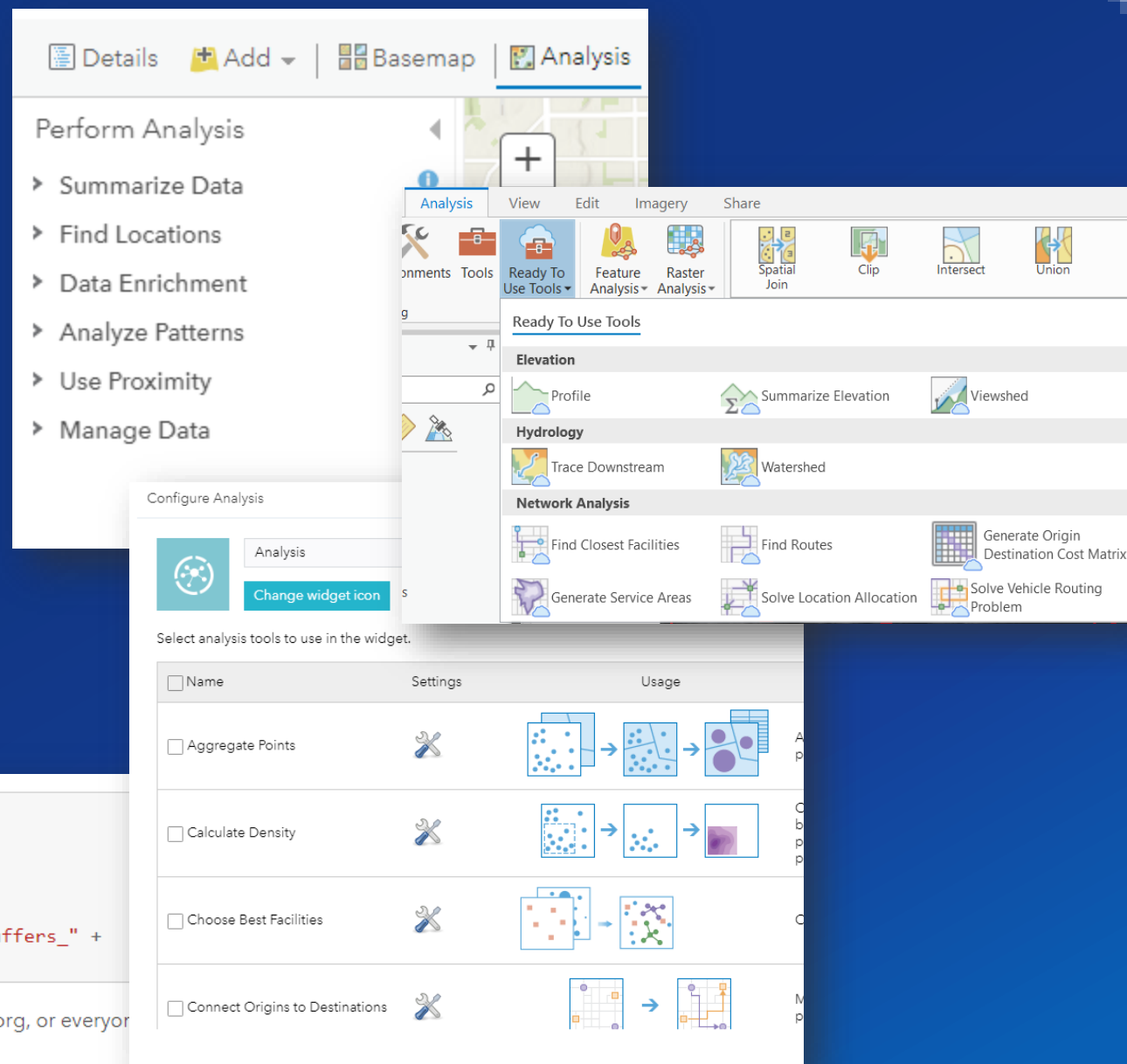
- ArcGIS Online Map Viewer (classic)
- ArcGIS Enterprise
- ArcGIS Web AppBuilder
- ArcGIS Pro
- ArcGIS REST API
- ArcGIS Python API
- ArcGIS JavaScript API

```
In [ ]: from arcgis.features.use_proximity import create_buffers

# buffer the active fire boundaries and add as new content

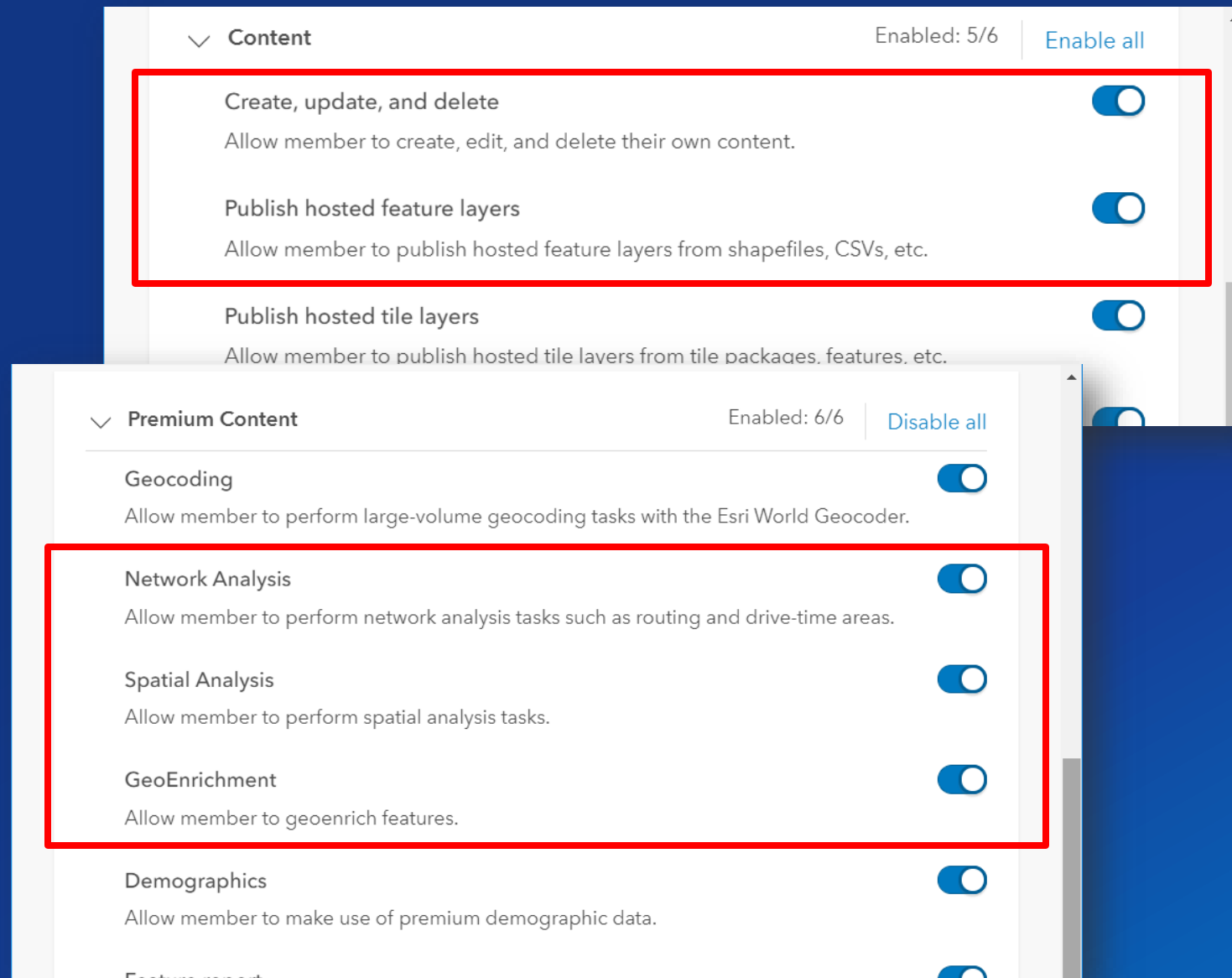
timestamp = '{:%Y_%m_%d_%H_%M_%S}'.format(datetime.datetime.now())
firebuffers = create_buffers(fires, [4], None, 'Miles', output_name="Fire_Buffers_" +
timestamp )
```

The output layer is private by default. To share it with particular groups, members within the org, or everyone we can use the `Item.share()` method. The code below shares it to everyone (public):

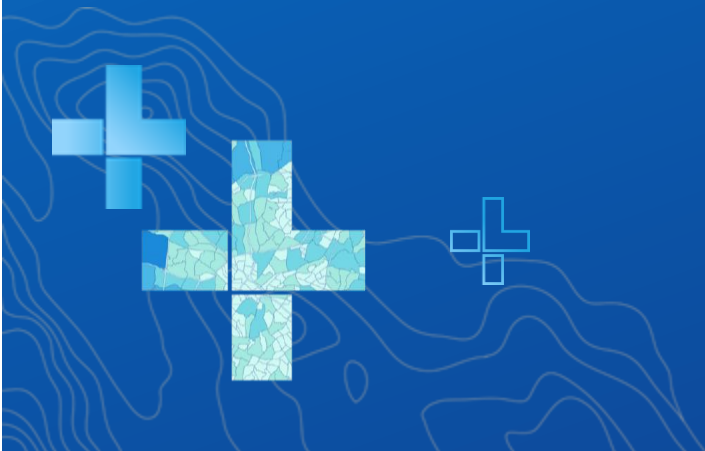


Requirements

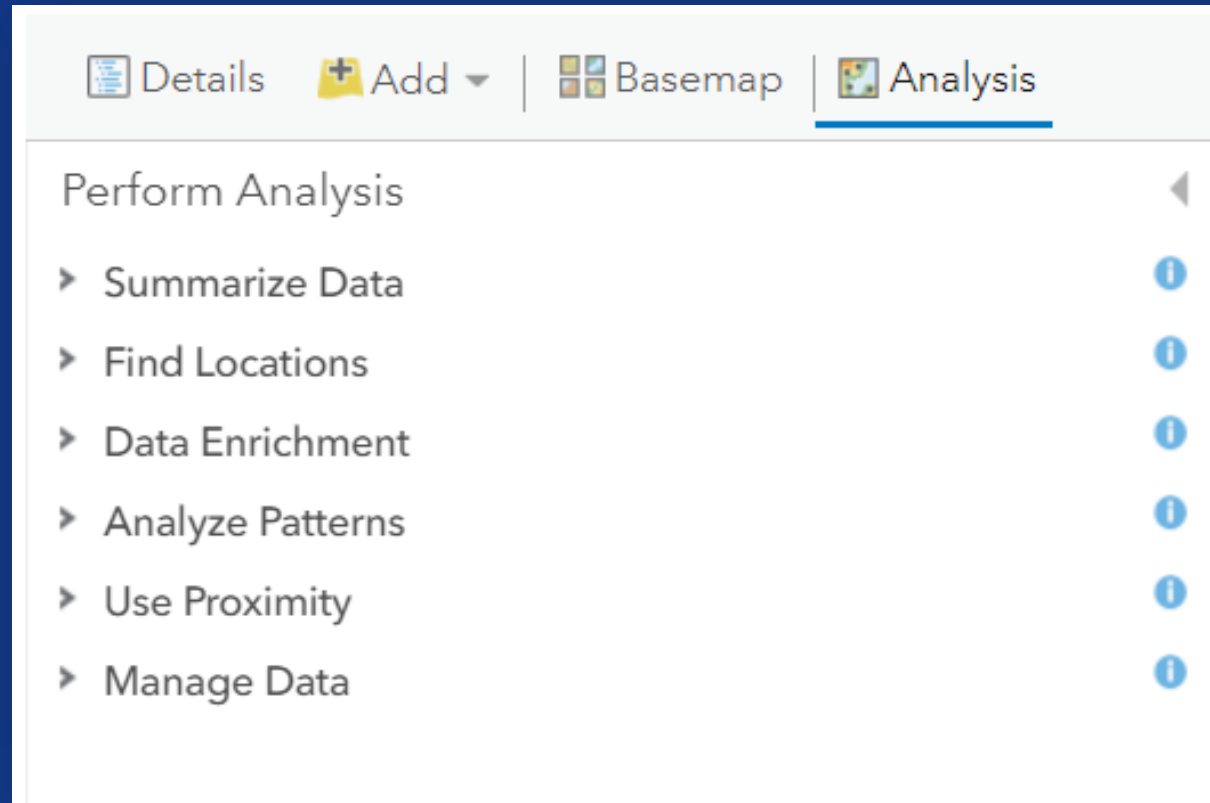
- **ArcGIS Online subscription**
- **Creator user type**
- **Publisher role or custom role with content creation, publishing, and analysis privileges**
- **Credits**



What tools are available?

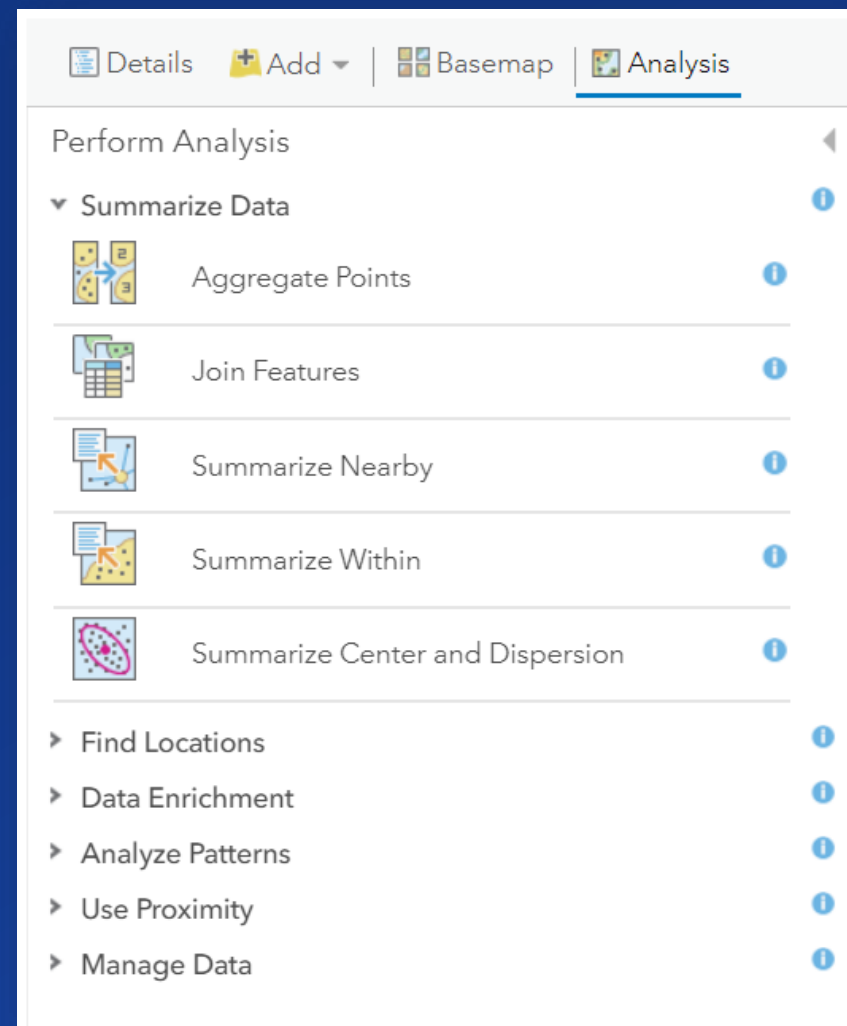


Tool Categories



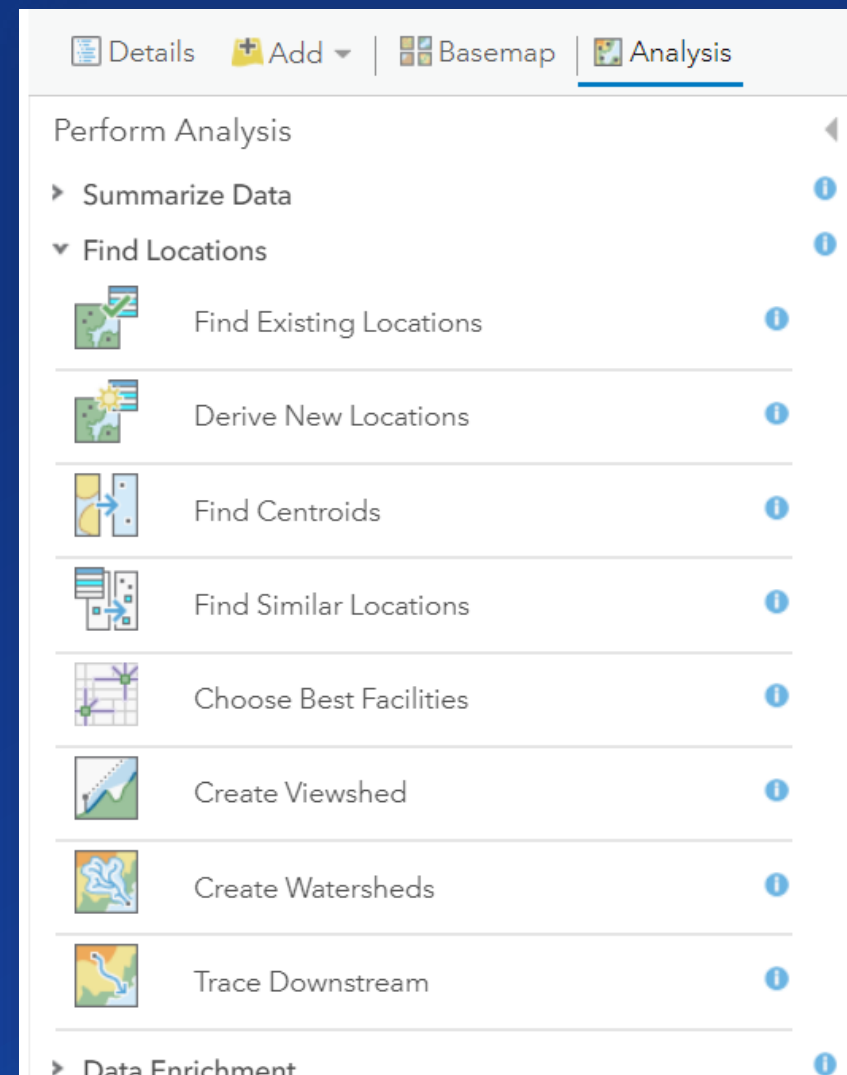
Summarize Data

- **Calculate total counts, lengths, areas, and basic descriptive statistics of features and their attributes within areas or near other features**



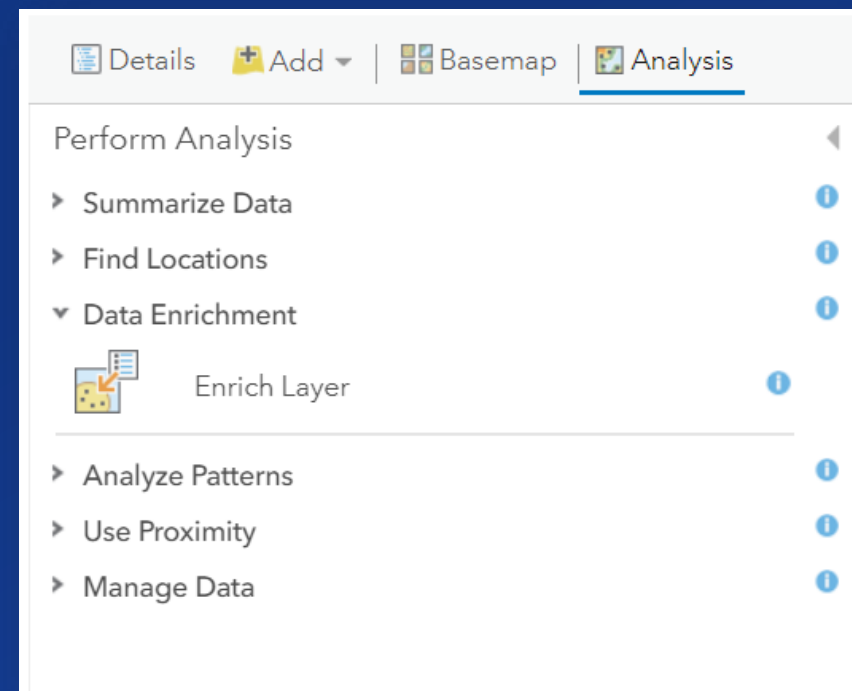
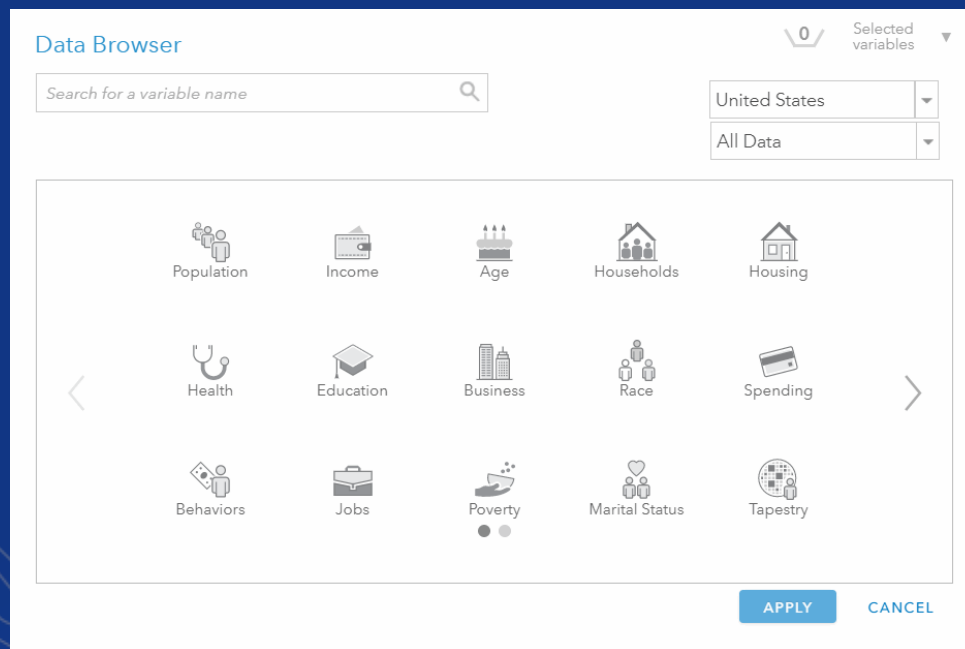
Find Locations

- **Identify or create features that meet criteria you specify**
 - Spatial or attribute queries
 - Locations that satisfy a demand
 - Visible areas from a specified height
 - Downstream areas for drainage points



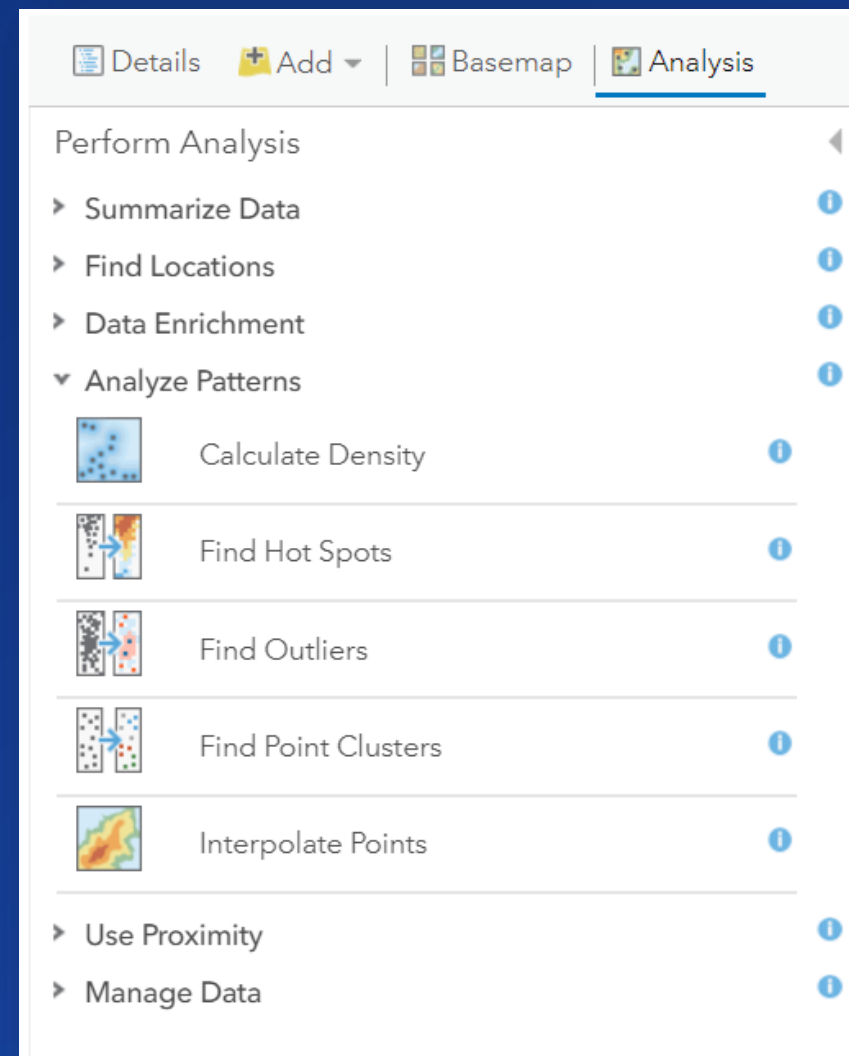
Data Enrichment

- Explore detailed demographic, lifestyle, business, and landscape data for an area(s) you choose



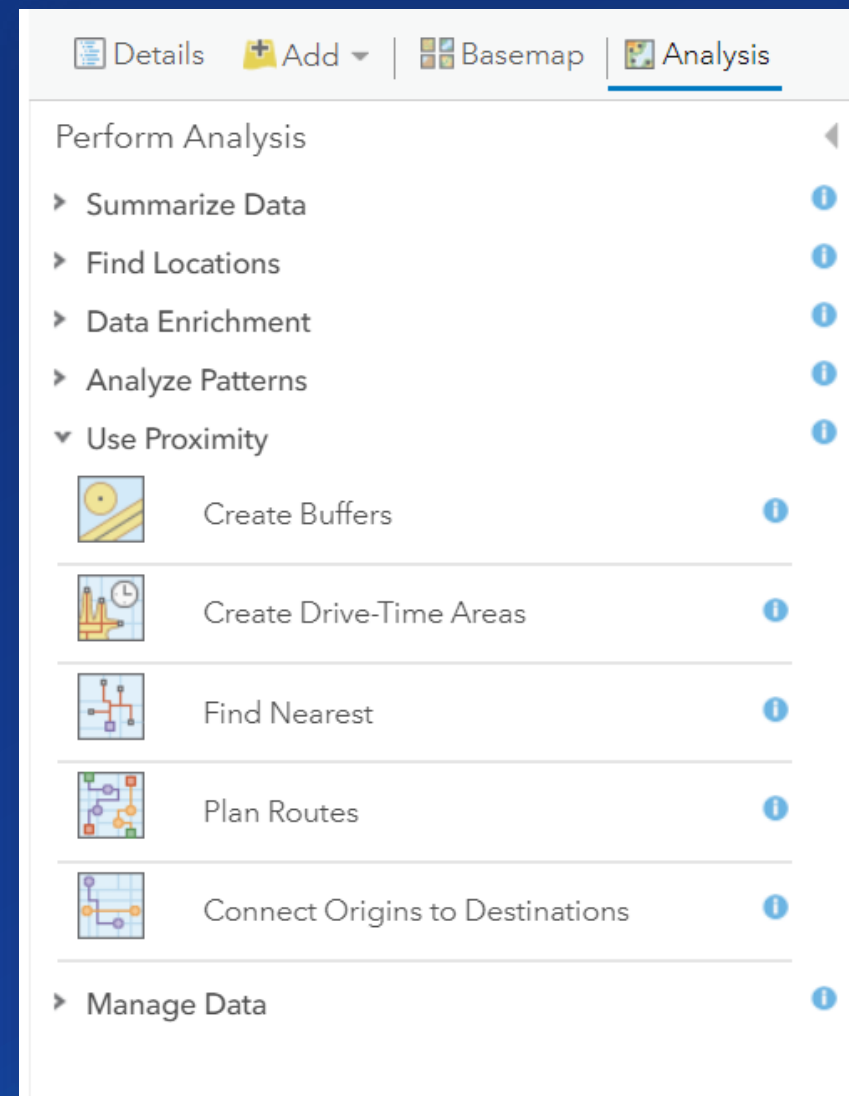
Analyze Patterns

- **Identify, quantify, and visualize spatial patterns in your data**
 - **Clusters**
 - **Statistically significant features**
 - **Estimate values**



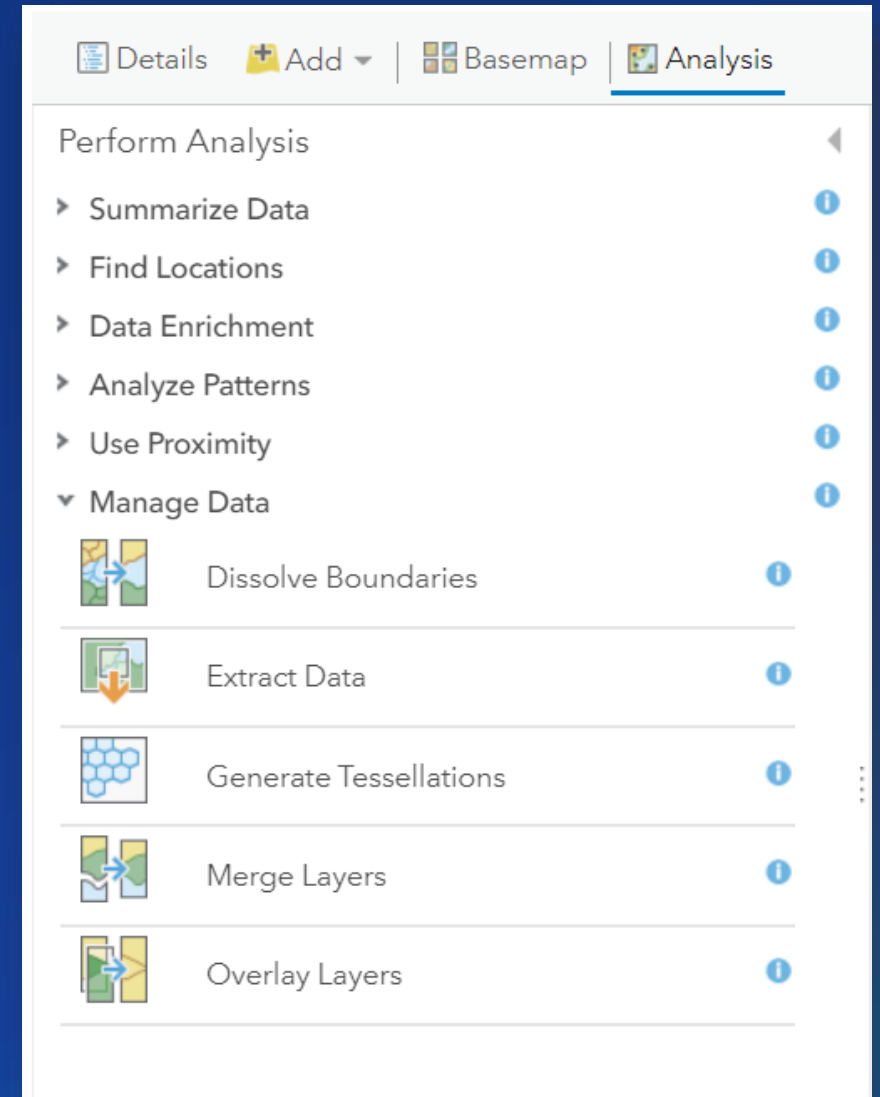
Use Proximity

- Answer questions about “what is near what?”
 - Measure travel time or distance
 - Routing

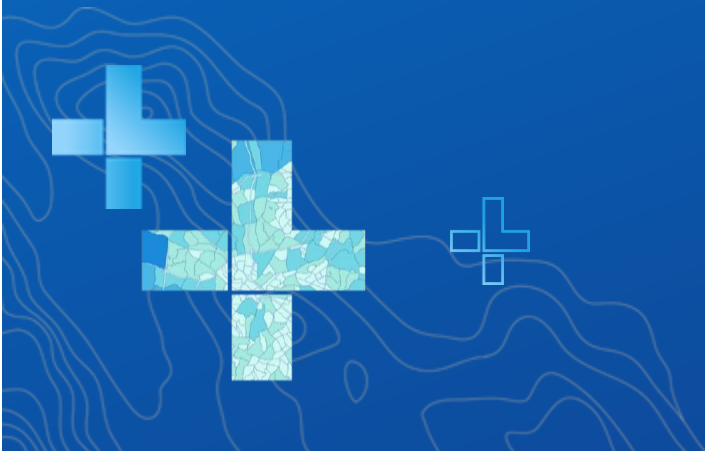


Manage Data

- Day-to-day management of data and combining data prior to analysis



Workflow



ArcGIS Online Analysis Workflow



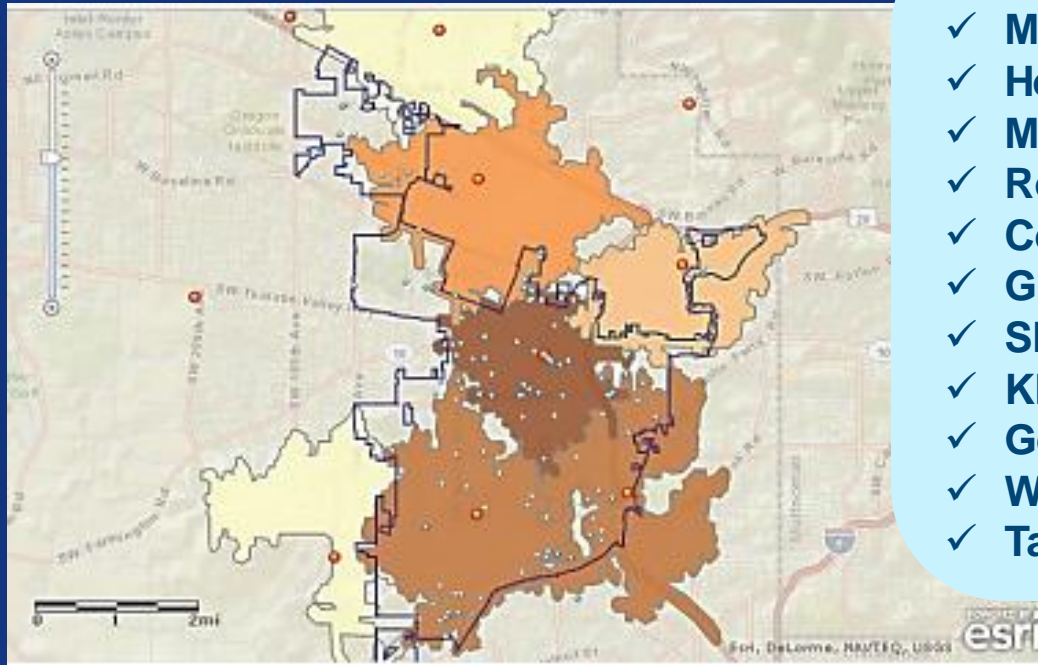
Assemble data

Prepare
data

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

Supported data types

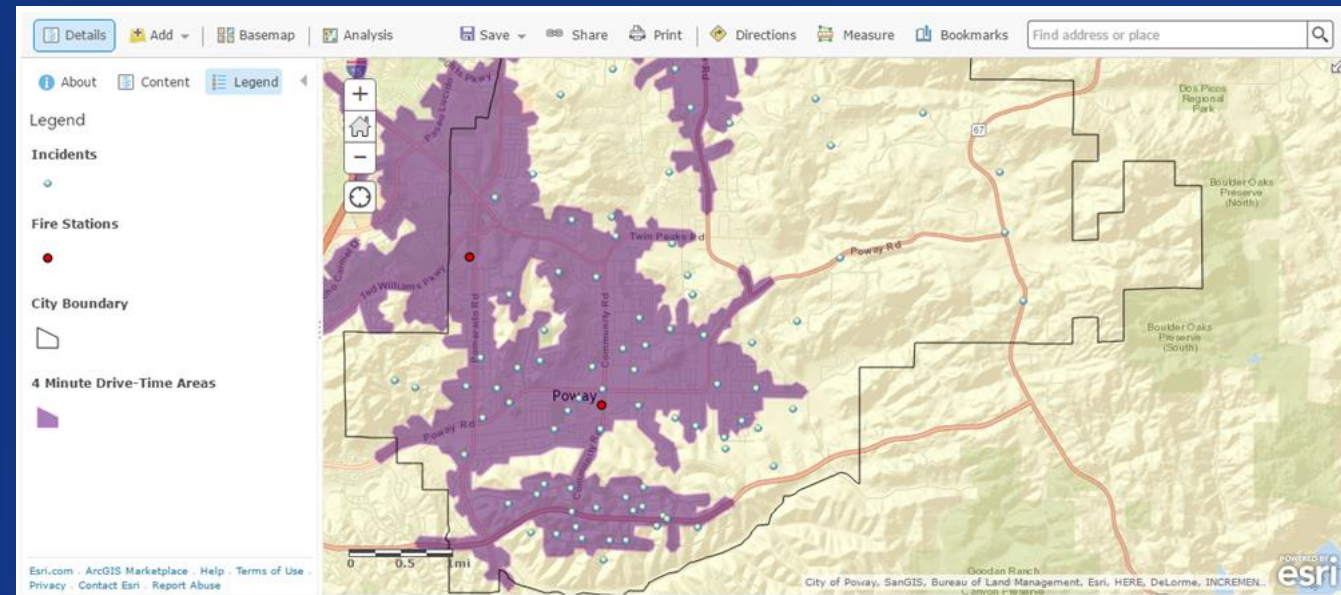
- ✓ Feature services
- ✓ Map services
- ✓ Hosted tile layers with query capability
- ✓ Map Notes
- ✓ Route layers
- ✓ Comma-separated values (CSV) file (.csv)
- ✓ GPS exchange format file (.gpx)
- ✓ Shapefile (.zip)
- ✓ KML layers
- ✓ GeoRSS web feed
- ✓ WFS layers
- ✓ Tables



Update map

Add to
map

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

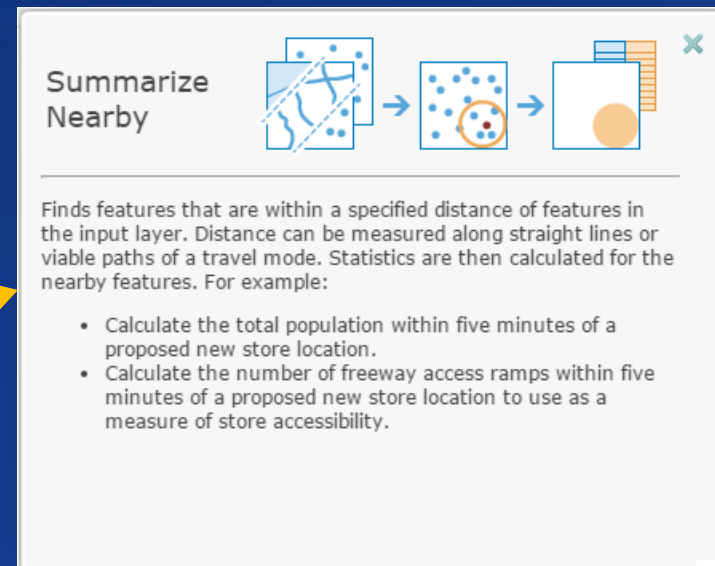
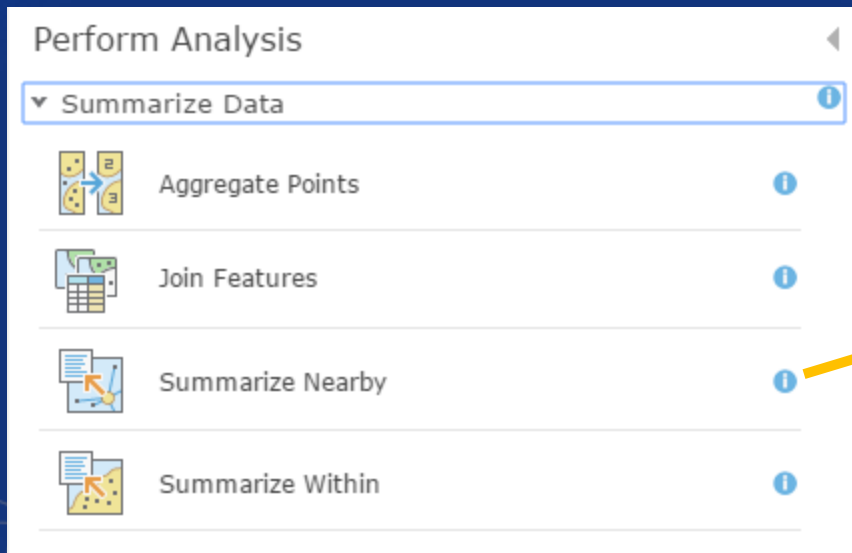
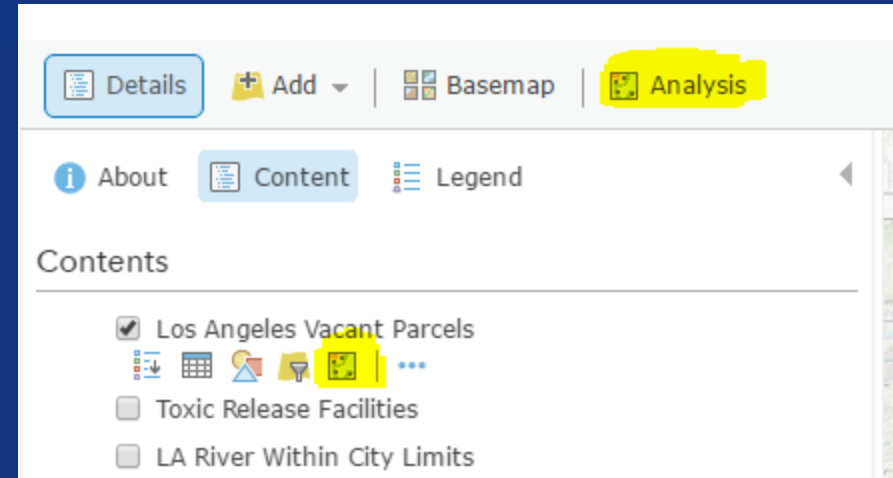


*You can also browse to layers from the analysis tools without adding the layer to your map

Analyze data


- Open Analysis tools
- Determine appropriate tool(s)

Perform analysis



Analyze data

- Apply parameters

 Summarize Nearby

1

Choose layer from which distances will be measured to features in the layer to summarize

Fire Stations


2

Choose layer to summarize

Incidents

3

Summarize nearest features using a

 Driving Time


4

Minutes

To output multiple areas for each point, type sizes separated by spaces (2 3.5 5).

☐ Traffic based on typical conditions for

☒ Live traffic



Now

+3

+6

+9

+12 hr

☐ Traffic based on typical conditions for

Monday

12:00 PM

[See availability.](#)

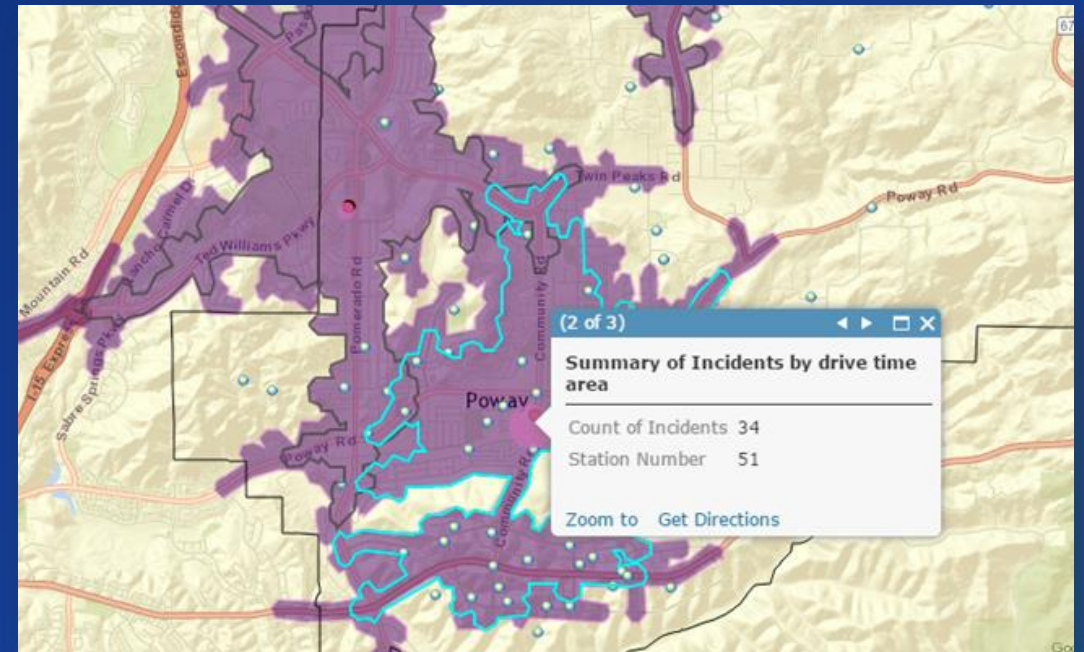
☒ Return bounding areas

Perform analysis

Use and review results

Review
results

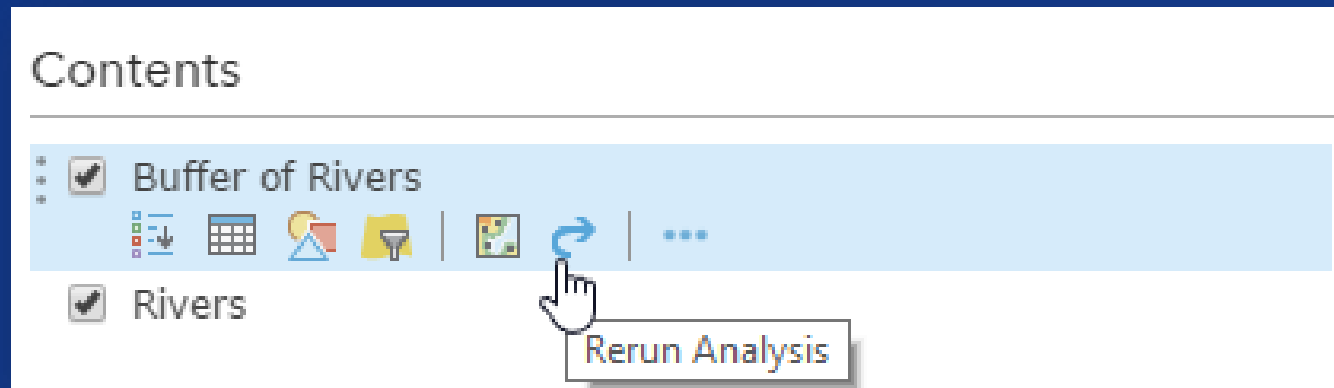
- Published as hosted feature services
- Added to web map automatically
- Configure results layer – pop-ups, symbology
- Share the results



Rerun analysis

Rerun
analysis

- Analysis can be rerun from a result layer
- All the previous parameters will be honored
- The tool can be rerun with the same parameters, or the parameters can be updated



Example Analysis: Bureau of Alcohol, Tobacco, Firearms, and Explosives

Aaron Jabbour
ATF



Summary

- **Spatial analysis adds valuable insights by providing tools to answer questions**
- **ArcGIS Online provides hosted tools, grouped into categories, in an easy-to-use interface**
- **Performing spatial analysis online follows this workflow:**



Resources

- **Documentation:** <https://doc.arcgis.com/en/arcgis-online/analyze/perform-analysis.htm>
- **Learn Lessons:** <https://learn.arcgis.com/en/paths/data-analysis/>
- **Analysis case studies:** <https://desktop.arcgis.com/en/analytics/casestudies/>
- **Feedback survey:** <https://www.surveymizmo.com/s3/5422755/ArcGIS-Online-Analysis-Tools-Survey>



ArcGIS Security Update – HTTPS Only



- **Esri is committed to ensuring your content is secure**
 - TLS 1.2 implemented in 2019
 - HTTPS Only / HSTS to be enforced *September 15, 2020*
- **What does this mean for you?**
 - After 9/15/20 all HTTP requests to ArcGIS Online will be redirected to HTTPS
 - Clients limited to HTTP only will fail (for example scheduled clear-text Python script calls)
 - HTTP only ArcGIS Enterprise deployments may have issues accessing ArcGIS Online services
- **What do you need to do?**
 - Validate your ArcGIS Online org utilizes HTTPS only immediately
 - Launch AGO Security Advisor tool to check your org settings @ [Trust.ArcGIS.com](https://trust.arcgis.com)
 - If HTTP enabled, use tool to discover HTTP references and change to HTTPS
 - Enforce HTTPS only for your orgs ASAP and validate clients/scripts can use HTTPS
 - Keep an eye out for additional announcements and support guidance pages

Print Your Certificate of Attendance

Print Stations Located in 150 Concourse Lobby

Tuesday

12:30 pm – 6:30 pm
Expo
Hall B

5:15 pm – 6:30 pm
Expo Social
Hall B

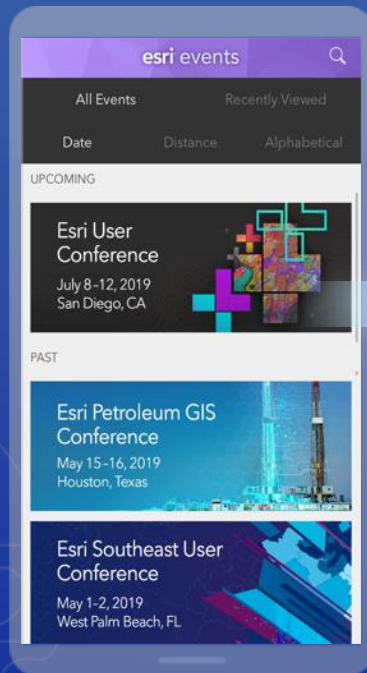
Wednesday

10:45 am – 5:15 pm
Expo
Hall B

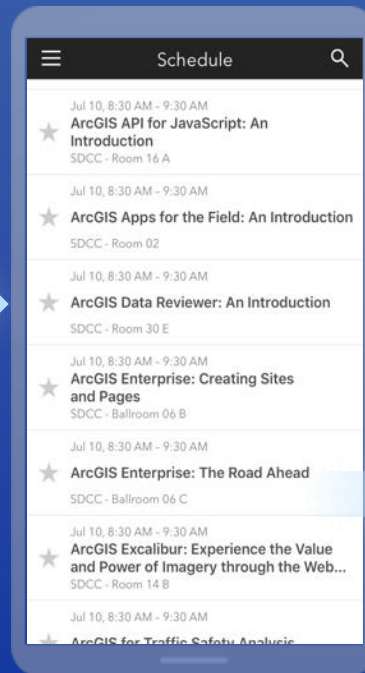
6:30 pm – 9:30 pm
Networking Reception
Smithsonian National Museum
of Natural History

Please Share Your Feedback in the App

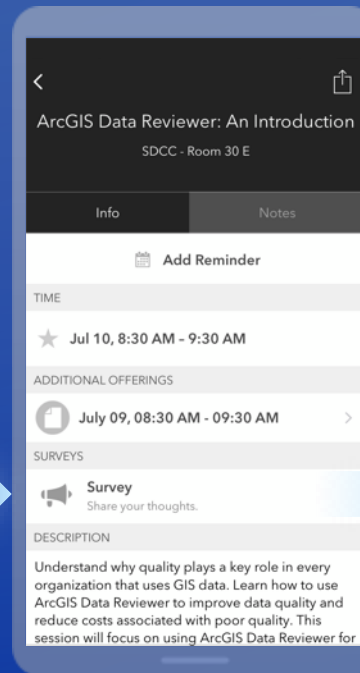
Download the Esri Events app and find your event



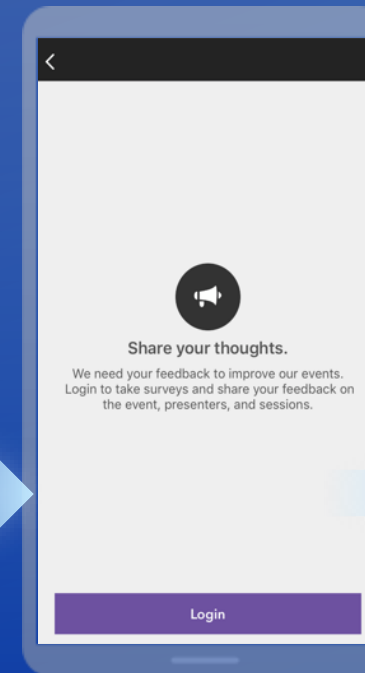
Select the session you attended



Scroll down to "Survey"



Log in to access the survey



Complete the survey and select "Submit"

