

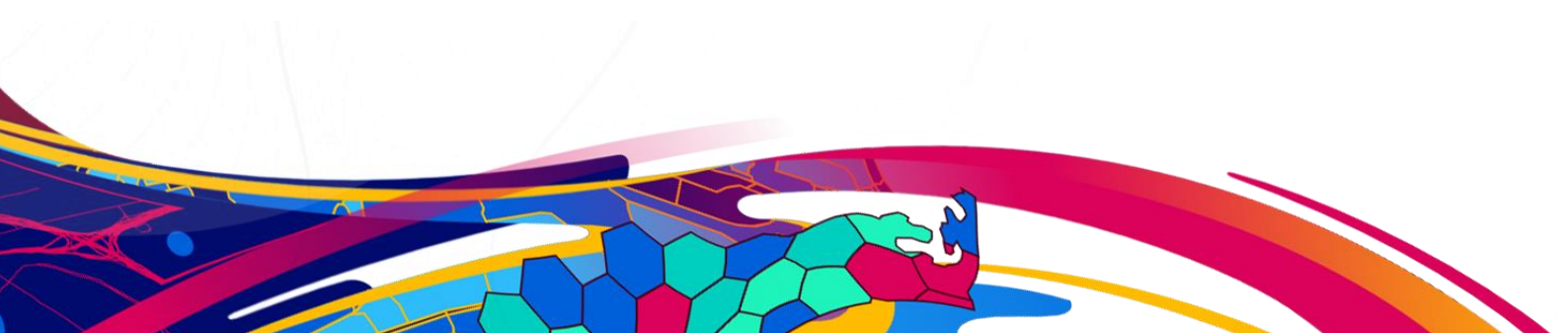


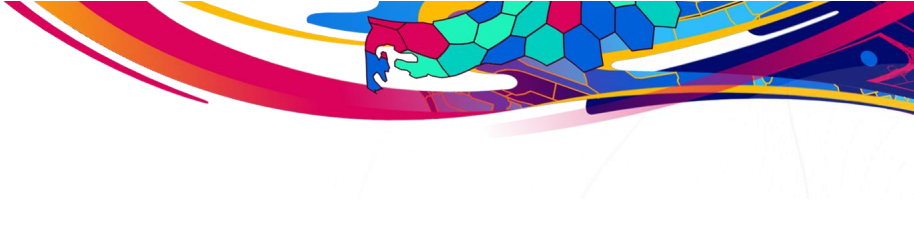
# **TRAINING SESSION 2:**

Go further with Microsoft and Esri

## **User Guide**

October 2023

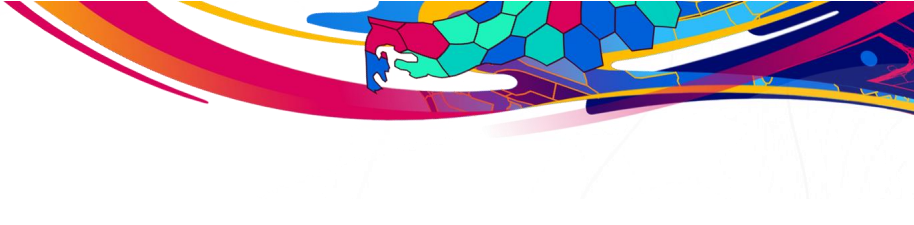




---

## Contents

ArcGIS for Excel .....	2
ArcGIS for Power BI.....	5
ArcGIS Power Automate .....	10
ArcGIS For Teams .....	11
Esri resources.....	12



## Go Further with Microsoft and Esri

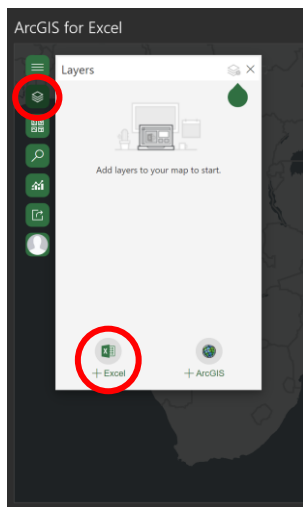
Trainer 1: Lebogang Mashishi

Trainer 2: Tendai Dupwa

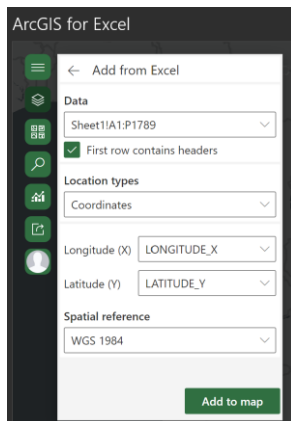
### ArcGIS for Excel

#### Section 1 Exercise

1. Open file explorer and navigate to **C:\\Student\\ TRAINING SESSION 2 - Go further with Microsoft and Esri**
2. Open the **Loadshedding\_Analytics\_ver02** excel file.
3. At the top, find and click on the ArcGIS Plug-in.
4. Click Show Map.
5. This will open a dialog box on the right-hand side of your file.
6. For choose a connection, choose ArcGIS Online and click sign-in.
7. Enter in the ArcGIS Online details assigned to you.
8. On your map display, click on the layers button, then click the +Excel button.



9. Make sure your Layers dialog box matches the one below:



10. Click Add to map.

### Symbology and Smart Mapping

11. On the layer dialog box, click on the layer options button on the top right hand corner.



12. For column size, choose AVERAGE DEMAND\_MONTHLY

13. For column colour, choose POWER SOURCE

14. Explore the map.

15. On the left hand side of the layers dialog box, select the third button from the top: Clustering.



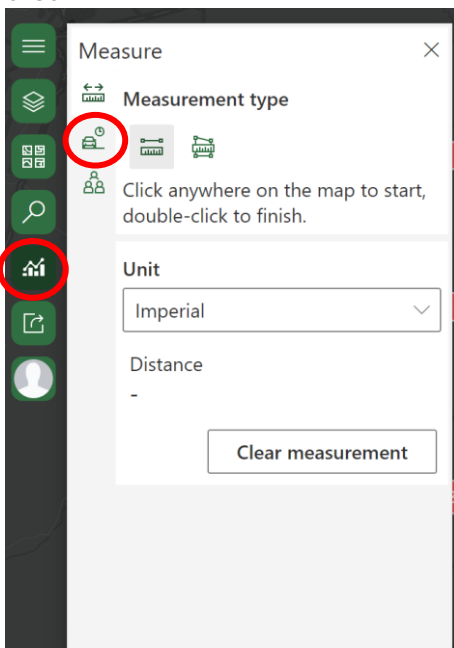
16. Enable clustering.

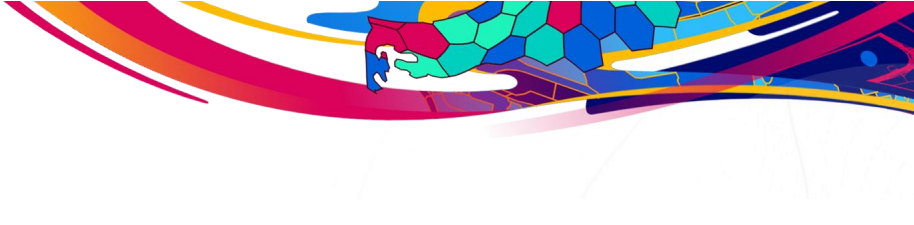
17. Explore the map and once done, disable the clustering.

18. Close the layers dialog box.

### Analysis

19. On the right-hand side on the map box click on the analysis button, then click on Create buffer/drive-time area.

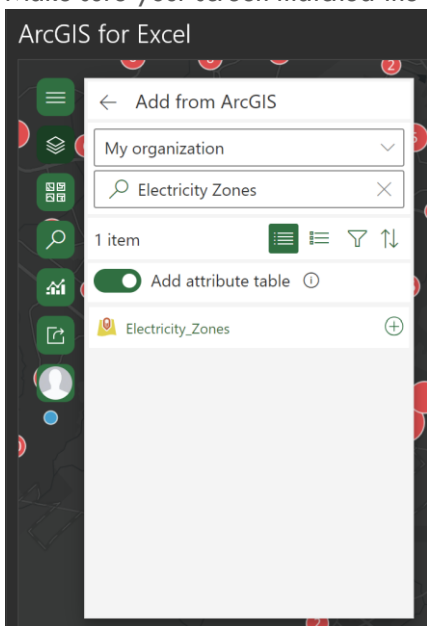




20. For Choose input layer, choose click to add a point and place a point anywhere on the map.
21. Enter the following parameters.
  - a. Analysis type: Ring buffer
  - b. 5 Kilometers
  - c. Result layer name: 5kmBuffer
22. Click Run analysis.
23. Explore the map and close the analysis.

### Add data from ArcGIS Online

24. Open the layers dialog box.
25. Click on +ArcGIS.
26. Make sure your screen matched the image below:



27. Click on the “+” to add the Electricity Zones to the map.
28. Explore Map

### ArcGIS Function Builder

29. On the ArcGIS Tab on the menu at the top, click the ArcGIS Function builder.
30. The function builder opens on the right-hand side of the spreadsheet. Click Ok.
31. Explore the functions.
32. Under the Geocoding functions, Choose GETADDRESS
33. Under set parameters, choose the following properties.
  - a. Latitude: I2
  - b. Latitude: J2
  - c. Spatial reference: 4326
  - d. All data: TRUE
  - e. Geocode Service: ArcGIS World Geocoding Service

## ArcGIS for Power BI

**Objective:** Create a Power BI report integrated with ArcGIS Maps for 365

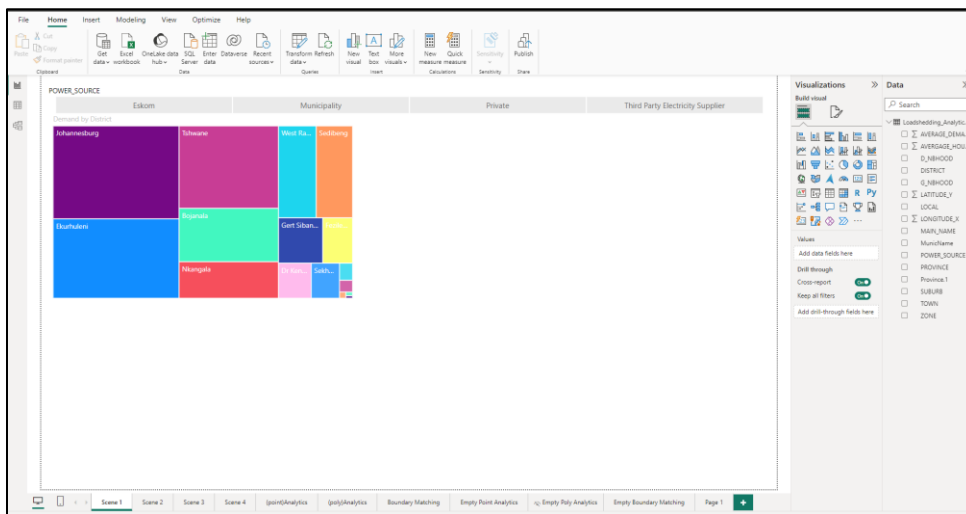
**Focus:** Display average power outage durations per municipality and interactive chart implementation

**Outcome:** Efficient Report management and informed decision support through data integration.

### Prepare and evaluate your data.

In this step you will open an existing Power BI report and explore your data.

1. Open file explorer and navigate to **C:\Student\ TRAINING SESSION 2 - Go further with Microsoft and Esri**
2. Double Click on the **“Loadshedding Analytics.pbix”** report to open



3. Notice that the Visualization and Data Pane on the right-hand side of the report. Expand the Data Pane if necessary.



4. Click Table View in the far left of the canvas and look through the fields.

We will predominantly work for focus on the demand, hours of loadshedding with in Provinces and Districts.

5. Click Report View to return to the report.

### Create a Chart Visualization

To create a chart showing the average hours of loadshedding per province, follow these steps;

6. Select “Scene 1” at the bottom of the canvas if necessary.



7. In the Visualization Pane, select “Scatter Chart” and a blank visual is added to your canvas.
8. Under “Add data to your visual” drag the following filed from your Loadshedding\_Analytics data to match the following:
  - **X Axis:** MunicName

- **Y Axis:** AVERAGE\_HOURSE\_LOADSHEDDING
- **Legend:** PROVINCE
- **SIZE:** AVERAGE\_HOURS-LOADSHEDDING

1

2

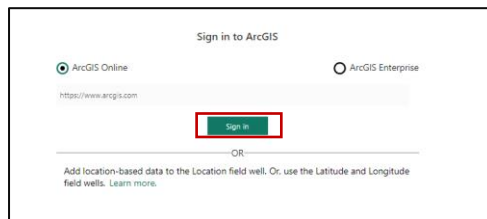
3

9. Save your report.

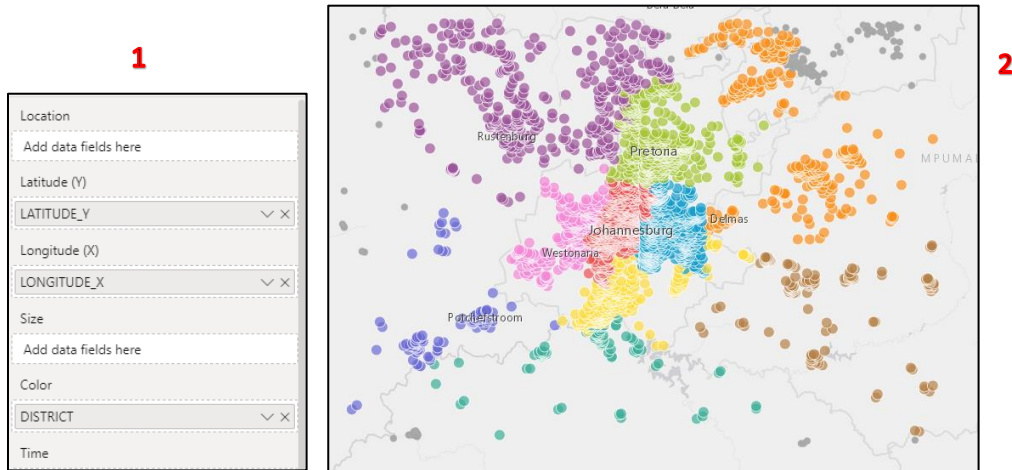
### Map out outage Points in Power BI with ArcGIS Maps for Power BI

To map out outage points in Power BI using ArcGIS Maps for Power BI, follow these steps:

10. In your report, click on a blank area to deselect any existing visuals. Then, go to the Visualizations pane and click on the "ArcGIS Maps for Power BI" icon to add a new map visual to your report.
11. On the ArcGIS Maps for Power BI visualization, select ArcGIS online and click Sign in.



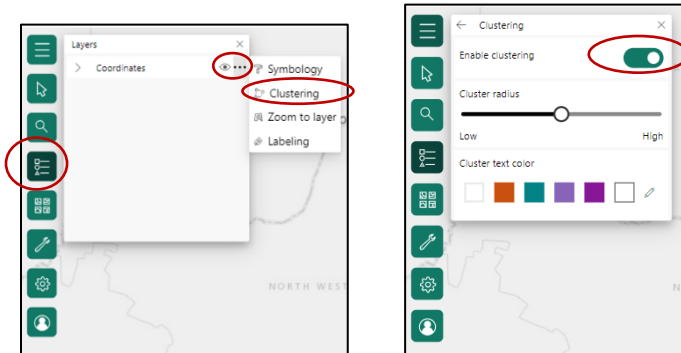
12. Drag and drop you location fields on the Latitude (Y) and Longitude (X) respectively
13. Drag and drop the District field under Color.



### Style Your Map with Clusters

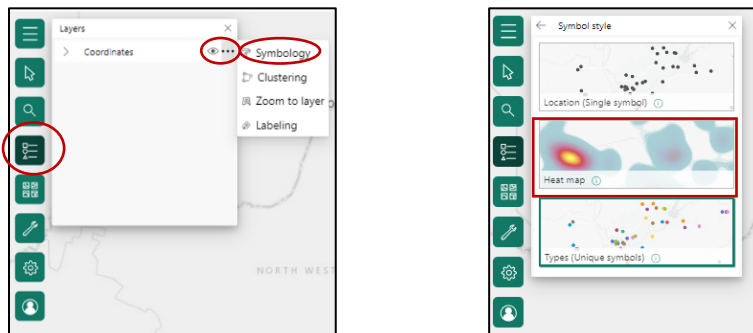
Customize the appearance of your map by configuring options in the Format and Settings tabs within the Visualizations pane and map tools.

14. In your map expand the “Map tools” and select layers. On the “Coordinates layer click the menu and select Clustering”
15. In the clustering dialog box Enable Clustering to see the change on the map



16. Zoom into your map to see the changes. You can also explore other point visuals by following the illustrations below.

### Heat Maps

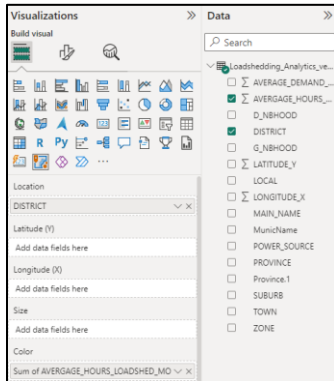




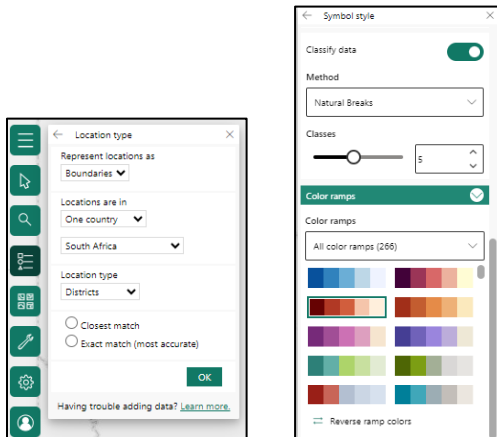
## Boundary Matching with ArcGIS for Power BI

Now, you can utilize ArcGIS's capabilities to enhance your data visualization by incorporating boundary matching functionality. This will enable you to depict the districts affected by load shedding using graduated colors and various classification methods.

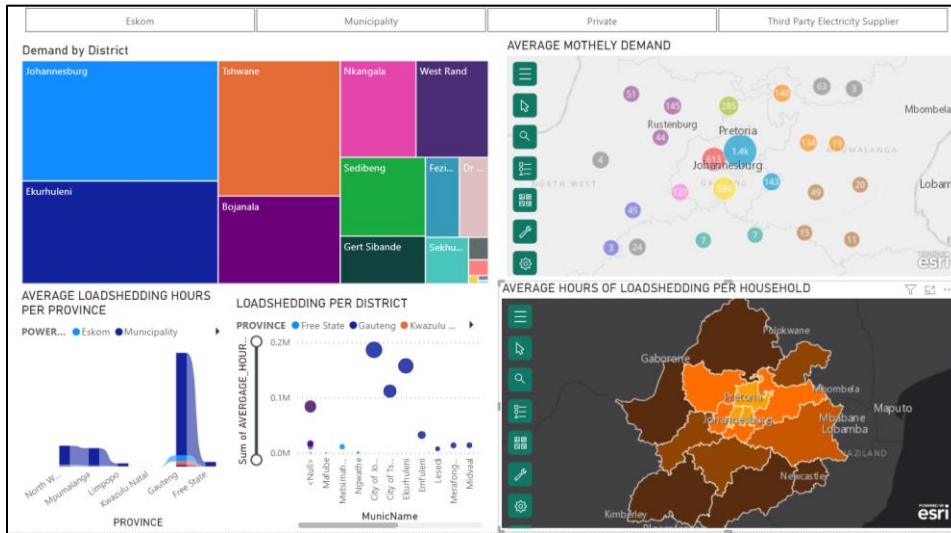
17. In your report, click on a blank area to deselect any existing visuals. Then, go to the Visualizations pane and click on the "ArcGIS Maps for Power BI" icon to add a new map visual to your report.
18. In the Visualizations Pane, arrange and connect fields to replicate the graphic shown below.

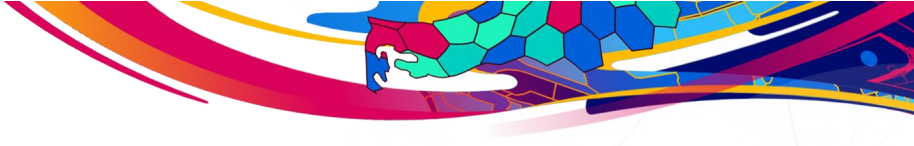


19. In your map expand the "Map tools" and select layers.
20. On the "Districts". Layer click the menu and select "Location type".
21. In the "Location type" dialog box match with the illustration below.
22. In the "Location Type" dialog box, configure the settings to match the illustration provided below.



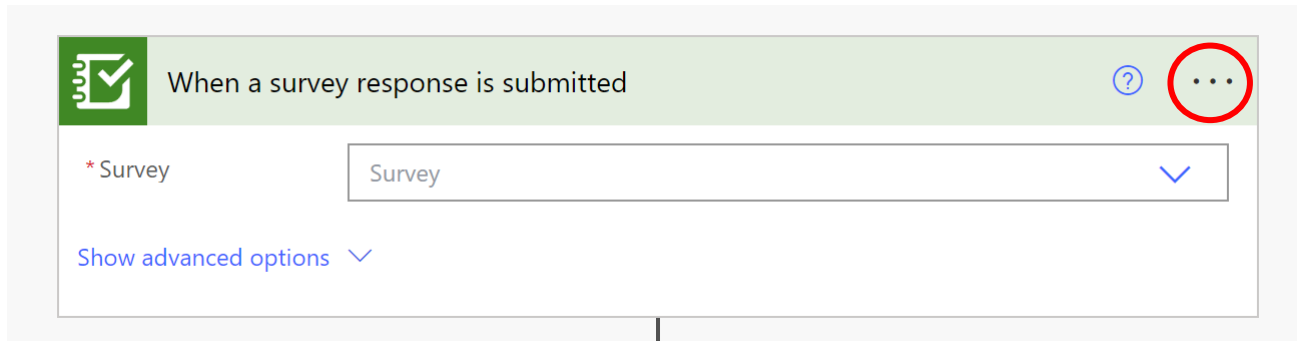
23. Click "OK"
24. Resize the visuals on your canvas to create a balanced report.
25. You can also change your base maps to your preference.





## ArcGIS Power Automate

34. Open any browser on your machine and browse to [make.powerautomate.com](https://make.powerautomate.com).
35. Sign in with the credentials assigned to you.
36. On the right-hand side of your screen, click on Templates.
37. Enter in Survey123 on the search bar and press enter on your keyboard.
38. Choose the Send an email when a survey response is submitted to Survey123.
39. At the bottom of the page, click continue.
40. Click on the properties option on the ArcGIS Survey123 connector.



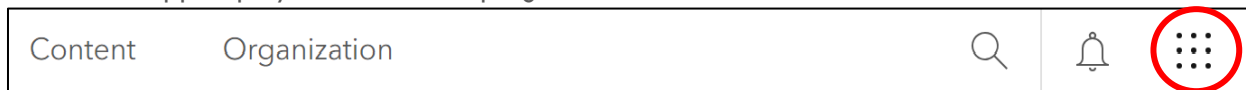
41. Click on Add a connection and login with your ArcGIS credentials assigned to you.
42. For Survey, Choose Airport Noise Report
43. For the Send an email connector
  - a. **To:** enter any email you can get access to at the current moment
  - b. **Subject:** A new record has been added on Airport Noise Report
  - c. **Body:** Dear (Enter Name)

A new record has been added on the Airport Noise Report

44. Click Save
45. Open flow checker and check for errors and messages.
46. Click on Test, choose Manually (Perform the starting action to trigger it)
47. Select Test.

### Perform the trigger.

48. In a different browser page, Open ArcGIS Online on [www.arcgis.com](https://www.arcgis.com)
49. Click sign-in and sign in with the ArcGIS Online credentials that have been assigned to you.
50. Click on the app display button on the top right-hand corner.



51. Choose Survey123
52. Open the Airport Noise Report Survey and complete it.
53. Once you have submitted your record, check your emails to see if you have received the notification.

---

## **ArcGIS For Teams**

ArcGIS for Teams is a collaborative platform that combines the power of location intelligence with Microsoft Teams, a popular communication and collaboration tool. It allows organizations to enhance their geospatial capabilities and seamlessly integrate geospatial data into their workflow within the Microsoft Teams environment

## **Esri resources**

Take advantage of these resources to develop ArcGIS software skills, discover applications of geospatial technology, and tap into the experience and knowledge of the ArcGIS community.

### **Instructor-led and e-Learning resources**

Esri instructor-led courses and e-Learning resources help you develop and apply ArcGIS skills, recommended workflows, and best practices. View all training options at [esri.com/training/catalog/search](https://esri.com/training/catalog/search).

### **GIS bibliography**

A comprehensive index of journals, conference proceedings, books, and reports related to GIS, including references and full-text materials. [gis.library.esri.com](https://gis.library.esri.com)

### **ArcGIS documentation and tutorials**

In-depth information, tutorials, and documentation for ArcGIS products.

ArcGIS Online: [arcgis.com](https://arcgis.com)

ArcGIS Desktop: [desktop.arcgis.com](https://desktop.arcgis.com)

ArcGIS Enterprise: [enterprise.arcgis.com](https://enterprise.arcgis.com)

### **GeoNet**

Join the online community of GIS users and experts. [community.esri.com](https://community.esri.com)

### **Esri events**

Esri conferences and user group meetings offer a great way to network and learn how to achieve results with ArcGIS. [esri.com/events](https://esri.com/events)

### **Esri Videos**

View an extensive collection of videos by Esri leaders, event keynote speakers, and product experts. [youtube.com/user/esrit](https://youtube.com/user/esrit)