Minneapolis Crime Map App

STEP 1 - Create a map in ArcGIS Online:

1- Go to the ArcGIS Online website.
2- Click on **Sign In**, and then click on the **Enterprise Login**. Type **umn** in the box. Hit **continue**.
3- Use your **UMN Internet ID (X.500)** to log in.
4- Once you are logged in, click on the **Map** tab.
5- Save your map titled **Minneapolis Crime Map**. Add some tags and summary as you wish.

STEP 2 - Add Data

Go to the Minneapolis Open Data website. Search for Police Incident 2019 and Minneapolis Neighborhoods.

Option 1 - Add Data as Feature Service:

1- Click on **APIs**, and hover the cursor over **GeoService** and press **Ctrl+C** to copy the text.
The copied link looks like this:
https://services.arcgis.com/afSMGVsC7QIRK1kZ/arcgis/rest/services/Minneapolis_Neighborhoods/FeatureServer/0/query?outFields=*&where=1%3D1
2- Delete the text starting from the word “query”.
3- Copy the text. The final text should be like this:
https://services.arcgis.com/afSMGVsC7QIRK1kZ/arcgis/rest/services/Minneapolis_Neighborhoods/FeatureServer/0/
4- From the ArcGIS Online map, click on **Add** >>> **Add Layer from Web**. Paste the text into the URL box, be sure **An ArcGIS Server Web Service** is chosen. Hit **Add Layer**. (Figure 1)

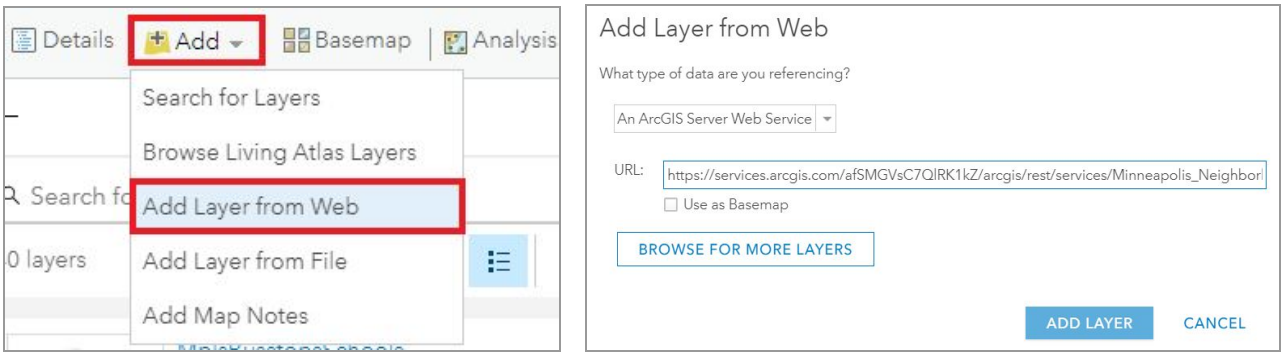

Figure 1: Add Layer from Web

Option 2 - Add Data from File:

1- Click on **Download >>> Shapefile** from the data website.

2- From the Map, click on **Add >>> Add Layer from File** and import the downloaded shapefile zip to here.

***Note**: If the data you want to use is being changed, you will not be able to see the changes on your map. But, if you add the data as a feature service as we did in option 1, the layer on your map will also be updated when the source data is updated. In this latter case, the layer is dynamic. But if you do option 2, the layer you use is not dynamic.*

Now, you should be able to see the Minneapolis Neighborhoods layer added to the map.
Repeat the same steps for the Police Incident 2019 data as well.
Your map should look something like this (Figure 2):

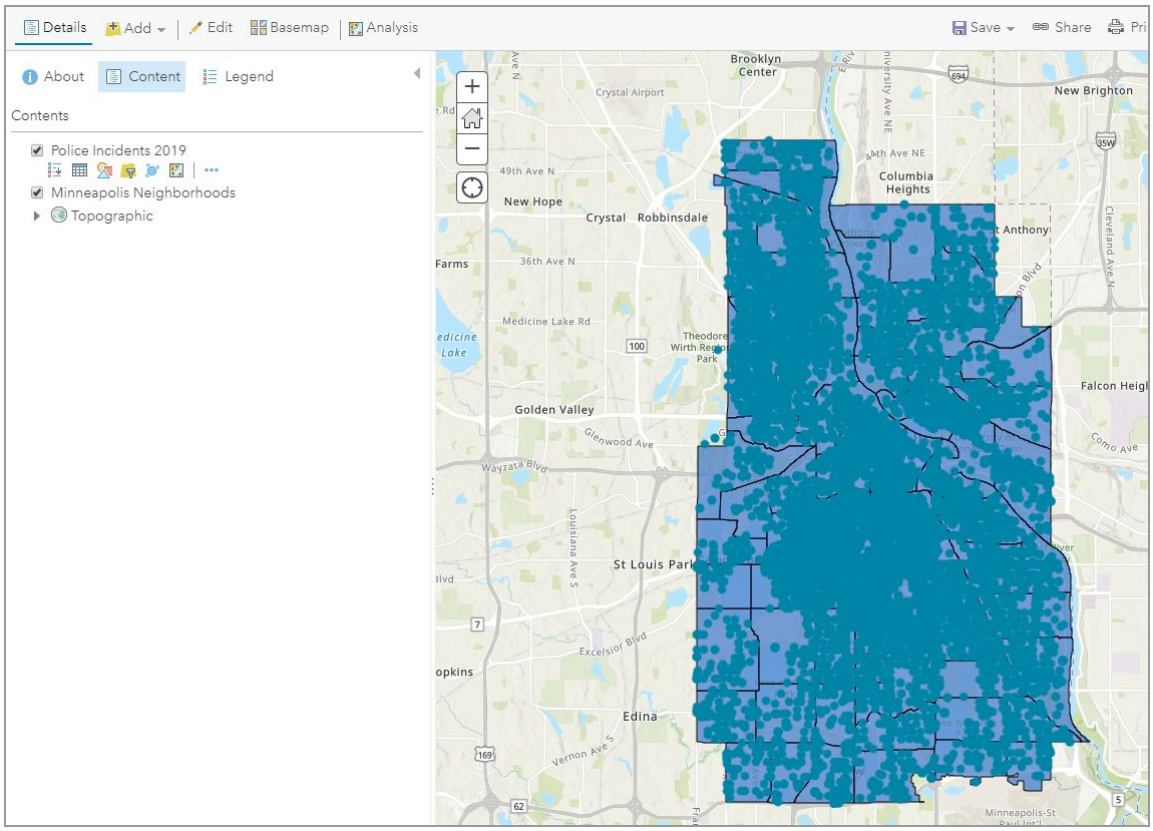

Figure 2: Layer overview

To read more about adding layers to maps, click here.

STEP 3 - Analysis

We want to count the number of incidents occurred in each neighborhood. In order to do that, we use the “Analysis” tab on the map. (The final analysis pane should look something like Figure 3 on the right) (To read more about the Aggregate points, click here.)

1- Click on the **Analysis >>> Summarize Data >>> Aggregate Points**.

2- Choose **Polygon** and **Police Incidents 2019** for section 1.

3- Choose **Minneapolis Neighborhoods** for section 2.

4- Do not change anything for sections 3 and 4.

5- Name your result layer as “Minneapolis Crime Count”.

6- Hit **Run Analysis**.

7- From the contents pane, uncheck Minneapolis Neighborhoods and Police incidents 2019, and check the new layer.

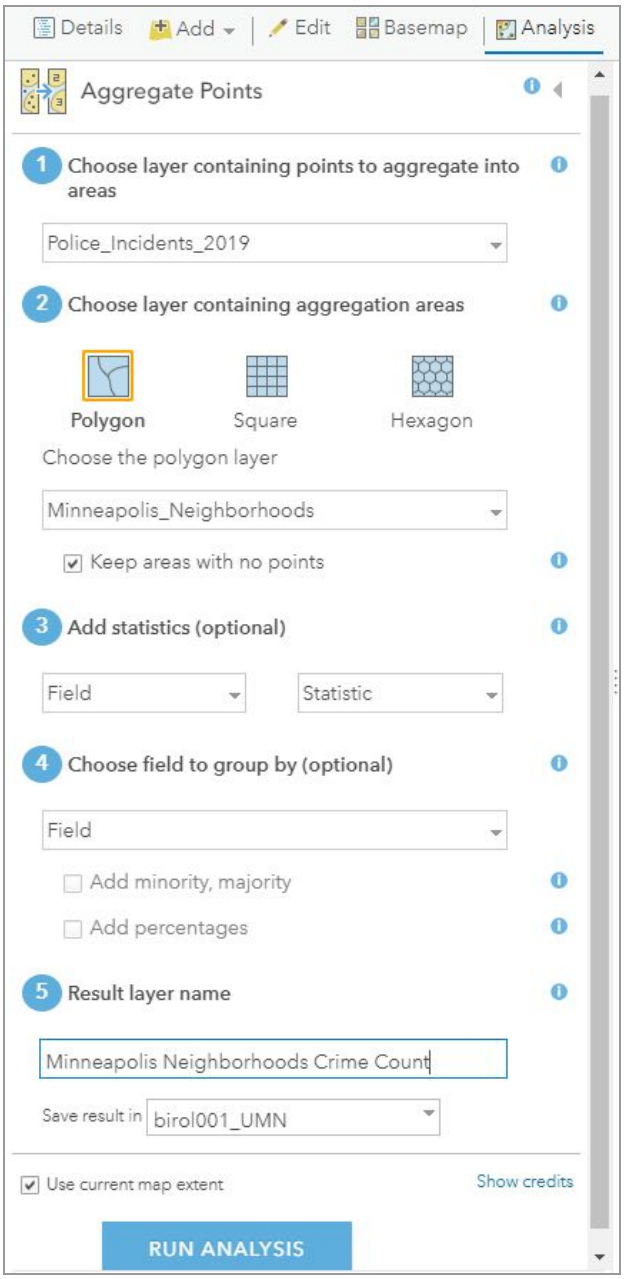

Figure 3: Aggregate points analysis

The layer should look something like Figure 4. When you click on a polygon, the pop-up shows up, and displays “Counts of Points”.

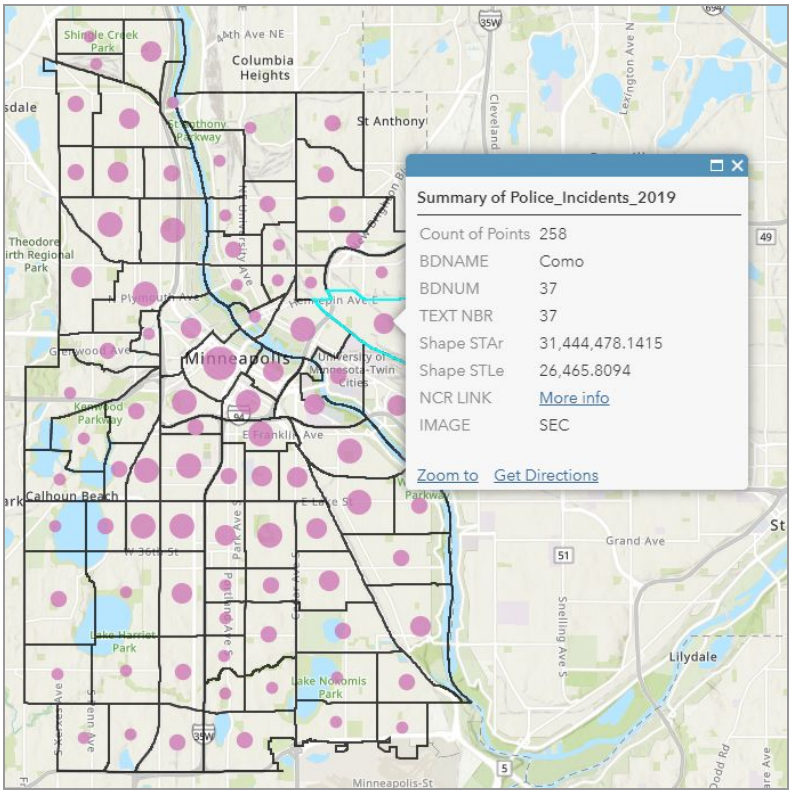

Figure 4: Analysis layer result

STEP 4 - Symbolize Layers

1- From the Content pane, click on the **Change Style** icon. (Figure 5)

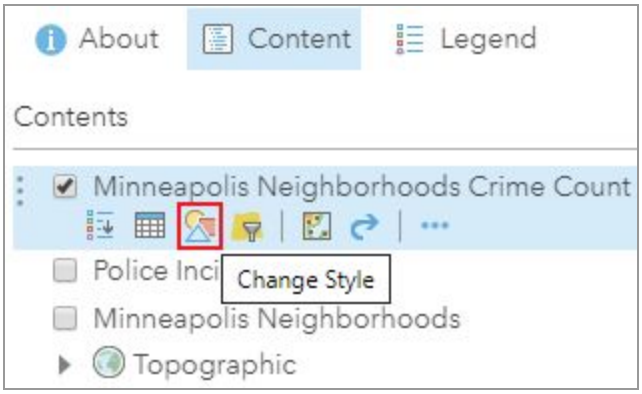

Figure 5: Change style

2- Click on the “Counts and Amounts (**Color**)” style. (Be sure the **Choose an attribute to show** is chosen as **Count of Points**)

3- From the “change style” pane that just opened, click on the **Classify data** (Figure 6)

4- Choose **Manual Breaks** as the classification method with **5** classes. Round classes to **10** (to make the legend appear clear).

5- Click on the **Symbols** and choose an appropriate color ramp to show your results.
6- Set transparency to what you wish (For this example, it is set to 0).
7- Click **OK** and **Done**.
8- From the “Basemap” tab, choose a basemap. (For this example, we chose “Light Gray Canvas”.)

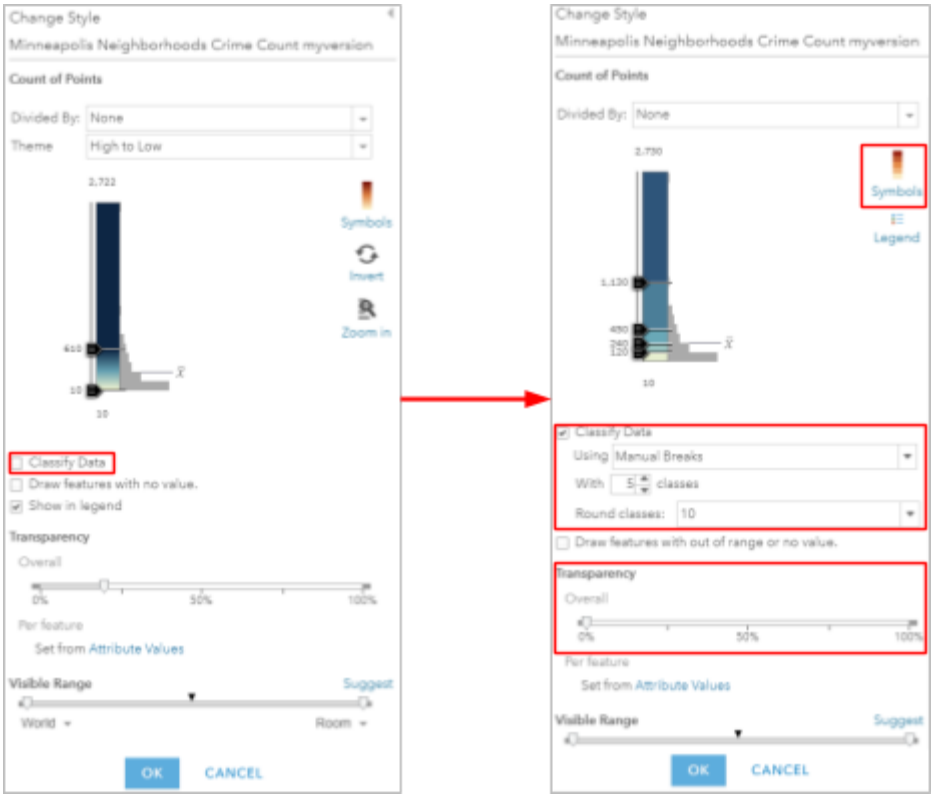

Figure 6: Classify Data

The map should look something like Figure 7.

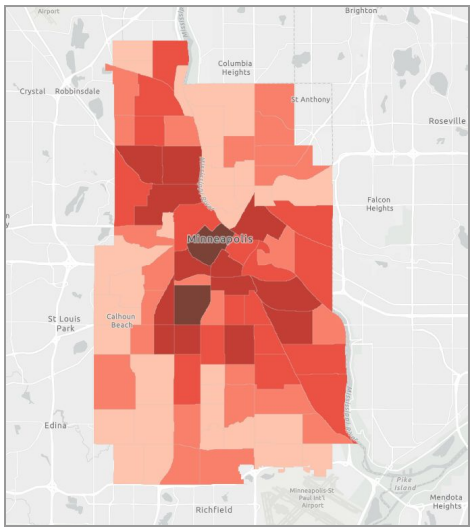

Figure 7: Symbolize layer Result

STEP 5 - Configure Pop-up

1- In the contents pane, click on the three dots and **Configure Pop-up** to open the "Configure Pop-up" pane. (Figure 8)

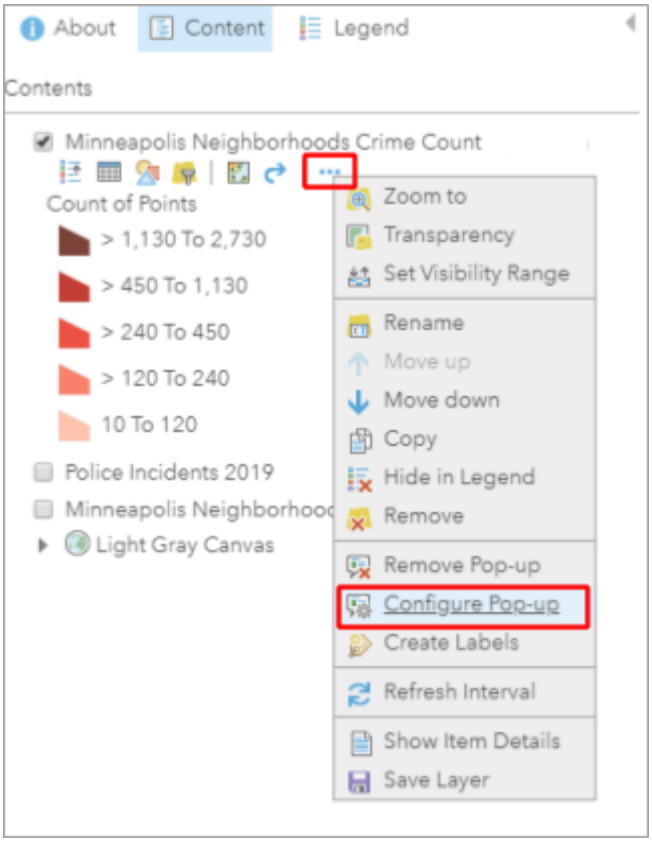

Figure 8: Open Configure Pop-up Pane

2- From the Configure Pop-up pane, enter a title for the pop-up window as "Police Incidents 2019 counts by Neighborhoods: {BDNAME}". (The curved brackets represent the field values that you want to show in the pop-up title.)
3- Make sure the **Display** option is **A list of field attributes**.
4- Click on **Configure Attributes.**
5- From the configure attributes window, check the fields you want to show. Enter new field aliases. (Figure 9)

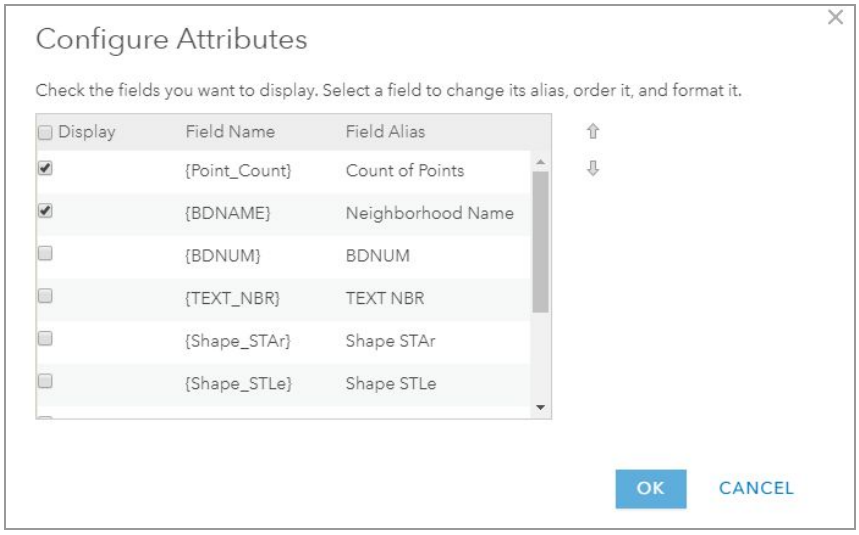

Figure 9: Configure Attributes

6- Hit **Ok** and close the pane.
For further readings about configuring pop-ups click here.
7- **Save** your map.

STEP 6 - Create a heat map

Now, we are going to create a new map from this existing map.

1- Click on the **Save >>> Save As** and save your map as “Minneapolis Police Incidents Heat Map”.
2- Remove the “Minneapolis Neighborhoods Crime Count” layer, and make the **Police Incident 2019** and **Minneapolis Neighborhoods** layers visible.
3- Change the basemap to **Dark Gray Canvas**.
4- Drag and drop the **Minneapolis Neighborhoods** layer on top of the **Police Incidents 2019** layer. (Figure 10)

Figure 10: Changing the order of the layers

5- Change **symbology** to **Heat Map** for the Police Incidents 2019 data. Choose an appropriate color scheme.

6- Change **symbology** for the Minneapolis Neighborhoods. Make a **transparent** fill.
7- Click on the three dots and **create labels** for the Minneapolis Neighborhoods layer. Make sure BDNAME is chosen for the Text. Choose an appropriate color for the labels.
8- Save your map.

The map should look something like Figure 11.

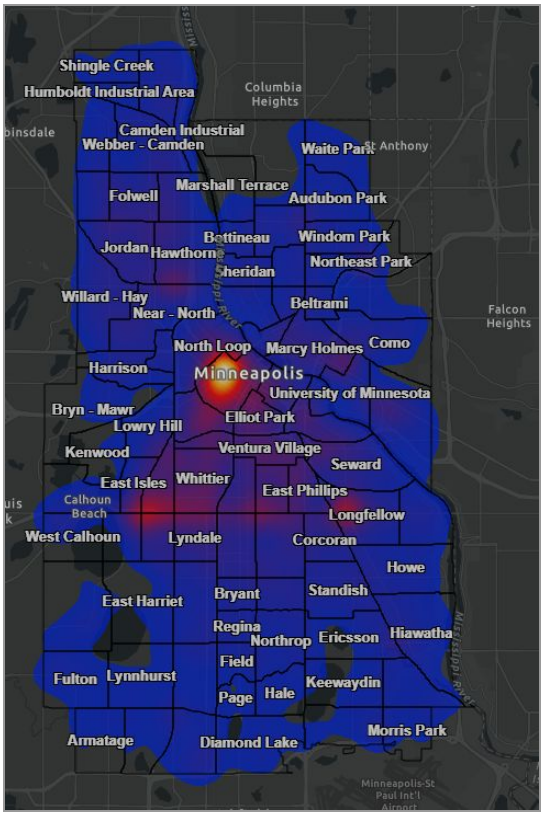

Figure 11: Heat Map

To read more about the heat maps, click here.

STEP 7 - Create a Story Map

1- Go to your **Content** in the ArcGIS Online website.
2- Click on **Create >>> Configurable Apps >>> Story Map Swipe and Spyglass** and create an app.
3- Title your map as “Minneapolis Police Incidents 2019”. Add some tags and summary as you wish.
4- Once the app is created, choose the **Minneapolis Crime Map** as the first map.
5- Choose **Vertical Bar** as swipe style.

6- For Swipe Type, choose **Two web maps”**. For the right map, choose **Minneapolis Police Incidents Heat Map.**
7- For app layout, **enable** Description, Legend, Pop-up, and an address search tool.
8- Enter titles for left and right maps and choose header color for each. Then, hit **OK.**
9- After specifying the maps, change **Theme, Header, and Extent** from the **Settings** button on the app.
10- Write a brief description of your maps.
11- Save the app.
12- Share the map **Publicly**.