Exercise: Create a map to be published to the web

You have been asked to create a map for publishing to the web that shows the oil pipeline, the proposed new sites and valves, and the location of bald eagle nests.

Note: Although some of the data shown in this exercise is real, some of the details (valves, sites, and bald eagle nests) are fictitious.

Estimated completion time: 15 minutes

To complete exercises, you need the following:

ArcGIS Desktop 10.2 or ArcGIS Desktop 10.2.1 or ArcGIS Desktop 10.2.2 or ArcGIS Desktop 10.3 or ArcGIS Desktop 10.4 (Basic, Standard, or Advanced)

- Step 1: Download the data

To complete the exercise, you must download the data. If you have already downloaded and installed the data, continue to the next step.

- Step 2: Create a map for web publishing

Start ArcMap and open a blank map document.

If necessary, click the Catalog tab to open the Catalog window.

Note: If you do not see the Catalog tab, click the Catalog button on the Standard toolbar.

Click the Connect To Folder button, browse to the **..\Student\PetrolCreating** folder, and click OK.

All your course data is stored in this location.

In the Catalog window, browse to **..\Student\PetrolCreating\NewValve.gdb**.

Add the following feature classes to the map:

BaldEagleNests

Petroleum_Pipeline

PotentialValves

PotentialValveSites

To make these layers more readable to a wide audience, you will rename them.

Rename the layers using the following names:

Bald Eagles Nests

Potential Valves

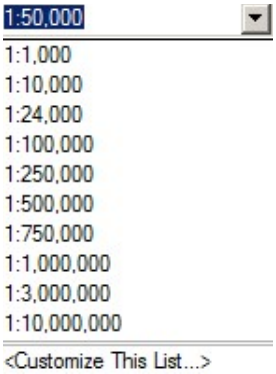
Petroleum Pipeline

Potential Valve Sites

- Step 3: Load online scale settings

Clients will use your map service in a web browser, so you will configure ArcMap to behave like a browser. Doing so will help you to author the map from that point of view. To begin, you will customize the list of available map scales.

From the Map Scale menu, click Customize This List.



In the Scale Settings dialog box, click Load > ArcGIS Online/Bing Maps/Google Maps.

Click the Only Display These Scales When Zooming check box and click OK.

ArcMap immediately snaps to the nearest online map scale, just as it will for your web map users. Unlike a web browser, ArcMap can still view the online basemap at any scale by interpolating the nearest scale online basemap image tiles. Web browsers can only view the basemaps at their online scales.

Now you will make sure that you can see all your data.

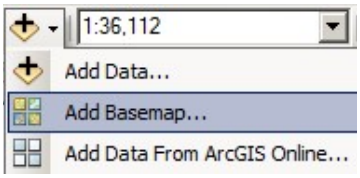
In the table of contents, right-click Potential Valve Sites and click Zoom To Layer.

On the Tools toolbar, click the Fixed Zoom Out button .

- Step 4: Add a basemap and create a group layer

Next, you will add an ArcGIS Online basemap.

Click the down arrow next to the Add Data button and choose Add Basemap.



Click the Imagery basemap and click Add.

It takes a few moments to download the cached online basemap and add it to your table of contents. After it has downloaded completely, you can see how your map service will appear in a web browser, allowing you to make any symbology changes before you publish the map service.

Click File > Save As.

Browse to **..\Student\PetrolCreating** and save the map as **NewValve_Web**.

In the table of contents, right-click the Layers data frame and click New Group Layer.

Rename the new group layer **Valve_18K**.

Drag all four feature classes into the new group layer and arrange them in the following order.

Bald Eagle Nests

Potential Valves

Potential Valve Sites

Petroleum Pipeline

Center the three Potential Valve Sites polygons in your display.

- Step 5: Configure ArcMap to use the Esri_Optimized style

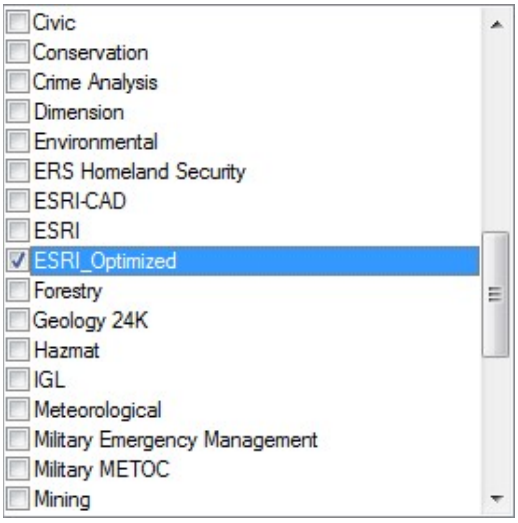
Next, you will configure ArcMap to use the Esri_Optimized style, a set of symbols designed to perform better (approximately 60 percent faster) while still looking indistinguishable from their Esri style counterparts. Depending on the needs of your map, you can use the following procedure to configure ArcMap to use the Petroleum style or any other style that is appropriate for your map.

From the Customize menu, click Style Manager.

In the Style Manager dialog box, click Styles.

Scroll down and click the Esri check box to remove the check mark.

Click the Esri_Optimized check box.



Step 5a: Configure ArcMap to use the Esri_Optimized style.

Click OK to dismiss the Style References window.

Close the Style Manager dialog box.

- Step 6: Symbolize layers

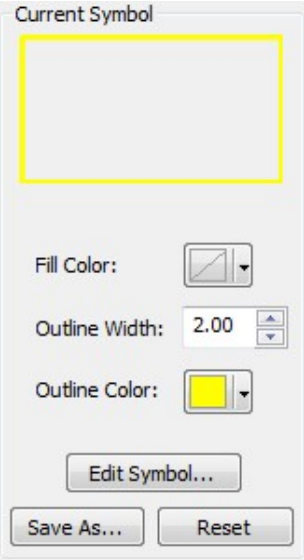
You will now prepare your layers to be viewed on the web, starting with symbolization.

In the table of contents, click the symbol for the Potential Valve Sites layer.

Click the Hollow symbol and set the following parameters:

Outline Color: Solar Yellow

Outline Width: **2**



Step 6a: Symbolize layers.

Click OK.

Apply the following symbology from the Esri_Optimized style to the remaining layers:

Petroleum Pipeline:

Color: Poinsettia Red

Width: 3

Potential Valves:

Cross 4 symbol

Color: Default symbol color

Bald Eagle Nests:

Hexagon 7 symbol

Color: Ginger Pink

- Step 7: Display fields in attribute table

In the table of contents, right-click the Bald Eagle Nests layer and click Open Attribute Table.

	OBJECTID *	Shape *	NumberEagles	NumberAdults	NumberImmature
▶	1	Point Z	4	2	2
	2	Point Z	2	1	1
	3	Point Z	3	2	1

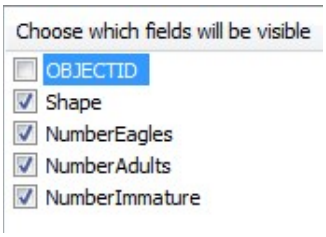
Step 7a: Display fields in attribute table.

Three fields in this layer may interest your map users: the total number of eagles, the number of adult eagles, and the number of immature eagles. Some information in the attribute table is not useful for map users. You will configure this layer to display the important information only.

In the table of contents, double-click the Bald Eagle Nests layer to open the Layer Properties dialog box.

Click the Fields tab.

In the list of fields on the left side, click the box next to OBJECTID to uncheck it.



Step 7b: Display fields in attribute table.

Note: The Shape field must always be visible for the layer to be queried.

Now you will add more user-friendly aliases to the field names.

Click NumberEagles.

Under Appearance, change the alias to **Number of Eagles**.

Change the following field aliases using the following information.

Field name	Alias
NumberAdults	**Adult Eagles**
NumberImmature	**Immature Eagles**

Click OK to close the Layer Properties.

If necessary, open the attribute table for the Bald Eagle Nests layer.

	Shape *	Number of Eagle	Adult Eagles	Immature Eagles
▶	Point Z	4	2	2
	Point Z	2	1	1
	Point Z	3	2	1

Step 7c: Display fields in attribute table.

The new aliases are now at the top of the field columns.

Close the attribute table.

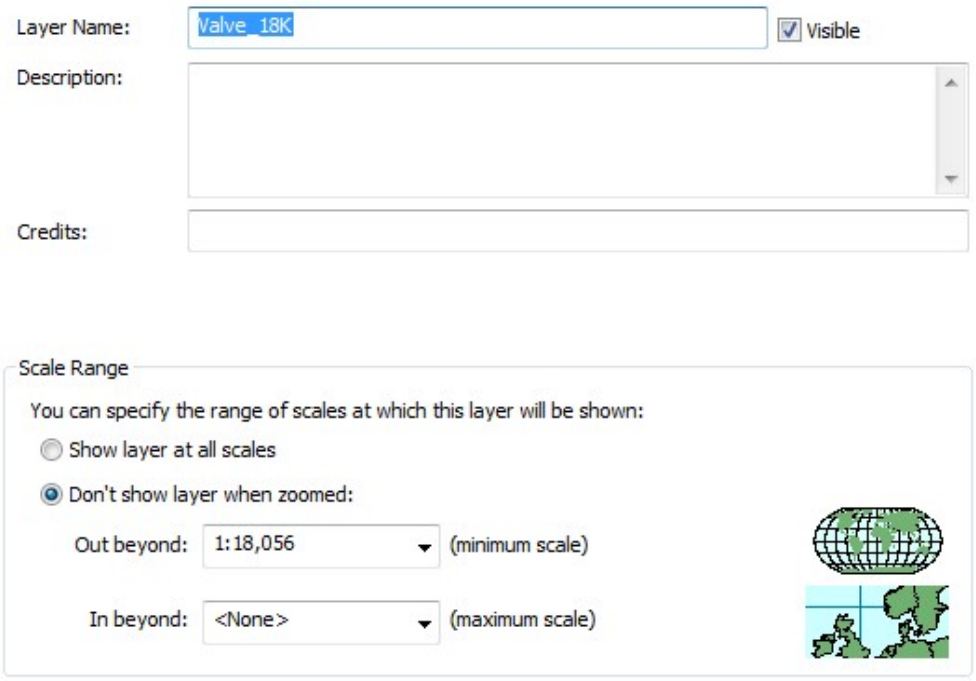
- Step 8: Set scale dependency

Next, you will configure scale dependency for the group layer. Setting scale dependency on a layer or group layer makes the layer display only if the map scale is within the range of the scale dependency. Consequently, the map creator can make sure that the map symbols are appropriate for the map's current scale. For example, on a small-scale map of the world, a city might be displayed as a single point; however, if the map user zooms in to a large-scale map of the city, it might be more appropriate to view the city boundaries as a polygon.

Double-click the Valve_18K group layer to open its properties.

On the General tab, in the Scale Range section, click Don't Show Layer When Zoomed.

For Out Beyond, type **1:18,056**.



Step 8a: Set scale dependency.

Tip: No punctuation is necessary; you can enter whole numbers for the scale values.

Click OK.

Zoom out one scale level (1:36,112).

Your group layer turns off because you have set up a scale dependency.

- Step 9: Create a second view scale

Now you will configure the data to be shown at a smaller scale.

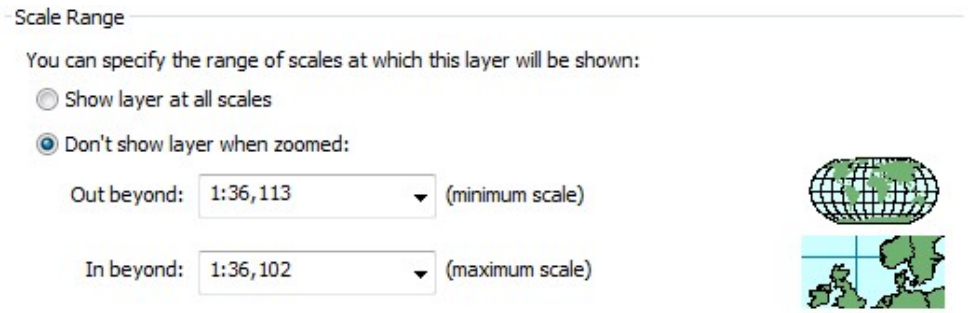
In the table of contents, right-click the Valve_18K group layer and click Copy.

Right-click the Layers data frame and click Paste Layer(s).

A duplicate group layer is added above the original.

Drag the duplicate group layer below the original and rename it **Valve_36K**.

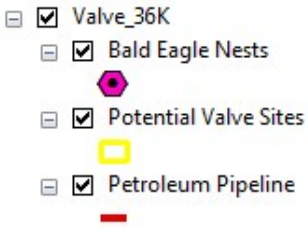
Change the minimum scale for the new group layer to **1:36,113** and the maximum scale to **1:36,102**.



Step 9a: Create a second view scale.

At this smaller scale, your map readers will not need the same level of detail.

Remove the Potential Valves layer from the Valve_36K group layer.



Step 9b: Create a second view scale.

This map is now ready to be published. You have symbolized the layers using the Esri_Optimized style and created scale-dependent group layers; both of these actions will allow the web map to draw quickly.

Save your map.

Exit ArcMap.

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