

Quick Guide: Digitizing (Editing) GIS Map Layers

NOTE: If you want to create a new layer from scratch to digitize into, you will need to first create a blank (empty) layer in ArcCatalog.

- a. **Open ArcCatalog**
- b. **Browse** to the folder where you will want the new layer to reside
- c. **Right-click** in the white space in the right side of ArcCatalog
- d. Select **New... Shapefile** (or **Geodatabase**, your preference)
- e. In the dialog box that appears, **name you new file** and select **Feature Type** of point, polyline, polygon, multipoint, or multipatch, depending on what type of features you want to draw
- f. select a coordinate system (if desired) and click **OK**
- g. You can now drag and drop this newly created layer into ArcMap for digitizing.

Open ArcMap and add the layer to be digitized and any necessary background layers

1. Open **ArcMap** with a new or existing map document (.mxd)
2. **Add** the layer to be digitized (whether creating new features or editing existing features)
3. **Add** whatever background layers you need for reference to do your digitizing.
4. If you are digitizing from an image (raster layer), add it

Add Editor Toolbar and 'start an editing session':

5. Click the **View menu, Toolbars, and Editor Toolbar**



You may want to “dock” this toolbar into the menu bar by simply moving it to the top of the window until it ‘sticks’ in place.

6. On the **Editor Toolbar**, click **Editor, Start Editing**
7. You will be asked which folder you want to start editing in. This should be the folder that contains the layer you want to digitize into.
8. Click **OK**
9. In the **Editor Toolbar**, make sure that the **Target** (drop down list) is set to the layer you want digitize.

NOTE: You can always “Stop Editing” by going to Editor, Stop Editing. You will be asked whether you want to save your edits or not. Thus you may elect not to save edits, and your layer will only reflect changes you made up to the point where you last saved your edits.

If modifying existing features:

1. Click the “**Edit Sketch Tool**” icon (looks like a black triangle on the **Editor Toolbar**)
2. In the map **double-click** the feature that you want to edit. You should see the feature become highlighted with little squares where the vertices are.
3. If you **hover over a vertex**, you will notice the cursor changes and you can click and drag the vertex to move it.

4. You can also insert a new vertex anywhere along a line or edge of an area (polygon) by **right-clicking** and choosing **Insert Vertex**.
5. You can delete a vertex by **right-clicking** on it and selecting **Delete Vertex**.

*NOTE: After you have created or modified a feature and are happy with your result, click on the **Editor Toolbar**, and **SAVE EDITS**. Do this **OFTEN** while editing.*

If drawing new features:

1. Click on the **Pencil Tool** in the **Editor Toolbar**
2. You will now **begin drawing the trails by clicking on the map**.
3. **Left-click to add points**. While editing, you can use “CTRL Z” on the keyboard to *undo* your last added point, or use it several times to undo several points. An entire segment can be undone by using the Editor Tool (black arrow) on the editor toolbar to select a segment, then press the “Delete” key.

Remember: *After every few good moves you make, go ahead and save your work to the layer by clicking **Editor** on the **Editor Toolbar** and then clicking **Save Edits**. This way if you make a mistake after, you can always stop editing without saving your recent edits, but everything you’ve done before you ‘saved edits’ will still be saved.*

Adding attributes to a feature you just created

10. Now, to add the attributes for the segment you just created, click the **Attribute Button** on the **Editor Toolbar**. It’s the next-to-the-last one on the right that looks like an icon for a table. (See image below)



11. A dialog box should pop up. Click in the *value column* to the right and enter the appropriate information for each row.

Note: You can enable “*streaming*”, which will allow you to simply move the cursor along a path while points are added for you at a specified rate. This can speed up the process because you do not have to click while you are drawing. **However, this mode can be less accurate than actually putting the points in yourself.**

As you stream, ArcMap automatically adds vertices at an interval you specify; this interval is called the stream tolerance. Because the default stream tolerance is 0, you must enter a tolerance value before you start digitizing or the vertices will join together or overlap each other. You can change the stream tolerance at any time, even when you're in the process of digitizing a feature.

You must also specify the number of streaming vertices you want to group together. The number you set tells ArcMap how many vertices to delete when you click the Undo. For example, if you set this number to 20 and click the Undo button while you're digitizing a feature, ArcMap deletes the last 20 digitized vertices from your feature.

Digitizing features in stream mode

Summary: With the mouse pointer, right-click anywhere on the map and click Streaming. You can switch back to point mode at any time by pressing F8; press F8 again to switch back to stream mode. Detailed instructions follow.

1. Click the Editor menu and click Start Editing.
2. Click the Editor menu and click Options.
3. Click the General tab.
4. Type the stream tolerance (in map units) **(50)** in the Stream tolerance text box. Click OK.
5. Type the number of vertices you want to group together. **(1)** Click OK.

Now when you click the Undo button while digitizing in stream mode, the number of vertices you specified in step 5 will be deleted.

6. Click the tool palette dropdown arrow and click the Sketch tool.
7. Click to create the first vertex of the line or polygon feature (left mouse click).
8. Trace the mouse over the feature on the paper map.

ArcMap creates vertices at the stream tolerance you specified.

9. Finish the feature by right-clicking and choosing Finish Sketch, or simply double-click.

The feature is created.

Tip: Use F8 to switch in and out of stream mode

When you're in the process of digitizing a feature in stream mode and want to interact with the ArcMap interface using your mouse—for example, to change the stream tolerance or undo an action—you must first switch back to point mode by pressing F8. After you have finished interacting with the interface, you can resume streaming by pressing F8 again.

