FedGIS Conference

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ArcMap Editing Tricks and Tips

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Agenda

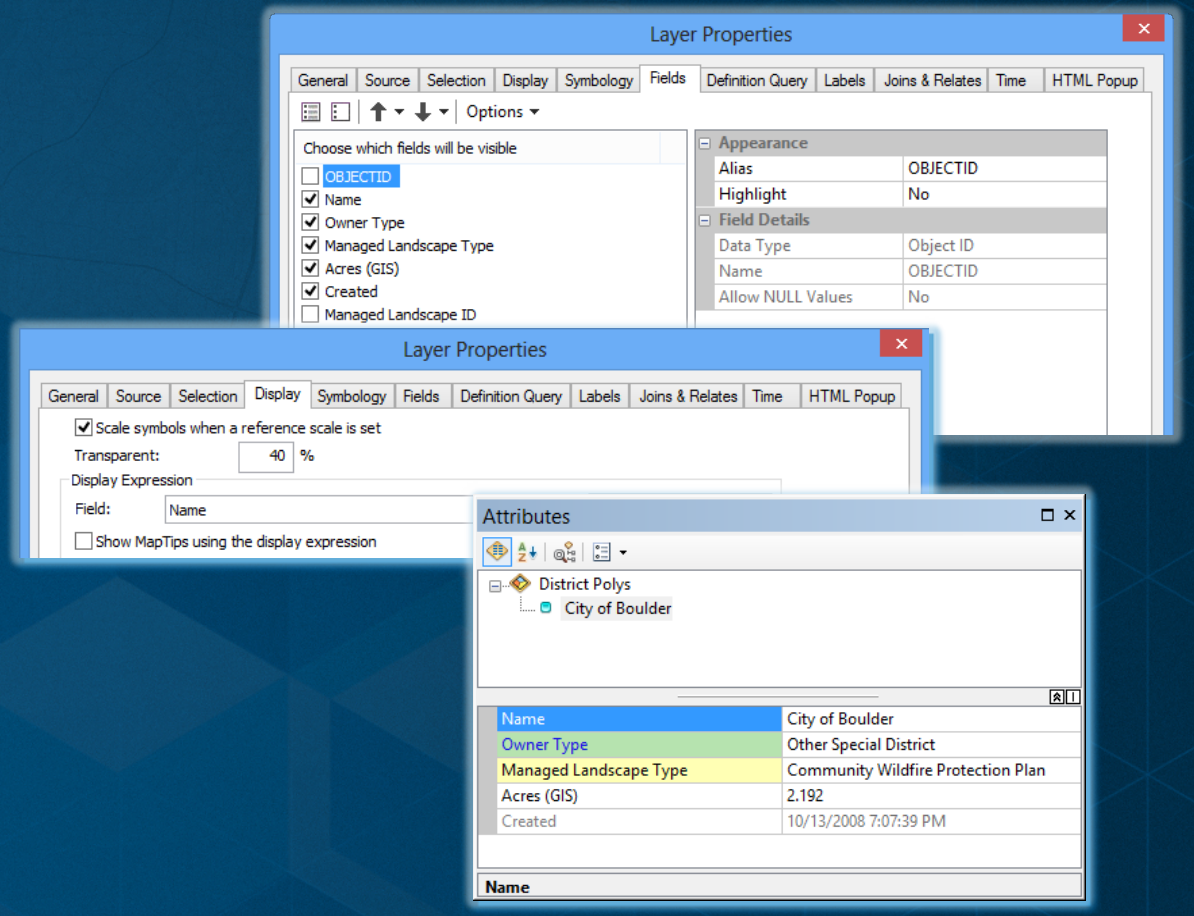
1. Creating Features
2. Editing Features and Attributes
3. Aligning and Editing Coincident Features

01

Creating Features

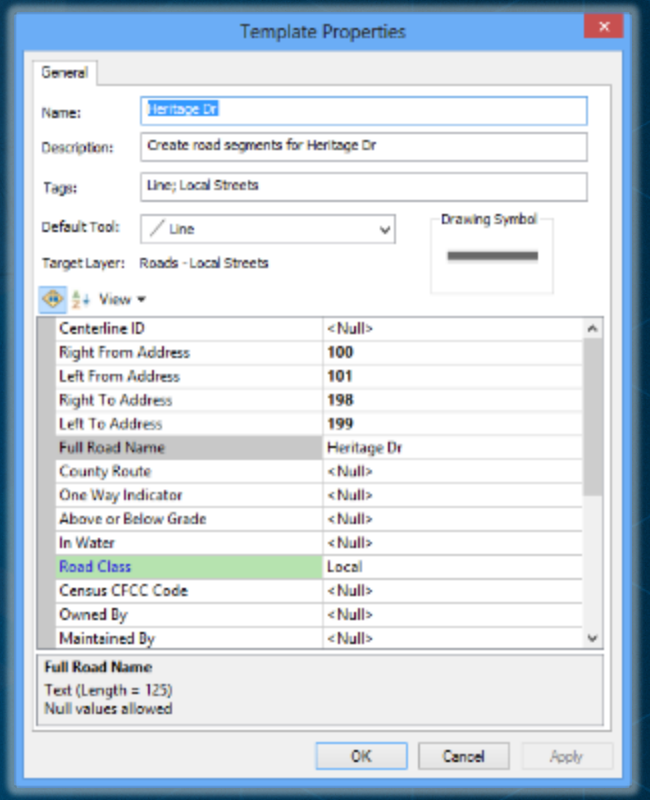
Preparing a map for editing

- **Best to have all data in same, local projection**
- **Set layer properties before you start editing**
  - Symbology tab
  - Fields tab: alias, visibility, highlighting, read-only
  - Display tab: Display expression
  - Definition query: works best with discrete (=) queries



Creating features with feature templates

- **All info needed to create a feature**
  - initial attribute values, target layer, default construction tool
- **Templates are used anytime you create features**
  - After feature is created, no connection back to template
- **Saved in .mxd (also .lyr files, packages, and web services)**



Any geodatabase default values are automatically set as defaults for feature templates.

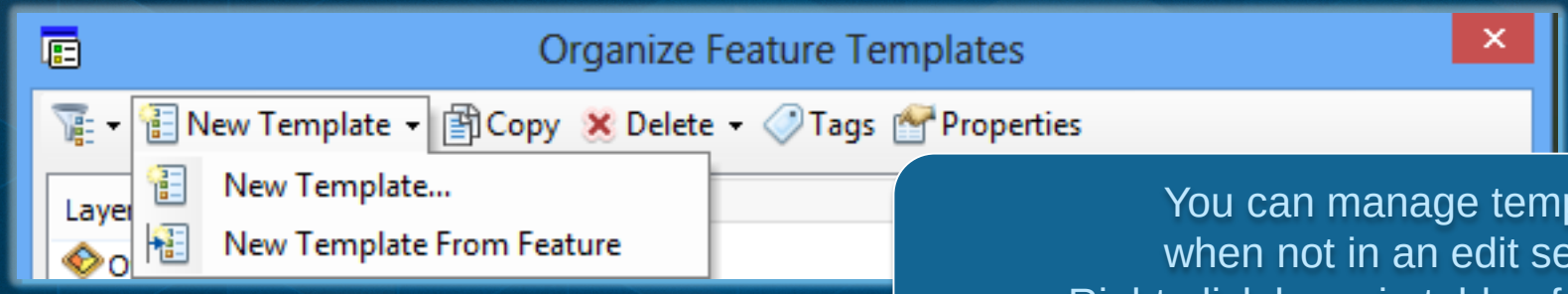
Best practices for feature templates

- Create templates
  - Auto-generated at edit session start if not present for layer
  - Multiple templates in a layer with different defaults (tools, attributes)
- Set good layer, symbol names, and field aliases
- Add description and tags for easy searching
- Delete templates you are not using

If you see a gray symbol and draw warning, re-create the template. Happens if you change the renderer after templates were created.

Managing feature templates

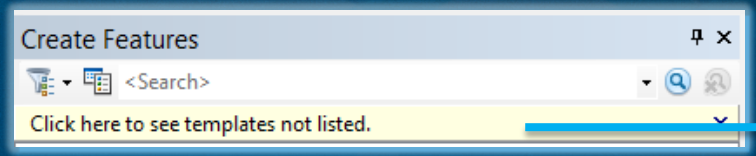
- **Organize Feature Templates window**
  - Create, modify, delete templates
  - Update properties for multiple templates
- **Use existing feature as “template” for new template**
  - Makes it easy to set target layer and default attribute values
  - Select a feature > Open Organize Feature Templates window

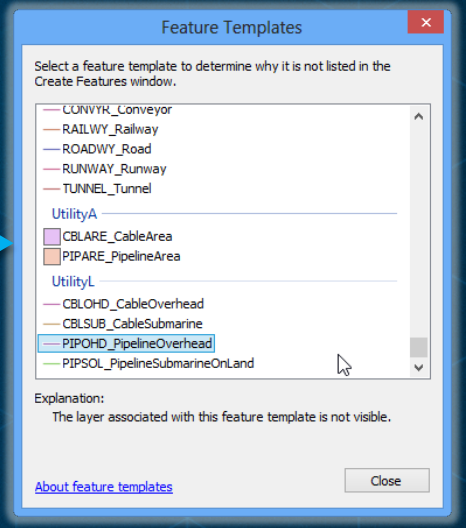


You can manage templates
when not in an edit session.
Right-click layer in table of contents >
Edit > Organize Feature Templates.

Why are my feature templates hidden?

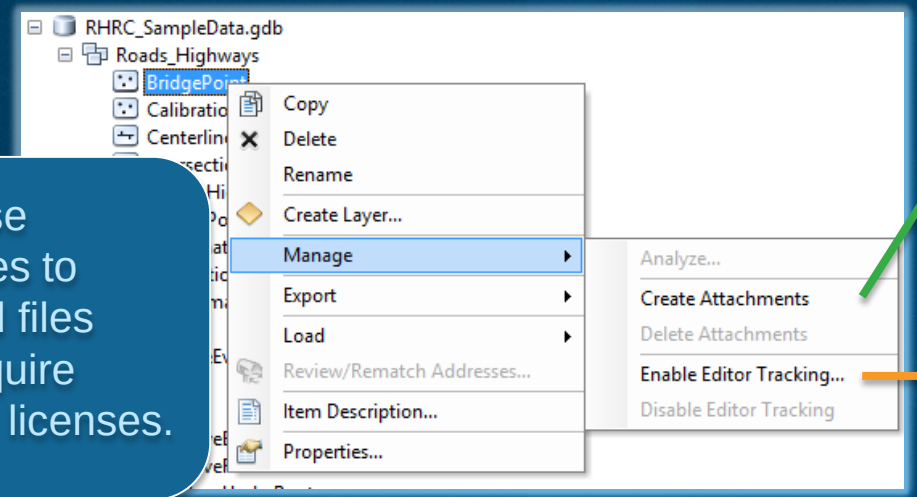
- **To avoid creating features that cannot be drawn**
- **Layer or group is not visible**
  - Turned off, beyond scale range
- **Default attribute values do not fulfill definition query**
  - More info: see Best practices blog
- **In a parcel fabric: use Parcel Editor toolbar**
- **Or templates may not exist – need to create yourself**

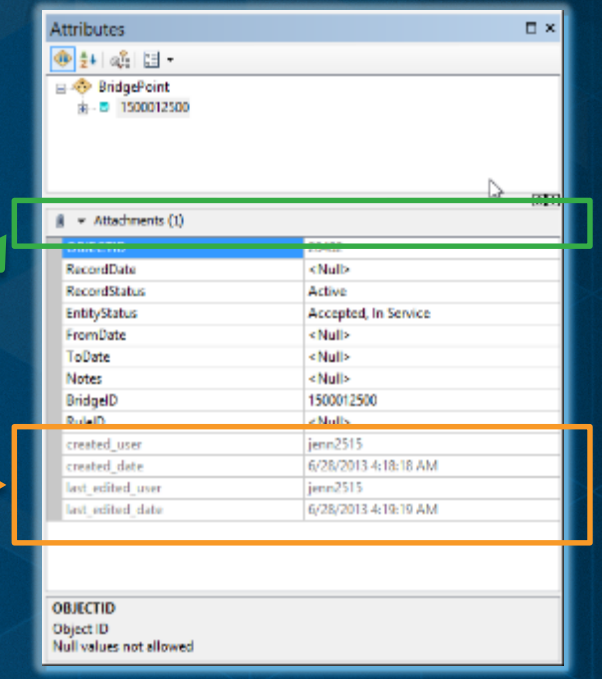




Setting up fields to track edits and add attachments to features

- For geodatabases only: enable from Catalog window
- Editor tracking: automatically records editor's name, creation date, or last edit date
- Attachments: add documents and images to features
  - manage on Attributes window





Attachments use relationship classes to match the attached files to features, so require Standard or Advanced licenses.

Switching among tools while editing

- **Use keyboard shortcuts: E, C, X, Z, and B**
  - E key to toggle among construction, Edit, and Edit Annotation tools
  - C key to pan
  - X key to zoom out
  - Z key to zoom in
  - B key to zoom and pan continuously
- **Use the navigation shortcuts with any ArcMap tool**

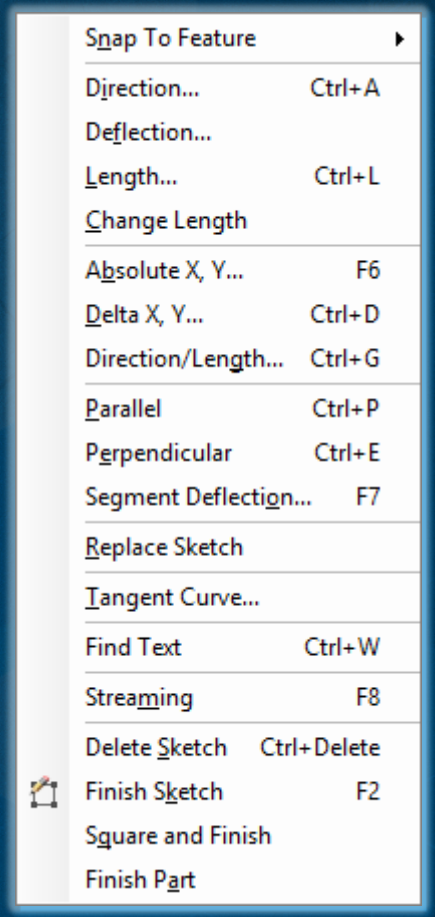
Shortcuts common to all editing tools

Shortcut key	Editing function
Z key	Zoom in
X key	Zoom out
C key	Pan
B key	Continuous Zoom/Pan
V key	Show vertices
Esc	Cancel
Ctrl + Z	Undo
Ctrl + Y	Redo
Spacebar	Suspend Snapping

See the help for a complete list of editing shortcuts.

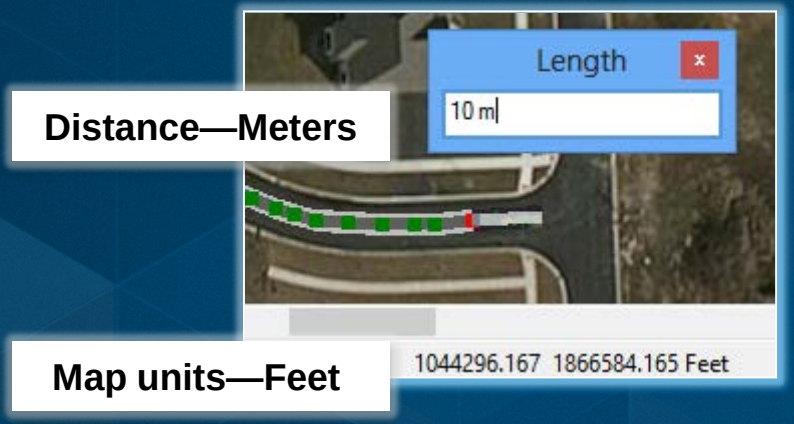
Creating a sketch using measurements

- **Feature Construction toolbar or right-click**
  - Parallel or perpendicular
  - At a specific coordinate or angle
  - With a specific length
- **Feature Construction toolbar**
  - Press Tab to show and hide toolbar
  - Off by default
  - Enable permanently on Editor Options



Overriding map units

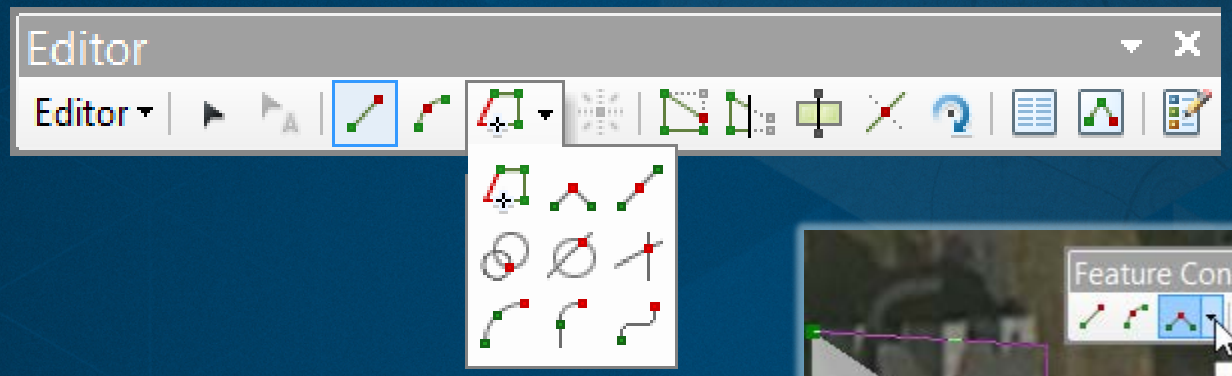
- Use unit abbreviation after distance value
- DD, DMS, or DDM when map has a projected coordinate system to enter Absolute XY and Delta X,Y
- See the help for a full list of abbreviations

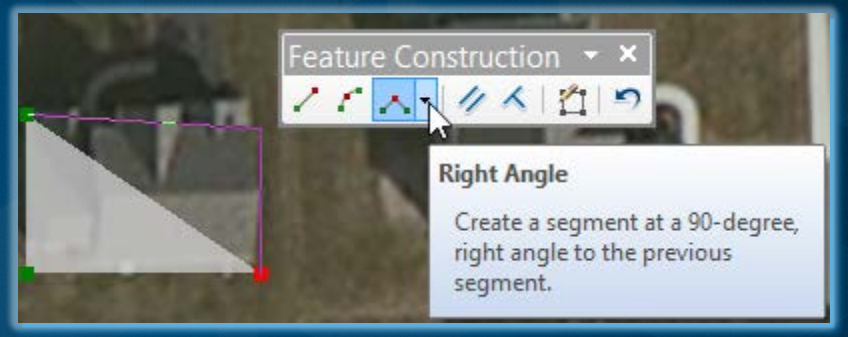


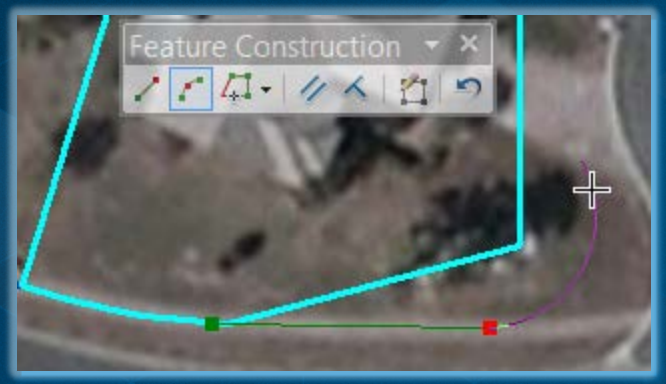
Unit	Abbreviation
Meter	m
Kilometer	km
Foot	ft (or ')
Mile	mi
Survey Foot	ftUS
Survey Mile	miUS
Decimal degrees	dd
Degrees minutes seconds	dms
Degrees decimal minutes	ddm

Switching construction methods mid sketch

- **Use Editor or Feature Construction toolbar palette**



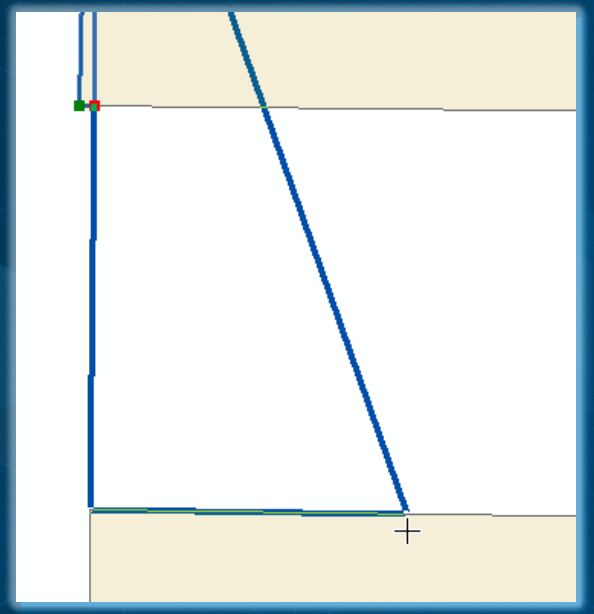


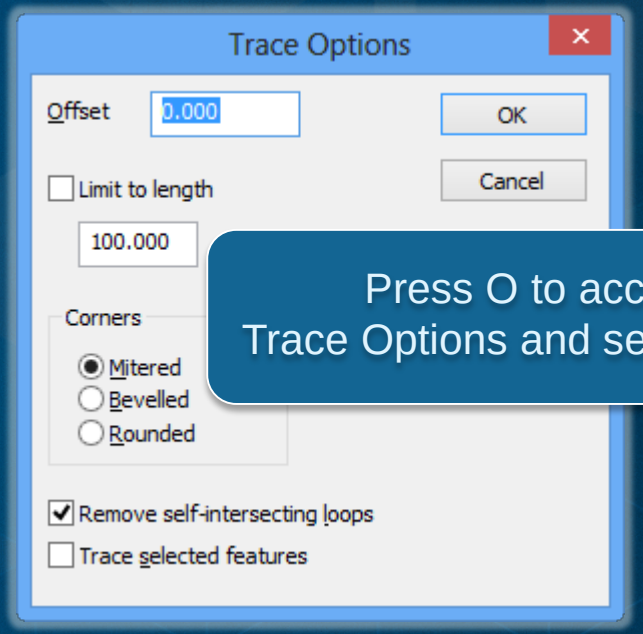


Press Tab to show or hide the Feature Construction toolbar.

Creating a sketch by tracing other features

- **Use Trace construction method**
- **Features do not need to be selected**
  - Use Ctrl key to limit to trace to selected features
- **Spans gaps and works on non-editable layers.**

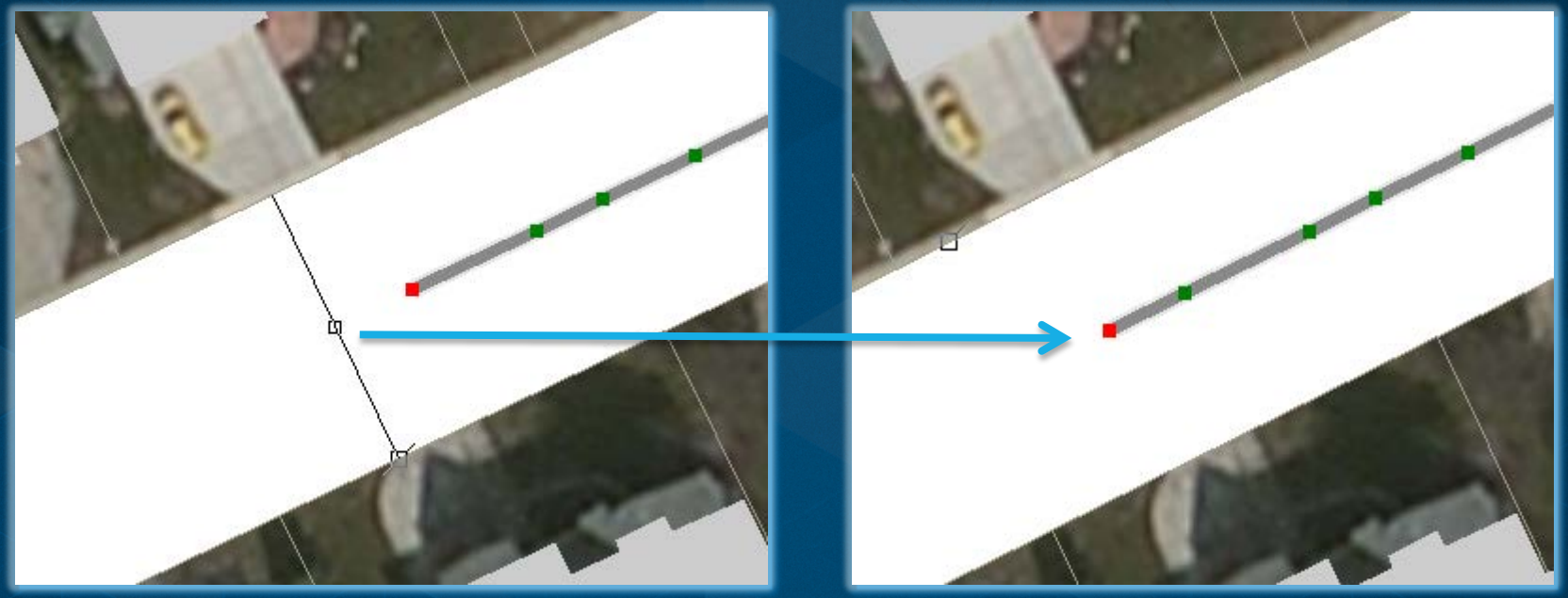




Press O to access
Trace Options and set an offset.

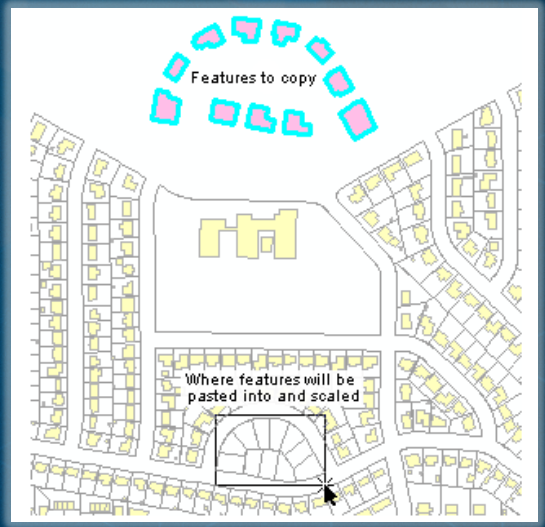
Creating a sketch at the midpoint of a line

- Use Midpoint construction method
- Click two points, vertex added at midpoint



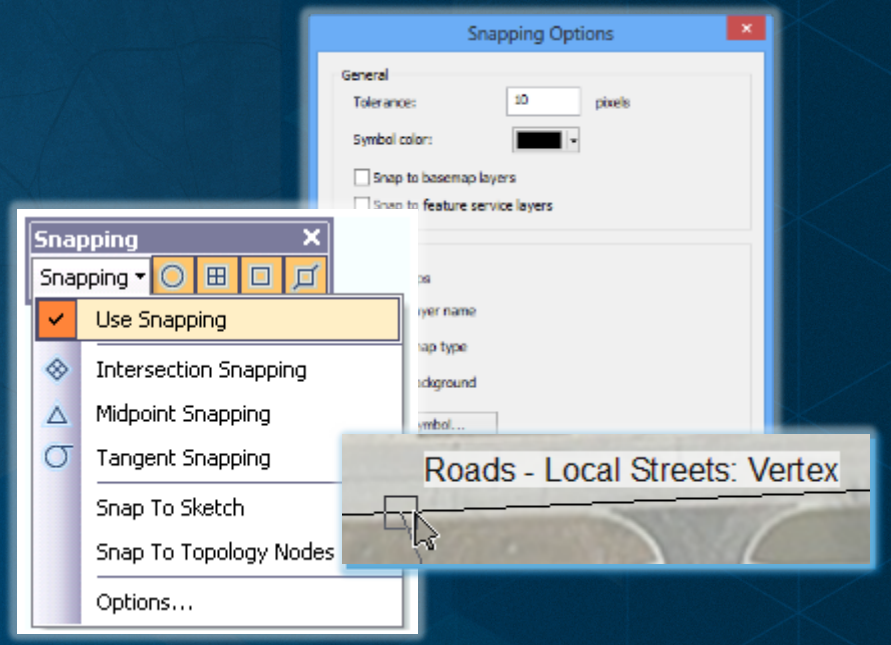
Copying and pasting features

- **Select features > Copy , Paste**
  - Within same layer or between layers and types (such as polygon pasted as lines)
  - Can copy from non-editable layer, such as CAD
  - Attributes copied if schemas match
- **Copy Features tool on Advanced Editing toolbar**
  - Copy and scale features
- **Copy Parallel on Editor menu**
  - Creates new parallel lines at an offset



Using snapping

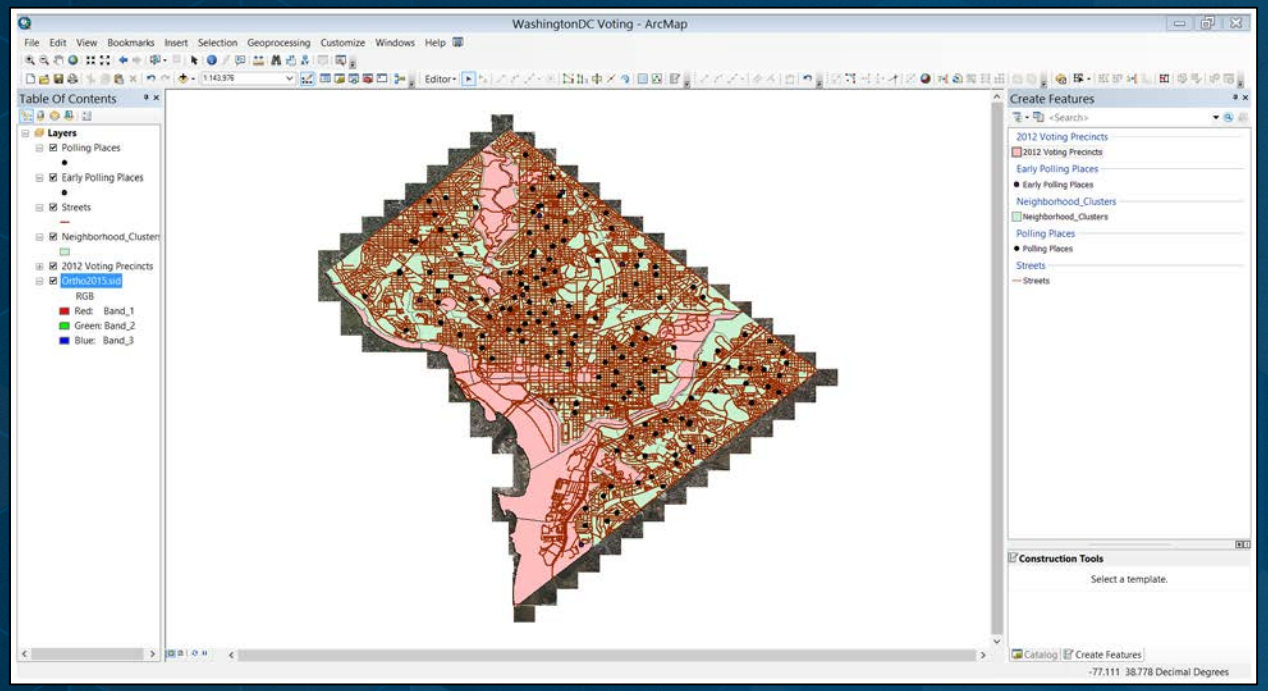
- **Snapping toolbar – simple**
  - Set tolerance on Snapping Options
  - Works with non-editing tasks (measure)
  - Snap to any visible layer
- **SnapTips**
  - pop-ups with layer name, snap type
- **Classic snapping**
  - fine-grained control over snapping
  - Enable on Editor Options



Temporarily suspend snapping by holding down the Spacebar.

Editing on top of imagery

- **Editing Options**
  - Uncheck Use symbolized feature to see wireframes
  - Change edit sketch symbols
- **Snapping Options - SnapTips**
  - Turn on background and change text symbol



Creating Features

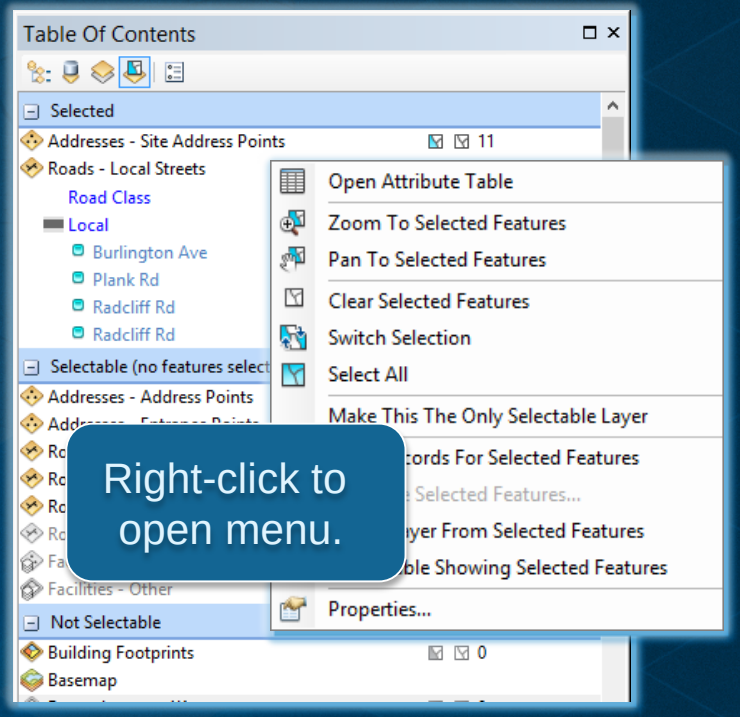
demonstration

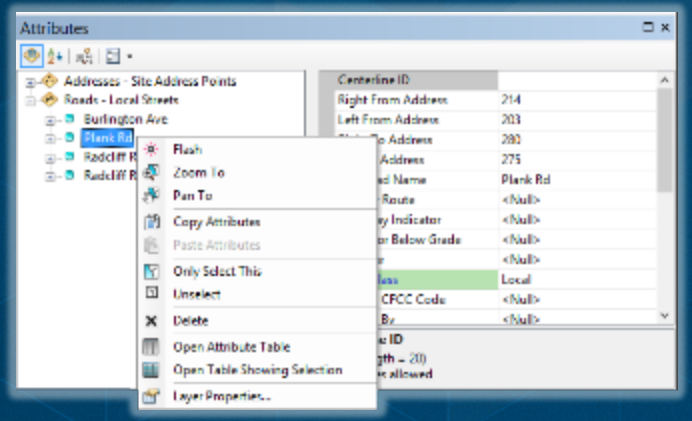
02

Editing Features and Attributes

Selecting the features you want

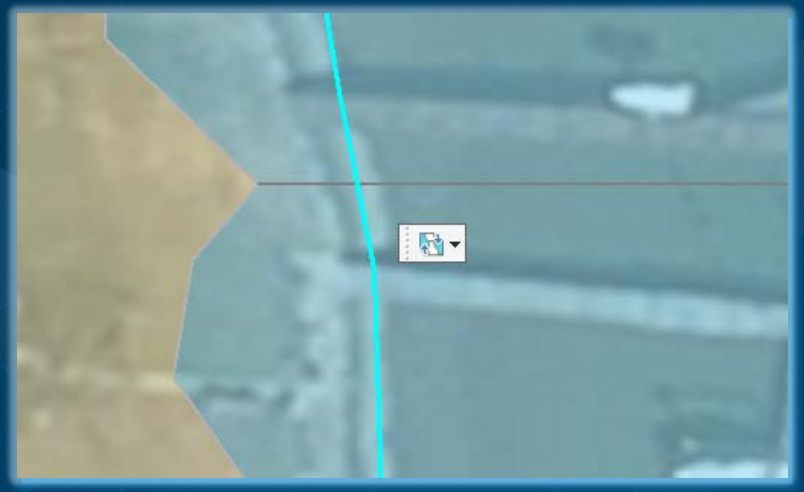
- **Table of contents – List By Selection**
  - Groups layers by selection info
  - Use icons to set selectable and visible layers
  - Deselect individual features in a layer
  - Clear all selections
- **Attributes window**
  - Deselect, navigate, copy attributes

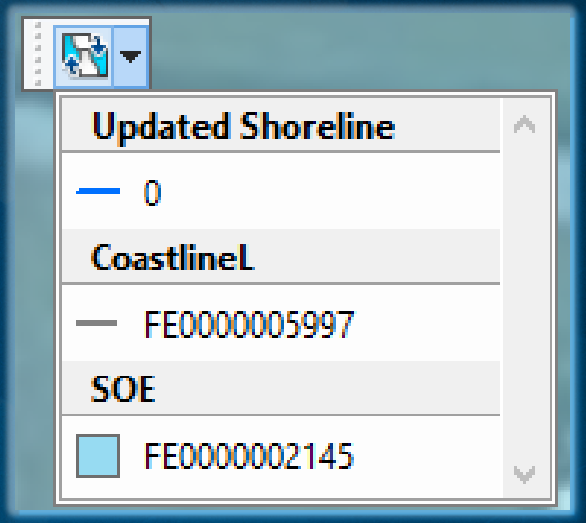




Selecting from overlapping features

- **Click with the Edit tool to display selection chip**
  - Only displays if you click the map. Dragging a box selects all overlapping features
  - Hover over feature in list to flash
  - Click feature in list to select it
  - Features listed by display expression

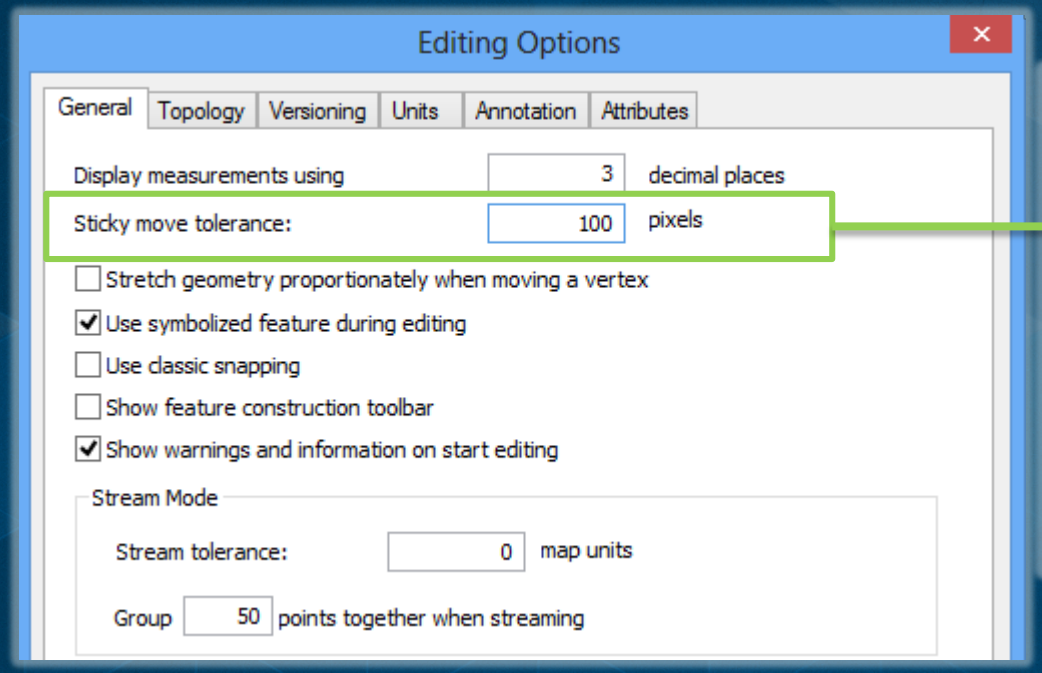


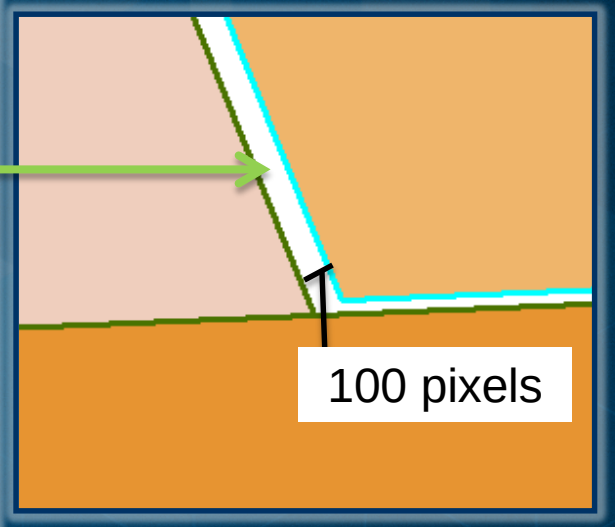


You can also press
N to cycle the selection
through overlapping features.

Preventing accidental feature movement when selecting

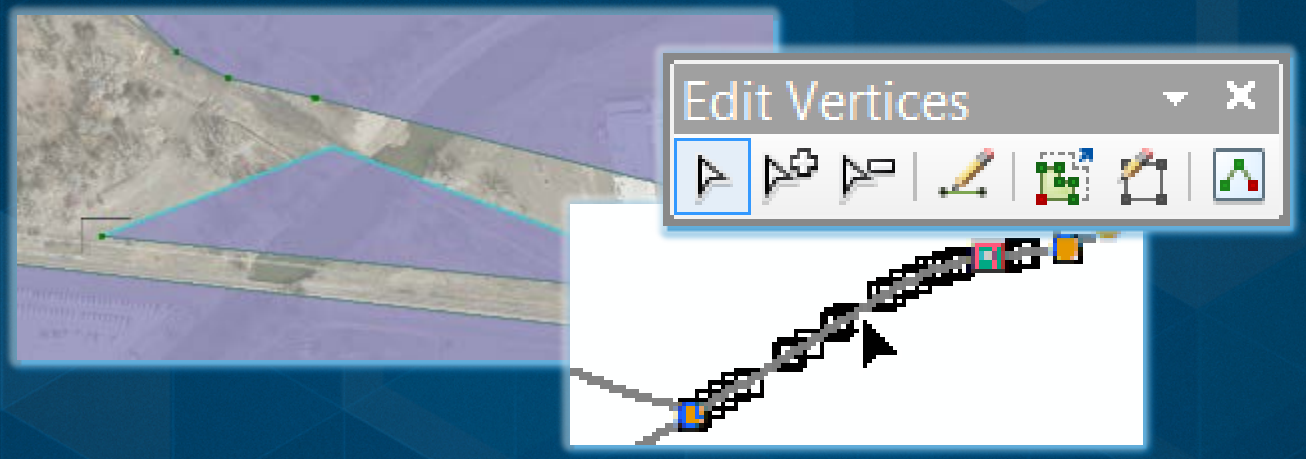
- Set the sticky move tolerance
- Editing Options > General tab
- Prevents feature movement within tolerance





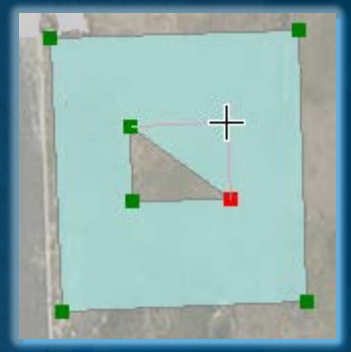
Editing segments and vertices

- Double-click feature with Edit tool or select it and use Edit Vertices on Editor toolbar
- Select, move, and delete multiple vertices
- Change segment types (straight, curved, Bezier)
- Select and delete parts of features



Hover over a feature and press V to show vertices.

Creating donut holes in polygons

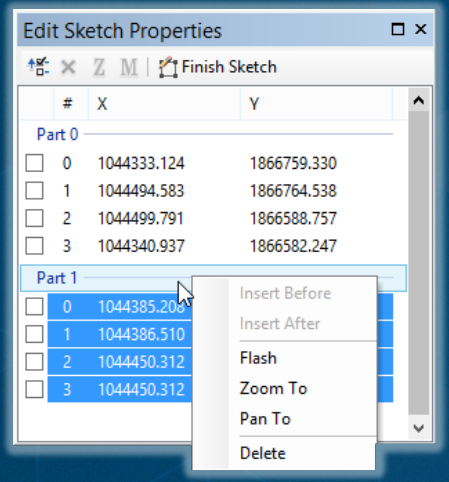


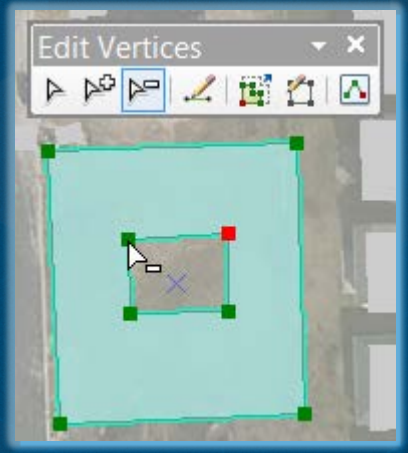
- **When digitizing the feature initially**
  - Right-click and click Finish Part
  - Digitize the hole and finish sketch
- **Continue Feature**
  - Available on the Edit Vertices toolbar
- **Cutting hole to match another shape**
  - Select polygon, use Cut Polygons tool, and trace other feature
  - Can also use Editor menu > Clip with discard the area that intersects option

When clipping, turn off any polygon layers that you don’t want to be clipped.

Removing donut holes in polygons

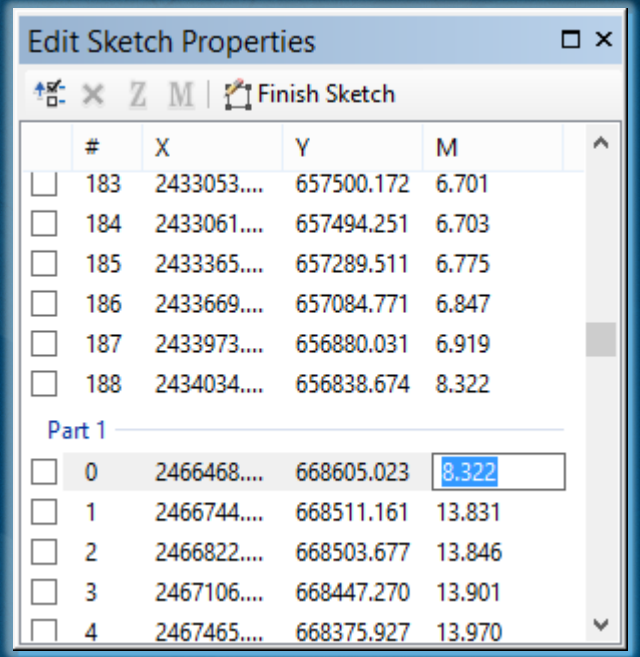
- Double-click feature to modify its shape
- Right-click feature > Part > Delete
- Can also open Edit Sketch Properties menu to delete
- Use Edit Vertices toolbar to delete vertices





Changing the coordinates of a feature

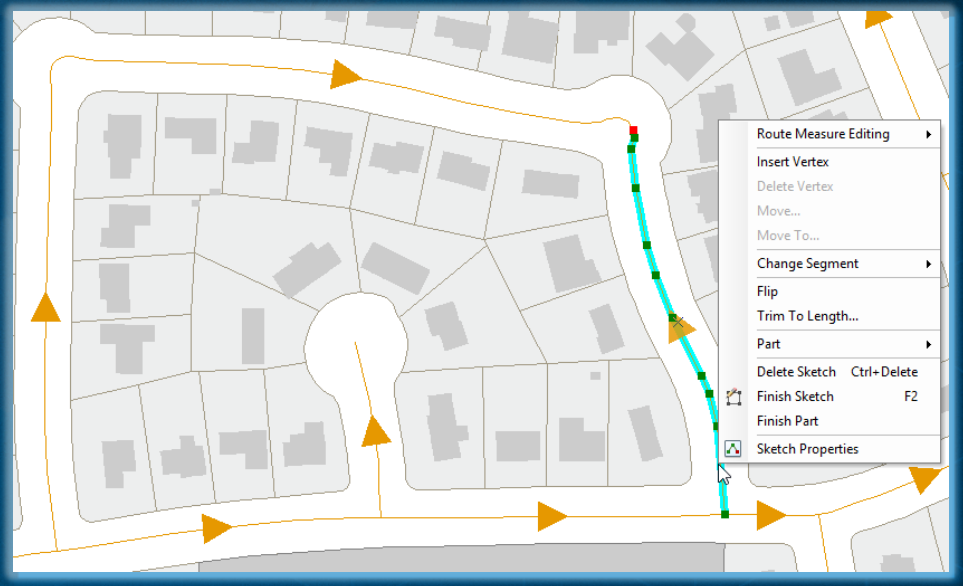
- Edit Sketch Properties window
- Right-click to insert, delete, zoom to vertices
- Edit X,Y, M, and Z values



Flipping the direction of a line

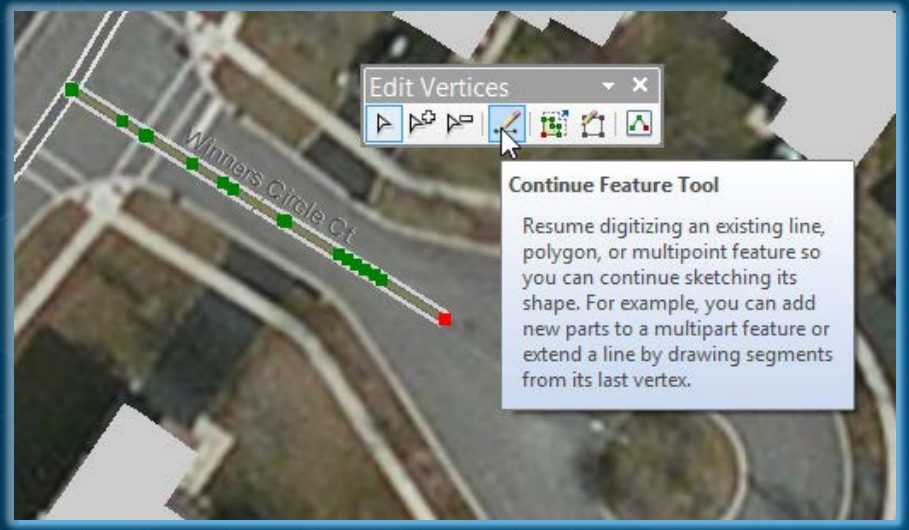
- **Editing geoprocessing toolbox > Flip tool**
  - Works on selected features or whole layer
- **Flip command on Edit Sketch context menu**
  - Double-click feature
  - Right-click > Flip

Editing toolbox requires a Standard or Advanced license.



Extend an existing line by sketching

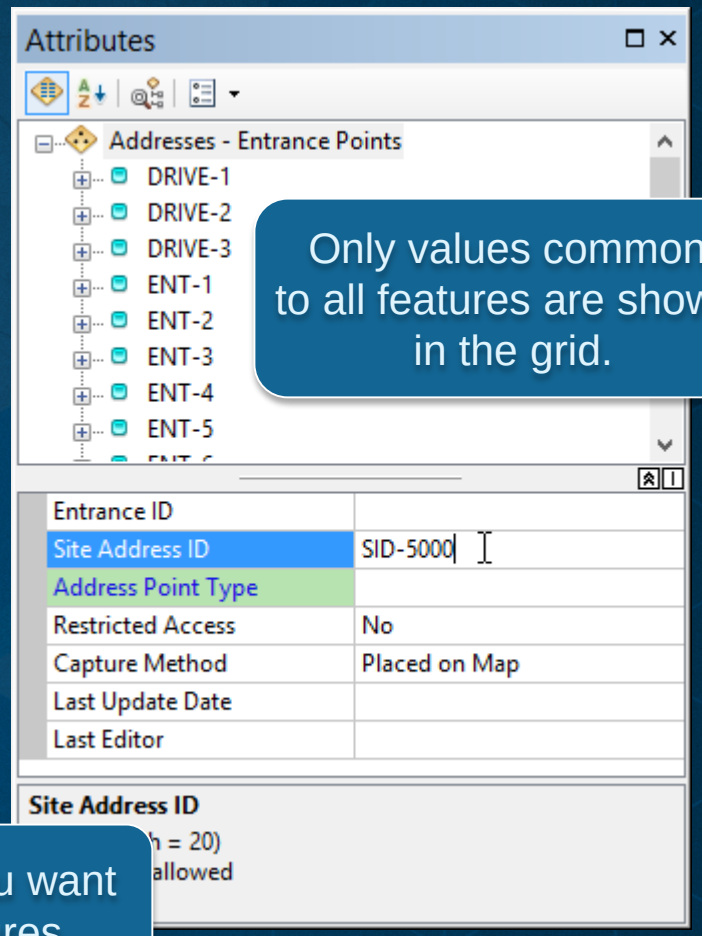
- **Continue Feature tool on Edit Vertices toolbar**
  - Double-click feature to modify
  - Click Continue Feature
  - Enter sketch mode—constraints and constructors available



Use Continue Feature to add parts to a multipart polygon.

Updating attributes of multiple features at once

- Select features and open Attributes window
- Click layer name in tree to update all in layer
- Ctrl or Shift in tree to update multiple features
- Click field and type values
- Can also update attributes of related features or records

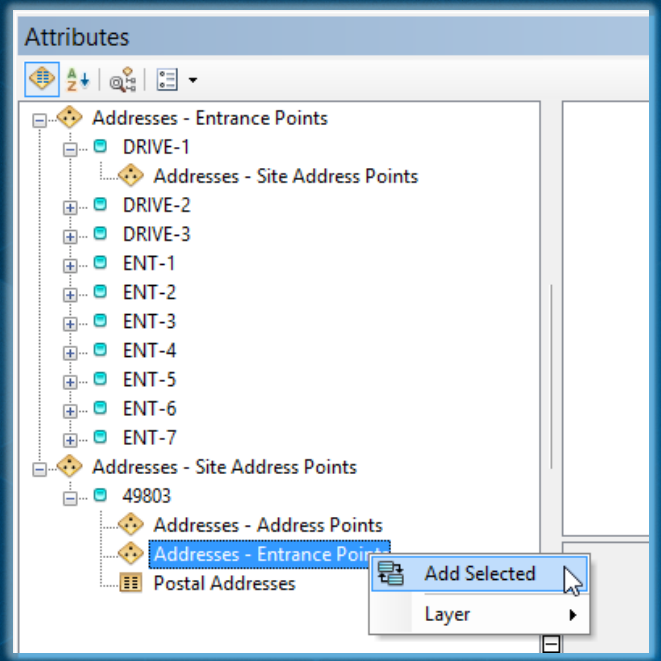


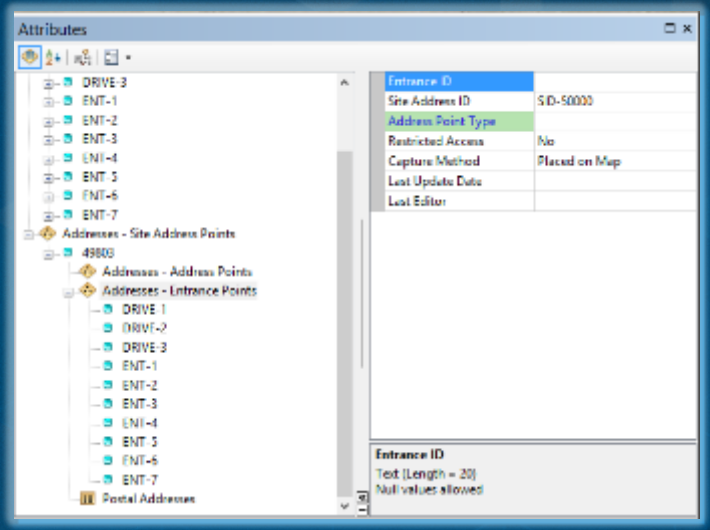
Only values common to all features are shown in the grid.

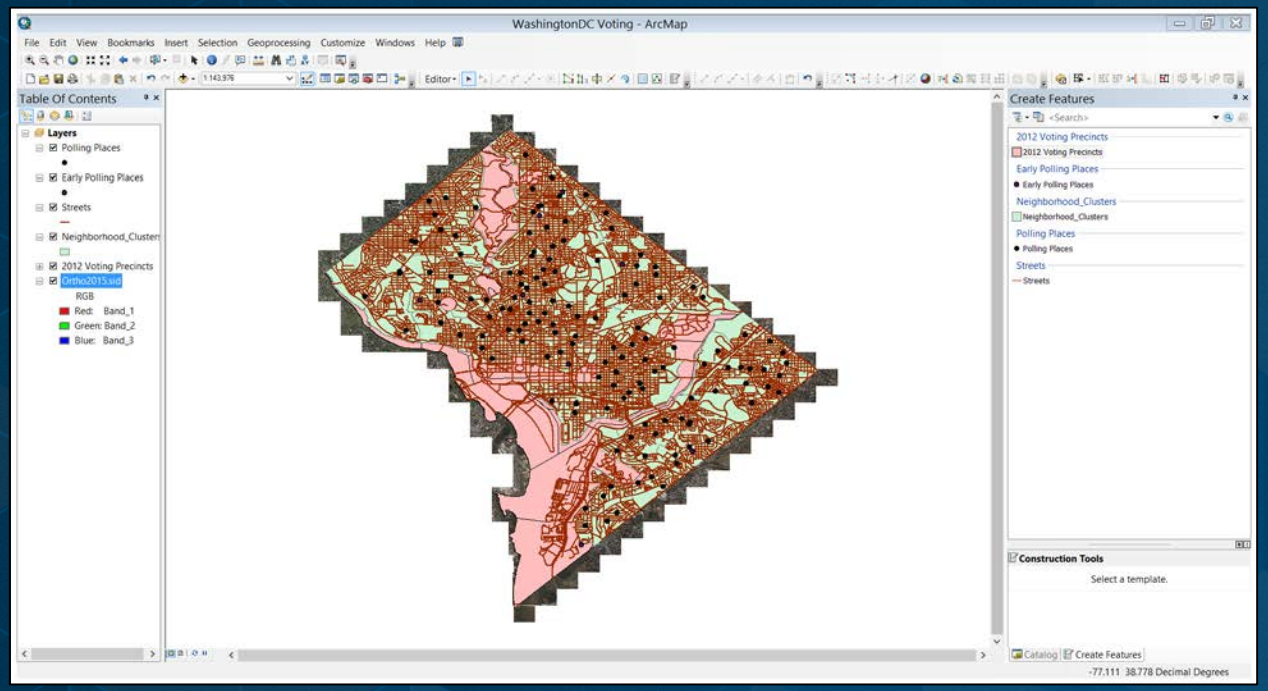
Only update the values you want applied to multiple features.

Adding selected features to a relationship

- Select features
- Set primary key on primary feature
- Right-click relationship label > Add Selected
- Foreign key on related features is set automatically







Editing Features and Attributes

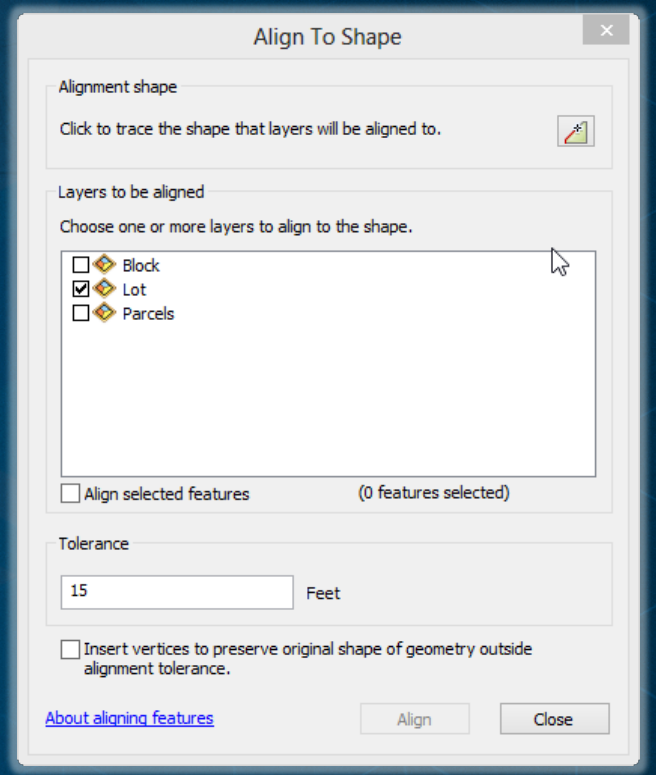
demonstration

03

Aligning and Editing Coincident Features

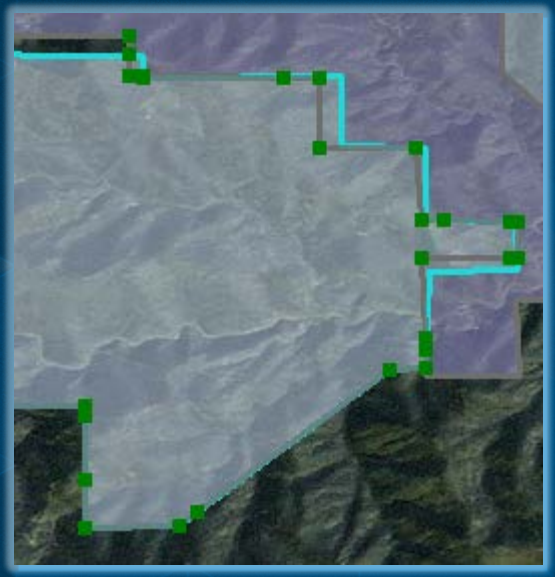
Aligning data to a shape you trace

- **Align to Shape on Advanced Editing toolbar**
  - Trace adjacent features to align to
  - Choose which layers will be updated
  - Specify buffer tolerance
  - Preview



Replacing a feature's geometry

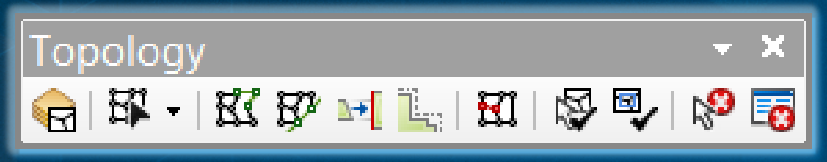
- **Replace Geometry on Advanced Editing toolbar**
  - Maintains ObjectID and attributes of original feature
  - Original shape displayed for reference: can snap or trace to it
  - Use Reshape Feature instead if you need to modify only a portion



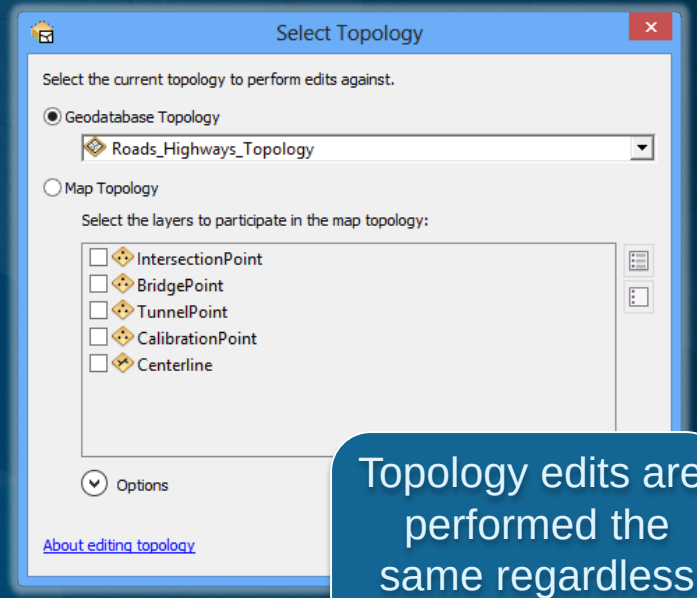
Also works to add a shape to null geometry, such as addresses that could not be matched when geocoding.

Editing coincident features with topology

- **Use Topology toolbar to edit coincident features**



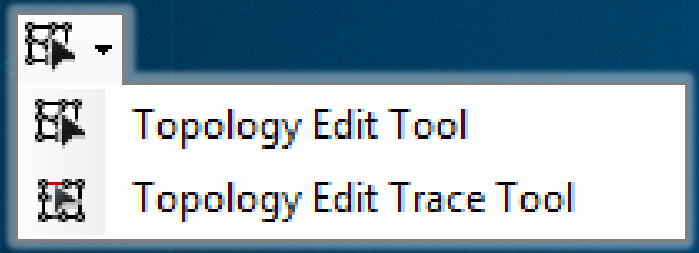
- **Two types of topology in ArcGIS**
  - Map topology
    - Simple way to edit connected features
    - Geodatabases or shapefiles
    - All licenses, built from Topology toolbar
  - Geodatabase topology
    - Rules about how features share geometry
    - Requires Basic or Advanced license, built in Catalog window



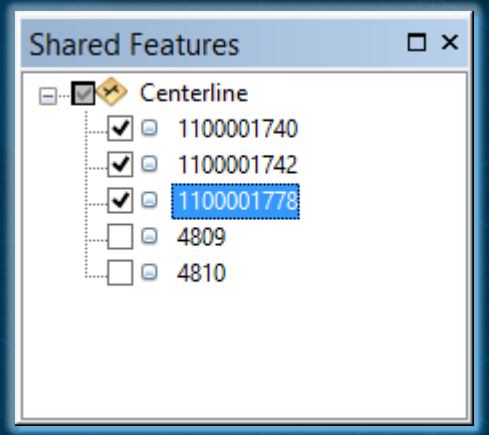
Topology edits are performed the same regardless of type.

Selecting topology edges

- **Topology Edit tool**
  - Drag or use Topology Edit Trace tool to select multiple connected edges



- **Shared Features window**
  - Lists features the connected to the selected edge
  - Uncheck layers or features so they are not affected by edits (temporary)



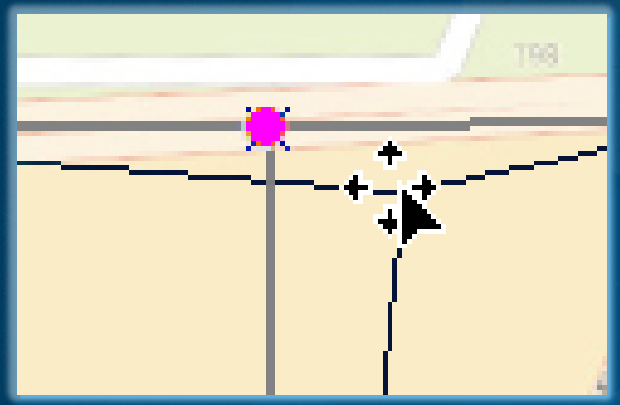
Reshaping multiple topology edges

- Reshape Edge tool to update connected edges
- Use Topology Edit Trace tool to select edges

Reshape Edge works on multiple edges.
Modify Edge is one edge at a time.

Moving topology edges

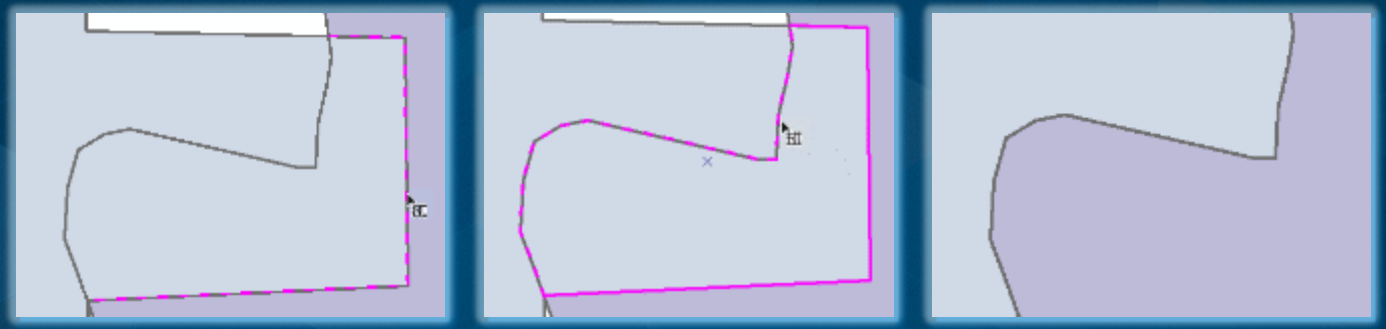
- Drag selected topology elements to move all coincident features at once



- Move an edge and reconnect it (“split-move”)
  - Select edge, then drag and snap endpoint at new location

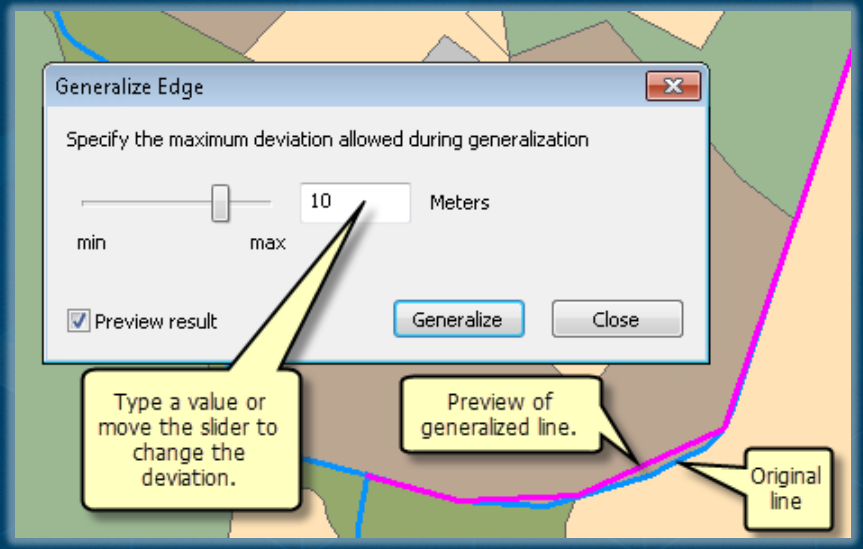
Aligning an edge to match another edge

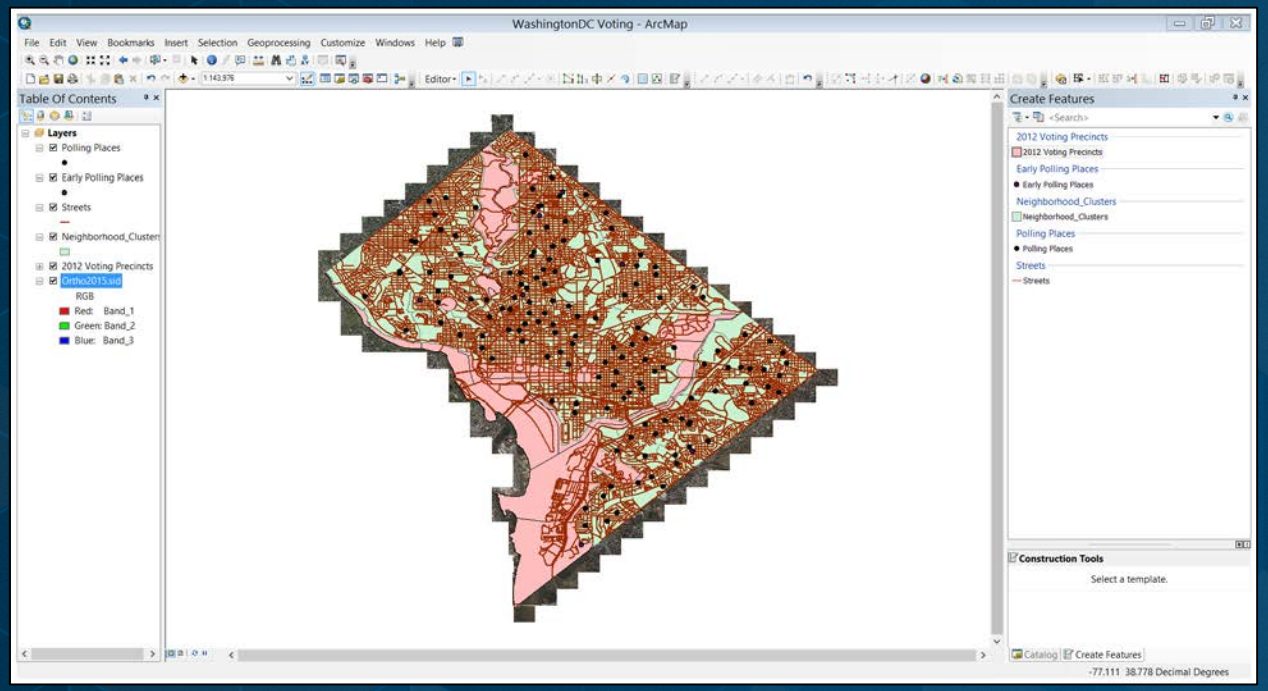
- **Align Edge tool**
  - Match edges quickly so they are coincident without having to reshape manually
  - Two clicks: click edge to update and then click edge to align to



Simplifying a topology edge

- **Reduce vertex count, integrate features of different resolutions, remove true curves**
- **Generalize Edge tool**
  - Only way to simplify and maintain coincidence
  - Select one or more edges, set deviation, and preview



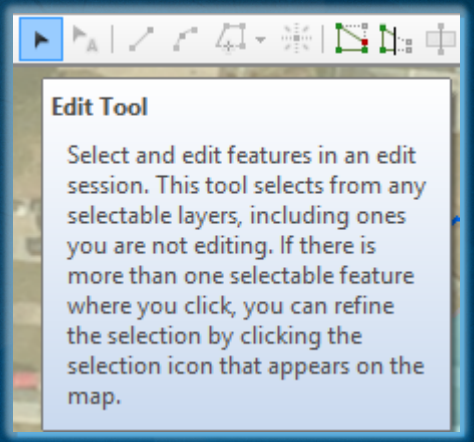


Aligning and Editing Coincident Features

demonstration

Getting more help

- Context-sensitive help
  - Hover over tools for tooltips
- Resources
  - Help: Desktop > Editing data
  - ArcGIS Blog: Editing category
- Training
  - Editing Data with ArcGIS for Desktop

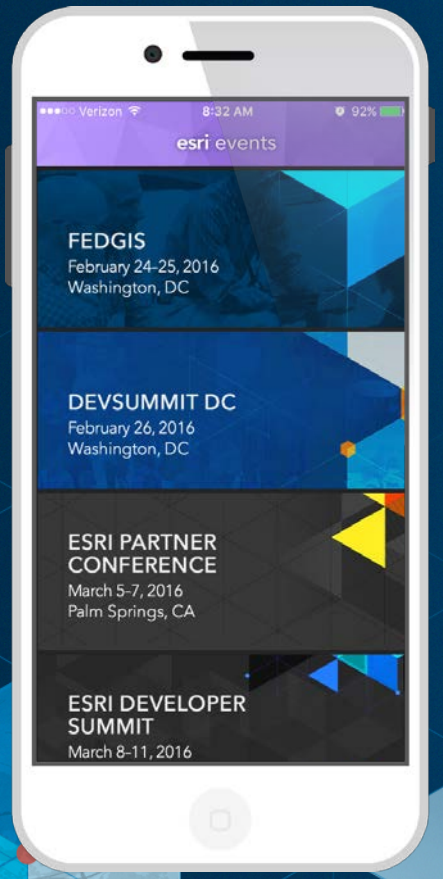


Don’t forget to complete your digital session survey

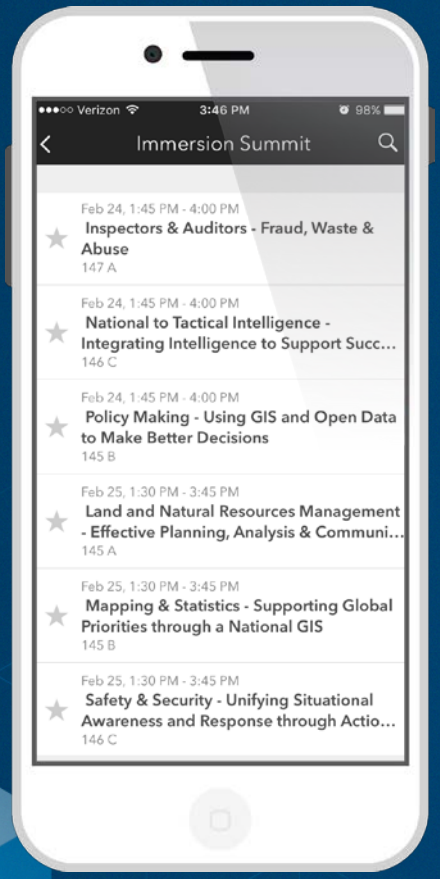
Download the Esri Events app!

Please Take Our Survey!

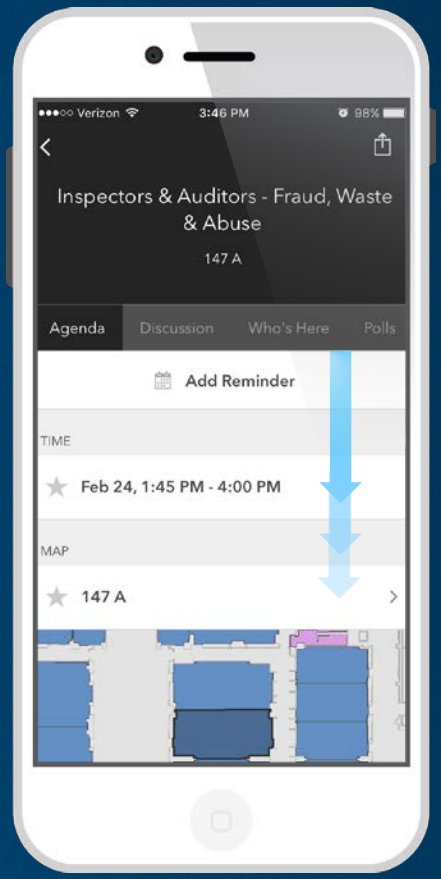
Download the Esri Events app and find your event



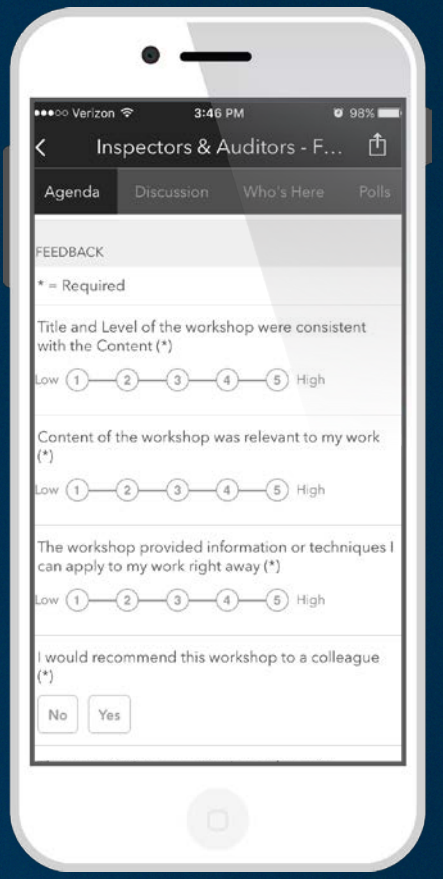
Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"



Networking Reception

Smithsonian National Museum of the American Indian

Thursday, 6:30 p.m. – 9:30 p.m.

Bus pickup on L Street

Print your customized Certificate of Attendance

Print stations located in the 140/150 Concourse

GIS Solutions Expo, Hall A

Wednesday, 12:30 p.m. – 6:30 p.m.

Welcome Social, 5:15 p.m. – 6:30 p.m.

Thursday, 10:45 a.m. – 4:00 p.m.

- **Exhibitors**
- **Hands-on Learning Lab**
- **Demo Theaters**
- **Esri Showcase**