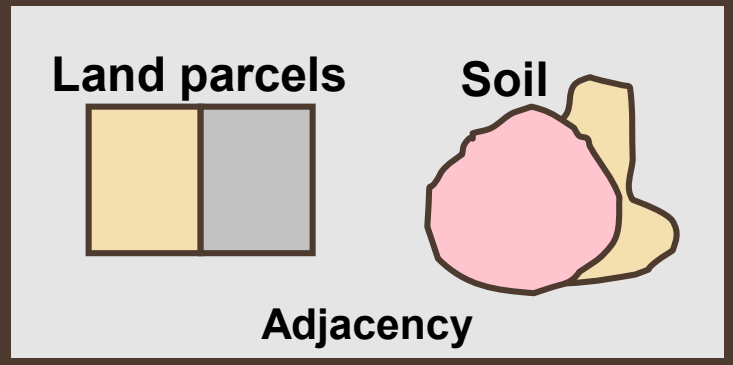
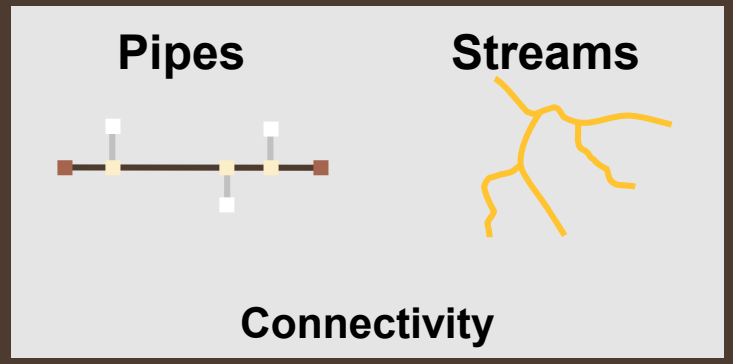
TOPOLOGY

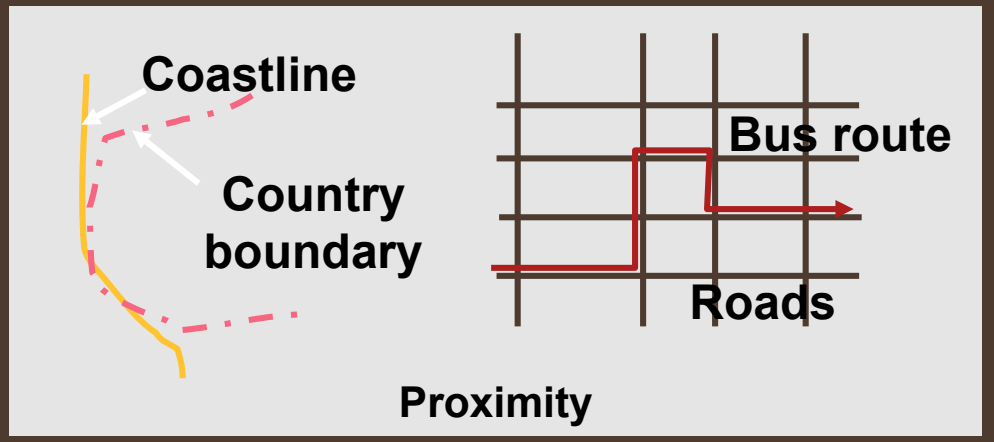
Sandeep Talasila, GISP

WHAT IS TOPOLOGY?

- A set of rules and behaviors that model how points, lines, and polygons share geometry.







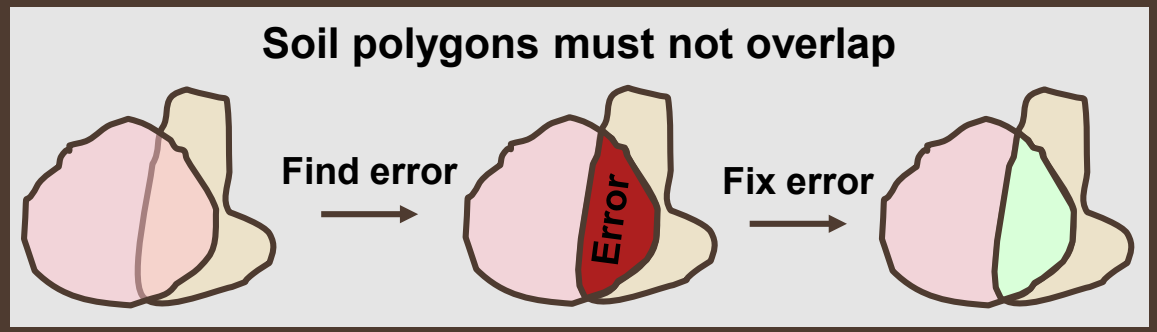
TOPOLOGY

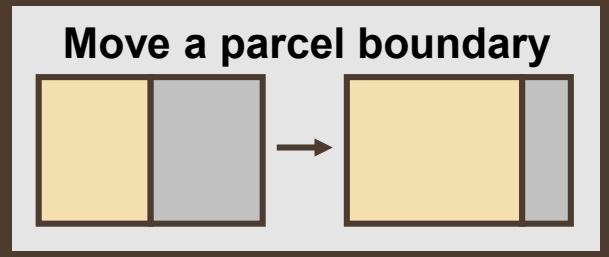
- Preserve data integrity by managing spatial relationships.
- Required for some spatial analyses: network analysis
- In ArcGIS
  - Can only be created inside a feature dataset in a geodatabase.
  - Error features are stored as: Point errors, Line errors, and Area errors
  - If errors are acceptable, can be marked as exceptions.
  - A geodatabase can have multiple topologies, but one feature class can participate in only on topology.
  - Topology rules can be defined between subtypes of feature classes.

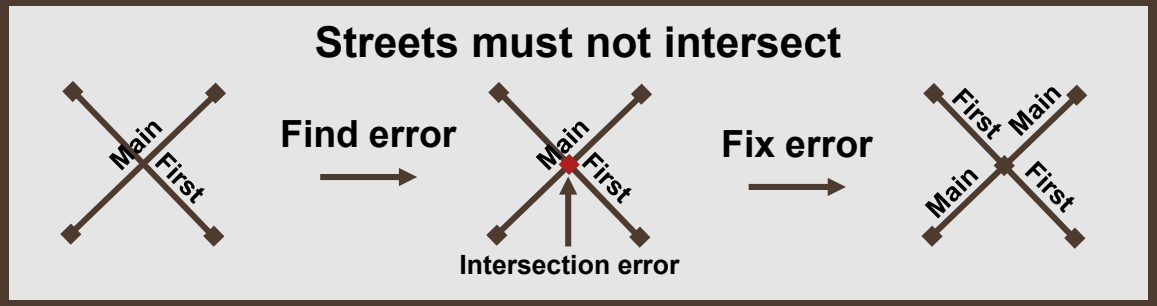
WHY TOPOLOGY?

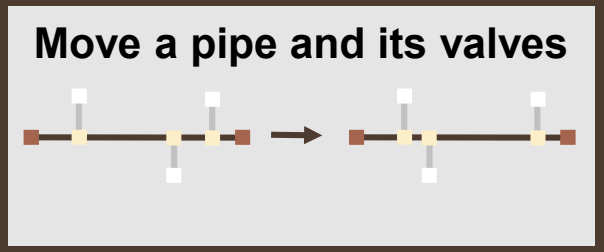
- Manage how features share geometry
  - Adjacent polygons (parcels, administrative areas) share edges and linear networks (such as streets, streams/rivers, electric distribution lines) share nodes
- Define and enforce data integrity rules
  - No gaps can exist between polygons, there can be no overlapping features, road centerlines must connect at endpoints, etc.
- Perform feature relationship analysis and queries
  - Identify features that are connected to each other; navigate networks
- Apply editing tools that enforce rules as data is manipulated
  - Concurrently edit features that share geometry; update all features that share common edges, i.e. parcels, easements, rights-of-way, etc.
- Create new features from unstructured geometry
  - Build new polygon features from line work

TOPOLOGY RULES

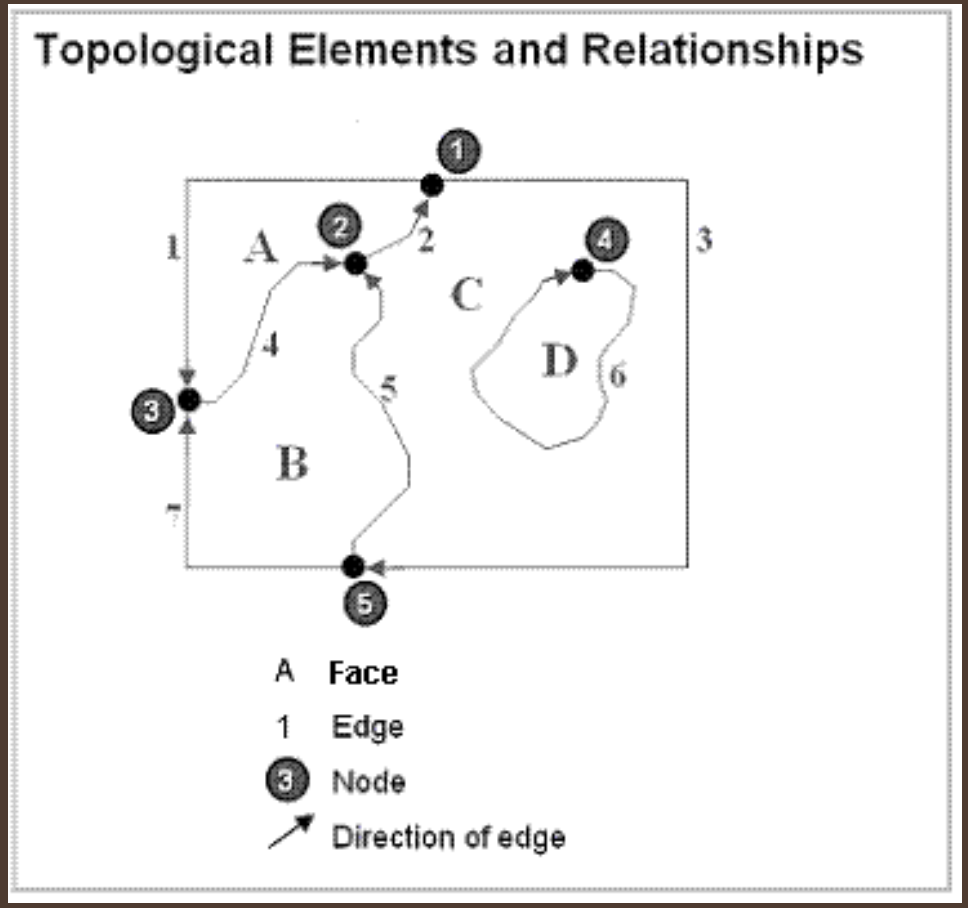








TOPOLOGICAL ELEMENTS



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WHO USES TOPOLOGY?

- Transportation - Modeling and analyzing modes of transportation and transit networks
  - Highways, roads, hiking and biking trails, rail and bus networks
  - Logistics and fleet management, fire, rescue, EMS routing
- Water/wastewater
  - Modeling and maintaining water, sewer, and drainage networks
  - Modeling surface water networks
- Land Records
  - Managing boundaries, administrative areas and jurisdictions, service areas
  - Survey networks

WHO USES TOPOLOGY?

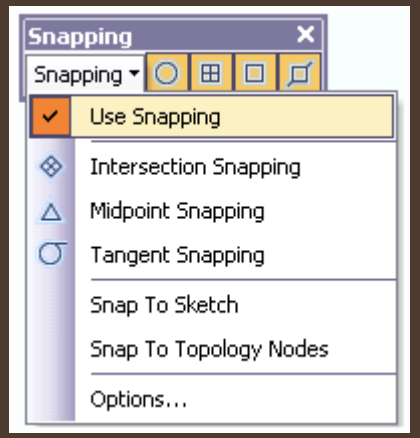
- Utilities
  - Modeling electric transmission and distribution networks, outage management
  - Petroleum, natural gas pipeline management and maintenance, flow detection and management, emergency response
  - Telecommunications networks and resources

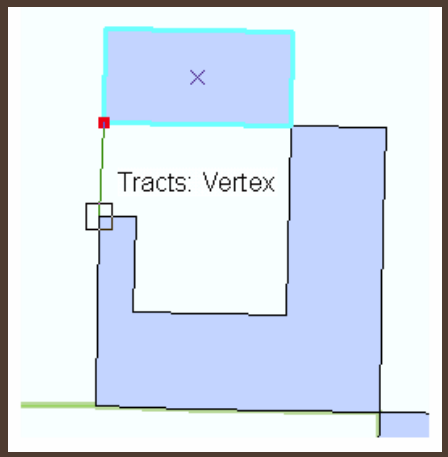
TYPES OF TOPOLOGY

- Geodatabase Topology
  - Must be created within a geodatabase
  - All feature classes within the topology can be editable
  - Topology and the rules can be stored within a geodatabase
- Map Topology
  - Editing features that are visible and editable within the map
  - Temporary editing mode to fix issues in coincident geometry
  - Allows simultaneous editing of shared geometry

SNAPPING

- Create features that connect to each other
- Edits are more accurate, with fewer errors
- Works only for visible layers
- A snapping tolerance allows feature snap to another feature location within a distance.





GEODATABASE TOPOLOGY

Based on topology rules implemented in a geodatabase

DESIGNING TOPOLOGY

- Define a name for the topology to be created
- Set a cluster tolerance used for topology operations
- Make a list of feature classes that share geometry
- Assign relative accuracy ranks for each feature class (coordinates).
- Specify topology rules between feature classes

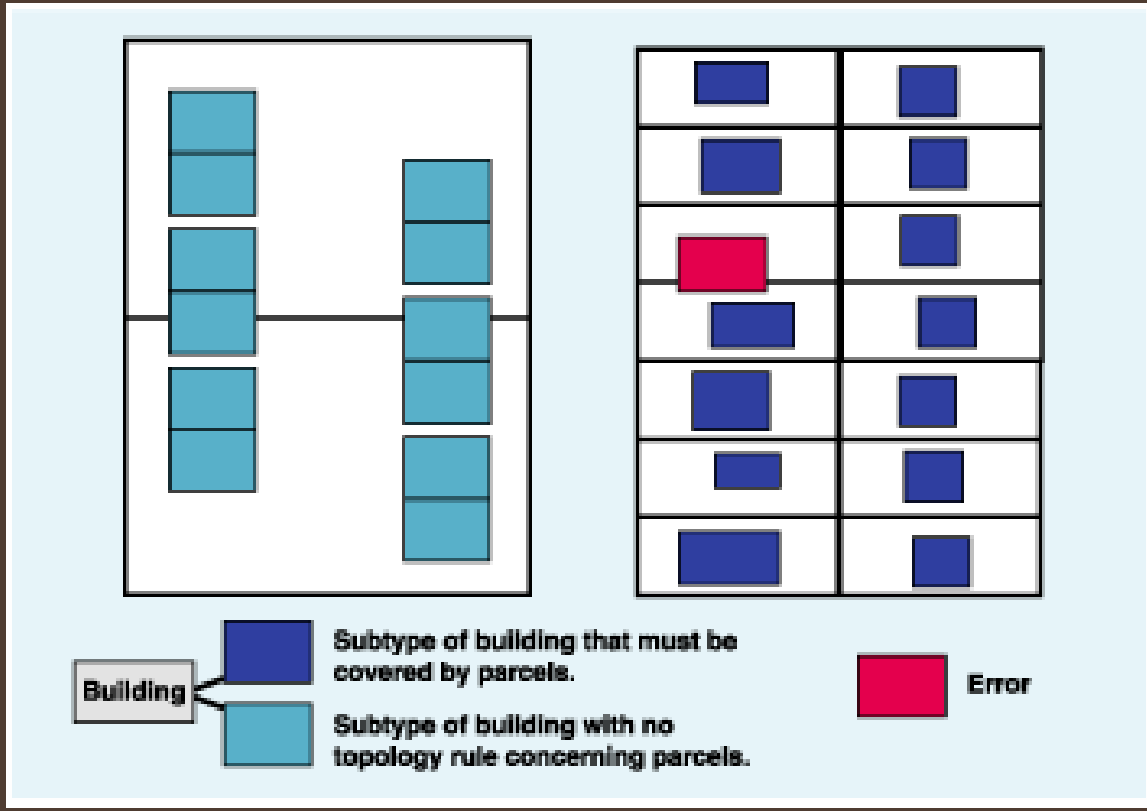
SHARED TOPOLOGY

Data theme	Feature classes	Subsample of topology rules
Parcels	Parcel polygons, Parcel boundaries (lines), Parcel corners (points)	Parcel polygons must not overlap. Parcel polygon boundaries must be covered by Parcel boundary lines. Parcel boundary endpoints must be covered by Parcel corner points.
Street centerlines and census units	Street centerlines, Census blocks, Census block groups, Census tracts	Street lines must not intersect or touch interior. Census blocks must not overlap. Census block groups must be covered by census blocks. Census block groups must not overlap. Census tracts must be covered by census block groups. Census tracts must not overlap.
Soils	Soil type polygons	Soil polygons must not overlap. Soil polygons must not have gaps.
Hydrology	Hydro lines, Hydro points, Watersheds (polygons)	Hydro lines must not self-overlap. Hydro points must be covered by hydro lines. Watersheds must not overlap. Watersheds must not have gaps.

SUBTYPES

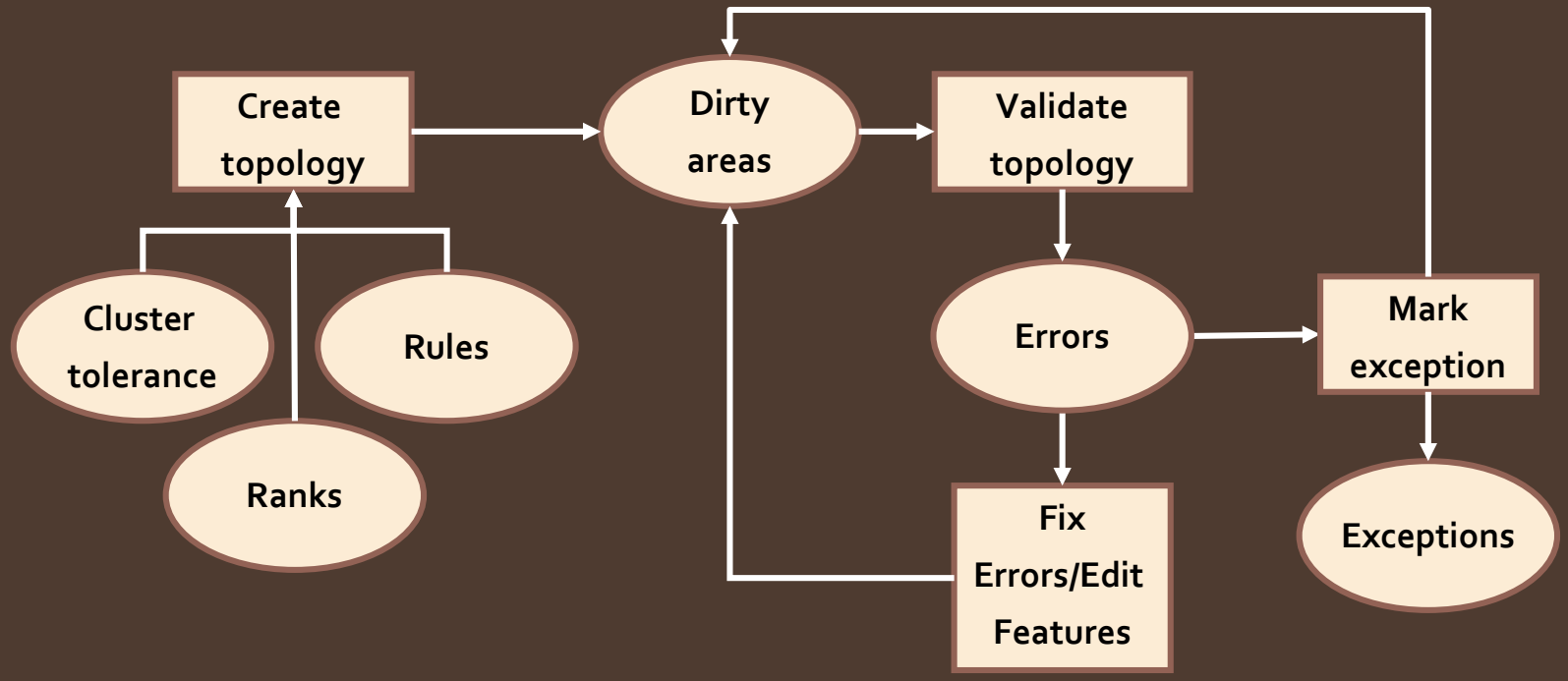
- To manage a subset of features within a feature class.
  - *Streets feature class - could be categorized into three subtypes: local streets, collector streets, and arterial streets.*
  - *Parcel feature class – might have subclasses of normal parcels (which cannot overlap) and condo parcels (which are allowed to overlap).*
- Subtypes share common data attributes.
- Apply coded or range domains to features.
- Create connectivity rules between other subtypes and feature classes.
  - *In a water network, a hydrant can connect to a hydrant lateral but not to a service lateral.*
- Create topology rules between subtypes and feature classes.
  - *Road segments must be connected to other roads at both ends, except in case of dead-end subtypes*

SUBTYPES



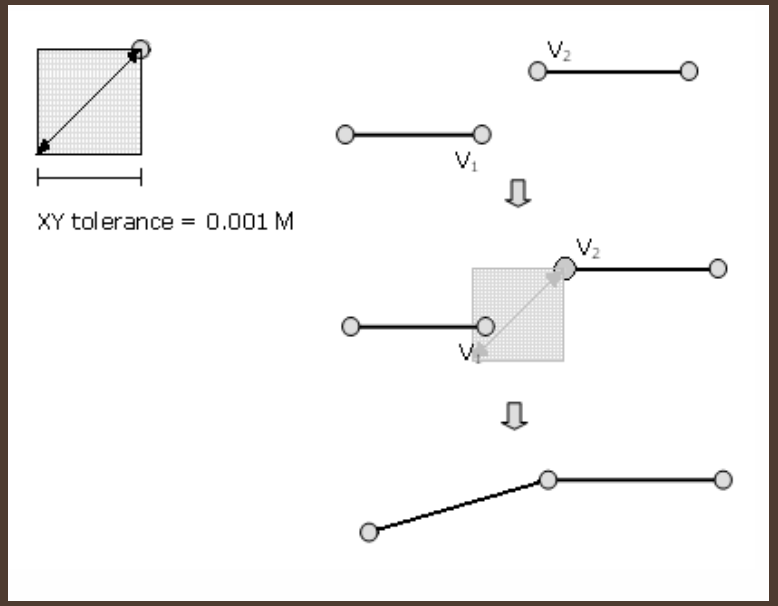
Modeling building footprints, where a small percentage of buildings legitimately cross parcel boundaries by creating subtypes of buildings and only creating the Must Be Covered By rule for the subtypes that cannot extend across a parcel.

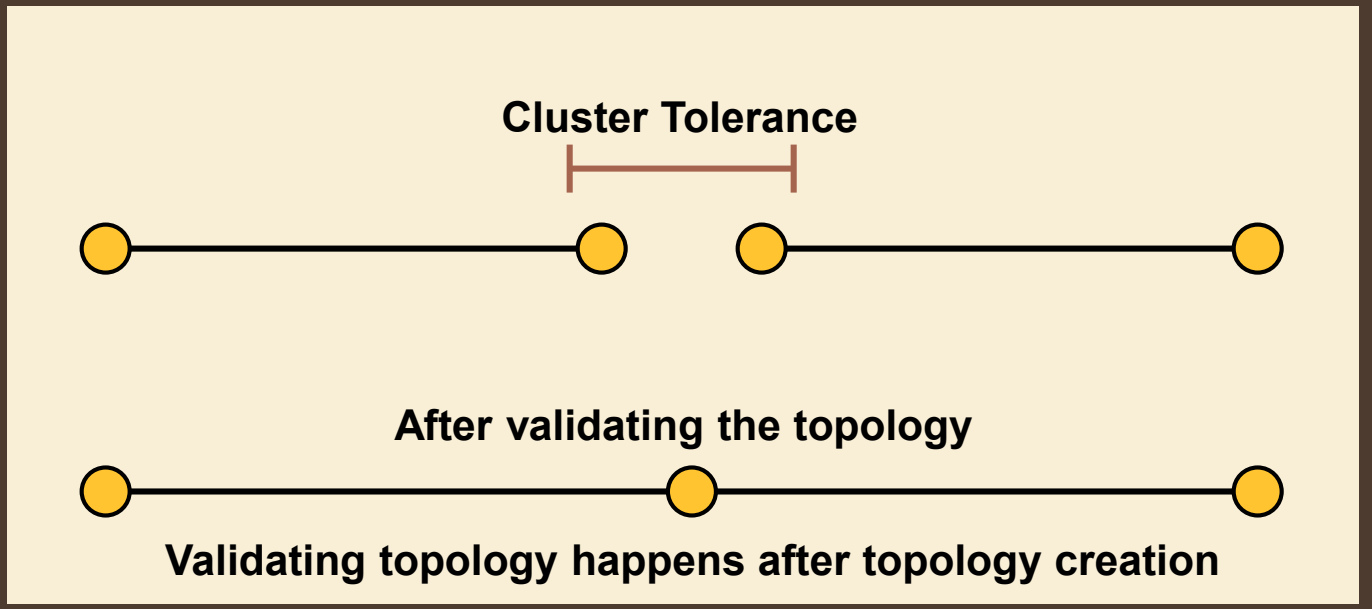
TOPOLOGY WORKFLOW IN ARCGIS



CLUSTER TOLERANCE

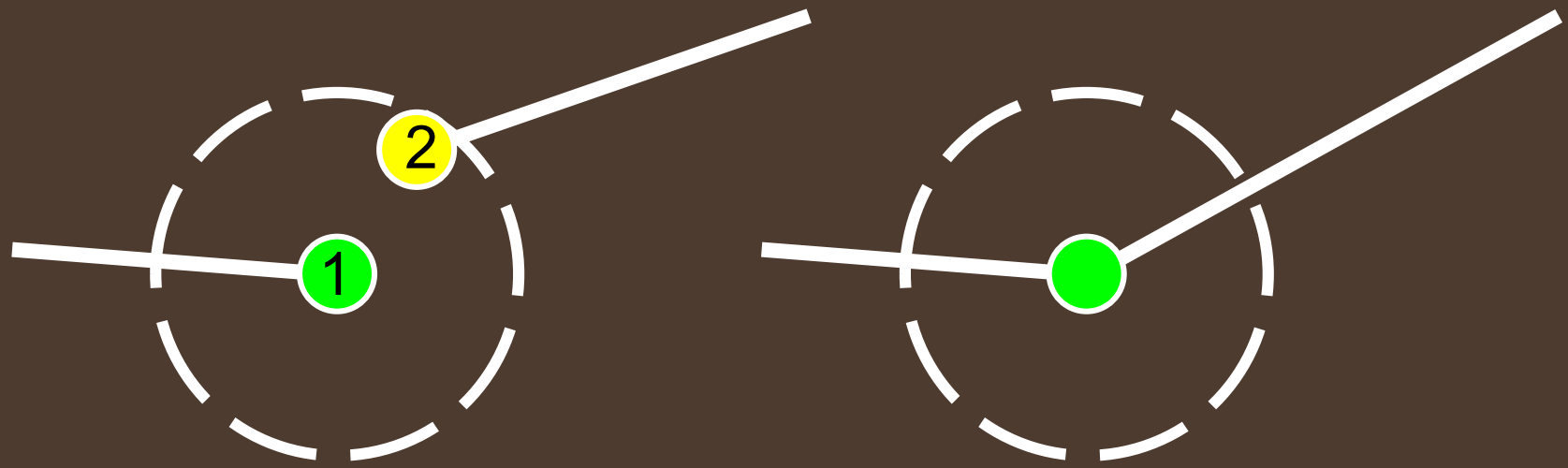
- A distance range in which all vertices and boundaries are considered identical, or coincident
- The tolerance should be small, so only vertices that are very close together are assigned the same coordinate location.





RANKS

- Define how vertices move during validate topology
  - Snap low quality feature classes to high quality feature classes
- Lower ranked (higher numbers) vertices move to higher ranked (lower numbers) vertices
  - 1(highest) – 50(lowest)



RULES

- Polygon Rules
  - Must Not Overlap, Must Not Have Gaps, Must Not Overlap with, Must Be Covered by Feature Class of, Contains Point, …
- Line Rules
  - Must Not Overlap, Must Not Intersect, Must Not Have Dangles, Must Not Have Pseudo Nodes, Must Be Inside,…
- Point Rules
  - Must Coincide with, Must Be Covered By Boundary Of, Must Be Properly Inside,…

https://pro.arcgis.com/en/pro-app/latest/help/editing/geodatabase-topology.htm

ArcGIS® Geodatabase Topology Rules

Topology in Esri® ArcGIS® allows you to model spatial relationships between feature classes in a feature dataset. Topology rules allow you to define those relationships between features in a single feature class or subtype or between two feature classes or subtypes. Topology rules allow you to define the spatial relationships that meet the needs of your data model. Topology errors are violations of the rules that you can easily find and manage using the editing tools found in ArcMap™.

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How to read these diagrams:

Topology rule name

The topology rule occurs within a single feature class or subtype.

The topology rule occurs between two different feature classes or subtypes.

Description and example of a valid case of the specified topology rule.

Description and example of a case of the specified topology rule that is not allowed and will be returned. For each example, the error shape is shown in bright red.

Generalized description of when to use this rule.

Description of a real-world application of the specified topology rule.

Polygon

Must not overlap

Polygons must not overlap within a feature class or subtype. Polygons can be disconnected or touch at a point or touch along an edge.

Polygon errors are created from areas where polygons overlap.

A voting district map cannot have any overlaps in its coverage.

Use this rule to make sure that no polygon overlaps another polygon in the same feature class or subtype.

Must not have gaps

Polygons must not have a void between them within a feature class or subtype.

Line errors are created from the outlines should areas in a single polygon or between polygons. Polygon boundaries that are not coincident with other polygon boundaries are errors.

Soil polygons cannot include gaps or form voids—they must form a continuous fabric.

Use this rule when all of your polygons should form a continuous surface with no voids or gaps.

Contains point

Each polygon of the first feature class or subtype must contain within its boundaries at least one point of the second feature class or subtype.

Polygon errors are created from the polygons that do not contain at least one point. Points on the boundary of a polygon is not contained in that polygon.

School district boundaries must contain at least one school.

Use this rule to make sure that all polygons have at least one point within their boundaries. Overlapping polygons can share a point in that overlapping area.

Contains one point

Each polygon must contain exactly one point. Each point must fall within a polygon.

Polygon errors are created from the polygons that do not contain exactly one point. Point errors exist where points are not within a single polygon.

Parcels must contain exactly one address point.

Use this rule to make sure that there is a one-to-one correspondence between features of a polygon feature class and a point feature class.

Must be covered by feature class of

The polygons in the first feature class or subtype must be covered by the polygons of the second feature class or subtype.

Polygon errors are created from the uncovered areas of the polygons in the first feature class or subtype.

States are covered by counties.

Use this rule when each polygon in one feature class or subtype should be covered by all the polygons of another feature class or subtype.

Boundary must be covered by

Polygon boundaries in one feature class or subtype must be covered by lines of another feature class or subtype.

Line errors are created where polygon boundaries are not covered by a line of another feature class or subtype.

Major road lines form part of outlines for census blocks.

Use this rule when polygon boundaries should be coincident with another line feature class or subtype.

Must not overlap with

Polygons of the first feature class or subtype must not overlap polygons of the second feature class or subtype.

Polygon errors are created where polygons from the two feature classes or subtypes overlap.

Lakes and land parcels from two different feature classes must not overlap.

Use this rule when polygons from one feature class or subtype should not overlap polygons of another feature class or subtype.

Must be covered by

Polygons in one feature class or subtype must be covered by polygons from another feature class or subtype.

Polygon errors are created from the first feature class or subtype that are not covered by a single polygon from the second feature class or subtype.

Counties must be covered by states.

Use this rule when you want one set of polygons to be covered by same part of another single polygon in another feature class or subtype.

Area boundary must be covered by boundary of

The boundaries of polygons in one feature class or subtype must be covered by the boundaries of polygons in another feature class or subtype.

Line errors are created where polygon boundaries in the first feature class or subtype are not covered by the boundaries of polygons in another feature class or subtype.

Subdivision boundaries are coincident with parcel boundaries, but do not cover all parcels.

Use this rule when the boundaries of polygons in one feature class or subtype should align with the boundaries of polygons in another feature class or subtype.

Must cover each other

All polygons in the first feature class and all polygons in the second feature class must cover each other.

- FC1 Must be covered by feature class of FC2
- FC2 Must be covered by feature class of FC1

Polygon errors are created where any part of a polygon is not covered by a polygon or polygons in the other feature class or subtype.

Vegetation and soils must cover each other.

Use this rule when you want the polygons from two feature classes or subtypes to cover the same area.

Point

Must coincide with

Points in one feature class or subtype must be coincident with points in another feature class or subtype.

Point errors are created where points from the first feature class or subtype are not coincident with points from the second feature class or subtype.

Meters must be coincident with service points in an electric utility network.

Use this rule when points from one feature class or subtype should be aligned with points from another feature class or subtype.

Must be disjoint

Points cannot overlap within the same feature class or subtype.

Point errors are created where points overlap themselves.

Fittings in a water distribution network should not overlap.

Use this rule when points within one feature class or subtype should never occupy the same space.

Must be covered by endpoint of

Points in one feature class or subtype must be coincident with the ends of lines in another feature class or subtype.

Point errors are created on the points that are not covered by the ends of lines.

Street intersections must be covered by the endpoints of street centerlines.

Use this rule when you want to model points that are coincident with the ends of lines.

Point must be covered by line

Points in one feature class or subtype must be covered by lines in another feature class or subtype.

Point errors are created on the points that are not covered by lines.

Monitoring stations must fall along streams.

Use this rule when you want to model points that are coincident with lines.

Must be properly inside

Points in one feature class or subtype must be inside polygons of another feature class or subtype.

Point errors are created where the points are outside or touch the boundary of the polygons.

State capitals must be inside each state.

Use this rule when you want points to be completely within the boundaries of polygons.

Must be covered by boundary of

Points in one feature class or subtype must touch boundaries of polygons from another feature class or subtype.

Point errors are created where points do not touch the boundaries of polygons.

Utility service points might be required to be on the boundary of a parcel.

Use this rule when you want points to align with the boundaries of polygons.

Line or Polygon

Must be larger than cluster tolerance

Cluster tolerance is the minimum distance between vertices of features.

Vertices that fall within the cluster tolerance are defined as coincident and are snapped together.

Any polygon or line feature that would collapse when validating the topology is an error.

Soil polygons must be larger than the cluster tolerance.

This rule is applied to all line and polygon feature classes that participate in the topology.

Line

Must not have pseudo nodes

The end of a line cannot touch the end of only one other line within a feature class or subtype. The end of a line can touch any part of itself.

Point errors are created where the end of the line touches the end of only one other line.

For hydrologic analysis, segments of a river system might be constrained to only have nodes at endpoints or junctions.

Use this rule to clean up data with inappropriately subdivided lines.

Must not have dangles

The end of a line must touch any part of one other line or any part of itself within a feature class or subtype.

Point errors are created at the end of a line that does not touch at least one other line or itself.

A street network has few segments that connect. If segments end for dead-end roads or cul-de-sacs, you could choose to set an exception during an edit session.

Use this rule when you want lines in a feature class or subtype to connect to one another.

Must not self-overlap

Lines must not overlap themselves within a feature class or subtype. Lines can touch, intersect, and overlap lines in another feature class or subtype.

Line errors are created when lines overlap themselves.

For transportation analysis, street and highway segments of the same feature should not overlap themselves.

Use this rule with lines whose segments should never occupy the same space as another segment on the same line.

Must not overlap

Lines must not overlap any part of another line within a feature class or subtype. Lines can touch, intersect, and overlap themselves.

Line errors are created where lines overlap.

Lot lines cannot overlap one another.

Use this rule with lines that should never occupy the same space with other lines.

Must not self-intersect

Lines must not cross or overlap themselves within a feature class or subtype. Lines can touch themselves and touch, intersect, and overlap other lines.

Line errors are created where lines overlap themselves, and point errors are created where lines cross themselves.

Contour lines cannot intersect themselves.

Use this rule when you only want lines to touch at their ends without intersecting or overlapping themselves.

Must not intersect

Lines must not cross or overlap any part of another line within the same feature class or subtype.

Line errors are created where lines overlap and point errors are created where lines cross.

Lot lines cannot intersect or overlap, but the endpoint of one feature can touch the interior of another feature.

Use this rule with lines whose segments should never cross or occupy the same space with other lines.

Must be single part

Lines within a feature class or subtype must not have more than one part.

Multipart line errors are created where lines have more than one part.

A highway system is made up of individual features where any one feature is not made up of more than one part.

Use this rule when you want lines to be composed of a single series of connected segments.

Must not intersect with

Lines in one feature class or subtype must not cross or overlap any part of a line in another feature class or subtype.

Line errors are created where lines overlap, and point errors are created where lines cross.

Local roads cannot intersect or overlap major highways and must connect only at ramps.

Use this rule with lines whose segments should never cross or occupy the same space with lines in another feature class or subtype.

Must be covered by feature class of

Lines in one feature class or subtype must be covered by lines in another feature class or subtype.

Line errors are created on the lines in the first feature class that are not covered by lines in the second feature class.

Liner that make up bus routes must be on top of lines in a road network.

Use this rule when you have multiple groups of lines describing the same geography.

Must not intersect or touch interior

Lines can only touch at their ends and must not overlap each other within a feature class or subtype.

Line errors are created where lines overlap and point errors are created where lines intersect or touch.

Lot lines cannot intersect or overlap and must connect to one another only at the endpoints of each line feature.

Use this rule when you only want lines to touch at their ends and not intersect or overlap.

Must be covered by boundary of

Lines in one feature class or subtype must be covered by the boundaries of polygons in another feature class or subtype.

Line errors are created on lines that are not covered by the boundaries of polygons.

Polylines used for displaying hillsides and lot boundaries must be covered by parcel boundaries.

Use this rule when you want to model lines that are coincident with the boundaries of polygons.

Must not intersect or touch interior with

Lines in one feature class or subtype can only touch at their ends and must not overlap lines in another feature class or subtype.

Line errors are created where lines overlap and point errors are created where lines cross or touch.

Lot lines cannot intersect or overlap block lines and must connect to one another only at the endpoints of each line feature.

Use this rule when you only want lines to touch at their ends and not intersect or overlap with lines in another feature class or subtype.

Must be properly inside

Lines in one feature class or subtype must be contained by polygons of another feature class or subtype.

Line errors are created where lines are not within polygons.

Streams are within watersheds.

Use this rule when you want lines to be contained within the boundaries of polygons.

Must not overlap with

Lines in one feature class or subtype must not overlap any part of another line in another feature class or subtype.

Line errors are created where lines from two feature classes or subtypes overlap.

Highways can cross and come close to rivers, but road segments cannot overlap river segments.

Use this rule for lines that should never occupy the same space with lines in another feature class or subtype.

Endpoint must be covered by

The ends of lines in one feature class or subtype must be covered by points in another feature class or subtype.

Point errors are created at the ends of lines that are not covered by a point.

Endpoints of secondary electric lines must be supported by either a transformer or meter.

Use this rule when you want to model the ends of lines in one feature class or subtype that are coincident with point features in another feature class.

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VALIDATING TOPOLOGY

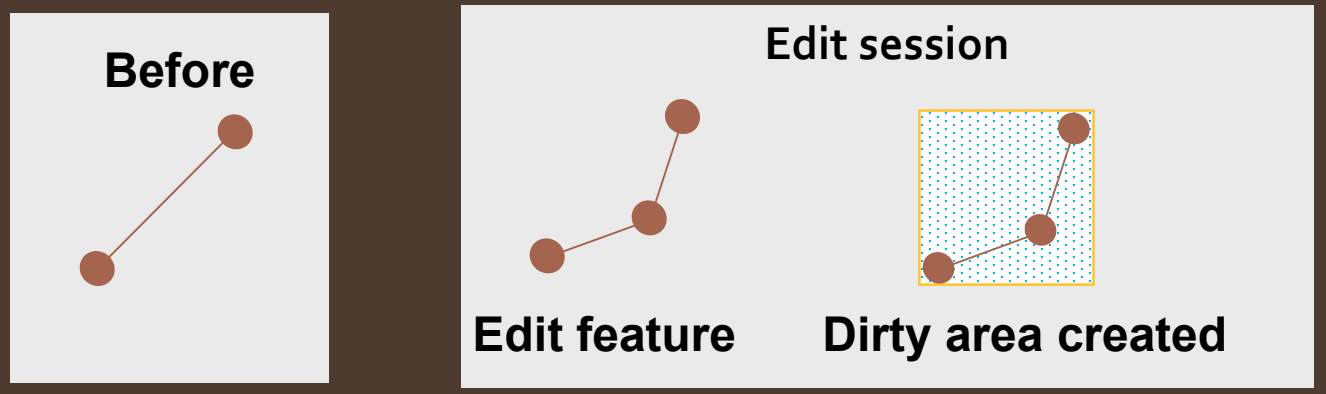
- Integrates the geometries based on cluster tolerance
  - Cracking – Adding vertices to lines
  - Clustering – Snapping vertices
- Validates topology rules which may generate errors
  - Deletes errors if the rules are no longer violated
- No new features are created
- A topology is validated in entirety at once. All other validations will only validate dirty areas where changes occurred.

STATES OF TOPOLOGY

- Not Validated
  - Dirty areas exist
  - Can be saved in the database
- Validated - Errors exist
  - All dirty area have been validated and errors were found
- Validated - No Errors
  - All dirty areas have been validated and no errors were found

DIRTY AREAS

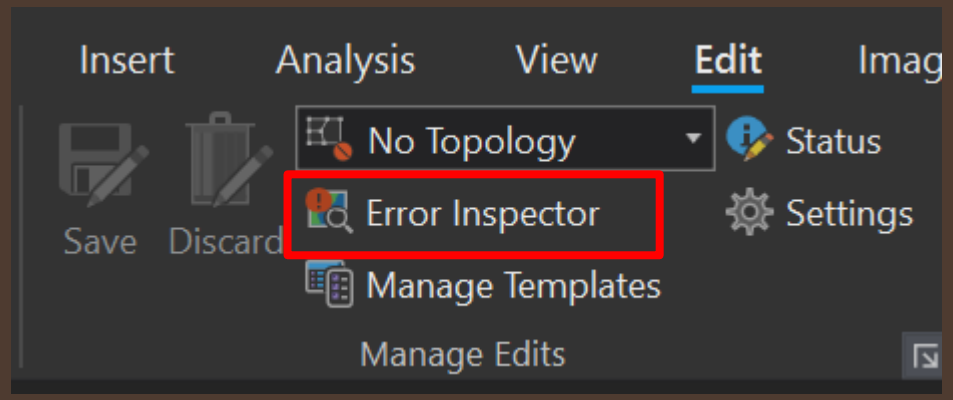
- Represent areas that have not been validated
- Edits create dirty areas
- Dirty areas may contain existing or undiscovered topology errors
- Entire extent is dirty when the topology is first created.
- Dirty areas are cleared when the network topology is validated.

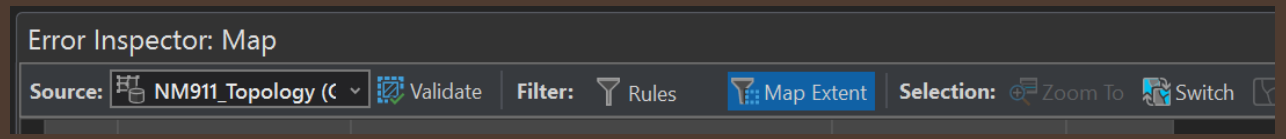


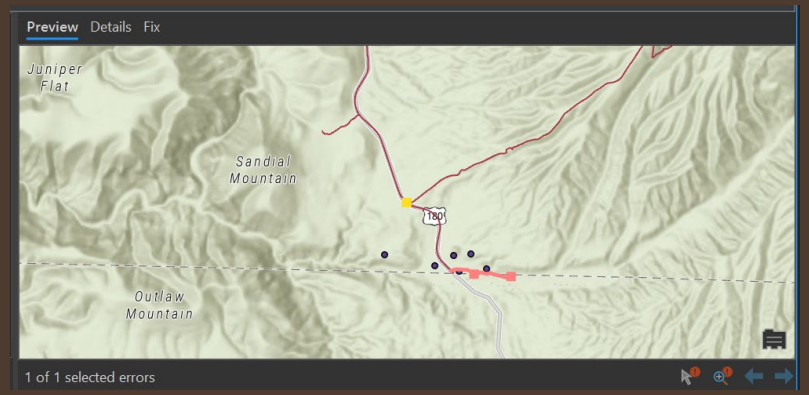
EDITING FEATURES

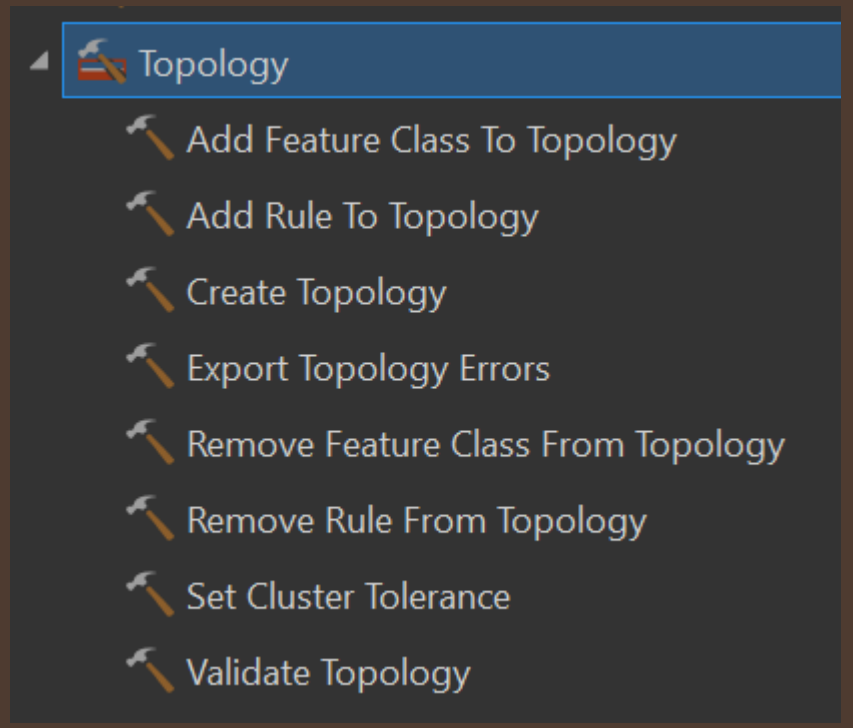
- Use the editing environment to identify and fix errors.
  - Develop a workflow for editing/fixing errors
    - Fix all overlaps first?
    - Dangles
    - Snapping issues?
- Manage topology within a versioned geodatabase.
  - Accidently delete a whole subdivision? Revert to old version with the subdivision present.
- Perform many other common editing tasks.
  - Check attributes, are they correct?

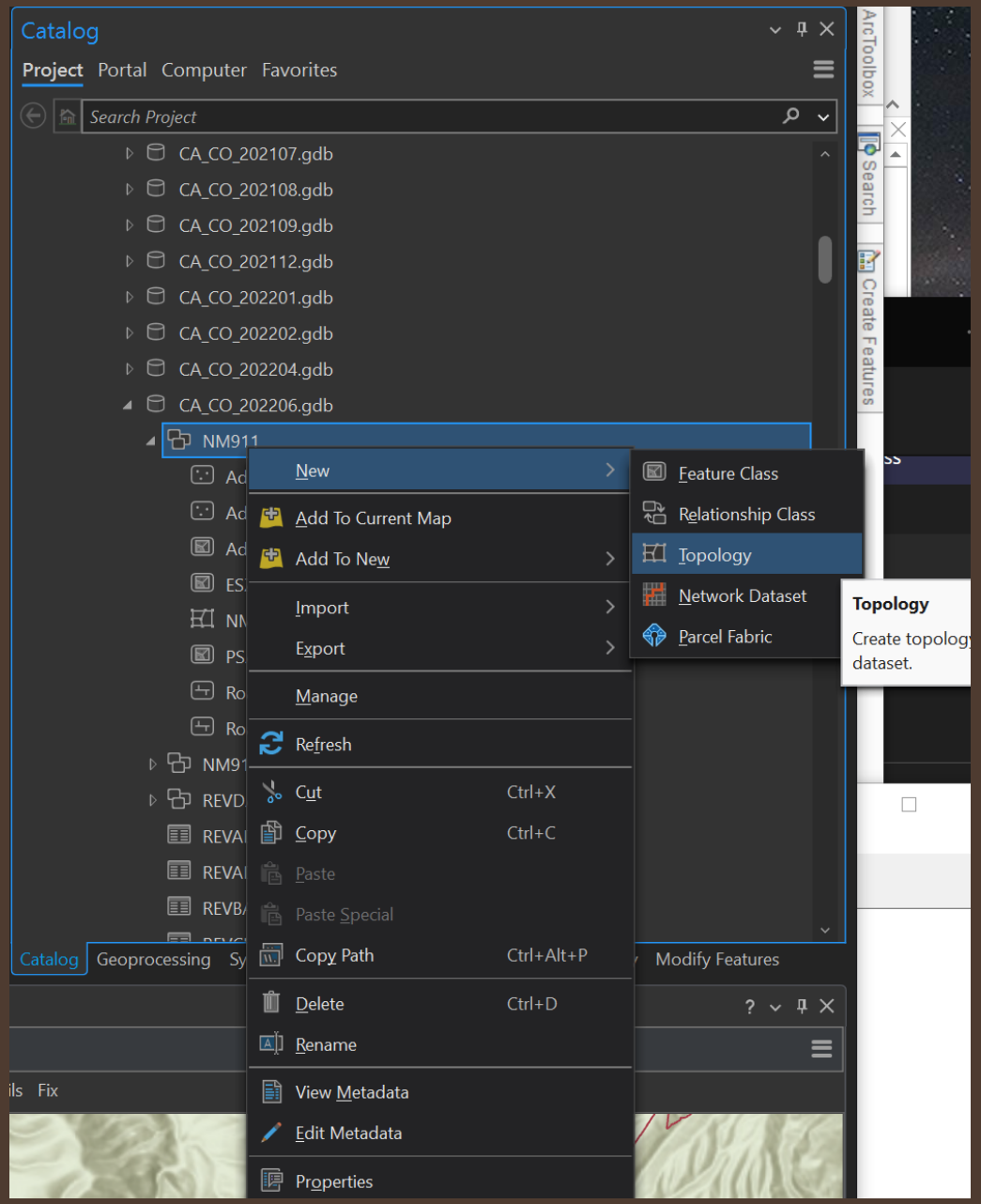
TOPOLOGY TOOLS







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CA_CO_202204.gdb
CA_CO_202206.gdb
NM911
New
Add To Current Map
Add To New
Import
Export
Manage
Refresh
Cut Ctrl+X
Copy Ctrl+C
Paste
Paste Special
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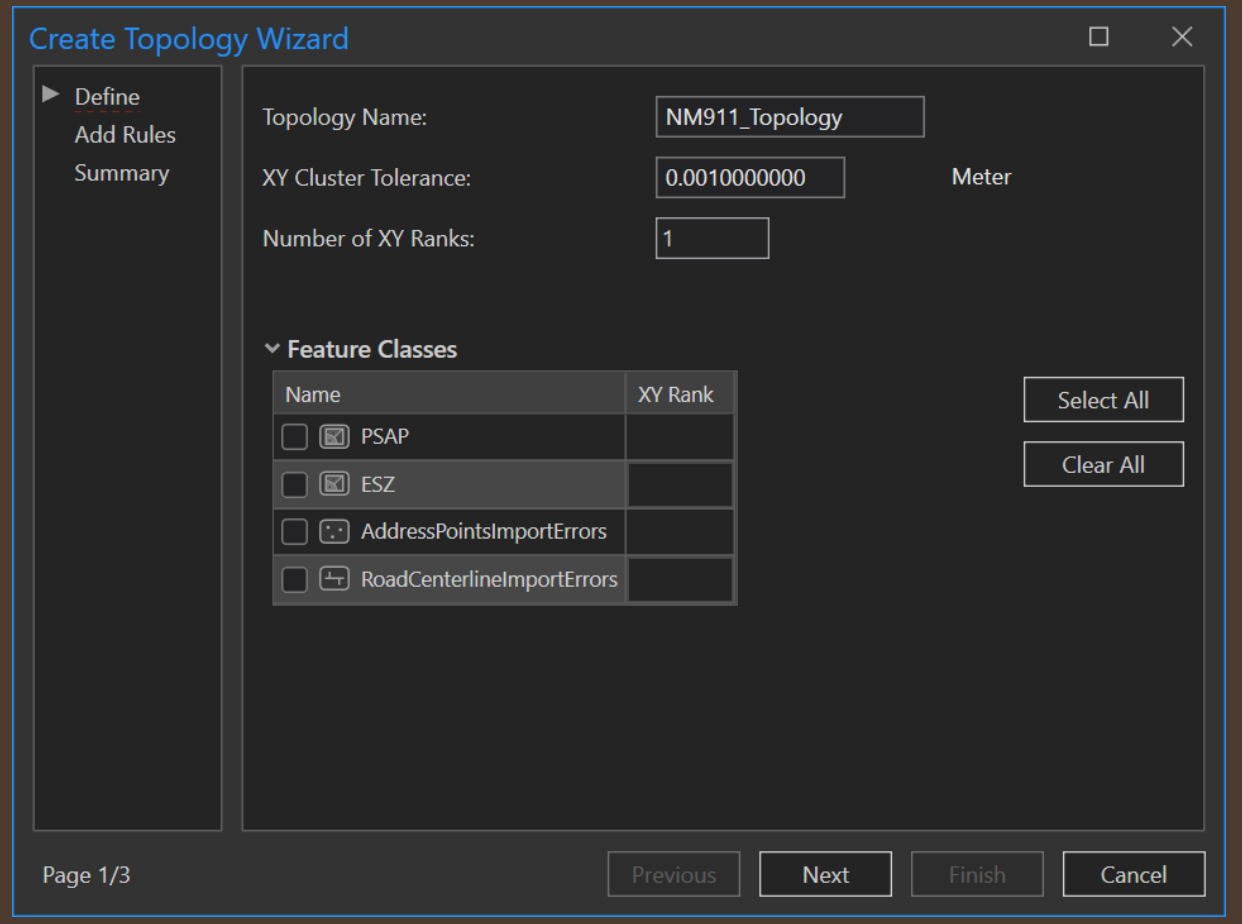
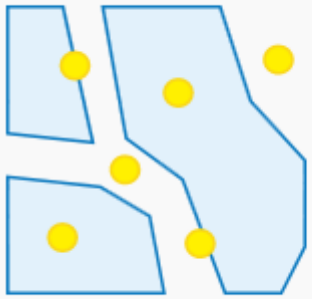
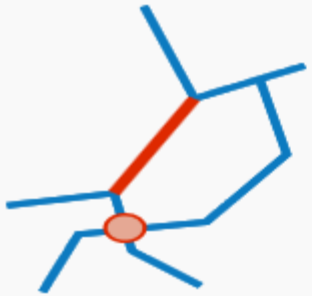
Rename
View Metadata
Edit Metadata
Properties
Feature Class
Relationship Class
Topology
Network Dataset
Parcel Fabric
Topology
Create topology dataset.
ArcToolbox
Search
Create Features
Modify Features
Catalog
Geoprocessing


Create Topology Wizard
Define
Add Rules
Summary
Topology Name:
NM911_Topology
XY Cluster Tolerance:
0.0010000000
Meter
Number of XY Ranks:
1
Feature Classes
Name
XY Rank
PSAP
ESZ
AddressPointsImportErrors
RoadCenterlineImportErrors
Select All
Clear All
Page 1/3
Previous
Next
Finish
Cancel



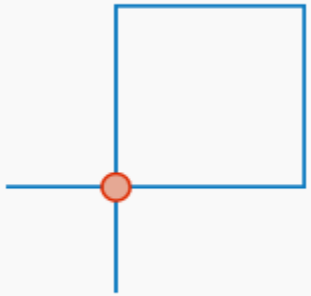
Must Be Properly Inside Polygons

Points in one feature class or subtype must be inside polygons of another feature class or subtype. Point errors are created where the points are outside or touch the boundary of the polygons.



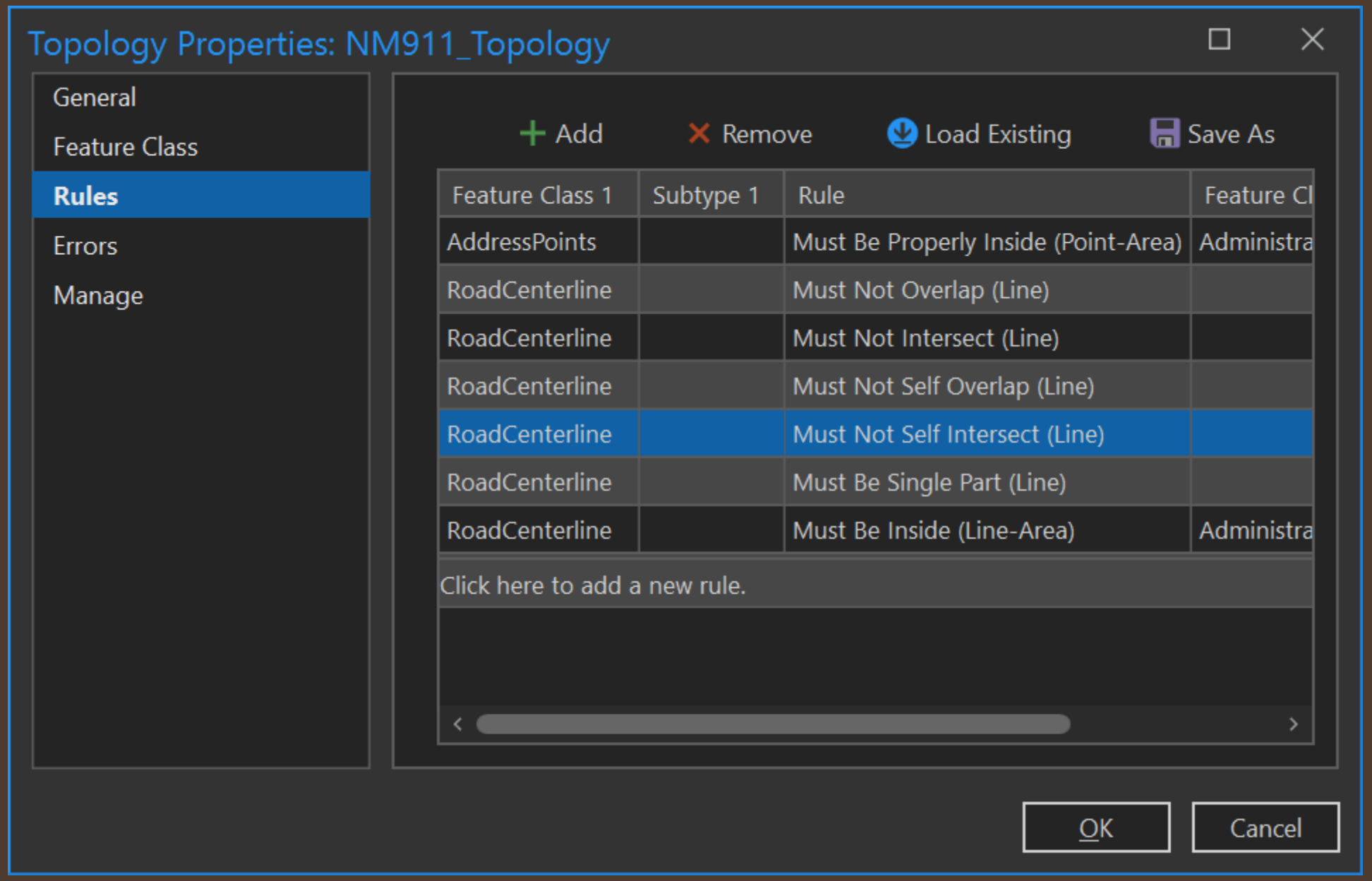
Must Not Intersect

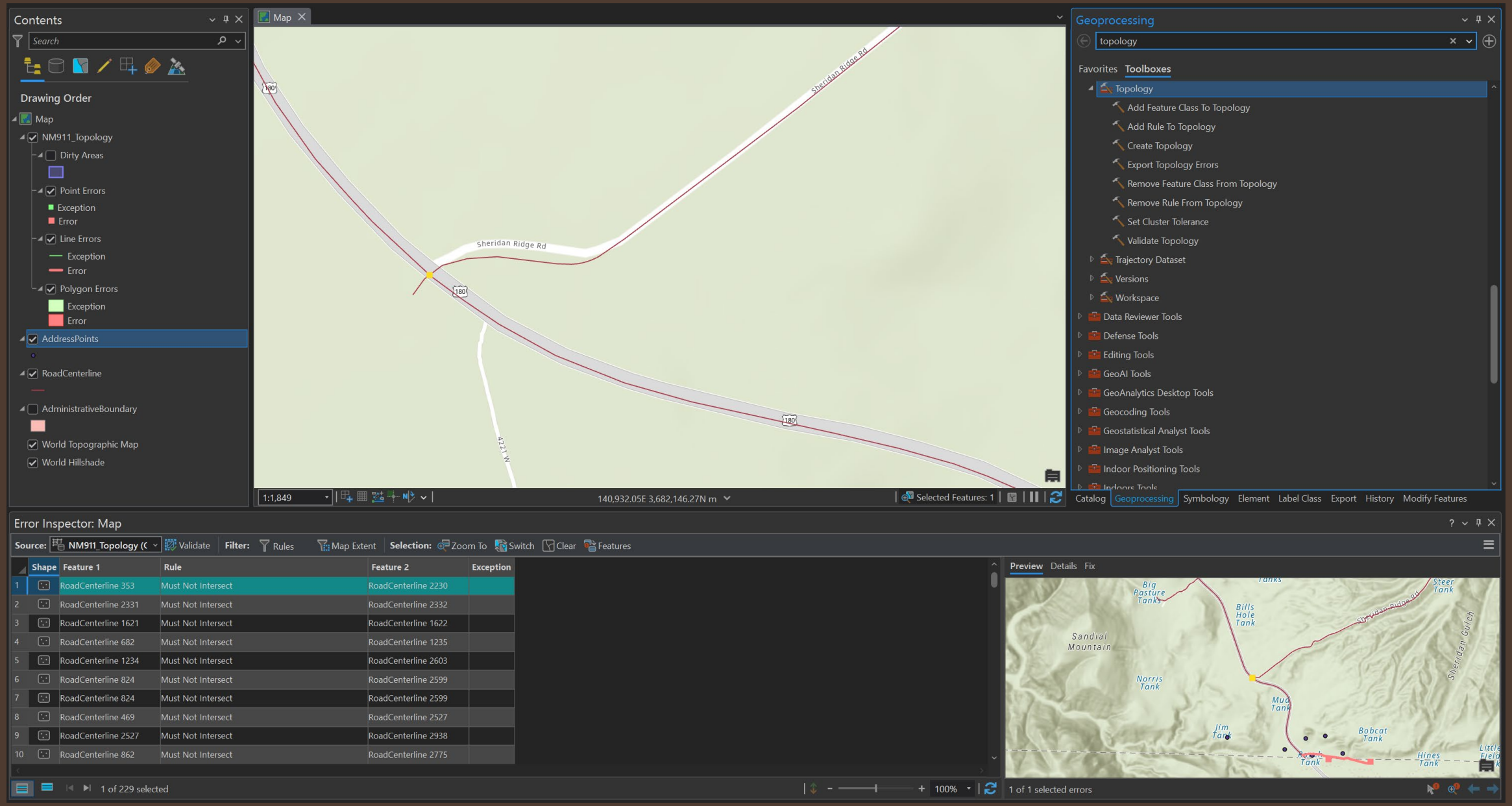
Lines must not cross or overlap any part of another line within the same feature class or subtype. Line errors are created where lines overlap, and point errors are created where lines cross.



Must Not Self-Intersect

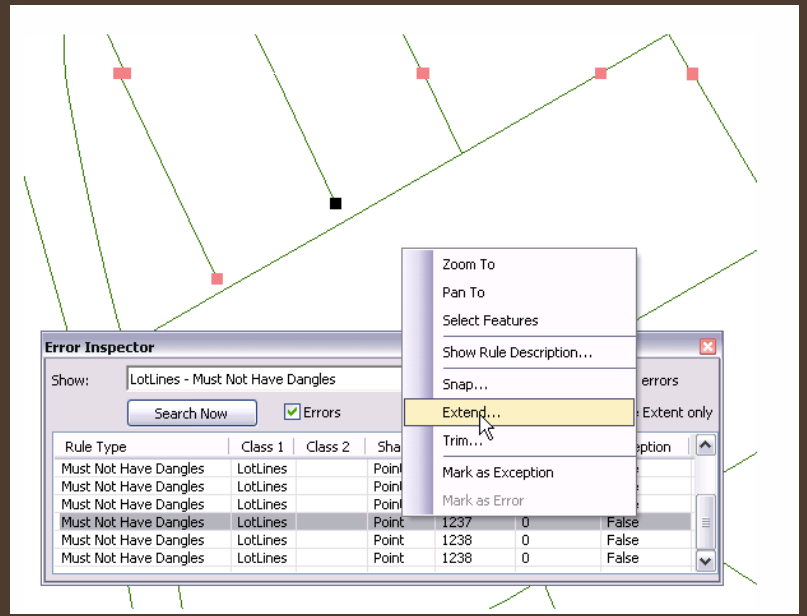
Lines must not cross or overlap themselves within a feature class or subtype. Lines can touch themselves and touch, intersect, and overlap other lines. Line errors are created where lines overlap themselves, and point errors are created where lines cross themselves


Topology Properties: NM911_Topology
General
Feature Class
Rules
Errors
Manage
Add
Remove
Load Existing
Save As
Feature Class 1
Subtype 1
Rule
Feature Cl
AddressPoints
Must Be Properly Inside (Point-Area)
Administra
RoadCenterline
Must Not Overlap (Line)
RoadCenterline
Must Not Intersect (Line)
RoadCenterline
Must Not Self Overlap (Line)
RoadCenterline
Must Not Self Intersect (Line)
RoadCenterline
Must Be Single Part (Line)
RoadCenterline
Must Be Inside (Line-Area)
Administra
Click here to add a new rule.
OK
Cancel


Contents
Search
Drawing Order
Map
NM911_Topology
Dirty Areas
Point Errors
Exception
Error
Line Errors
Exception
Error
Polygon Errors
Exception
Error
AddressPoints
RoadCenterline
AdministrativeBoundary
World Topographic Map
World Hillshade
Map
Sheridan Ridge Rd
Sheridan Ridge Rd
180
180
180
4221 W
1:1,849
140,932.05E 3,682,146.27N m
Selected Features: 1
Geoprocessing
topology
Favorites
Toolboxes
Topology
Add Feature Class To Topology
Add Rule To Topology
Create Topology
Export Topology Errors
Remove Feature Class From Topology
Remove Rule From Topology
Set Cluster Tolerance
Validate Topology
Trajectory Dataset
Versions
Workspace
Data Reviewer Tools
Defense Tools
Editing Tools
GeoAI Tools
GeoAnalytics Desktop Tools
Geocoding Tools
Geostatistical Analyst Tools
Image Analyst Tools
Indoor Positioning Tools
Catalog
Geoprocessing
Symbology
Element
Label Class
Export
History
Modify Features
Error Inspector: Map
Source:
NM911_Topology ((
Validate
Filter:
Rules
Map Extent
Selection:
Zoom To
Switch
Clear
Features
Shape
Feature 1
Rule
Feature 2
Exception
1 RoadCenterline 353 Must Not Intersect RoadCenterline 2230
2 RoadCenterline 2331 Must Not Intersect RoadCenterline 2332
3 RoadCenterline 1621 Must Not Intersect RoadCenterline 1622
4 RoadCenterline 682 Must Not Intersect RoadCenterline 1235
5 RoadCenterline 1234 Must Not Intersect RoadCenterline 2603
6 RoadCenterline 824 Must Not Intersect RoadCenterline 2599
7 RoadCenterline 824 Must Not Intersect RoadCenterline 2599
8 RoadCenterline 469 Must Not Intersect RoadCenterline 2527
9 RoadCenterline 2527 Must Not Intersect RoadCenterline 2938
10 RoadCenterline 862 Must Not Intersect RoadCenterline 2775
1 of 229 selected
100%
Preview
Details
Fix
Big Pasture Tanks
Steer Tank
Bills Hole Tank
Sandial Mountain
Sheridan Ridge Rd
Sheridan Gulch
Norris Tank
Mud Tank
Jim Tank
Bobcat Tank
Hines Tank
1 of 1 selected errors

FIXING TOPOLOGY ERRORS

- Fix Topology Error tool allows selecting a topology error and fixing using a predefined fixes set for that error type.
- Different error types have different predefined fixes available for them.
- Examples:
  - A dangling line can be trimmed, extended, or snapped to another line.
  - Errors caused by violations of the Must Be Covered By rules can be fixed by creating a new feature or deleting a feature.
  - Errors caused by overlapping polygons can be merged into one of the polygons; subtracted from both; or turned into a separate, new polygon feature.



For the selected Must Not Have Dangles error, which is shown in black on the map and highlighted in the Error Inspector, extending the line is an appropriate way to fix this error.

TOPOLOGY EXCEPTIONS

- Violations of topology rules are initially stored as errors in the topology, but can be marked as exceptions where the errors are appropriate.
- Examples
  - An assessor's geodatabase might have a topology rule requiring that building features not cross parcel lines as a quality control for the building digitizing effort. This rule might be true for 90 percent of the features in the city, but it could be violated by some high-density housing and commercial buildings.
  - A condominium building feature that crosses parcel boundaries – it will be discovered as an error when you validate your edits, but you can mark it as a legitimate exception to the rule.

MAP TOPOLOGY

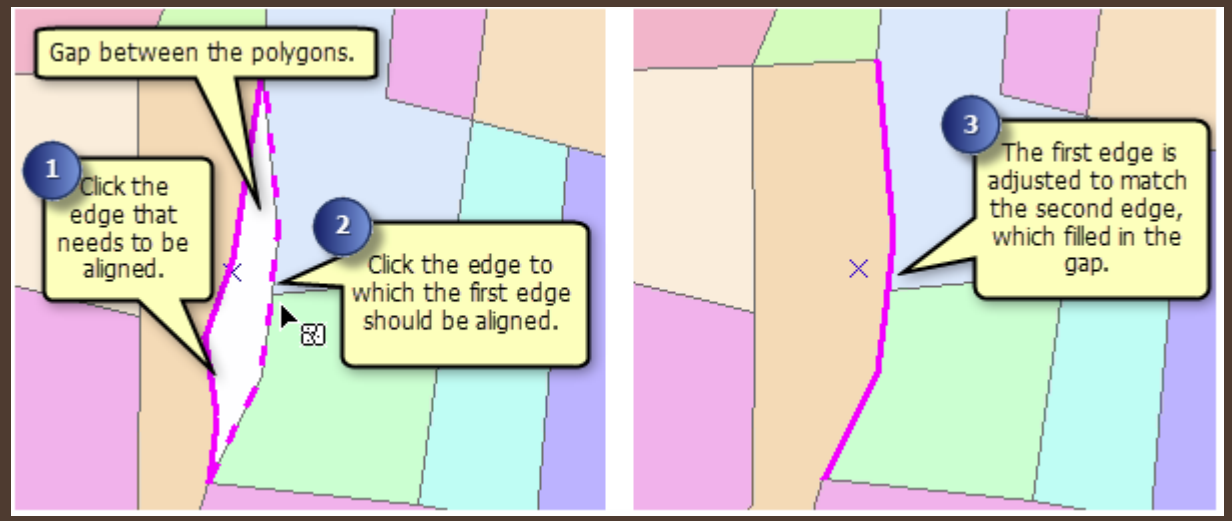
Editing coincident features

MAP TOPOLOGY

- Creates topological relationships between the parts of features that are coincident.
- Features with shared geometry can be edited simultaneously.
- Based on the layers in the map.
- Layer visibility, scale, definition queries are respected.
- Topology Cache – stores topological relationships between edges and nodes of features in a current extent. It needs to be rebuilt when display extent is changed.

ALIGN EDGE

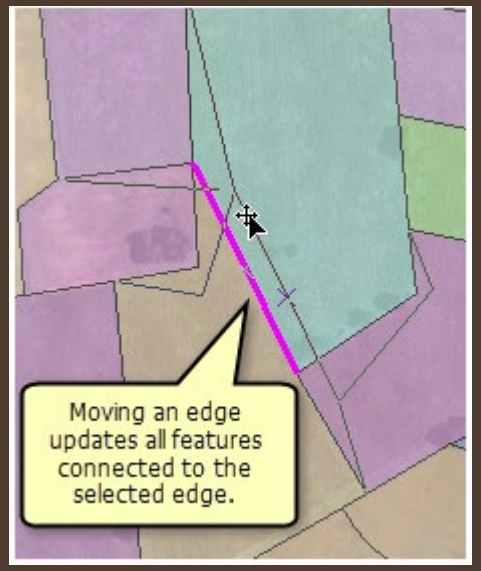
- Match one edge to another to make them coincident
- Align Edge Tool allows this without having to trace or reshape the edge manually



Images: arcgis.com

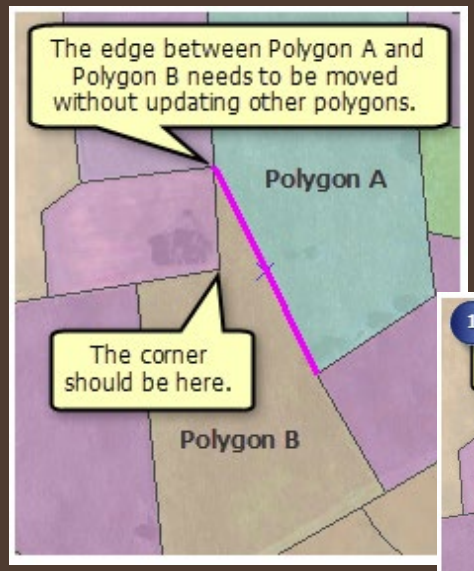
MOVING TOPOLOGY ELEMENTS

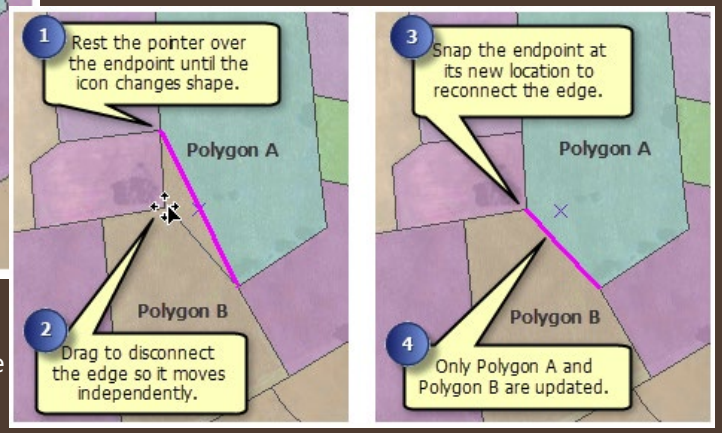
Moving a topology element



When you move an edge, all features that are connected to the selected edge stretch and move to maintain connectivity.

Moving an edge and reconnecting it at another location





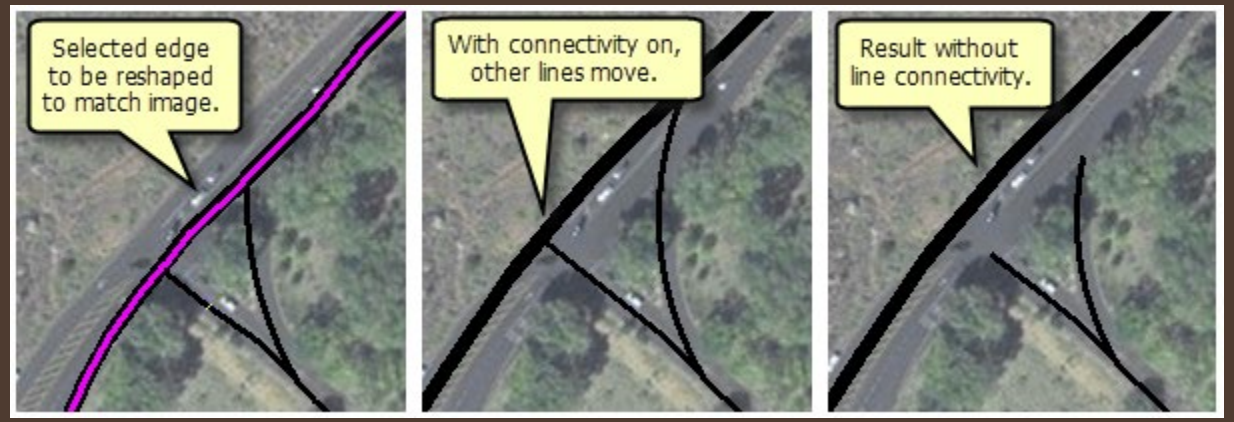
An edge can be detached and reconnect to another edge. This is also known as a split-move because it temporarily splits the connection between the topology elements.

Images: arcgis.com

RESHAPING EDGE

Reshaping multiple edges that form a connected path, such as parcel boundaries that need to be updated because of a planned road-widening project.

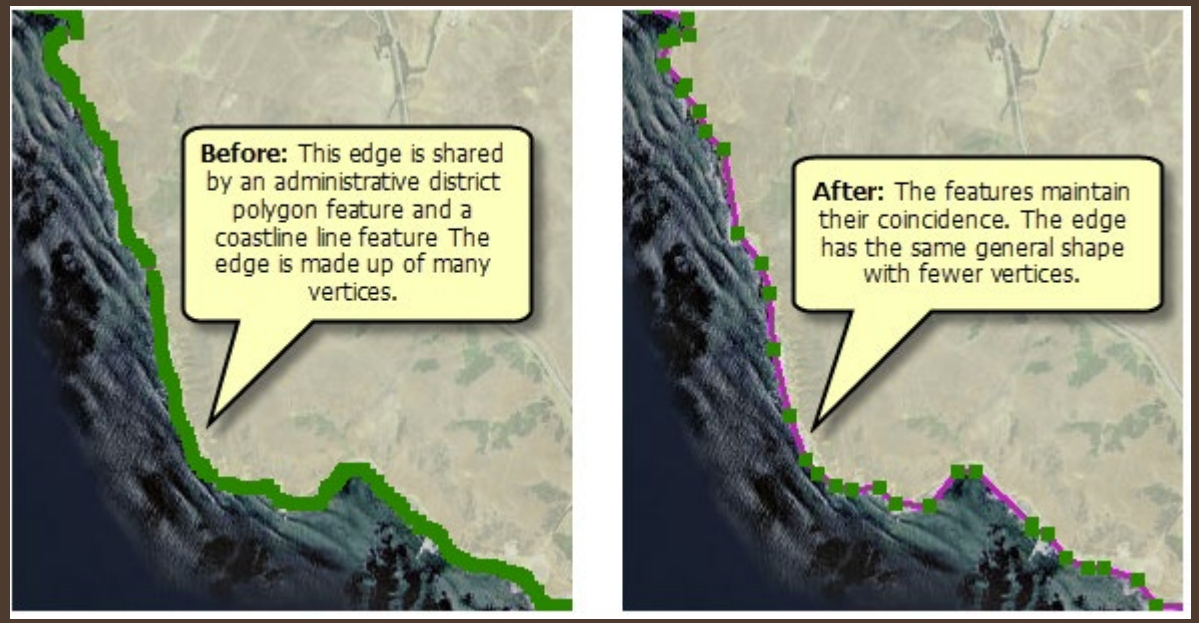
The left image shows the original road edges that are to be reshaped. The resulting images show the effect on the connecting roads when line connectivity is turned on (the lines continue to connect) and turned off (the lines not being reshaped remain in their original positions).



Images: arcgis.com

GENERALIZE EDGE

- Simplifying a topology edge by reducing the vertex count in features



Images: arcgis.com