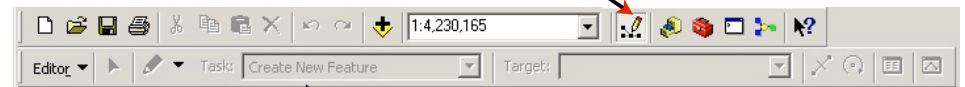## GEOL 452/552 - GIS for Geoscientists I

- chapter 12 - Basic editing (add/change features)
- How to create a new shapefile
- Hands-on editing demo
- data in follow_along\ch12A_class_ex folder (copy!)
- Think about class project (more info next lecture)
- Tut ch 11 1-50 (very similar to HW)
- HW 11: ch 12 ex 1,2,3, 5,6, (but only SW corner!)
- More detailed slides about editing on WebCT (Editing_Details.pdf)
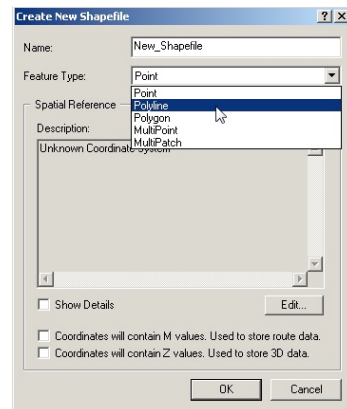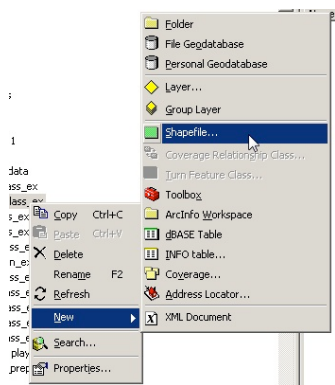
Editing in ArcMap

- Create/change **vector data** geometry interactively
- Also: change content of feature attribute table
- Make a backup before starting to editing a big / important layer
- May create new layer for new features (ArcCatalog only!)
- Also: you may be asked to "lock" the **folder** of the shapefile to be edited (locks all shapefiles in a folder)
- Activate **Editing** toolbar:
  - View – toolbars   Or click

Creating new layers
(in **Arc Catalog only!**)

- Right click – new file – shapefile
- Choose name and type
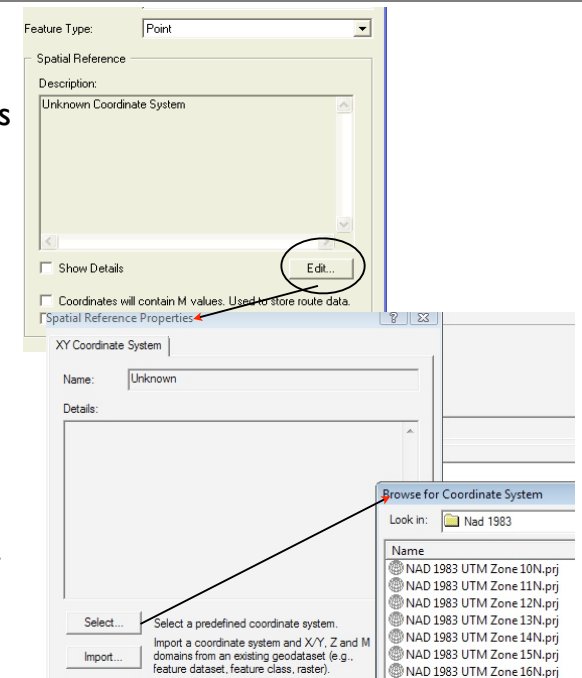- (let's create a Polyline file line.shp)
- Later: define Attributes (type)

(for how to make a new feature class within a GeoDB, see tutorial)
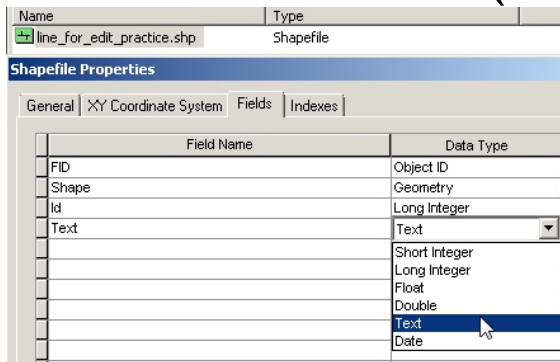
Setting the new Shapefile's coordinate system

Edit… brings up Spatial Reference Properties

- Select: choose yourself (GCS or projected)
- Let's use NAD83 UTM15N (projected)
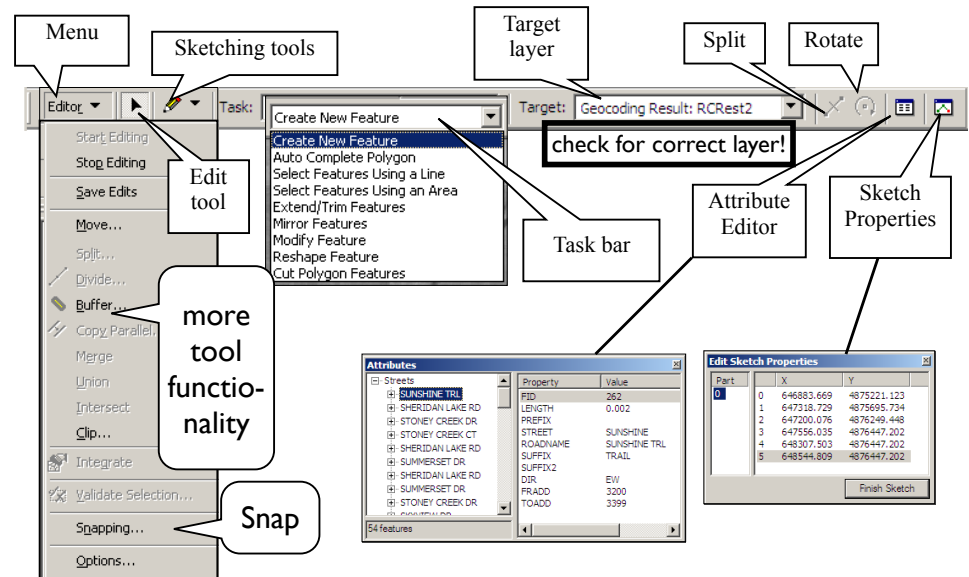- Import: get same coord. system as other file

Define attribute (field)

Name	Type
line_for_edit_practice.shp	Shapefile

Shapefile Properties

General | XY Coordinate System | Fields | Indexes |

Field Name	Data Type
FID	Object ID
Shape	Geometry
Id	Long Integer
Text	Text

Short Integer
Long Integer
Float
Double
Text
Date

- Right-click on new file - Properties - Fields
- Enter Field's name (Text, Length) and type (text, float)
- Done - open Ch12_class_ex.mxd and add new file
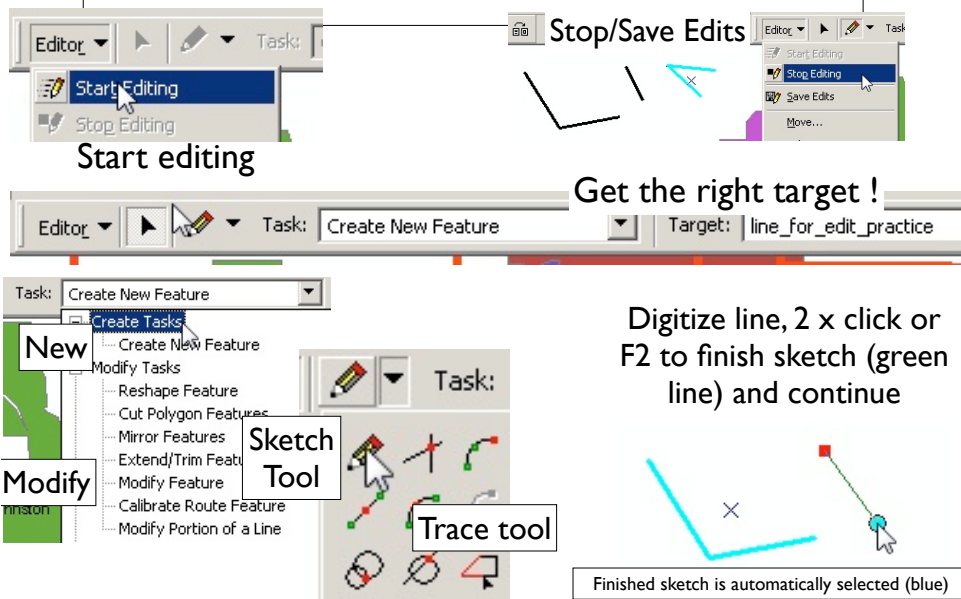- Activate Edit toolbar!

5

The Editor toolbar

Menu

Sketching tools

Target layer

Split

Rotate

Editor ▾ | ▸ | ✎ ▾ | Task: [Create New Feature ▾] Target: [Geocoding Result: RCRest2 ▾]

check for correct layer!

Start Editing
Stop Editing
Save Edits
Move...
Split...
Divide...
Buffer...
Copy Parallel...
Merge
Union
Intersect
Clip...
Integrate
Validate Selection...
Snapping...
Options...

Edit tool

more tool functio-nality

Snap

Create New Feature
Auto Complete Polygon
Select Features Using a Line
Select Features Using an Area
Extend/Trim Features
Mirror Features
Modify Feature
Reshape Feature
Cut Polygon Features

Task bar

Attribute Editor

Sketch Properties

Attributes
Streets
SUNSHINE TRL
SHERIDAN LAKE RD
STONEY CREEK DR
STONEY CREEK CT
SHERIDAN LAKE RD
SUMMERSET DR
SHERIDAN LAKE RD
SUMMERSET DR
STONEY CREEK DR

Property	Value
FID	262
LENGTH	0.002
PREFIX	
STREET	SUNSHINE
ROADNAME	SUNSHINE TRL
SUFFIX	TRAIL
SUFFIX2	
DIR	EW
FRADD	3200
TOADD	3399

54 features

Edit Sketch Properties

Part	X	Y
0	0	646883.669	4875221.123
	1	647318.729	4875695.734
	2	647200.076	4876249.448
	3	647556.035	4876447.202
	4	648307.503	4876447.202
	5	648544.809	4876447.202

Finish Sketch

6

Creating new features

Editor ▾ | ▸ | ✎ ▾ | Task:

Start Editing
Stop Editing

Start editing

Stop/Save Edits

Editor ▾ | ▸ | ✎ ▾ | Task
Start Editing
Stop Editing
Save Edits
Move...

Get the right target !

Editor ▾ | ▸ | ✎ ▾ | Task: [Create New Feature ▾] Target: line_for_edit_practice

Task: [Create New Feature ▾]

Create Tasks
  Create New Feature
Modify Tasks
  Reshape Feature
  Cut Polygon Features
  Mirror Features
  Extend/Trim Features
  Modify Feature
  Calibrate Route Feature
  Modify Portion of a Line

New

Modify

✎ ▾ Task:

Sketch Tool

Trace tool

Digitize line, 2 x click or F2 to finish sketch (green line) and continue

Finished sketch is automatically selected (blue)

7

Sketching - summary

- Temporary sketch for creating new features
- Select layer to add feature to (target layer) and press pencil button
- You can use zoom, pan while sketching (click sketch button again to go back)
- Right-click: pulldown menu for context menus:
  - On vertex: vertex menu
  - Not on vertex: sketch menu
- Double click to end sketch and create actual new feature (newly made feature will be selected)
- Click on Select tool (Black Arrow) exits sketch mode
- Delete feature: Select - Hit Delete Key (Ctrl-Z Undo)

8

Editing context menus

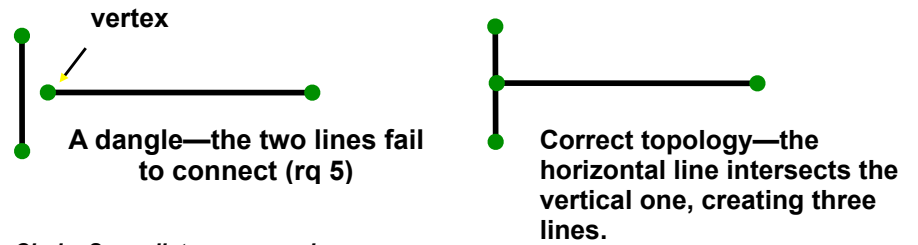**Right-click on sketch (vertex,..)**

Vertex menu

- Route Measure E...
- Insert Vertex
- Delete Vertex
- Move...
- Move To...
- Flip
- Trim to Length...
- Delete Sketch
- Finish Sketch
- Finish Part
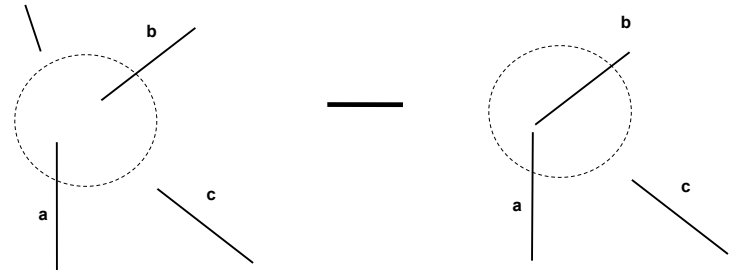- Properties...

Right-click outside sketch

Sketch menu

- Snap To Feature
- Direction... Ctrl+...
- Deflection... Ctrl+...
- Length... Ctrl+L
- Change Length
- Absolute X, Y... F6
- Delta X, Y... Ctrl+D
- Direction/Length... Ctrl+G
- Parallel Ctrl+P
- Perpendicular Ctrl+E
- Segment Deflection... F7
- Replace Sketch
- Tangent Curve... Ctrl+T
- Find Text Ctrl+W
- Streaming F8
- Delete Sketch Ctrl+Delete
- Finish Sketch F2
- Square and Finish
- Finish Part

Snapping
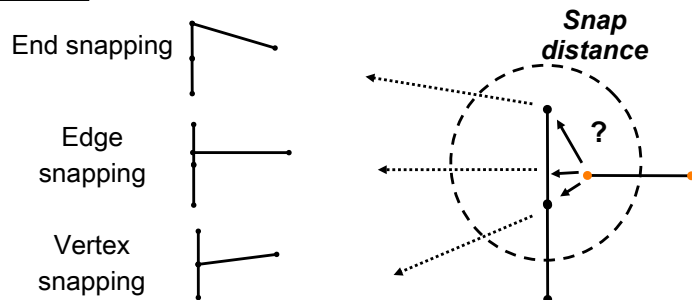
Automatically connects features (point, line)

vertex

A dangle—the two lines fail to connect (rq 5)

Correct topology—the horizontal line intersects the vertical one, creating three lines.

Circle: Snap distance around mouse cursor

b

c

a

b

c

a

Setting different types of snapping

Editor ▼
- Start Editing
- Stop Editing
- Snapping...
- Options...

Snapping Environment

Layer	Vertex	Edge	End
Blocks	☐	☐	☑
Connects	☐	☐	☐
Parcels	☑	☑	☐

End snapping

Edge snapping

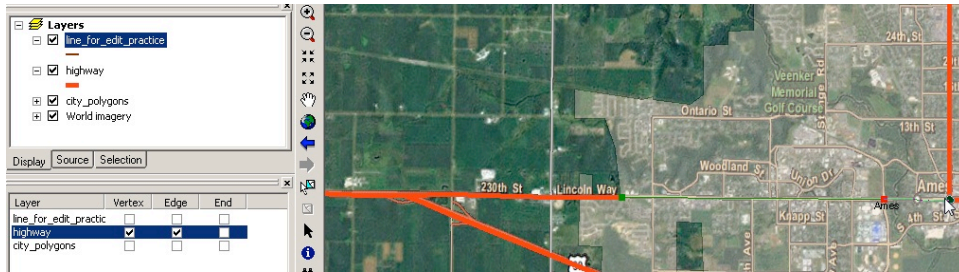Vertex snapping

Snap distance
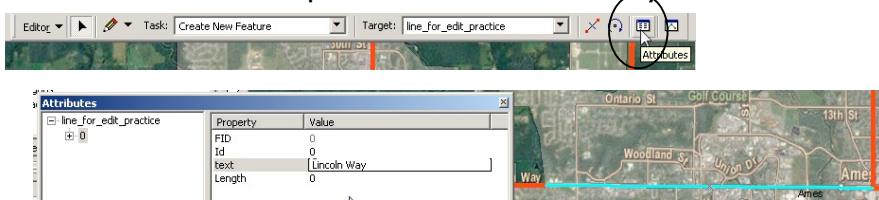
?

The snapping window

It is handy to dock the snapping window below the Table of Contents, and leave it open so you can easily turn snapping on and off as you edit.

Click and drag to change the sizes and space allotted to the Table of Content and the two snapping window panes.
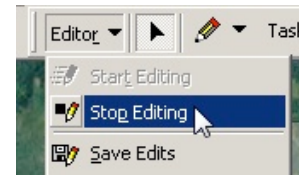
Layer	Vertex	Edge
practicept	☐	☐
Connects	☐	☐
practicelin	☐	☐
practicepo	☐	☐
Parcels	☐	☐
Streets	☐	☐
Buildings	☐	☐

- ☐ Edit sketch vertices
- ☐ Edit sketch edges
- ☐ Perpendicular to sketch
- ☐ Topology Elements
  - ☐ Topology nodes
- ☐ Miscellaneous
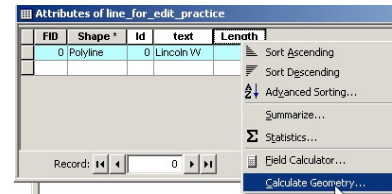 - ☐ Survey Points

Digitizing exercise

- Snap to Highway layer (Vertex and Edge)
- Edit Feature Properties - Text = Lincoln Way

- Stop Editing (saves features + attribs to file)
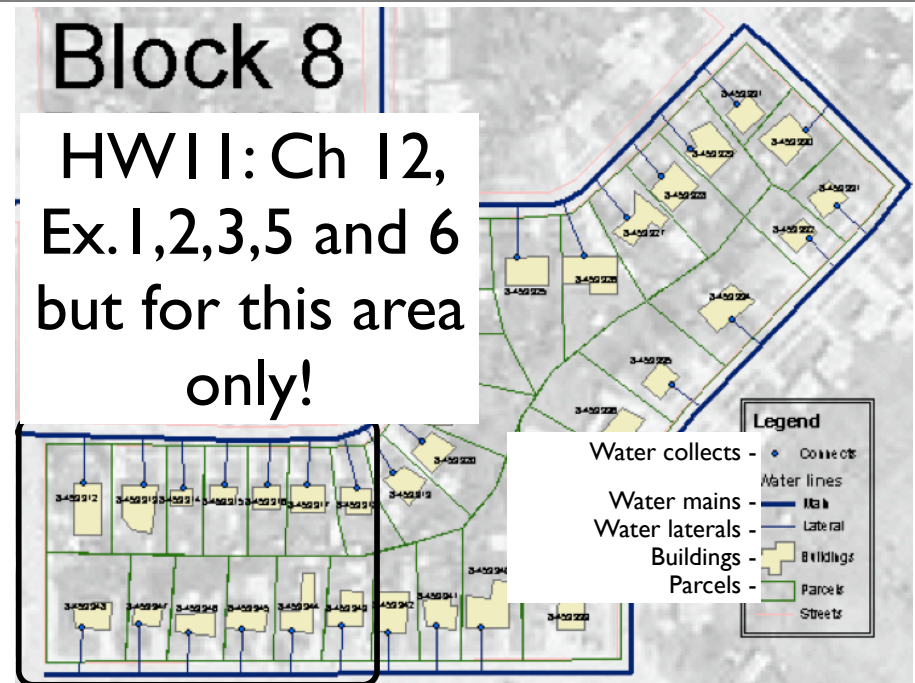- Calculate Length via Attribute Table - Calculate Geometry (in meters)

Wrap up

- More detailed slides about editing on WebCT (Editing_Details.pdf)
- Tut ch 11 1-50 (very similar to HW)
- HW 11: ch 12 ex 1,2,3, 5,6, (but only SW corner!)
- Think about class project (more info next lecture)

Block 8

HW11: Ch 12, Ex.1,2,3,5 and 6 but for this area only!

Legend

Water collects - Connects

Water lines

Water mains - Main

Water laterals - Lateral

Buildings - Buildings

Parcels - Parcels

Streets