Exercise 8 – Mapping Trails (Team Project)

Session Objectives - At the conclusion of this session you will be able to:

- ❑ Conduct a multi-user GPS project
- ❑ Use segment polyline tool in ArcPad 10
- ❑ Edit line features in ArcMap 10 using snapping and advanced editing tools
- ❑ Create metadata in a file geodatabase

Materials created by*:* Eric Kelchlin (July 2011)

Revision: January 2012

Software: ArcGIS 10 SP3, ArcPad 10 SP3

Directory Path: D:\CSP7301\Exercise8

GDB: Park_Project.gdb (copied over from Exercise4 and modified)

Title: Scenic Enjoyment Trails Mapping Project in Riverside Park

Requested by: Gwen Stefani, Visitor Services

Problem Statement:
Riverside has a network of newly paved trails throughout the park. Visitor Services would like to rate the trails by scenic views. The trails need to be visually inspected and mapped to determine what sections are poor, good, or best on a scenic grade scale. The best trail sections will have uncompromised views of the water. However, the rating scale will be subjective for each inspector. The final product should be cleaned-up using ArcMap 10 and presentable for a park brochure. Finally, Gwen's supervisor requires that metadata be completed for all GIS layers due to high employee turnover.

Objectives:
1. Map the trails and categorize trail segments relative to scenic views.
2. Edit the raw GPS data making sure all the data are as "clean" and as possible.
3. Create metadata documenting your methodology.

Existing Data: NAIP_2010.sid

Methodology:
1. Collect the data using the Segment Polyline Tool in ArcPad 10.
2. Modify the Park_Project.gdb from Exercise4 to fit this project.
3. Check the project out to multiple users to save time in the field.
4. Edit the line data using snapping and advanced editing tools.
5. Copy and paste this summary into the Metadata Description field.

Deliverables:
1. A clean polyline feature class.
2. A map document clearly showing the trails scenic types.
3. Metadata with the GPS project summery in the description field.

SECTION 1 – Geodatabase Design

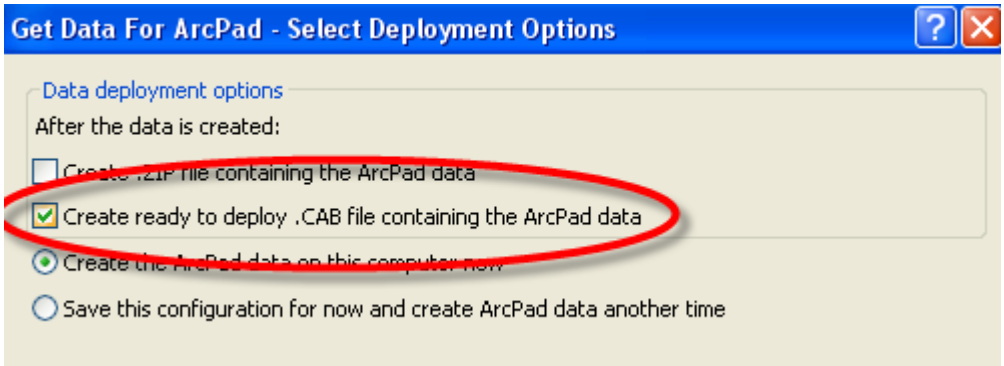
Save all your work in the D:\CSP7301\Exercise8 folder.

1. Copy the **Park_Project.gdb** from the Exercise4 folder and past in the Exercise8 folder.

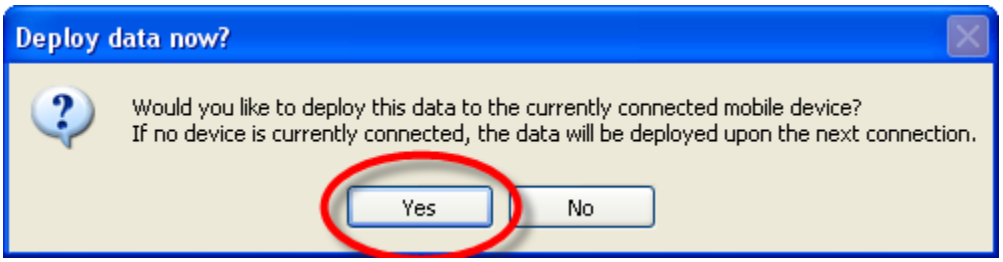
2. Delete all the feature classes (FC) and create a new line FC called **Trails**. Use the form at the end of this exercise to complete the geodatabase structure.

   - You will need to create the Technician domain. However, all you need to include is your name and your teammate's name.

3. Create a map document (MXD) as before and check out your data to ArcPad. But this time deploy the project as a CAB file! Make sure you're Trimble is connected before you do this.



4. Deploy the CAB file to your mobile device.



   - The project folder will be saved as "DataForArcPad" on your device. Follow the instructions on the Trimble screen to install the CAB file.

   - Use the File Explorer on ActiveSync to browse down and replace this generically named folder name with your initials.

5. Remove your Trimble unit from the cradle and connect your teammate's Trimble unit via ActiveSync.

6. Click the Deploy to Mobile Device Tool on the ArcPad Data Manager Toolbar to quickly send the project over to your teammate's device. Rename with his/her initials.

7. Save your MXD again and Get ready to head-out into the field for about an hour.

SECTION 2 – Check In the Field Data

1. Get an ActiveSync connection and copy both projects over from the Trimble unit past in the Exercise8 folder. No need to replace any folders as before.

2. Open your MXD. Start editing and Check In edits from both project folders at one time.

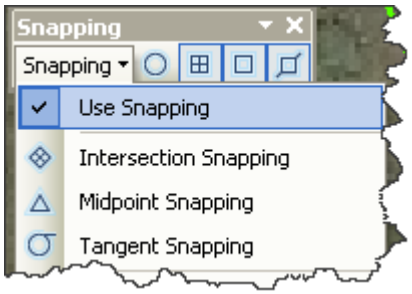
3. Save your edits but stay edit mode for the next section.

SECTION 3 – Editing Line Features

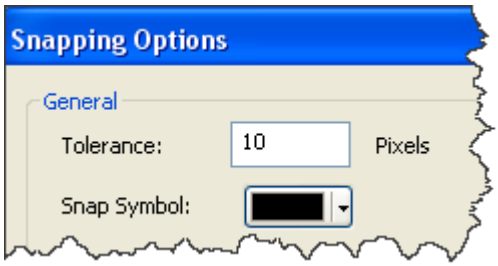
TASK 1: Set the Stage

1. Right-click in the "gray area" on the main toolbar and select the **Snapping** and **Advanced Editing** Toolbars. Move the toolbars to a desired location.

2. Click on the **Snapping** drop-down arrow and make sure Use Snapping is checked. Also click on the last 3 button on the toolbar to enable End, Vertix and Edge snapping.



3. Select the **Snapping > Options** and set the snapping tolerances to 10.

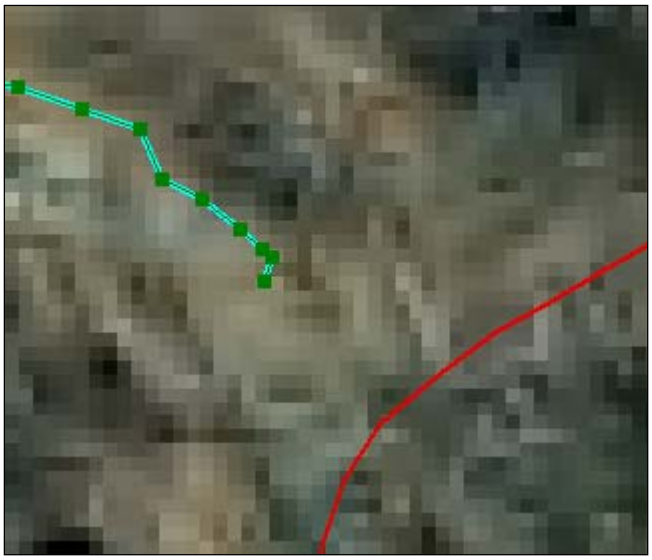


TASK 2: Connect Broken Lines

1. Click on the Edit Tool on the Editor Toolbar.

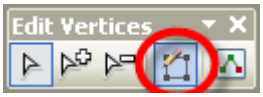
2. Zoom into the area you will be working in.

3. Using the **Edit Tool**, double click on the line that you want to edit to show its vertices (green boxes).



4. Place your mouse over the last vertex until it becomes a box surrounded by arrows. Left click and drag the vertex to the desired location on the other line. Notice how the vertex “snapped” to the edge of the other trail.

5. Click on the **Finish Sketch** icon on the floating **Edit Vertices** toolbar or anywhere on the map to accept your changes.



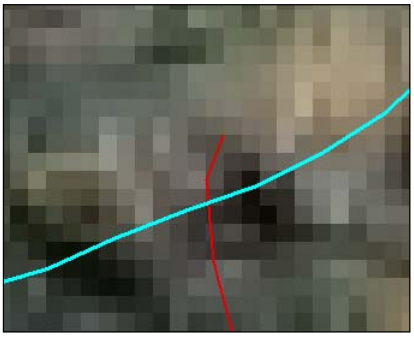
6. If you make a mistake, use the undo button on the **Standard** toolbar.

7. To insert a vertex, click on the Insert Vertex tool on the **Edit Verticies** toolbar.

8. To delete a vertex, click on the Delete Vertex tool on the **Edit Verticies** toolbar.

TASK 3: Trim lines

1. Zoom in to the area you will be working in.



2. Use the Edit tool to click once on the line which will be used to trim the desired line. We will trim the red line where it crosses the selected (blue) line.

3. Click on the Trim tool on the **Advanced Editing** toolbar.

4. Now, click on the red trail line above the blue selected trail to remove the overshoot.

TASK 4: Split lines

This is a useful tool when you have to a lot of vertices to delete and you don't want to waste your time deleting each one separately. The split tool cuts the line so you can delete entire line segments.

1. Zoom in to the area you will be working in. Highlight the trail to split with the Edit tool .

2. Click on the Split Tool on the **Editor** toolbar.

3. Click on the line where you want the split to occur. Select the line segment you want to delete and press the **Delete** Key.

SECTION 4 – Create Metadata

1. Save your edits and MXD before you proceed.

2. Copy the text from the **Trails_Project.docx** file and add to the Description field in the metadata. Save your edits.

Geodatabase Design Form

Feature Class or Table Name	Data Type	Field Name	Field Type	Text Length	Domain Name	Default Value
Trails	Line	_Date	Date			
		GPS_Device	Text	10		GeoXM
		Technician	Text	35	Technician	"your name"
		Park_Name	Text	35	Park_Names	Riverside Park
		Scenic_Type	Short Int			
		Comments	Text	40		

SubType Design Form

Feature Class	Switch Field	Sub-Types	List Field	Doman Name	Default Value
Trails	Scenic_Type	**1 - Poor**			
		2 - Good			
		3 - Best			