LAB X: Park Ski Trail Mapping

What You'll Learn:
-Practice digitizing   -How to create a County Park Ski Trail Map
-Practice updating attributes

Data for this exercise is in the \Extra Credit Lab - LX subdirectory and on the class web page. Supporting information can also be found at those locations.

What You'll Produce: a map of the Pine Point Park with Boundaries, Roads, Trails, Buildings, Lakes and Driveways and Parking. The final map must also include a useful legend identifying the ski trail difficulty and direction of travel.

Background: See Lab 3 and Lab4 for digitizing concepts.

## READ ENTIRE INSTRUCTIONS BEFORE STARTING YOUR PROJECT!

Washington County's Pine Point Park has both ski trail and horse trails. It also has the Minnesota Gateway Trail, a multi-use paved asphalt trail, which transects the Park, east/west. Your job is to create a useful "Ski Trail" map for the Park.

This assignment is designed to be similar to a "typical" GIS request from the County Park Division.

The data layers you are given are shown to the right.

Use pp_utm.sid as your base to create the Park Ski Map.

For background help see Lab 3: Digitizing
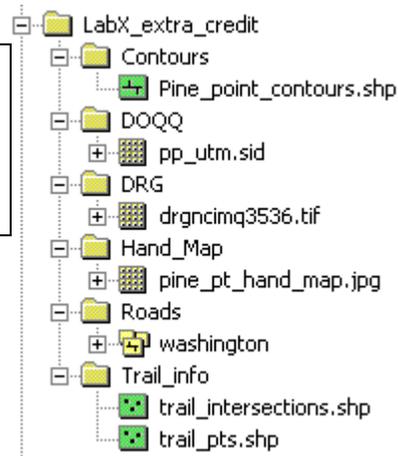
You will interpret trail locations from the image "pp_utm.sid". Trails are <u>sometimes</u> clearly visible in parts of the image. The point data layers (trail_intersections & trail_pts) and the hand-drawn trail map will help you determine the trail locations on the image.

You will create eight (8) new layers: Park Boundaries, Driveways, Lakes, Buildings, Parking Lots, the Gateway Trail, the Horse Trail, Ski trails. (Use ArcCatalog to create the empty shape files)

You may also use the DRG (the 7.5 Quad USGS Topographical Map), which is named "drgncimg3536.tif" as a reference.

Only digitize features from <u>what is visible </u>on the "pp_utm.sid" image.

WHERE TO START
First, create the Park Boundaries. Use the hand-drawn map as a guide to decide where to digitize the boundaries. The boundary should be a polygon layer.

Next create and digitize the Driveways, snapping to existing roads. Then create and digitize the Parking Lots. Notice that there are two Parking Lots, one on the east and the other by the Outing Lodge on the west side. Driveways are poly-lines, Parking lots are polygons.

Next create and digitize the Lakes and Buildings. The Lakes and the Building layers should be polygons.

Finally create 3 new layers for Trails as poly-lines. The layers are the Gateway Trail, the Horse Trail, and the Ski Trail.   In the Ski Trail layer add an attribute field to store values representing the trail difficulty rating (use Easy, Intermediate or Difficult).

As you create (digitized the trails) use the GPS point layers to help you see where the trails are located on the photo. The GPS point layers are named Trail Intersections (trail_intersections) and Trail Points (trail_pts). The intersection layer is where two or more trails meet; compare this to the hand-drawn map to see which trails intersect. The Trail Points are reference points to make sure you know where a trail is located; they are not intersections.   When you digitize, zoom in as far as you can; try and digitize at 1:1,500 scale or larger.


Trail markers

Trail Intersections

Remember to SNAP features together appropriately

Digitize the Gateway Trail and the Horse Trail into separate layers.

Identify and digitize a section of the ski trail on the photo using the GPS points and the Hand-Drawn Map. Next, look at the 2 meter contour layer to decide if the trail should be classified as Easy, Intermediate or Difficult. The contour layer is named pine_point_contours.shp. *(Steep trails should be coded Difficult, fairly flat trails should be Easy and the rest are Intermediate. There should just a few difficult sections. Of the remaining trails, about a 1/3 should be Easy and the others are Intermediate; you decide how each section should be classified.)*

You can create separate layers for each the ski trail difficulty rating or add one attribute to a common ski trail layer, then use the attribute (text) to assign a difficulty rating to the ski trail segment *(Easy, Intermediate, Difficult)*.

Here are the **REQUIRED** symbols and markers

You must add some type of directional arrows
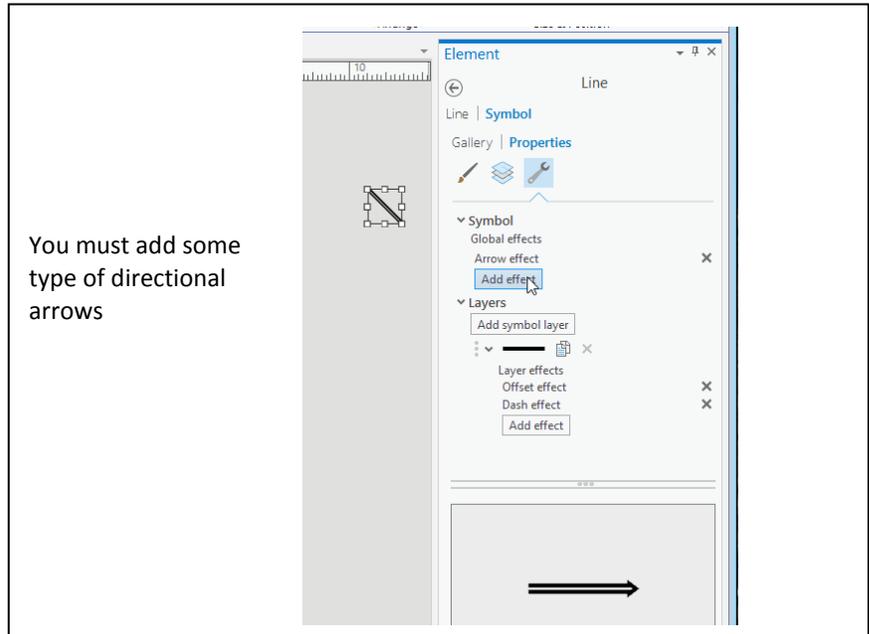
Hint:
For directional arrows, from the Insert ribbon menu, select "Line", then draw in a simple line. The use the Line Format, (Element) Symbol Properties, Symbol to Add effect, selecting Arrow effect.   Add the directional arrows at the very end, just before creating the PDF.

The Final Map must show the Park Boundaries, Roads, Lakes, Driveways, Parking Lots and Buildings as well as the trail layers. DO NOT DISPLAY the photo behind the layers. This map is to be designed as a "Trail Map"; a map to help skiers find their way.

Make sure you have a clear and helpful legend, scale bar, north arrow, and title. You will be graded on content and style (how the map looks). Cryptic file names, titles, legends and sloppy maps will not be well received.

This "hand drawn" map of Pine Point Park THIS **MAP IS FOR REFERENCE ONLY**
(A larger copy is on the \Extra Credit Lab - LX directory or downloaded from the class
web site.)