

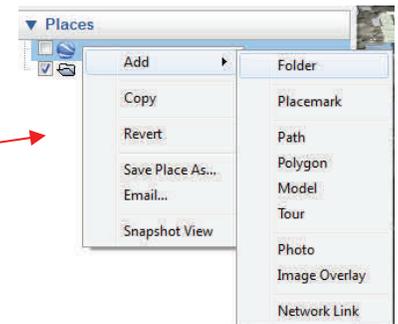


# Georeferencing and Digitizing Historical Maps in Google Earth

Google Earth will be used for this assignment. Students can download the software from <http://www.google.com/earth/>. Google Earth will be used as a backdrop to overlay and digitize historical maps.

## Georeferencing a scanned map

1. From CULearn, select an historical map from the list, save it to your c:\ drive and familiarized yourself with its location.
2. Open Google Earth and zoom into the rough location of the antique map.
3. In the table of contents on the left, create a new folder for this project. To create a new folder, right-click "My Places" and select *Add > Folder*. Provide a folder name and hit *Enter*.



4. With the new folder selected, click the *Add Image Overlay* tool 

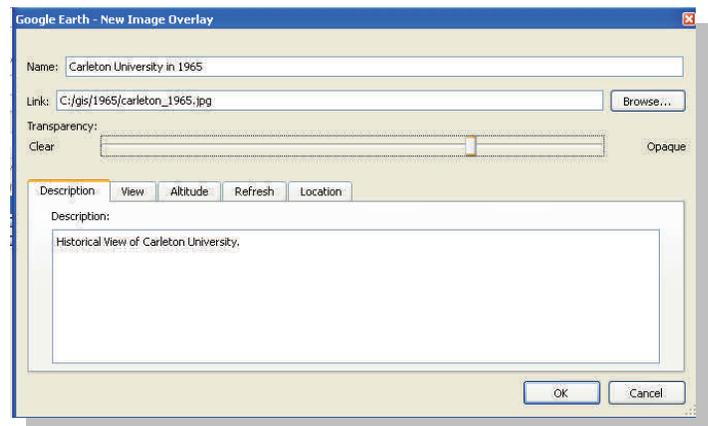
5. In the dialogue box, enter a descriptive name in the **Name** field.

6. In the **Link field**, enter the URL address of an image to overlay or use the **Browse** button to locate the image locally (i.e. the image that you selected in step 1).

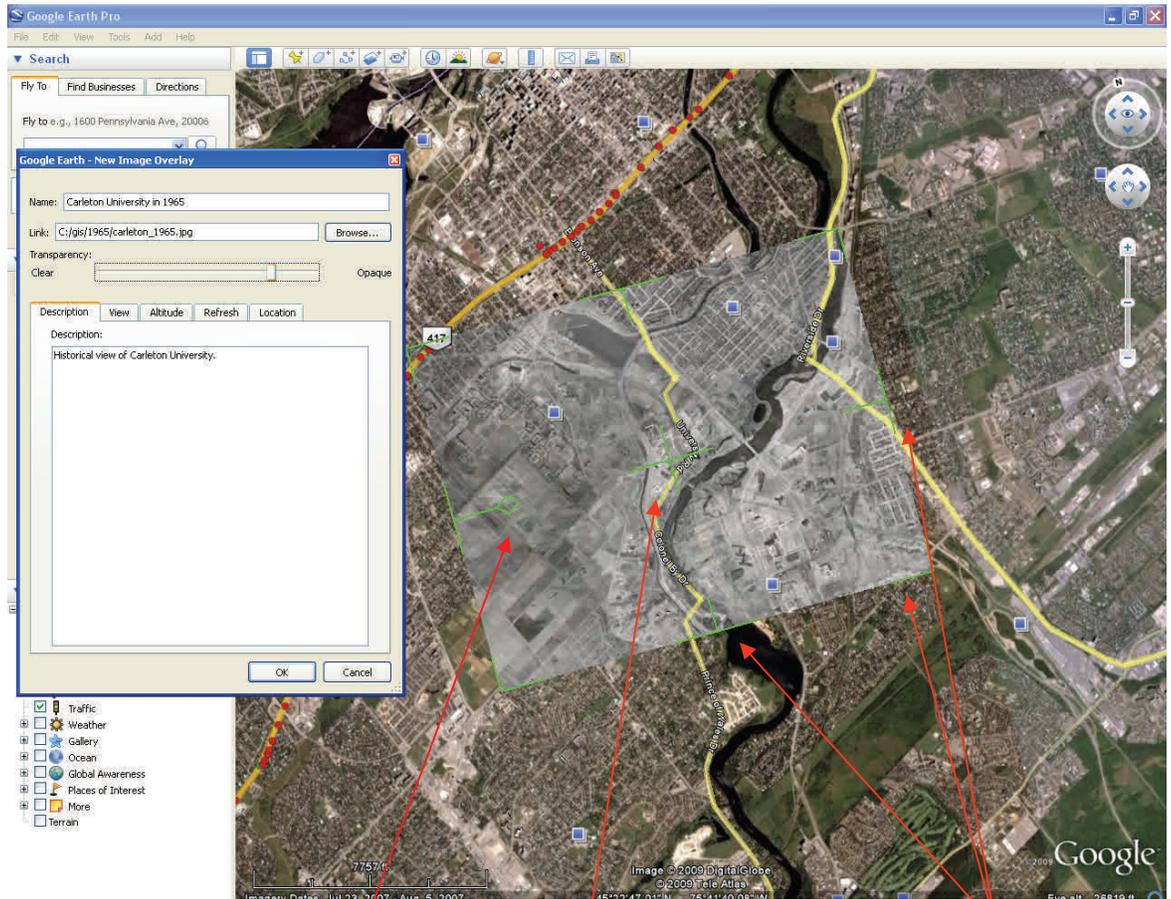
Change the transparency of the image by sliding the tab to make the Google imagery visible beneath the overlay.

7. Add a description.

8. Move the *new Image Overlay* window aside to see the Google Earth viewer. **Do not close the window or you will be unable to edit the map.**



9. Use the green diamond to rotate, the green cross to reposition, and the green handles to stretch the overlay until it matches the imagery beneath. This may take a bit of tweaking to match up the detail.



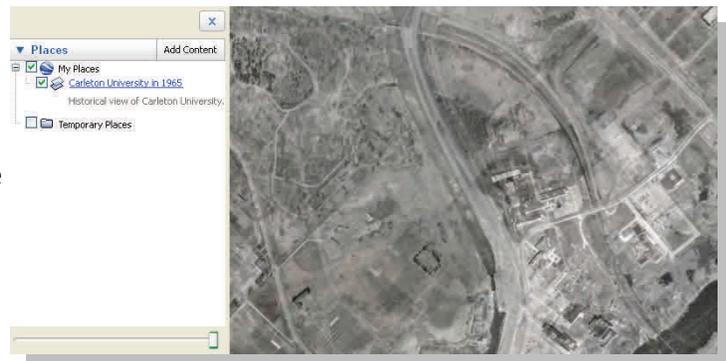
Click and drag to rotate the image.

Click and drag to reposition the image.

Click and drag to stretch the image.

10. When the adjustments are complete, click **OK**. The image can be seen in the Google Earth viewer and is listed in the new folder under *My Places*.

11. The image transparency can be modified on-the-fly by selecting the image from the list then dragging the slider below the *Places* listing.



## Digitizing an Antique Map

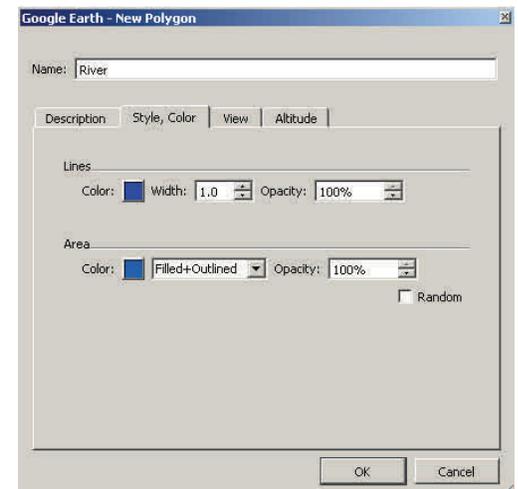
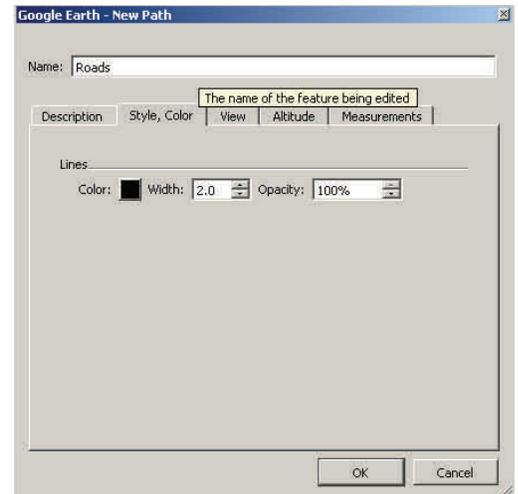
### Adding Custom Features

We will create custom features and store them in the folder that we previously created. The mapping tools at the top of the viewer offer custom feature creation such as points (placemark), lines (path) & polygons.



### Adding a Path or Polygon

1. To add a line, click the “Add Path” tool .  The ‘New Path’ dialogue box appears and the cursor has changed to a path drawing tool.
2. Click along the path on the imagery to create a line, double-clicking when complete.
3. Enter a Name and Description.
4. To change the colour, select the “Style, Color” tab, click the colour box and select a new colour. Click OK.
5. The width of the line can also be changed at this point by entering a new line thickness.
6. When satisfied with your changes, click OK to return to the map viewer.
7. To add a polygon shape, click the polygon drawing  tool then click at the corners of the polygon, double-clicking to finish the shape.
8. Again, colour and line thickness may be customized and a name or description added to the information window.



### Sharing Your Work

Any features or layers that were added to your custom folder can be saved in KML or KMZ (zipped KML) format (native to Google) and shared with the world.

1. To create a KMZ file, right-click on the folder you created earlier and select *Save Place as...*
2. Give the file an appropriate name and click *Save*. This file can be sent via email as an attachment, added to a website as a download link or saved locally for future reference.

To view a KMZ /KML file, run Google Earth and select *File > Open*. Navigate to the KMZ/KML file and open. The layers will appear under *Places > Temporary Places*