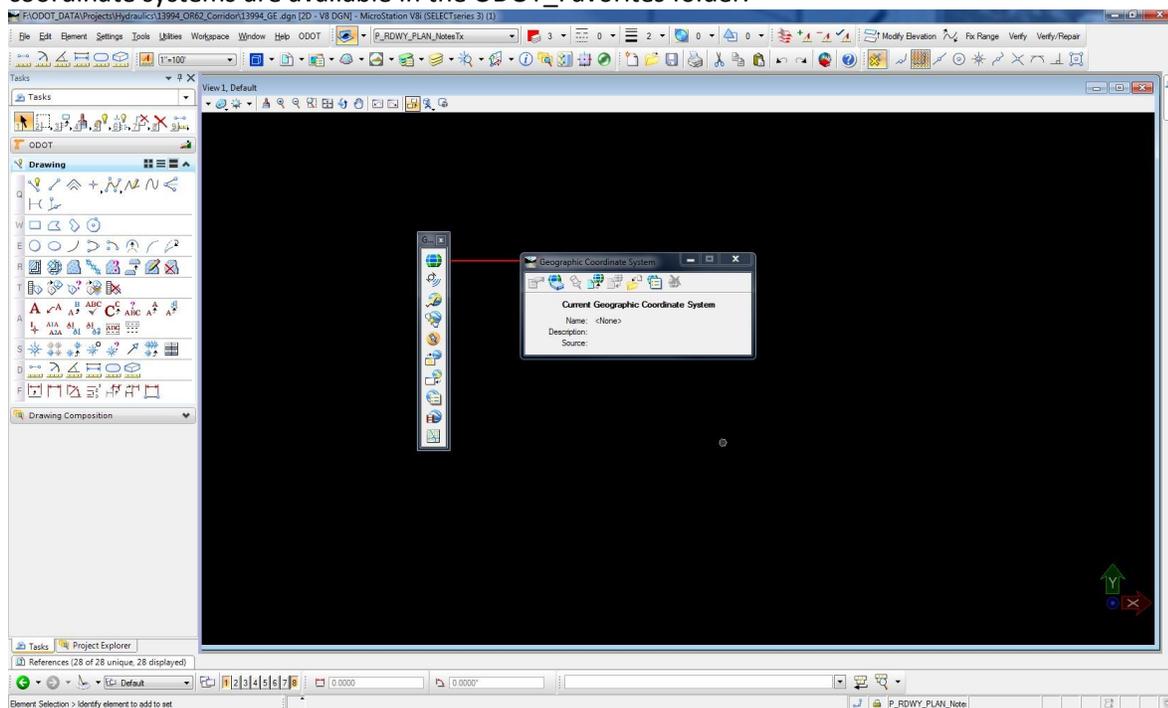


Importing Image from Google Earth Pro Into MicroStation

Sometimes you would like to be able to view a recent aerial image as background to your project graphics in MicroStation. Google Earth can be a source for recent imagery and if you follow this procedure, you will be able to attach the image as a raster to your MicroStation design file in the correct location and still have the ability to pan, zoom, and create PDFs and prints. You will need two design files or models: one to contain your vector graphics or design, and a separate image design file (this one must be 3D) to contain the image(s). Please be aware that you will be going back and forth between two different applications and look for underlined text to tell you which application you should be working in. Note - a MicroStation data point is a left mouse click.

Step 1 (Attach a Geographic Coordinate System to your project graphics design file)

In your MicroStation project graphics design file (“e” or “d” file), select the **Tools** menu and open the “Geographic Tools” as a tool box. Open the Geographic Coordinate System tool and select the **From Library** icon to set the geographic coordinate system to the same coordinate system that is defined in the survey narrative (i.e. OCRS_CG – Cottage Grove-Canyonville Zone). Note that common ODOT coordinate systems are available in the ODOT_Favorites folder.



Save settings **<Ctrl>+F**.

Open Google Earth Pro (just to get it open) and now bring MicroStation back to the front.

In MicroStation, click the **Synchronize Google Earth View** icon - this will locate your area of interest in

Google Earth (it should center your view in Google Earth to show Oregon).



Step 2 (Prepare a MicroStation File to receive Google Earth images by attaching the project's Geographic Coordinate System)

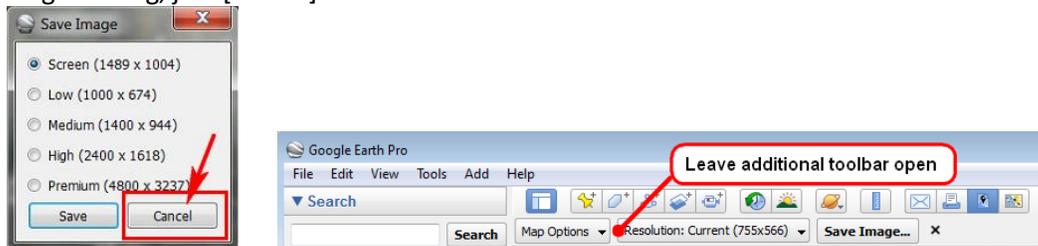
Create a new 3D MicroStation file, which will be used as an imagery reference file. Create the image file (.dgn) on your computer, for example, C:\work\Aerial\01234\01234aerial.dgn. It is important to save imagery to your local computer for better performance.

Set the geographic coordinate system to the same coordinate system that is defined in the survey narrative, typically the same one as used in Step1 (i.e. OCRS_CGC – Cottage Grove-Canyonville Zone).

Save settings <Ctrl>+F.

Step 3 (Select the image in Google Earth Pro and capture the image with MicroStation)

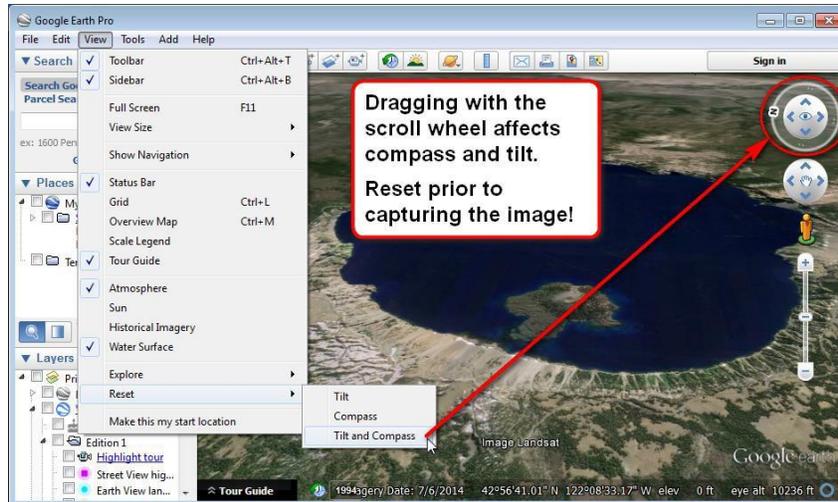
Bring Google Earth Pro to the front and adjust the extents and zoom level to display only the area you are interested in. For maximum resolution, keep the screen width to less than 2500 feet and attach multiple rasters in MicroStation if you need a longer distance. Use layers to help you locate your project area, then use the Google Earth sidebar menu to turn off Layers that you don't want in your image. To avoid distorting the image, **it is important to ensure "Terrain" and "3D Buildings" are toggled off** and collapse the sidebar menu using **View>Sidebar**. Without changing the view in Google Earth, select **File>Save>Save Image...** . If your version of Google Earth Pro opens a "Save Image" dialog, just [Cancel] it.



If your version of Google Earth Pro opens an additional toolbar – just leave it open. If Google Earth Pro has the toolbar with Map Options, it must be open before proceeding.

BE CAREFUL! – Dragging with the scroll wheel in Google Earth changes the compass orientation and tilt.

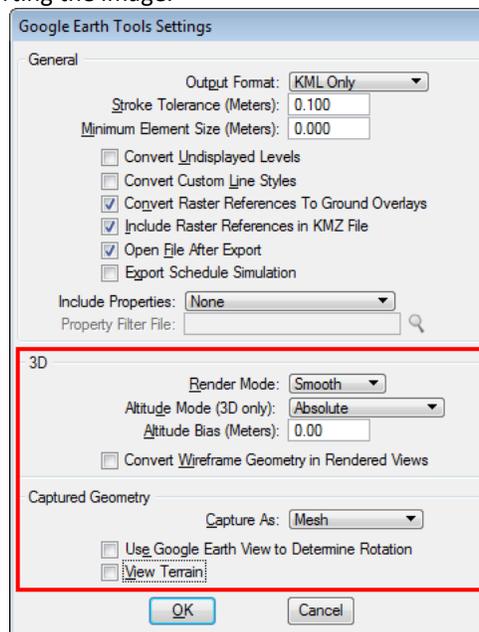
Reset the Compass and Tilt in Google Earth Pro, **View>Reset>Tilt and Compass**



Go back to your MicroStation (.dgn) image file, once you have the area and extents displayed in Google Earth Pro. Open the **Google Earth Settings** from the Geographic tool box.



IMPORTANT!! - Make sure the "Altitude Mode (3D only)" is set to "Absolute" on the Google Earth Tools Settings dialog. Turn off all toggles under 3D and Captured Geometry sections and set the "Altitude Bias (Meters):" to 0.00 to prevent distorting the image.



Click the **Capture Google Image** icon and data point anywhere in the MicroStation file.



An image file (.jpg) will be saved in the same location as your open MicroStation design file – hopefully, C:\work\Aerial\.... The image is also placed in MicroStation as a wireframe mesh; however, you will not see an image in MicroStation at this point.

Step 4 (Save a higher resolution image from Google Earth Pro and use it in MicroStation)

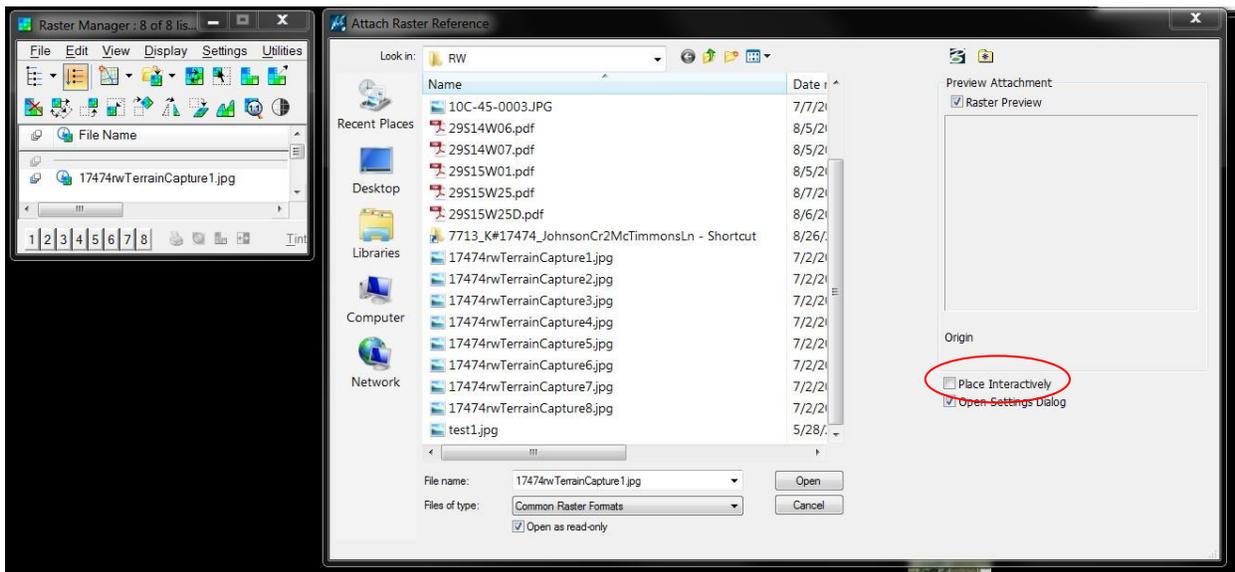
Go back to Google Earth Pro, and from the additional toolbar, **without adjusting the view**, select **Map Options** and turn everything off (recommended), select the **Resolution** you want, and click **Save Image...** If you have a version of Google Earth Pro that uses a dialog box to save image select **File>Save>Save Image** select your resolution and select Save.



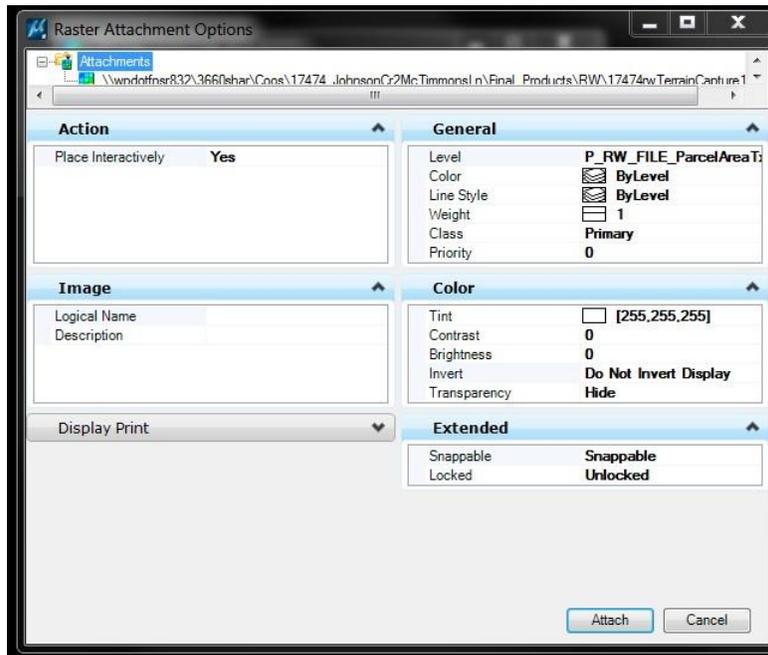
Note – higher resolutions mean smaller pixel sizes and much larger file sizes. In the example above, the maximum resolution file was almost 20 times larger in size than the current resolution file.

Overwrite the image that was previously saved in the Aerial folder for your project in step 3 (the image you captured should be saved in the same folder as the MicroStation image file, for example, C:\work\Aerial\01234\01234aerial.dgn).

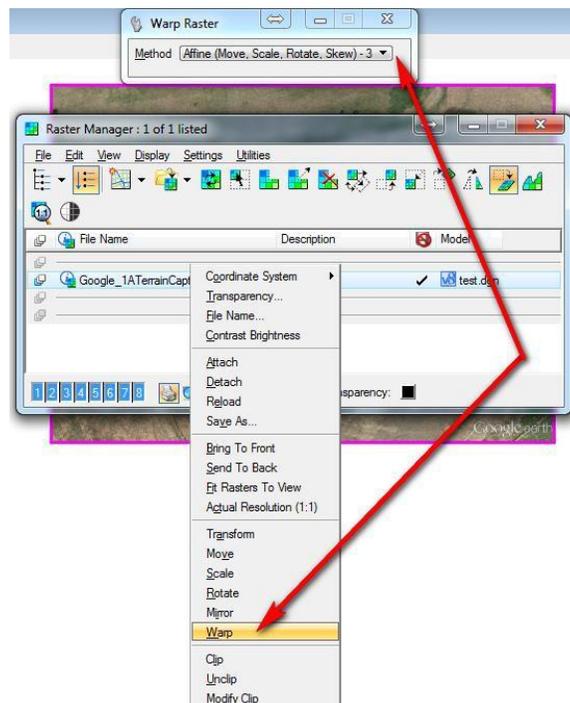
In the MicroStation (.dgn) Image file, open the Raster Manager and **File>Attach>Raster...**, browse to your image file (the one that you just saved), and select it and click Open (You could check the box to **“Place Interactively”** here).



The Raster Attachment Options dialog box will appear. Change the **Place Interactively** from No to **Yes**, if necessary, and attach the image by snapping the top left and then the bottom right corner of the wire mesh. The corners of the image and the wire mesh should match closely but not exactly.



In the Raster Manager dialog box, right-click on your image and select **Warp** and in the settings dialog box for the **Method** select **Affine (Move, Scale, Rotate, Skew)**. Snap to an image corner and then to the corresponding corner of the wireframe mesh; do this for the top left corner and any other 2 corners and then reset (right-click). The image should be moved and aligned with the mesh. **Now delete the mesh element.**



Step 5 (Verify alignment of images with topography by attaching topography as a reference to the image design file)

If you have a MicroStation file containing surveyed existing topography, attach it as a reference file to your MicroStation image file. (These .dgn files should have the same assigned geographic coordinate system and do not need to be geographically reprojected.) If the images do not align by more than a few feet open the Raster Manager, select all the images, select **Edit>Move** and click (without snapping) on a well-defined corner in one of your images and align it with your surveyed topography and click (without snapping) and reset to get out of the command. Try to avoid using image features with elevation difference (fence posts, poles, buildings, etc.) or features that may have changed (striping) when aligning with surveyed topography. Verify that you are satisfied with the overall alignment with the surveyed topography and repeat the move as described above if necessary. Now your image file can now be attached as a Reference file using Coincident – World to any other project design file that has the same geographic coordinate system.