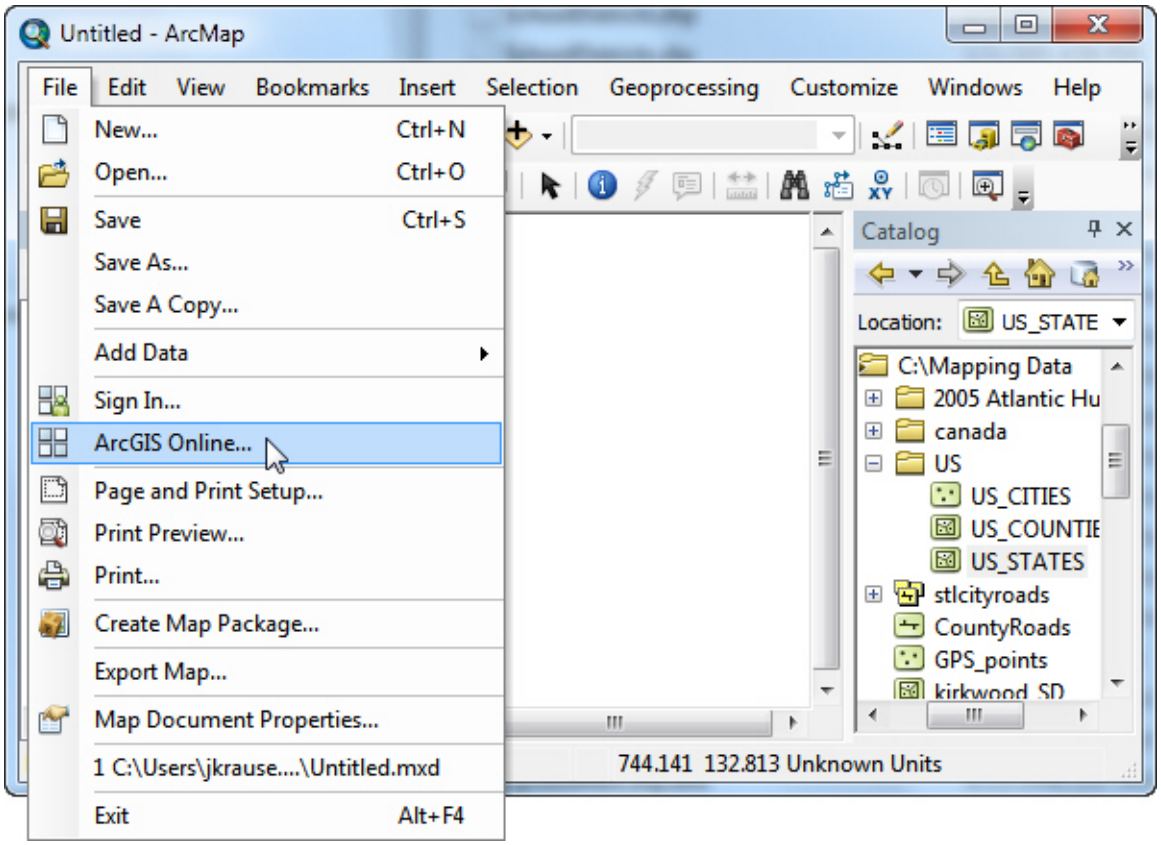
2.3 Importing Imagery

You may want to add an aerial photograph or topographic map to your project. We will look at two different sources and the way the imagery is imported for each.

Getting images from ArcGIS® Online

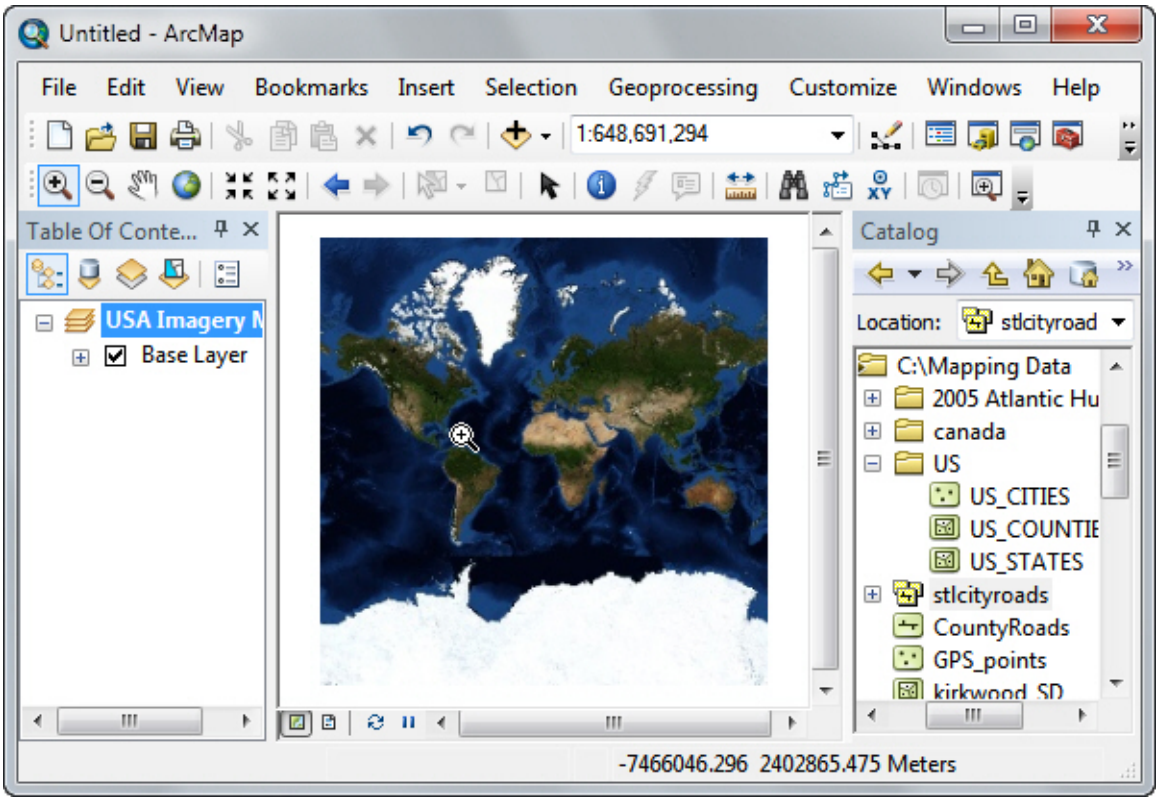
Many images can be brought in through ArcMap's "File" menu. Open the File menu and then click on "ArcGIS Online."



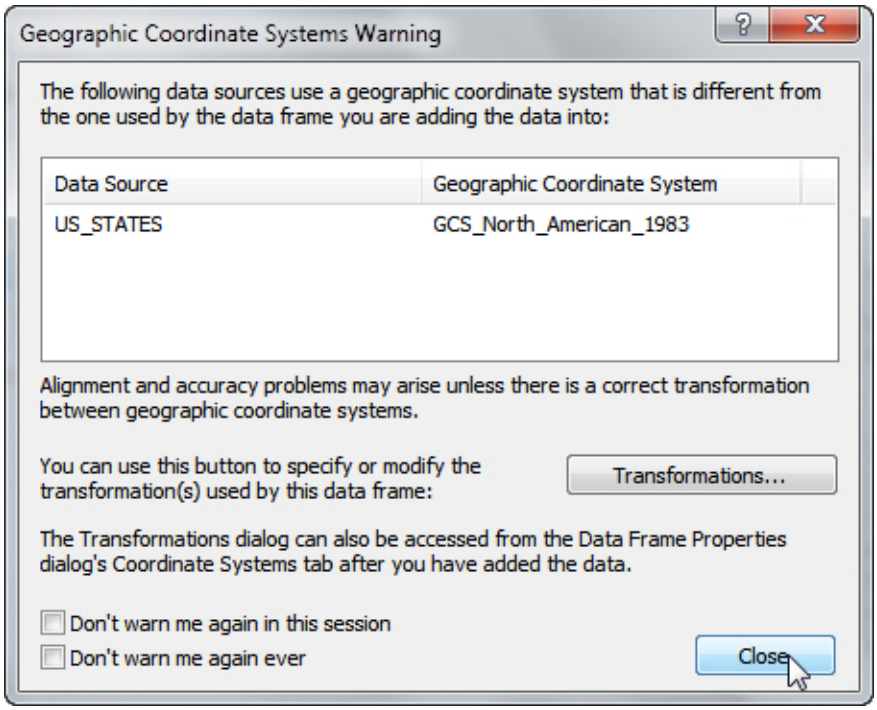
This will open the ArcGIS Online window. For this exercise, we are looking for an aerial photo of downtown St. Louis, Missouri. Search for aerial images by typing the keyword "aerial" in the search box and clicking the magnifying glass icon.

You should receive several pages of matches. You may need to scroll down or go to the next page to find the best file for your project. Of the results shown, the "USA Imagery Map" selection towards the bottom of the first results page looks promising.

Click on "Open" to get the imagery. (Note: depending upon the size of the imagery files and your internet connection, it might take some time to download the imagery.)

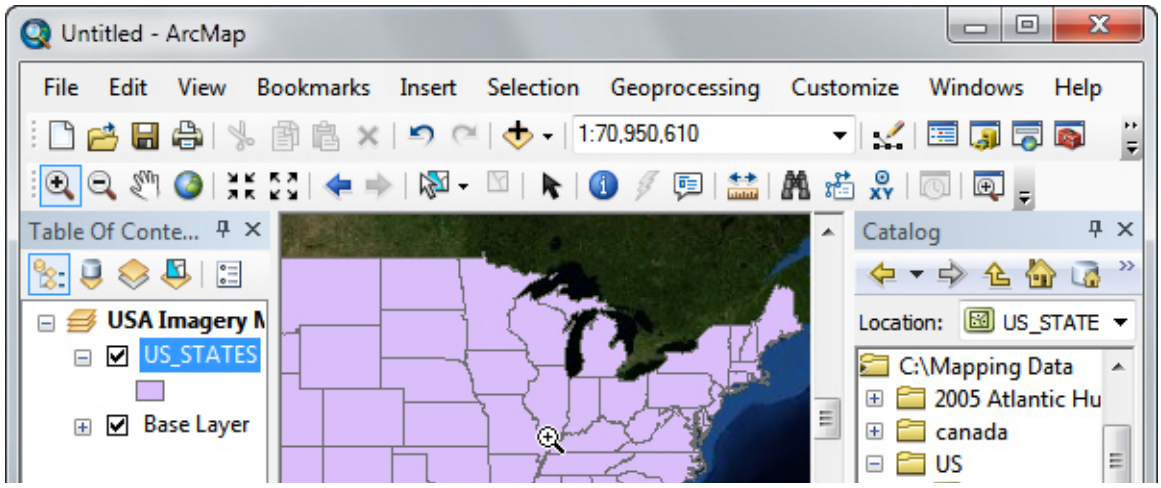


Now we've got the imagery, but we're way too far out. You can add another map layer, like US_STATES to help you zoom in on your target area. You may get a dialog box like the one below if your two images do not share the same projection.

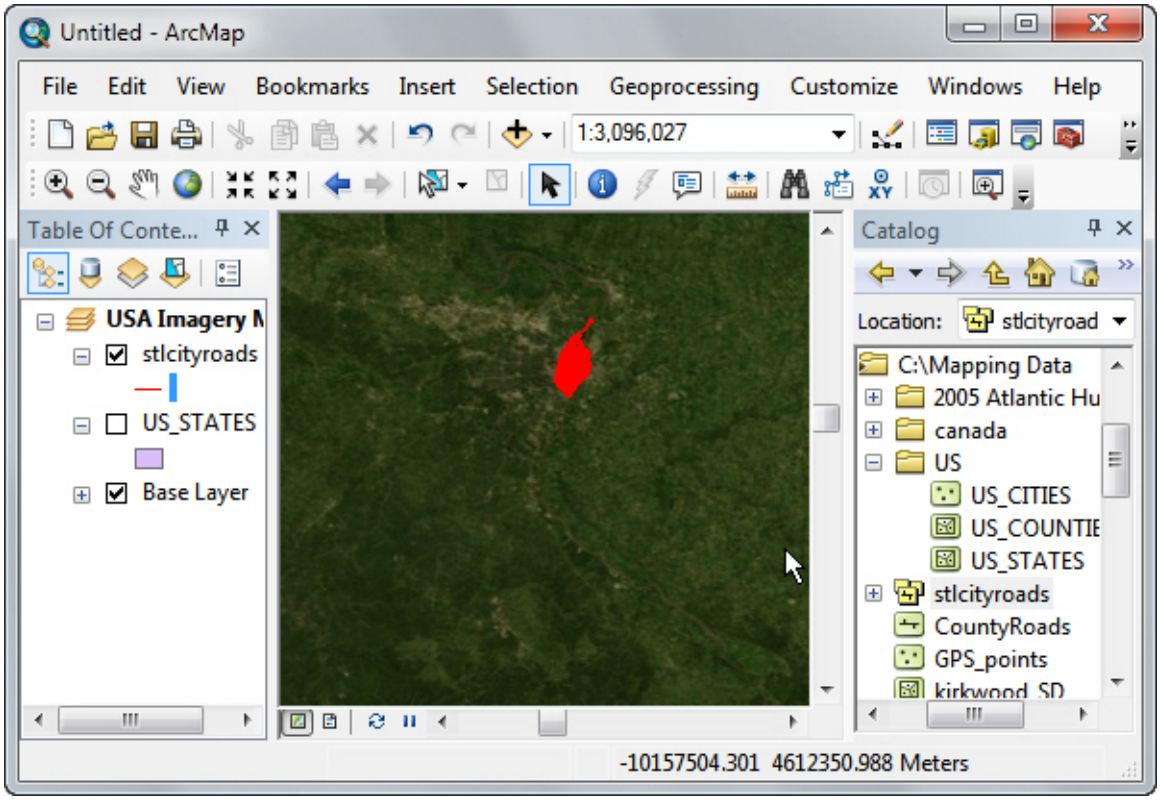


ArcMap is usually pretty good about transforming the projection of the incoming file to match the base file, so we will click "Close."

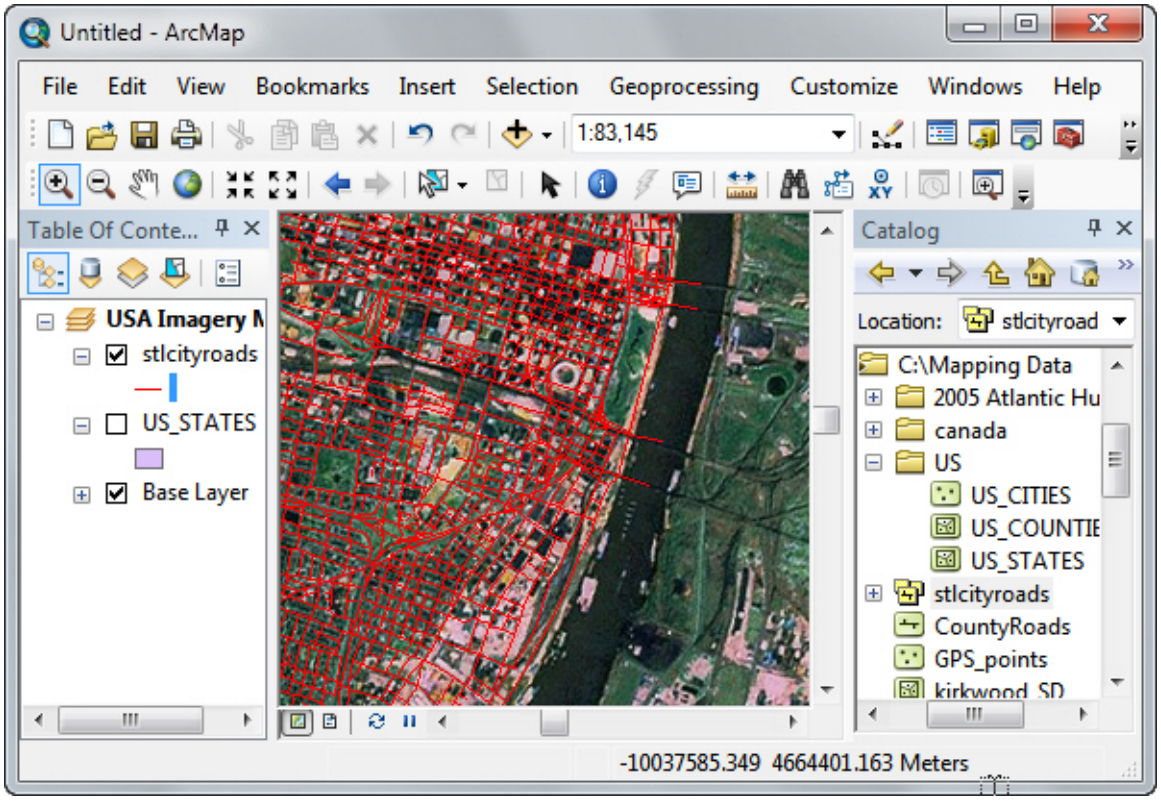
Adding the states helps us to zoom in on the area we are looking at.



When you are zoomed in enough you can turn off the visibility of the US_STATES layer by unchecking the box next to the file name in the Table of Contents. Then you can add the St. Louis city roads file if you like (this file was created in lesson 2.2).



After some further zooming and fine-tuning we can see the downtown area of St. Louis with an overlay of the city streets.



Getting images from Microsoft Research Maps

The Microsoft Research Maps web site (*http://msrmaps.com*) offers aerial photography and topographic maps for use in mapping projects. Both of these types of data are often called raster imagery. Following these steps will help you to locate and download the raster you need.

First, at the Microsoft Research Maps site, at the upper left corner of the web page, enter a location for which you want an aerial photo or topographic map. Then click the "Go" button.

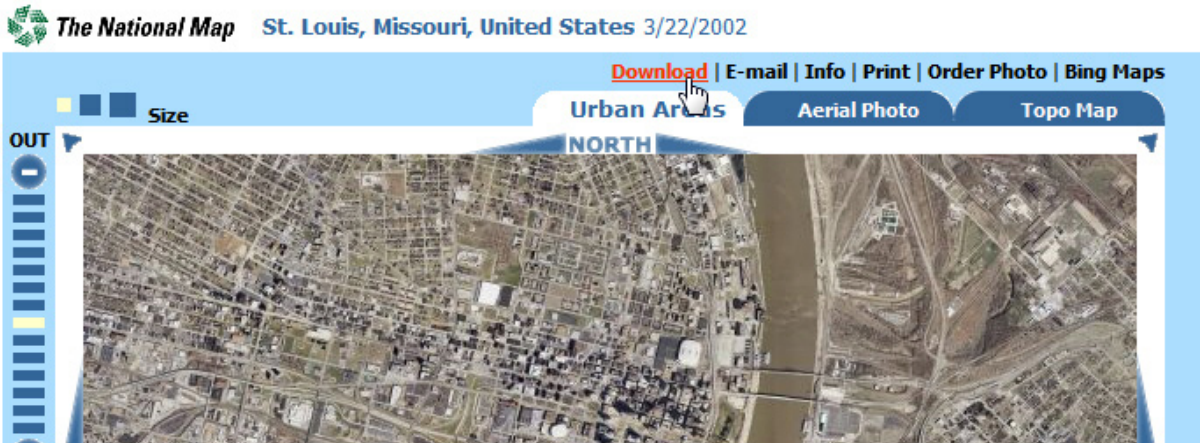
The site will return the choices available for that area.

Select one and it will appear in a window within the web site. Be sure to note how current the photo or topographic map is—quite often it can be a decade or more old, which may affect its usefulness.

Note that after your image or map is chosen, you can further navigate north, south, east, or west, and zoom in or out to alter the scope of your selection.

	Place Name	Available Imag
1	St. Louis, Missouri, United States	Urban Areas 3/22/2002 Aerial Photo 4/2/1998 Topo Map 7/1/1985
2	St. Louis Centre, Missouri, United States	Urban Areas 3/22/2002 Aerial Photo 4/2/1998 Topo Map 7/1/1985
3	St. Louis Downtown Airport, Missouri, United States	Urban Areas 3/22/2002 Aerial Photo 4/2/1998

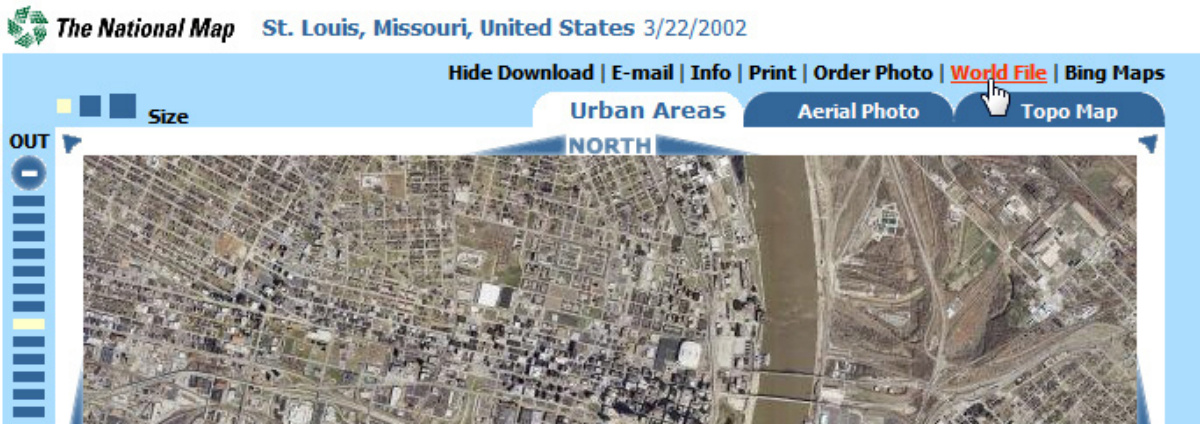
Once you have finalized your selection, click on the "Download" option in the top right corner of the image box. This engages processing on the server, preparing the photo for your use.



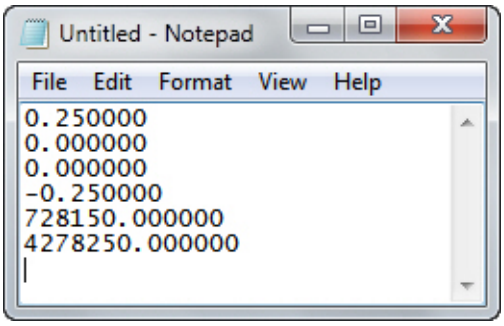
Once the photo is restored on screen, simply right-click on it and choose "Save picture as…" or a similar command for the browser you are using.

Save the image in JPG format (**with the .jpg file ending**; note: using the .jpeg ending will not work!) in a location you will remember. Remember that ArcMap handles the Desktop and My Documents locations poorly. Pick another place if you can. It might be most helpful to put the new jpg file in a folder that is already connected to the Catalog through the "Folder Connections" utility (see page 1.1.3).

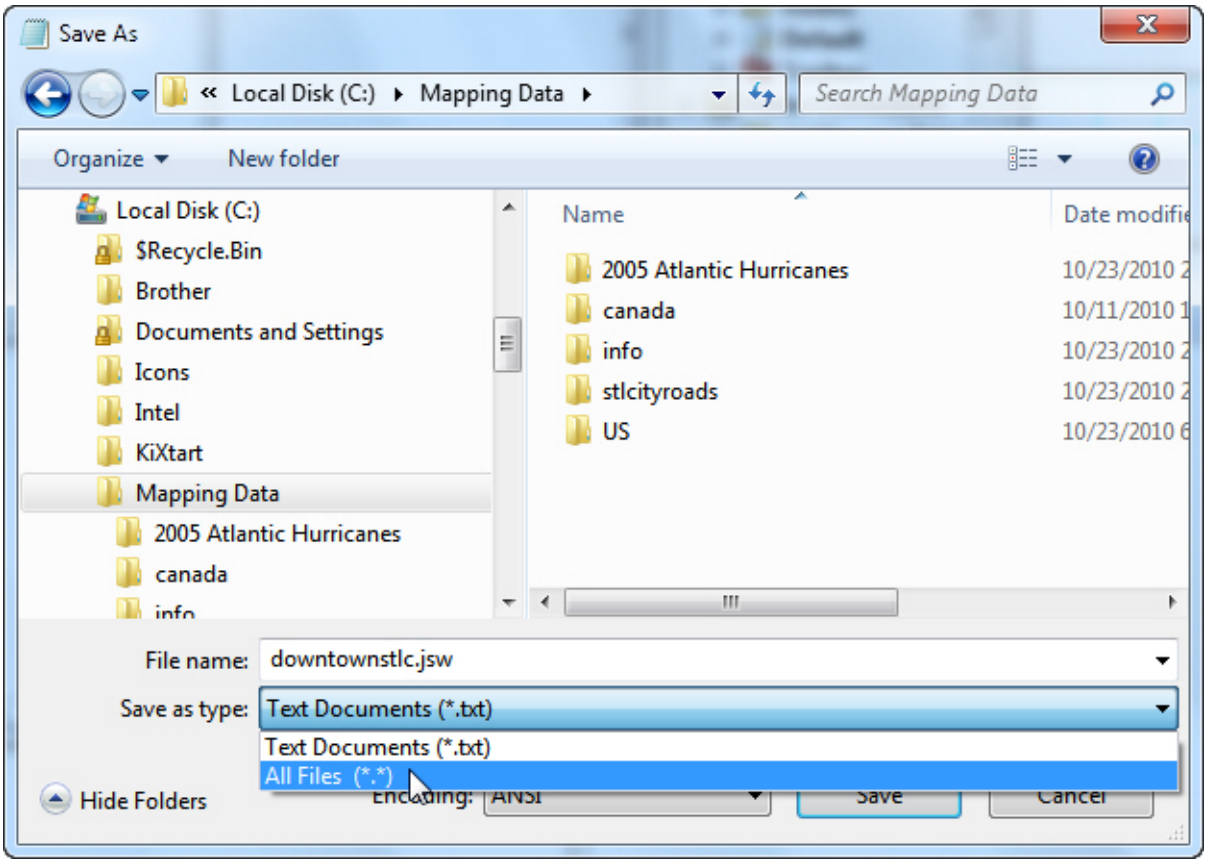
Once you have saved your image, choose the "World File" option which has now appeared near the top right corner of the image box.



A series of numbers will appear in a new browser window. Copy and paste these numbers into a new Notepad file.



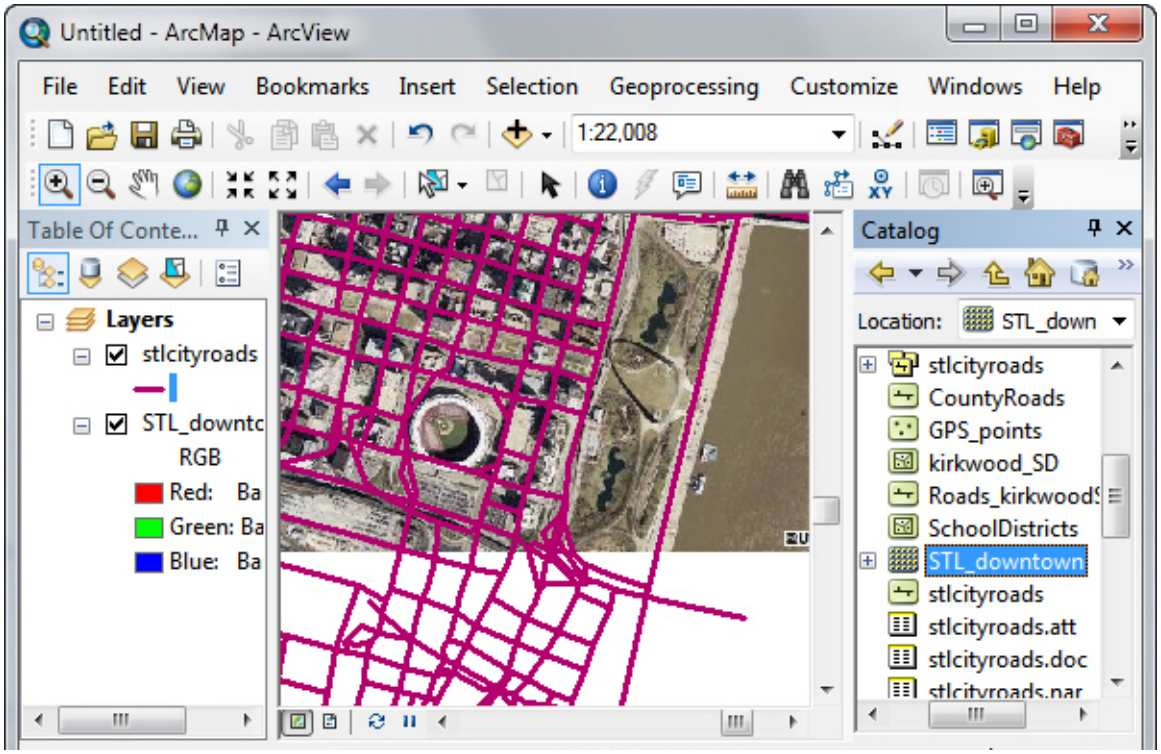
Save the file with same file name you used for the image earlier, except now the ending must be ".jgw". Be sure to change the "Save as type" selector to "All Files."



These two files must be stored in the same folder.

Double-check that your two files have the same names and have the file endings .jpg and .jgw. You can do this by navigating to the folder using Windows Explorer. Before adding the photo to your project, be sure your world file was saved properly and that no extra file type ending was added after the .jgw.

In ArcMap, drag the image from the Catalog window and drop it into the data frame. Add any other data you want.



(Note: Microsoft Research Maps files use NAD 83 UTM as their coordinate system. Look at the zone map available at *http://www.tinyurl.com/UTMzones* to see which zone you need. St. Louis, Missouri is in zone 15. Thus the projection for this image is NAD 83 UTM Zone 15N. The "N" stands for north because it is in the Northern hemisphere.)

Note: if you want to plot coordinates on an image, see section 4.4 for special projection instructions.

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