

“Free GIS Layers on the Web – Finding & Using Them” – Monday, May 22, 2006

Workshop Notes

Data Sources:

Colorado Department of Transportation (CDOT): <http://www.dot.state.co.us/>

USGS: <http://seamless.usgs.gov>

GeoCommunity: <http://data.Geocomm.com>

The National Atlas <http://www.nationalatlas.com>

EPA: <http://www.epa.gov/airmarkets/cmap/data/>

Census: www.census.gov (recommend getting Census data from National Atlas)

The GeoSpatial One-Stop, a.k.a., Geodata.gov: www.geodata.gov

Geography Network: www.geographynetwork.com

National Park Service: www.nps.gov/gis

Common download formats:

- Shapefile – Can be added directly to ArcMap
- Compressed files:
 - o Zip
 - o Tar
 - o Gz
 - o e00 (ArcInfo Exchange format)
- Raster formats
 - o DEM – Digital Elevation Model
 - o SDTS – Spatial Data Transfer Standard

Project: Make a Basemap of Colorado Springs:

Steps:

1. Set up working directory on computer. **C:/GIS/CS_BaseMap**. *Notice: no spaces or non-alphanumeric characters in any folder or file names.*
2. Open a web browser and access Colorado Department of Transportation (CDOT) - <http://www.dot.state.co.us/>. This site offers GIS data layers for both Statewide and Countywide extents.
3. Click on “Stats & Data”, then “Geographic Data” near the top of page. In the new page that loads (entitled “Geographic Data”), notice that you have a link to the *Metadata*. You can click here to read descriptions of what is available.
4. Select “Countywide Data Set” and select “El Paso” for the county, then click the “Download” button.
5. When prompted, elect to “Save to Disc”, Click “OK”, and browse to your CS_BaseMap folder to Save.
 - This is a “zip” file, which is compressed for fast download. It is also good to keep for archiving. However you will want to “unzip” it for use.
6. Open Windows Explorer (My Computer) and go to your project folder (**C:/GIS/CS_BaseMap**).
7. You should see your newly downloaded, zipped file called “EIPaso.zip” Right-click on it and select “Extract All...”
8. In the dialog box, you’ll click “Next” twice, then “Finish”. It puts all the extracted files in a folder called EIPaso. *Note: you may want to rename that folder from EIPaso to CDOT to make it easy to remember that these files all came from CDOT.*

9. Look inside this folder and see that there is a folder called "Metadata" and a folder called "shp". The "shp" folder contains shapefiles that can be immediately used in ArcMap.
10. Now open ArcMap (new empty map) and "Add Data" to add these new shapefiles.
11. *Notice you have four layers that contain road information (FCROADS, HIGHWAYS, LROADS & ROUTES). By turning on and off the layers, we can see that the HIGHWAYS and ROUTES contain the same road segments, but the HIGHWAYS layer stops at the county border. We'll use that one and remove the ROUTES layer.*
12. Right-click on ROUTES in the Table of Contents and select "Remove". This only removes it from your current map project (.mxd), not deleting it from your computer.
13. Rename the layers in the map to more appropriate names using the slow-double click method: click the name once, wait a second and click it again. You can then type your new name. For example, instead of "FCROADS", you may want to change it to "Major Roads".
14. Save your .mxd by choosing "File, Save" and browsing to your **C:/GIS/CS_BaseMap** directory to give it a name and save.
15. Spend a few minutes working with the symbology to make the map look appealing to you.
16. You will notice that the layers containing Local Roads and Streams are very detailed. You may want to set a Scale Range so that these layers only show up as you zoom in close. You can do this by zooming in to an appropriate extent (maybe 100,000 or so) and Right-Click, Select "Visible Scale Range" and "Set Minimum Scale". Now the layer will not show up until you are zoomed to at least that level.

Project: Importing Additional Data Formats

Importing E00 Files (ArcInfo Interchange Format) – Example from US Census – www.census.gov

1. Access www.census.gov
2. Click on "Maps" in the "Geography" category
3. Click on "Boundary Files" then "Download Boundary Files"
4. Choose the last file, which is zip codes
5. Download and unzip as in steps 6-8 above
6. Open ArcCatalog.
7. Click "Tools" > "Customize" > "Toolbars" tab.
8. Check the box for the "ArcView 8.x Tools" toolbar and click "Close".
9. Dock the Conversion Tools toolbar if desired.
10. Click the "Conversion tools" dropdown.
11. Select "Import from Interchange File".
12. Navigate, for the Input file, to the directory location of the .E00 file to be imported, and select the E00 file.
13. Specify a name and location for the output dataset.
14. Add the dataset to ArcMap.

Project: Importing Elevation Data

US Elevation from National Atlas – www.nationalatlas.gov/atlasftp.html#shdrf1

This layer is shaded relief with land cover in color for the conterminous United States at 200m resolution (Very large file). It will download as a compressed file. Unzip it, then it can be directly added to ArcMap as a TIF.

Smaller areas of Elevation data from USGS – <http://seamless.usgs.gov>

This interactive portal allows the user to define the extent they want to download by drawing a box on the map.

More Possibilities:

The Geography Network provides data on many topics and in many formats. You can view maps in a web browser, access interactive web maps, and download actual GIS data layers. You can search by drawing an area on a map, or by placename, and can also specify content themes (example, Agriculture and Farming) or keyword.

Go to www.geographynetwork.com

Spotlight: Geodata.gov

This site is a geospatial data 'portal' serving as a public gateway for improving access to geospatial information and data under the Geospatial One-Stop e-government initiative. It provides links to mapping on **topics of interest** such as:

- Fire Mapping
- GIS for the Nation
- Geographic Names
- Homeland Security
- Indian Ocean Disaster
- Lewis and Clark
- Recreation
- The National Map

Data are available in the following categories:

- Administrative Boundaries
- Agriculture
- Atmosphere
- Biology
- Business
- Cadastral
- Demographic
- Elevation
- Environment
- Facilities
- Geology
- Health
- Imagery and Basemaps
- Inland Water
- Locations
- Oceans
- Transportation
- Utilities