

# Viewing Data with PCI Geomatica FreeView

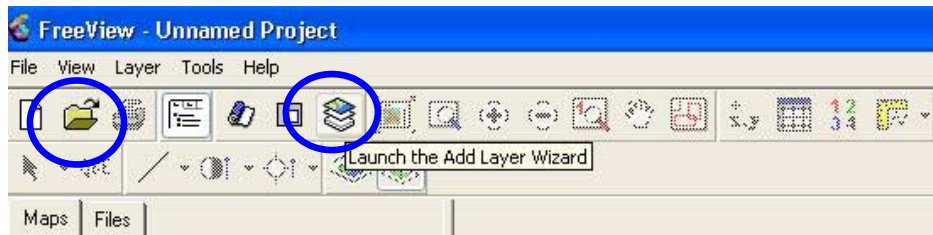
FreeView from PCI Geomatica is a free data viewer which can be downloaded and used to view NAIP imagery and other geospatial files. It will open the near infrared band (Band 4), allowing the user to switch from a natural color display to color infrared, for both Digital Ortho Quarter Quads (DOQQs) and JPEG2000 Compressed County Mosaics (CCMs).

FreeView displays vector files (shapefiles) and will allow the user to query the attributes for individual polygons. FreeView does not allow the user to save a project – it does what its name implies – operates mostly as a viewer.

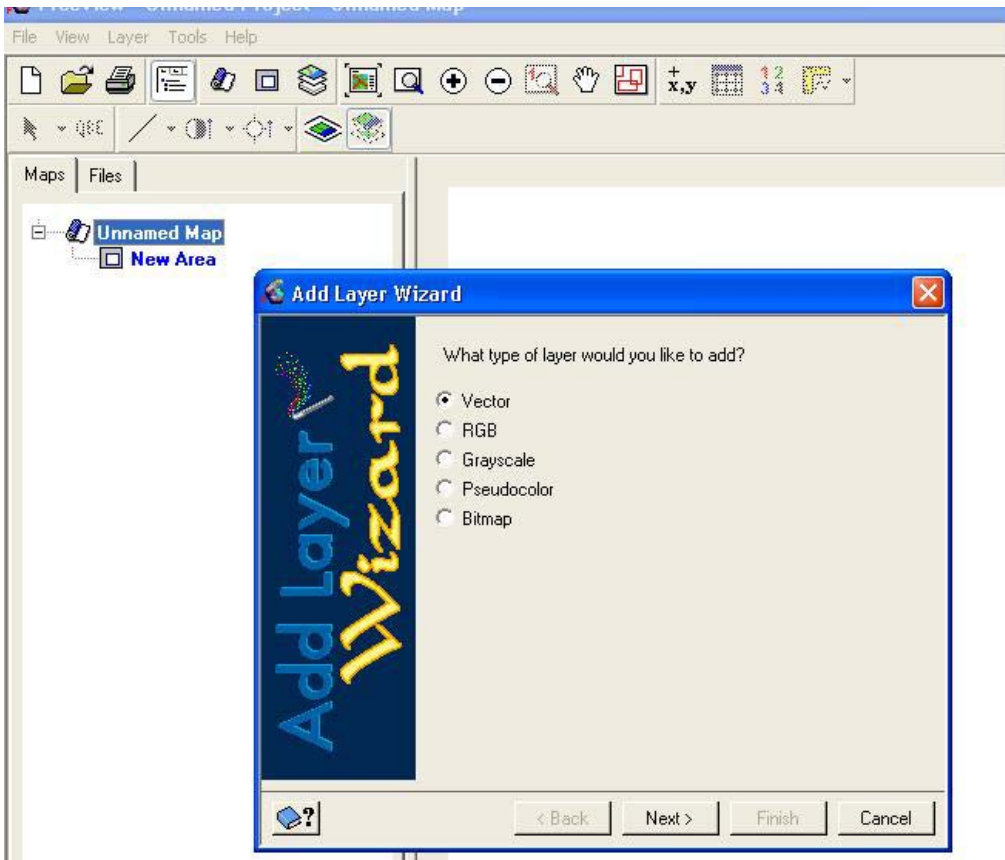
## Using FreeView

### Load Data into the Viewer.

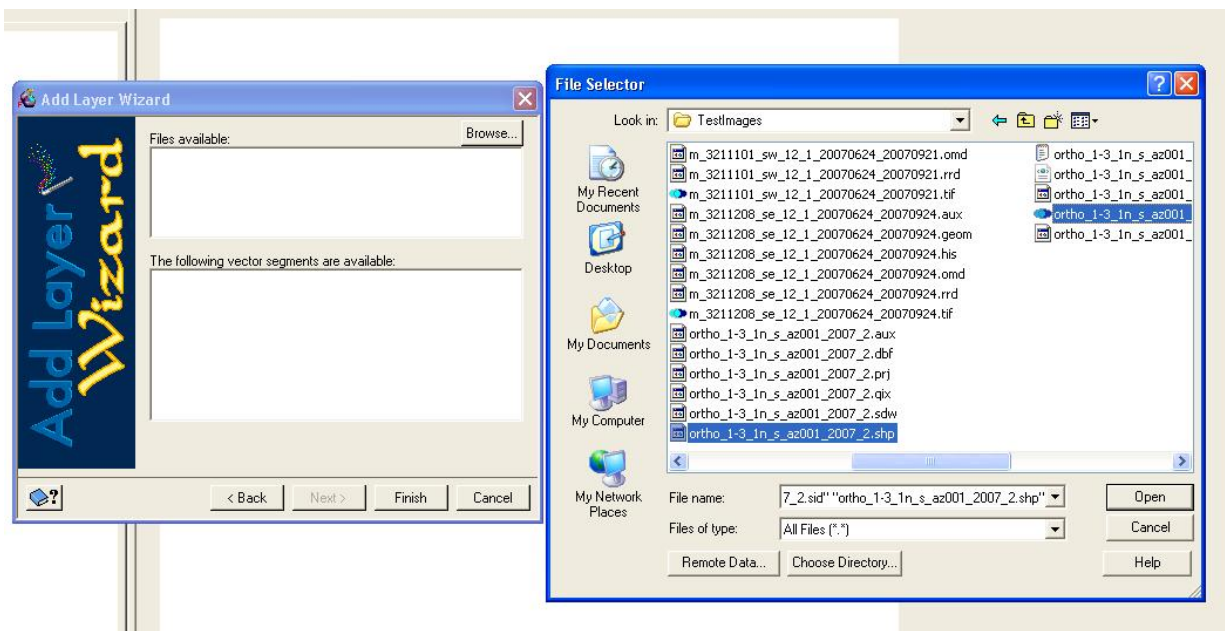
Data can be added to the viewer in several ways. One is to click the *Open* icon on the main toolbar, or under the *File* dropdown menu.



Another method – necessary when adding imagery – is to use the *Add Layer Wizard*. This option will require the user to make band assignments. In the first window of the Wizard, the user selects the type of layer to add.

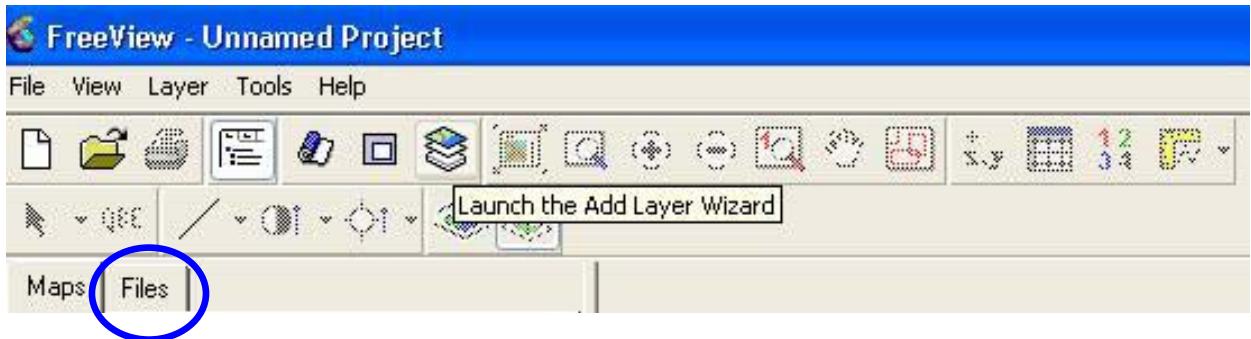


To add a shapefile, select *Vector*; to add a natural color or CIR image, select *RGB*.

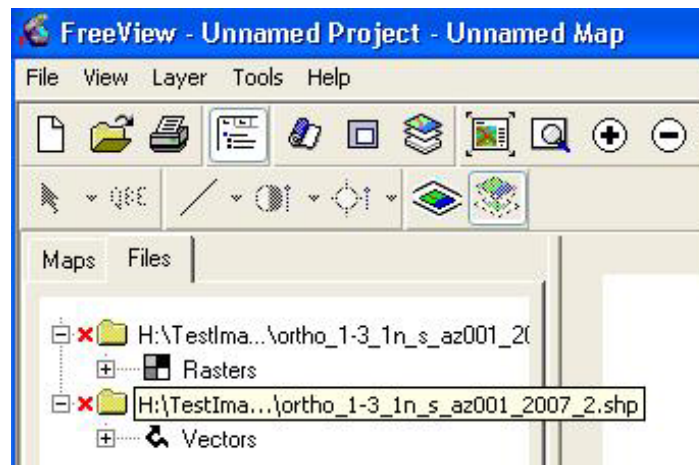


Both the .shp and .sid files can be selected in this window.

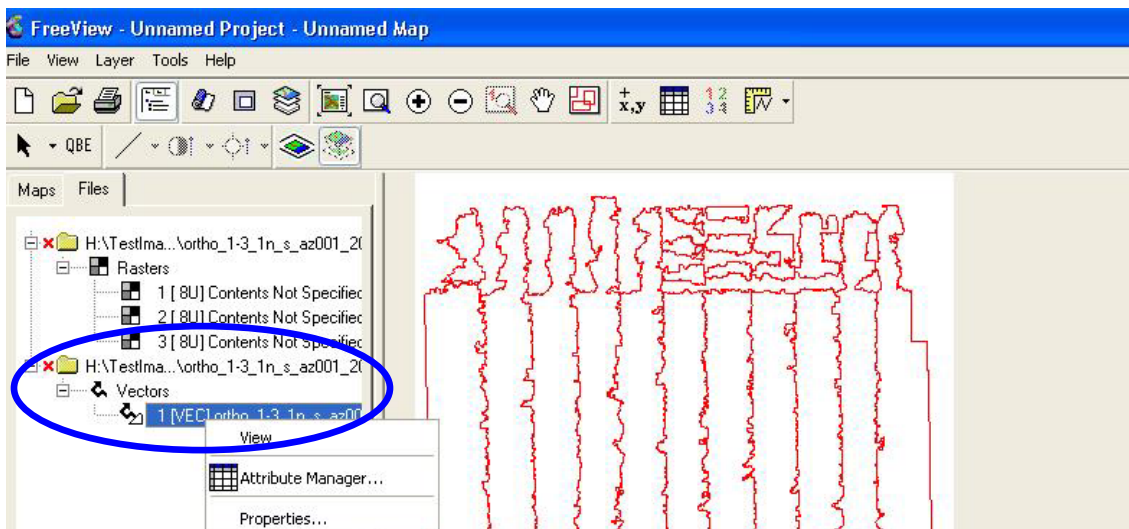
The Wizard will allow the selection of more than one file, of different types, but they will not display in the view window. Both names will appear under the *Files* tab, but they will not be visible, and will not appear under the *Maps* tab.



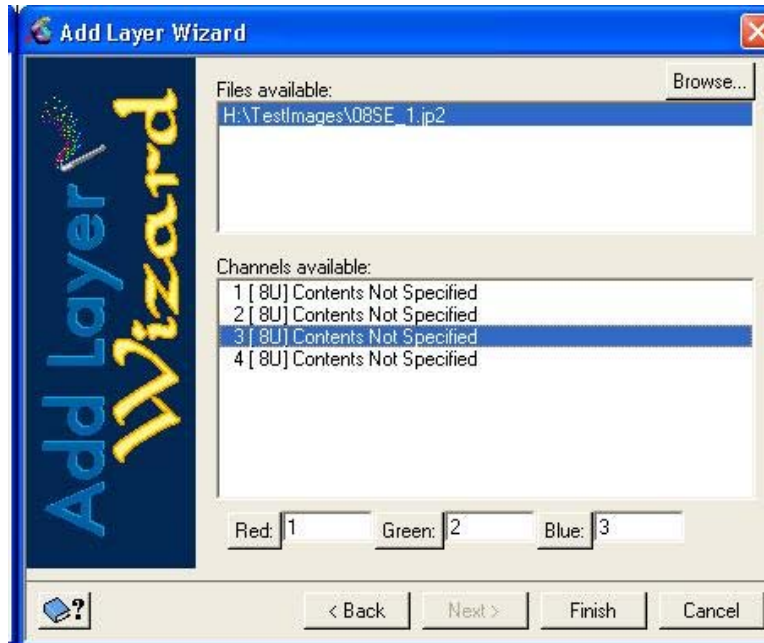
Files will need to be added individually in order for them all to appear in the Map View.



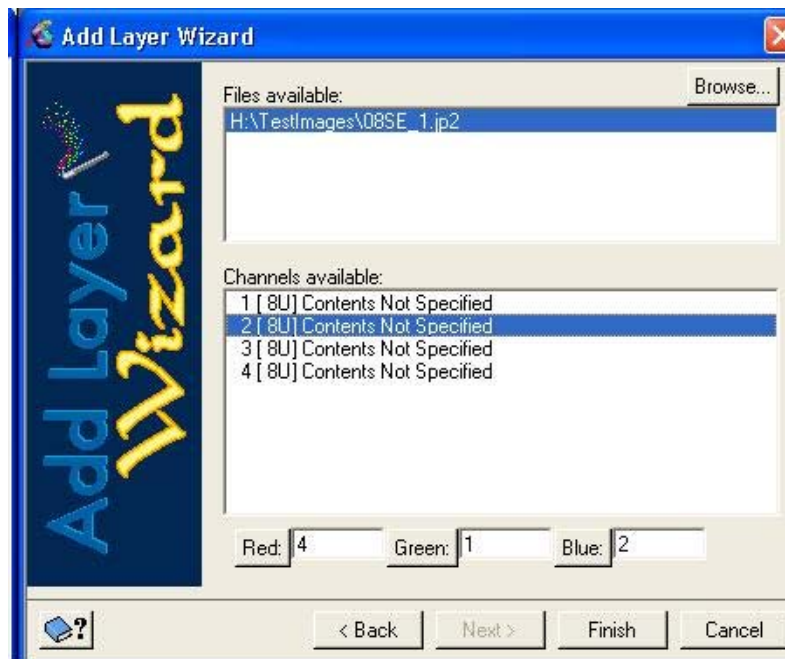
A vector layer appearing under the *Files* tab can be opened under the *Maps* tab by right clicking the file name below *Vectors* and selecting *View*.



When adding an image, the second screen of the Wizard requires band selection. In the screen below, the bands were assigned for natural color, as Red: 1, Green:2 and Blue:3.

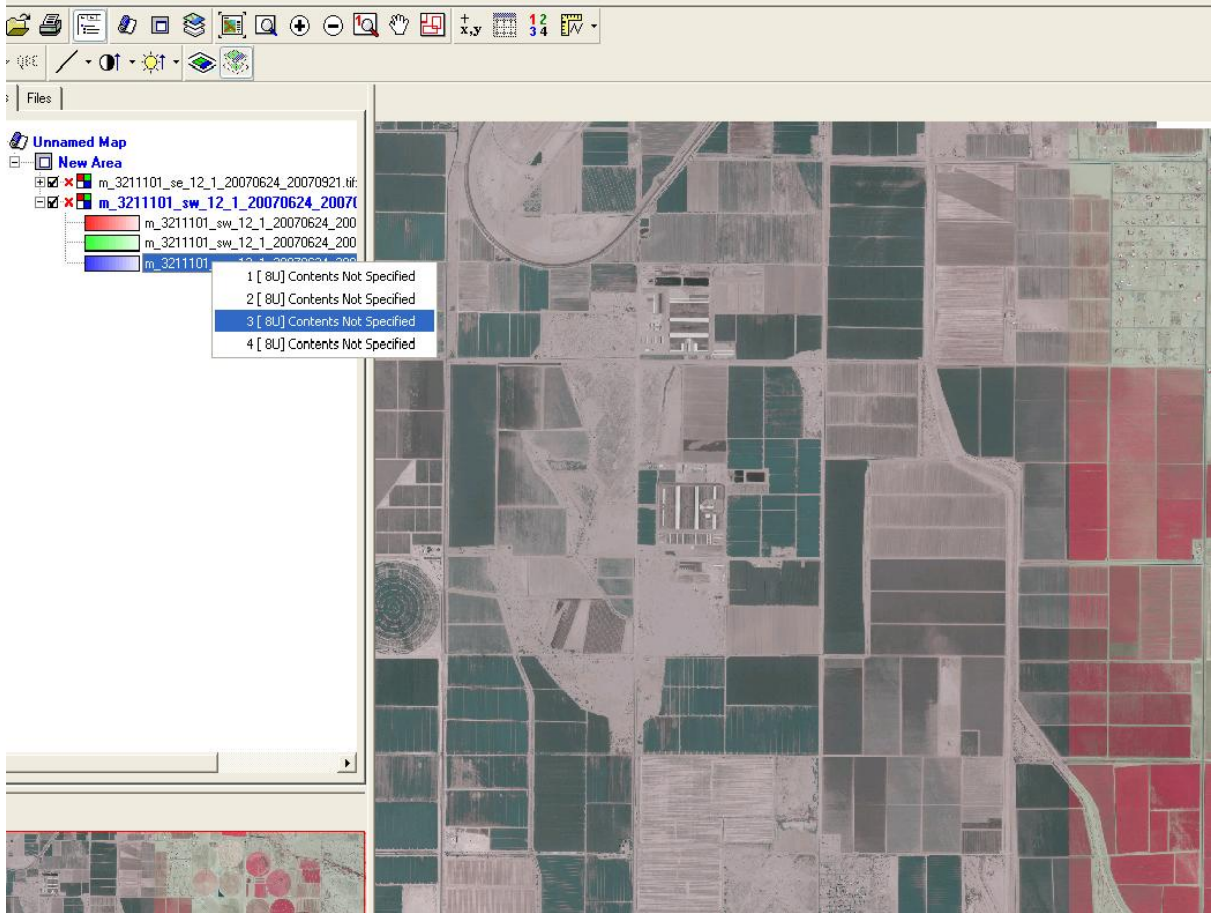


In the next graphic, the bands are set for a CIR image, with Red: 4, Green: 1, and Blue: 2.

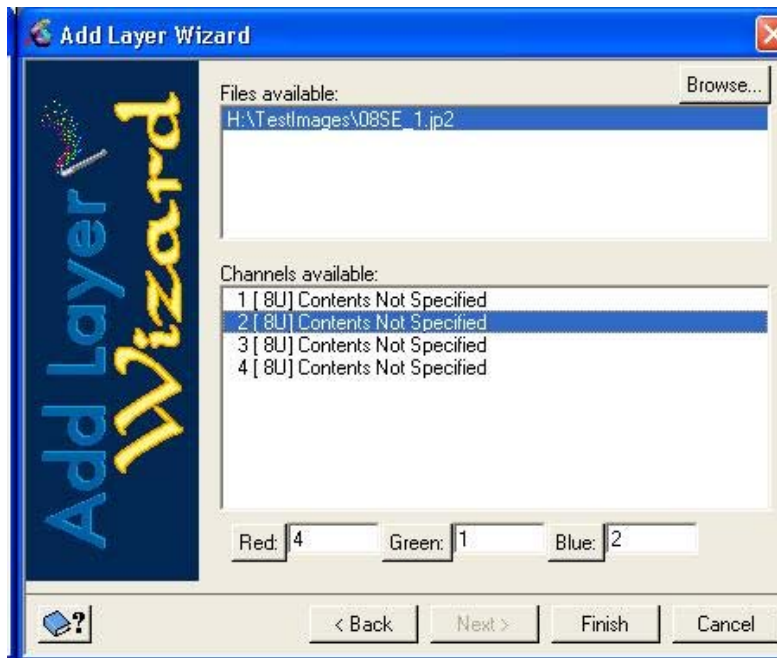


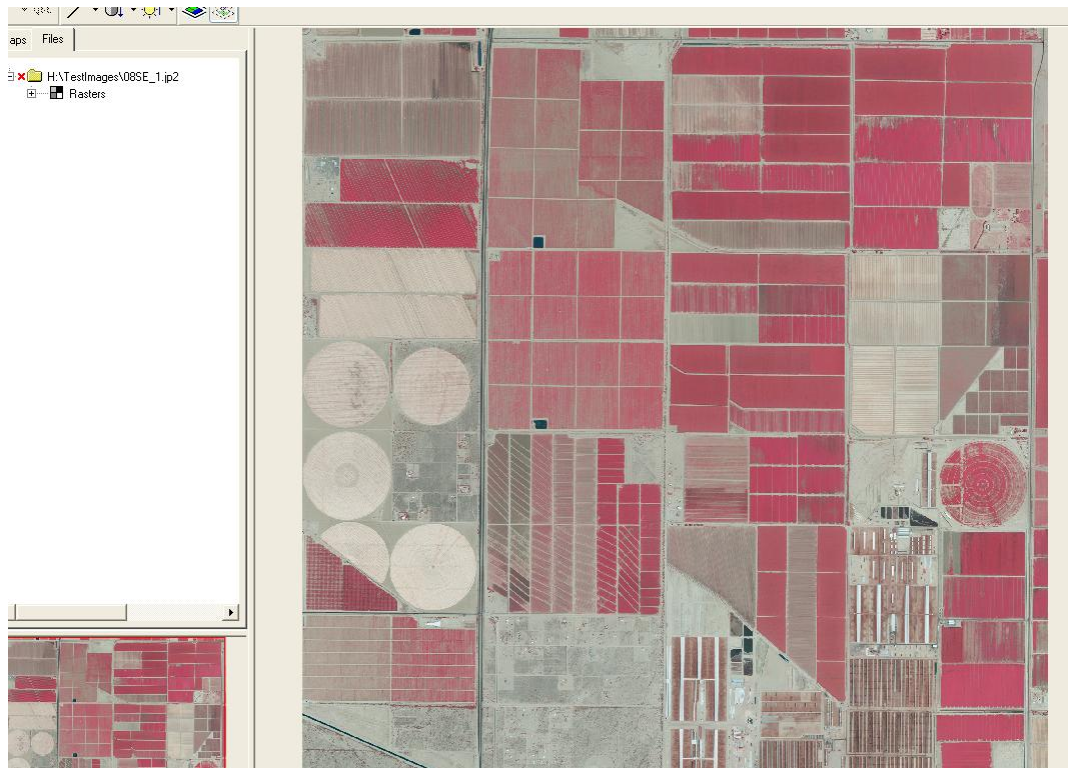
To change the band assignments of an image already in the view, right click on the individual band under the *Maps* tab, and change the assignment. In the graphic below, the southwestern DOQQ in the view is being changed from CIR to natural color.





The procedure for loading a JPEG2000 image is exactly the same as for a DOQQ.

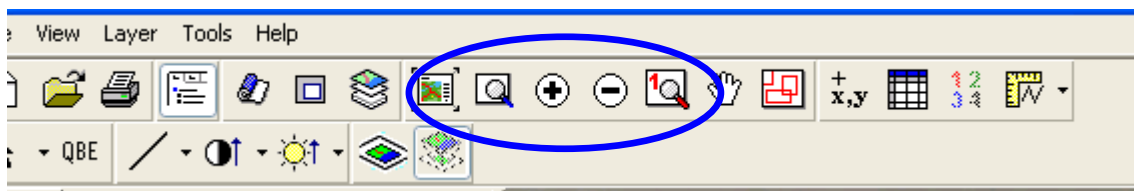




This JPEG2000 has been set up to view as a CIR image.

Removing an image is done by right clicking on the image name under either the *Maps* or the *Files* tab, and selecting *Remove*. The files need to be removed individually.

### Zoom in and out on the Display

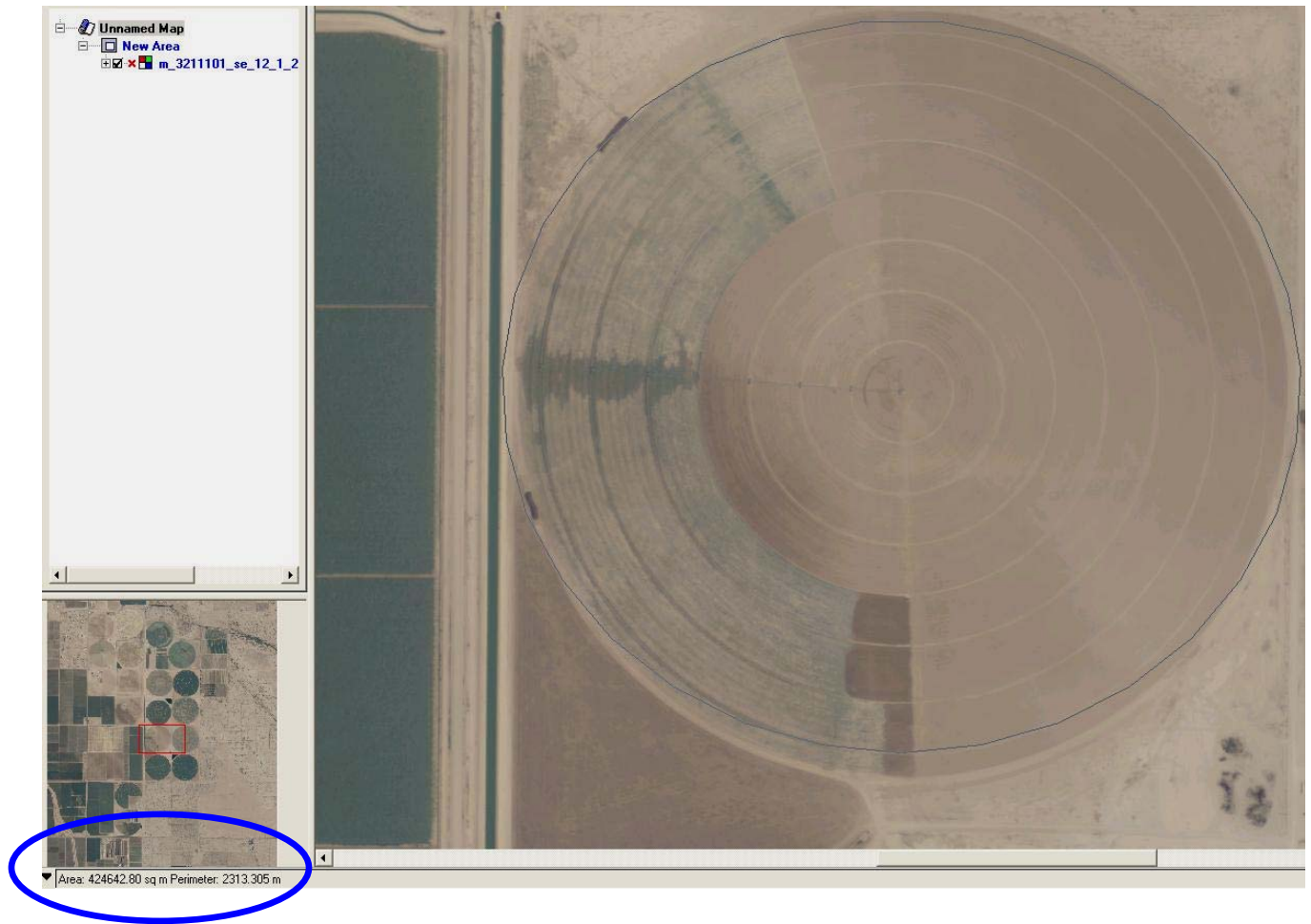
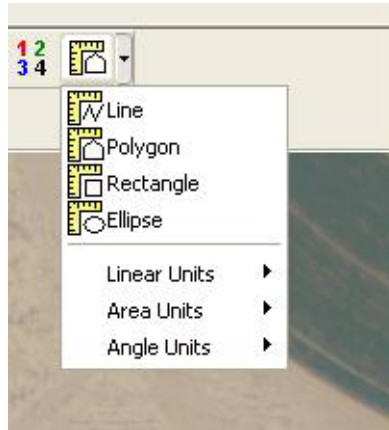


There are several Zoom icons in FreeView. From left, they are:

- Zoom to Overview (square with arrows at the corners moving outwards); this zooms to the “whole page” view.
- Zoom Interactive (magnifying glass); draws a rectangle around the area of interest and zooms to it.
- Zoom In (Plus sign); zooms in after clicking in the view
- Zoom Out (Minus sign); zooms out after clicking on the view
- Zoom to 1 to 1 Image Resolution (magnifying glass with “1”); Moves to a 1:1 resolution at the cursor location.

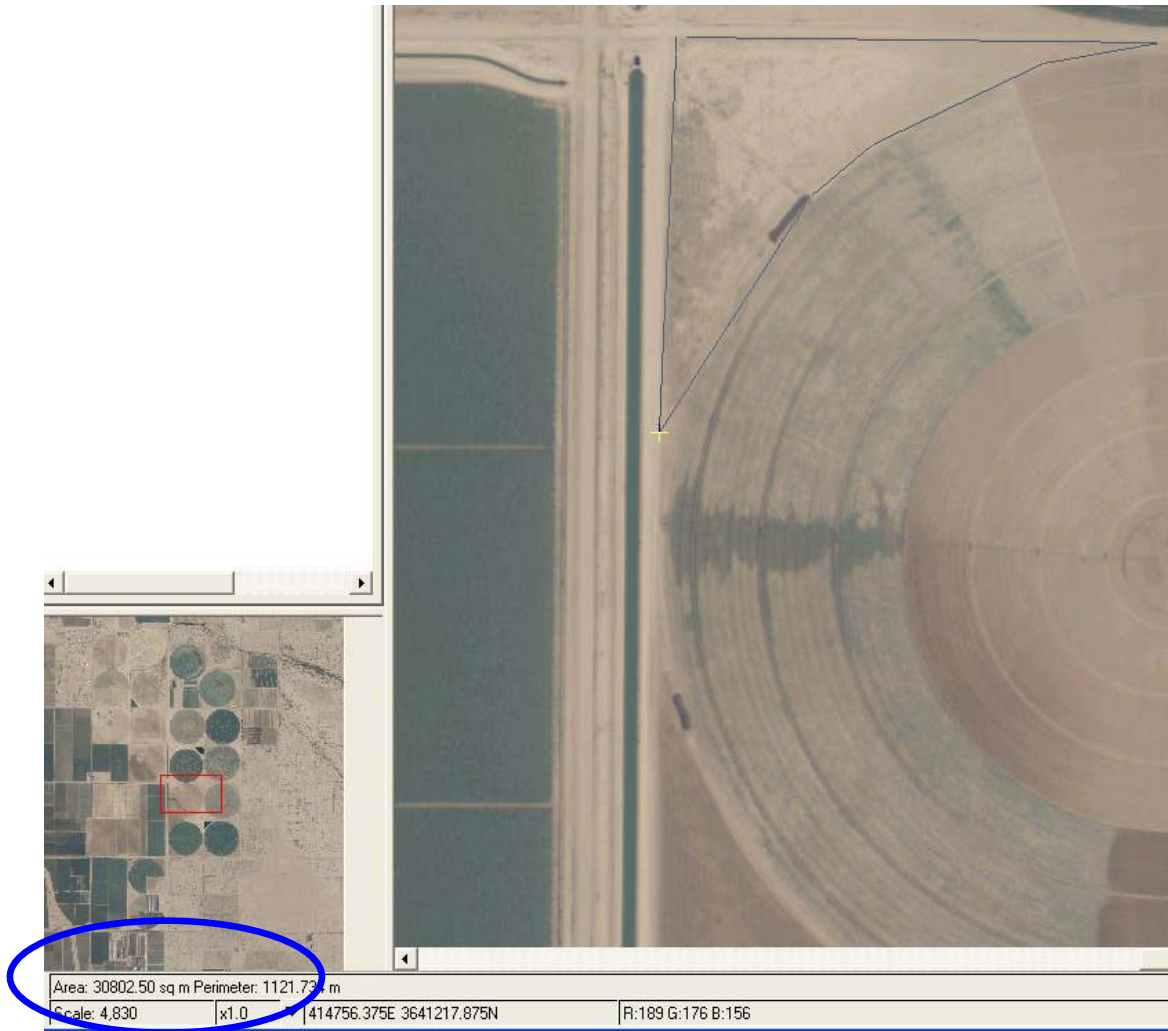
## Measuring on the Map View

FreeView allows the user to measure lines and polygons, in differing units. The measurement tool is at the far right of the toolbar.

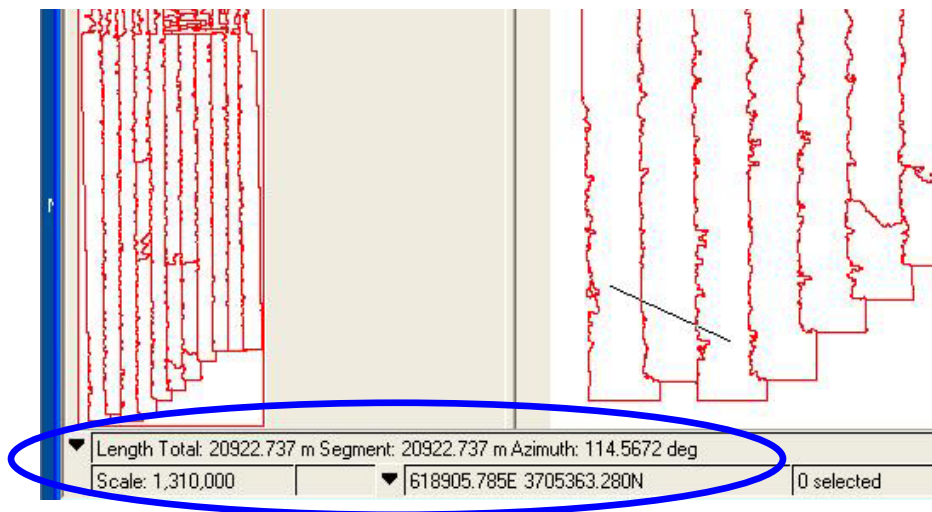


Measuring an ellipse gives a result for the area and perimeter.





Measuring a polygon also displays area and perimeter.



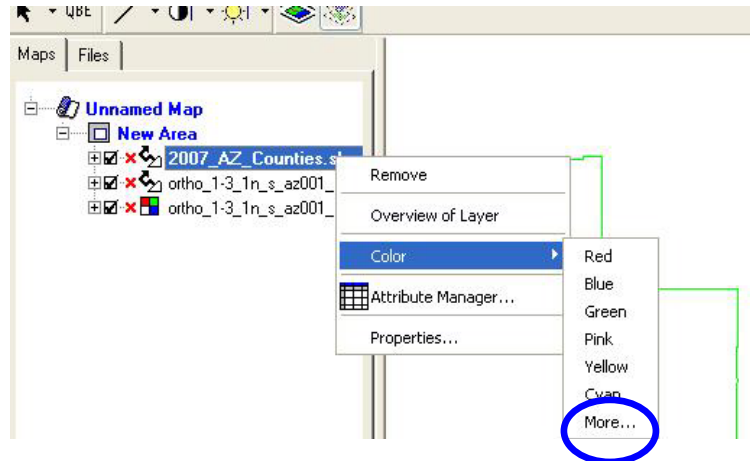
Measuring a line gives an azimuth in addition to the length.



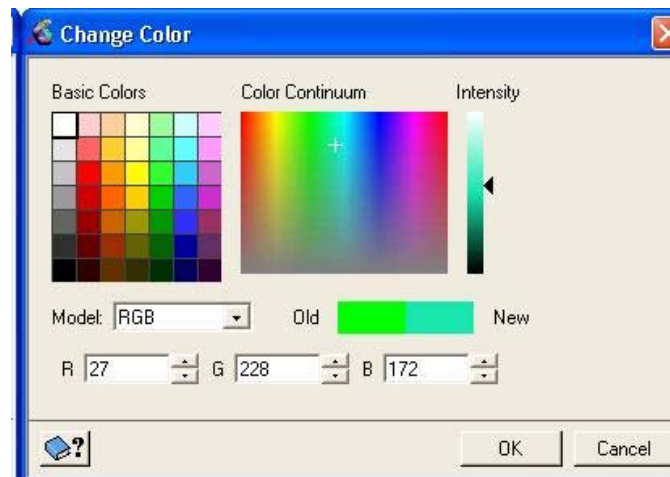
## Changing a Vector Layer Display

There is no option to label features in the FreeView map display.

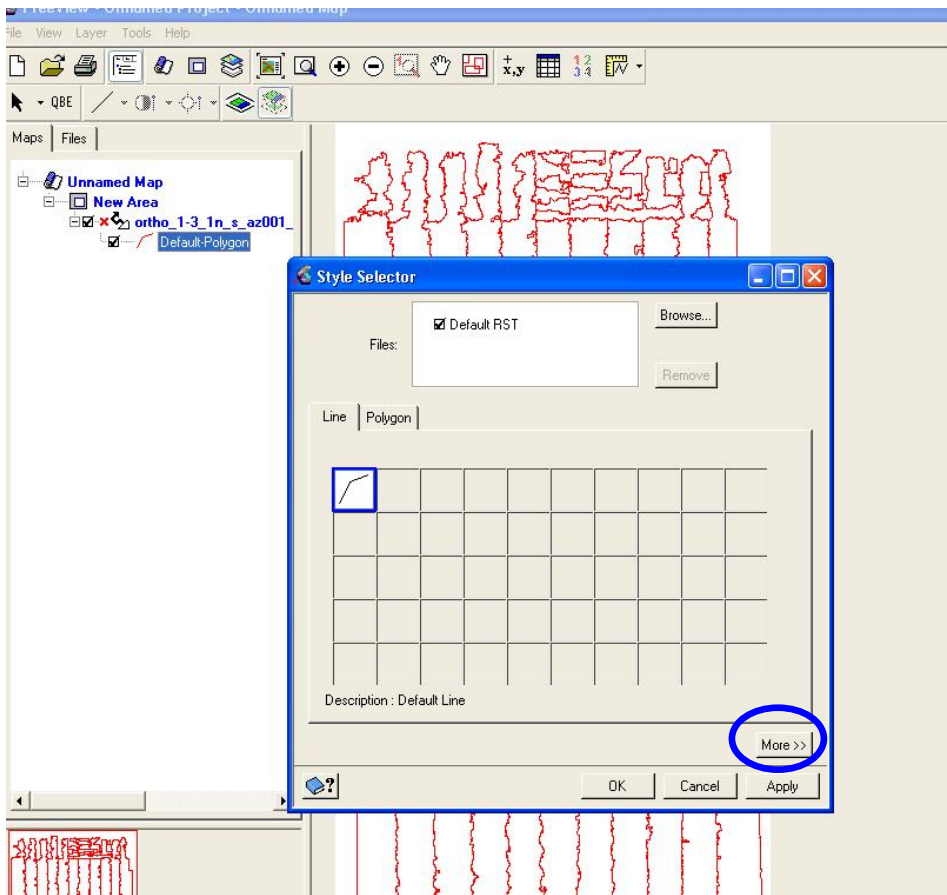
The color of a shapefile can be changed by right clicking on the file name. Select *Color*, and choose a preset color.



Selecting *More* will open a color table, with the opportunity to create a custom color.

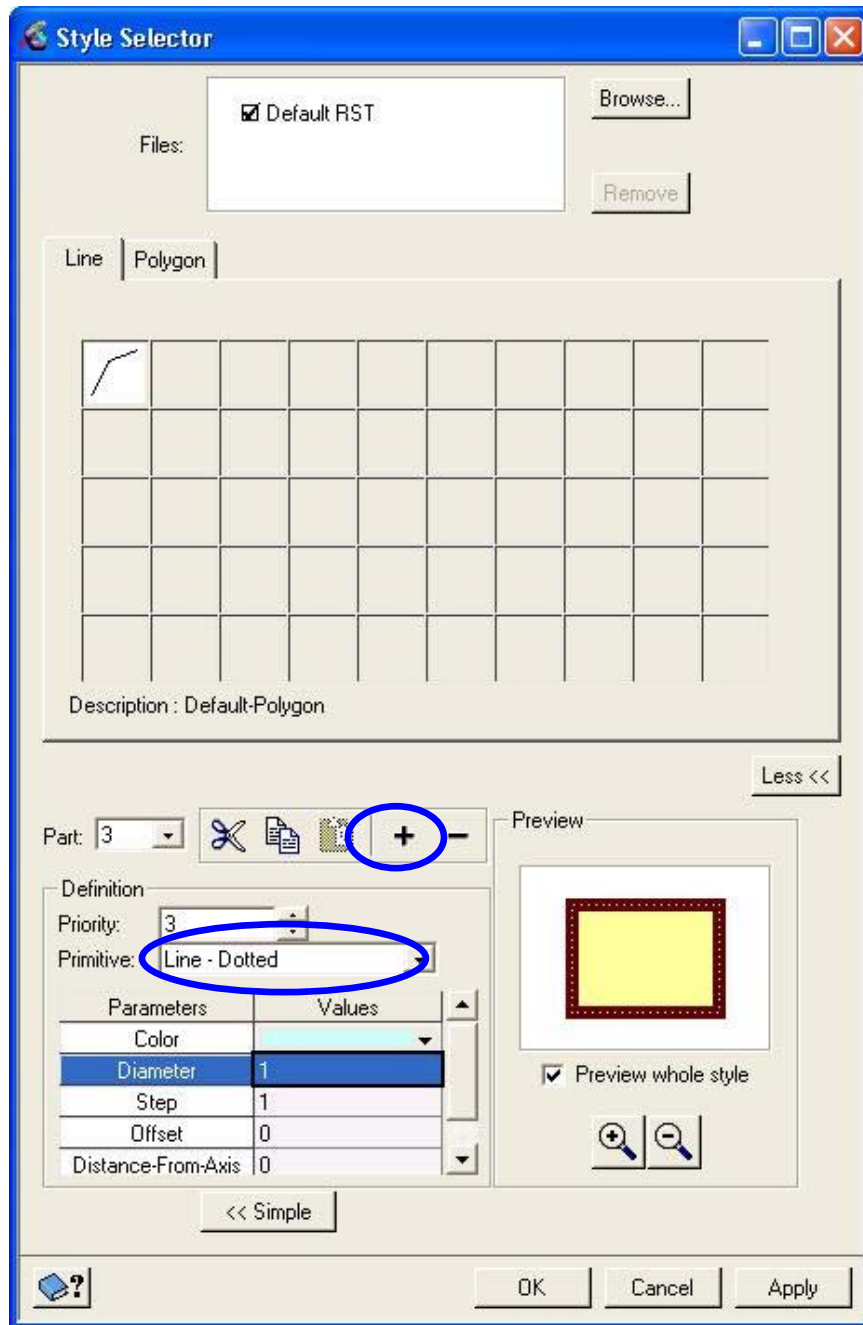


The line feature can be edited by right clicking the icon for *Default Polygon* under the file name. This will open the *Style Selector*.



Clicking on *More*, and then on *Advanced* will open a dialog box with the option to create different versions of the polygon. The polygon in the example below was created in three parts:

- The first step was selecting a dark brown color for the line, and making the width greater than the default.
- The second step involved clicking on the “+” sign to add a “part”, and selecting “2”. For *Primitive*, the selection *Polygon-Filled* was chosen. A fill color (yellow) was selected.
- The third step, shown below, began with adding a third part. *Primitive* was set to *Line Dotted*, a width was selected, and a light blue color was selected. This line is barely visible above the brown line in the Preview box at the right of the screen.



### Viewing a Vector Layer's Attribute Table

The Attribute Manager is opened by right clicking on the file name under either the *Maps* or *Files* tab.

	AREA	PERIMETER	CNTY100K_1	CNTY100K_2	STATECTY	ST	STATENAMES	CNTYNAME	ACRES	CNTY
0	2.560	8.747	2378	235	4017	AZ	ARIZONA	NAVAJO	6374054.000	NAVA
1	4.822	12.587	2379	223	4005	AZ	ARIZONA	COCONINO	11943058.000	COCO
2	3.475	10.639	2384	233	4015	AZ	ARIZONA	MOHAVE	8620467.000	MOHA
3	2.883	9.306	2393	219	4001	AZ	ARIZONA	APACHE	7179720.000	APAC
4	2.069	7.383	2709	243	4025	AZ	ARIZONA	YAVAPAI	5201730.000	YAVA
5	1.209	8.435	2920	225	4007	AZ	ARIZONA	GILA	3069250.750	GILA
6	1.137	5.767	2942	230	4012	AZ	ARIZONA	LA PAZ	2888513.750	LA P
7	2.314	8.117	2997	231	4013	AZ	ARIZONA	MARICOPA	5903477.000	MARI
8	0.463	3.446	3057	229	4011	AZ	ARIZONA	GREENLEE	1181755.000	GREE
9	1.159	5.468	3071	227	4009	AZ	ARIZONA	GRAHAM	2971540.750	GRAH
10	1.342	5.939	3101	239	4021	AZ	ARIZONA	PINAL	3439390.000	PINA
11	1.376	5.543	3102	245	4027	AZ	ARIZONA	YUMA	3532138.250	YUMA
12	2.274	7.437	3285	237	4019	AZ	ARIZONA	PIMA	5880767.500	PIMA
13	1.535	5.021	3294	221	4003	AZ	ARIZONA	COCHISE	3980070.500	COCH
14	0.305	2.549	3399	241	4023	AZ	ARIZONA	SANTA CRUZ	792398.250	SANT

Clicking in the box next to a record, or onto a polygon in the display, will highlight the record in the table and change its color in the display.

	IDATE	SDATE	EDATE	CAM_TYPE	CAM_MAN
0	20070608	06/08/2007 15:04	06/08/2007 15:38	Digital	Leica Geosystems
1	20070608	06/08/2007 15:43	06/08/2007 16:09	Digital	Leica Geosystems
2	20070608	06/08/2007 16:14	06/08/2007 16:49	Digital	Leica Geosystems
3	20070618	06/18/2007 14:19	06/18/2007 14:48	Digital	Leica Geosystems
4	20070618	06/18/2007 14:53	06/18/2007 15:08	Digital	Leica Geosystems
5	20070618	06/18/2007 15:10	06/18/2007 15:22	Digital	Leica Geosystems

Count	1	1	1	1	1
Min	0	20070608			
Max	0	20070608			
Mean	0	0070608.00			
Median	0	0070608.00			
Mode	0	20070608	06/08/2007 15:04	06/08/2007 15:38	Digital
Std Dev	0	0.00			
Sum	0	20070608			

The attributes can be queried through a very simple SQL type query.



5201730.000	YAVA	4	025	4025	4	4025	20000501	1	1	AZ	1	0	1
3069250.750	GILA	4	007	4007	4	4007	20000501	1	1	AZ	1	0	1
2888513.750	LA P	4	012	4012	4	4012	20000501	1	1	AZ	1	0	1
5903477.000	MARI	4	013	4013	4	4013	20000501	1	1	AZ	1	0	1
1181755.000	GREE	4	011	4011	4	4011	20000501	1	1	AZ	1	0	1
2971540.750	GRAH	4	009	4009	4	4009	20000501	1	1	AZ	1	0	1
3439390.000	PINA	4	021	4021	4	4021	20000501	1	1	AZ	1	0	1
3532138.250	YUMA	4	027	4027	4	4027	20000501	1	1	AZ	1	0	1
5880767.500	PIMA	4	019	4019	4	4019	20000501	1	1	AZ	1	0	1
3980070.500	COCH	4	003	4003	4	4003	20000501	1	1	AZ	1	0	1
792398.250	SANT	4	023	4023	4	4023	20000501	1	1	AZ	1	0	1

The example above shows a query for counties with an area larger than 1,000,000 acres.

CNTYNAME	ACRES	CNTY_ABV	FIPS_ST	FIPS_CD	FIPS	STATE_F
NAVAJO	6374054.000	NAVA	4	017	4017	
COCONINO	11943058.000	COCC	4	005	4005	
MOHAVE	8620467.000	MOHA	4	015	4015	
APACHE	7179720.000	APAC	4	001	4001	

Count	4	4	4	4	4	4
Min		6374054.000				
Max		11943058.000				
Mean		8529324.750				
Median		7900093.500				
Mode	APACHE	6374054.000	APAC	4	001	4001
Std Dev		2458217.959				
Sum		34117293.000				

In the example above, a query of counties larger than 6,000,000 acres highlighted four in Arizona: Apache, Coconino, Mohave, and Navajo.

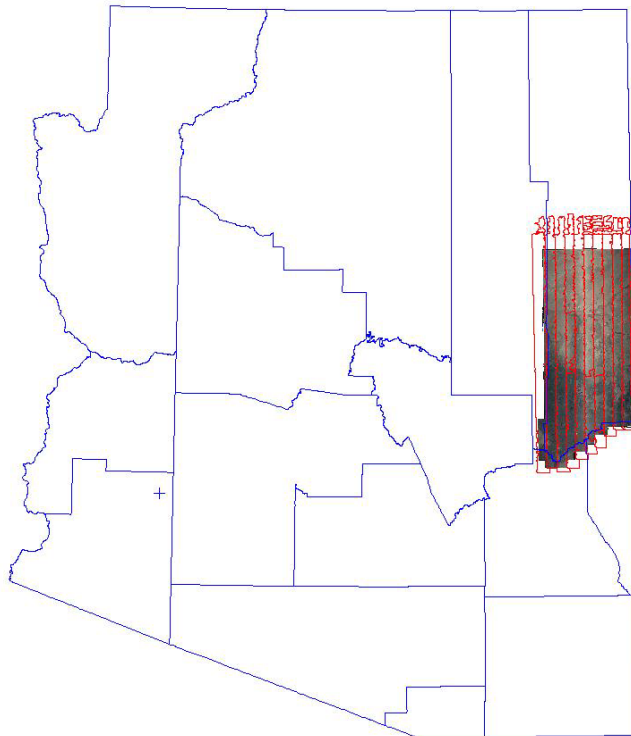
## Displaying Data from Different Projections

FreeView will *sometimes* accommodate data in different projections within the same map view. The order in which the data is imported will determine the success.

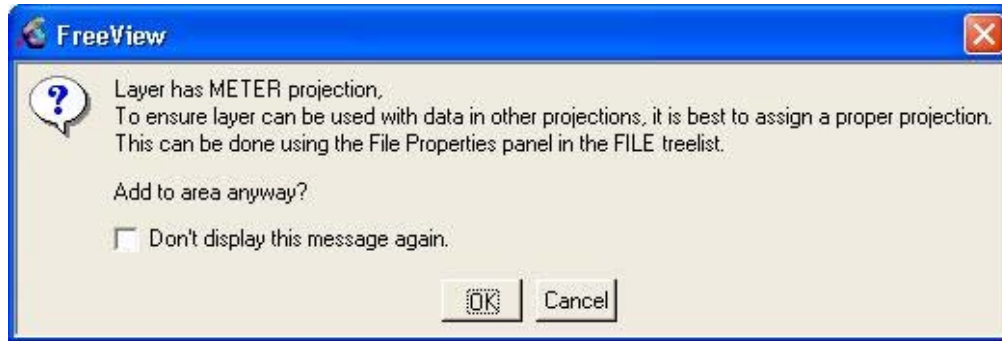
In the first experiment, the CCM and seamline shapefile, in the same projection, were added to the view with no problem. When an attempt was made to add a shapefile of Arizona counties, which is in a different projection, there was a warning that dealing with the projection difference might be “time consuming.”



In spite of the warning, the county shapefile displayed correctly over the two original files (the CCM and Seamline Shapefile).



When the county shapefile was added first, an attempt to add the CCM produced the following warning:



The *File Properties* panel is not available in the free viewer version of the software.

The attempt to add the CCM to this view was unsuccessful. Because the county shapefile was added first, it set the projection standard for the other files, and FreeView was unable to project the CCM correctly.

### **Printing a Map**

FreeView gives the options of creating either a .pdf or .tif which can then be printed.



**For additional information contact:  
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