

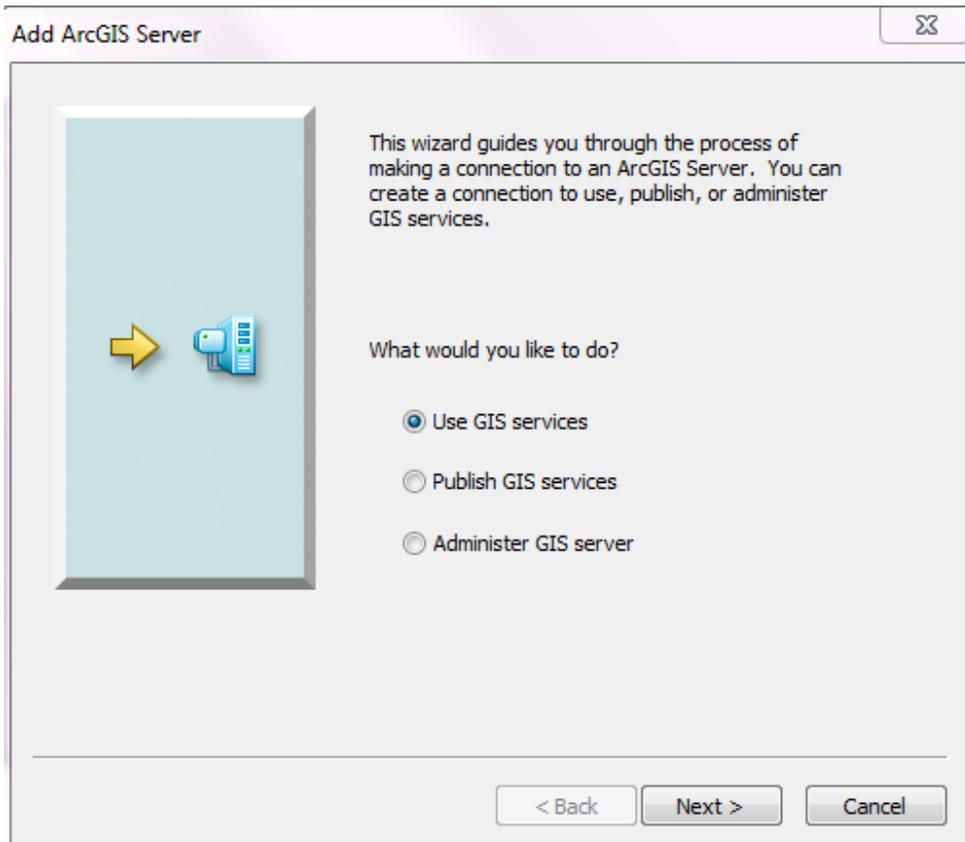
## Adding Data from APFO's Public ArcGIS Server into ArcMap 10.x

APFO provides the most current year of NAIP imagery, as well as satellite imagery for Hawaii, in a web service for public users. There are a number of other layers, which could be useful in researching NAIP or historical film photography from the NAPP or NHAP programs archived at APFO, for checking on the status of NAIP acquisitions in progress, or for finding some basic map information, such as county or PLSS boundaries, cities, highways, and water bodies.

The “short instructions” for accessing this service consist of stating that **the URL is *<http://gis.apfo.usda.gov/arcgis/services>***

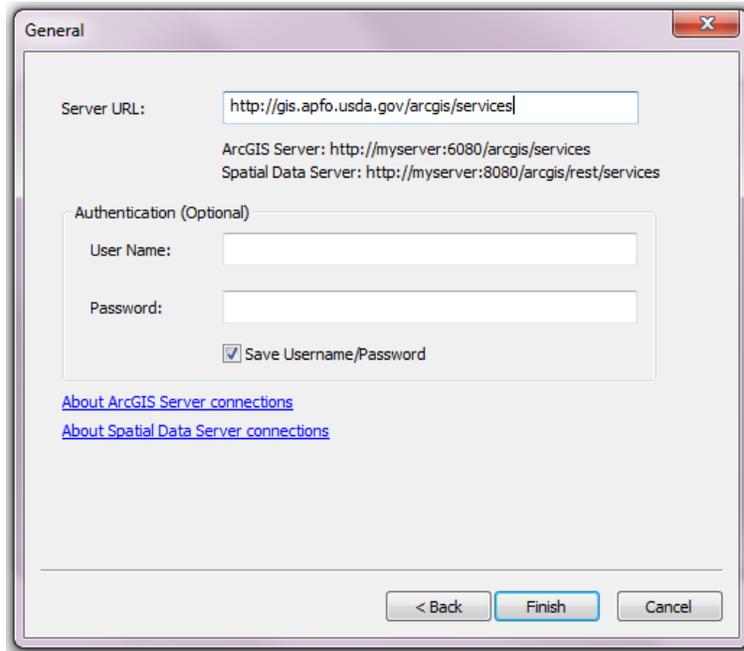
The detailed instructions:

- 1) Open ArcMap and Click the *Add Data* button.
- 2) Select *GIS Servers* and then *Add ArcGIS Server*. Click *Add*.
- 3) Click the *Use GIS Services* radio button, and then click *Next*.



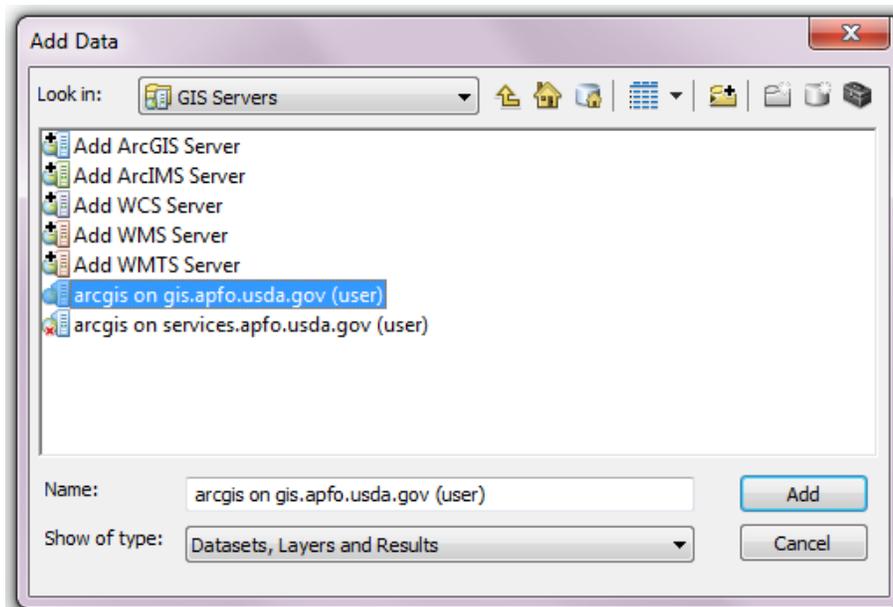
4) The *General* Dialog will open.

- 4a) In the Server URL: text box enter *http://gis.apfo.usda.gov/arcgis/services*
- 4b) Click *Finish*.



5) A new server, *arcgis on gis.apfo.usda.gov*, has been added to the GIS Servers list.

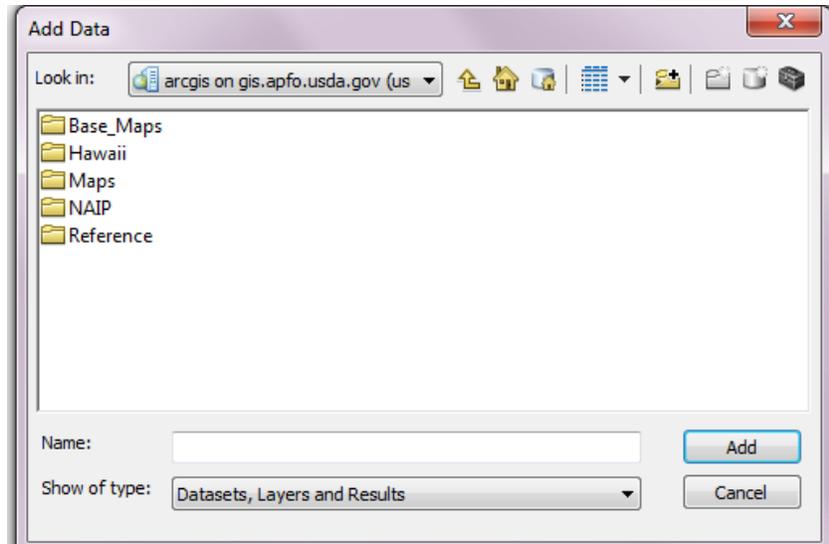
6) Double Click the new ArcGIS Server connection to access the server.



## Imagery Available on the Server

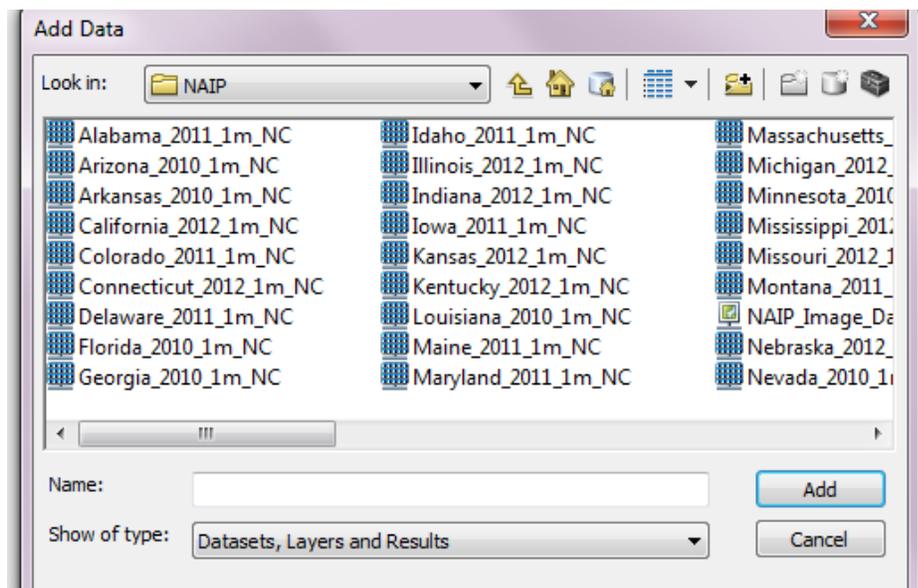
7) This is the public facing imagery server for NAIP, and the data is organized by state.

The server also has several map layers, displaying information such as state and county boundaries, water bodies, cities, highways, UTM zone lines, and NAIP acquisition and inspection status maps.

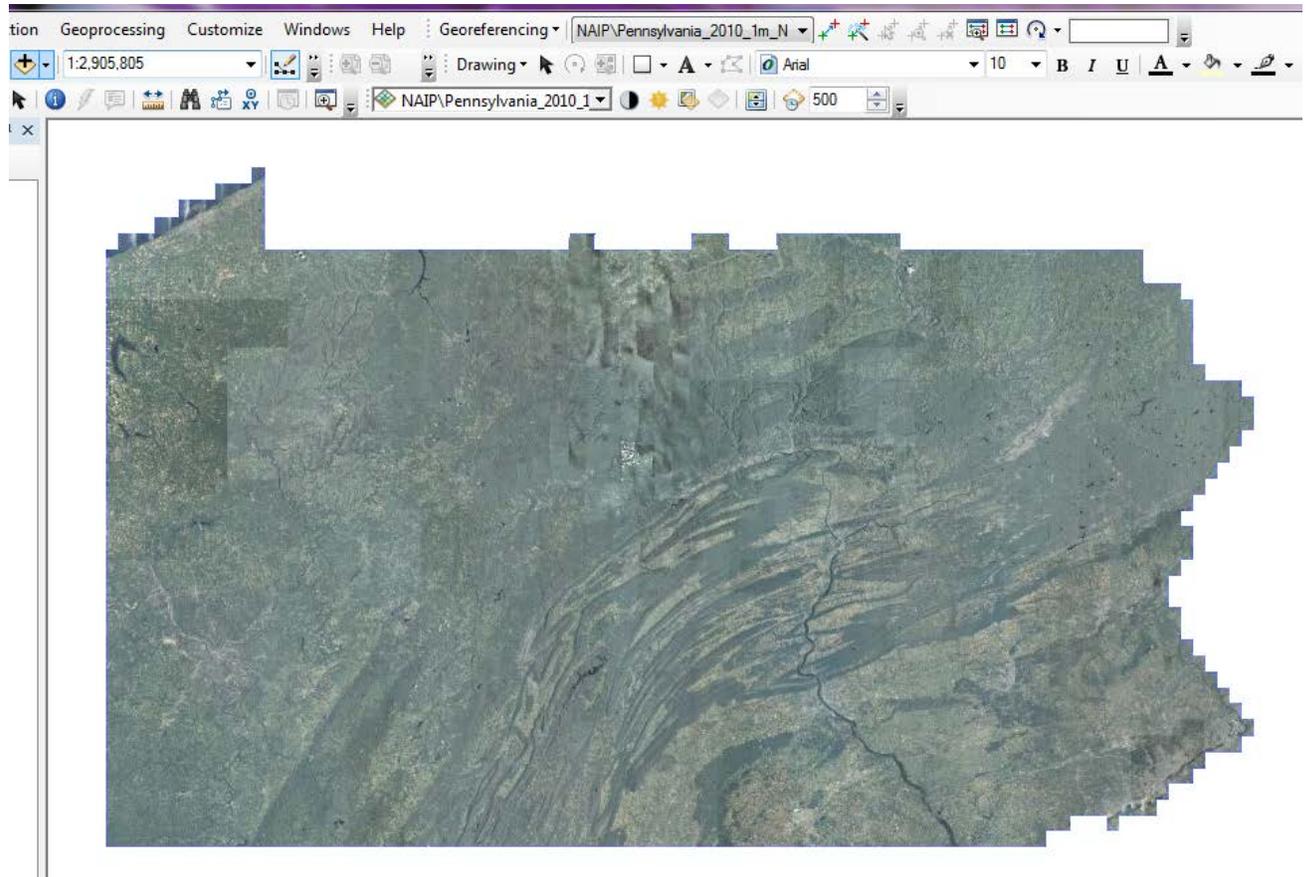


8) Double Click the NAIP folder to see the state based imagery services.

A list of state based image services in natural color format for the most current flying year will open. Select from the list, and view the selected state in a project.



9) The server displays only the most current year of imagery; for Pennsylvania, that was 2010.



10) In addition to the most current year of imagery, the web service also offers a vector layer giving information about the project's acquisitions in every part of the state. These "seamlines" delineate the flight lines or "exposures" (this varies with the sensor) which captured the area of the image lying within its boundaries.

The attributes for each polygon can be accessed. They will tell the date of flight (IDATE), the starting and ending times, with the date (SDATE and EDATE), and the band content (BCON – this will be natural color, or NC, even though the project was flown with four bands – red, blue, green and color infrared. The web display is only the natural color version. Four band DOQQs can be purchased from APFO.)

The attributes also include the camera type, manufacturer, and model (CAM\_TYPE, CAM\_MAN, and CAM\_MOD), the camera hardware firmware (HARD\_FIRM), the sensor number (SENSNUM), and the aircraft type and tail number (AC\_TYPE, ACTAILNUM).

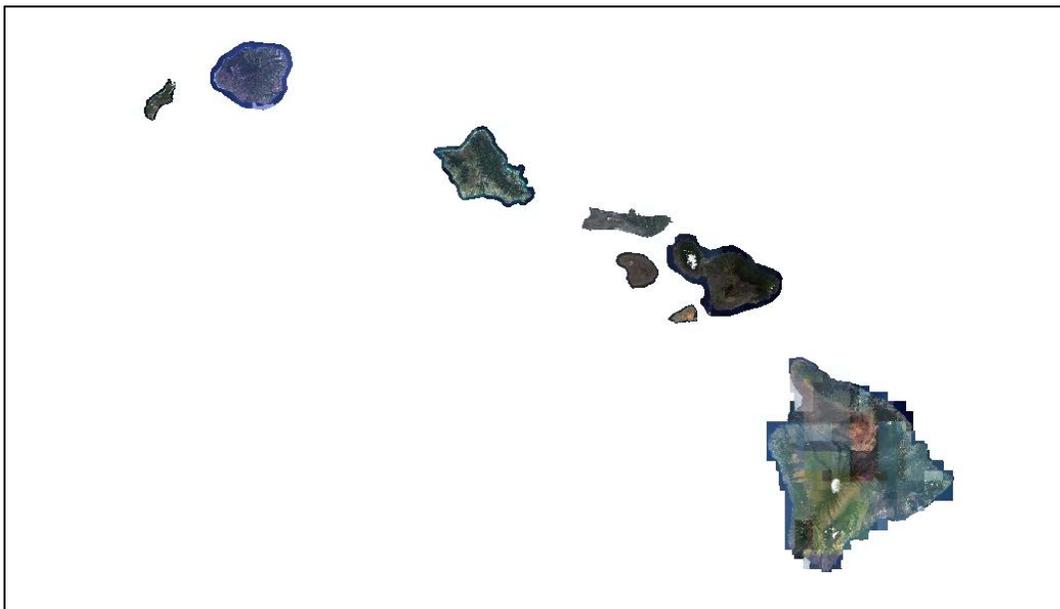
The vendor's name is not given.

The screenshot shows a GIS application interface. The top toolbar includes standard GIS tools like pan, zoom, and identify. The main map area displays a satellite image of California with various colored overlays representing different image dates. A metadata table is visible on the right side of the map, providing details for a specific feature.

Field	Value
OBJECTID	114
IDATE	2012-07-02
SDATE	07/02/2012 08:49
EDATE	07/02/2012 09:10
BCON	NC
CAM_TYPE	Digital
CAM_MAN	Leica Geosystems
CAM_MOD	SH82
HARD_FIRM	FCMS 3.23
SENSNUM	30110
AC_TYPE	C441
ACTAILNUM	N441S

Identified 2 features

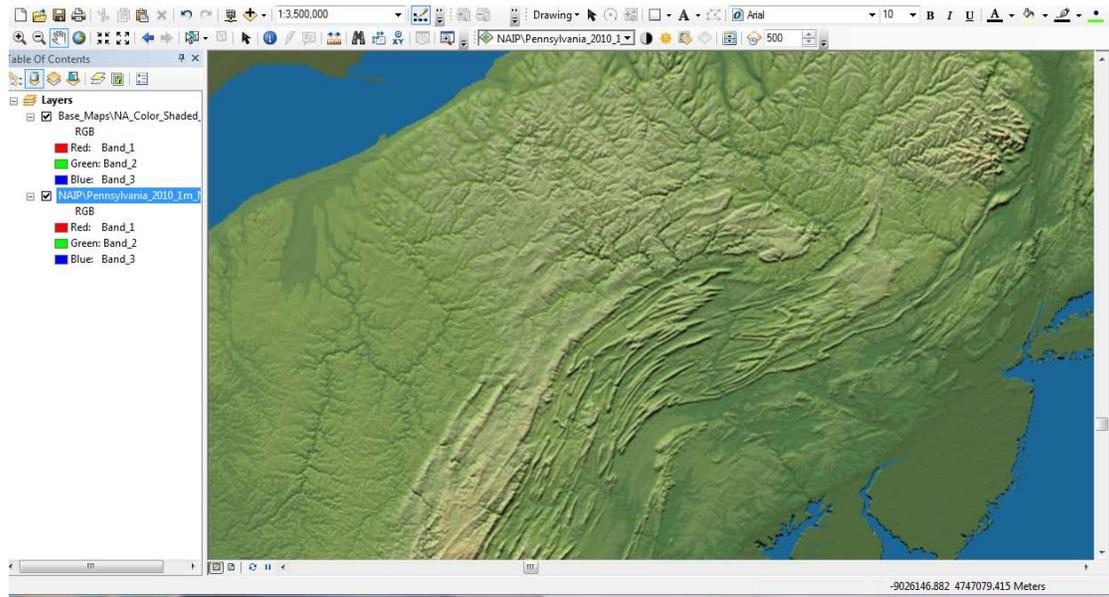
10) The server also offers satellite imagery of the Hawaiian Islands.



## Other Data Available on the Server

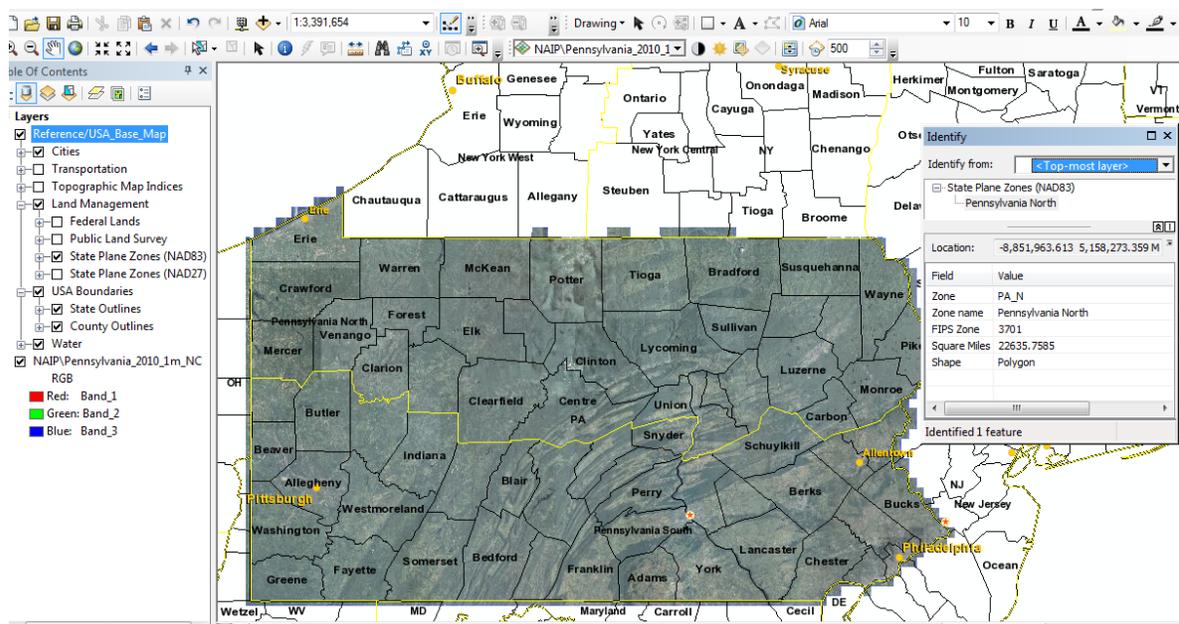
9) Other folders on the server contain useful data.

The Base Maps folder contains a map service utilizing NAIP imagery for the entire country, as well as a Color Shaded Relief Map.

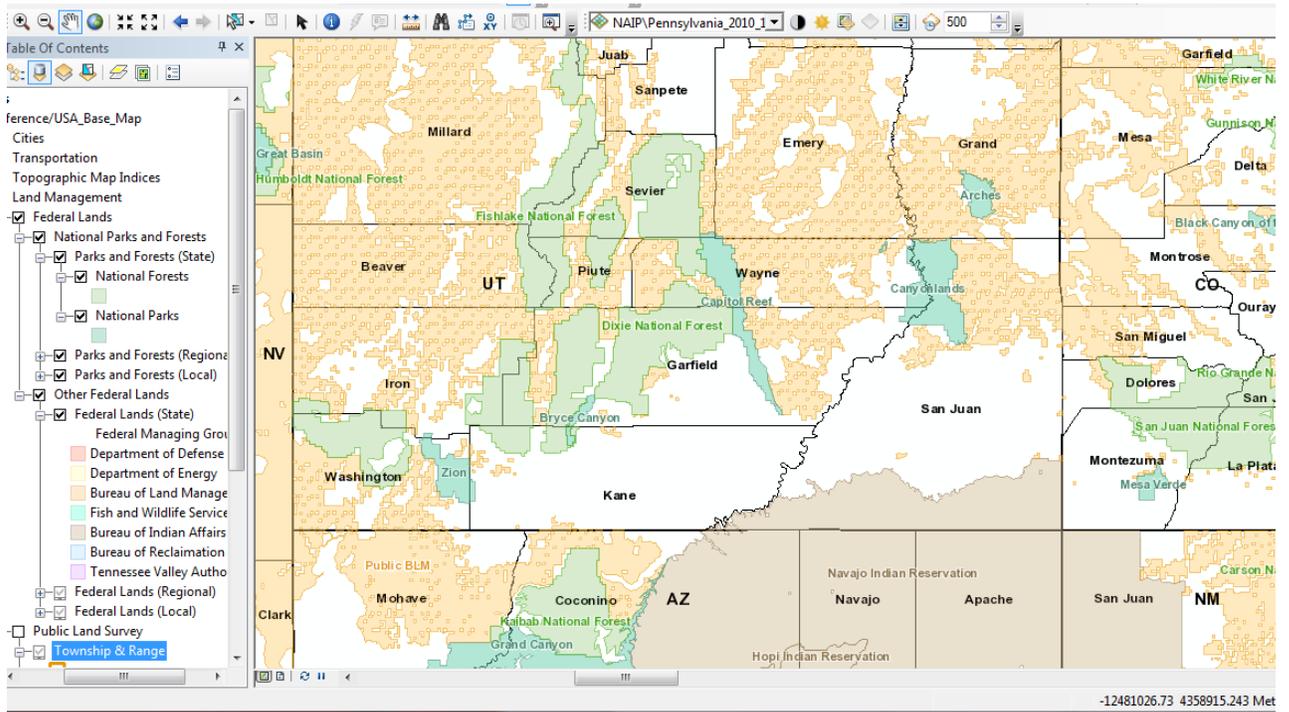


10) The Reference/USA Base Map service contains some layers which could be used in display maps. The display properties for these layers cannot be changed.

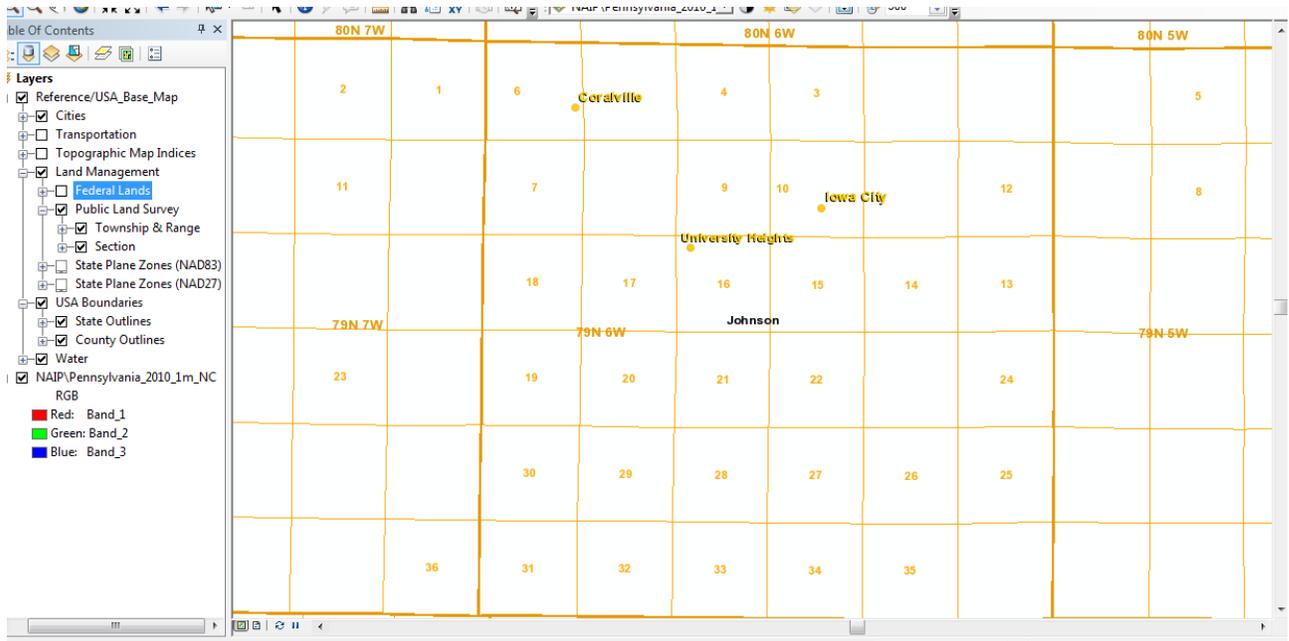
Among the layers in this folder are State Plane Boundaries:



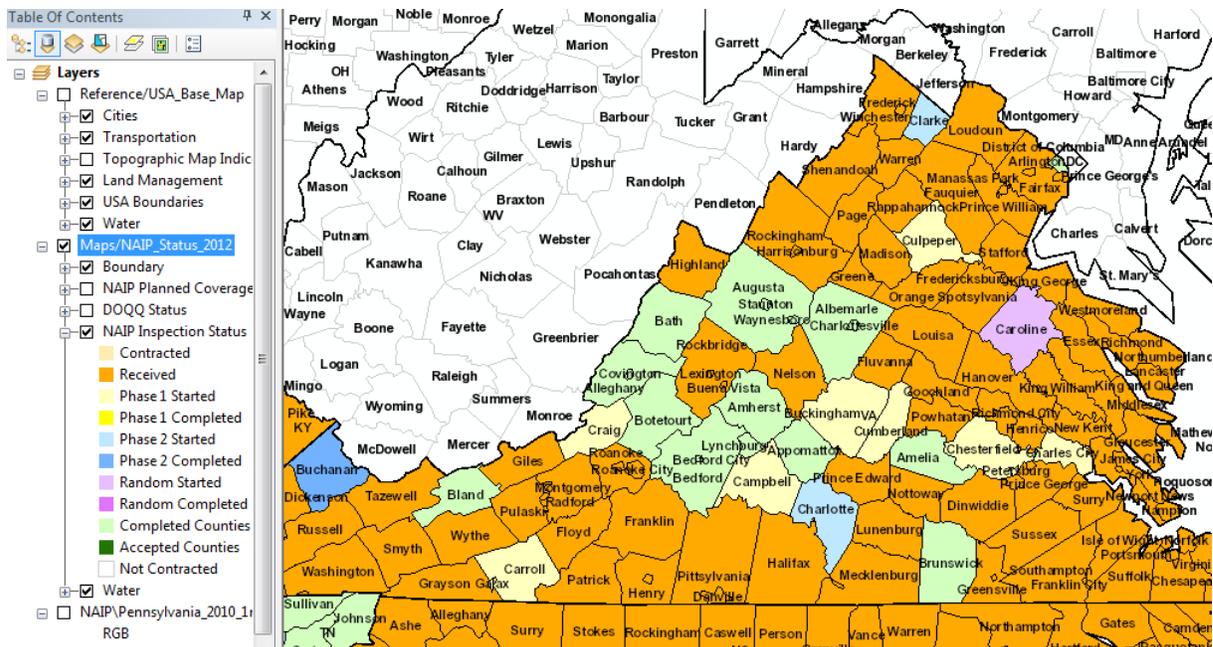
## Federal Lands:



## Public Land Survey System (Township and Range) Boundaries

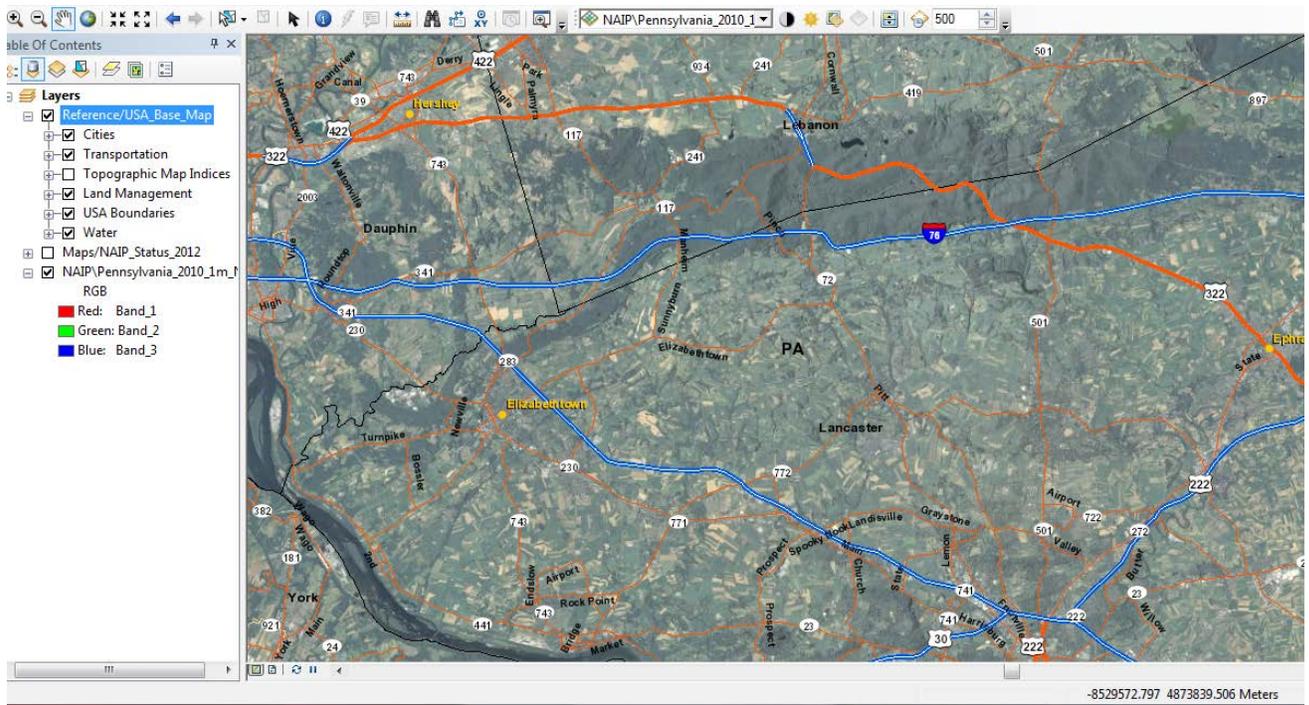


Within the Maps folder, the NAIP Inspection Status is one of the layers which can be added. This map service allows a user to track the progress of NAIP imagery inspection for any county being acquired within that year.



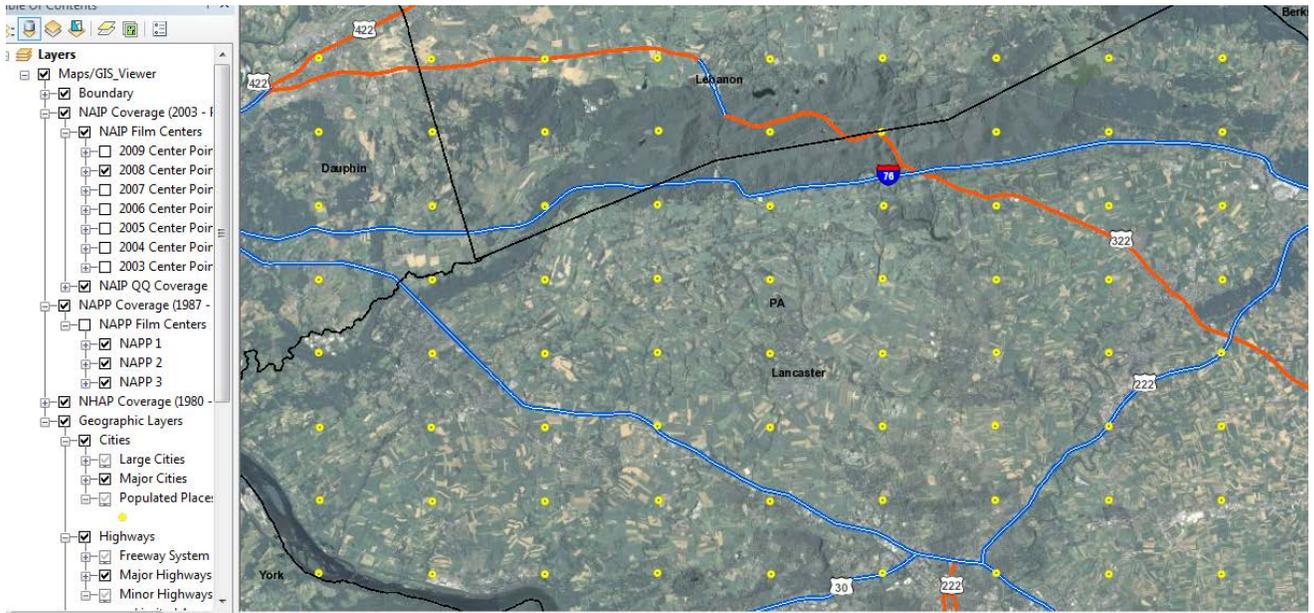
A user could also check on planned coverage and DOQQ status.

The Reference/USA Base Map service also includes some basic roads, highways, cities, and water bodies.

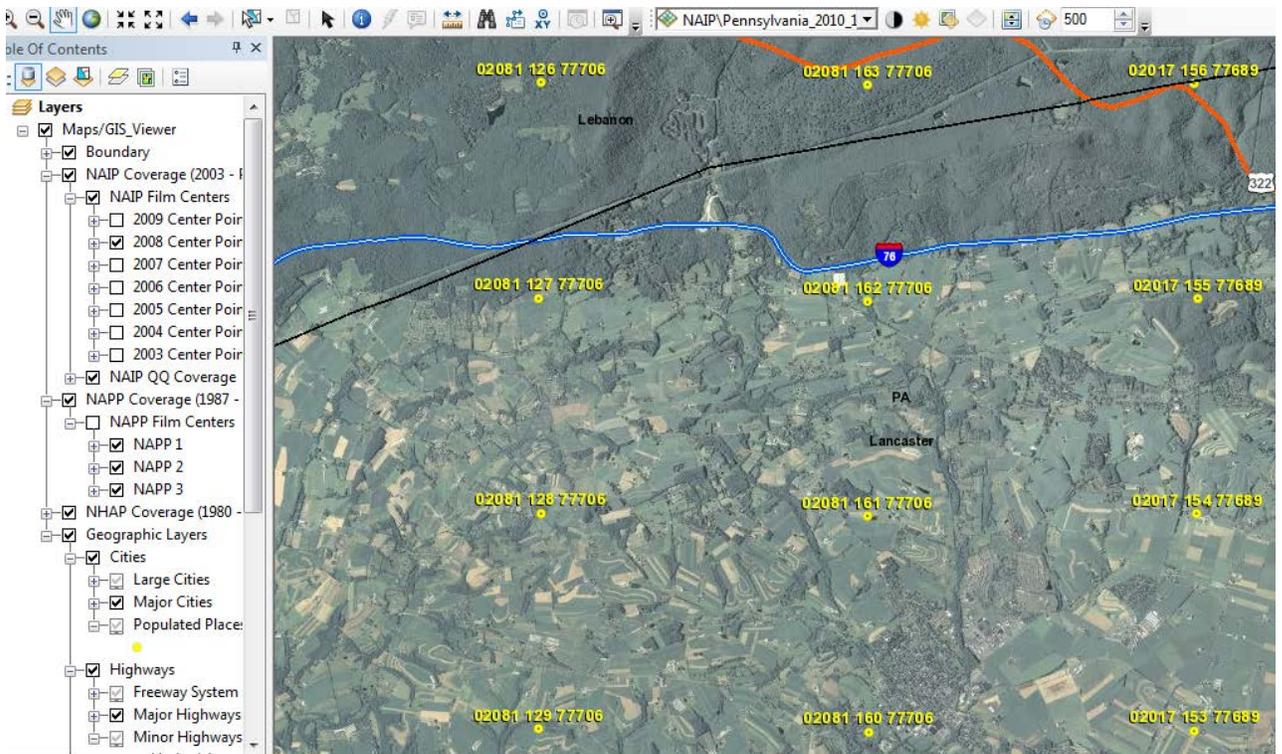


The Maps/GIS Viewer layer accesses the same data available on the GIS Data Viewer available on the APFO website. This map service shows the locations of center

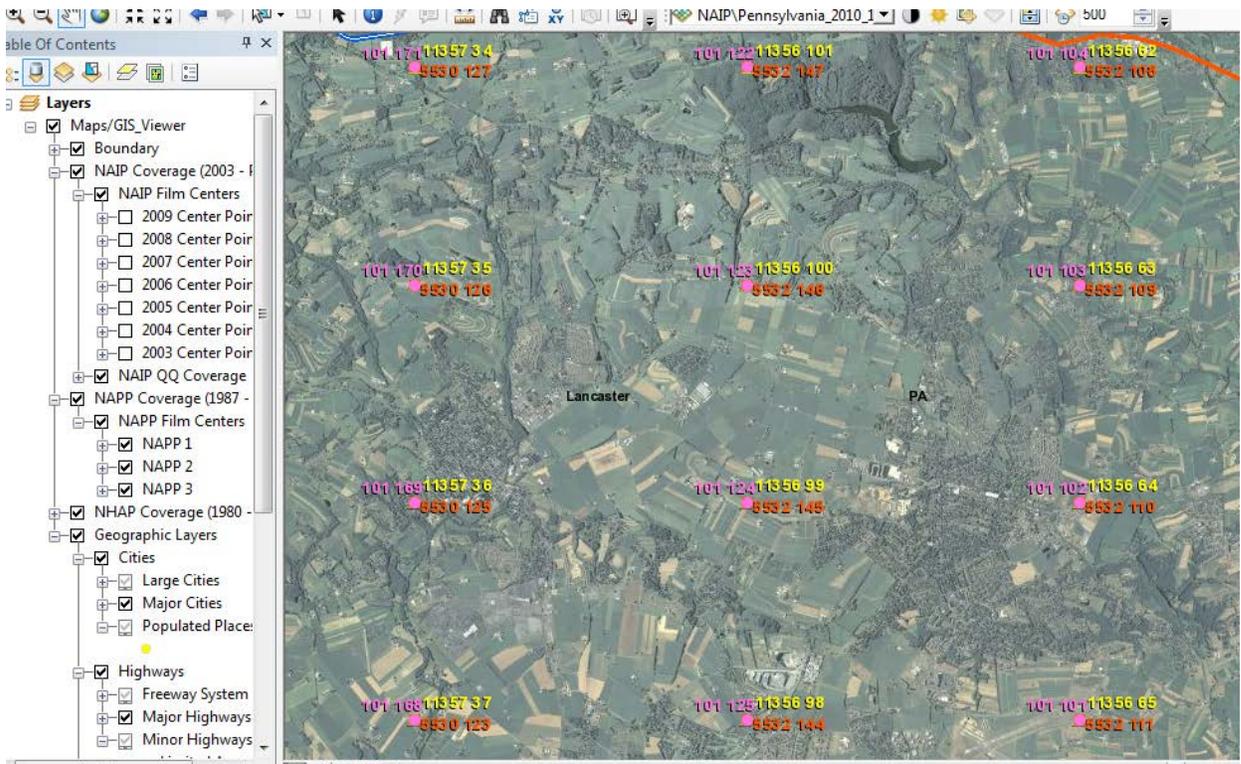
points for film exposures from the NAIP, NAPP, and NHAP programs. It also can display some basic map features, such as county boundaries, roads, and cities.



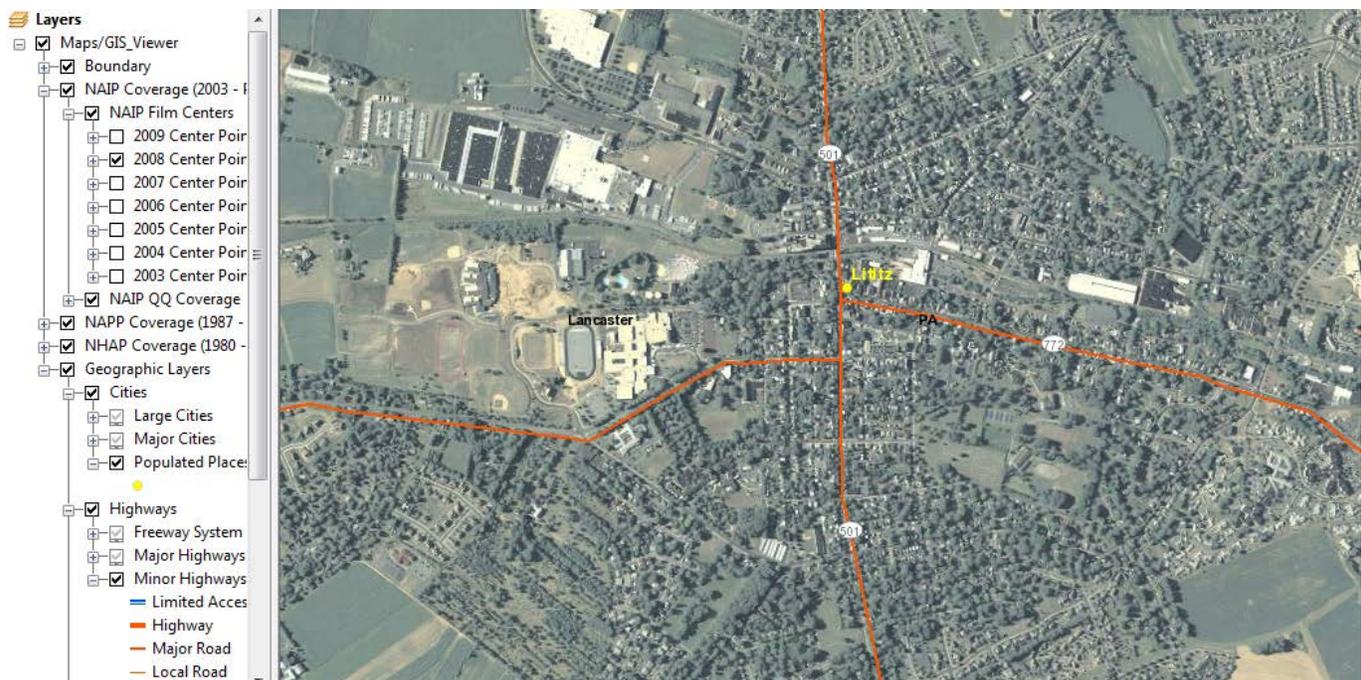
The map displays elements based upon the scale; in the example below, the names of the center points for this year of NAIP appear only at a certain zoom level.



The center points and labels for three years of NAPP imagery appear in the example below; again the display is scale dependent.



More detailed geographic features appear after zooming in further.



For more information, contact GIS Specialists Brian Vanderbilt, 801-844-2930, or Louise Mathews, 801-844-2934



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