

Using Google Earth



I'm sure many surveyors like myself have downloaded and played with Google Earth. I have virtual map pins stuck in places where I've lived and worked, and pins placed at Air Force bases where I was stationed in the United States, Europe and North Africa. There are pins in the area around Asheville, North Carolina where I now live and a bunch in and around Wilson where I grew up—like the first house my folks rented in Wilson more than 50 years ago, which is still standing. With streets that have photo bubbles, I can pop in and see what the area looks like today.

Once Google Earth's photo bubbles began appearing in my area, I began using them to research survey proposals. In North

Carolina, surveyors are required to tie into a grid monument if there is one within 2,000 feet of the property. Years ago I purchased Maptech's Terrain Navigator Pro software for the state of North Carolina. It provides the most recent quad maps in digital form, and the locations of all of the grid monuments are clearly shown. If a new monument is found that is not shown, it can easily be added to the program. The software has been very helpful for many years. Sometimes it was very difficult to locate a particular parcel of land. The drop down from the "Find" button in the program lists a search by coordinates. This actually is a search by latitude and longitude. The problem is, if you don't have the lat and long, where are you going to get them?

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When the zooming in stops, the target will be at the latitude and longitude entered. Photo points will appear as a camera if available.

A double click on the camera symbol will provides a ground level view.

The North Carolina Geodetic Survey website has a page titled “NGS Software”, which has a program titled “Corpscon 6.0”. This program is a free download, which can convert State Plane Coordinates to latitude and longitude.

The next step is getting the State Plane Coordinates in order to convert to the latitude and longitude. In North Carolina, almost every parcel in the state has been given a parcel identification number (PIN) for short. The PIN is made up of the northing and easting from the State Plane Coordinates. It’s a ten digit number with the first number being the first number of the easting. The second number is the first number of the northing. You separate the pin into two groups of five numbers, then add a “0” to the ends to get two six-digit numbers.

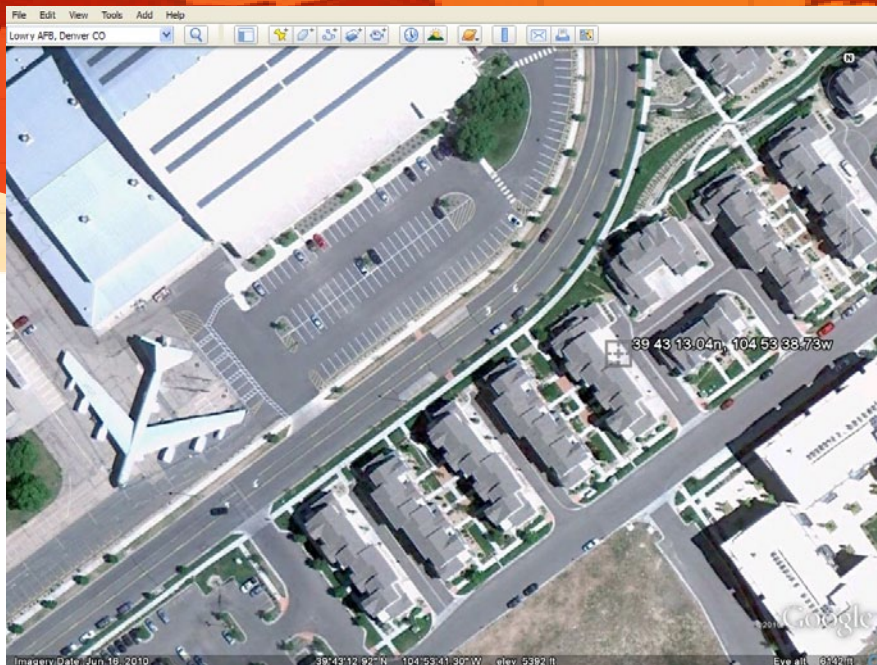
In the “Corpscon 6.0” program enter the northing and easting in the appropriate spaces and click on the convert button. The program will give you the lat and long out to two decimal places in the second’s column.



Here’s how I use Google Earth using the above information. I received a call from a land owner wanting a cost estimate to survey and mark his southern boundary line. He gave me his PIN. Converting the PIN to state plane coordinates gave me the northing and easting. Entering these two numbers into the “Corpscon 6.0” program, I was able to obtain the lat and long.

In the “Search” box for Google Earth, I entered the lat and long in the following sequence, (example: 00 00 00.00n, 00 00 00.00w) and pressed Search. When you stop “falling” toward the earth you will see the target.

At this point you can pop into the photo bubble and see what the area looks like and get a really good idea of you may encounter when trying to



In some locations the aerial view in Google Earth is very sharp and clear detail can be seen when zooming closer.

survey and mark a boundary line, rather than having to drive out to the property to get a first hand look at the site. This also saves a lot of time and expense.


In many areas around the country Google Earth's bubble photos are very useful. When a site is originally surveyed and a topo done, the surveyor can check to see if everything was located by the field crew. A quick look at the utility poles in the photos can verify the existence of power, telephone and cable TV wires on the poles. I've even been able to verify the existence of a fire hydrant near a survey.

Now what about areas where the photo resolution is not good? The lat and long of 35-47-51.44N, 82-41-02.42W is the center of my home town. When you enter the lat and long in the Google Earth search you'll wind up in an area which is not clear at all because of the resolution of the satellite pictures. However, popping into a photo bubble on the bridge will give you a clear view of the area at car level. I've been able to use the photo bubbles a number of times in these poor resolution areas.

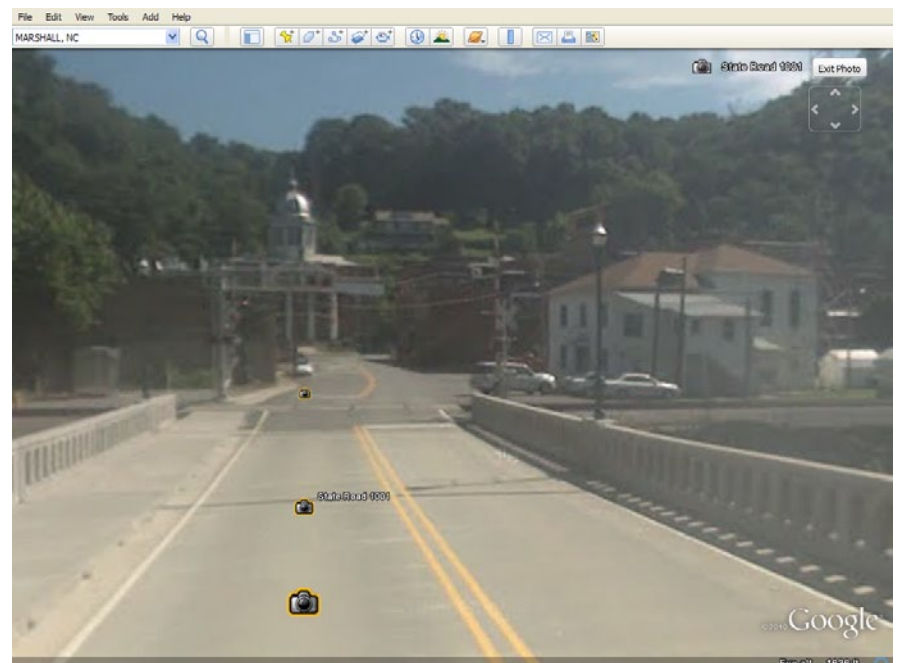
Another interesting area where I would like to see surveyors use lat and long and Google Earth is in the interesting articles published in surveying magazines. For example, in a past issue of *The American Surveyor* there is a really good article about the Surveyor's Notch in the Wind River Range in Central Wyoming. If the lat and long of the Notch were added to the article it

would have been really nice. Those of you who want to check it out on Google Earth the lat and long are 42-42-45.08N, 109-07-58.54W. Using the 3D view in Google Earth you can find where the pictures in the article were taken.

As time goes on, Google Earth will update more streets with the photo

bubbles, which will be a great help to surveyors. Give it a try and see what you can get out of this good resource. 

Ken Mills has been surveying for 36 years, and is licensed in North Carolina. He currently is senior partner at Blue Ridge Land Surveying in Asheville.



A double click on the camera symbol can provide a clearer picture in areas where the aerial is of low resolution.