GOOGLE EARTH

An Invaluable Tool for Valuation Professionals

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Aerial photography and cadastral mapping has made appraisal work more precise, more detailed and has improved the quality of analysis. You can locate, select, and investigate right from your desktop. There are many sources of this type of information. More and more, cities, provincial and federal bodies and private suppliers are producing sophisticated mapping tools with multiple layers that go beyond just orthophotos and cadastre information. But in our practice, local government geographic information systems (GIS) are almost always used in conjunction with Google Earth.

There are several versions of Google Earth available to the user. There is the free version, Google Earth Pro and Google Earth Enterprise. For us, the free version just didn't have the useful features we needed so a few years ago we upgraded to Pro. At $399 US/year, it's not inexpensive, but if you use it every day, it can be a bargain. The Pro version gives you "fastest" performance, highest image print and save resolution, email support and the very important ability to measure area. But perhaps most critical is the license to reproduce content for external purposes, including, "screen captures from Google Earth in reports and presentations or otherwise creating materials that will be displayed or distributed outside of your organization". We use many Google Earth images in our reports, from standard overhead aerials with overlays to tilted terrain images and street view photos. So what is the big deal with Google Earth? Here's a list on the top uses for valuation professionals:

Measure distances. You can use the ruler to measure distance or paths "as the crow flies". Or, drop a placemark (the yellow pin) at the property, another at the second location, right click on one and choose "directions from here", right click on the other and choose "directions to here". Google Earth will draw the route (by road) and tell you the distance to the tenth of a km. No more guessing or clocking in your car. This is available to the free version.

Measure area. How much of Property A is hillside, cleared, paved, landscaped, fenced, split zoned, bisected by a road? Measure it using the ruler tools or create a polygon and query the area. How big is that industrial building that sold last year? Measure it to determine if it warrants closer scrutiny as a comparable. This is available only to Google Earth Pro.

Create polygons. This is useful for illustrating the boundaries of a property or any other defined area. In the Pro version, you can see the area of each polygon without using the other measuring tools.

Record a "video" of any route or navigation within Google Earth. You can tilt, rotate, zoom in and out, move locations and record it all to share with another user.

Overlay images. We overlay subdivision plans, plot plans, zoning maps, engineering drawings, higher resolution aerial photos, etc. If you are lucky enough to have a third party provide such an image as a geo-referenced file all you do is open it with Google Earth and it takes you to the accurately placed overlay. (Only Google Earth Pro can import non Google Earth format GIS files.) If you must create your own overlay and are not a GIS expert, you will have to "rubbersheet" an image by placing and sizing it to your location. Once the overlay is placed, you can add other overlays and fade any to partial transparency so that information for multiple overlays can be seen on one image.

Analyze sun exposure at a particular location for any hour of day of the year. Do you suspect that direct sunlight on the north side of that valley is limited in the winter? Advanced users can even cast shadows of 3D building mockups.

Street View. They say a picture's worth a thousand words. Doing an appraisal of a regional type of property and can't drive hundreds of kms to see if a comparable is suitable or to photograph it? We often rely on trading data with other appraisers in and outside of our region. Many email us very detailed information, but some are still faxing or don't collect photos for their database. Type in the address of the property and Google Earth takes you there. If they have recorded street view data at that location, you can enter this layer and it's like being there. This is available to both versions.

Display GPS tracks/waypoints and geo-tagged photos. Importing directly from your GPS into Google Earth or using third party software, you can display your GPS inspection tracks, and, if your camera and GPS are time synched, you can show the location of each photo taken. GPS tracks are helpful for your own reference for keeping track of lengthy inspections on large or multiple properties or to clearly illustrate the scope of your inspection. Geo-tagging photos allows you to display an aerial image key map for a reader to reference the photos in your report (more on geo-tagging in a future column).

View historic aerial imagery. Many locations have multiple images available to Google Earth. The image date is displayed and a slider allows you to scroll through time. Here are the former Expo 86 lands in Vancouver in 2000, 2003 and 2010.

Navigate in Google Earth in real time. Not too many handheld GPS units allow you to import aerial photos yet. But if you connect your GPS to a laptop with a cellular connection, you can navigate in real time, in your car. This is useful if you've loaded polygons or placemarks of subject or comparable data you are currently inspecting. When the mobile version of Google Earth has some of the functionality of the PC version, this feature can go portable – what a field tool that will be.

Load and display third party layers. The federal government has an interesting site for Google Earth layers for federal lands. But BC seems to be at the forefront of Google Earth integration. There are literally dozens of usable layers available (http://archive.ilmb.gov.bc.ca/dm/wms/index.html), including the very important cadastre layer, contour lines and municipal and agricultural land reserve boundaries. Some municipalities (see Nanaimo, BC) have integrated well with Google Earth and I hope more follow.

Organize, save and share all your overlays, polygons, placemarks, GPS tracks, geo-tagged photos and 3D buildings within Google Earth. Save them to your digital work file or email them to another user. An emailed Google Earth file of any of these types will open automatically in the other user's Google Earth.

For us, integration and the ease of viewing, saving and sharing makes Google Earth a platform that is central to geo-spatial information analysis – an increasingly important field for appraisers. With Google's vast economic clout, it's likely that third party services will continue to develop for Google Earth and uses for the software will expand. Every new version of the tool has come with terrific upgrades and I'm expecting that to continue. If you don't have it, download the free version or try a free trial of Pro. Write to us at this column(tech@aicanada.ca) and I'll send you some actual Google Earth files that I've created and used.