

Conversion of Shapefile to KML : An overview of tools available

By Eva Dodsworth, April 17, 2009

For Google Earth users interested in converting their Shapefiles to KML format, I have researched many tools and programs available and have described and summarized their features below. You will see that they vary in terms of output resolution, symbol and label customization and accessibility. Most require the shapefile to be geographic WGS 1984 coordinate system as that is what is supported by Google Earth. I use ArcGIS for the coordinate conversion, but there are open source programs that will do this as well, and there are also several free converters available online. All products are free but may require proprietary software to run, such as ArcGIS or Google Earth Pro.

Product	Advanced symbology (define unique or graduate value)	Labels	Attribute Table Transfer	Customize Balloons	Notes
Geocommons : Finder This is an online tool www.geocommons.com	No	No	Yes	No	Need to register with site.
SHP2KML This is a downloadable stand-alone product http://www.zonums.com/shp2kml.html	Yes	Yes – all or none	Yes – user can select variables	Yes	I highly recommend this product. Program able to change projection and datum. Product has problems combing usage of labels and advanced symbology
Google Earth Pro This is a \$400 upgrade to Google Earth	Yes	No	Yes – all features are transferred	No	
Shp2Earth Plug-in for MapWindow GIS	No	Yes	Yes – user can select variables	Yes	Program is able to change projection and datum

(open source) www.mapwindow.org					
ArcGIS Conversion Tool within 3D Analyst	Yes	No	Yes	No	
ArcGIS ArcScript : Export to KML tool ArcScript available from : http://arcscripts.esri.com/	Yes	Yes	Yes	No	I highly recommend this product. Excellent Results

GeoCommons : Finder : www.geocommons.com

GeoCommons Finder is a browser-based application for finding, organizing and sharing geospatial data. Users can upload their own GIS files and use the tools available in the application to convert to other formats such as .shp, .csv and KML. GeoCommons also has a mapping component to it called the GeoCommons Mapper where users can map the data they have uploaded, or data that others have uploaded. This is a very simple program to use, but it also offers only a very simple conversion tool, with very little user input for kml templates. Once in GE, the user can define a single symbol colour. It automatically offers an icon for every single feature, but this can be removed in GE’s layer properties.

The process of uploading your Shapefile to their online database is very simple.

Store, Organize and Share your GeoData

Upload your geographic data and we'll make it easy to share it with the world in a variety of formats.

Pick one:

- 1 Save a Shapefile to your disk. (learn how in our video tour)
- 2 Shapefiles are made up out of three files: SHP, DBF and SHX. Click each browse button below to locate each file on your disk (GeoCommons currently only supports the WGS 84 projection):

SHP:

DBF:

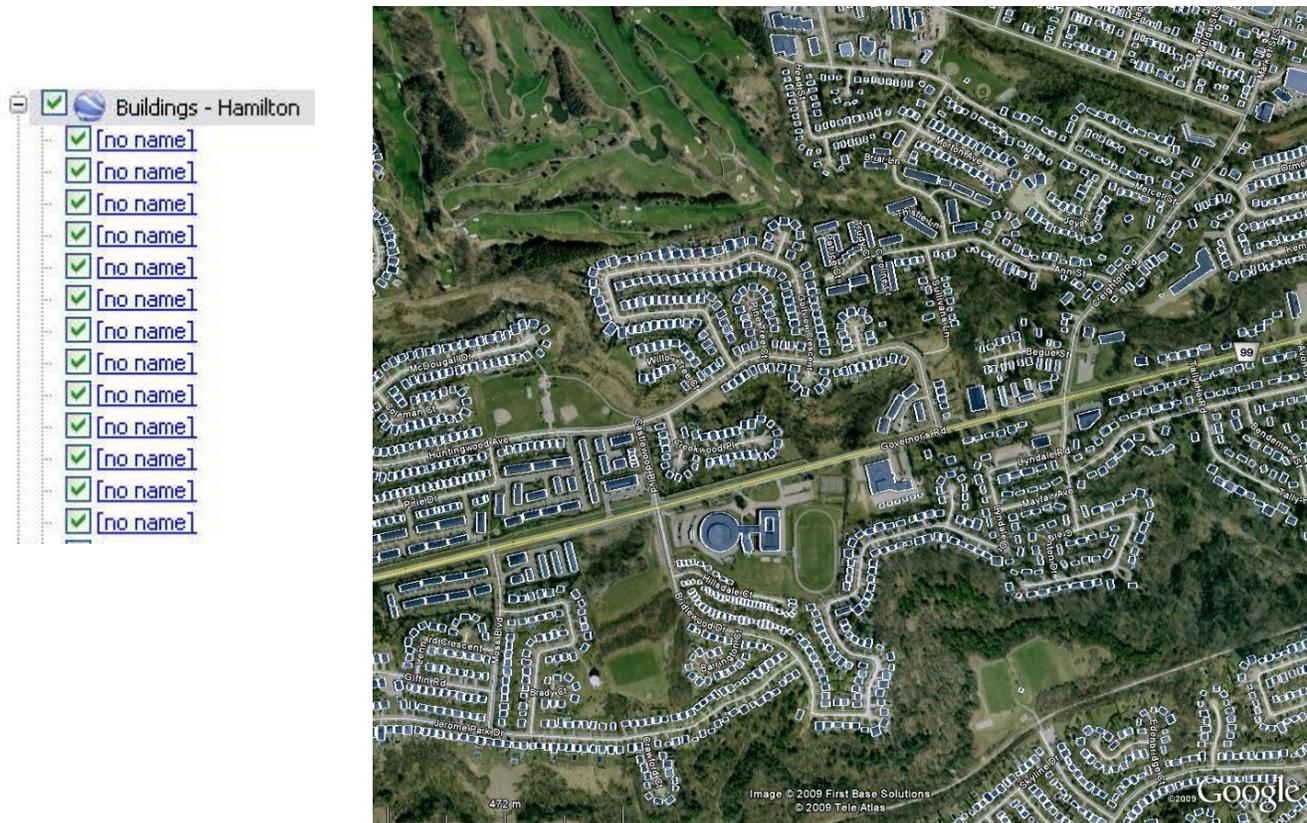
SHX:

3

Once uploaded, you can access your stored layers and then download them to your local computer in the file format that you would like.



Results in Google Earth :



The resulting KML files offer a high resolution display of features.

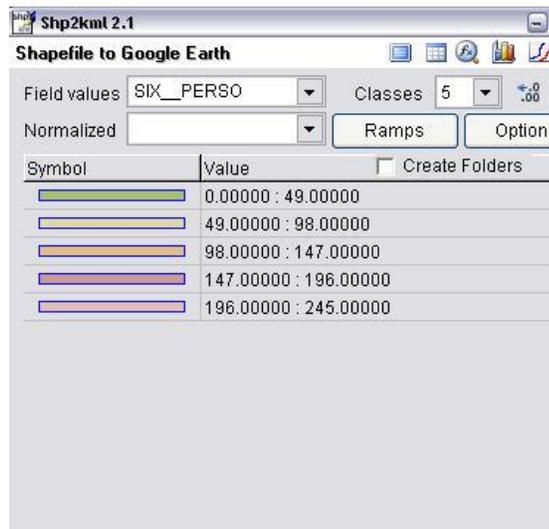
Shp2kml : <http://www.zonums.com/shp2kml.html>

Shp2kml is an excellent stand-alone application that transforms Shapefiles into KML files. The product includes a projection and datum converter as well, for those files that are not in the geographic WGS 1984 coordinate system.

The program offers several advanced features that others don't : unique and gradual values for themed features (i.e choropleth mapping) :

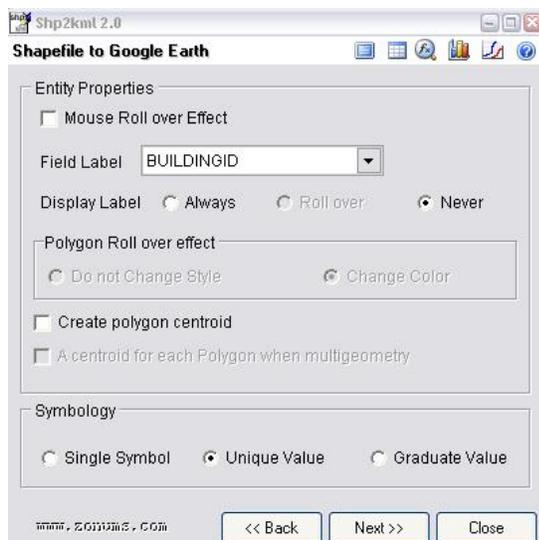


Mapping by Unique Value

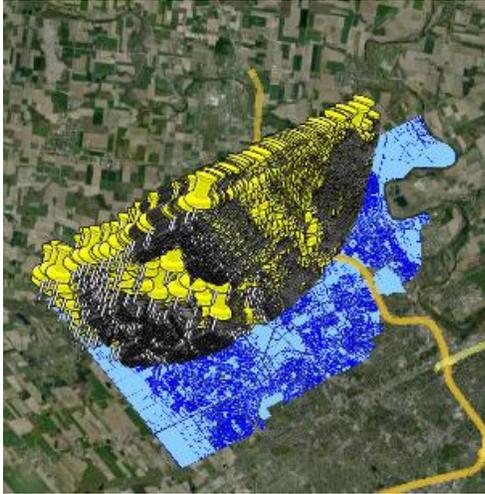


Mapping by Gradient Value

Labels :

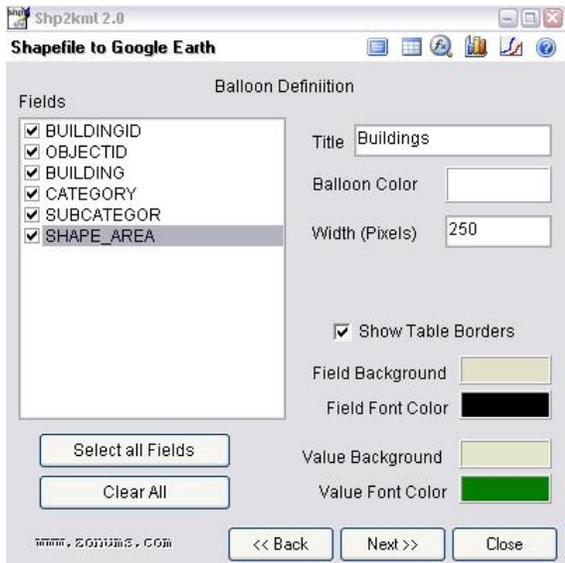


A note about labels : In order to activate the label feature, the product displays icons for every feature. This icon can be turned off in Google Earth in the layer's properties, but it will remove all unique and graduate value symbology. Therefore, I do not recommend labelling features when using advanced symbology.



Each feature has associated icon. These icons can be removed in the layer property field but all advanced symbology will convert to single symbols.

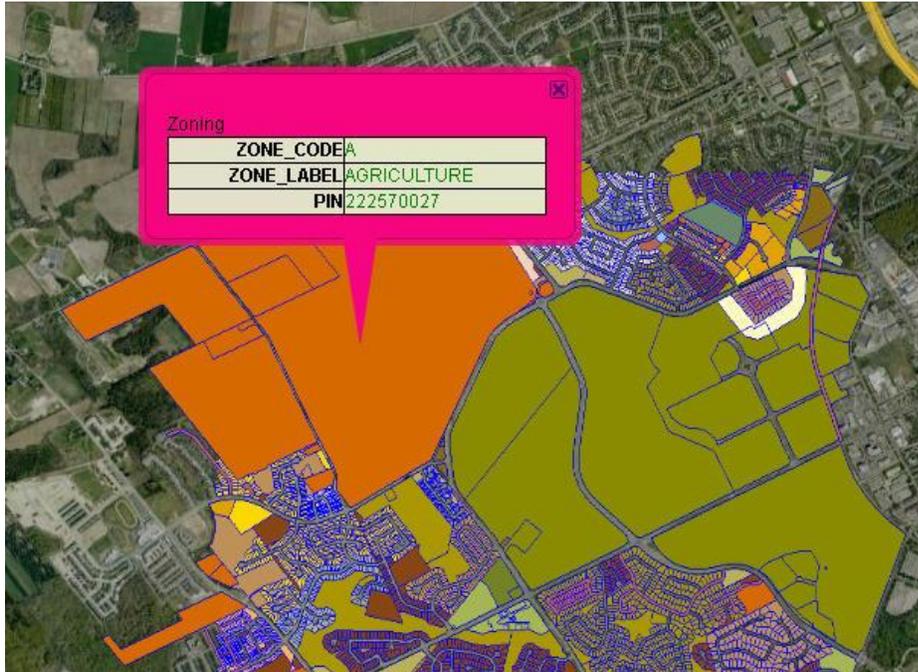
And customized balloons:



The 'balloon' where attribute information appears when features on the map are clicked are completely customizable. Users can select the attribute fields, and the colours of the balloon.

The application also offers a preview of the map as well as access to the attribute table.

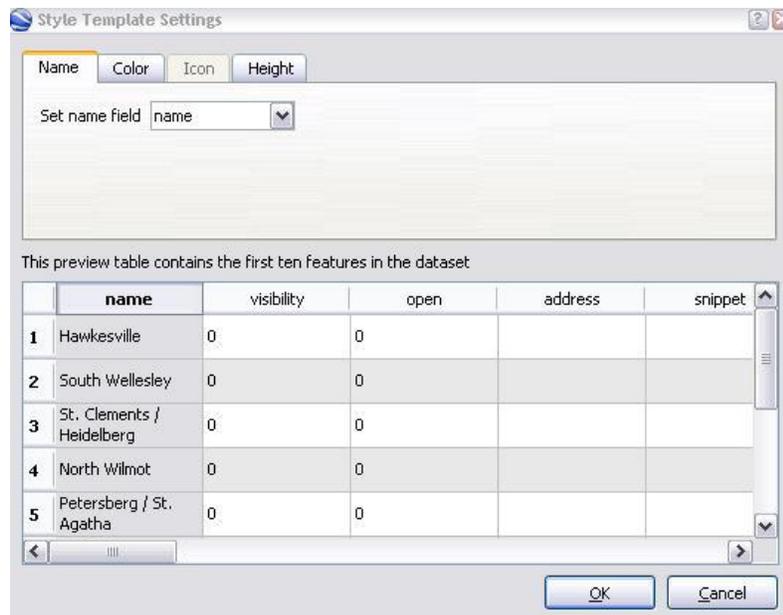
Results in Google Earth :

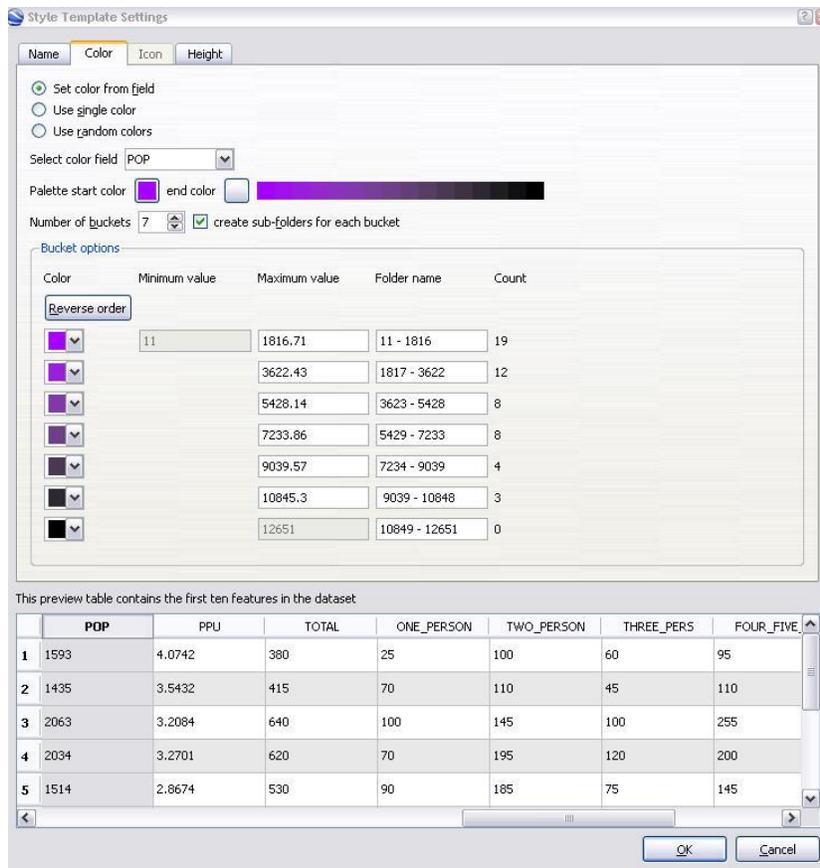


The resulting KML files offer a high resolution display of features.

Google Earth Pro

Google Earth Pro, a \$400 upgrade to Google Earth, supports a wide variety of geospatial files, including Shapefiles. Users can add Shapefiles to the virtual globe (in geographic WGS 1984 coordinate system) and apply a template style to it which selects the name field and symbol colours.



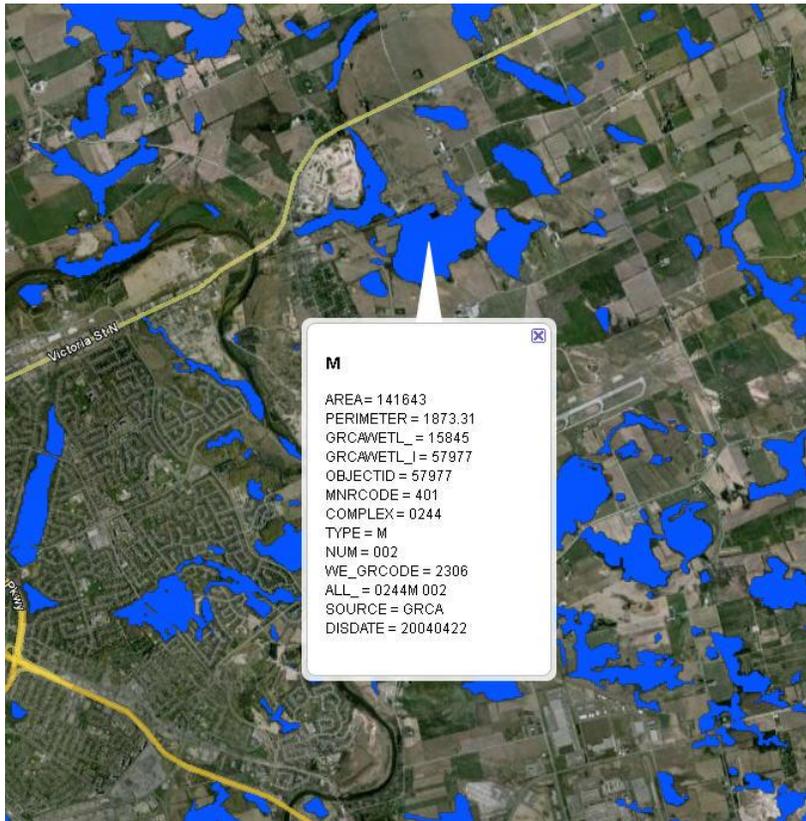


Both single symbols and thematic mapping are supported. Numeric ranges can be user-specified and can be added into individual folders so it is visible in Google Earth Pro's table of contents.



Google Earth Pro does not support labelling, nor does it offer customized balloon information and settings.

Results in Google Earth :

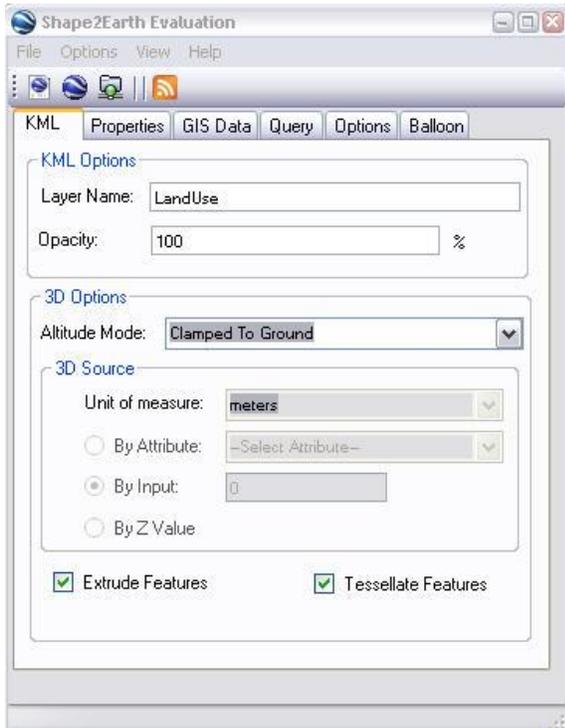


To create a KML file from this shapefile, simply right click on the layer - and “save place as” will save to KMZ format (compressed KML format).

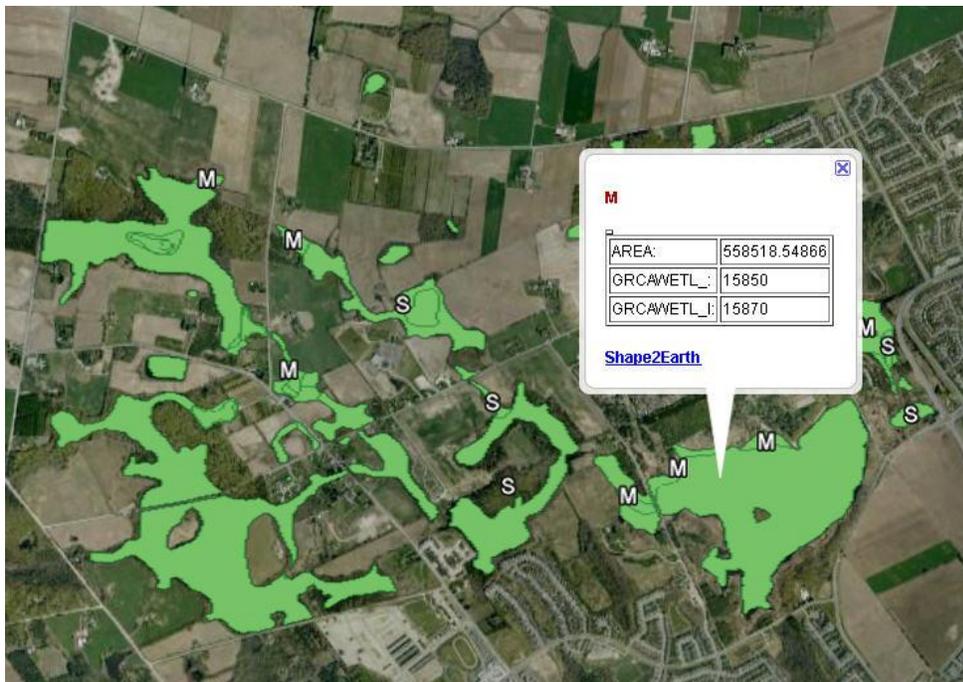
Shp2earth : www.mapwindow.org

Shp2earth is a plug-in for open source MapWindow GIS. An evaluation copy is available for free which allows the conversion of up to 500 features. Users can add Shapefiles into MapWindow GIS in any coordinate system, customize the colours, symbols and labels and convert to a geographic WGS 1984 KML file. Unlike other utilities, this one allows users to transfer the label information and in Google Earth have the choice to keep the labels turned on or off. Users can also select individual labels to appear. Unfortunately, it doesn't support thematic mapping (advanced symbology).



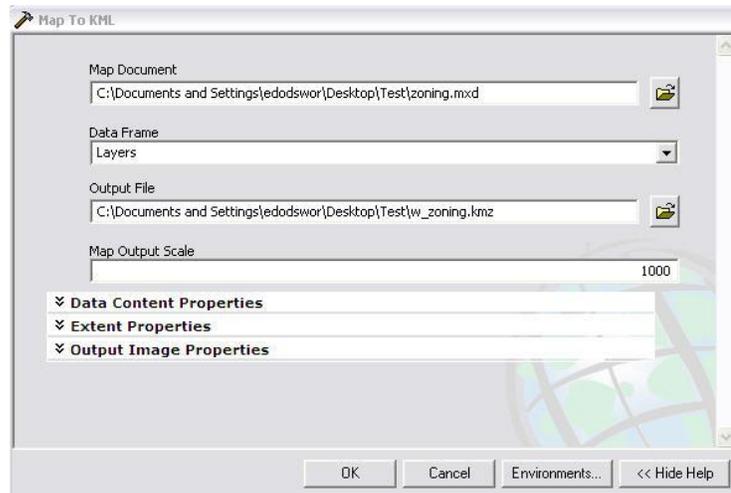
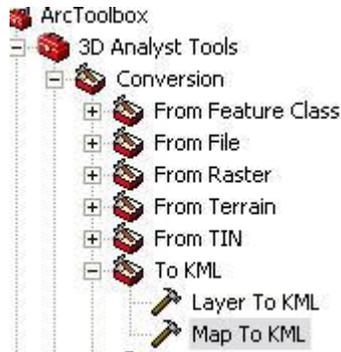


Results in Google Earth :

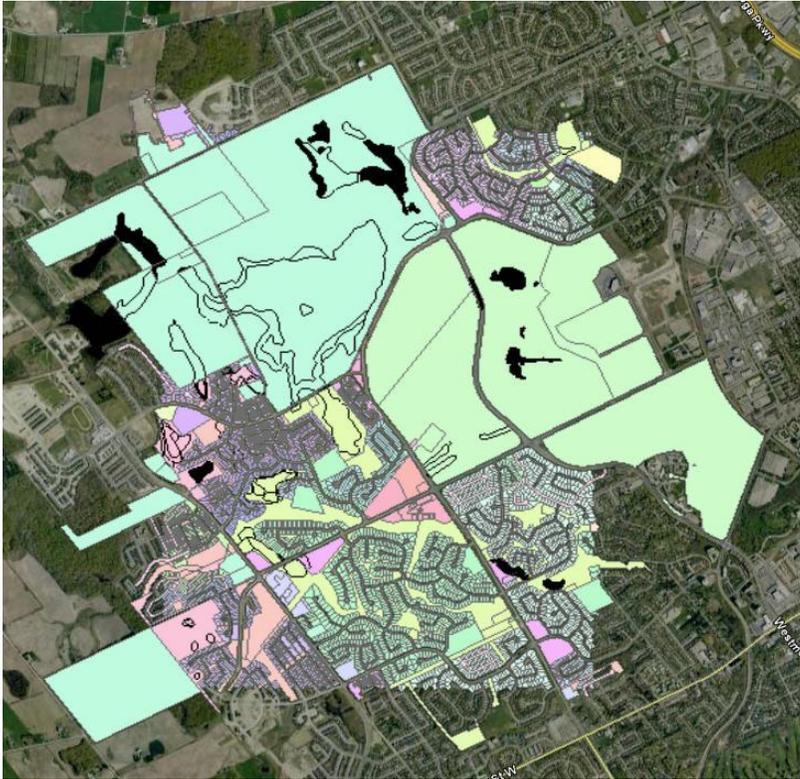


ArcGIS : Utility in ArcMap

This conversion tool in ArcMap will convert shapefiles or mxd to KML. The Shapefiles must be in geographic WGS 1984 coordinate system. All symbol settings and attribute information will be converted as well. There are however no label features included.

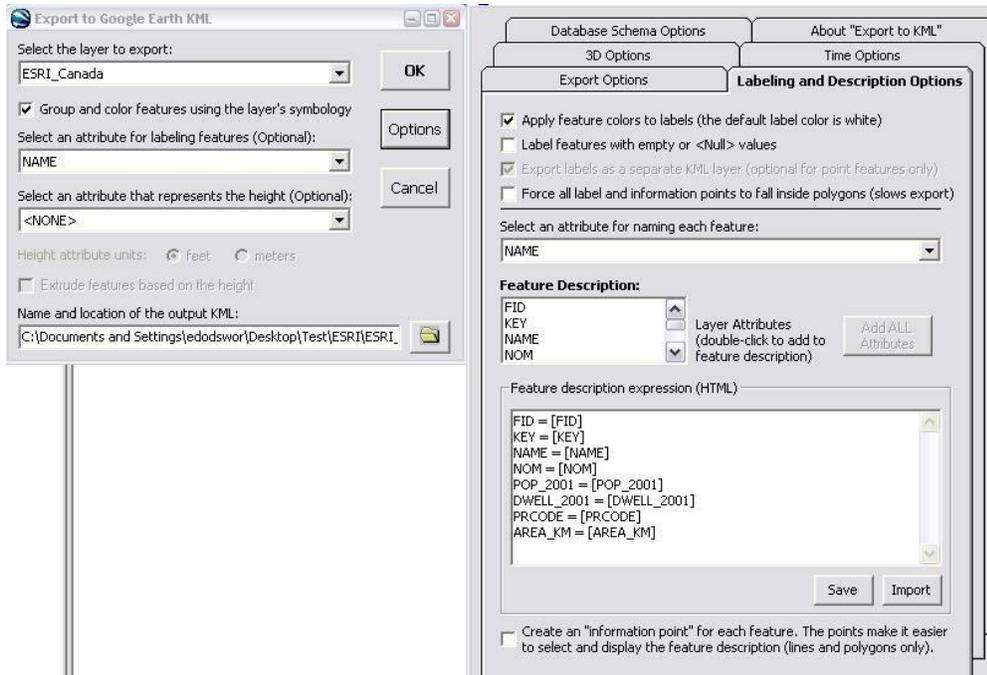


Results in Google Earth :



ArcGIS – Export to KML tool

An open source ArcScript “Export to KML” tool is available for download from <http://arcscripts.esri.com/>. The user can customize the layer’s symbology settings and then go through the properties of the Export to Google Earth KML utility to customize further settings.



The user can customize the labels, attribute information and even add timeline information for use in Google's timeline bar. The labels display as a separate file and may be turned on and off independent of each feature.

Results in Google Earth:

