

Using KML Overlays in Geomashups

You can use several forms of KML data as overlays in the geomashups you create in the Assemble Geomashup process in TNTmips Pro. These KML data types include:

- individual KML files you have created in TNTmips (e.g., via the Render to KML procedure in Display)
- individual KML files available from other sources
- Google Earth tilesets (KML image tilesets) produced by the Export Tilesets process or by the Render to Tileset procedure in Display
- KML geometric tilesets created by the Export Geometric Tileset process.

The available web mapping platforms (APIs: Google Maps, Google Earth browser plugin, Bing Maps, and Open Layers) provide varying degrees of support for KML overlays and impose varying restrictions on the type of KML data supported and whether you can use local KML data (not in a web domain). Support for KML overlays in these web mapping platforms is summarized in the table to the right.

In order for KML data to be displayed in any geobrowser, the XML-formatted text in the KML file (or files) must be read and interpreted (“parsed”). Each of the web mapping platforms has some degree of internal support for parsing KML files and displaying the KML data. MicroImages has developed a custom GeoXML Parser for Google Maps geomashups that provides enhanced support for KML overlays (including KML tilesets) in comparison to the Google Maps API. (The MicroImages and Open Layers KML parsers have similar capabilities). When you make a Google Maps geomashup, you can choose between the Google Maps and MicroImages parsers on the Custom Settings window (see illustration to the right). This window opens automatically when you add a KML overlay to a geomashup.

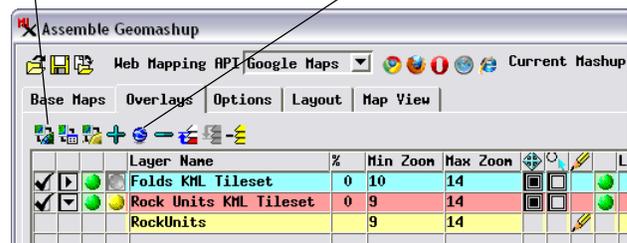
Web-based vs Local KML

The Google Maps API parser for KML requires a full URL (web address) for any KML layer to be shown, so with this parser you are limited to creating geomashups for KML layers that are already hosted on the web. Open Layers and the MicroImages GeoXML parser for Google Maps enable your geomashup to reference either local or web-hosted KML data. Support for local data (using a relative directory path in the geomashup HTML file for the KML link) also means that if you save the geomashup file in the same directory as the local KML file it references, and move the directory contents to another local location or to the web, the geomashup will continue to show the KML data. (Note that security restrictions built into some browsers prevent them from showing local KML files.)

KML Geometric Tilesets

You can use KML geometric tilesets in Google Maps geomashups using the MicroImages GeoXML parser or in Open Layers geomashups. Using the Google Maps parser for Google Maps geomashups limits your KML overlays to individual, non-tiled KML files containing relatively uncomplicated geometric data.

Add Remote Tileset or KML Add KML (Vector) Overlays



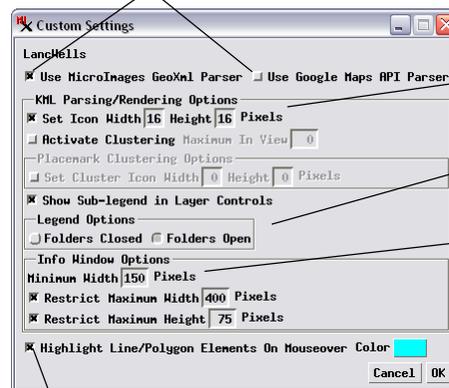
Use the *Add KML (Vector) Overlays* icon button to select a local KML file or KML geometric tileset to add to the geomashup. Use the *Add Remote Tileset or KML* button to specify the URL (web address) for simple or tiled KML data on the web (see the Technical Guide entitled *Geomedia Publishing: Adding Web Layers to Geomashup* for details on choosing custom web data).

Support for KML Overlays in Geomashups for Various Web Mapping Platforms

Web Mapping Platform	Simple KML	KML Geometric Tileset	KML Image Tileset	KML Location	
				Local	Web
Google Maps	Yes	Yes [†]	No	Yes [†]	Yes
Google Earth*	Yes	Yes	Yes	No	Yes
Bing Maps	Poor	No	No	No	Yes
Open Layers	Yes	Yes	Yes	Yes	Yes

* Google Earth browser plug-in [†] using MicroImages parser, subject to browser security limits

Choose the parser to use for a KML overlay in Google Maps mashups.



Size settings for KML point symbols (“icons”)

Option to show a clickable sublegend in the layer controls

Size settings for the Info Window that shows DataTip information for the KML elements in Google Maps

Set elements to highlight on mouseover (single KML only)

Single KML files with hundreds to thousands of elements and accompanying attributes are too large to be efficiently parsed and displayed in a web browser. KML geometric tilesets made up of many small KML tile files allow you to view custom geometric data covering large areas over a wide range of zoom levels without overwhelming a web browser’s limited processing capabilities.

Control of Info Window Size

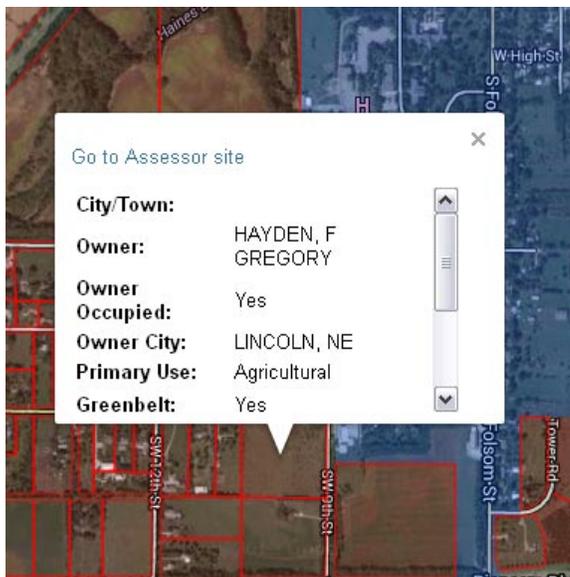
When you render a geometric object to a KML file or export it to a KML geometric tileset in TNTmips, you can transfer attribute information (name and description) to the KML file(s) created in several (over)

ways (see the Technical Guide entitled *Tilesets: Export Geometric Tilesets*). In a geomashup, left-clicking on an element in the KML overlay opens an Info Window (“balloon”) showing the associated attribute information. Using Open Layers or the MicroImages GeoXML parser for Google Maps, you can set parameters that control the size of the Info Window that appears in the browser. In the Info Window Options portion of the Custom Settings window (shown on the previous page), you can set a minimum width, maximum width, and maximum height for the window (in screen pixels). Scroll bars are automatically added if needed to show attribute information that does not fit within the specified window dimensions (see illustration below). Info window size limits cannot be adjusted when you use the Google Maps parser to create a Google Maps geomashup.

Legends and Point Symbol Settings

Using Open Layers or the MicroImages GeoXML parser for Google Maps, you have the option to expand the geomashup layer controls to include a legend for the KML elements with entries that you can click on to identify the corresponding element in the geomashup. (See the TechGuide entitled *Geomedia Publishing: Legends for Geomashup Geometric Layers*.) Element legends are not available using the Google Maps parser in Google Maps geomashups.

Several differences in the parsers relate to KML files containing point data. When you render geometric point data to a single KML file or create a KML geometric tileset, point symbols can be rendered to PNG icon files that are stored locally with the KML output. The KML files reference the icon files using relative file paths. (The Render to KML operation also offers the option to assign standard Google Earth point symbols instead; the KML file(s) produced then contain URLs to these symbols in Google’s web space). The Google Maps parser does not support the use of local icon files referenced by relative file paths; it requires absolute web addresses for referenced icons. Open Layers and the MicroImages GeoXML parser support the use of point icon files referenced by either relative file paths or web URLs.



Using the MicroImages GeoXML parser for KML data in a Google Maps geomashup, you can tailor the dimensions of the Info Window to the width and height of the DataTip information to be shown.

Furthermore, you can use the Custom Settings window to set the width and height (in screen pixels) at which the point “icon” is rendered in the browser.

Restrictions Imposed by Browser Security Measures

Because the Open Layers and MicroImages GeoXML parser actions are carried out in the web browser, they are subject to certain security measures enforced by the browser. One such restriction pertains to web-based KML data. Browser security restrictions require that the geomashup HTML file and any web-based KML data it references must be in the same web domain in order for the KML overlay to be displayed. Thus, using the MicroImages or Open Layers parser, a geomashup file posted on your website can only reference KML data that is also on your website; it cannot reference KML data on another website. This cross-domain KML access is allowed in a Google Maps geomashup if you use the Google Maps API parser because the Google Maps server converts the KML data to a different form before delivering it to the browser for display, avoiding the browser’s KML restrictions.

The limitation on cross-domain KML data access noted above also has ramifications for browser previews in the Assemble Geomashup process. The preview procedure creates a temporary local HTML file; if the KML data referenced by the preview mashup is on the web, then the resulting HTML file and KML data are not in the same web domain; browser security restrictions thus prevent display of the KML overlay except for Google Maps geomashups using the Google Maps parser. (Previews of Google Maps geomashups using the MicroImages parser can show non-tiled KML files from a web source because the preview automatically switches to use the Google Maps parser for this case.)

A summary comparison of the capabilities of the MicroImages GeoXML, Open Layers, and Google Maps API parsers is presented in the table below.

Comparison of Capabilities of MicroImages and Open Layers Parsers and the Google Maps API Parser

KML Overlay Capability in Google Maps Geomashup	MicroImages & Open Layers Parsers	Google Maps API Parser
Access to local KML data	Yes*	No
Use KML geometric tileset	Yes	No
Use rendered local point symbols (icons)	Yes	No
Set size of point symbols to show in mashup	Yes	No
Display sublegends in layer controls	Yes	No
Displays messages while loading	Yes	No
KML files can be password-protected	Yes	No
Interpreted each time the HTML page is loaded (useful for automatically-updated KML)	Yes	No
Parsed result cached server-side (faster, but may not be current)	No	Yes
Use KMZ format for KML data	No	Yes
Geomashup HTML file and KML can be in different web domains	No	Yes

* subject to security limits in some browsers