

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 also developed a custom GeoXML Parser that provides enhanced support for KML overlays in geomashups using the Google Maps web mapping platform in all browsers.

Choosing a Parser for Google Maps Mashups

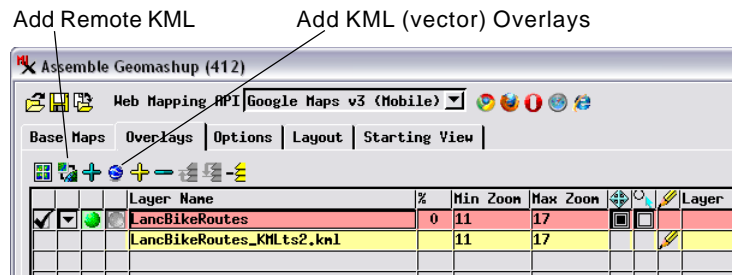
You can choose between the MicroImages GeoXML parser and the Google Maps API parser for each individual KML overlay using the Custom Settings window (see illustration to the right). This window opens automatically when you add a KML overlay to a Google Maps geomashup.

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. The MicroImages GeoXML parser enables 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 the Chrome and Opera browsers prevent them from showing local KML files.)

KML Geometric Tilesets

Using the Google Maps parser limits your KML overlays to individual, non-tiled KML files containing relatively uncomplicated geometric data. The MicroImages GeoXML parser enables your geomashups to use KML geometric tilesets as overlays in addition



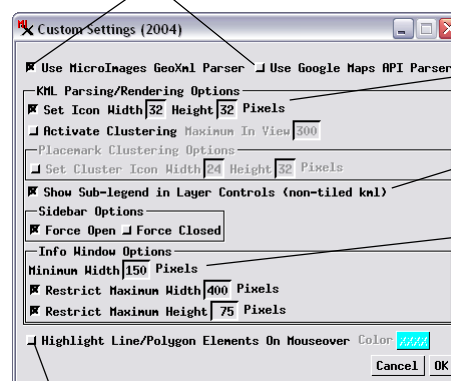
Use the Add KML Overlays button to select a local KML file or KML geometric tileset to add to the geomashup. Use the Add Remote KML button to specify the URL (web address) for simple or tiled KML data on the web (see the Technical Guide entitled *Geomedia Publishing: Adding Web Layers to Geomashup* for 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	No	No	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)

tion to simple KML files. 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 Google Info Window Size

When you render a geometric object to a KML file or export it to a KML geometric tileset in TNTmips, any attribute information that (over)

you have set to show in the element DataTip for the source object is transferred to the KML file(s) created. In a Google Maps geomashup, left-clicking on an element in the KML overlay opens an Info Window (“balloon”) showing the associated attribute information. Using the MicroImages GeoXML parser, 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, you can set a minimum width, maximum width, and maximum height for the window (in screen pixels). The 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 the mashup.

Legends and Point Symbol Settings

Using the MicroImages GeoXML parser, 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. Element legends are not available using the Google Maps parser.

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 process 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. The MicroImages GeoXML parser supports the use of point icon files referenced by either relative file paths or web URLs. Furthermore, you can use the Custom Settings window

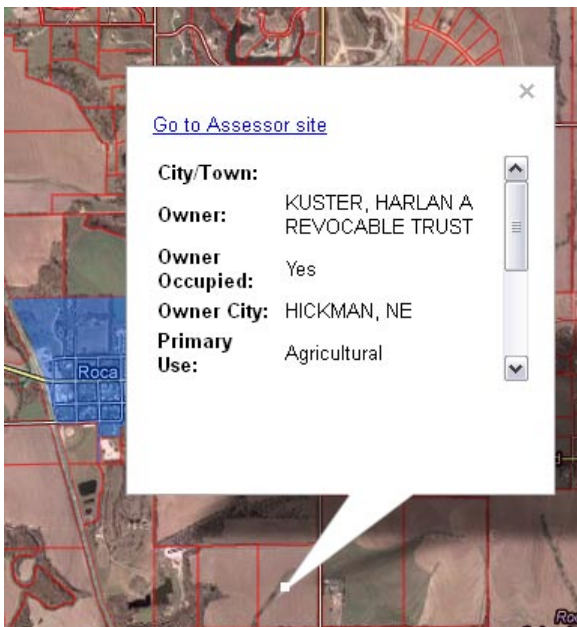
to set the width and height (in screen pixels) at which the point “icon” is rendered in the browser.

Restrictions Imposed by Browser Security Measures

Because the 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 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 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 when you use the MicroImages GeoXML parser 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 using the MicroImages parser. The preview procedure detects this case, creates the temporary HTML file using the Google Maps parser, and presents a warning message. Any KML geometric tileset overlays referenced by the mashup are not shown in the preview, however, as tiled KML data is not supported by the Google Maps parser.

A summary comparison of the capabilities of the MicroImages GeoXML parser and the Google Maps API parser is presented in the table below.



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.

Comparison of Capabilities of MicroImages GeoXML Parser and Google Maps API Parser

KML Overlay Capability in Google Maps Geomashup	MicroImages GeoXML Parser	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 browser security limits; available in Firefox, Safari, and Internet Explorer, but not in Chrome or Opera