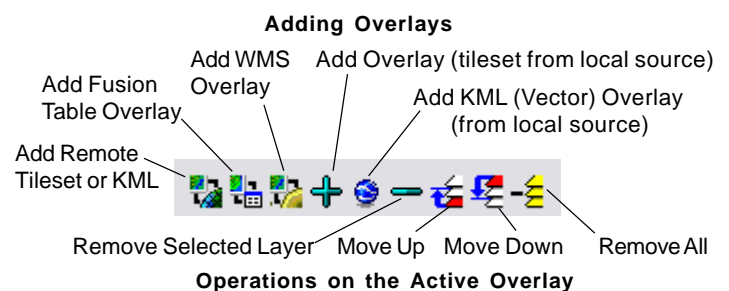# Managing Custom Overlays for Geomashups

The Assemble Geomashup process in TNTmips (Main / Assemble / Geomashup) allows you to mashup your own tilesets with geodata layers from remote sources for viewing in a web geobrowser (Google Maps, Bing Maps, Google Earth, or Open Layers). An overview of this process is provided in the Technical Guide entitled *Geomedia Publishing: Introduction to Geomashups*. You can add one or more local or web tilesets as either *base maps* or *overlays*, which are treated differently in a geobrowser and have separate layer controls. A geomashup can include more than one base map, but only one can be displayed at a time in a geobrowser. Overlays provide more viewing flexibility, as multiple overlays can be displayed simultaneously, and each overlay can be provided with controls allowing the viewer to toggle it on/off and to dynamically vary its transparency. Setting up and managing base maps for a geomashup are discussed in the Technical Guide entitled *Geomedia Publishing: Managing Custom Base Maps for Geomashups*.

Adding and Managing Overlays

The Assemble Geomashup window has separate tabbed panels for managing Base Maps and Overlays. Each panel can list multiple layers in the geomashup. When you make a geomashup for Google Maps, the proprietary Google Labels overlay (which includes roads and place name labels) is automatically shown in the Overlays list. You can add other custom overlays to use in addition to, or in place of, the Google Labels overlay. Bing Maps and Open Layers provide no proprietary overlays, and the Google Earth API does not allow a geomashup to access their proprietary overlays. As a result, Assemble Geomashup only shows a proprietary overlay when you have selected the Google Maps Web Mapping API.

The controls for adding and managing layers on the Overlay panel are illustrated to the right. The custom overlays you add to the geomashup can be standard (raster) web tilesets, geometric (SVG or KML) tilesets, simple KML files, Web Map Service (WMS) layers, or Google Fusion Tables. Separate icon buttons are provided for selecting layers from the web (remote) and from local sources. Use the *Add Remote Tileset or KML* icon button to add a web-hosted standard web tileset, KML file, or geometric tileset (KML or SVG) to the geomashup. Use the *Add Overlay* icon button to add a tileset from a local source and the *Add KML (Vector) Overlay* icon button

Adding Overlays

Add Fusion Table Overlay · Add WMS Overlay · Add Overlay (tileset from local source) · Add KML (Vector) Overlay (from local source) · Add Remote Tileset or KML

Remove Selected Layer · Move Up · Move Down · Remove All

Operations on the Active Overlay

Layer control tools for adding and managing overlays.

to add simple KML files or KML geometric tilesets from a local source. Clicking on a layer entry in the Overlays list makes it the active layer (highlighted in red; see illustrations below). The active layer is the one operated on by the controls for moving a layer up or down in the list or removing an overlay layer. The order of overlay layers in the list in the Assemble Geomashup window determines the order in which the overlays are listed and rendered in the geobrowser view (see illustrations below).
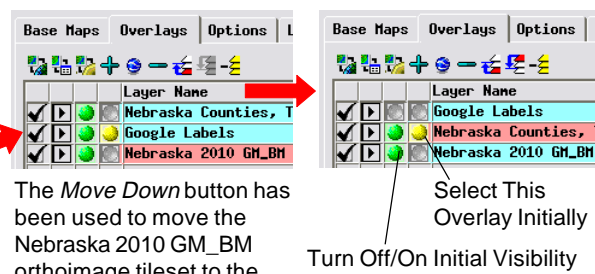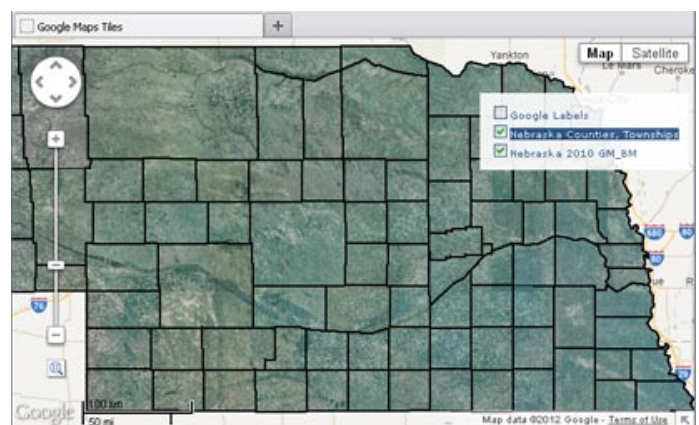

Overlays tabbed panel for a Google Maps geomashup listing the proprietary Google Labels overlay (bottom layer in list) and two custom overlays. Left-click on the Layer Name field of a layer (or any of its other fields) to make the layer active, which highlights it in red (middle layer in this example).

The *Move Down* button has been used to move the Nebraska 2010 GM_BM orthoimage tileset to the bottom of the list.

Select This Overlay Initially

Turn Off/On Initial Visibility

In the illustration to the left, the proprietary Google Labels overlay has been moved to the top and Initial Visibility turned off for it. The Nebraska Counties overlay has been set to be initially selected.

A geomashup can set which overlays should be visible and which should be turned off when it is first opened in the geobrowser. The *Turn Off/On Initial Visibility* toggle in the Overlays list of the Assemble Geomashup window sets this condition individually for each overlay (a green ball icon indicates that the overlay will be initially visible). One overlay is also always "selected" in the geobrowser view and is highlighted in blue in the overlay control list. The *Select This Overlay Initially* radio buttons in the Overlays panel of the Assemble Geomashup window set which overlay (indicated by the yellow ball marker) will be initially selected in the geobrowser. On the Options tabbed panel you can choose the

Preview of the geomashup created by the overlay settings shown above, with the Google Labels layer intially toggled off. *(over)*

type of overlay layer controls and other controls to include in the geomashup (see the TechGuide entitled *Geomedia Publishing: Geomashup Custom Overlay Controls*). The geomashup can provide each overlay with a checkbox to turn it on or off or create radiobutton controls for mutually exclusive layers. The checkbox control can also be combined with a transparency control that allows the viewer to interactively vary the transparency of the active overlay layer.

Each layer in the Overlays list in the Assemble Geomashup window is provided with a checkbox in the far left column of the list that you can use to set whether the layer is to be included in or excluded from the geomashup (including previews). This feature allows you to create several geomashups with different combinations of the same set of overlays without having to delete and re-add any layers (see illustration to the right). All newly-added overlays are initially set to be included. You can also remove any overlay layer from the list on the Overlays panel by highlighting the layer and pressing the *Remove Selected* icon button.
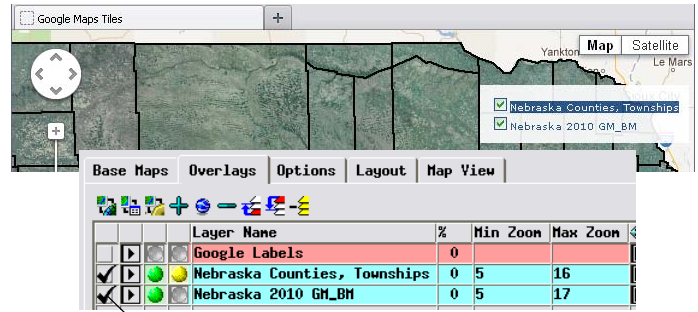
Each overlay also has a toggle button that sets whether the layer is included in or excluded from the layer controls. A green ball icon in this column indicates that overlay will be included, which is the default state (see illustration to the right). If an overlay is excluded from the layer controls, it is visible in the geomashup map view but has no layer control, so it cannot be turned off by the user.

When you add a custom tileset as an overlay, the Min Zoom and Max Zoom fields automatically show the minimum and maximum zoom level values available in the selected tileset. You can edit these values to set a more limited zoom range for that overlay if desired. (The Map View tabbed panel lets you set a zoom level range for the entire geomashup; see the TechGuide entitled *Geomedia Publishing: Map View Settings in Geomashups*).

The Transparency field allows you to set an initial transparency value (between 0 and 100%) for each overlay.

Excluding Layer Extents

Each layer on the Overlays panel and Base Maps panel has an Include Extents toggle. All layers with this toggle turned on are used together to determine the default initial spatial extents and zoom level of the geobrowser view in previews and in the saved geomashup. The Include Extents toggle is turned on by default for each custom overlay or base map added to the geomashup. It is turned off by default for the proprietary Google Maps and Bing Maps layers, which have global extents. When you have added several overlays covering different areas, you can therefore use these toggles to choose which layer(s) to use to set the initial view of the geomashup, as shown in the illustrations to the right. (You can also use controls on the Map View panel to set a desired intial zoom level and the initial map extents.)
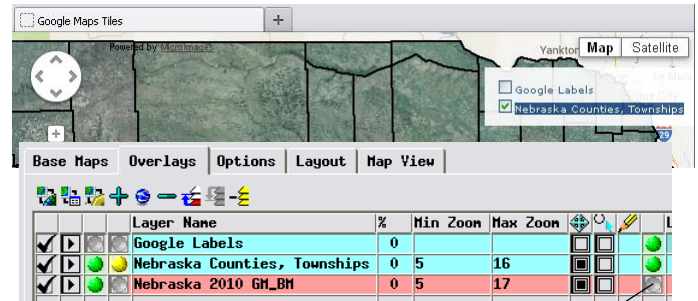
(continued)

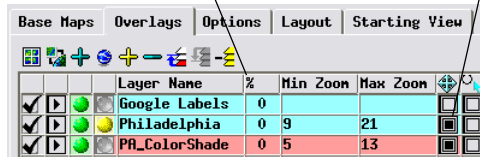Include in Output / Exclude from Output

The example Overlays listing shown above uses the same overlays as the examples on the reverse. However, here the *Include in Output/Exclude from Output* checkbox has been turned off for the proprietary Google Labels layer. As a result, the resulting preview or final geomashup (background image) includes only the two custom tileset overlays.

In the example below using the same overlays, the *Include in Layer Controls* toggle button has been turned off for the Nebraska orthoimage tileset. This layer is therefore visible in the geomashup but has no layer control, so it cannot be turned off by the user.
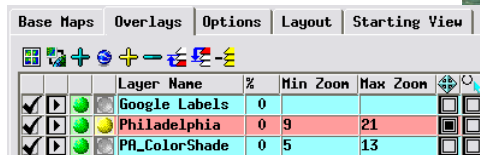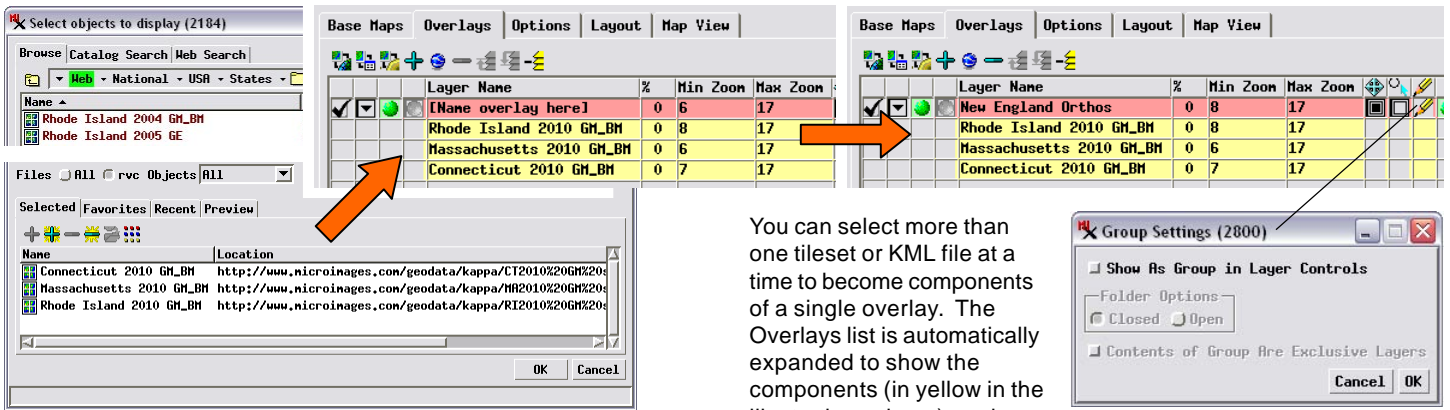

Include in Layer Controls / Exclude from Layer Controls

Transparency Percentage   Include Extents toggle

A geomashup that includes as custom overlays a color shaded-relief tileset of Pennsylvania and an orthoimage tileset of the city of Philadelphia. In the illustration above, the Include Extents toggle is turned on (black square) for both custom overlays. The larger extents of the statewide tileset therefore control the initial extents of the geobrowser view in the geomashup. The resulting zoom level is outside the range of the Philadelphia orthoimage tileset, so only the statewide tileset is initially rendered. In the illustration below, the Include Extents toggle has been turned off for the statewide tileset, so the geomashup opens zoomed in on the Philadelphia orthoimagery.
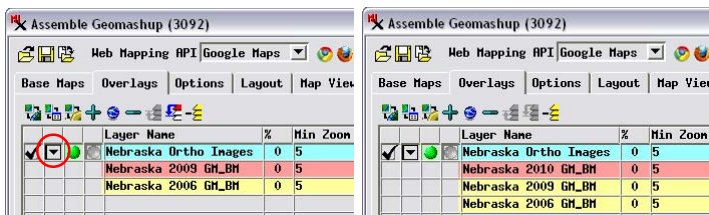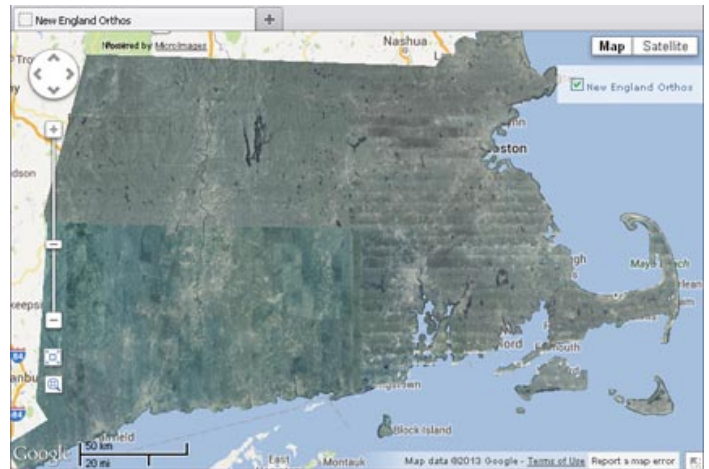
Multicomponent Overlays and Overlay Groups

You can add multiple tilesets or KML files to a single *layer set* and use the Group Settings window to designate how the components of the layer set behave in the geomashup. The components can be designated as parts of a single named layer with one entry in the geomashup layer controls, or as separate layers with individual controls within a group of layers (with a group control that allows the entire group to be turned on or off).
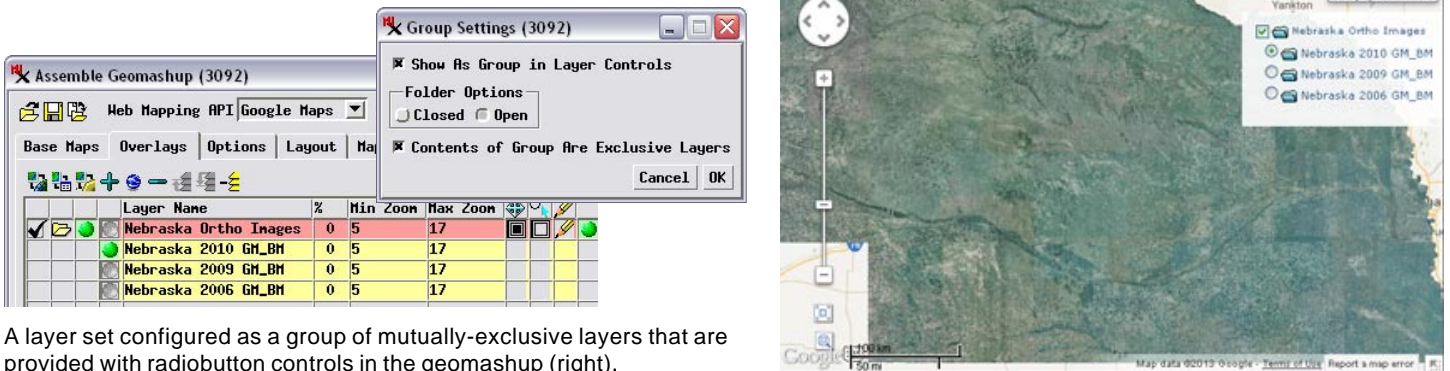
You can select more than one tileset or KML file at a time to become components of a single overlay. The Overlays list is automatically expanded to show the components (in yellow in the illustrations above), and placeholder text is shown for the overlay name; you must edit the name field to provide a suitable name for the overlay. The Group Settings window automatically opens when you select multiple objects at the same time. If you do not turn on the *Show As Group in Layer Controls* toggle on this dialog, the component objects are added to geomashup as a single overlay without separate layer controls, as shown in the preview below, which shows orthoimage tilesets of three adjacent states.

You can added components to an existing layer set by:
- turning on the *Show/Hide components of overlay* button (circled in red above left)
- left-click in any field of one of the components to highlight it (orange color above)
- use the Add... buttons to add one or more tilesets, KML files, WMS layers, or fusion tables to the layer set.

You can add multiple layers in a single operation, as illustrated at the top of the page; the Group Settings window opens automatically in this case. You can also add components one by one to an existing layer set (see illustration above left), in which case you can manually open the Group Settings window using the Custom Settings icon button for the layer set.

The *Show as Group in Layer Controls* toggle in the Group Settings window determines how layer sets are presented in a geomashup. If this toggle is turned off, the components of the layer set are added to the geomashup as a single overlay. For example, the overlay could include several spatially adjacent tilesets (as in the illustrations at the top of the page), or several tilesets with different sources and zoom level ranges but that cover the same geographic area. If the *Show as Group in Layer Controls* toggle is turned on, the layer set components are treated as individual overlays within a group and are provided with individual layer controls within the geomashup. Layers in the group can be provided with checkbox controls or can be set to be mutually exclusive, with radiobutton controls, as in the example illustrated below (see the TechGuide entitled *Geomedia Publishing: Grouping Overlays in Geomashups* for details).

A layer set configured as a group of mutually-exclusive layers that are provided with radiobutton controls in the geomashup (right).