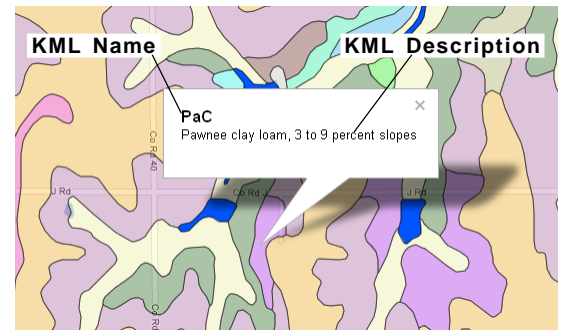


DataTip Design for Google Maps/Earth Info Windows

In TNTmips you can set up DataTips for your geospatial objects to dynamically show attribute information in TNT view windows. When the mouse pauses over any spatial element (such as a point, line, or polygon), a pop-in DataTip shows the attribute information for that element using the database field you have designated as the DataTip source. Google Maps, Google Earth, and the Google Earth browser plug-in employ a somewhat similar concept to present descriptive information for the map features in KML overlays in these geobrowsers. An Info Window (also called the information window, info balloon, or description balloon by Google) is displayed over the map when the user left-clicks on a map feature. The info window shows particular information stored with the feature in the KML file: the *name* of the feature at the top of the window, followed by the *description* below it (see illustration to the right).



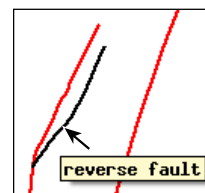
Google Maps info window for a soil map polygon in a KML geometric tileset showing the soil symbol as the KML name at the top followed by the full soil name as the KML description.

In TNTmips there are several ways in which you can convert fully styled geometric data into KML form for display in Google Earth or Google Maps. For map data covering small areas you can use the Render to KML procedure in the Display process to render the contents of the View window to a single KML file. For map data covering large areas (states, provinces, countries) you can use the Export Geometric Tileset process to render a styled vector object into a KML geometric tileset, a tiled multi-resolution KML form (for details see the Technical Guides entitled *Spatial Display: Render Map Layouts to KML* and *Tilesets: Export Geometric Structures*). Both of these operations create a KML feature for each geometric element in your input data, and in so doing they also automatically transfer the TNT DataTip information for that element to the corresponding KML feature. The structure and formatting of your DataTip text is automatically used to assign different parts of the DataTip information to the KML name and description, so you can design the DataTip in your source vector objects to control the way in which attribute information is shown in Google's info window for the resulting KML layer.

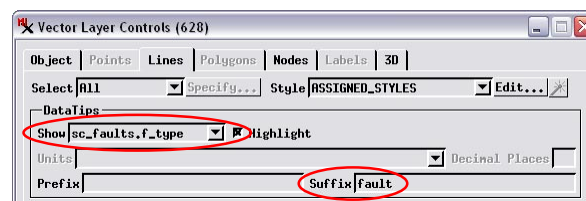
KML Name from Single-Line DataTip

If elements in the vector object you convert to KML have DataTips consisting of just a single line of text, then that DataTip text is automatically transferred to the KML *name* attribute for each map feature. The single line of DataTip text can come solely from the contents of a field in an attached database table, or the database attribute can be augmented with a static prefix and/or suffix that you specify in the Layer Controls window (see illustrations to the right). The KML name from a single-line DataTip is automatically shown in bold in the info window in Google Maps and the Google Earth browser plug-in, but in non-bold font in the desktop Google Earth application.

Right, a TNT DataTip for a geologic fault line in a vector object. The DataTip consists of a single line of text showing the type of fault. The settings for this line DataTip in the Vector Layer Controls window are shown below. The fault type is read from the specified field in an attached database table; the word "fault" is appended as a suffix added to the attribute value.



Google Maps geomashup of geologic map data using KML files. The Google info window for a fault line feature shows the KML name for the line created from the single-line DataTip in the source vector. Google Maps automatically shows the name in bold font.



KML Name and Description from Multiline DataTip

You can create DataTips showing multiple lines of data drawn from any number of database fields by using a string expression database field as the basis for the DataTip. A string expression can include references to fields in the same or related database tables, static text, and formatting (see the Quick Guide entitled *Multiline DataTips*). A two-line DataTip can be produced by a simple string expression that references two database fields and uses the newline character code ("`\n`") to introduce a line break (see illustration to the right).

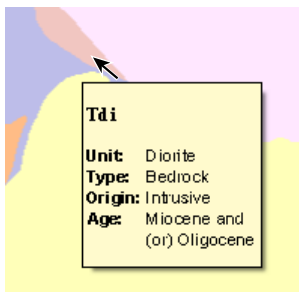


Two-line TNT DataTip from a simple string expression database field (text in box) using the newline character code (`\n`). The corresponding Google info window is shown at the top of this page.

(over)

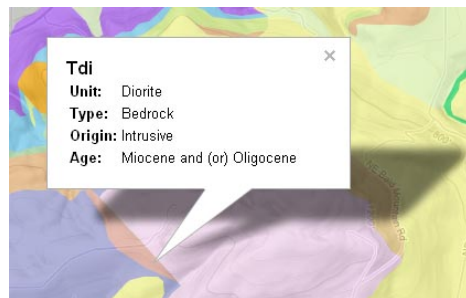
When graphic elements using this type of two-line string expression DataTip are rendered to KML, the first line of the DataTip is automatically transferred to the KML feature *name* and the second line to the feature's KML *description*. The result is a two-line Google info window, as shown in the illustration at the top of the previous page.

Both TNT DataTips and Google info windows support HTML formatting to set font styles, headings, and tables with multiple columns to show a list of attributes with a label to the left of each attribute. An example for a geologic map polygon layer is shown below. You can use any of the HTML heading tags (<h1>, <h2>, <h3>, etc.) to create a bold heading at the top of the TNT DataTip. When you render a vector object to KML form, the HTML-formatted DataTip heading for any element is transferred to the corresponding KML feature's *name* attribute. The Google info window sets the font size for the *name* automatically based on the heading rank, with the largest font set for <h1> and decreasing font sizes for the subsequent heading ranks. The body of the DataTip below the heading is automatically transferred with its formatting to the KML feature's *description*. In the HTML-formatted DataTip example shown below, the cells in the left column of the table include a style property for the <td> (table data) elements that sets bold styling for the attribute labels.



Left, a TNT multiline DataTip from a string expression database field that uses HTML tags to specify a heading at the top and a table with rows and columns for the body of the DataTip text. The string expression used is shown in the text in the box below.

Right, Google Maps info window from a KML geometric tileset created from the vector object shown at the left. The DataTip heading is transferred to the KML name while the table that forms the body of the DataTip is transferred to the KML description.



```
'<H3>' + MAPUNITS.PTYPE + '</H3>' +
'<table style="font-family:arial,Helvetica,sans-serif">' +
'<tr> <td style="font-weight:bold">Unit: </td> <td>' + MAPUNITS.UNIT + '</td> </tr>' +
'<tr> <td style="font-weight:bold">Type: </td> <td>' + MAPUNITS.CAT1 + '</td> </tr>' +
'<tr> <td style="font-weight:bold">Origin: </td> <td>' + MAPUNITS.CAT2 + '</td> </tr>' +
'<tr> <td style="font-weight:bold">Age: </td> <td>' + MAPUNITS.AGE + '</td> </tr>' +
'</table>';
```

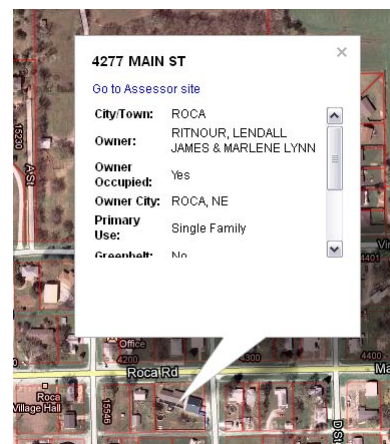
Embedding Web Hyperlinks in Info Windows

A Google info window can include a hyperlink that can be clicked to open a web page. You can set up such a hyperlink as part of a TNT DataTip string expression in the source vector object. Although the hyperlink is not useable in TNT DataTips, it is transferred along with the rest of the DataTip information when you render the object to a KML file or KML geometric tileset. In the example shown below, a KML tileset of property parcel polygons includes in the info window a hyperlink to open a page on the county assessor's website with more detailed information about each specific parcel polygon.

Parcel DataTip String Expression (table contents omitted)

```
'<H3>' + parcel.Situs_NoCity + '</H3>' +
'<p style="font-family:arial,Helvetica,sans-serif">
  <a href = "' + parcel.P_ID + '" target="_blank" >
    Go to Assessor site </a>
</p>' +
'<table style="font-family:arial,Helvetica,sans-serif">' +
  ...
'</table>';
```

Right, a Google Maps info window for a property parcel polygon in a KML geometric tileset. The info window includes a hyperlink that can be clicked to open a web page on the county assessor's website containing more detailed information about the parcel. The HTML formatting for the hyperlink is set up in the DataTip string expression in the source vector object (shown above). In this example the parcel-specific URL is set up in another string expression field, parcel.P_ID. That expression, shown below, contains parameters specific to the target website.



String Expression for the parcel.P_ID field that generates a parcel-specific URL string

```
string http$, more$, url$;
http$ = "http://orion.lancaster.ne.gov/appraisal/publicaccess/PropertyDetail.aspx?";
more$ = "PropertyID=" + NumToStr(parcel.PROP_ID) +
"&dbKeyAuth=Appraisal&TaxYear=2011&NodeID=11&PropertyOwnerID=" + NumToStr(parcel.PROPOWN_ID);
url$ = http$ + more$;
return url$;
```