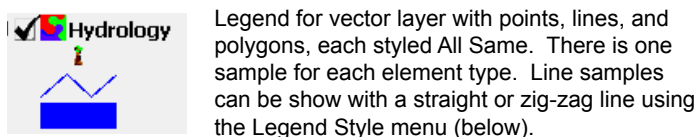# Vector and Shape Layer Legends

Legends in the View sidebar for vector and shape layers show style and attribute information for the displayed geospatial elements. For a vector layer, a legend is shown for any element type in the object that has been set to be displayed. A vector layer thus could have legends for points, lines, polygons, and/or nodes. A shape object can only contain one type of geometric element, so a shape layer can have only one element-type legend. Legends can be shown for elements with any styling option: All Same, By Attribute, By Theme, and By Script.

Legends for All Same Style

When an element type is styled All Same, a single style sample is shown for each element type in the legend, and there are no labels. The legend sample for line elements with any style option can be shown as either a straight line or a zig-zag line using the Legend Style menu in the Legend control box on the Lines tabbed panel of the Vector Layer Controls window or the Element tabbed panel of the Spatial Layer Controls window for a shape layer (see illustration below).

Legend for vector layer with points, lines, and polygons, each styled All Same. There is one sample for each element type. Line samples can be show with a straight or zig-zag line using the Legend Style menu (below).
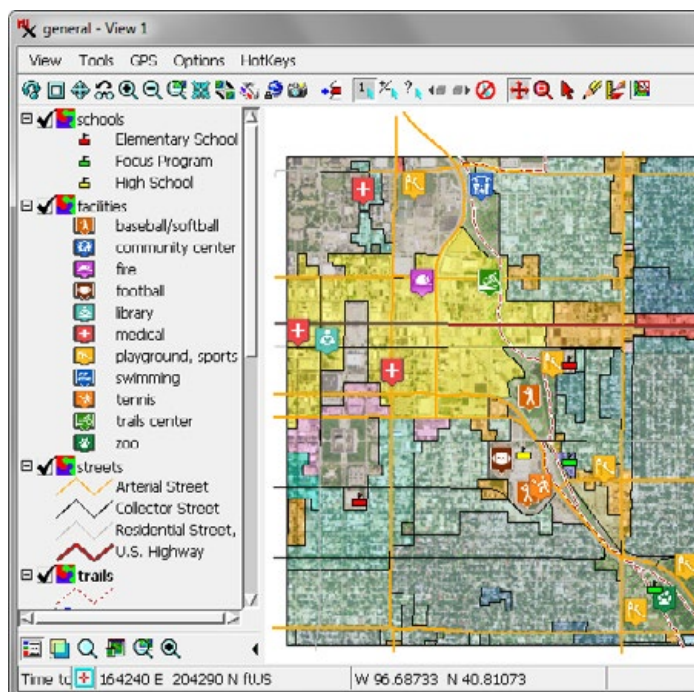

lines styled By Attribute, with attribute labels

Legends for Style by Attribute

Legends for layers styled By Attribute have a legend entry for each element style with a style sample and a label shown to the right of the sample. The default legend label is set from the database field that is the basis for assigning the styles. You can use the Legend Label pushbutton in the Legend control box in the Layer Controls window to choose a different field to provide the label text. Legend entries are sorted alphabetically by the label field by default, but you can use the Sort Field pushbutton to choose a different database field to determine the order of the entries, as illustrated below and to the right.
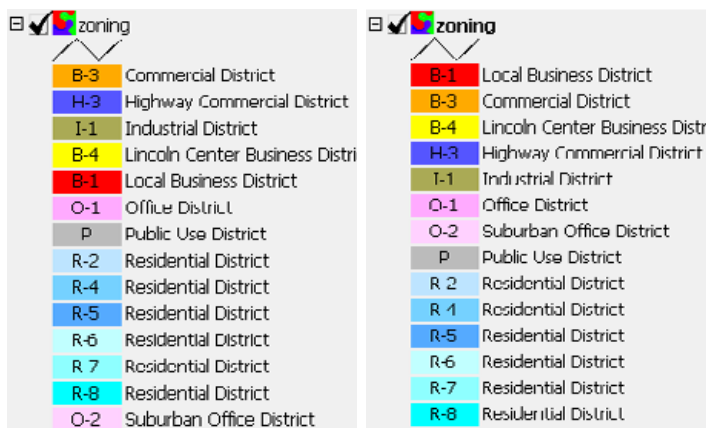

The Legend controls allow you to choose database fields as the source for the legend labels, the sorting order, and (for polygons) a sample label shown within the legend sample.

View window with sidebar legends for a number of vector layers (point and line element legends visible in this illustration).

Polygons styled By Attribute can have both a legend label (to the right of each sample) and a short sample label (inside the polygon samples). Use the Sample Label pushbutton on the Polygons panel in the Layer Controls window to choose a database field with a short abbreviation or code string to provide the sample label text (the sample width is fixed and does not expand to accommodate wider labels). You can then choose a field with longer, more descriptive text for the legend label (as in the illustration below).
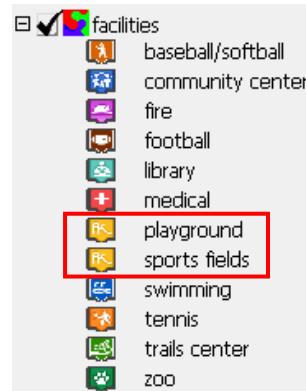

Legend for a vector object with polygons mapping city zoning districts. The sample label (inside the style sample) shows the zoning code, while the legend label describes the zoning use. The legend on the left has entries sorted by the legend label field, while the one on the right is sorted by the field used for the sample labels.
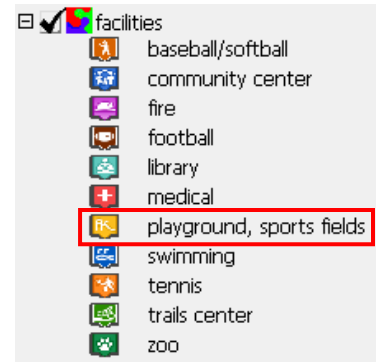
(continued)

When you style elements By Attribute, there may be cases in which the same style is assigned to closely-related attributes. You have the option to show a separate legend entry for each attribute regardless of the styles assigned, or to merge entries that share the same style (see illustration to the right). The label for a merged legend entry lists up to two attributes associated with that style, separated by commas. If there are more than two attributes, an ellipsis (...) follows the second attribute name in the label. You choose between these behaviors using the *Merge duplicate styles in legend* toggle button on the Object tabbed panel of the Layer Controls window.

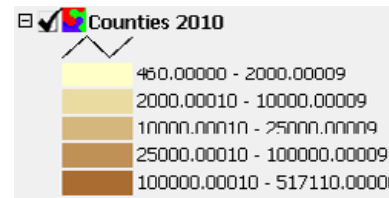## Legends for Layers Style By Theme or By Script

When an element in the layer is styled by theme (theme-mapped), which assigns styles to sets of elements by value ranges of an associated numeric attribute, the legend automatically includes a sample for each theme interval and labels showing the numeric range of each interval. For points or lines styled By Script (using simple style scripts or CartoScripts), legend samples for particular styles can be added manually to the legend by selecting representative elements in the View. For more information see the Technical Guide entitled *Legend Samples for CartoScript Styles*.

Sidebar legend for vector points styled By Attribute in which two entries (red box) share the same style.

With the option to merge duplicate styles turned on, one legend sample is shown for the style and the label lists the associated attributes, separated by commas.

Sidebar legend for polygon elements styled By Theme, with automatic labels that show the value range for each theme style.