



What's NEW in Maptitude® 6.0

Maptitude 6.0: New Features Overview

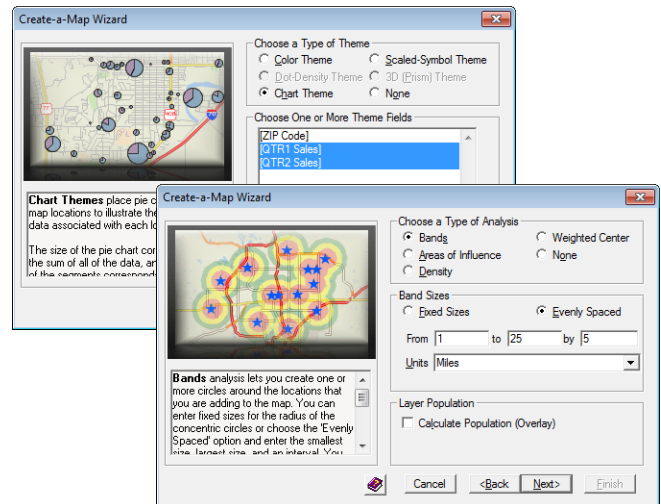
Maptitude 6.0 is a major new release of Caliper Corporation's award-winning GIS and mapping software. This latest version of Maptitude continues to provide easy-to-use, professional mapping tools at an affordable price. This version also contains the most detailed and accurate U.S. data ever included with Maptitude.

The new features and enhancements enable you to create the maps you need faster, with better accuracy, more attractively, and in a wider variety of formats than ever before.

Improved Create-a-Map Wizard

Create-a-Map Wizard™ is now more robust and easier to use. When you need to map your own data, descriptive text and illustrations accompany each option so that you can understand and envision what each step will accomplish.

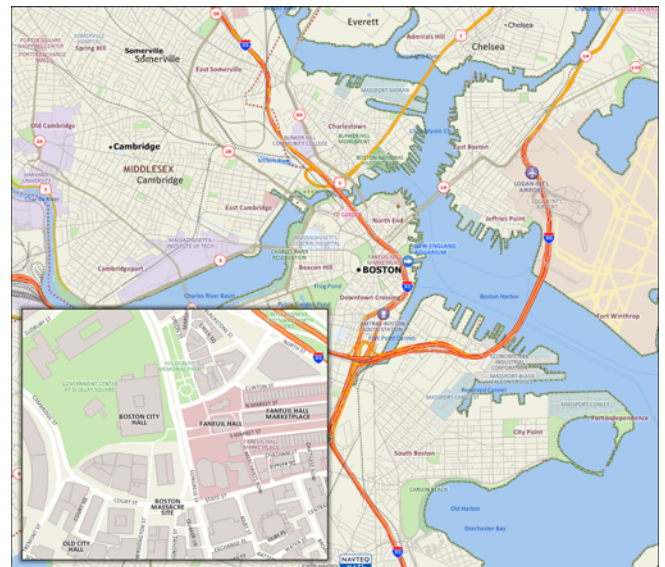
The Create-a-Map Wizard maps are all revised. They use the latest geography and are simpler to customize. The maps also take advantage of the new features in Maptitude including autoscaled feature display settings and new label alignment, display, and placement options.



New and Updated Data

New U.S. data sets provide access to up-to-date geographic information. Maptitude includes a 2010 NAVTEQ® map, allowing accurate address locating and street visualization, plus robust data on which to calculate shortest paths, network bands, and network partitions.

Other new U.S. layers from NAVTEQ® include building footprints for many urban locations, highways, railroads, and landmarks. The Points of Interest (POI) layer contains over 2 million named locations that range from public facilities to commercial buildings including shops, restaurants, and retail stores.



Also included is the Caliper 2010 third-quarter ZIP Code® update. The 5-digit ZIP Code boundaries are a nationwide area database with ZIP Codes for all 50 states, the District of Columbia, Puerto Rico, and the territories. There is an updated point database of ZIP Code centroids for the entire country and 3-digit ZIP Code Areas. The ZIP Code area layers now extend into non-deliverable areas, providing complete coverage of the continental U.S.

Finally, Maptitude includes refreshed U.S. Census boundaries based on the TIGER 2007 geography. Counties reflect the 2009 definitions, Places, MCDs, and Indian Reservations reflect the 2007 definitions, and Tracts reflect the 2000 definitions. The CBSAs reflect the latest OMB definitions (2009).

Enhanced Labeling Capabilities:

Previous versions of Maptitude required you to use manual labels to customize the placement of a label. Manual labels, however, were freehand items that were no longer associated with the feature that was labeled. Therefore, changes to the labels did not affect any manual labels. Maptitude 6.0 now allows you to customize individual labels, eliminating the need for manual labels. In addition, the automatic label engine in Maptitude is completely revamped:

- Move, callout, and rotate individual labels.
- Double-click on any label to change its style, prioritize its display, or hide it.
- Multiline labels are Left-, right-, or center-aligned depending on their location with respect to the feature.
- Automatically move or hide a label when only a portion of it is visible in the map.
- Adjust the leading of multiline labels.
- Use different colors for labels that contain data from multiple fields.
- Choose whether to have point labels parallel with lines of latitude, horizontal, or at a specific angle.
- Choose whether to have area labels parallel with lines of latitude or always horizontal.
- Add halos or shadows to labels and specify their color and opacity.
- Automatically suppress labels that overlap with chart themes and/or point icons.
- Display hidden labels.

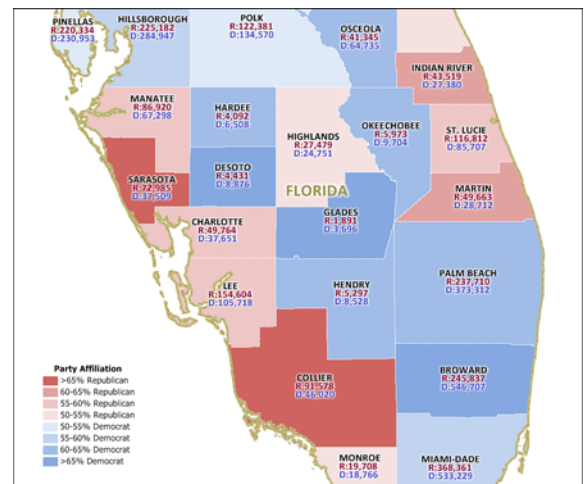
Smart Alignment

Improvements to the “Smart Align” option maximize the number of labeled features.

- For all layers, more label locations and positions are considered.
- Labels for area features display even when only a portion of the feature is visible.



You can add halos to labels, change the style of individual labels, add callout lines, prevent labels from extending beyond the edge of the map, and label partially visible areas.



For labels based on data in multiple fields, you can use a different color for each separate field used in the label.

New Map Styles:

Mapitude 6.0 gives you much greater flexibility in setting the styles of map features, themes, and selection sets.

Area Layers

- Set a level of opacity for area layer fill styles.
- Choose from a number of included image files or use your own image in BMP, EMF, GIF, ICO, JPEG, PNG, or TIFF format for the fill style.

Point Layers

- Set a level of opacity for point layer icons. This is particularly useful when using scaled-symbol themes on a point layer so that overlapping features are clearer in areas with a high density of features.
- Whereas previous versions of Maptitude only supported BMP files for point layers, you now can use an image in BMP, EMF, GIF, ICO, JPEG, PNG, or TIFF format.
- When using images for point layers, the default icon folder is automatically displayed and many new images are included.

Line Layers

- Set a level of opacity for line layer segments. This is particularly useful for showing a dense street network behind which is a color theme that you want to stand out.

Themes

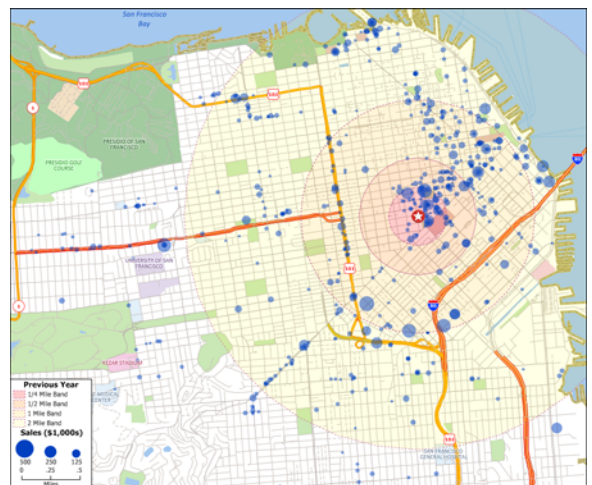
- Previous versions of Maptitude repeated colors in list-of-value themes after no more than 16 colors. There are now 15 list-of-value themes, most of which have at least 60 unique colors.
- Modify the border styles for chart themes.
- Change the opacity for theme styles.
- The Color Theme "Include counts in legend" option can always be chosen in order to list in the map legend the number of records in each thematic class.

Miscellaneous

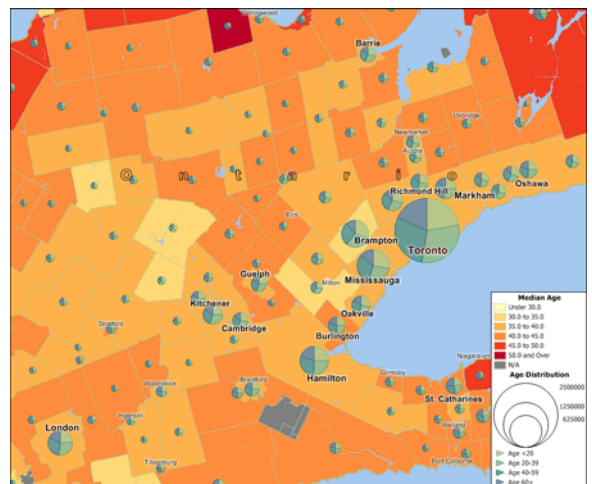
- Autoscale individual feature display settings.
- Modify the styles of selection sets directly from the Selection toolbar.
- Set preferences for geocoded point styles and for the Info tool.



Use images as fill styles for area layers or the map background



Set the opacity of features to make them translucent



Customize the borders and opacity of chart themes

New Documentation

Maptitude continues to offer numerous ways to get you started with the software. There is a brand new extended tutorial (Chapter 2 of the Maptitude User's Guide) to familiarize you with the most common features in Maptitude, along with new and revised 60-second tutorials and training videos. The 60-second tutorials and video tutorials are also now incorporated into the online help.

Graphics Framework

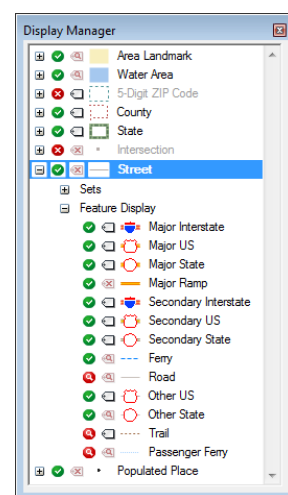
The visual capabilities of Maptitude have been enhanced considerably. The modernized Windows graphics framework ensures:

- Smoother line and icon drawing
- Improved display of maps, layouts, figures, and legends
- Improved interface graphics and printing
- Improved output as bitmaps/metafiles
- Improved pattern fill printing
- Appropriate scaling to the system dots per inch (DPI)

Enhancements to the Display Manager:

Maptitude 6.0 improves the map window Display Manager by providing:

- Updated buttons that better define layer and label status
- A command to list all dataviews on a layer, including joined views
- A command to restore autoscale settings
- The ability to display layers that are autoscaled off
- The ability to view and control autoscale for individual Feature Display settings



Analysis Tools

Maptitude 6.0 contains two new analysis utilities:

- **Create Districts:** Create a new geographic file of districts using selection sets or your table and any area geographic file. Maptitude can automatically join to the ZIP Code, county, or state layers if it detects an appropriate join field in your table, even if you do not have a map open with the appropriate layer. The districts you create can be non-topological and overlapping.
- **Animate GPS Data:** Track the locations of vehicles (or other moving objects) over time using a schedule table containing information on one or more vehicles. Track data often come from GPS devices. You can show all or selected vehicles on the map as labels that Maptitude moves based on timestamps. You can also use a selection set to animate just some of the records in the track data.

Existing Tool Improvements

Several modifications to existing tools were implemented:

- Pan the map while measuring with the Distance and Size tools, while adding a line or area during geographic editing, or when drawing with the annotation tools.
- When creating separate bands you can choose a "Name" field from the source layer so that each band has a value indicating the feature around which it was created.

Output Improvements

There is a new option to optimize printed output for transparency. This option prints the map as a high-resolution bitmap to properly handle effects such as opacity, halos, and shadows. This option also helps in situations where there are custom or locally installed fonts that are used in a map because they are not lost when the font set is unavailable.

In addition to saving maps, layouts, figures, and dataviews to BMP, JPEG, and PNG formats, Maptitude also outputs to GIF and TIFF. Layouts and map legends can also be individually saved with adjustable quality and/or resolution settings to one of these five image formats.

The enhanced metafile option has also been updated to provide better vector output.

New Support for Non-Topological Area Layers:

This release of Maptitude offers several new features for working with non-topological area layers such as those stored in Shapefiles, Oracle Spatial, SQL Server Spatial, and non-topological versions of Caliper standard geographic files.

- When you create a new area geographic file, you have the option to allow the areas to overlap or to enforce topology.
- Use the Map Editing toolbox to move non-topological areas and snap non-topological area layer edges.
- Create non-topological districts from a table or from selection sets with the new “Create Districts” tool.
- Use a new non-topological Select by Location method that supports overlap criteria.
- Visualize differences in non-topological, overlapping areas with the new “Edge” color theme.



Create and modify non-topological area layers, like the sales region layer in this map. The edge theme makes it easier to identify overlapping areas.

Locating Data

The geocoding tools use the updated data, which makes the results of location matching more accurate. Additional improvements to the locate tools include:

- The Locate by Address tool has improved geocoding rules and logic that provide more accurate address matching. The tool will by default use the 2010 NAVTEQ® map address.
- The Locate by ZIP Code tool will by default use the 2010 third quarter ZIP Code update.
- The Locate by City tool accepts full U.S. state names as well as two-letter state abbreviations, and the city and state can be combined in a single field.
- The Locate by Coordinate tool allows you to view unlocated records, and automatically adds located records to the default map window.

Network Analysis and Routing Improvements

Previous versions of Maptitude included a nationwide US street layer that did not include data on one-way streets or travel time. Data from a 2010 NAVTEQ® map let you create routes, network bands, and partitions that account for these variables as well as for distance. In addition:

- You can find shortest paths and routes using up to 1-million links on a line layer (previously limited to 130,000) with up to 1,000 stops encompassing a 1,000 mile wide region.
- Earlier versions of Maptitude required you to select nodes on a line layer and use those as the basis for creating network bands or network partitions. Now you can create network bands and network partitions using any point layer and selection set as origins.
- The Network Bands and Network Partitioning dialog boxes have an integrated Overlay tab.
- A weighted network partition option allows a line network to be segmented based upon travel cost. This partitioning can also be weighted to reflect the greater influence of certain locations. Once defined, these line assignments can be automatically zoned, which allows the creation of travel-based territories.
- Grid-based contours for the Network Bands tool ensure better representations of travel cost.



New Database Functionality

Several new capabilities for databases have been introduced, primarily in support of non-aggregate joins:

- Perform one-to-many non-aggregate joins.
- Query one-to-many relationships in aggregate join tables on a record-by-record basis via the Tracked Joined Records tool.
- Use any of the filter buttons that have been added next to many field lists to narrow your search for specific columns of data.

Imagery Improvements

Accessing and visualizing image layers is a core aspect of the new capabilities provided in 6.0. Maptitude now supports several open and international standards and handles auxiliary layer information. You can:

- Access OpenGIS Web Map Service (WMS) imagery.
- Open images with EPSG projections.
- Register images with an XML projection file and create the auxiliary file when missing.
- Register and reregister PNG images.
- Adjust image layer interpolation and smoothing for better display when zooming in or out, respectively.
- Automatically reproject image layers to match the map projection, allowing images with different projections to be visible in the same map.

New Drawing Toolbar:

There is a new toolbar that groups the new and existing freehand drawing buttons into a single location in the interface.

- There are separate Circle and Oval tools.
- You can Draw circle annotations with a specified radius and unit of measure.
- The Freehand Text tool now works with a single click or by dragging on the map, and it supports pressing the "Enter" key or typing a vertical bar (|) carriage return.
- There is an Arrow tool for adding arrow annotations.
- There is a Great Circle tool for adding a great circle line annotation between two locations.
- You can set the opacity of freehand shape, circle, oval, and rectangle fills, of freehand lines and arrows, and of freehand text.
- You can add images in EMF, GIF, ICO, JPG, PNG, and TIF format to a map or layout.



System and Interface

Mapitude 6.0 supports the latest Windows operating systems, file types, and common design elements:

- Maptitude runs as a 32-bit application on 32-bit or 64-bit Windows 7.
- Maptitude has Windows compliant use of Tab, Shift-Tab, and F2 keys in tables.
- There is a Windows Manager accessed via **Window-Windows** command.
- There are new cursor icons and buttons.
- The improved software key reduces the incidence of license failure in aggressive security environments.

New File Import Support

- Microsoft SQL Server 2008 Spatial Layer
- Microsoft SQL Server Table
- Microsoft Access and Excel 2010 (and earlier versions) even when Office 2010 is not installed
- Oracle 11g Spatial
- Oracle 11g Databases
- GPS Exchange Format (GPX)

New File Export Support

- Microsoft SQL Server 2008 Spatial Layer
- Oracle 11g Spatial

New Native File Support

- Microsoft SQL Server 2008 Spatial Layer
- Microsoft SQL Server Table
- Oracle 11g Spatial
- Oracle 11g Databases
- Microsoft Access and Excel 2010 (and earlier versions) even when Office 2010 is not installed
- Planar Configuration 2 TIFF image layers
- PNG image layers

Creating Selections and Formulas

There are several changes to the condition-building tools:

- Select by Touching is now a default user preference.
- Select by Circle allows a choice of measurement unit.
- The Formula Builder now includes a “Values” drop-down list.
- You can save and load formulas.

Projections/Datums

Maptitude 6.0 has expanded support for European datums and for converting between international datums:

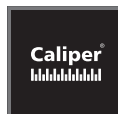
- There are new datum conversions for Germany, France, Spain, and Switzerland.
- New worldwide datum conversions are supported via 3-parameter, 7-parameter, and Molodensky conversion methods.

Geographic Information System Developer's Kit (GISDK)

Many new functions have been added to the GISDK. The main highlights are the addition of vector handling commands, improved progress bar calls, Microsoft .NET Framework integration, and support for creating compact area grid layers using CreateGrid(). Other changes include:

- Edit items (of type text, integer, or real) support an “immediate” option.
- Regular expressions are supported.
- Break and Continue statements are allowed in loops.
- SaveEditorToImage(), SaveFigureToImage(), SaveLayoutToImage(), SaveMapToImage(), SaveLegendToImage() all accept the image types TIFF and GIF, in addition to previously-supported image types.
- Parameters have been added to Standardize() and StandardizeView() to support custom regular expressions created with the RegEx object.

Please see the “Listing of GISDK Functions” topic in the Online Help to view a full list of functions that were added, changed, or replaced in Maptitude 6.0.



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