



What's New in **Maptitude 2020**

Maptitude 2020: New Features Overview

Maptitude 2020 is a major release of Caliper Corporation's popular Geographic Information System (GIS) and mapping software. The 2020 version provides the most up-to-date and accurate data available.

Maptitude 2020 provides the business value you expect when investing in mapping software. Mapitude includes the latest streets, postal data, and demographics. Mapitude 2020 is the fastest and most intuitive professional mapping application, with significant enhancements to usability, data import/linking, and logistics/operations analytics.

Key Features of Mapitude 2020

1. The most up-to-date geographic and demographic information available, including **improved points-of-interest**/landmarks, and new data for the USA describing **population projections, Opportunity Zone poverty status, and Gross Domestic Product** (or "GDP", the value of all goods and services produced in an area) **by industry**.
2. **Maptitude is faster** with improvements to layer drawing speed, quicker layer creation for the drive-time ring/contour/buffer tools, better software download times, and quicker loading of all the routing tools.
3. One of the best features of MapPoint was being able to **copy drawing items between maps** to the exact same location, and Mapitude now supports this.
4. The **Facility Location tool supports "What if?" analyses** (where the placement of new facilities is unknown) by allowing an unlimited number of target locations to be analyzed.
5. When modeling routes, you can set the Automatic Rest setting to be any value, and with no overnight break, allowing you to **model long-haul routes** while adhering to government rules such as those for interstate truck drivers in the USA.
6. You can now clearly **differentiate points** on a map using a default numbered symbol theme.
7. A new **export to PDF** tool automatically saves your map to either a landscape or portrait orientation, depending on the dimensions of your map window.
8. To support the growing number of logistics tools in Mapitude, Country Packages now include an **operations tutorial file** with sheets for sample clients, sites, and depots to allow you to quickly familiarize yourself with the analytical capabilities of Mapitude.
9. Interoperability with **external data** has been expanded with support for ERDAS Imagine and GeoJSON files, and for Esri ArcGIS Pro. In addition, you can connect to external services such as Microsoft Bing to analyze driving, public transportation, or walking travel times, or real-time travel by arrival time, departure time, and date.
10. **Interoperability** with Mapitude has been expanded with PostgreSQL functions, support for Intellisense in our Microsoft Visual Studio add-on, and by documenting external calls to the Update Linked Records tools via the API.

Maptitude can map your information whether you have data from Google Maps, from a Microsoft mapping product such as MapPoint, or from Microsoft Office. You can analyze your information using the intuitive Maptitude 2020 mapping wizards and export your results as attractive, preformatted Excel or PDF reports.

Maptitude delivers easy-to-use professional mapping tools and data at the unbeatable price of only US\$695 (or US\$395 for upgrades.) For [pricing and ordering](#) information, please visit the [Mapping Software Store](#), e-mail [Maptitude Sales](#), or call US sales at +1 617-527-4700.

New Data

Maptitude 2020 comes standard with one detailed Country Package of your choice, and additional Country Packages can be purchased separately. Each Country Package includes a wealth of data unavailable in any other product, such as an up-to-date street layer with addresses for pin-mapping (geocoding) and travel time information for computing routes and drive-time rings. Features such as building footprints for many urban locations, railways, and named landmarks are also built into the software. The comprehensive landmarks range from public facilities to commercial buildings including businesses, restaurants, and retail stores, and include addresses and phone numbers where available. Where available, postal data and detailed demographics are shipped with the product.

As you switch between the countries you have purchased, Maptitude will seamlessly refresh the interface with country-specific tools such as Create-A-Map Wizard and tools for finding, pin-mapping, and routing. New Map Libraries allow you to easily create attractive geographic and demographic maps while locating unlimited numbers of addresses and territory-based records.

The basic global map that is provided with every Maptitude license enables you to view your data for anywhere on Earth, and it allows you to map your locations by coordinate, manually, or by any populated place (village/town/city).

United States

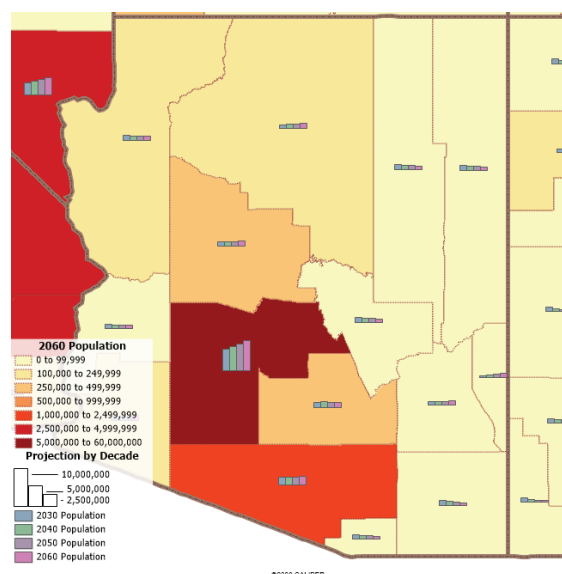
New U.S. datasets provide access to the most up-to-date geographic information available. Maptitude 2020 comes with October 2019 HERE® Map Content, which allows for accurate address locating and street visualization, in addition to robust data with which you can calculate shortest paths, drive-time rings, and drive-time territories. Speeds based on HERE Traffic Patterns are included. There is improved **parking lot data** for the top 100 metro areas.

Other 2019 U.S. map layers from HERE include those for buildings, highways, railroads, and landmarks. The Points of Interest layer contains over 2.7 million named public and business locations.

Maptitude 2020 ships with the January 2020 ZIP Code update to ensure that you are using the latest data. 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.



Includes October 2019 map layers from HERE



Includes population projections to 2060

Other standard features of Maptitude 2020 are updated 3-digit ZIP Code areas and a point database of ZIP Code points for the entire country. The ZIP Code area layers extend into non-deliverable areas to provide complete coverage of the USA. The 3-digit and 5-digit ZIP Code areas include updated counts of businesses by detailed industry type (retail, finance, etc.), along with the number of employees working in each ZIP Code, and annual payroll figures. The ZIP Codes are also classified by their updated rural-urban commuting characteristics and with the numbers of hospitals, hospital beds, and healthcare providers.

The US Census boundaries (e.g., Tracts, Places, Counties, MCDs, MSAs, States) and the 3- and 5-digit ZIP code areas that come with Maptitude contain [demographic data](#) from a variety of data providers. These sources include the 2010 Census and the 2018 American Community Survey (ACS) to name a few. This data is available for the USA, Puerto Rico, and the Territories. These layers include daytime population, and percent change (2017 to 2018) in population, median income, and mean income. The ZIP Code, Tract, County, and State layers also include updated buying power (disposable income for 2017) figures. Tracts also list updated banking compliance FFIEC data for 2019, and designated **Qualified Opportunity Zones (QOZs)**.

Personal income and change in personal income BEA data for 2018 are included for States and Counties, and 2018 GDP (by total, goods, services, government, **and now by 2-digit NAICS code**) and change in GDP BEA data for 2016 are included for Counties. **New 2025 population projections** for Counties, States, and Tracts are included by age, race, gender, and ethnicity, and for population by 5-year increment for 2025-2060. The **Demographic Map Librarian** tool makes it easy to access a series of pre-defined thematic and shaded maps of these updated data, and has a new "USA (Optimized for large scale maps)" option.

The Country Package updates under development are listed below:

Australia

- October 2019 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated HERE postal boundaries and centroids
- New Logistics.XLSX tutorial file

Brazil

- October 2019 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated HERE postal boundaries and centroids
- New Logistics.XLSX tutorial file

Canada

- October 2019 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated 3-character postal Forward Sortation Area (FSA) boundaries and centroids (HERE)
- Updated 6- character postal point layer (HERE)
- There is improved parking lot data for the top 11 metro areas
- New Logistics.XLSX tutorial file

United Kingdom

- October 2019 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated postal boundaries for the UK (HERE)
- Updated postal boundaries and postcode points for GB (Caliper)
- 2018 Estimated population by age and gender, UK
- New Logistics.XLSX tutorial file

Mexico

- October 2019 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated HERE postal boundaries and centroids
- New Logistics.XLSX tutorial file

New Zealand

- October 2019 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated HERE postal boundaries and centroids
- New Logistics.XLSX tutorial file

Germany, Austria, Switzerland, Liechtenstein (DACH)

- New Logistics.XLSX tutorial file

Norway, Sweden, Denmark, Iceland, Finland (Scandinavia/Nordics)

- New Logistics.XLSX tutorial file

Spain

- October 2015 HERE update with speeds based on noontime HERE® Traffic Patterns
- Updated HERE postal boundaries and centroids
- New Logistics.XLSX tutorial file

Colombia, Netherlands, Belgium

- New Logistics.XLSX tutorial file

World

- World Country updated with 2020 population projections, and names for Czechia, Eswatini, and North Macedonia
- World Province updated for Chile, Norway, and Albania
- World City updated for some capitals, such as Kyiv/Kiev

Network Analysis, Directions, and Routing

Maptitude 2020 gives you powerful tools to model routes, to calculate the distances and travel times between locations, and to display and analyze service provision over the road network.

Drive-Time Influence Areas Tool

The **Tools>Routing & Directions>Drive-Time Influence Areas** tool now:

- Loads much more quickly
- Has a Zone Names option that allows you to name the zones based on the origin points, allowing easy interpretation of the results, such as demographics serviced by which store or sales representative
- Builds zones to the specified maximum extent rather than to the area visible in the map
- Supports weighting of the zones using any point layer, allowing stores with a larger customer base, for example, to have a proportionately larger service area

Routing & Directions Manager

The **Tools>Routing & Directions>Routing & Directions Manager** now:

- Loads much more quickly
- Allows the Automatic Rest setting to be greater than 400 minutes, and allows 24-hour rollover (no break for the night), where the start and end time are equal
 - This supports, in the USA for example, modelling routing of OTR (over-the-road) Drivers (Class A CDL), where the DOT (Department of Transportation) rules state drivers are required to take a 10-hour break (600 minutes) after 11 hours of driving (or a 14-hour total workday)

Drive-Time Rings Toolbar

The Drive Time Rings Toolbar creates the most accurate drive-distance travel analysis on the market.

The **Tools>Routing & Directions>Drive-Time Rings** tool now:

- Loads much more quickly
- Creates drive-time rings many times faster than in Maptitude 2019
- Shows the interactively clicked origin locations in reports
- Creates a Color Theme named "Drive-Time Ring" allowing the theme to be more easily identified in the legend

- Expands the Color Theme branch in the Display Manager, allowing single-click changes to the ring style settings
- Supports 2,000 origin locations by default without having to change the Maximum origin points setting in the User Preferences dialog box.

Distance and Travel-Time Tables Tool

Maptitude 2020 makes it easy to identify alternative service suppliers, backup field representatives, and closest locations. The distance and drive-time tool creates an Excel table that lists the costs of travel between any number of origins and destinations, allowing you to easily sort the data to identify the closest locations.

The **Tools>Routing & Directions>Distance and Travel Time Tables** tool now:

- Loads much more quickly
- Opens even if there is no routable layer such as streets, allowing straight line distance calculations on custom maps
- Supports 3rd-party web service providers such as Google or Microsoft Bing to obtain real-time travel times between multiple locations
 - You first obtain a license from the service provider and configure the service via **Tools>Routing & Directions>Web Services>Configure Web Services Credentials**. For example, you can obtain a Microsoft Bing web service license and then calculate:
 - Uncongested driving, public transportation, or walking travel times
 - Real-time driving travel time by arrival time, departure time, and date and time of day

New Database Functionality

The new capabilities for geographic databases that have been introduced are:

- Redrawing in a map of Standard Geographic File (*.dbf) area layers is now faster
- Redrawing in a map of Standard Geographic File (*.dbf) line layers is now faster
- Exporting via **File>Export>Table** defaults to the Excel (*.xlsx) file format
- Fewer files constitute the shipped Compact Geographic File (*.cdf) format layers
- Larger Compact Geographic File (*.cdf) sizes are supported, exceeding the previous 2 gigabyte limit
- Better compression is supported for the Compact Geographic File (*.cdf) format resulting in smaller file sizes
- Choosing **Map>Linked Records Settings** allows you to see the layer, field, and file used in the Create-a-Map Wizard "Link Data" step.
- Choosing **Map>Update Linked Records** allows you to permanently change the linked file when, for example, the file name has changed

New Map Styles

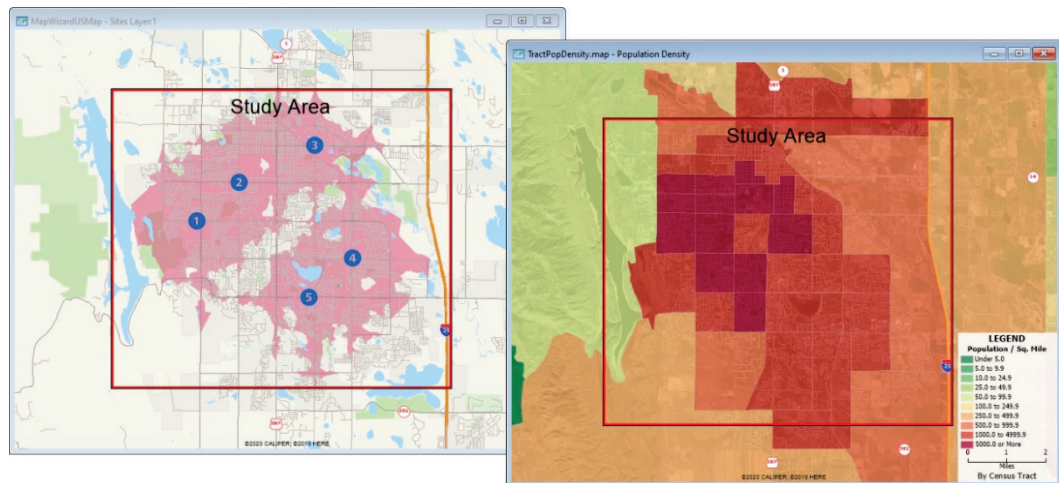
Maptitude 2020 gives you the greatest flexibility to date in setting the styles of map features, themes, and selection sets.

Themes

- The Multiple Symbol Theme default style for point layers is now the numbers palette, allowing you to easily associate the different categories in your data to a numbered list in the legend

Drawing

- The ability to copy and paste drawing items between maps allows you to place them on a new map in the exact same geographic location as in the original map



Locating Data

The geocoding tools use the updated street and postal data, making location matching results more accurate than in previous versions of Mapitude.

- The **Tools>Locate** and Create-a-Map Wizard geocoding tools now all add the geocoding precision column to the layer, allowing you to consistently see the level of accuracy used to place your pins on a map
- The Create-a-Map Wizard automatically imports comma separated text files (CSV files), allowing the attribute data to be saved into the Workspace, and to be editable on geocoded layers
- The **Tools>Locate** and Create-a-Map Wizard geocoding tools now better handle Excel files with empty rows of data, which is especially important when using **Map>Update Linked Records**

Improved Create-a-Map Wizard

Create-a-Map Wizard is now more robust and easier to use:

- The maps have been updated with the latest geography.

Creating Selections and Formulas

Condition building tools improvements:

- The "Show One Set/All Features" functionality accessible through the Selection toolbar can now be accessed through the Display Manager by right clicking on a selection set and toggling "Show this set only"
- The Select by Pointing tool can now select by a rectangle by left clicking and dragging the mouse over the records you want to select

Analysis Tools

Completely new and innovative analytics were added to Maptitude 2020:

- The **Tools>3D>Terrain Analysis Toolbar** has significant speed improvements when creating contours
- The creation of Voronoi diagrams (Thiessen polygons) has been improved
- The **Tools>Analysis>Buffers** tool is now multi-threaded resulting in significant speed improvements when creating separate buffers around points and lines
- The Visible Features option is now available for the following tools and allows you to perform analyses around the locations shown on the map without having to first create a selection set of those locations:
 - **Tools>Analysis>Overlay**
 - **Tools>Analysis>Straight Line Influence Areas**
 - **Tools>Analysis>Weighted Center**
 - **Tools>Analysis>Tag Points by Area**
- The **Tools>Analysis>Facility Location** tool setting under **Edit>Preferences>Routing>Facility Location Route Limit** allows any number of routes, supporting "What if?" analyses (where the placement of new facilities is unknown) using, for example, a layer of points created via **Tools>Editing>New Grid Layer**
- The **Tools>Analysis>Facility Location** tool loads much more quickly
- The **Tools>Analysis>Facility Location** tool opens even if there is no routable layer such as streets in your map, allowing straight line distance calculations on custom maps



A new "Logistics.xlsx" file will be provided for most Country Packages, allowing users in those countries to work through the tutorials for the logistics and operations tools in Maptitude such as **Tools>Analysis>Facility Location**.

System and Interface

Maptitude 2020 supports the latest Windows operating systems, file types, and common design elements. Maptitude 2020:

- Allows the **Map>Display Manager Toolbar** to remain docked, supporting a smoother transition when moving from a map to a dataview, for example
- Supports faster downloads due to smaller Compact Geographic File (*.cdf) sizes
- Includes Workspace (*.wrkz) changes that enhance the robustness of the file format when interacting with antivirus software and Windows "Storage Sense"
- Dispenses with the need to choose the Workspace file name and file type in the Home window
 - The ability to save to the legacy Workspace (*.wrk) file format can be accessed by unchecking **Edit>Preferences>System>Use compressed workspace (*.wrkz)**
- Includes a redesigned **Map>Synchronize** toolbar that is resizable and that uses unique map names to help distinguish between map windows
- Includes keyboard shortcuts for **File>Export>Table** CTRL-ALT-T and **File>Export>Image** CTRL-ALT-I
- Supports resizing of the **Dataview>Fields>Show/Hide Manager** toolbar
- Allows several processes to be cancelled out of rather than displaying a "Not Responding" message
- Supports a single 64-bit Maptitude installation file
 - If you require 32-bit Maptitude, please contact us at sales@caliper.com

New File Import Support

- GeoJSON (*.JSON, *.GEOJSON)

New File Export Support

- GeoJSON (*.JSON, *.GEOJSON)

New Native File Support

- GeoJSON (*.JSON, *.GEOJSON)
- ERDAS Imagine (*.IMG)
- ESRI File Geodatabase (*.GDB) when ArcGIS Pro is installed, as a read-only layer
- ESRI ArcSDE File Geodatabase (*.SDE) when ArcGIS Pro is installed, as a read-only layer

Projections/Datums

Mapitude 2020 has expanded support for datums and projections with:

- The addition of the datum conversion:
 - BD72/ETRS89 for Belgium
- The addition of projections:
 - For the world:
 - Equal Earth
 - Natural Earth
 - Natural Earth II
 - Patterson
 - For China:
 - 3-degree Gauss-Kruger zones for the CGCS2000 (GRS 1980) ellipsoid as well as for the 3 previously supported ellipsoids
 - The CGCS2000 (GRS 1980) ellipsoid was also added to the existing 6-degree Gauss-Kruger zones
 - For Shapefiles (*.SHP):
 - Web Mercator

Geographic Information System Developer's Kit (GISDK)

APIs

The GISDK .NET APIs make it easy to add mapping functionality to any Windows desktop application written in Python, C# or any other .NET programming language.

Function descriptions and code examples are documented under **Help>GISDK Help**.

The following functions have been added:

- AddLayerDB
- AddTables
- CalculateTables
- CC.Table
- CC.ModifyTableOperation
- Utilities.Mail
- Caliper.Charts

One highlight of the API changes:

- The [Caliper GISDK VSIX file](#) is a software add-on created for Microsoft Visual Studio (a software development IDE for Windows) extends the functionality of the Visual Studio software and:
 - Now has better support for Intellisense, a code-completion tool.
 - IntelliSense includes: List Members, Parameter Info, Quick Info, and Complete Word. These features help you to learn more about your code, keep track of your parameters, and add calls to properties and methods.

GISDK Functions

Please see the “Listing of GISDK Functions” topic in the Online Help to view a full list of GISDK functions that were added, changed, or replaced in Maptitude 2020. Highlights of the GISDK changes:

- A collection of PostgreSQL functions has been added for layers, schemas, queries, spatial databases, export, tables, and connections.
- A collection of new functions for the Create-A-Map-Wizard “Link Data” tool and the **Map>Update Linked Records** tool can be called from the GISDK and are documented under **Help>GISDK Help**. This allows developers to refresh map layers and joins with updated data from sources such as SQL Server and Excel.
 - Calling JoinViews() with the "JoinLinkedString" sets a joined view to be linked.
 - Calling SetDBLinkedData() sets a layer (*.DBD) to be linked.
 - Calling RunMacro(Update Linked Records") performs an "Update Linked Records" on the layers and joins in a map.

About Caliper

Caliper Corporation develops state-of-the-art [Geographic Information System \(GIS\) software](#). With a focus on usability, [Maptitude](#) is designed to be the most cost-effective professional [mapping software](#) product on the market. Maptitude enables organizations to leverage their location-based data to improve decision making and planning while minimizing expenditure through competitively priced solutions.

Caliper is a privately held corporation and is a leading developer of [mapping](#), [redistricting](#), [transportation](#), and [GIS software](#).