User Guide

MassMapper was created by the Office of Geographic Information (MassGIS) as a modern replacement for the long-used Oliver online mapping application. It is loaded with virtually all the MassGIS map layers and associated databases, which can be displayed and queried. Users can quickly create and share maps and download data for use in a Geographic Information System (GIS) or export tabular data as Excel or CSV files.

*Please note: MassMapper is one of a family of applications, all built on the same template. Some of the other versions include MuniMapper that was created for Massachusetts Municipalities upon request. This user guide applies to all these applications, so you may substitute "MuniMapper," etc. for MassMapper as you read this guide.

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Getting Started

What do I need to run MassMapper?

MassMapper is run through a web browser. Currently, the application fully works in Google Chrome, Edge, Mozilla Firefox, and Safari. The latest versions of these browsers are recommended

To start MassMapper, go to this URL. You will see a splash screen with some introductory info. Click on [→ GO TO MASSMAPPER] to dismiss the splash screen.

You may also choose to never see the splash screen again by checking this box. [☐ Don't show this splash page again, please] If we need to post pertinent info about MassMapper, it will be posted here and any changes to the text will force the splash screen to reappear.
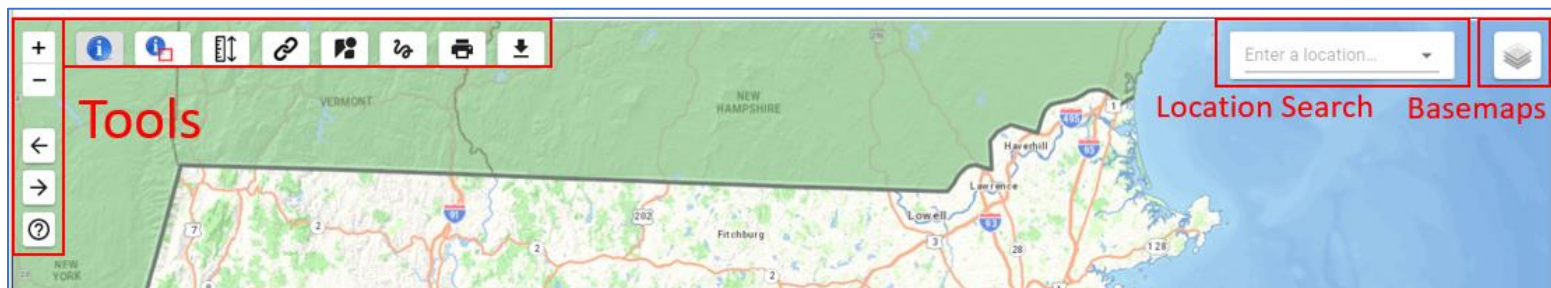
Initial view of the MassMapper application
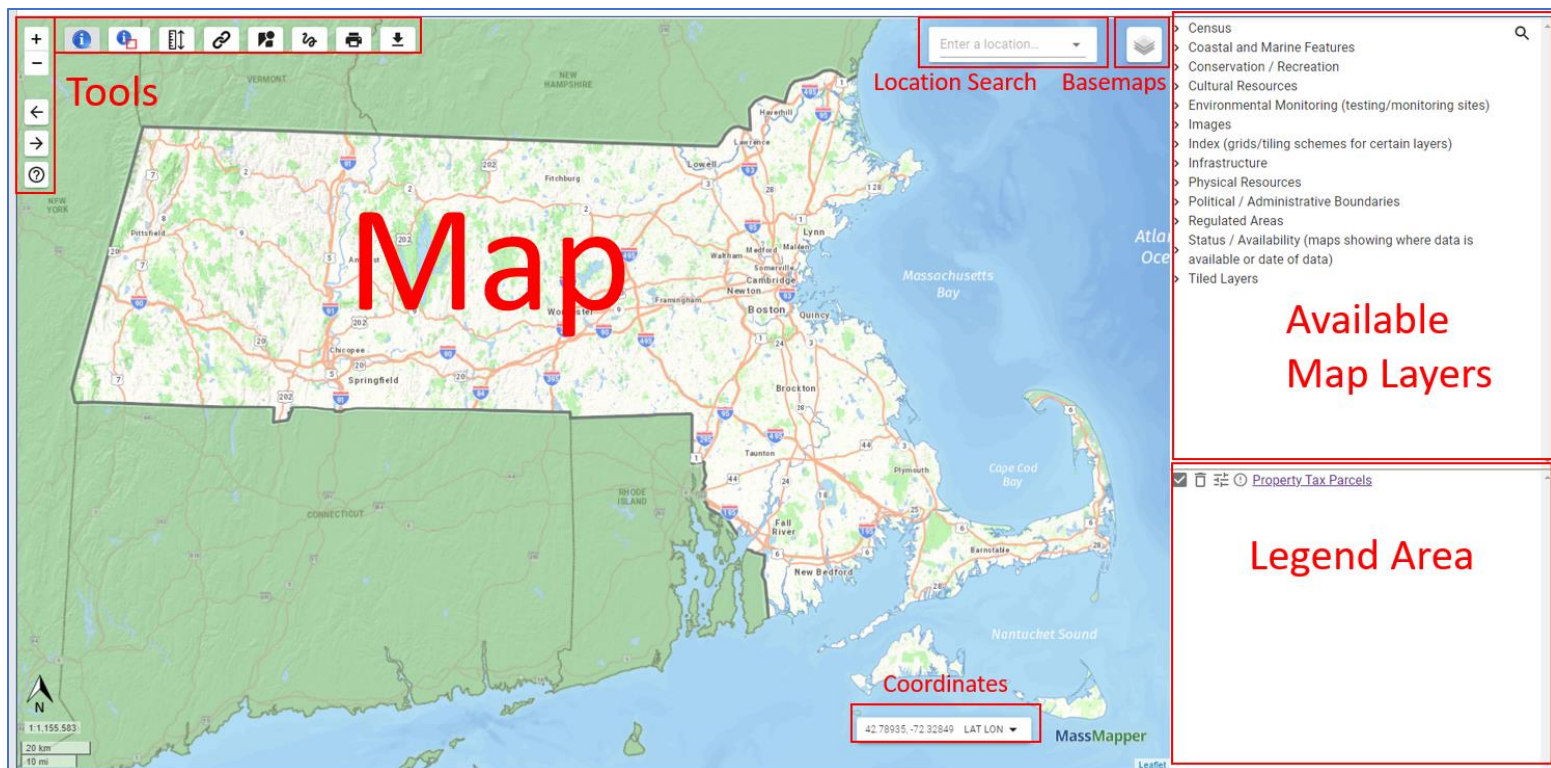
Tools

Please note: Not all tools are available in all applications.

Tools at the top and left side of the map

 Most navigation can be accomplished with a wheeled mouse. To pan, simply hold your left mouse key to recenter the map. To zoom in, scroll your mouse wheel forward. To zoom out, scroll the wheel backward. If you do not have a wheel on your mouse, you will need to use these plus/minus tools. Or hold your shift key while dragging a box around a specific area to zoom to.

 Go back to previous extent - Click this button to go back to the previous map extent.

 Go to next extent - Click this button to go forward to the next map extent.

 Help - Click this button to view this help documentation.

 Identify features by clicking a feature - Click this tool then click on the map to identify features of active data layers that intersect the location you clicked. The identify results will appear in a pop-up window.

Identify features by drawing a shape - Click this tool then click on the map multiple times to draw a shape. Double click on your starting point to close the shape The identify results will appear in a pop-up window for all the features within your shape.

Measure by length or area - Click this tool to view the measure menu. Click either radio button for Length or Area. Then using the dropdown menus, choose your units. Step by step details are further below.

Permalink - Click this tool to make a permalink for the map. A copy of the URL used to create the map you've constructed will be copied to your clipboard for pasting elsewhere.

Abutters List – (*Only available in City or Town based Municipal Mappers*) Click this tool to launch the abutters list function. Enter a distance and select units (feet or meters) from the dropdown, then click on the subject parcel to get a list of abutters in the popup that can be exported as an Excel, CSV or Shapefile (for use in GIS software). You can grab and move the popup to see the buffer polygon used to select the abutters.

Draw tools – Click this tool to see 2 drawing options. You can draw a line or a shape using the colors presented. You can also add text to the map. These drawn features will not carry through in a permalink but will be on a map you print.

Print or save your map and legend as a PDF - Click this tool then enter the title that you want to appear on the top of your PDF map. You have the option of naming the PDF file. The default is massmapper.pdf. 2 page sizes are available. Click the print map button then the PDF will be downloaded to your Downloads folder.

Export data layers (for use in GIS) – Download zipped GIS files for the data layer features on your map for use in GIS software. Or export the tabular information.

Enter a location - Type an address or location into the box. There is a type ahead feature that will display candidates as you type. Once you see your location appear, click on it to zoom to the address. You can also search on city and town names, and in some cases, neighborhood names or major landmarks. This location feature is provided by Google.

Basemaps – Hover over this tool to see choices to change the basemap. The latest MassGIS aerial imagery will always be a choice. Use the layers from the Images folder to see older vintages of aerial photos. The opacity of basemaps can be changed. Some of the basemap choices may change over time.

Map units – You can choose 4 different coordinate systems; the default is Lat/Long decimal degrees. Use the dropdown to change units to lat/long (degrees/minutes/seconds), State Plane Meters, or State Plane Feet. This is useful for getting a coordinate of a location where you hover your mouse.

Searching for a Location

Type an address or location into the "Enter a location" box. A type-ahead feature will begin to display candidates, click on your candidate and the map will zoom to that location. The tool may be used to search a variety of locations, such as street addresses (include a municipality **or** ZIP code), street intersections, landmarks, or lat/long coordinates. When using lat/long coordinates, the candidates are displayed as the nearest address. This location search feature is provided by Google.

If this location search is unavailable, you will see this tool instead in the tool bar. Click on it and type in the required address information, then click the Search button. The best address candidate will appear. To zoom to this address, click on that choice.

Navigating the Map

Most navigation can be accomplished with a wheeled mouse. To pan, simply hold your left mouse key to recenter the map. To zoom in, scroll your mouse wheel forward. To zoom out, scroll the wheel backward. If you do not have a wheel on your mouse, you will need to use the plus/minus tools.

Go back to previous extent - Click this button to go back to the previous map extent.

→ **Go to next extent** - Click this button to go forward to the next map extent.

To zoom to a very specific area, hold the shift key while dragging a box by holding your left mouse key to define a box to zoom into.

Adding Data Layers

1. On the right-side column is a category listing of map/data layers preceded by a right facing arrow >. By clicking your category of interest, sub-menus will open. Drill down until you find your layer of interest, which will be preceded by a symbol that indicates the layer's geometry type: points ⬚, lines ⍵, or polygons ⬚.
2. Click a data layer name to add it to the map.
3. The data layer is drawn on the map. The data layer name and its legend will appear in the Legend Area window.
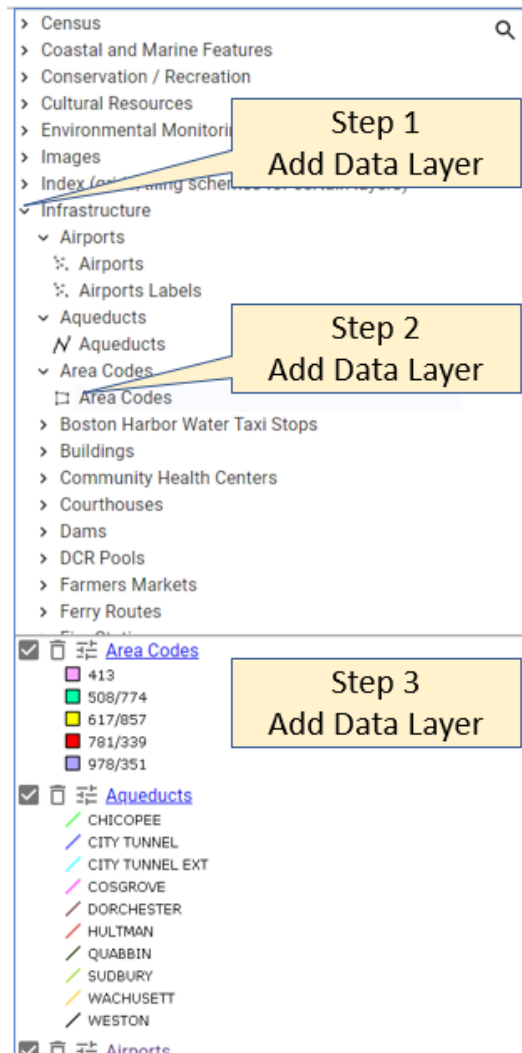

Adding Data Layers by Searching

1. 🔍 In the upper right click on the magnifying glass.

If you simply click in the Search for a layer window, you will see an alphabetical listing of available data layers that you can scroll through, click on a layer of interest to have it render.

Or you can start typing search terms. All available layers can be found [here](#). The category sections on that page loosely mirror the section categories in MassMapper. In the example below, Counties is being called for.
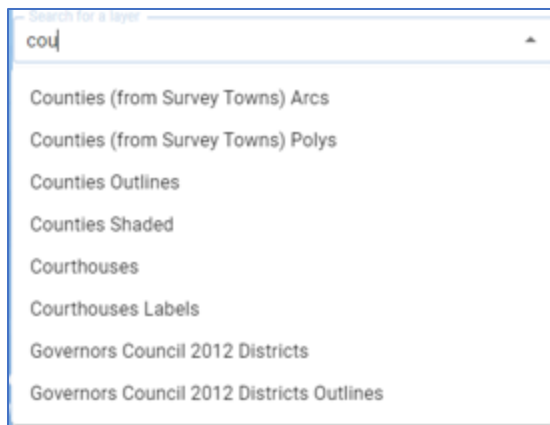
Data Layers with Scale Dependencies

Most data layers have scale dependencies and are only visible within certain scale ranges, such as less than 1:100,000. If a data layer has a scale dependency and the map is not within the appropriate scale range, the data layer will not draw on the map and this icon ⓘ will appear next to the layer name. To view the data layer, zoom in. Some of the basemaps ▨ also have scale dependency and will be dimmed/unavailable at small scales (zoomed way out) and you'll need to zoom in and then add that basemap.

Reordering Data Layers

Data layers are drawn from the bottom to the top of the Legend Area, and they appear layered in that order on the map. To reorder the data layers, click on a data layer name in the Legend Area, hold down the mouse button, and drag the data layer name up or down in the list.

Customizing Data Layers

After adding a data layer, you will see the Customize Layer Settings button ▤, click that to expose several functions related to that layer.

Symbology: MassGIS has created sensible legends for each data layer. However, the user can change the color of point, line, or polygon data layers in the legend area. Click a data layer's settings icon ▤ in the legend area, move the mouse cursor over "Custom Color" and select a color option. Points will be drawn as squares in the color you selected, lines will be drawn with the color you choose, and polygons will be drawn with a gray outline and filled in with the color you picked. Keep in mind that there is

no way to use different colors for different features in the same layer; either use the default legend that may have many colors or select your own **single** color.

Opacity Slider: The opacity (solid to transparent) of active data layers may be changed. Click ⬒ preceding the layer name, see the opacity slider [Opacity ⬤✕], hold down the mouse button on the green dot, and drag the slider to the desired opacity. The percentage of opacity will appear in the green pin and will appear on your map _once you release the mouse_. Data layers with 0% opacity will be completely transparent and data layers with 100% opacity will be opaque.
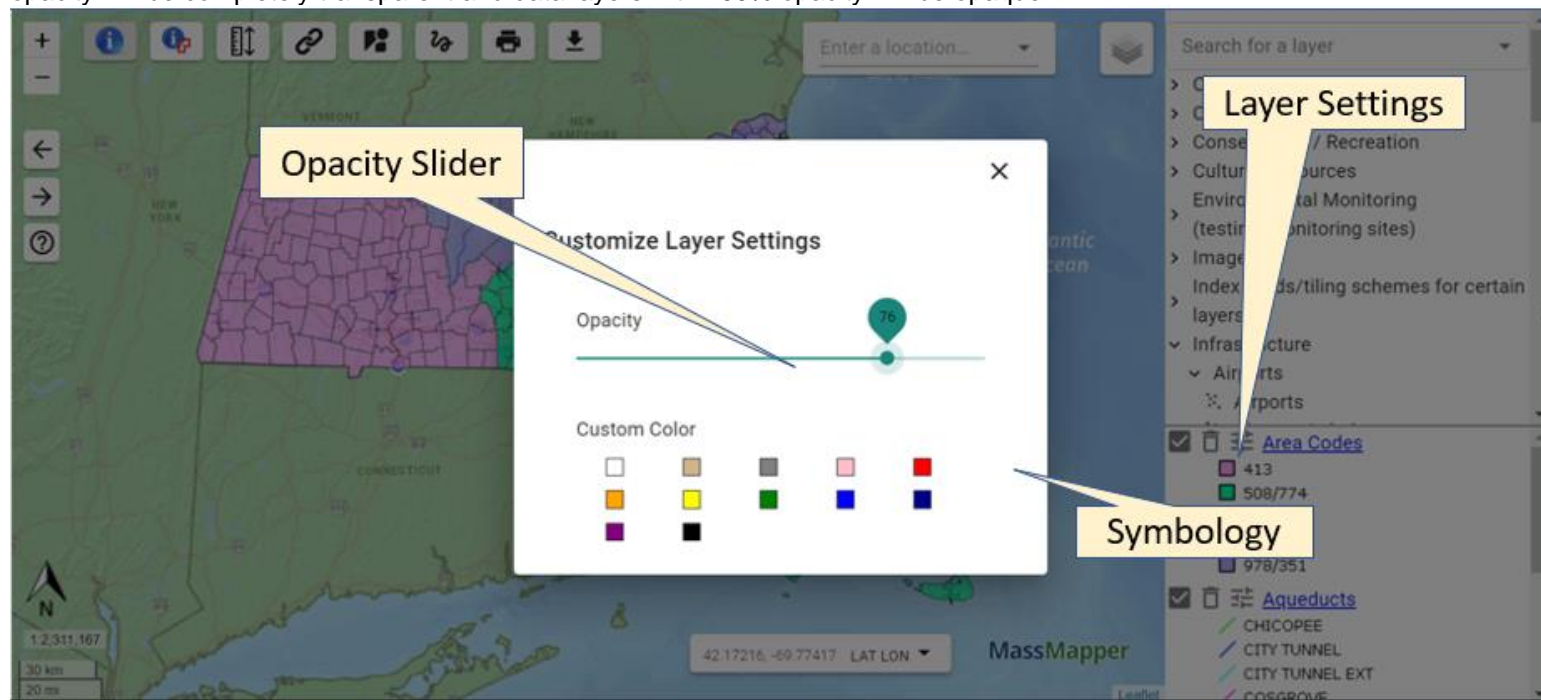

Customizing the Map

Map units: When the cursor is over the map, the latitude and longitude of the cursor's location are displayed in the lower right-hand corner of the map. To change the units of the latitude and longitude, click the dropdown on the Map units bar in the lower right to view a menu and select one of the listed options.
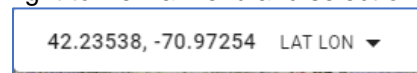
Basemaps: To change the basemap, hover over the "Basemaps" button ⬙ in the upper right to view a menu and select one of the listed options. This map will always appear below any other added data layers and can only be removed by selecting a different basemap. A dimmed basemap title in the list indicates it is scale dependent and you'll need to zoom in to see it. The opacity of the basemap can be changed by using the slider. Depending upon availability, the options may change over time.
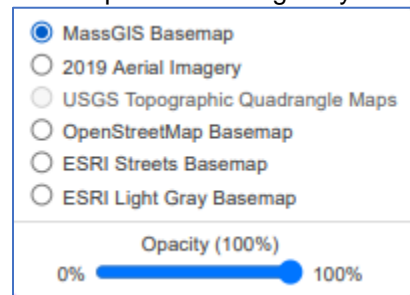
Removing Data Layers

☑ To temporarily turn a data layer off, uncheck the box next to the data layer name in the legend area window.

🗑 To remove a data layer, click the trash can icon next to the layer name.

Viewing Metadata

Metadata is text documentation about a data layer and is available for virtually all data layers in MuniMapper. To view a data layer's metadata, click the hyperlinked name of the layer once you have added it to the legend area. This page on the MassGIS website hosts all the metadata pages and the section categories there loosely mirror the top categories of the available data layers in MassMapper.

Identifying Features - Using the Select by Polygon Tool

This tool is used to draw a shape around features of interest to see the details (textual description) of those features in a table. The tool will only identify layers present in the legend area and will not identify features in any basemap as the basemap is merely a picture.

1. Click on the draw a polygon tool. In the map use your cursor to click multiple times to draw a shape around your features of interest and close the shape by clicking back on the first point.

2. A popup window will appear with the identify results. You may view the attributes for up to 500 features per data layer. Please note that some data layers have scale dependencies and are only visible within certain scale ranges, such as less than 1:100,000. If a data layer has a scale dependency and the map is not within the appropriate scale range, then the data layer will not draw on the map, this icon will appear next to the layer name legend area.

3. In the popup to view the feature details of a point, line, or polygon data layer, click on the data layer name in the "Identify Results" table. Attributes for the selected data layer will appear in the bottom half of the popup. The data field names are slightly bolded at the top of each column. The columns may be widened by hovering and clicking on the divider to pull right. The specific feature details are in the column. Hovering over a field value will provide tool tip text of the entire value. With most detail records, you'll need to use the scroll bar to scroll right to see the entire record.

4. The attribute tables can be manipulated in many ways. Select records from the set by checking the box preceding each record. Sort on any of the fields once your cursor is in the field name area by clicking the 3 dots in the column header (or use the sorting arrow next to the dots). Change the size of the popup using this tool in the upper right.

5. Selected records or all records can be exported as an Excel, CSV or Shapefile.
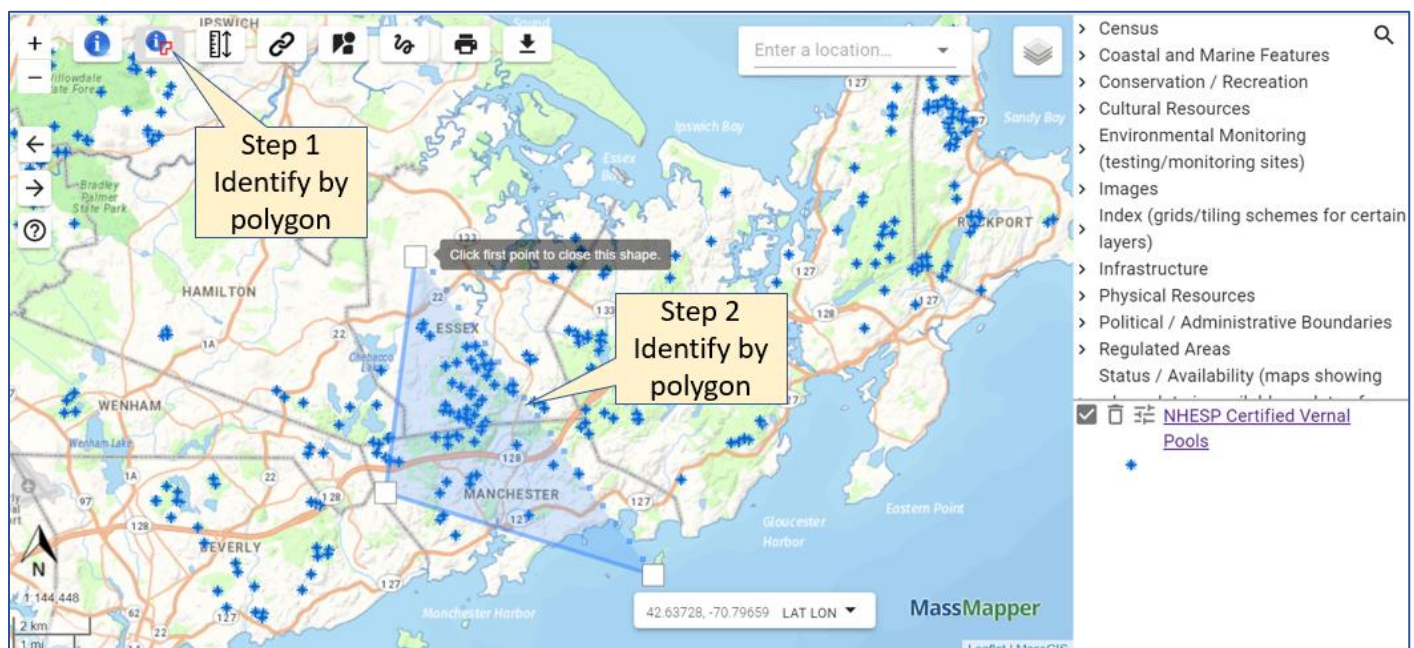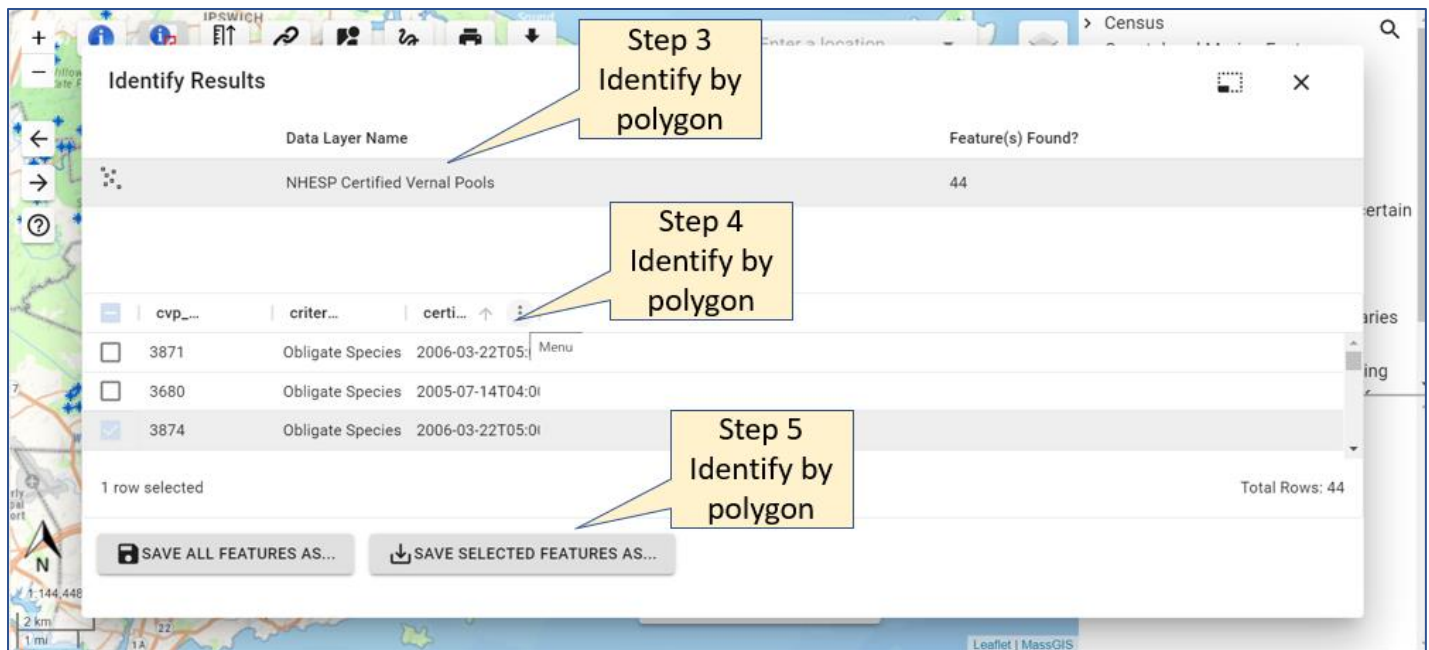
6. Close the Identify results window by clicking the X and then click on the tool to clear blue shape from the map.

Identifying Features – Using the Single Identify Tool

This tool is used to click a feature on the map to see the details (textual description) of that feature. This tool will only identify layers in the legend area and will not identify features in any basemap as the basemap is merely a picture. Click the "Click to identify a feature" tool.

1. Click on the identify a feature tool, then click on the map to identify features of added data layers that intersect the location you clicked.

2. A pop-up window will appear with the identify results. You may view the attributes for up to 500 features per data layer. Please note that some data layers have scale dependencies and are only visible within certain scale ranges, such as less than 1:100,000. If a data layer has a scale dependency and the map is not within the appropriate scale range, then the data layer will not draw on the map, this icon will appear next to the layer name legend area.

3. In the popup to view the feature details of a point, line, or polygon data layer, click on the data layer name in the "Identify Results" table. Attributes for the selected data layer will appear in the bottom half of the popup. The data field names are slightly bolded at the top of each column. The columns may be widened by hovering and clicking on the divider to pull right. The specific feature details are in the column. Hovering over a field value will provide tool tip text of the entire value. With most detail records, you'll need to use the scroll bar to scroll right to see the entire record. Change the size of the popup using this tool in the upper right .

4. The attribute tables can be manipulated in many ways. Select records from the set by checking the box preceding each record. Sort on any of the fields by clicking the 3 dots in the column header (or use the sorting arrow next to the dots).

5. Selected records or all records can be exported as an Excel, CSV or Shapefile.

6. Close the Identify results window and then click the tool to clear blue shape from the map.

Measuring Length or Area

1. Click the "Measure" tool. Select the radio button for Length or Area. The following popup will appear.


2. Select your units from the dropdown. Length measurements can be in Feet, Meters or Miles. Click in the map at the start of your measurement. If you are measuring a line that bends, click each vertices point. When your measurement is complete, double click to see the results on the empty line in the image above. You can change the units of the line you just measured using the units dropdown. Click the measure tool to close the measure popup and erase the line.

3. For Area, select the radio button and your units, Square Feet, Acres, Square Meters, and Square Miles. Click in the map to measure your area. Your last click should close your shape. The results will appear in the empty line in the image above. You can change the units of the area you just measured using the units dropdown. Click the measure tool to close the measure popup and erase the shape.

Creating an Abutters List

The abutters list tool is available only in Municipal Mappers and will generate a list of property owners within a certain distance that you input. The list can be exported as Excel, CSV, and Shapefile formats.

Navigate to your property of interest. The only default data layer, Property Tax Parcels should appear. For clarity, remove any other layers.

1. Click the tool .
2. In the popup, input the distance (ex. 100 or 500). Use the dropdown if you want Meters (m) otherwise, leave as it as Feet (ft).
3. Click on your property of interest.
4. A popup will appear. This can be moved by clicking and dragging the popup to the side to see the polygon that was generated to select the parcels whose records now appear in the popup. This table has all the functionality of the other Identify tables: Select specific feature records, widen the columns, hide, and sort, etc. Change the size of the popup using this tool in the upper right .
5. All features or just selected features can be exported as Excel, CSV or Shapefile. Make your format selection after clicking the export button.
6. Click on the download link and the file will be downloaded.
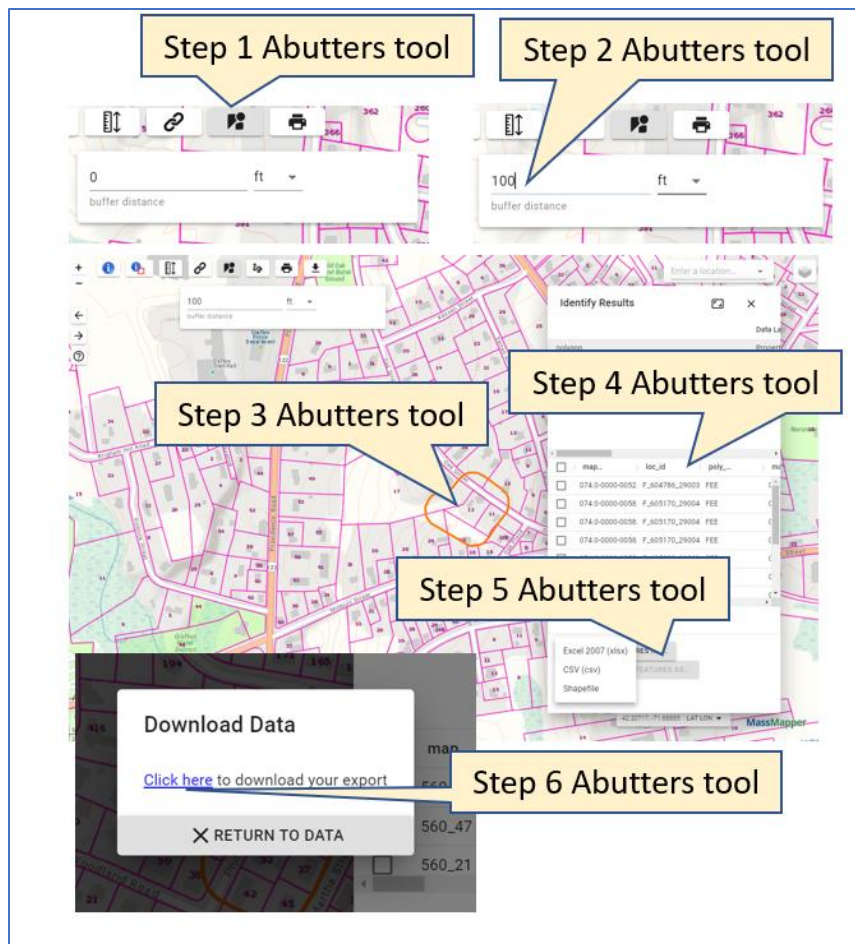
*Users should be aware that in the case of multiple owners on a single condo property, only one property parcel may be selected but the multiple owners will be listed in the abutters list results. A single parcel with multiple condo owners will be a darker orange color, whereas parcels with single owners will be a more transparent orange.

Bookmarking/Sharing a Map

Using Permalink button:

1. To create a bookmark to launch the application with the current map settings (e.g., data layers, extent, etc.) enabled, click the "Permalink" tool.

2. Doing so will copy the URL of the current map to your clipboard. Share that with someone via email. Or create a document where you store these very long URLs. Click ok to dismiss the popup.


Please note: Some software programs, such as Microsoft Outlook, limit the number of characters allowed in a URL. If the permalink URL exceeds the maximum allowed length, the link will not open automatically when clicked. Copy and paste the URL into a web browser to open it. Also, if you used the draw tools to add text or lines, those will not carry over in the permalink. Use the print as PDF tool if you need text or lines to be saved.

Downloading Data Using the Export Data Layers Tool

This tool is useful for downloading small areas of data layers in various formats for use in mapping software, or to simply get the tabular attribute data. If you need data layers for larger areas, we recommend downloading the statewide data layers.

1. [⬇] Click the "Export data layers" tool.

2. The data export wizard will appear in a pop-up window. The data layers will be listed with the number of features that will be exported. If you have gone beyond the limit of features for any data layer, it will be indicated in the "OK to export" column. Click "Next" to continue.
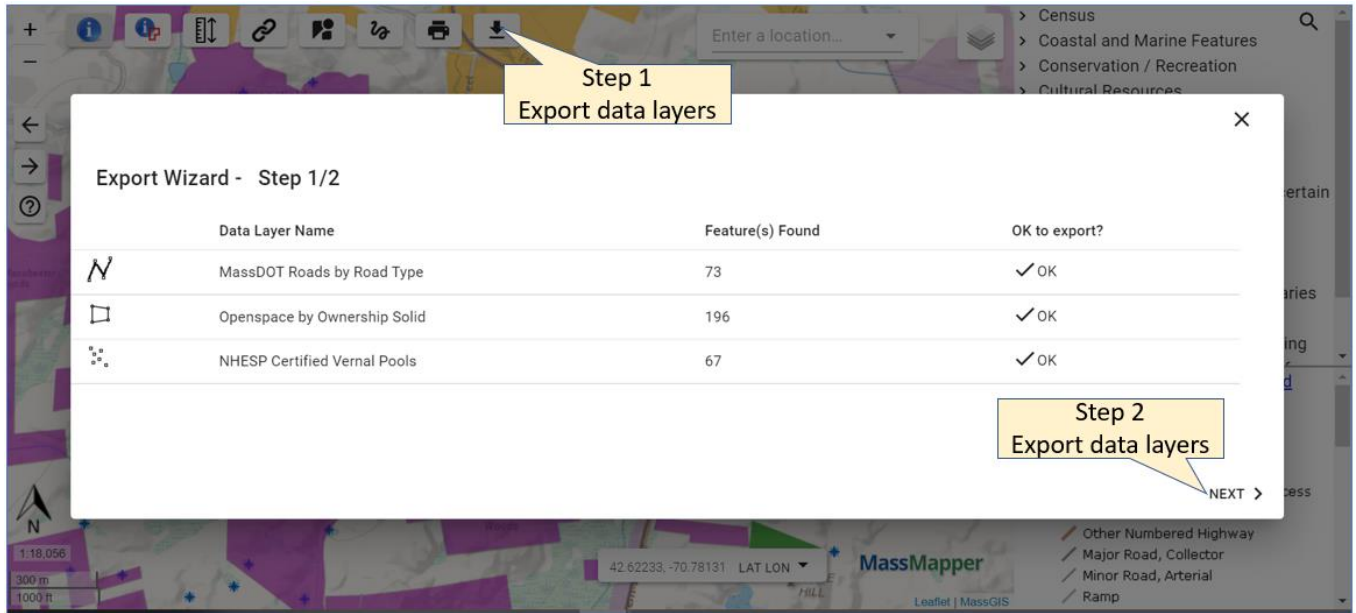
3. The next pane will display several options for your data export. 1) Choose the data format (the default is Shapefile). 2) Choose the coordinate system (the default is NAD83 MA Stateplane Meters, as this is how all MassGIS data are stored). 3) Input a file name (**use no spaces in file name!)**, 4) then click Finish.
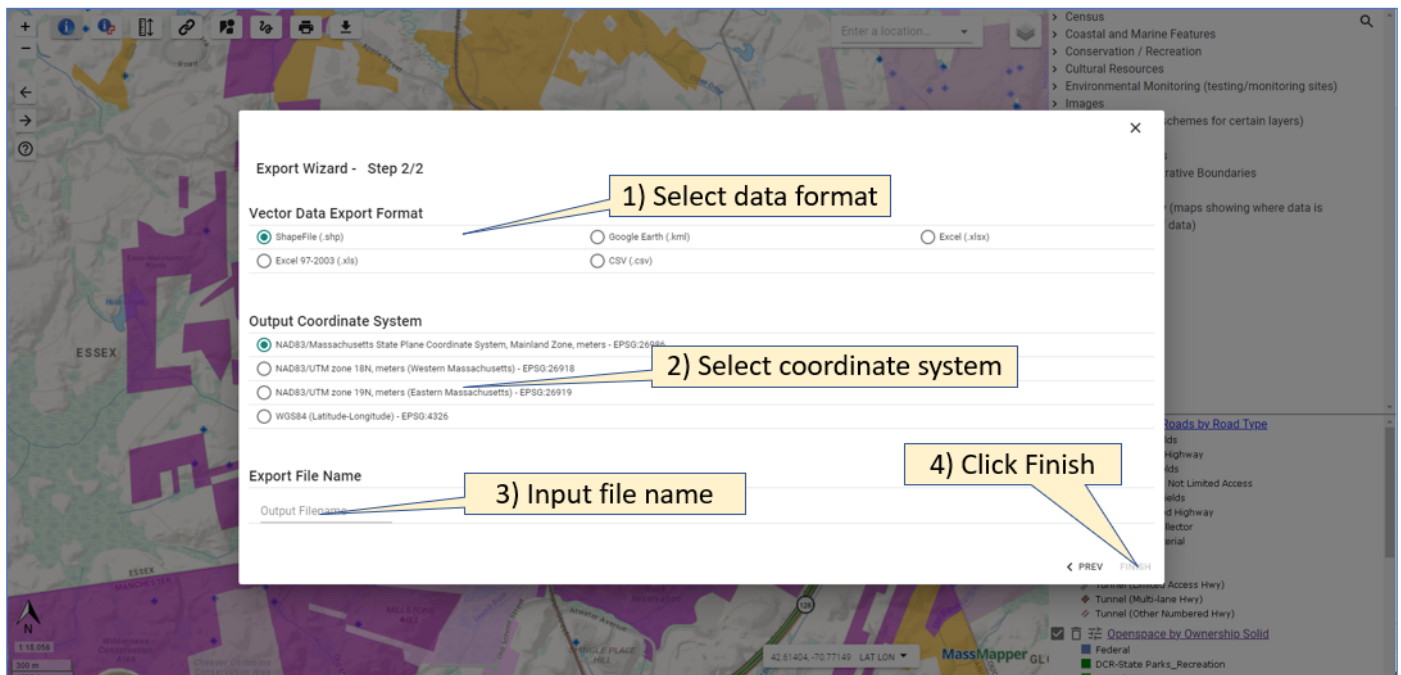

In the final pane, click on the Download box and the file will be placed in your Downloads folder.

Saving a Map as a PDF

Before saving a map, use the trash can icon to remove any default data layers or any you may have added that you do not need or have simply checked off. This will help to save space for the legend; especially if you have a long legend which may be saved as a second page of your PDF depending upon the length of the legend.

1. ![print icon] Click the "Print map" button.

2. A pop-up window will appear. Enter a title for the map that will appear at the top of your PDF.

3. If desired, change the default name of massmapper.pdf (be sure to retain the .pdf extension and **use no spaces in file name!**).

4. Choose the Page Size radio button you want.

5. Click the Print Map button. A PDF will be created and placed in your Downloads folder. You can cancel the PDF creation by clicking the "cancel" button.
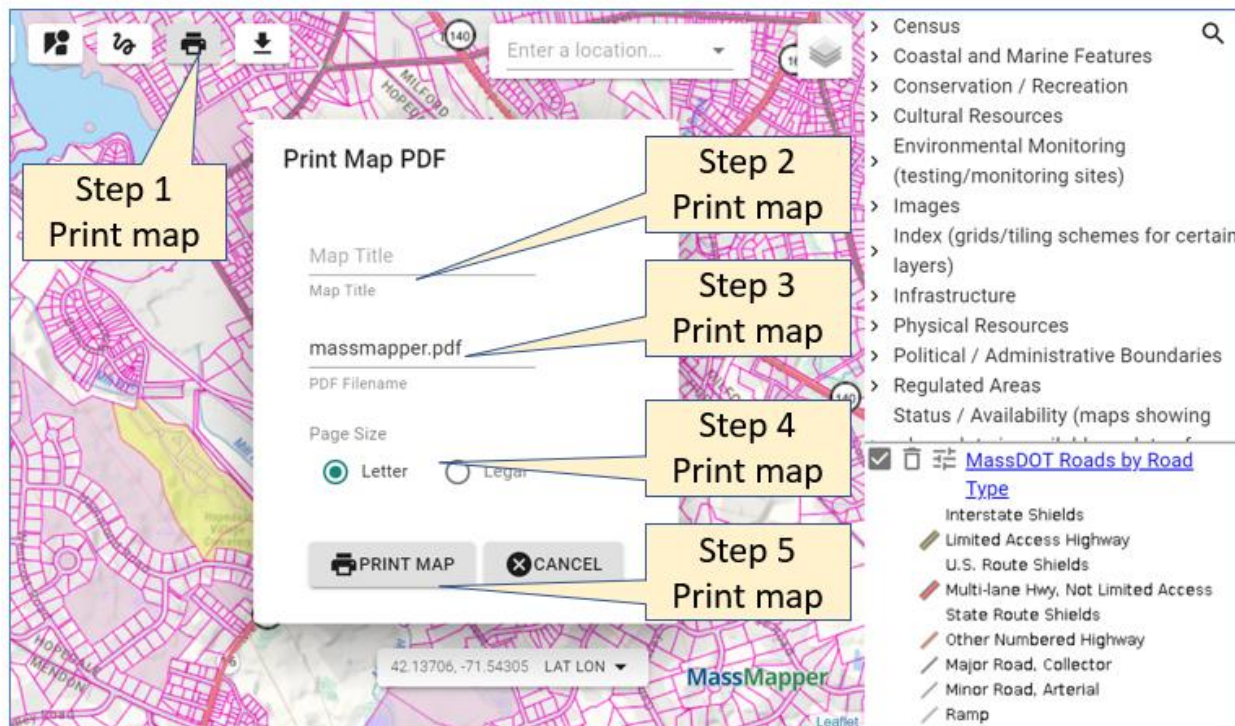
Problems? Questions? Comments?

Please Report Problems and Give Feedback
If you notice any bugs in the application or think that something should be explained better in this help document, please use this form.

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