GeoWeb Portal

User Manual

Purpose

The GeoWeb Portal (GWP) is a map viewing and publishing site. It is designed to allow people to build their own maps and review the data that is attached to the elements of that map. Users of the GWP cannot damage, harm, edit or erase the data displayed in the GWP – it is a **read-only** site. This document has been created to describe the tools that are available in the GWP interface and provide an example of how to use the tools to make a map.

Browsers

The user can use any browser to access the GWP. If the PC user seeks an alternative to Microsoft Internet Explorer, consider installing Firefox (http://www.mozilla.com) for use with the GWP.

Mouse Techniques

The mouse techniques that will be called for in this document are described here. While the GWP can be accessed through any web browser, the assumption here is that the user's operating system is Microsoft Windows:

Click – a single click of the left mouse button

Click and Drag – Depress the left mouse button and while the button is depressed, move the mouse to "drag open" a rectangle on the screen. When the red outline encloses the area you desire, release the left mouse button.

Interface

The GWP interface is shown in Figure 1. The interface is made up of four (4) main elements: the left frame, the status frame, the toolbar and the map. The left frame is located on the left side of the interface. The status frame is located in the lower left hand corner of the interface. The toolbar is located along the top of the interface and the map takes up the rest of the interface below the toolbar.
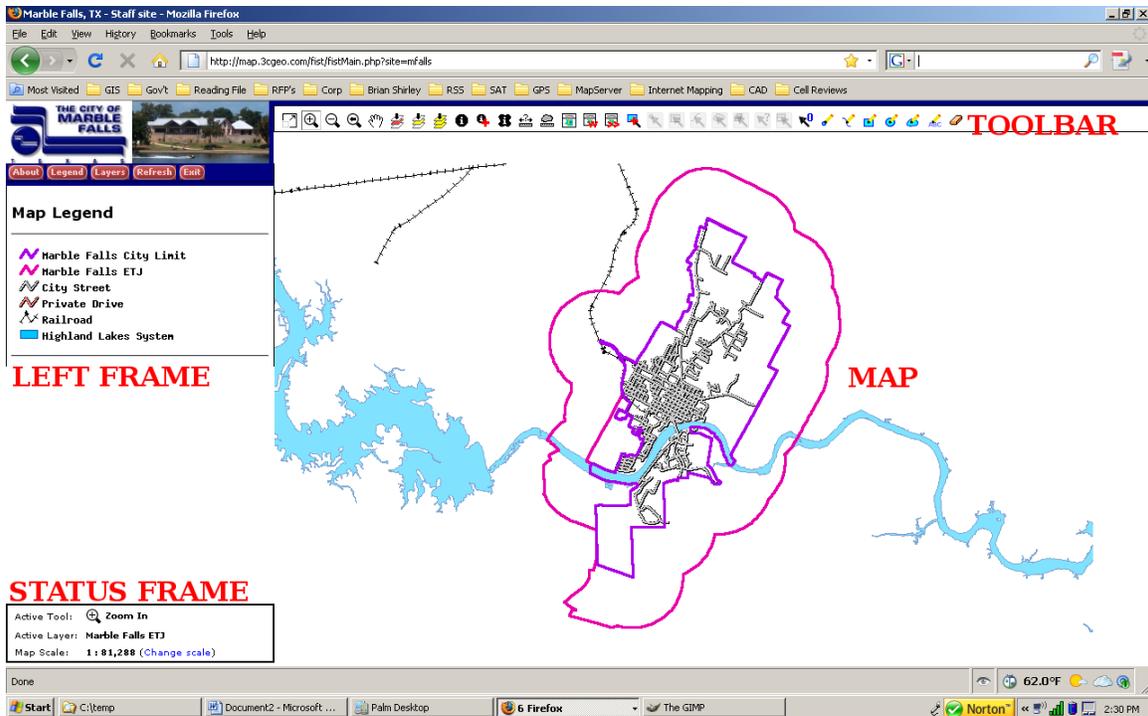
Figure 1. GeoWeb Portal Interface

Left Frame

The left frame changes based on the tool that the user selects. The left frame has 5 buttons located at the top: About, Legend, Layers, Refresh and Exit.

About   [About]
The "About" button reveals the copyright information and 3cGeo's contact email address.

Legend   [Legend]
The "Legend" button displays the map legend showing the map layers that are turned on and the symbology of each layer.

Layers   [Layers]
The "Layers" button displays the folders containing the various map layers. By clicking on each folder, the map layers contained in that folder are displayed. Layers can be selected to display by clicking in the box next to layer name. Layers can be selected to no longer display by clicking on the box with the check mark displayed in it next to the layer to be turned off. After selecting or unselecting the layers, scroll to the bottom of the left frame and click on the gray "Refresh Map" button to apply the changes just made to the map. Alternately, you can click on the red "Refresh" button at the top of left frame.

Refresh   [Refresh]
The red "Refresh" button at the top of left frame functions the same as the gray "Refresh Map button at the bottom of the Layers interface (see paragraph above).

Exit   Exit

The "Exit" button will close the GWP if you are using a Java-enabled browser such as Microsoft Internet Explorer.

Status Frame

The status frame displays three (3) vital fields of information: the active tool, the active layer and the current map scale.

Active Tool:

The "Active Tool:" line displays the current tool that is selected to be used. When a user clicks on a continuous use tool in the toolbar, that tool name is displayed in this line of the status frame.

Active Layer:

The "Active Layer:" line displays the name of the layer that can have the data attached to the elements in that layer displayed. To set the active layer, click on the gray circle next to the name of that layer in the "Layers" interface. The user DOES NOT have to click on the gray "Refresh Map" button for the active layer to change. Notice that when the user clicks the gray circle next to the name of the layer, the circle will become black to indicate that the layer is now the active layer as well as displaying the layer name in the "Active Layer:" line of the status frame.

Map Scale:

The "Map Scale:" displays the absolute map scale. Absolute map scale means that the user can apply any unit to the scale ratio. That means that for an absolute map scale of 1:24000 means that 1 inch on the map equals 24000 inches on the ground. To change the absolute map scale to an engineering map scale, simply divide the second number by 12 to change the units to feet (there are 12 inches in each foot). So, for an absolute map scale of 1:24000, dividing the second number by 12 makes an engineering scale of 1:2000 or 1 inch on the map equals 2000 feet on the ground. By knowing how to change the map scale to engineering scale allows the user to make a map that, when printed, allows the user to use a ruler to measure on the printed map. To enable the user to produce maps at standard engineering scales, consult the Table 1 below.

Map Scale	Engineering Scale
(in:in)	(in:ft)
1:600	1 in = 50 ft
1:1200	1 in = 100 ft
1:2400	1 in = 200 ft
1:3600	1 in = 300 ft
1:4800	1 in = 400 ft
1:6000	1 in = 500 ft
1:12000	1 in = 1000 ft
1:24000	1 in = 2000 ft

Table 1. Absolute Scale to Engineering Scale Conversions

To change the map scale, click on the blue text (Change scale) after the numbers in the absolute scale expression. A dialog box will appear (see Figure 2).
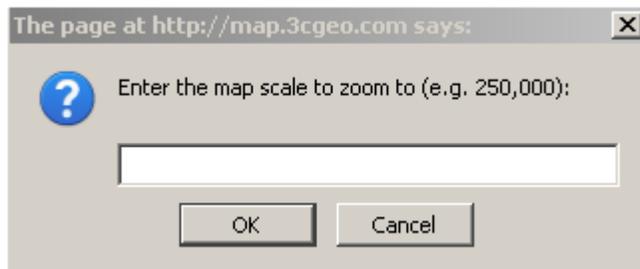
Figure 2. Change scale dialog box

Simply enter the scale that you wish the map to appear at and click on the "OK" button, or hit the "Enter" key on your keyboard. Note that this simply adjusts the scale at which the map is displayed and does not change the center point of your map view or the layers that you have turned on. You may see text or symbols appear or disappear because various layers of information may have settings that direct the site to only display text or certain layers above, below, or within a certain range of scales.

Tools

The toolbar is located along the top of the interface and contains buttons that, when clicked on, make that tool the "Active Tool" in the Status Frame. When the user clicks on a tool, they will notice that the button will be displayed with an outline around it. However, some tools are single use tools and will not remain as the active tool after they are clicked. If the tool is a single use tool, the previous continuous use tool that was used will remain the active tool. The buttons will "auto wrap" based on the size of the browser window. The toolbar may be in a single row, or in two or more rows depending on the size of the window that the user has selected for their browser. If the tool button is "grayed out" it is because that tool cannot operate on the current Active Layer of information. This is also referred to as the tools having "context sensitivity". Notice that when a cursor is left over a tool button, the name of that tool will appear in a "display tag" below the cursor. This section of the user manual will list the tools in the order that

they appear in the toolbar starting at the left end of the first row and moving right across each row in order.

View control tools

The first eight (8) tools allow the user to manipulate the "Map" in term of scale and center point.

Zoom to initial map extents

This tool automatically changes the Map Scale back to the scale that was used when the map was first displayed. This is a single use tool.

Zoom in

This tool allows the user to click and drag open a box around the area of the map the user wants to "zoom in" on, or display at a smaller scale. When the left mouse button is released, the map will appear again displaying the area within the drag box as the entire map. Notice that the Map Scale in the Status Frame will contain a smaller number than was displayed before this tool was used. This is a continuous use tool.

Zoom out

This tool will create a new map center and display the map at a scale equal to double the scale displayed before the tool was used. After clicking on the "Zoom out" tool button, simply click on the point that the user wants to become the new center of the map. The map will now display with the new center and at twice the scale as before. This is a continuous use tool.

Zoom previous

This tool will display the current map using the scale and center of the previous view. The tool does not change the layers currently displayed. This is a single use tool.

Pan

This tool allows the user to click and drag the map displayed to view another area of the map currently out of view. To understand how this map works, imagine a large map unfolded on a table in front of the user, and the user is simply moving the map to be able to see another portion of the map in front of them. This is a continuous use tool.

Zoom to the active layer

This tool adjusts the center point and scale of the map automatically to allow the user to see all of the map features in the current active layer. Click on this tool prior to using the "Select features by attributes" tool to be able to view the features you select with that tool. This is a single use tool.

Zoom to selected features of the active layer

This tool will adjust the center of the map and zoom in to a smaller scale so that the features that the user has selected in the active layer fill the map area. This is a single use tool.

Zoom to selected features of all layers

This tool will the center and scale of a map to display all of the selected features in all of the displayed layers. A user can leave features of a layer selected by not using the "Clear selected features" tool before changing the active layer that the user has selected features within. This is a single use tool.

Identify tools

The next three (3) tools allow the user different methods to identify features that the user desires to view the database records of.

Identify features

This tool will display the database records of features in the current Active Layer. After the user clicks on the tool, the user will click and drag open a box containing one or more of the features of the Active Layer that the user wants to view database records for. A database widow will open to display the record(s) for the feature(s) contained in the selection box the user specified (see Figure 3). The database window can display up to 10 database records at once, with each record differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar at the right edge of the database window. If more than 10 features were selected the user will find a hyperlink (blue text) at the bottom of the current list of records to navigate to the next or previous list of 10 or less records within the selection set. To navigate to the next or previous list of records, simply click on the blue hyperlink text. Each database window has a hyperlink (blue text) at the top and bottom that reads "Export to Excel". Clicking on that hyperlink will download all of the selected records to your computer in .csv format, which will automatically be opened by the spreadsheet software on your computer (usually Excel). When the user is finished viewing the database records, the database window can be closed by clicking on the "X" or "Close" button in the upper right corner of the database window. This is a continuous use tool.
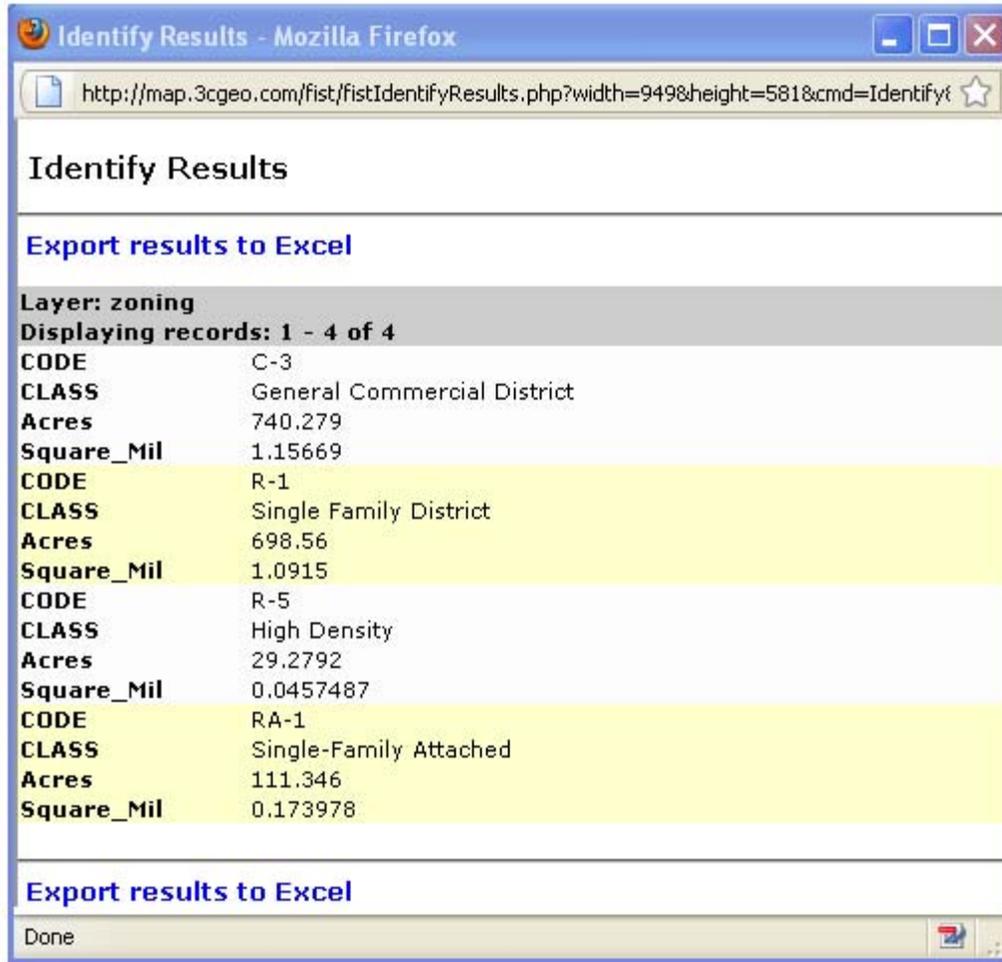
Figure 3. "Identify Features" Database window

Identify features in all layers

This tool, when selected, will display in the Active Tool line of the Status Frame as "Drill Down Identify". After the user clicks on the tool, the user will click and drag open a box containing one or more of the features of the displayed layers that the user wants to view database records for. A database widow will open to display the record(s) for the feature(s) contained in the selection box the user specified (see Figure 4). The database window is split into two frames, each with its own scroll bar. The left frame of the database window contains the list of currently displayed layers with records within the user's selection box. The right frame of the database window contains the records from the first layer listed in the left frame of the database window. All frame references within this tool description refer to frames within the database window. Each layer name in the list of layer names in the left frame is differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar. Each layer name in the list of layer names in the left frame is a hyperlink to display records from that layer in the right frame. To view the records from a layer, simply click on the layer name in the left frame. The right frame can display up to 10 database records at once, with each record differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar at the right edge of the right frame. The right frame can display up to 10

database records at once, with each record differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar at the right edge of the right frame. If more than 10 features were selected the user will find a hyperlink (blue text) at the bottom of the current list of records to navigate to the next or previous list of 10 or less records within the selection set. To navigate to the next or previous list of records, simply click on the blue hyperlink text. When the user is finished viewing the database records, the database window can be closed by clicking on the "X" or "Close" button in the upper right corner of the database window. This is a continuous use tool.
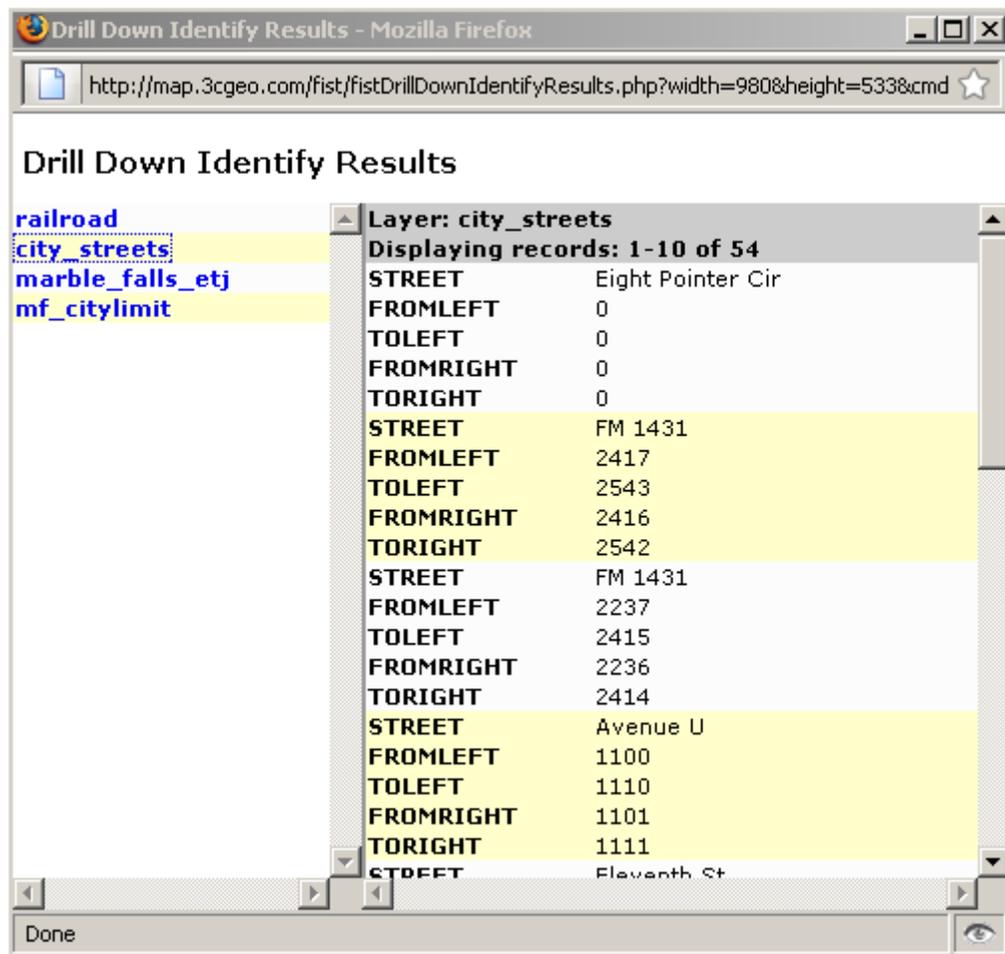

Figure 4. "Drill Down Identify" Database window

Draw a polygon to identify features in a layer

This tool will display the database records of features in the current Active Layer. After the user clicks on the tool, the user will click points defining the vertices of a polygon containing one or more of the features of the Active Layer that the user wants to view database records for. After clicking all of the vertices of the polygon you wanted to draw, click the gray "Identify features" button in the Left Frame. A database widow will open to display the record(s) for the feature(s) contained in the selection box the user specified (see Figure 3). The database window can display up to 10 database records at once, with each record differentiated by alternating white and yellow backgrounds as the

user scrolls down using the scroll bar at the right edge of the database window. If more than 10 features were selected the user will find a hyperlink (blue text) at the bottom of the current list of records to navigate to the next or previous list of 10 or less records within the selection set. To navigate to the next or previous list of records, simply click on the blue hyperlink text. When the user is finished viewing the database records, the database window can be closed by clicking on the "X" or "Close" button in the upper right corner of the database window. This is a continuous use tool.

Measure tools
The next two (2) tools allow the user different methods to measure features or their spatial relationship to each other.

Measure the distance between points
This tool allows the user to measure the distance between points that the user specifies by clicking to determine them. This tool, when selected, will display in the Active Tool line of the Status Frame as "Measure Distance". First, click on the tool, then click on the map to indicate the point you wish to measure from. When the user clicks on that first point, or origin, the Left Frame will display two columns of information (see Figure 5). The left column of information is the location of each point clicked on the map, expressed as a coordinate pair. The X coordinate is also known as the Easting and is followed by the capital "E". The Y coordinate is also known as the Northing and is followed by the capital "N". As the user clicks the next point, the coordinates for that point will be listed next in the left column and the distance between the two points will be listed in the right column next to the second coordinate pair. The Total Distance will be calculated and displayed in the gray bar at the bottom of the coordinate list in the Left Frame. The user may click on the map as many times as they wish to measure along each line segment and find out the total length of all line segments together. Note that the value in the right column (Distance (ft)) is the distance between that point and the point above it in the left column. This is a continuous use tool.

Measure Distance

Location	Distance (ft)
2940242.73 E 10181728.41 N	
2944107.56 E 10179611.63 N	4406.54
2943001.37 E 10177590.45 N	2304.09
Total Distance	**6710.63**

Figure 5. Left Frame interface for the Measure Distance tool

Measure the area within a polygon
This tool allows a user to measure the area of a polygon that will be defined by vertices that the user creates with mouse clicks on the map. This tool, when selected, will display in the Active Tool line of the Status Frame as "Measure Area". First, click on the tool, then click on the map to indicate the point you wish to measure from. When the user

clicks on that first point, or origin, the Left Frame will display two columns of information (see Figure 6). The left column will contain the point number. The right column of information is the location of each point clicked on the map, expressed as a coordinate pair. The X coordinate is also known as the Easting and is followed by the capital "E". The Y coordinate is also known as the Northing and is followed by the capital "N". As the user clicks the next point, the coordinates for that point will be listed next in the right column. There are two lines of information above the coordinate listing. As the user clicks the third point (the minimum number to define a polygon), the first two lines in the Left Frame interface will display the area in square feet and acres. The user can continue to click points on the map to define the polygon completely. The information in the Left Frame will update after each point. This is a continuous use tool.

Measure Area

Area (ft^2)	1459760.88
Area (acres)	33.51
Point 1	2943001.37 E 10183216.98 N
Point 2	2944011.96 E 10182684.37 N
Point 3	2943438.38 E 10181564.53 N
Point 4	2942400.48 E 10182097.14 N

Figure 6. Left Frame interface for Measure Area tool

Export tools

The next three (3) tools allow the user different methods to create specifications for the exported version of the user's map in Adobe .pdf format.

Export the map to a file

Before using this tool, click on the red "Legend" button and count how many lines are in your legend. This tool changes the display of the left frame (see Figure 7) and allows a user to provide specifications for the creation of a map in Adobe .pdf format. This tool, when selected, will not change the display in the Active Tool line of the Status Frame, so the previously used tool will remain active and continue to display.

Export map

_____

Paper size:

| Ansi A (8.5x11) - Letter | ▾ |

Paper layout:

| Portrait | ▾ |

Legend location:

| Left | ▾ |

Title:

| Map |
| |
| |

Ancilliary information:

| |
| |
| |

Layer names:

| Yes | ▾ |

| Export Map |

_____

Figure 7. Left Frame interface for Export the Map to a File tool

First, click on the "Export the map to a file" tool, then click on the gray button at the right end of the "Paper size:" pick list (see Figure 8). Click on the paper size you want your map created on.

Paper size:

| Ansi A (8.5x11) - Letter | ▾ |
| Ansi A (8.5x11) - Letter |
| Ansi B (11x17) - Tabloid |
| Ansi C (17x22) |
| Ansi D (22x34) |
| Ansi E (34x44) |

Figure 8. Left Frame Paper size selection list for Export the Map to a File tool

When making your paper size selection, keep in mind that an "A" size map will result in a .pdf file of around 1.4 MB in size. The paper size selection needs to made with your printer capabilities and email attachment size limitation in mind – if you plan on sending the map to someone else as an email attachment. Next, click on the gray button at the right end of the "Paper layout:" pick list (see Figure 9). Click on the paper orientation you want your map created with.

Paper layout:

| Portrait | ▾ |
| Portrait |
| Landscape |

Figure 9. Left Frame Paper layout selection list for Export the Map to a File tool

Now click on the gray button at the right end of the "Legend location:" pick list (see Figure 10). Click on the legend location you want your map created with. The "Left" and "Right" legend locations will support about 35 lines of legend information; the "Bottom" legend location will support about 15 lines of legend information. This is why it was recommended that you count the number of lines in the legend before clicking on the "Export the Map to a File" tool.


Figure 10. Left Frame Legend location selection list for Export the Map to a File tool

For a diagram to help you visualize the legend location, map title location and general map composition, see Figure 17. The next step is to type the title you wish to appear at the top of your map into the "Title:" text box (see Figure 11).
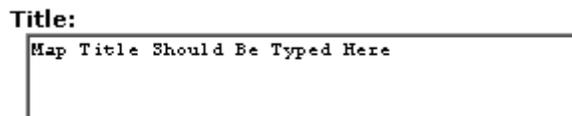
Figure 11. Left Frame Title text box for Export the Map to a File tool

After the title is entered, you may type any additional information that you wish to appear in the lower corner of the map into the "Ancillary information:" text box (see Figure 12). This ancillary information could include the date the map was made, the specific numeric map scale used, a disclaimer, who the map was created for, who created the map, etc.
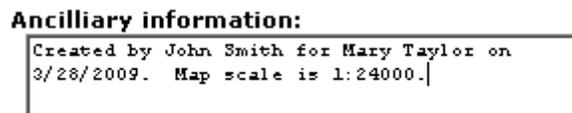
Figure 12. Left Frame Ancillary information text box for Export the Map to a File tool

The last specification to make is whether or not to display layer names as part of the map legend. Click on the gray button at the right end of the "Layer names:" pick list (see Figure 13). Click on the "No" line to exclude layer names. Click on the "Yes" line to include layer names. Keep in mind the number of lines each legend location will support, and remember that, most of the time, including layer names will nearly double the number of lines in your legend. The "Left" and "Right" legend locations will support about 35 lines of legend information; the "Bottom" legend location will support about 15 lines of legend information.

Figure 13. Left Frame Layer names selection list for Export the Map to a File tool

Finally, click on the gray "Export Map" button at the bottom of the Left Frame. Your .pdf map file is generated by the server and you can download it to your computer when the Left Frame content changes to read "Your map has been created" (see Figure 14). Click on the blue "Exported Map" text to download the map to your computer.

Figure 14. Left Frame completed map download link for Export the Map to a File tool

If your computer has Adobe Acrobat Reader software or plug-in installed, the map file (in .pdf format) will display automatically when the download process is completed. The Adobe Acrobat Reader software is free and available at http://www.adobe.com. The .pdf file can be printed on your printer, emailed to someone, or even taken to your local print shop for large format printing. This is a single use tool.

Export the map to a file using a wizard

This tool is designed to serve the user who prefers a wizard interface to walk them through the process of exporting their map. Before using this tool, click on the red "Legend" button and count how many lines are in your legend. This tool changes the display of the left frame (see Figure 15) and allows a user to provide specifications for the creation of a map in Adobe .pdf format. This tool, when selected, will not change the display in the Active Tool line of the Status Frame, so the previously used tool will remain active and continue to display.

Export map wizard

1. Setup the map for export

Before you export your map you will need to
setup the map using the mapping tools:

1. Zoom to the area you would like displayed
   on your map.
2. Enter the scale or zoom into the scale you
   would like your map produced at.
3. Turn on the layers you would like to use.

Next >

Figure 15. Left Frame interface one for Export the Map to a File using a Wizard tool

The first Left Frame interface in the wizard simply instructs the user in the basic steps to compose a map and set it up for export to .pdf file format. When you have read the three (3) steps and completed them, if you have not already completed prior to activating the wizard, simply click on the gray "Next" button. The second Left Frame interface in the wizard will then be displayed (see Figure 16).

Export map wizard

2. Choose paper size/layout

Paper size:
Ansi A (8.5x11) - Letter

Layout:
Portrait   Landscape
   ⊙   ○

Next >

Figure 16. Left Frame interface two for Export the Map to a File using a Wizard tool

Click on the gray button at the right end of the "Paper size:" pick list (see Figure 8). Click on the paper size you want your map created on. Now select the paper orientation you would like to have your map created with by clicking on the radio button below either "Portrait" or "Landscape". After you have made the selections in this second wizard interface, click on the gray "Next" button. The third Left Frame interface in the wizard will then be displayed (see Figure 17).

Export map wizard

3. Choose a map layout

Figure 17. **Left Frame interface three for Export the Map to a File using a Wizard tool**

The third wizard interface graphically displays the three choices for map layouts available to the user. Select the map layout you wish to use by clicking the radio button next to the layout. The left and right legend locations will support about 35 lines of legend information; the bottom legend location will support about 15 lines of legend information. This is why it was recommended that you count the number of lines in the legend before clicking on the "Export the Map to a File using a Wizard" tool. After you have made your selection in this third wizard interface, click on the gray "Next" button. The fourth Left Frame interface in the wizard will then be displayed (see Figure 18).

Export map wizard

4. Add title and text

Title:

Map Title Should Be Typed Here

Ancilliary information:

Created by John Smith for Mary Taylor on
3/28/2009. Map scale is 1:24000.

Next >

Figure 18. Left Frame interface four for Export the Map to a File using a Wizard tool

The next step is to type the title you wish to appear at the top of your map into the
"Title:" text box. After the title is entered, you may type any additional information that
you wish to appear in the lower corner of the map into the "Ancillary information:" text
box. This ancillary information could include the date the map was made, the specific
numeric map scale used, a disclaimer, who the map was created for, who created the
map, etc. After you have made type your information in this fourth wizard interface,
click on the gray "Next" button. The fifth, and final, Left Frame interface in the wizard
will then be displayed (see Figure 19).

Export map wizard

5. Other options

Include layer names in the legend:

Yes   No

Export Map

Figure 19. Left Frame interface five for Export the Map to a File using a Wizard tool

The last specification to make is whether or not to display layer names as part of the map
legend. Click on the radio button below "No" to exclude layer names. Click on the radio
button below "Yes" to include layer names. Keep in mind the number of lines each
legend location will support, and remember that, most of the time, including layer names
will nearly double the number of lines in your legend. The "Left" and "Right" legend
locations will support about 35 lines of legend information; the "Bottom" legend location

will support about 15 lines of legend information. Finally, click on the gray "Export Map" button at the bottom of the Left Frame. Your .pdf map file is generated by the server and you can download it to your computer when the Left Frame content changes to read "Your map has been created" (see Figure 20). Click on the blue "Exported Map" text to download the map to your computer.

Export map wizard

Your map has been created

Click on the link below to download the map:

- **Exported Map**

Figure 20. Left Frame completed map download link for Export the Map to a File using a Wizard

If your computer has Adobe Acrobat Reader software or plug-in installed, the map file (in .pdf format) will display automatically when the download process is completed. The Adobe Acrobat Reader software is free and available at http://www.adobe.com. The .pdf file can be printed on your printer, emailed to someone, or even taken to your local print shop for large format printing. This is a single use tool.

Export a simple map to a file

This tool is designed to serve the user who prefers a quick, pre-formatted export of their map, with making selection such as those available in the Export the Map to a File using a Wizard tool. This tool, when selected, will not change the display in the Active Tool line of the Status Frame, so the previously used tool will remain active and continue to display. When you click the tool, your .pdf map file is generated by the server and you can download it to your computer when the Left Frame content changes to read "Your map has been created" (see Figure 21). Click on the blue "Exported Map" text to download the map to your computer.

Export simple map

Your map has been created

Click on the link below to download the map:

- **Exported Map**

Figure 21. Left Frame completed map download link for Export a Simple Map to a File

If your computer has Adobe Acrobat Reader software or plug-in installed, the map file (in .pdf format) will display automatically when the download process is completed. The Adobe Acrobat Reader software is free and available at http://www.adobe.com. The .pdf file can be printed on your printer, emailed to someone, or even taken to your local print shop for large format printing. This is a single use tool.

Selection Tools

The next nine (9) tools allow the user different methods to select features that the user desires to view the database records of.

Select features in all layers

This tool functions almost identically to the "Identify features in all layers" tool, except that the user will see any filled features that are selected turn yellow, to indicate they have been selected. Some lines and points and most polygon features are filled features. Any features that are not filled features will be selected, and their database record will be displayed, but the feature will not temporarily change its display color to yellow. This tool, when selected, will display in the Active Tool line of the Status Frame as "Drill Down Select". After the user clicks on the tool, the user will click on a feature, or click and drag open a box containing one or more of the features of the displayed layers that the user wants to select and view database records for. A database widow will open to display the record(s) for the feature(s) contained in the selection box the user specified (see Figure 22). The database window is split into two frames, each with its own scroll bar. The left frame of the database window contains the list of currently displayed layers with records within the user's selection box. The right frame of the database window contains the records from the first layer listed in the left frame of the database window. All frame references within this tool description refer to frames within the database window. Each layer name in the list of layer names in the left frame is differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar. Each layer name in the list of layer names in the left frame is a hyperlink to display records from that layer in the right frame. To view the records from a layer, simply click on the layer name in the left frame. The right frame can display up to 10 database records at once, with each record differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar at the right edge of the right frame. The right frame can display up to 10 database records at once, with each record differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar at the right edge of the right frame. If more than 10 features were selected the user will find a hyperlink (blue text) at the bottom of the current list of records to navigate to the next or previous list of 10 or less records within the selection set. To navigate to the next or previous list of records, simply click on the blue hyperlink text. When the user is finished viewing the database records, the database window can be closed by clicking on the "X" or "Close" button in the upper right corner of the database window. To "un-select" features so that they change their color from yellow back to their original color, the user must click on the "Clear selected features" tool. This is a continuous use tool.
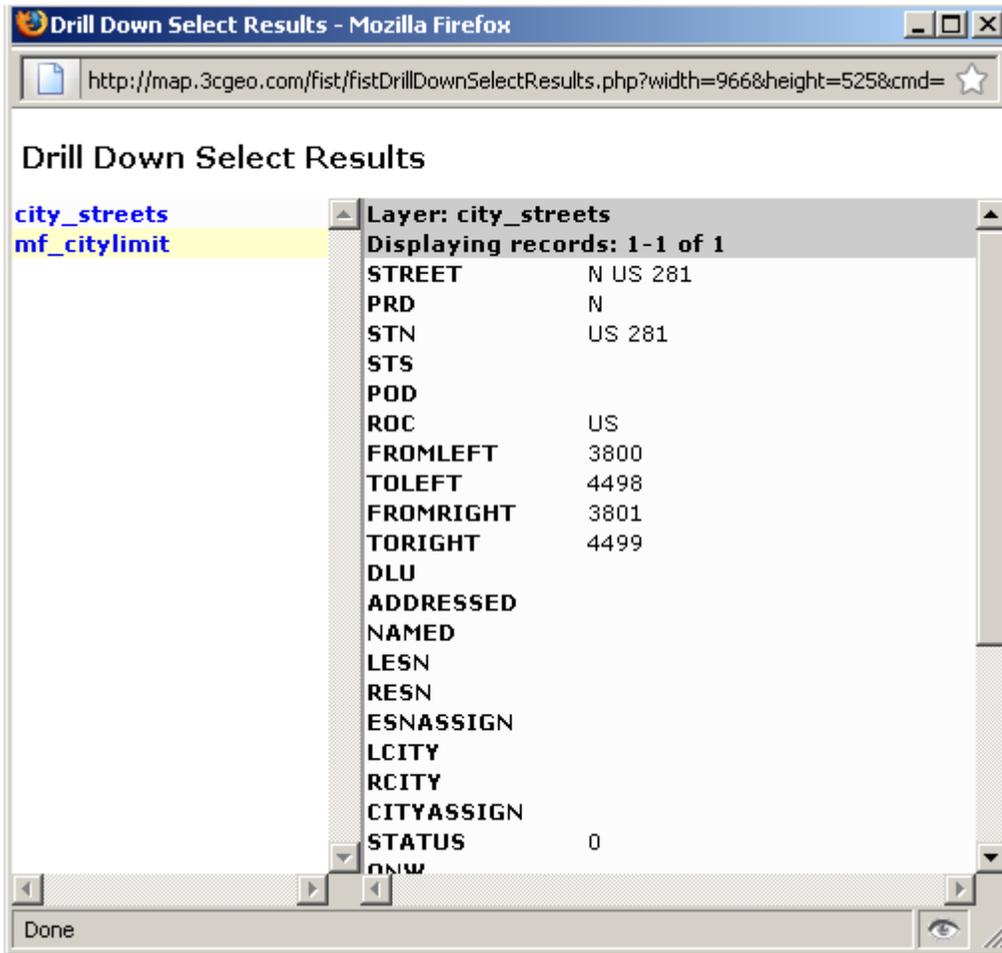
Figure 22. "Drill Down Select Results" Database window

Select features by click

This tool for selecting features is not activated until the user selects a layer to be the active layer. See the Active Layer paragraph in the Status Frame section of this document for instructions on making a layer the "Active Layer". This tool, when selected, will display in the Active Tool line of the Status Frame as "Select by point". After the user clicks on the tool, the user will click on a feature of the active layer that the user wants to select. The map will be refreshed to show the features in the active layer that have been selected in yellow, if that layer is represented with a filled symbology. If the user wishes to view the database records for the selected elements, use the "Display selected records" tool. This is a continuous use tool.

Select features by rectangle

This tool for selecting features is not activated until the user selects a layer to be the active layer. See the Active Layer paragraph in the Status Frame section of this document for instructions on making a layer the "Active Layer". This tool, when selected, will display in the Active Tool line of the Status Frame as "Select by rectangle". After the user clicks on the tool, the user will click and drag open a box containing one or more of the features of the active layer that the user wants to select. The map will be

refreshed to show the features in the active layer that have been selected in yellow, if that layer is represented with a filled symbology. If the user wishes to view the database records for the selected elements, use the "Display selected records" tool. This is a continuous use tool.

Select features by line

This tool for selecting features is not activated until the user selects a layer to be the active layer. See the Active Layer paragraph in the Status Frame section of this document for instructions on making a layer the "Active Layer". This tool, when selected, will display in the Active Tool line of the Status Frame as "Select by line". The user will draw a line by clicking points in the Map area of the user interface. When the user clicks the first point, the Left Frame will display the coordinates of that point, and each point the user clicks on in the Map area (see Figure 23). As the user clicks each point after the first point, a red line is drawn between the last point and previous point.

Select By Line

Select by line	
Point 1	2943787.16 E 10180940.89 N
Point 2	2943942.71 E 10180357.57 N
Point 3	2946242.66 E 10179118.71 N

Figure 23. Left Frame interface for Select features by line tool

When the user has drawn the line they wish to use for selecting elements in the active layer, they then click on the gray "Select by line" button located at the top of the Left Frame. The map will be refreshed to show the features in the active layer that have been selected in yellow, if that layer is represented with a filled symbology. If the user wishes to view the database records for the selected elements, use the "Display selected records" tool. This is a continuous use tool.

Select features by polygon

This tool for selecting features is not activated until the user selects a layer to be the active layer. See the Active Layer paragraph in the Status Frame section of this document for instructions on making a layer the "Active Layer". This tool, when selected, will display in the Active Tool line of the Status Frame as "Select by polygon". When the user clicks the first point, the Left Frame will display the coordinates of that point twice (as first and last point), and each point the user clicks on in the Map area (see Figure 24). As the user clicks each point after the first point, a red polygon boundary is drawn between the last point and previous point.

Select By Polygon

```
Select by polygon
```

Point 1	2944598.25 E 10179979.80 N
Point 2	2945164.91 E 10180129.80 N
Point 3	2945142.68 E 10179418.71 N
Point 4	2944598.25 E 10179979.80 N

Figure 24. Left Frame interface for Select features by polygon tool

When the user has drawn the polygon they wish to use for selecting elements in the active layer, they then click on the gray "Select by polygon" button located at the top of the Left Frame. The map will be refreshed to show the features in the active layer that have been selected in yellow, if that layer is represented with a filled symbology. If the user wishes to view the database records for the selected elements, use the "Display selected records" tool. This is a continuous use tool.

Select features by layer

This tool is an extremely specific tool designed to select features from one layer contained within a polygon from another layer. The first task the user must accomplish is to select a single polygon using one of the other "Select" tools, and "Zoom Out" to a map scale that displays the entire selected polygon. After that single polygon selection is accomplished, the user must make the layer they wish to select features from the active layer. See the Active Layer paragraph in the Status Frame section of this document for instructions on making a layer the "Active Layer". This tool changes the display of the left frame (see Figure 25) and allows a user to select the name of the layer that the selected polygon is in. This tool, when selected, will not change the display in the Active Tool line of the Status Frame, so the previously used tool will remain active and continue to display.

Select By Polygon Layer

Currently only one polygon can be selected in the layer you select below. Otherwise no features will be selected in the active layer.

```
Select a Layer ...          ▼
```

```
Submit
```

Figure 25. Left Frame interface for Select features by layer tool

Now click on the gray button at the right end of the "Select a layer:" pick list. Click on the layer that contains the single selected polygon that the user now wants to use to make an additional selection with. After selecting the layer from the list, simply click on the gray "Submit" button to select all of the features in the current active layer that are within, or touch, the "selection" polygon. The map will be refreshed to show the features in the active layer that have been selected in yellow, if that layer is represented with a filled symbology. If the user wishes to view the database records for the selected elements, use the "Display selected records" tool. This is a single use tool.

Select features by attributes

This tool changes the display of the left frame (see Figure 26) and allows a user to provide specifications for the creation of a database query to select features, in the current active layer, based on their attributes. This tool, when selected, will not change the display in the Active Tool line of the Status Frame, so the previously used tool will remain active and continue to display. To insure that you can perceive the features of the active layer that are selected using this tool, click on "Zoom to the active layer" tool before using this tool.

Select By Attributes

1. Select a field
LOCATION

2. Select a logical operator
=

3. Input the data value

4. Add the information to the query string
Add to query string

5. Refine the search
AND OR NOT ( )

6. Submit the query or clear the query
Submit   Clear

Query string:

Figure 26. Left Frame interface for Select features by attributes tool

This tool requires the user to be familiar with the database structure of the layer the user wishes to perform the query against. To accomplish this, the user can make that layer the active layer and use the "Identify" tool to review records in the database attached to features in that layer. The user should pay special attention to the standard used in any text fields as the query is case-sensitive. In order to help the user understand this interface, the instructions will be labeled according to the line of the Left Frame interface they pertain to.

1. Click on the gray button at the right end of the "Select a field" pick list. Click on the database field that the user wants to use to make the feature selection with.
2. Click on the gray button at the right end of the "Select a logical operator" pick list. The list of operators appears in the following order (see Figure 27): equal to, greater than, less than, greater than or equal to, less than or equal to. Click on the logical operator that the user wants to use to make the feature selection with.

Figure 27. Left Frame Logical operator selection list for Select features by attributes tool

3. Click on the empty data entry field in line 3 and type the value (text or number) that you want to use in your query. As mentioned before, text is case-sensitive.
4. Click on the blue "Add to query string" text. The user will notice that the inputs in lines 1, 2 and 3 are now composed into a query string in the "Query String:" data entry field under line 6 of the Left Frame interface.
5. If the user desires to create a compound query, then click on one of the blue operators listed under the "Refine the search" text. These operators allow the user to refine the search by adding additional criteria to the query string. The operator "AND" allows the user to create a second criterion (query string) and the records that meet both criteria are selected. The operator "OR" allows the user to create a second criterion (query string) and the records that meet either criterion are selected. The operator "NOT" allows the user to create a second criterion (query string) and the records that meet the first criterion (query string) are selected, but the subset of records that meet the second criterion (query string) are eliminated from the selection. The operators "(" and ")" should not be used. If the user selects an operator from line 5, it is automatically added to the "Query String:" data entry field under line 6 of the Left Frame interface. If the user selects an operator from line 5, they should return to lines 1, 2 and 3 to build a second criterion to be added to the query string.
6. When the user had created the query string desired in the "Query String:" data entry field under line 6 of the Left Frame interface, then click on the gray "Submit" button to run the query against the attribute database of the active layer. The map will be refreshed to show the features in the active layer that have been selected in yellow, if that layer is represented with a filled symbology. If the user wishes to view the database records for the selected elements, use the "Display selected records" tool. If the user wants to clear the "Query String:" data entry field under line 6 of the Left Frame interface, click the gray "Clear" button and the "Query String:" data entry field under line 6 of the Left Frame interface will be cleared. The user may now build another query string. This is a single use tool.

Display selected records

This tool simply displays the database records of the features in the Active Layer that have been selected using other selection tools. The selected records are displayed in a separate database window (see Figure 28).
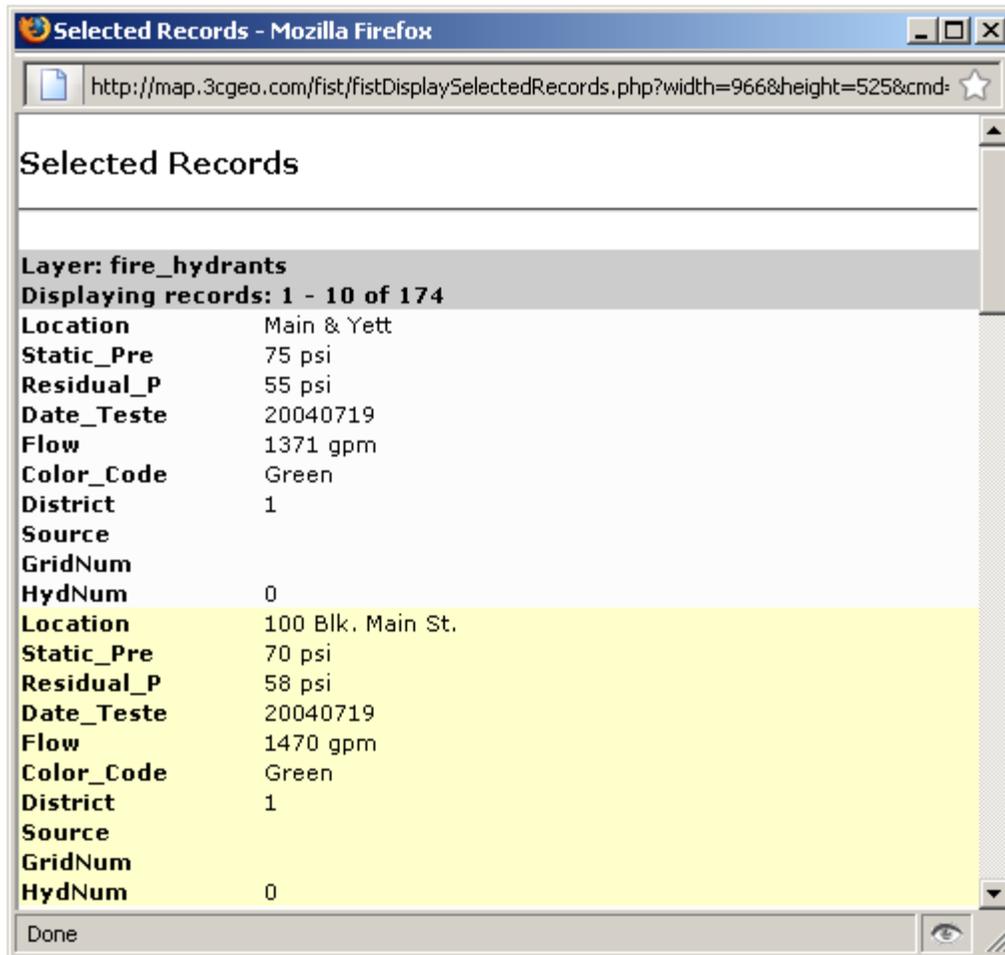

Figure 28. "Selected Records" Database window

The database window can display up to 10 database records at once, with each record differentiated by alternating white and yellow backgrounds as the user scrolls down using the scroll bar at the right edge of the database window. If more than 10 features were selected the user will find a hyperlink (blue text) at the bottom of the current list of records to navigate to the next or previous list of 10 or less records within the selection set. To navigate to the next or previous list of records, simply click on the blue hyperlink text. When the user is finished viewing the database records, the database window can be closed by clicking on the "X" or "Close" button in the upper right corner of the database window. This tool, when selected, will not change the display in the Active Tool line of the Status Frame, so the previously used tool will remain active and continue to display. This is a single use tool.

Clear selected features

This tool simply clears any selected features, on any layer, and returns them to their original display color. This is a single use tool.

Acetate Tools

The next seven (7) tools allow the user different methods to add graphics and text on top of the map that is displayed on their computer screen. The user must understand that these tools function as if the user has overlaid their screen with a clear layer of acetate for them to "doodle" on. This set of tools allows the user to make these "doodles". It is important to note that the user IS NOT creating new data or modifying the layers of information displayed in the GWP. This version of a GWP is a "read-only" version. However, **the acetate doodles WILL appear on a map that is exported to .pdf file format.** Additionally, if the user desires, they may capture what they create on their screen and paste that view into other documents. When a Windows computer user desires to capture what is on the screen, they may simply press the "Print Screen" key on their keyboard, which copies what is displayed on their screen to their clipboard. The user can then open an application (Word, Excel, PowerPoint, etc.) and "paste" the contents of the clipboard into a document in that application with a "<Ctrl V" keystroke combination or by using the "Paste" function found within the application. Additionally there are screen capture applications that allow a user to capture part or all of the contents of their screen. One such application is "Snippy" which is available at http://www.bhelpuri.net/Snippy/ . This capability enables a user to add additional notes and graphics with the acetate tools below and then capture and share what they have created with someone else. This can be very helpful when the user making the map with acetate additions depicts information not included in the GWP data layers.

Draw a point

This tool, when selected, will display in the Active Tool line of the Status Frame as "Draw point". After the user clicks on the tool, the user will click on a location on the map and a single black point will be drawn at that location (see Figure 29). The user may continue to add additional points simply by clicking on the map. This is a continuous use tool.
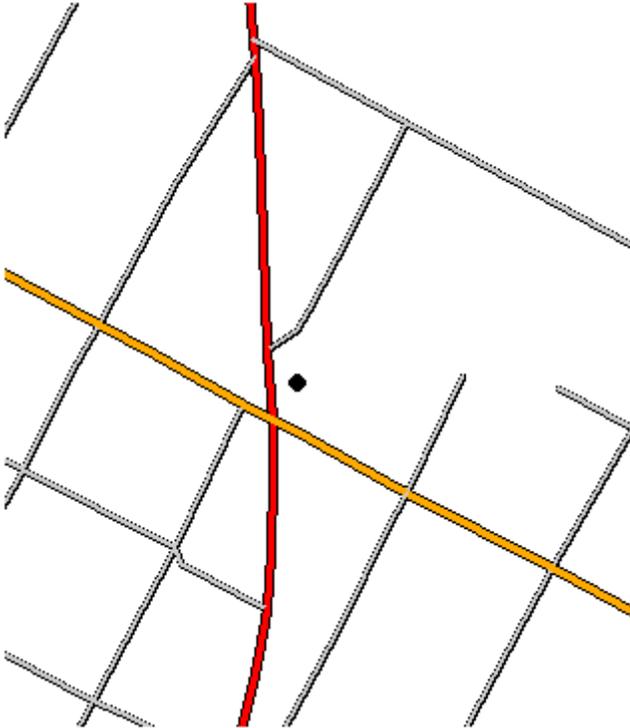
Figure 29. Black point created near intersection with "Draw a point" acetate tool

Draw a line

This tool, when selected, will display in the Active Tool line of the Status Frame as "Draw line". The user will draw a line by clicking points in the Map area of the user interface. When the user clicks the first point, the Left Frame will display the coordinates of that point, and each point the user clicks on in the Map area (see Figure 23).

Figure 30. Left Frame interface for Draw a line acetate tool

As the user clicks each point after the first point, a red line is drawn between the last point and previous point. When the user has added all of the points they desire, click on the gray "Draw line" button in the Left Frame and the red line will be redrawn as a thin black line in top of the map (see Figure 31). This is a continuous use tool.
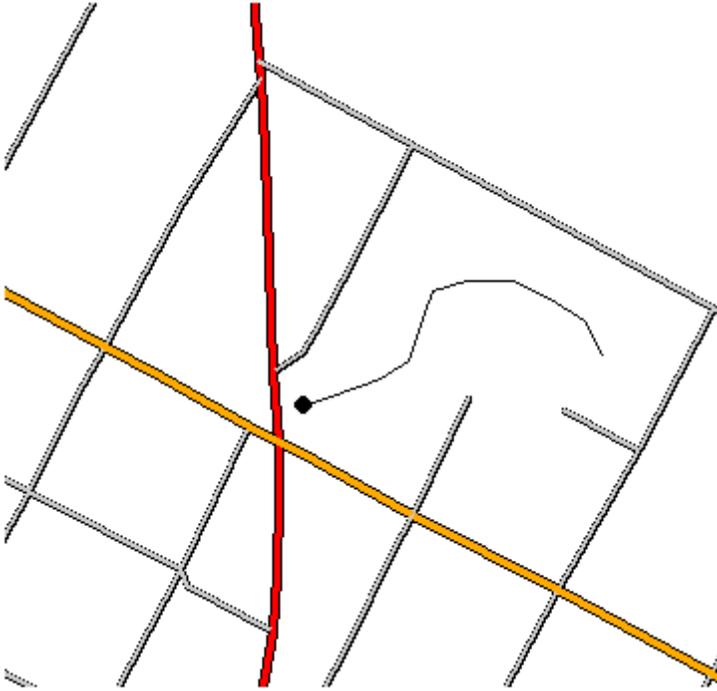
Figure 31. Black line created from point near intersection with "Draw a line" acetate tool

Draw a rectangle

This tool, when selected, will display in the Active Tool line of the Status Frame as "Draw rectangle". After the user clicks on the tool, the user will click and drag open a red rectangle. The map will be refreshed to show the rectangle just drawn with a thin black boundary and thin red line diagonal fill (see Figure 32). This is a continuous use tool.
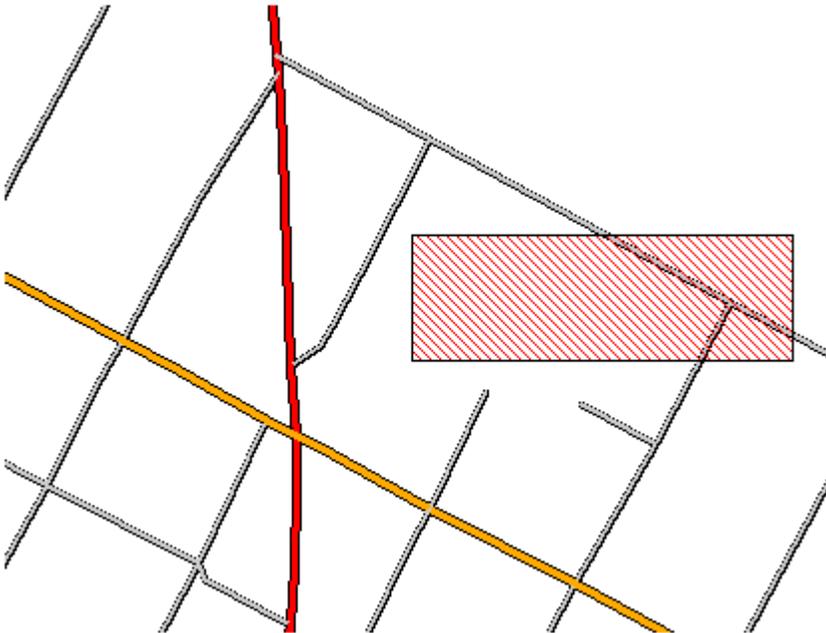

Figure 32. Black rectangle with diagonal red line fill created with "Draw a rectangle" acetate tool

Draw a circle

This tool, when selected, will display in the Active Tool line of the Status Frame as "Draw circle". After the user clicks on the tool, the user will click and drag open a red circle or ellipse. The map will be refreshed to show the circle or ellipse just drawn with a thin black boundary and thin red line diagonal fill (see Figure 33). This is a continuous use tool.
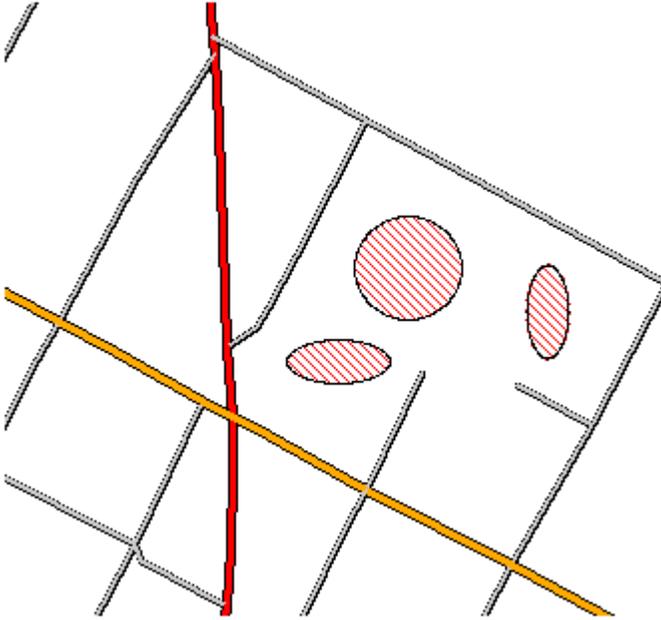

Figure 33. Black circle and ellipse with diagonal red line fill created with "Draw a circle" acetate tool

Draw a polygon

This tool, when selected, will display in the Active Tool line of the Status Frame as "Draw polygon". When the user clicks the first point, the Left Frame will display the coordinates of that point twice (as first and last point), and each point the user clicks on in the Map area (see Figure 34). As the user clicks each point after the first point, a red polygon boundary is drawn between the last point and previous point.

Figure 34. Left Frame interface for Draw a polygon acetate tool

When the user has drawn the polygon they wish to use for selecting elements in the active layer, they then click on the gray "Draw polygon" button located at the bottom of the Left Frame interface. The map will be refreshed to show the polygon just drawn with a thin black boundary and thin red line diagonal fill (see Figure 35). This is a continuous use tool.
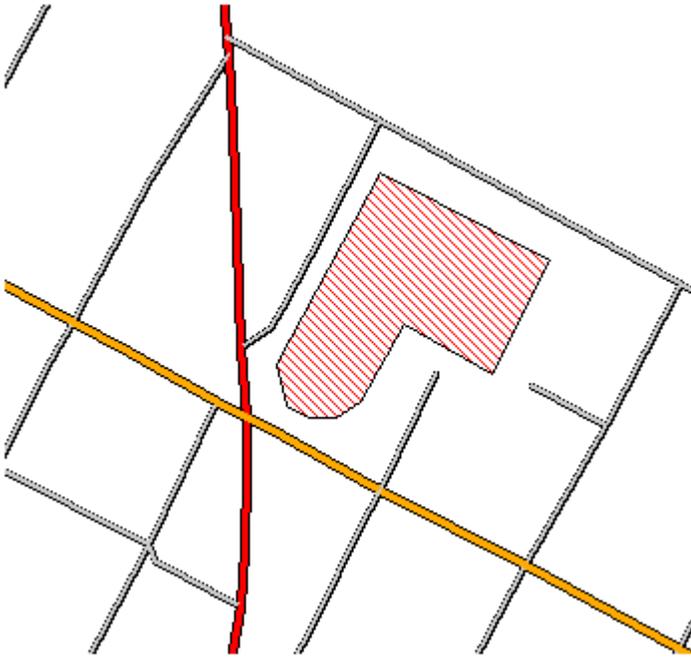
Figure 35. Black polygon with diagonal red line fill created with "Draw a polygon" acetate tool

Draw text   ABC

This tool, when selected, will display in the Active Tool line of the Status Frame as "Draw text". After the user clicks on the tool, the user will click on a location on the map and a single red point will be drawn at that location and the Left Frame will display the "Draw Text" interface (see Figure 36).

Figure 36. Left Frame interface for Draw text acetate tool

The user can select the color of flag they wish to have displayed at the point by clicking on the radio button below the flag color of their choice, or under the "No Image" label if no flag is desired. Next, the user should type in the text they wish to have displayed at the point they clicked on the map. If desired, the user can click on the blue "Label with map coordinate" text and the application will automatically type in the coordinate of the point into the "Text:" field. Once the "Text:" field contains the information the user

desires, click on the gray "Draw text" button located at the bottom of the Left Frame interface. The map will be refreshed to show a flag (if selected) and the text within a thin black rectangle with light yellow fill (see Figure 37). This is a continuous use tool.
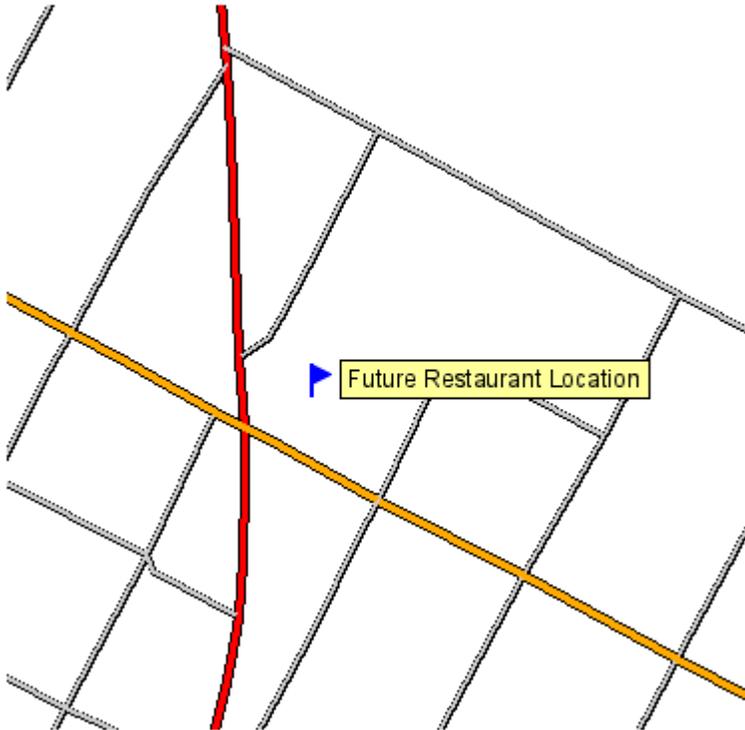

Figure 37. Text in black rectangle with light yellow fill created with "Draw text" acetate tool

Erase all graphics

This tool simply clears all acetate features and redraws the map. This is a single use tool.

Recipe for Making a Map

1. Select Layers

First step in making a map is to select the layers the user wants to view in the map. Use the Red "Layer" button in the Left Frame to access the user interface to select the layers. Be sure to click on the gray "Refresh map" button at the bottom of the Left Frame to make the map update and display the layers the user selected, or turn off the display of the layers they un-selected.

2. Zoom into Area of Interest

Next, zoom to the area of interest for the map using the View Control tools. Don't forget that the user can specify a specific scale for the map (in the Status Frame) so they can measure with an engineering scale or ruler after printing the map.

3. Export the Map

Finally, the user can export the map to a .pdf file using one of the Export tools. The very first time a user exports a map, they should probably use the "Export the map to a file using a wizard" tool. This will familiarize the user with the various controls available for export and will help the user visualize the position of the map component areas. After the first use of the Export wizard, the user will probably prefer the "Export the map to a file" tool because all of the export controls are available in one Left Frame interface.

This represents the basic recipe for composing and exporting a map. Have fun and remember, users of the GWP cannot damage, harm, edit or erase the data displayed in the GWP – it is a **read-only** site.