

NJ-GeoWeb on the Internet: Primer and Tutorial

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Introducing NJ-GeoWeb – The Successor to i-MapNJ

The Bureau of Geographic Information Systems (BGIS) is building NJ-GeoWeb, a suite of data and feature-rich web-based interactive mapping applications. The applications are being built using Orion™ OnPoint™ software which will enable BGIS to more rapidly develop applications with better performance, greater functionality, security (when necessary), and greater ability to more easily integrate with new and existing applications, reports, and documents. NJ-GeoWeb will use new and existing map serving technologies and will be able to connect to data from many different sources (NJEMS, COMPASS, potentially non-DEP, etc.), as well as link to online reports (DEP Data Miner) and other documents. NJ-GeoWeb will allow the combining of map layers from multiple map services into a single integrated map. NJ-GeoWeb applications will run for a period of time side-by-side with the existing i-MapNJ applications. However, the plan is to eventually replace i-MapNJ applications with similar applications in NJ-GeoWeb.

As mentioned, one of the major improvements over the i-MapNJ applications will be better performance. The NJ-GeoWeb applications will be running on a dedicated production server at New Jersey Office of Information Technology (NJOIT) and will not be sharing resources with other applications. There is also a fail-over server that should help in the event that the primary production server requires support.

All of the major tool functions that exist in the Internet i-MapNJ DEP application are present in NJ-GeoWeb. NJ-GeoWeb has expanded functionality for selecting features, measuring, and buffering. These tools are grouped under Advanced Tools. A new Generate URL tool enables a user to capture a URL string that when executed will launch the NJ-GeoWeb application zoomed to the same map extent. Also, selected features can be saved and later retrieved by the user or shared via e-mail.

Multiple profiles of NJ-GeoWeb can be developed (currently there are three) and each profile can have its own set of multiple Map Tabs. The developers of NJ-GeoWeb applications can designate what GIS layers are to be included for each map tab. The user can easily switch between map tabs by clicking on a different tab. The spatial extent of the map is maintained, but the GIS layers available to the user change.

The first profile/map tab is called **GeoWeb** and has been developed to suite the needs of a general audience that may be interested in viewing what environmental information exists in the vicinity of a location or area of interest. The GeoWeb profile allows users to view and interact with a very diverse set of environmental map layers and related data. Users may run searches to find a location or area of interest, display features from the mapped data layers, and view environmental data associated with those features. Tools are provided to allow users to select and buffer features, measure distances and calculate areas, and determine or locate and display NJ state plane coordinates.

The **Well Drillers** profile/map tab has been developed as a customized version of NJ-GeoWeb for the New Jersey well drilling community. The Well Drillers profile provides the mapped layers and tools to allow well drillers to find a location or area of interest, determine if the location is in or near the New Jersey Highlands or Pinelands areas, view possible groundwater contamination concerns in the area, measure distances between

locations and determine the New Jersey state plane coordinates for Well Permit Applications. The GeoWeb map tab is also included in this profile.

The **Volunteer Water Monitoring** profile/map tab has been developed as a customized version of NJ-GeoWeb for users participating in the volunteer monitoring program coordinated by NJDEP's Water Monitoring & Standards' Bureau of Freshwater & Biological Monitoring. This profile allows for the public, volunteer monitoring community, local, state and federal agencies to review and share information and data. This profile provides the mapped layers and tools to allow users to locate monitoring stations within an area of interest, view monitoring station information, and view collected monitoring data in linked custom DEP Data Miner reports. There will be additional layers added to this profile in the near future, including site locations of pipes and ditches. The GeoWeb map tab is also included in this profile.

The Queries in i-MapNJ are called Searches in NJ-GeoWeb. Searches are by default independent of the map tabs in NJ-GeoWeb. Any search developed in NJ-GeoWeb is available for use in any map tab, so long as security has not been set to restrict its use.

In an effort to provide more environmental data related to features from specific map layers, BGIS has established document links that leverage existing DEP Data Miner reports. DEP Data Miner is an independent NJDEP web-based reporting application. These links enable access to additional information associated with selected features from the NJEMS Sites and Volunteer Water Monitoring Stations layers.

The purpose of this document is to enable users to become familiar with NJ-GeoWeb. No doubt users accustomed to using i-MapNJ will find it different in a number of ways. Keep in mind that while BGIS has done some customization work on the application, it is still very close to its original user interface. BGIS plans to make further customizations to improve the user experience and add functionality to make NJ-GeoWeb a very powerful and useful tool for NJDEP staff and the public.

1. NJ-GeoWeb Interface

Users of i-MapNJ will notice a new look with numerous user interface differences. The interface presented to the user consists of a **Map View Frame**, a **Map Tools** toolbar, the **Layer Manager**, and **Advanced Tools** buttons. By default the Layer Manager is open and the Advance Tools is closed when the application is launched. Many of the tools launch windows that can be moved and placed anywhere on the application window. When finished with using a tool the user can close its window.

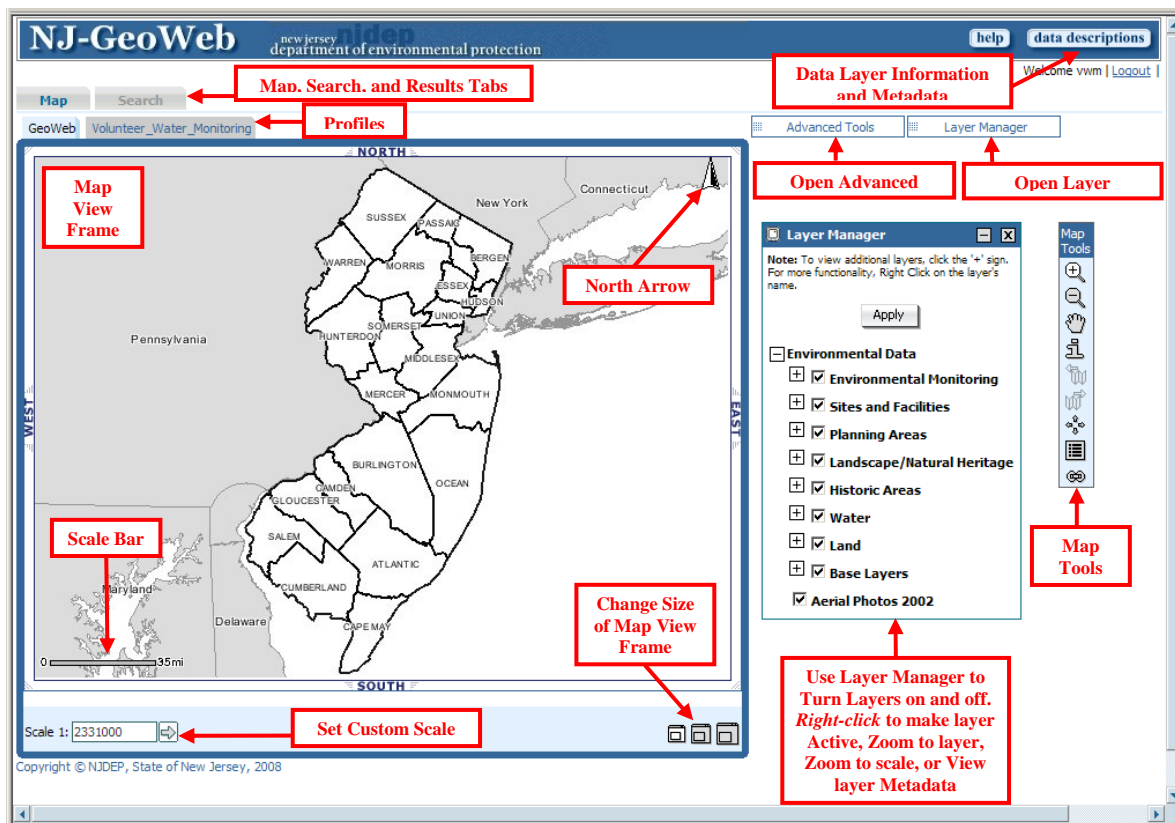


Figure 1. NJ-GeoWeb Functionality

Also notice that near the top-left of the screen there are tabs for **Map** and **Search**. At start-up the Map tab is selected, but the Search tab is activated with a mouse click on the tab. This tutorial begins by discussing the Map tab functions.

Map View Frame

The Map View Frame shows the main map display, and is the major focus of the application. This is the area where map layers are displayed at different zoom levels (or scales) and where the user can pan and zoom to areas of interest. By default, the opening of the application displays New Jersey and county boundaries along with the Mid-Atlantic States layer. The Map View frame also displays the North Arrow and Scale Bar and has text on the borders for compass directions (north, south, east and west) that pan the map when clicked.

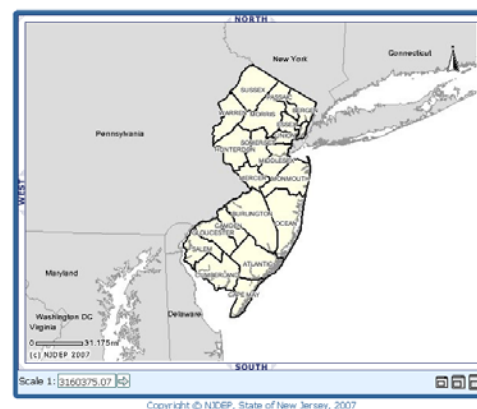









Figure 2. Map View Frame

Map Tools Toolbar

The toolbar provides most of the basic functions of the application. Tools can be used to find an area of interest in the Map View by zooming in or out to different scales, and by panning around the map by clicking and dragging the map. The **Identify**  tool provides information from the active layer when the features are clicked on. The **Previous Map** 

and **Next Map**  tools are helpful to return to geographic locations or extents, and the **Full View**  tool returns the map to the extent of New Jersey. The **Legend**  tool opens a window that provides the legend (or key) to the symbolization of the layers on the map. The **Generate URL**  page creates a web link back to the application that can be saved or e-mailed. Finally, the **Help**  tool opens a NJ-GeoWeb help topics window. A summary of each tool is provided in Figure 3.

NOTE: The function of all the tools on the tool bars in NJ-GeoWeb can be revealed by holding the mouse cursor over the tool's icon. When in doubt as to the name or function of a tool, use this feature.











	Zoom In	Zoom In by either clicking on the map or dragging a rectangle on the map
	Zoom Out	Zoom Out by either clicking on the map or dragging a rectangle on the map
	Pan	Pan the map by clicking and dragging the map to a new location
	Identify	Provides attribute data of a feature from the currently active layer
	Previous Map	Changes the map back to its previous extent
	Next Map	Changes the map forward to its prior extent
	Full View	Zoom to full view (initial extent)
	Legend	Opens the legend which displays the symbols of currently visible layers
	Generate URL	Opens the Generate URL window, providing the ability to create a URL (which can be copied) that will launch the same application, zoomed to the current extent, with an optional label

Figure 3. Summary of Map Tools

Layer Manager

Layer Manager enables the turning on and off of mapped layers, and is a floating control that can be moved to any location on the display, minimized, or closed. Layers are organized into groups that can be expanded to show what layers they contain (click on the plus symbol  next to the group). Layers are grouped in commonly recognized categories, as shown in Figure 4.

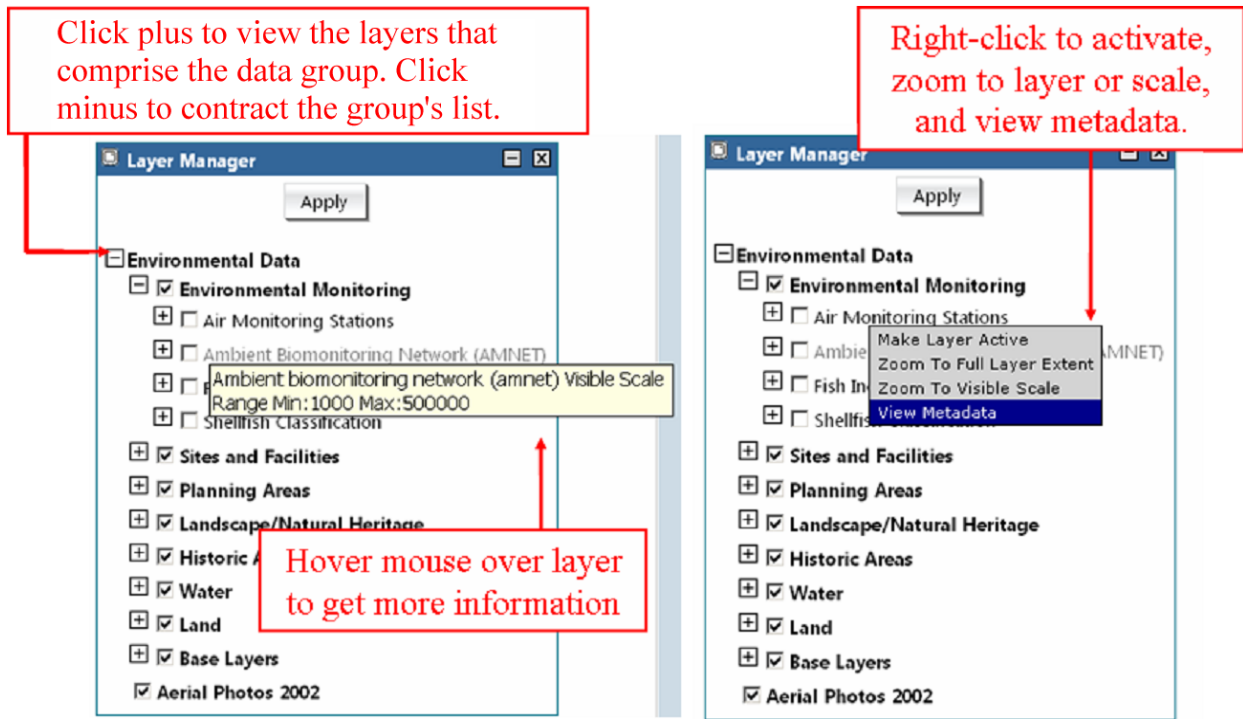


Figure 4. Layer Manager Features

Layers are turned on by clicking the checkbox next to the layer name and then clicking the **Apply** button. Another click in the checkbox will turn a layer off when the apply button is clicked. Layer names that appear grayed-out are not visible at the current map scale. Placing the mouse cursor over a grayed-out layer name and holding it still for a few seconds will activate a mouse-over popup that indicates the scale range at which the layer can be viewed.

The layer order can be changed by holding down the left mouse button on a layer name, and dragging it to a new location. Layers higher in the stack will draw on top of those that are below.

Right clicking on a layer name launches a layer menu through which a user can make the layer “active”, zoom to the layer’s extent, zoom to the scale at which the layer becomes visible, or view the layer’s metadata.

Advanced Tools

Advanced tools include some features GIS users expect, but also some new capabilities. This is a floating toolbar (see Figure 5.) and it can be moved or closed. When one of the tools is clicked, a new window will be opened for that particular tool.

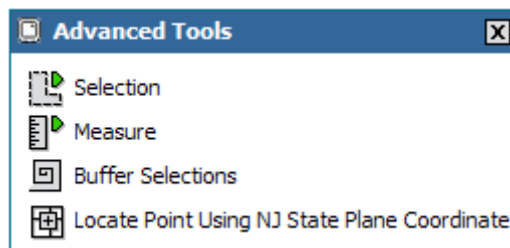


Figure 5. Advanced Tools Control

The available tools are **Selection**, **Measure**, **Buffer Selections**, and **Locate Point Using NJ State Plane Coordinates**. The tool bars for each of these are shown and described in Figure 6 below.

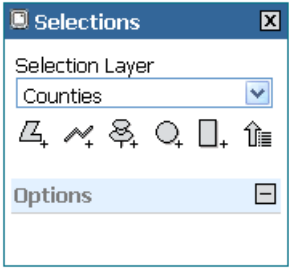
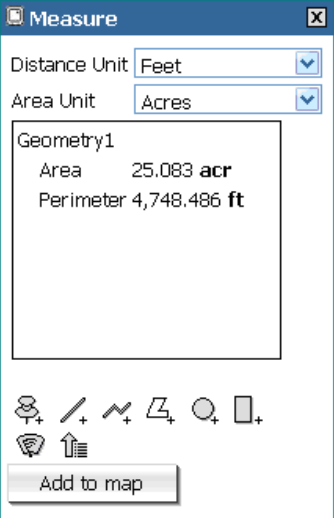
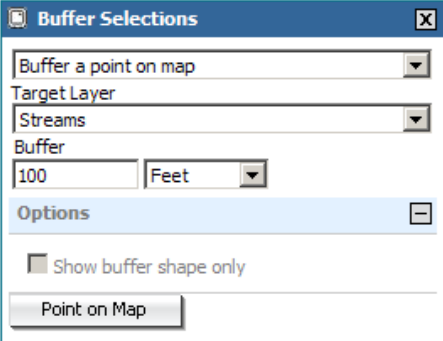
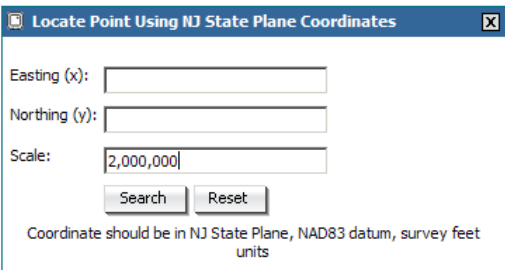
	<p>Selection Tool</p> <p>Used to select features from the currently active layer. When features are selected, they are highlighted on the map and are listed in the selection list. The selection list tracks both selections that are current and those that had been completed during a previous selection process or search. Selections can be saved and previously saved selections can be retrieved.</p>
	<p>Measure Tool</p> <p>Used to measure a distance, an area or a point location in NJ State Plane coordinates. Distance can be measured by either clicking on Measure Distance to find the length of one line, or by clicking on Multi Segment, which allows the user to determine the distance along a line made up of multiple points. Measure Polygon provides both perimeter and area. Measurements can also be added to the map display (Add to map) as a graphics and be added to the selection list or saved and retrieved at a later time.</p>
	<p>Buffer Selections Tool</p> <p>Used to create a buffer around a previously made selection. The buffer menu allows the user to decide whether to buffer features from the active selection list or a point on a map, and the radius of the buffer. The resulting selections from the buffer operation are denoted with asterisks in the selection list.</p>
	<p>Locate Point Using NJ State Plane Coordinate Tool</p> <p>Allows for the user to input x and y coordinates in order to find a specific point. The coordinates are based on the NJ State Plane coordinate system and are measured in feet. This function is most useful if the coordinates of the point are already known and the user wants to search for the location.</p>

Figure 6. Advanced Tools Descriptions

2. Searches

In addition to the **Map** tab there is also a **Search** tab which when clicked on replaces the map view window with the Search window. When the Search window is open, individual tabs for the most frequently used searches in NJ-GeoWeb are displayed just under the Map and Search tabs. These tabs are the launching points for searches that have been created to get the user to an area of interest or to select and highlight features from a GIS layer. To view and access the entire list of searches, click on the “**All Searches**” tab (last tab on the right). Currently, the following searches are available in NJ-GeoWeb: **Address, County, Municipality, Place, Zip Code, Watershed Management Area, Watershed/Sub-Watershed, NJEMS Site** (Figure 7b), and **NJEMS Sites in Area of Interest**. Additional searches will be added in the future as NJ-GeoWeb develops further.



Figure 7a. NJ GeoWeb Search Feature

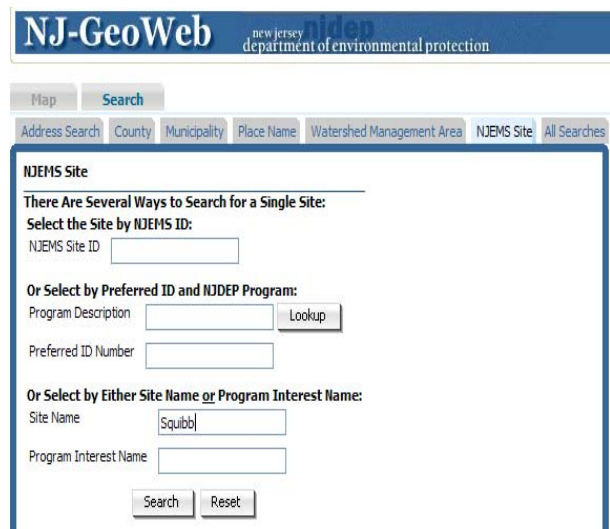


Figure 7b. NJEMS Sites Search Example

3. Linking to DEP Data Miner

Features from the NJEMS Sites GIS layer are linked to **DEP Data Miner** via their NJEMS Site ID. This allows easy access to DEP activity, permitting, and enforcement data from a limited number (for now) of existing DEP Data Miner reports. To access these reports, click on the document link at the bottom of the **More Information** window. The More Information window is opened when the user uses the Identify Tool on a feature from the NJEMS Sites layer. The More Information window also opens when the user clicks on the label index (blue underlined numbers) for a feature in the Selection List window produced as a result of a search. As shown in Figure 8, the search yielded a number of sites that matched the search criteria. Clicking the hyperlinked number next to the selections in the Selection List window opens the More Information window that displays attribute data for the corresponding feature.

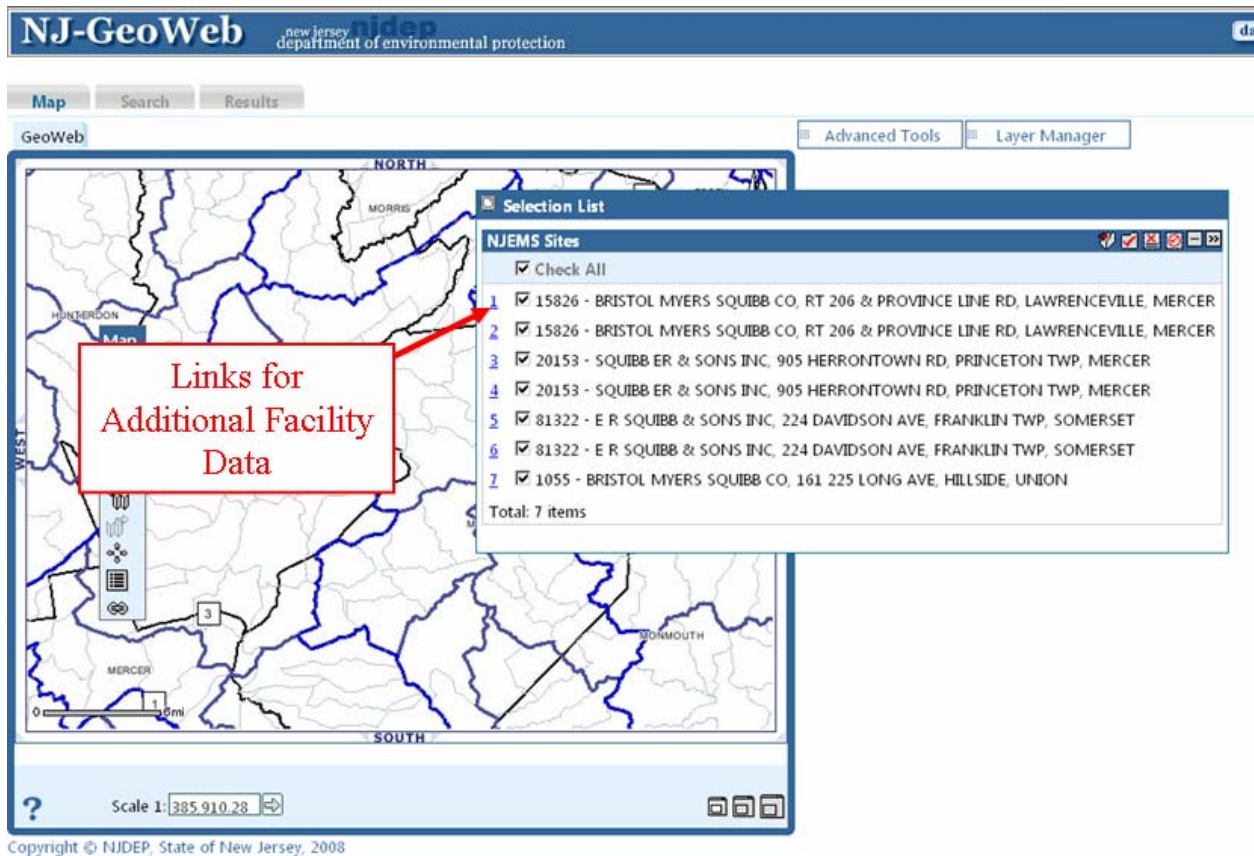


Figure 8. More Information about Selected Sites

Additional data is accessible by clicking the Documents link (Figure 9), which exposes the link to access Data Miner reports.

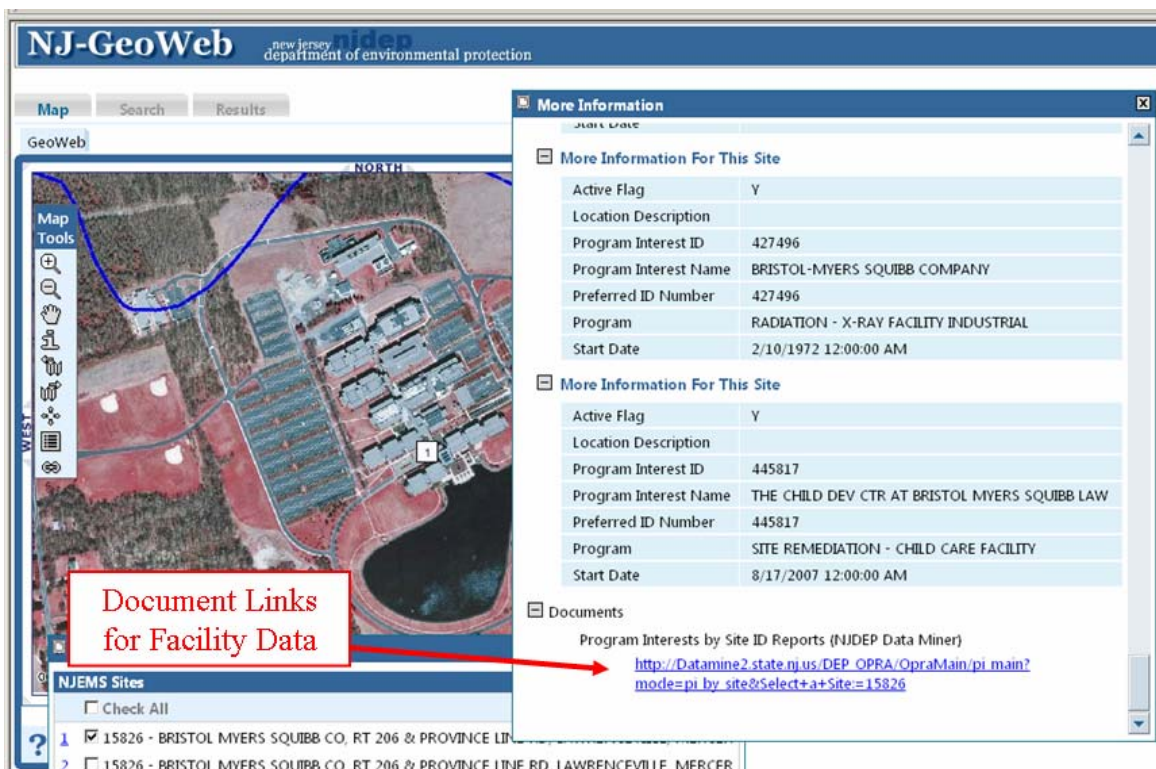


Figure 9. Data Miner Link in More Information window

A great deal of information is available through the link to DEP Data Miner, including permit, inspection, violation and enforcement activities, searchable by date ranges (Figure 10).

Address http://datamine2.state.nj.us/DEP_CPRA/OpraMain/pi_main?mode=pi_by_site&Select+a+Site:=15826 Go Links >>

data errors site search reports by category reports search help

PI by site
15826

15826 15826 15826
Inspections Enforcement Violations Actions

[1 to 19 of 19]


Program

Air

PI ID	NAME	ACTIVE	ADDRESS [street_name] [municipality] [zip]	TYPE	REPORTS
61052	E R SQUIBB & SONS LLC	Y	RT 206 & PROVINCE LINE RD, Lawrence Twp, NJ 08648	AIR OPERATING PERMITS	Air Permit SI
60069	SQUIBB,E.R. & SONS, INC.	N	RT. 206 & PROVINCE LINE, Lawrence Twp, NJ .	AIR	Air Permit SI
DPCC					
110700179000	BRISTOL-MYERS SQUIBB - PRINCETON	Y	ROUTE 206 & PROVINCE LINE ROAD, Lawrenceville, NJ 085430000	DPCC MAJOR FACILITIES	Enf. Actions by PI
Hazardous Waste					
NJD001865534	BRISTOL MYERS SQUIBB	Y	RT 206 & PROVINCE LINE RD, Lawrence Twp, NJ 08648	HW GENERATOR AND TSD	Enf. Actions by PI
Land Use					
1107-04-	BRISTOL-MYERS		US RT 206 &	COASTAL AND	Enf. Actions by PI

Figure 10. Data Miner Window

4. More Selection Tools

Additional tools are available once a selection has been made and a selection list is displayed. When the **Show More Selection Tools** button  is clicked, a new window appears with these extra **Selection Tools** (see Figure 11).

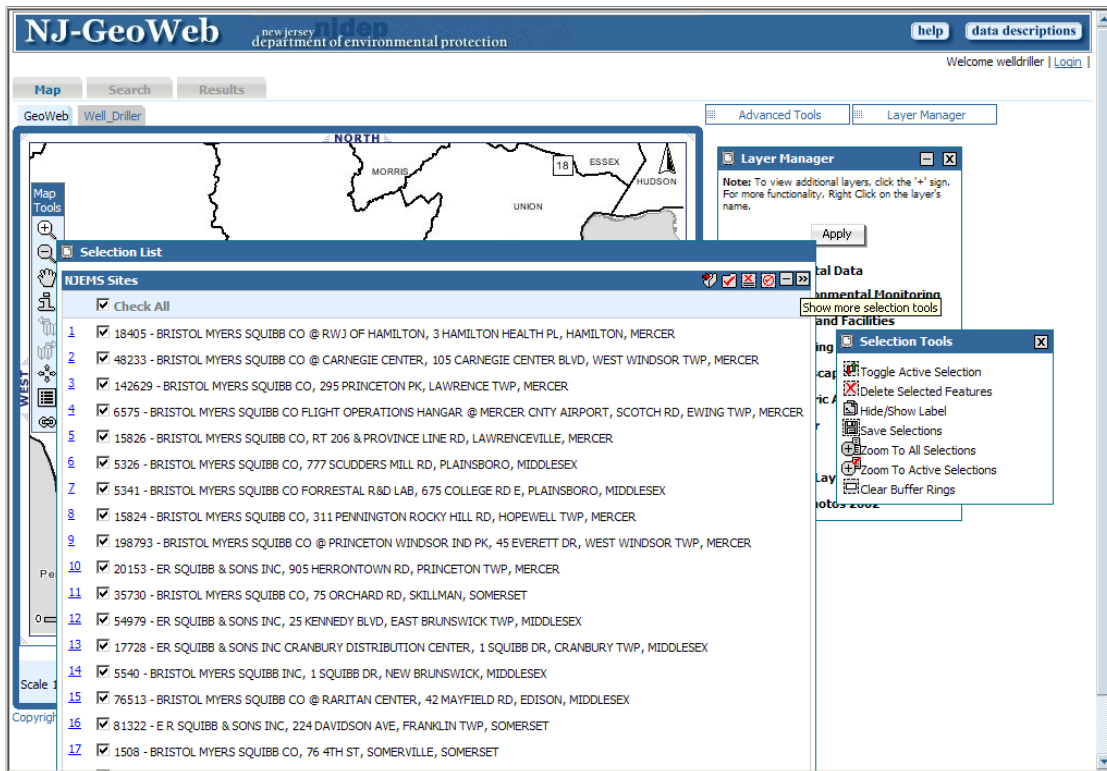


Figure 11. Click for More Selection Tools

The buttons on this window enable additional functions related to the current selection list such as turning off and on the selection list, deleting the entire list, turning on or off the index numbers that identify listed items on the map, etc. This is also where a current selection list can be saved, or e-mail to another user. The buttons and their related functions are detailed in Figure 12.








 Toggle Active Selection	Toggles off/on the active selection in the Selection List Window.
 Delete Selected Features	Deletes the currently selected features from the Selection List.
 Hide/Show Label	Toggles off/on the index numbers on the map that identify selected items from the Selection List.
 Save Selections	Opens a new window where selections can be named and saved, and be made private or made public for others to view. Once a selection is saved it can be e-mailed to others.
 Zoom To All Selections	Zooms the map display to show all the selections from the list.
 Zoom To Active Selections	Zooms the map to display only the selections that are active (checked in the Selection List window).
 Clear Buffer Rings	Clears buffer rings if they are displayed on the map (that were created using the buffer tool on the Advanced Tools window)

Figure 12. Selection Tools Window

The ability to save a selection set can be very useful for keeping track of successful searches, or for sharing information with others via e-mail. Give this feature a try after a successful search returns a list that you want to keep for future access. Saved selections will be available for 30 days before being cleaned off the server. If you want to save a selection list for a longer time, consider e-mailing it to yourself.

5. Printing the Map

NJ-GeoWeb does not currently have a built-in Print feature. At this time, the print capabilities are not up-to-date with the current software running the application. Please be patient and check back for the print options when the next version of NJ-GeoWeb is launched. An easy way to print your map is to use the browser's own print feature. This is usually accessed via the browser's file menu or via a printer icon 🖨️. It is also possible to print your map with the work-around outlined below:

- 1) Make sure your 'View Frame' and other needed features (e.g., 'Selection List,' 'coordinate display, etc.) are completely visible (remove other tool windows if necessary).
- 2) On your keyboard hold down **<Alt>** and press **<PrintScrn>**. This will create an image of the active window on your computer screen and send it to the clipboard. Using the <PrintScrn> key alone will save an image of what is currently visible on your screen, and can be used to capture multiple windows.

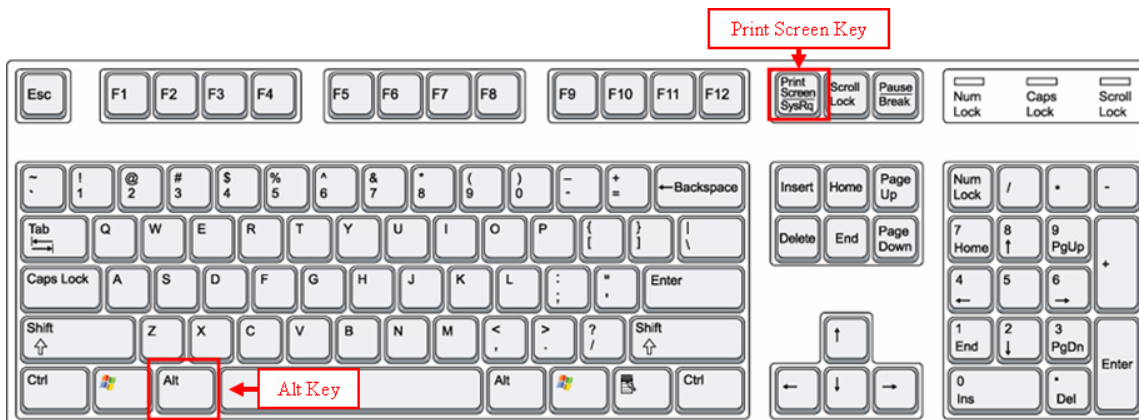


Figure 13. Print Screen Key and Alt Key Locations

- 3) On the bottom-left-hand corner of your computer screen, click the **Start button**. Go to **All Programs** → **Accessories** → **Paint**.
- 4) In **Paint** go to **Edit > Paste**. The image of your computer screen should paste in the **Paint** dialog.

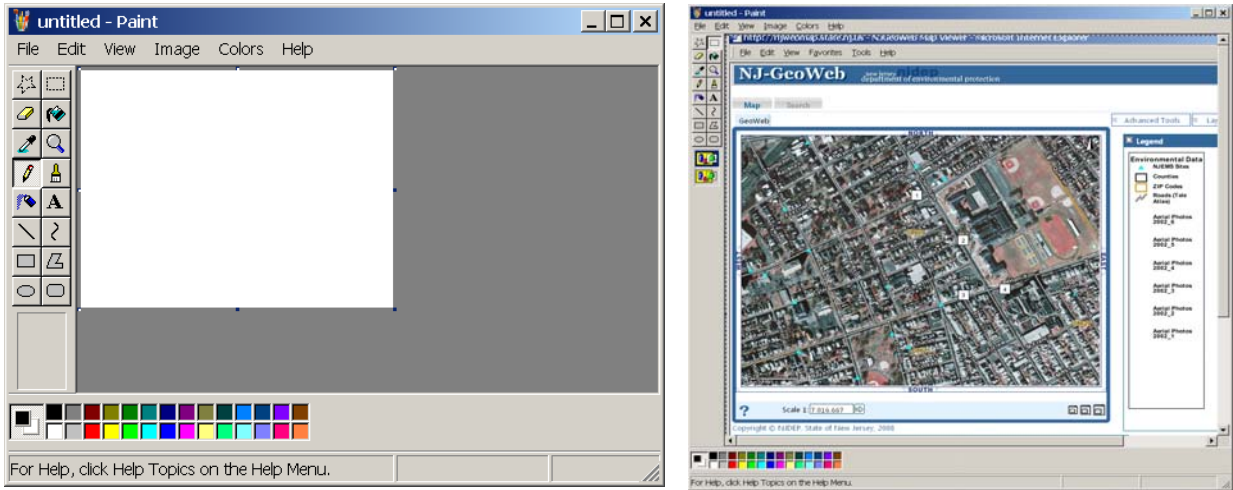


Figure 14. Pasting Image into Paint


- 5) Go to **File > Page Setup**, for 'Orientation' select **Landscape**, uncheck **Horizontal** and **Vertical** Centering, and change Scaling to **65%** of Normal Size. Click **OK**.
- 6) Go to **File > Print Preview** and make sure your image fits on the paper before printing.
- 7) When satisfied with your image, click **Print**.






Using this technique, or your favorite screen capture or graphics software, it is possible to create printable map and report output. Also, images, text and data can be pasted into word processing or spreadsheet applications in order to produce graphics and tables for maps or reports.

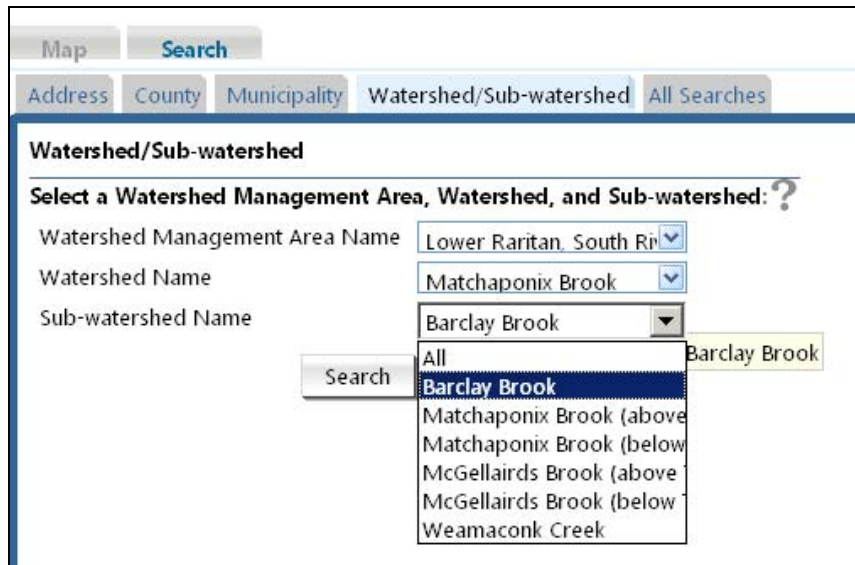
6. Tutorials

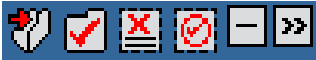
The following series of scripts walk users through most of the significant functionality that exists in NJ-GeoWeb. There are some additional tools and functionality that have not been included in this initial version of NJ-GeoWeb. Feel free to deviate from these scripts to explore on your own. It is usually best to quit out of NJ-GeoWeb before starting each new script.


NJ-GeoWeb Tutorial 1: Environmental Investigation

1. Launch NJ-GeoWeb
2. Click on the **Search** tab. Use the **Address Search** to search for an address you know exists in NJ. Enter **Street** and **ZIP Code**. Click on **Search** button. If found, the map will plot a symbol at that address, and place the address record in the **Selections List** window. Ex: 401 e state st 08608
3. Type **10000** in the **Scale** textbox (lower left corner of map view frame), then click on the arrow  button to its right.

4. Click on **Advanced Tools** to open the advanced tools toolset and click on **Buffer Selections** .
5. In the first dropdown, select the **Buffer a point on map** option, select **Known Contaminated Sites List** as the **Target Layer**, and enter **1 mile** as the buffer radius. Click the **Point on Map** button, and then click on the map at the center of the symbol that marks the found address. The application will find any Known Contaminated Sites within a 1-mile range from the location clicked on the map. These Known Contaminated Sites will be highlighted and the first 20 will be labeled. A Known Contaminated Sites List selection list will be added to the **Selection List** dialog and the reference numbers will correspond to the labels on the map.
6. To see all of the Known Contaminated Sites found within the 1-mile buffer on the map, click on the **Show more selection tools**  button at the upper right corner of the **Selection List** window to open the **Selection Tools** menu and then click on the **Zoom to All Selections**  tool.
7. Use the **Zoom In**  tool to zoom in on one of the labeled Known Contaminated Sites.
8. Find the corresponding label number in the **Selection List** window and click on the label number hyperlink to get more information on the site and view the additional attribute data.
9. At the top of the **More Information** window, in the **Select Reports** dropdown, select Basic Report (HTML) and click **View**. The contents of this new window can be printed by selecting File > Print or the text can be selected, copied and pasted into another document. Close the new window and the **More Information** window.
10. Next clear all of the selected features by clicking on the **Delete Selection List**  button at the top of the **Selections List** window, and close the **Selection Tools** menu.
11. Close the **Buffer Selections** window and the **Advanced Tools** window.
12. Click on the **Search** tab. Select the **Watershed/Sub-Watershed** search to search for a sub-watershed (HUC14). The sub-watershed dropdown list initially is populated with all sub-watershed names in NJ. By selecting from the preceding dropdowns (Watershed Management Area then Watershed) the Sub-Watershed dropdown list is reduced. Select a **Watershed Management Area**, a **Watershed**, and then a **Sub-Watershed** then click the **Search** button. The map will zoom to the sub-watershed and a sub-watershed record will be added to the **Selections List** window. Ex: Lower Raritan, South River, and Lawrence; Matchaponix Brook; Barclay Brook.

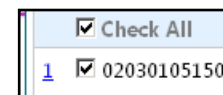





13. Note that additional tools are available from the **Selections List** window, by using the buttons at the top right. These tools are,  from left to right, the **Report Export/Editor**, **Set Selection List as Active**, **Delete Selection List**, **Apply Selections**, **Expand/Collapse** window, and **Show More Selection Tools**.











More tools are available when the **Show More Selection Tools** button  is clicked. This will open another window titled **Selection Tools** that displays additional functions. (These are described in Chapter 4, page 10.)




Also helpful is the hyperlinked number next to each item of the selection list: Clicking on this link will provide attribute information for that item.











14. In **Layer Manager**, expand the **Environmental Monitoring** layer group (click on the plus symbol ) and check on **Ambient Biomonitoring Network (AMNET)**. Click on the **Apply** button at the top of the **Layer Manager** window.
15. Click on the plus symbol  next to the **Ambient Biomonitoring Network** layer name to see the symbology scheme. Click on the **Environmental Monitoring** layer group's minus symbol  to contract the group's list.

16. Look for any Ambient Biomonitoring Network points that are red or yellow circles (denotes severe or moderate biological impairment). Use the **Zoom In**  tool (Map Tools toolbar) to zoom in to a smaller area surrounding one of these points. The resulting scale should be a map scale larger than 1:25,000 (i.e. 1:24,000). If it is not, type the scale number in the scale text box in the lower left corner of the map view frame, and click on the  button.
17. In **Layer Manager**, expand the **Water** layer group (click on ) and check on **Streams** and **Water Bodies**. Expand the **Sites and Facilities** layer group and check on **NJEMS Sites** and **Known Contaminated Site List**. Expand the **Land** layer group and click on **Land Use 2002**. Click the **Apply** button at the top of the **Layer Manager** window. Click on the **Water, Sites and Facilities, and Land** layer group's minus symbol  to contract the groups' lists.
18. From the **Map Tools** toolbar, click on the **Legend Tool**  to open the legend window. Notice which symbols represent which layers. Close the **Legend**.
19. Industrial pollution sources as well as land use activities are likely impacting the ambient biological communities here. From the **Map Tools** toolbar, click on the **Identify**  tool, and then click on a Land Use polygon near the severely impaired Ambient Biomonitoring Network point. In the **More Info** window click on the **Attribute Details For** dropdown and select **Land Use 2002**. Click on several surrounding Land Use 2002 polygons. Do the same for any NJEMS Sites or Known Contaminated Sites List features. To see the information for these, change the **Attribute Details For** dropdown to those layers.
20. After identifying a feature from the NJEMS Sites or Known Contaminated Sites List, scroll to the bottom of the **More Information** window and expand the **Documents** list by clicking on the . Click on the document link to access **Data Miner** reports. The resulting page will display NJDEP program interests for this site. After viewing, close the Data Miner application window and the **More Information** window.
21. Click on the **Search** tab and then the **All Searches** tab. Click on the **NJEMS Site** search link. Enter 46935 as the **Preferred ID Number** make sure Program Description is blank and click on the **Search** button. The application zooms to the site, and the NJEMS site record is added to the **Selection List** window.
22. Click on **Advanced Tools** to open the advanced tools toolset and click on **Buffer Selections** .
23. In the first dropdown in the **Buffer Selections** window, select the **Buffer active selections** option, select **Streams** as the **Target Layer**, and enter **2000 feet** as the buffer radius. Check the **Show buffer shape only** checkbox (when this executes, no selections will be made from the Streams layer, only the outline of the buffer will be drawn). Click the **Select** button and the buffer will draw. Remove the buffer outline by clicking on the **Show more selection tools**  button on the **Selection List** window menu to open the **selection tools** toolbar and click on the **Clear Buffer Rings**  tool. In the Buffer Selections window uncheck the **Show buffer shape only** checkbox and run the buffer again by clicking the **Select** button to generate the buffer. The application will find Streams

within 2000 feet of the NJEMS Site. The Streams will be highlighted and labeled. A Streams selection list will be added- to the **Selection List** window and the reference numbers (hyperlinks) will correspond to the labels on the map. On the **Selection Tools** menu click on the **Zoom to All Selections**  tool to see the full extent of the selected streams.







24. Close out of NJ-GeoWeb.

NJ-GeoWeb Tutorial 2: Searches and Selections

1. Launch NJ-GeoWeb
2. Click on the **Search** tab. Use the **Place** search to search for a place in New Jersey by first selecting a **county** (Somerset) and then the **Place** (Kingston) from the dropdowns and click the **Search** button. The map will zoom to the selected place location and add that place name in the **Selections List** window.
3. In **Layer Manager**, expand the **Sites and Facilities** layer group by clicking on  next to it, and check on **Known Contaminated Sites List**. Click the **Apply** button at the top of the **Layer Manager** window. Click on the  for the **Sites and Facilities** layer group to contract the group's list.
4. Click on **Advanced Tools** to open the Advanced Tools toolset. Click on the **Measure**  tool.
5. In the **Measure** window, click on the **View Coordinate**  tool, and click on the label that represents the place name location on the map. The NJ State Plane coordinate value for the location clicked will appear in the **Measure** window. Click on the **Measure Circle**  tool. Use this to determine the closest **Known Contaminated Sites List** facility to the place name point. First, click on the place name point, and then move the mouse away from the point. A circle will expand as you move the mouse. Expand the circle until the closest **Known Contaminated Sites List** facility is reached. Mouse click again to set the circle. In the **Measure** window, the distance to the facility (radius of the circle) will be indicated. The user may change the distance units (feet or miles) by using the **Distance Unit** dropdown.
6. In the **Measure** window, click on the **Clear**  button (which is located right above the **Add to map** button) to clear the circle. Close the **Measure** window and close the **Advanced Tools** window.
7. Delete the Place Names **Selection List** by clicking on the **Delete Selection List**  button in the Selection List window.
8. Click on the **Full View**  tool on the **Map Tools** toolbar.
9. Click on the **Search** tab, and then click on the **County** tab to run a county search. Select several counties from the dropdown menu by either holding down the Shift key and/or the Ctrl key, and click on the **Search** button. The selected counties will be highlighted in pink on the map, and a Selections List window will open and list the counties selected along with some attribute data. The labels on the map correspond to the blue hyperlink index numbers in the Selection List.
10. As a result of this search, the **Results** tab has now appeared along side of the Map and Search tabs at the top of the application page. Click on the **Results** tab. The information displayed on the Results tab page is additional attribute data coming from the County GIS layer. Uncheck one or more of the **Map It**

checkboxes that correspond to some of the counties, and then click on the **Map It** button that appears at the bottom of the results records. The map refreshes and now only those counties whose **Map It** checkboxes remained checked are selected (highlighted) and appear in the Selections List. The Results tab can be used to further refine a selection.

Note: The Results tab only appears after a search (from the Search tab) has been executed. A selection done with the Advanced Tools Selection Tool does not activate the Results tab.












11. Delete the Counties **Selection List** by clicking on the **Delete Selection List**  button in the Selection List window.
12. Click on the **Search** tab, and then click on the **Municipality** tab to run a municipality search. Select a **County** (Mercer) then a **Municipality** (Hamilton) from dropdown boxes and click on **Search** button. The application will zoom to the selected municipality, and a selection list will be created, with a record for that municipality. If after zooming, the map scale is larger than 1:30,000, the **Aerial Photos 2002** image will be rendered in the map view. Click on the blue "1" hyperlink in the **selection list** to get more information on the selected municipality. Close the **More Information** window.
13. Click inside the map **Scale** box, enter 15000, and then click on . This will zoom the map view to a scale of 1:15,000.
14. In **Layer Manager**, expand the **Land** group by clicking on , and check on **Land Use Change 1995-2002**. Click the **Apply** button at the top of the **Layer Manager** window. The areas where the land use changed between 1995 and 2002 will be displayed in yellow. In **Layer Manager**, right click on the **Land Use Change 1995-2002** layer name and click on **Make Layer Active**. The name should now have a light blue background. Click on  for **Land** group to contract the group's list.
15. Use the **Pan**  tool to center the map view on one of the polygons where the land use changed (yellow polygon).
16. Click on the **Identify**  tool from the **Map Tools** toolbar and click on a Land Use Change 1995-2002 polygon. The **More Information** window will open, and display attribute information for that land use polygon. Compare the values for the Land Use attribute for 2002 and 1995 for several changed land use polygons. Of particular interest are land use categories that are being lost to development. Typically this would include the transformation of forest, agriculture, and wetlands to urban (commercial or residential) use.
17. Close out of NJ-GeoWeb.

NJ-GeoWeb Tutorial 3: Setting the Scale, Using Layer Manager Right-Click, & Advanced Tools

1. Launch NJ-GeoWeb
2. Click on **Advanced Tools** to open the Advanced Tools toolset. Click on **Locate Point Using NJ State Plane Coordinate**. In the dialog box, enter the value **607300** for Easting (x), **681600** for Northing (y), and **25,000** for scale. Click on the **Search** button. After the map zooms to the coordinates, close the **Locate Point Using NJ State Plane Coordinates** dialog box.
3. In **Layer Manager**, expand the Sites and Facilities layer group (click on) and check on Chromate Sites. Click on the **Apply** button at the top of the Layer Manager window. The Chromate Site will display (green stars).
4. Right click on the Chromate Sites' layer name in **Layer Manager** and a grey sub-menu will appear. Click on **Zoom to Full Layer Extent**. The map viewer zooms to the full spatial extent of the layer. What happened to the Chromate Sites layer on the map?

If it disappeared, the Chromate Sites' layer name in Layer Manager has changed to grey. Move your mouse cursor so it is directly on Chromate Sites' layer name in **Layer Manager** and hold it there for a few seconds. A popup message will appear that indicates between what scales this layer displays –“**Chromate sites Visible Scale Range Min: 0 Max 200000**”. Check the displayed map scale (look for the 'Scale' tool at the bottom left of the map viewer). If it indicates a scale above the Max number (200000) for Chromate Sites, the layer will not appear on the map. If it is still visible, enter a map scale larger than 200000 so that it does disappear.


5. Right click again on the Chromate Sites' layer name in **Layer Manager** and click on **Zoom to Visible Scale** from sub-menu. This time the map viewer zooms to a scale value below the Max (200000) and the Chromate Sites are visible again. The Chromate Sites' layer name in **Layer Manager** has changed from grey back to black. Note you may no longer be viewing the full spatial extent of the layer.
6. Right click again on the Chromate Sites' layer name in **Layer Manager** and click on **View Metadata** from sub-menu. This will launch the NJ-GeoWeb **Data Descriptions** window that provides a brief layer description. Click on the **full metadata** button at the end of the layer's description to launch a window that displays the layer's full metadata. The metadata document provides a wealth of information associated with the layer. After viewing the metadata document, close both the metadata and NJ-GeoWeb Data Description windows.
7. Right click again on the Chromate Sites' layer name in **Layer Manager**. Click on **Make Layer Active** from sub-menu. This will make Chromate Sites the active layer, and the layer's name will have a pale blue background. Only one layer can be the active layer at a time. The active layer setting is important when the user wants to use some of the tools, primarily the Identify tool.



8. Click on the **Identify**  tool from the **Map Tools** toolbar and click on one of the Chromate Sites. A **More Information** window will appear with layer attributes for that site. Close the **More Information** window.
9. Click on the **Selection**  tool in the **Advanced Tools** toolset. This will open the **Selections** window. Using the **Selection Layer** dropdown menu select Chromate Sites. For the selection method, use **Select by Polygon** . You are going to define a polygon using mouse-clicks to input a sequence of vertices. Find a tight cluster of Chromate Sites in a small area. Any Chromate Sites that fall within the boundary of the polygon you define will be selected. On the last vertex, double click the mouse rapidly to complete the polygon. A **Selection List** window will appear that lists the set of selected Chromate Sites. The reference numbers (blue underlined numbers) correspond to the labels displayed on the map.
10. Close both the **Selections** and **Advanced Tools** windows, leaving open the selection list window.
11. In **Selection List** window click on the **Show More Selection Tools**  button on the Chromate Sites toolbar. This will open a secondary toolbar. Click on the **Zoom to Active Selections**  from this toolbar. This will zoom the map view to the extent of the selected Chromate Sites only. From this same toolbar click on the **Toggle Indexing**  button. This turns off the labels for the selected points. Click on **Toggle Indexing**  again to bring the labels back. Close the **Selection Tools** toolbar.
12. Click on **Advanced Tools** to open the Advanced Tools toolset, and click on the **Measure**  tool. Click on the **View Coordinate**  tool, and find a location centrally located to the selected set of Chromate Sites. Click on this location on the map. The coordinate of the point is displayed in the **Measure** window. Next, click on the **Add to map** button in the **Measure** window. The coordinate is added to the **Selection List** window and is labeled on the map. Make the Chromate Sites selection set the active selection by clicking on the **Set Selection List as Active**  button on the Chromate Sites section of the **Selection List** window. This should bring the Chromate Sites section of the Selection List to the top of the Selection List window, and re-label the Chromate Sites on the map.
13. Use the mouse to highlight and copy to the clipboard the coordinate information (i.e., X: 610891.070820717 , Y: 683407.546282296) shown in the **Selection List** window. This can be pasted into a map document created in the next step.
14. In the browser tool bar, select File > Print ... to print the map. (See Chapter 5 for detailed help on printing the map.)
15. In the **Measure** window, click on the **Measure Distance**  tool. The **Measure Distance** tool requires the entry of two mouse clicks on the map - a beginning and ending point. First, click on the marker symbol (circle) on the map that represents the located coordinate. Next, click on any one of the Chromate Sites. The linear distance between the located coordinate and the Chromate site will be displayed in the **Measure** window. The user may change the distance units (feet or miles) by using the **Distance Unit** dropdown in the **Measure** window. Click on the **Add**

to map button. This will add a graphical representation of the measurement and will add the measurement to the **Selection List**.

16. Repeat the last step several times – measuring from the located coordinate to several other Chromate Sites using the **Add to map** button each time. After the distances to several have been measured, close the **Measure** window and close the **Advanced Tools** window.
17. In the browser tool bar, select File > Print ... to print the map. (See Chapter 5 for detailed help on printing the map.)
18. Close out of NJ-GeoWeb.

NJ-GeoWeb Tutorial 4: Buffer NJEMS Sites and Using DEP Data Miner

1. Launch NJ-GeoWeb
2. Click on the **Search** tab and display all of the available searches by clicking on the **All Searches** tab.
3. Select the **NJEMS Sites in an Area of Interest** search by clicking on its link.
4. On the NJEMS Sites search window, a user can use the dropdowns to build a search that will retrieve NJEMS sites within an area of interest and optionally by NJDEP program. The user must designate an area of interest by selecting a county, or combination of county/municipality, or a combination of watershed management area/watershed/sub-watershed using the provided dropdown menus. Select **Camden** for county and **Bellmawr Boro** for municipality. Under **Options**, select **Site Remediation** for **Program** and **Y (Yes)** for the sites **Active Flag**. Click on the **Search** button to execute the search.
5. The map viewer will zoom to the selected NJEMS in Bellmawr Boro and the selected sites will appear in the Selection List window. Note that all of the sites satisfying the search criteria will highlight, but only 20 will be labeled on the map. The 20 labeled on the map correspond to the 20 listed currently in the Selection List window. At the bottom of the Selection List window for the selected NJEMS sites are page links that allow you to list sites after the first 20. Click on the second page link (2). Notice that the selection list now lists records 21-40, and that these labels now appear on the map. Go back to the first page by clicking page link 1.
6. Click on **Advanced Tools** to open the Advanced Tools toolset. Click on **Buffer Selections** . We will buffer the active selections (NJEMS Sites in Bellmawr Boro, with Site Remediation program interests that are active) by 1000 feet, and determine if any Public Community Water Supply Wells are within the buffered areas. Select **Public Community Water Supply Wells** for the **Target Layer**, and **1000 feet** for the buffering distance. Click on the **Show buffer shape only** checkbox and then click on **Select**. With the Show buffer shape only checkbox checked, only the buffers display – no features from the target layer (Public Community Water Supply Wells) are highlighted and selected. Uncheck the **Show buffer shape only** checkbox and click **Select** again, the Public Community Water Supply Wells that are within the buffered areas are selected (added to the Selections List) and highlighted (labeled). Close the **Buffer Selections** window.
7. The buffered selection set, the Public Community Water Supply Wells within 1000 feet of the selected NJEMS sites, relates to the current active selection list. The current active selection list always appears at the top of the **Selection List** window. For each well in the Selection List window, click on the well's index number hyperlink (blue). This will open a **More Information** window that displays the attribute data for each well.

8. Next, look for the NJEMS Sites section of the Selection List. Make the NJEMS Sites the current active selection list by clicking on the **Set Selection List as Active** tool  on the NJEMS Sites portion of the Selection List tool bar. This should move the NJEMS Sites portion of the Selection List to the top of the Selections List window. The NJEMS Sites should now be labeled on the map and the wells should now be highlighted with a yellow circle symbol.
9. Advance through the NJEMS Sites Selection List by using the page links at the bottom of the NJEMS Sites list, until you determine which of the NJEMS Sites are closest to the wells.
10. Find the NJEMS Site named “EVERGREEN PRINTING & PUBLISHING CO INC”. This site is near 2 of the wells. Click on this site’s index number (blue hyperlink) in the Selection List. This opens the **More Information** window which displays the attributes for the site. Click on the **Documents** link at the bottom of the window to expose the link to Data Miner reports (Data Miner - Program Interest by Site ID). Click on the Data Miner report link to launch Data Miner.
11. In the **Data Miner** application, click on the **Reports** dropdown menu which is all the way to the right-hand side of the application window. Select the **Permits by Timeframe** report, and then click on the  button to call the report. When the report page appears, accept the default settings and click on the **OK** button. After a few moments the report executes, and information about the site appears.
12. Close the Data Miner Application.
13. Close out of NJ-GeoWeb.

7. Summary

This short overview of NJ-GeoWeb should have provided a sampling of what can be done using the application. The short tutorials were designed to show most of the features and tools currently available. NJ-GeoWeb is meant to enable those who are not GIS experts to use GIS tools to conduct environmental analysis. Though the application has added functionality to that found in the earlier i-MapNJ, it is not intended to contain all the features found in desktop GIS software. However, it should provide the tools to accomplish the tasks that are most commonly requested by NJDEP staff and members of the public interested in NJDEP data.

NJ-GeoWeb also begins to provide the linkage between the Department's spatial data and its permit and facility related information. This is done through use of the online application DEP Data Miner. This connecting of GIS data and tools with NJDEP programmatic data represents the beginning of what should prove to be very powerful for environmental analysis that can be done by the concerned citizen, from home via the Internet. Until just recently, this was something only the trained professional could accomplish, and only through the use of specialized and costly software. These types of tools (and associated access to information) are increasingly expected by the public, consultants, and various types of stakeholders, who have become familiar and comfortable with mapping applications such as Google Earth and Microsoft Live Local.

Finally, it is important to note that NJ-GeoWeb is really a work in progress. Current software for customization of interactive mapping applications provide many tools and options that can be provided. As work continues on the application new tools will be added in response to the needs of users and the capabilities of the software. The ability to print a map, for example, is a needed function that must wait for a software update. Of course, it is not possible or appropriate to provide all of the tools currently available. BGIS strives to accommodate the needs of most users of NJ-GeoWeb, within the constraints posed by funding availability, data structures, technology and demands on staff time. The core functionality of NJ-GeoWeb will be enhanced incrementally as the situation permits, and in response to user requests.

The NJ-GeoWeb development team hopes that you enjoy using this application, and welcomes your comments or suggestions. Please direct your comments and inquiries to the Bureau of GIS.

Contact Information for Questions or Comments:


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Office of Information Resources Management
Bureau of Geographic Information Systems
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web page: <http://www.nj.gov/dep/gis>

8. Frequently Asked Questions

FREQUENTLY ASKED QUESTIONS	ANSWERS
What versions of web browsers work with NJ-GeoWeb?	<p>NJ-GeoWeb performs reliably in Microsoft's Internet Explorer (version 6.0 or higher) and Mozilla's Firefox. It may run to some degree, though less reliably, in other web browsers. NJ-GeoWeb utilizes POPUP windows for display of query results. You may need to disable popup blocking software you have running on your computer to ensure proper functionality of this application.</p> <p>This application works best with screen resolution of 1024x768 or 1152x864. (Right click on your computer's desktop, select Properties, and then select Settings from the pop-up menu.)</p>
Why does the NJ-GeoWeb application's performance vary throughout the day?	<p>The NJ-GeoWeb application is a web application whose performance is subject to a number of factors including the user's connection to the Internet (broadband vs. dial-up), the amount of data that is being requested from the application's servers, and how many concurrent requests to those servers are being made by all of the users at any given time.</p>
Why won't the mapped information come into the field of view when I launch NJ-GeoWeb?	<p>Cancel out and try again, or wait for 20 minutes or so and try again. If the application will still not load, email the NJDEP at Contact Us on the Splash Page.</p>
Why can't I find the address I am interested in when I use the Address Search?	<p>Achieving success when searching for an address is dependent on a few factors. Often what prevents a match is a situation where a street or road is known by more than one name (US Highway 1, Route 1, Brunswick Pike, etc.). If your address is in a more recently developed area, the roads layer that contains the address range information may not be current enough, preventing a successful match. There can also be address range coding errors in the roads layer. If searching for a specific address does not work, try another (if known) close to the original address. With the aid of the orthophotography (aerial photo image) users can often find their location of interest after recognizing familiar features such as major roads, streams, waterbodies, building structures, parks, etc.</p>

Why am I having trouble getting the aerial photos to become visible in the map view frame?

The aerial photos are scale dependent and are only available after the user has zoomed into a municipality or small study area. They also have a minimum scale so they won't be available if you zoom in too far. The 2002 and 1995/97 aerial photos should appear at scale values between 30,000 and 1,000. The 1930s aerial photos should appear between 30,000 and 5,000. You can reference the map's current scale value at the bottom of the map frame in the map scale box. You can type in any value within the aerial photo's visible range and click on the arrow button  to zoom to see the imagery.

Why aren't all of the layers in the Layer Manager available at all scales?

From a performance perspective, it doesn't make sense to have every layer available at all scales. A layer like Land Use 2002 is a very detailed layer defined by many data points, and this detail goes unnoticed when viewing at a small scale (statewide view). The fact that the layer is very detailed means that more effort and time is required by the application's server to draw a map that includes the layer. If a layer's name in the Layer Manager is displayed in black, then it is available for display at the current scale. If the layer's name is displayed in gray, then it is unavailable at the current scale. If you mouse-over a layer's name in Layer Manager, the application will indicate any scale settings for that layer. Most layers will be available for display if the user is zoomed to a municipality or small study area (large scale). NJDEP has classified most layers in NJ-GeoWeb to be available at specific scales (scale dependent), so as users zoom in to larger and larger scales, generally more layers become available for display.

Why can't I see the Category One Streams statewide?

NJDEP has classified each layer in NJ-GeoWeb to be available at specific scales. Because of its level of detail, the Category One Waters layer becomes available only after the user has zoomed in to a scale between 1:100,000 and 1:1,000.

How can I buffer a Category One Stream by 300 feet to determine if it is regulated?

Use the **Selection** tool (in Advanced Tools) to select the stream segments you would like to buffer. Usually selecting by rectangle or polygon works best. Once the stream segments are selected, you can then use the **Buffer Selection** tool to enter the buffer distance of 300 feet and a target layer from which features will be selected that fall within the buffer.

Why did my map retrieval fail?

When executing a search, or zoom, or pan, you must allow the process (spinning indicator) to complete or you will disrupt the data flow (request/response cycle) that the application must complete before additional user interaction. For this reason, it is recommended that users not click on the map or initiate other viewer actions while data transfer is in progress.

If you are experiencing problems, it is usually best to quit out of NJ-GeoWeb and relaunch the application.



Where do I get information on the mapped data used in NJ-GeoWeb?

This information is available by clicking on the *data descriptions* button above the Map Tools toolbar. This opens a window that lists all map layers. A brief description of the data is provided when a user clicks on the name of a layer. If a user wants to see further information, they may click on the full metadata button to view FGDC compliant metadata. The user can also get to this information by right-clicking on a layer name in Layer Manager and selecting Metadata from the menu.

What coordinate system is the information mapped in?

The mapped data in the application is in the New Jersey State Plane Coordinate System (NJSPCS), in units of US Survey Feet, referenced to the North American Datum of 1983 (NAD 83) horizontal geodetic datum.

How can I find the New Jersey State Plane Coordinates for a point of interest using NJ-GeoWeb?

First, navigate to your area of interest. This can be done using either an existing search (Municipality, Place, sub-watershed, etc.) or if you are more familiar with the location in relation to the entire state, you can use the Zoom In  tool. Once zoomed to a scale greater than 1:30,000, the aerial photos become visible, and you can turn on additional layers (major roads, roads, streams, etc.) to help orient yourself on the map. Look for physical features (building structures, open spaces, athletic fields, water bodies, etc.) in or near your area of interest. Once you have found the location for which you want coordinates, use the Measure tool (in Advanced Tools), and use the View Coordinates (pushpin ) tool. Move your cursor over the point of interest on the map and click. You will see the coordinates in the Measure tool dialog. The first coordinate is the **Easting** or “**X**” value and the second number is the **Northing** or “**Y**” value. In reporting these coordinate values to the NJDEP, they may be rounded to the nearest foot (integer).

	<p>If you are a new user or trying to find coordinates for an NJDEP regulated facility, please call the GIS Help Desk at: (609) 777-0672</p>
<p>Can I export or print the tabular data from the Selection List or More Information windows?</p>	<p>Yes, the Report/Export Editor button at the top of the Selection List provides several basic output options (.csv, .html, and .pdf) for outputting selected features' attribute data. In addition, near the top of the More Information window, there is a Reports dropdown menu that provides the same choices for exporting the attributes currently in the More Information window.</p>
<p>Can I export the tabular data from the current Selection Set in the Selection List window to a spreadsheet?</p>	<p>By using the Report/Export Editor button at the top of the layer's Selection List you can export the attribute data in the Selection List to the Basic Report (CSV) option from the dropdown.</p>
<p>Can I add a GIS data layer that I have stored locally on my computer to the NJ-GeoWeb application?</p>	<p>Not currently. NJDEP is planning on providing such capabilities in a future release.</p>
<p>Can I change the symbology of the layers or the order in which they overlay?</p>	<p>Unlike GIS desktop applications like ArcView and ArcExplorer, you can not alter the colors and symbols of the layers in NJ-GeoWeb. Layer drawing order can be changed by clicking on a layer's name in Layer Manager and dragging it with the mouse button still pressed to a different order location. This change is in affect for the current session only.</p>
<p>Can I select an area of interest by parcel number (block and lot)?</p>	<p>At this point in time, the State is working on an initiative to standardize parcel data layers developed by the state's counties. This will eventually lead to the development of a search in NJ-GeoWeb for a parcel based on block and lot.</p>