

Out With the Old...

Did you know that the original WashCoGIS debuted in 2002? In 2002 the county was using Windows NT and just starting to adopt Windows XP, most monitors were giant CRTs, most computer mice had hardware balls instead of optical pickup, and ArcGIS 8.0 was just released, driving the stake in the heart of ArcView 3.2. The world of web mapping has changed significantly since then - just think that Google Maps has only been around since 2005 (!).

The original site has definitely served us well, but throughout time several problems became apparent. Problems aside, the server-side software that runs the site (called ArcIMS) is at the end of its life and is no longer being supported by ESRI.

The new sites have been built in ESRI's newest server environment, called **ArcGIS Server**. ArcGIS Server has a set of web mapping APIs in which applications are developed. Using these web mapping APIs, ArcGIS Server is able to gain a significant performance improvement over ArcIMS by offloading some of the work to be done to the client's machine (your browser).

A Note on Silverlight

The new sites use a plugin made by Microsoft, called Silverlight. Silverlight is similar to Adobe Flash player, which is already installed on 99% of the world's computers – no doubt because YouTube uses the Flash video player format. There's a good chance you already have the plugin installed, which works on a Mac or PC, and works in all major browsers (IE, Firefox, Chrome, Safari). If you don't have Silverlight, you'll get an installation banner when trying to access the new site. Silverlight is *required* to view the sites, so if you don't have it you must download and install it.

The new sites were created with the following goals in mind:

1. Faster
2. Simpler
3. More Flexible
4. Better cartography
5. Custom data Reports
6. Database linking
7. Large-Format prints
8. Markup (redlining)

We feel we've accomplished these goals and are excited to have the next chapter in Washtenaw County's online GIS completed.

WashCoGIS or CVTGIS?

We actually have developed two sites with exactly the same content – the need for two sites is due to access restrictions.

Users who are connected to Washtenaw County's LAN will be able to use WashCoGIS without entering credentials. Users outside Washtenaw County's LAN should use the CVTGIS site, which requires a login to use. Login credentials are maintained by Washtenaw County GIS and can be obtained by contacting Nate Arnold at arnoldn@ewashtenaw.org. The data and functionality exposed through these sites may be considered sensitive, so we've chosen to restrict access to the sites to Washtenaw County employees and authorized local units of government only. If you are a CVT and have been given credentials to the site, please ***do not distribute these credentials to anyone outside of your organization***. The public is free to use **MapWashtenaw** (available at <http://mapwashtenaw.ewashtenaw.org>), our main public-facing parcel viewer, which provides much of the same information as WashCoGIS and CVTGIS, but with somewhat restricted layer content and functionality.

WashCoGIS: <http://gisapp.ewashtenaw.org/washcogis>

CVTGIS: <http://gisapp.ewashtenaw.org/cvtgis>

In addition to the materials provided here, we have additional information on the CVTGIS launch page at <http://cvtgis.ewashtenaw.org>, including pre-recorded training video screencasts of some of the most frequently performed operations.

Are you using BS&A Assessing?

You can link directly to the new mapping site by using this format:

```
http://gisapp.ewashtenaw.org/cvtgis?attributearch=Parcels,PIN,<PARCEL>
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Put this text into the *Program Management --> Accessory Programs --> Mapping system URL* box in BS&A Assessing. Your **Map** button will then automatically zoom to the selected parcel when the site launches.

What these sites are NOT

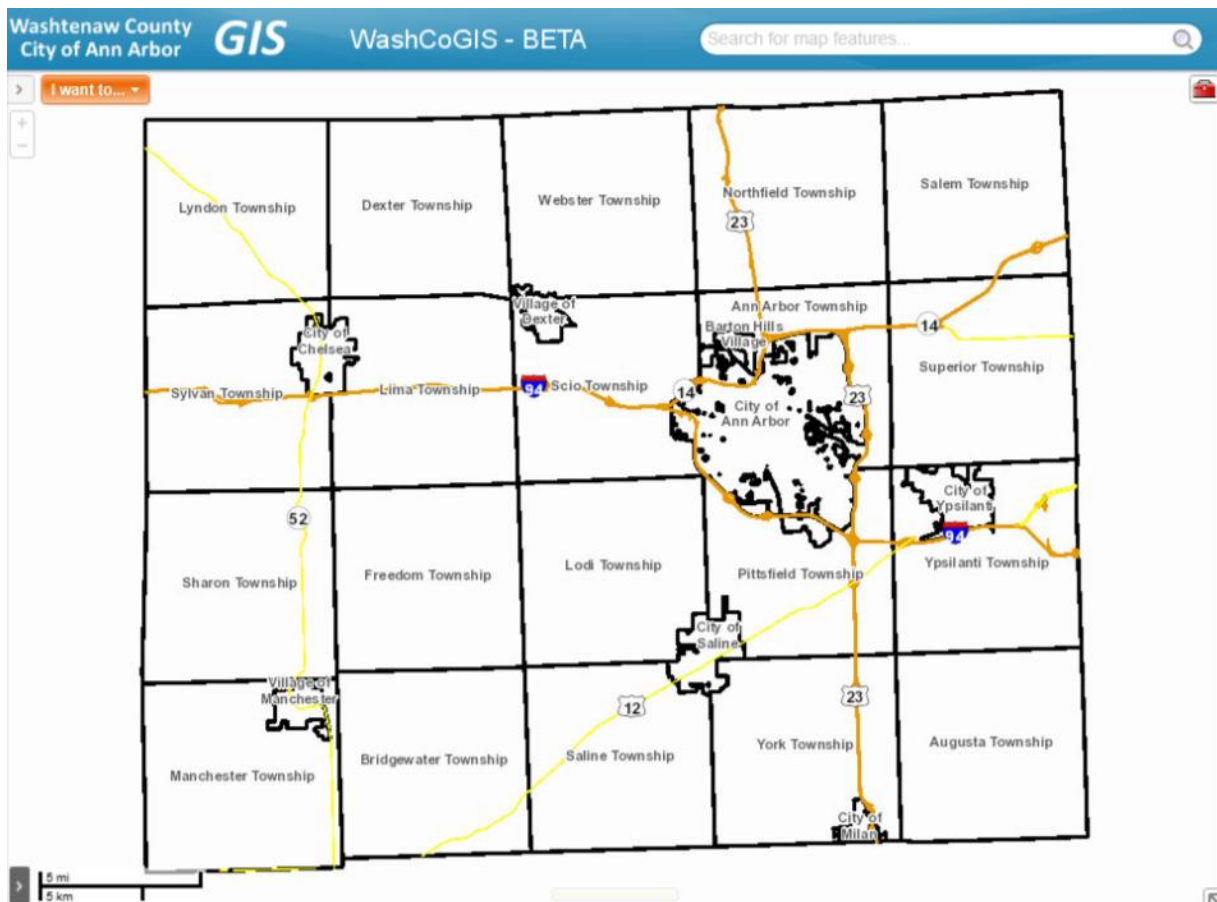
These sites have a huge amount of functionality built into them, but they do have their limitations. They are not GIS software in the traditional sense, meaning they are visualization tools only. No edits can be performed via these sites, as all the data displayed on them is read-only. If you notice either geometry or attribute errors (parcels, roads, etc.) please email l-wcgis@listserver.ewashtenaw.org to let us know. However, although edits can't be performed in the site, you do have the ability to markup the map with graphics. You can use this to draw how a parcel should be or the path a road really takes, then print the map to pdf and email it.

Further, these sites do not have custom SQL capability at this time, meaning you cannot enter your own SELECT statements. However, this is on the feature list for upcoming releases from the software vendor.

Lastly, these sites are NEITHER static NOR perfect. They are fully interactive and hopefully will be thought of as productivity tools rather than static maps. The data shown on the sites are being updated all the time, whereas paper maps have a published date and instantly start to age once they're printed. Unfortunately there is a certain degree of error in any GIS layer. Much of the data shown on the sites is compiled from a variety of sources and should be viewed as a cartographic representation only. See the CVTGIS launch page for the full disclaimer.

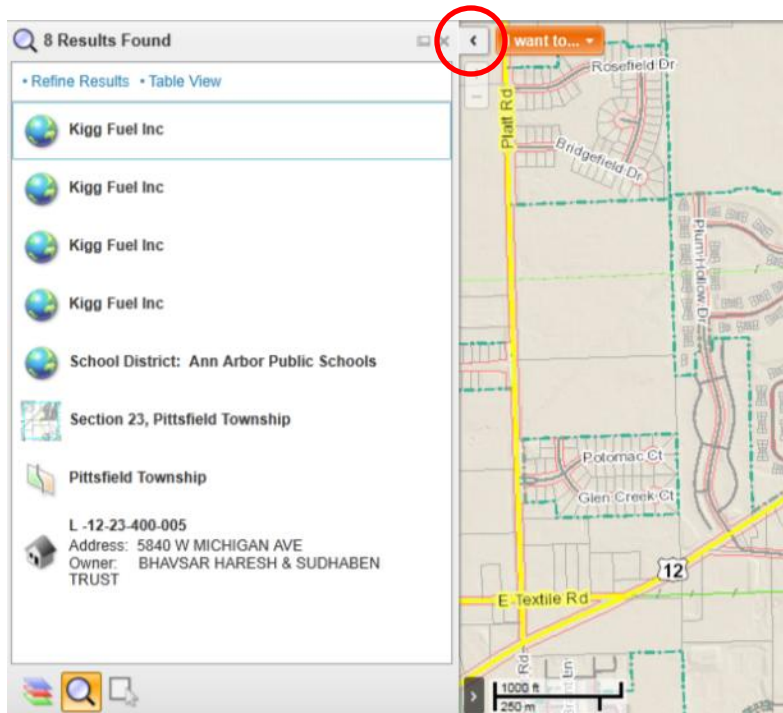
Application Layout and Toolbars

The application is map-centric, with much of the functionality embedded into toolbars and mouse actions:

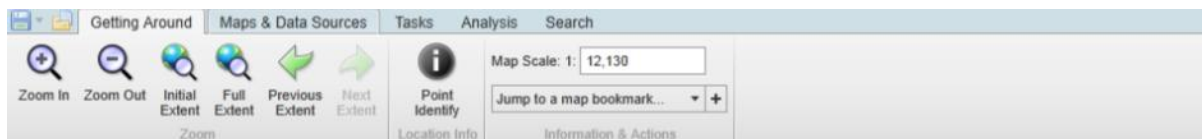


Most prominent is the title bar, which contains the application's search box. Also prominent is the **I want to...** button, which contains shortcuts to some of the most often-executed tasks.

To the immediate left of the I want to... button is a toggle that shows or collapses the left-hand panel, which is used for a variety of purposes including layer display, search results, and selection menu operations:



In the upper right-hand corner of the map is a red toolbox, which is a toggle for showing or hiding the toolbar. The toolbar is divided up into several tabs of related tools, including basic navigation, tasks, and analysis:



Most tools operate in a “sticky” behavior, meaning that once you click on a tool to use it (say *Measure Distance* for example), the tool will stay active until you click the tool’s button to deactivate it. Think of the tool buttons as toggles.

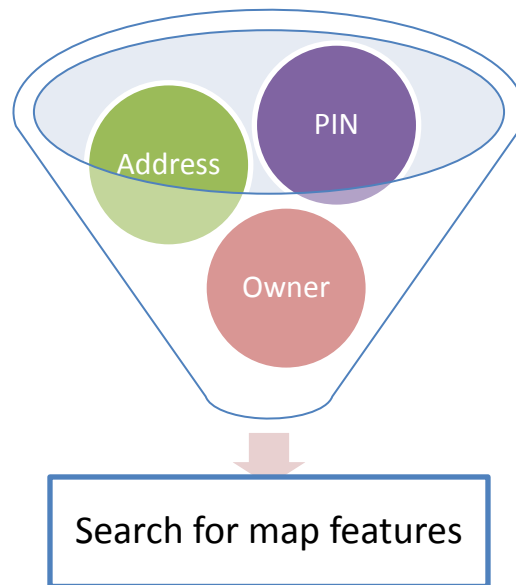
Basic Navigation does not require a tool!

Although the application does include several pan/zoom tools on the Getting Around tab of the toolbar, you do not need any of them to pan/zoom around the map. To pan around the map, click and hold the map while dragging your mouse, just like in Google Maps. If you have a mouse with a scroll wheel, scrolling up will zoom in on the map (centered at the cursor location), and scrolling down will zoom out. Pressing the plus key on your keyboard will zoom you in, and the minus key will zoom out. The arrow keys all will pan the map. **You don’t even need a tool to identify.** At any time you can simply right-click on the map and select What’s Here to execute a drill-down identify. All visible features that intersect where you clicked will be shown in the Results panel.

Functions:

1. Search for Map Features

The searching framework has been greatly simplified over the previous sites. There is one, unified search bar in the upper right corner (with the *Search for map features...* watermark), which operates in a Google-style fashion. You no longer have to specify Find by PIN, Find by Address, or Find by anything – just enter the text you want to find on any of the layers and hit Enter.



Regardless of what kind of search you perform, there are a few key points to consider:

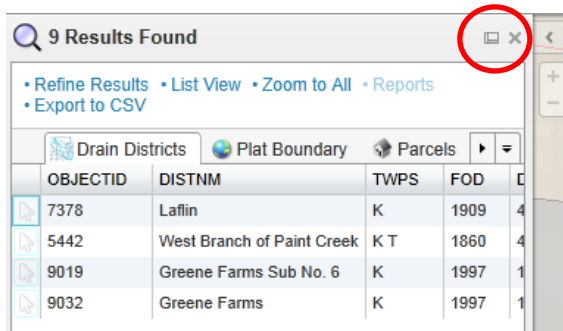
- Parcel PINs in Washtenaw County all have XX digits, including the space after the leading character if in a Township. You must enter this space for search to work properly
- Less information in the search box can give you more results. For example, if you are searching for a parcel by entering an address of '7514 Warwick Dr.' (with a period) you will not find any results, because the assessing database has the parcel without the period. A better option would be to search for 'Warwick' or even '7514'.
- The server has a limit of 2000 results that it will send, so please keep the 'joe smith' searches to a minimum – it will cause undue processing on the server and probably won't get you what you're looking for anyway.

When a search is executed, the left-hand panel will expand and show you a list view of features that were found. Clicking on any of these results will zoom you to the feature and open an information popup, through which additional details and functions can be found, such as the full feature attribute list and related data.

- Search for L -12-27-300-003. When the parcel is found, click on the record in the results window. In the popup that displays, click View Additional Details.
- Inspect the attribute list, and note that there is related data for this parcel, including sales and Drains data.
- At the bottom of the window, click Detailed Parcel Info (new window) and note that Pittsfield Twp's BS&A Internet Services window is launched.

Working with Results

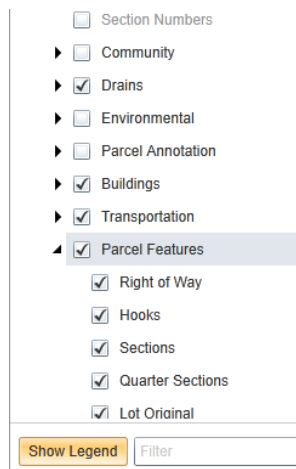
The results of a search are automatically displayed in **List View** in the left panel. You can switch to **Table View** for a different approach to the result set, similar to how ArcMap displays attribute tables:



Note that each layer is on a different tab. Clicking anywhere on the row of any record will zoom you to the feature and open the info window. Also, when on the results panel you can move the panel to the bottom of the screen by clicking the Wide button next to the panel's Close button (circled above).

2. Control Map Layer Display

Layer display is accomplished through the Table of Contents (TOC). The quickest way to access the TOC is through the **I want to...** button → *Turn map data on/off*. Layers are portrayed in the TOC according to their drawing level – layers at the top of the TOC will be drawn on top of layers at the bottom. Most of the layers are group layers and can be expanded to fine-tune which layers you want to see:



Just know that in order to see any child layers in a group layer, the whole group layer must be turned on.

Also, note the Show Legend button. Clicking this button will toggle the TOC display to show symbol and color swatches to help you identify what's being shown on the screen.

3. Measuring

Measure tools are located on the Analysis tab of the toolbar. Measure Distance will be in linear units only, whereas Measure Area will be in both perimeter and area. Note that the units for measurement can be changed on the fly or after measurement has completed. If you want to measure more than one feature while saving previous measurements to the map, click the *Add as Drawing* button after each measurement operation:



4. Selections

When interacting with map features, often times you will need to make selections to either save your search results or to create buffers. The selection menu (“My Selection”) is accessed via the bottom of the left panel:



Selection menu location

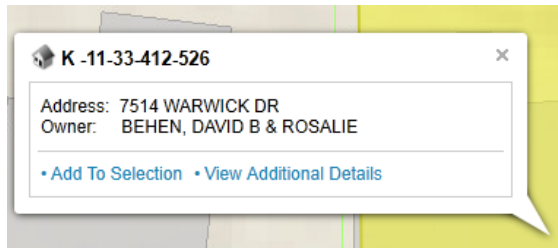
There are two ways to create a selection - (1) through the results menu (list or table view) and (2) through the identify popup menu.

1. Selections through results menu:

After you've performed a search or identify operation you will have results in the left panel. To select one of the records, the easiest way is to click on the icon next to the record – for example, on the parcels layer click on the house icon. Notice that when you, the feature on the map will now be highlighted with a cyan outline

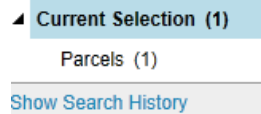
2. Selections through the identify popup menu:

You can also select a feature by clicking the *Add To Selection* link in the popup window:

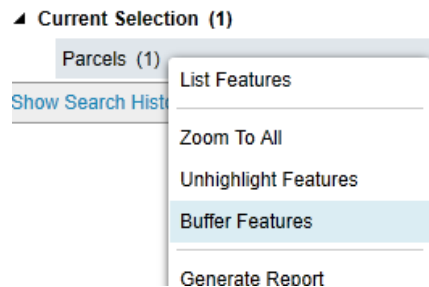


Creating Buffers

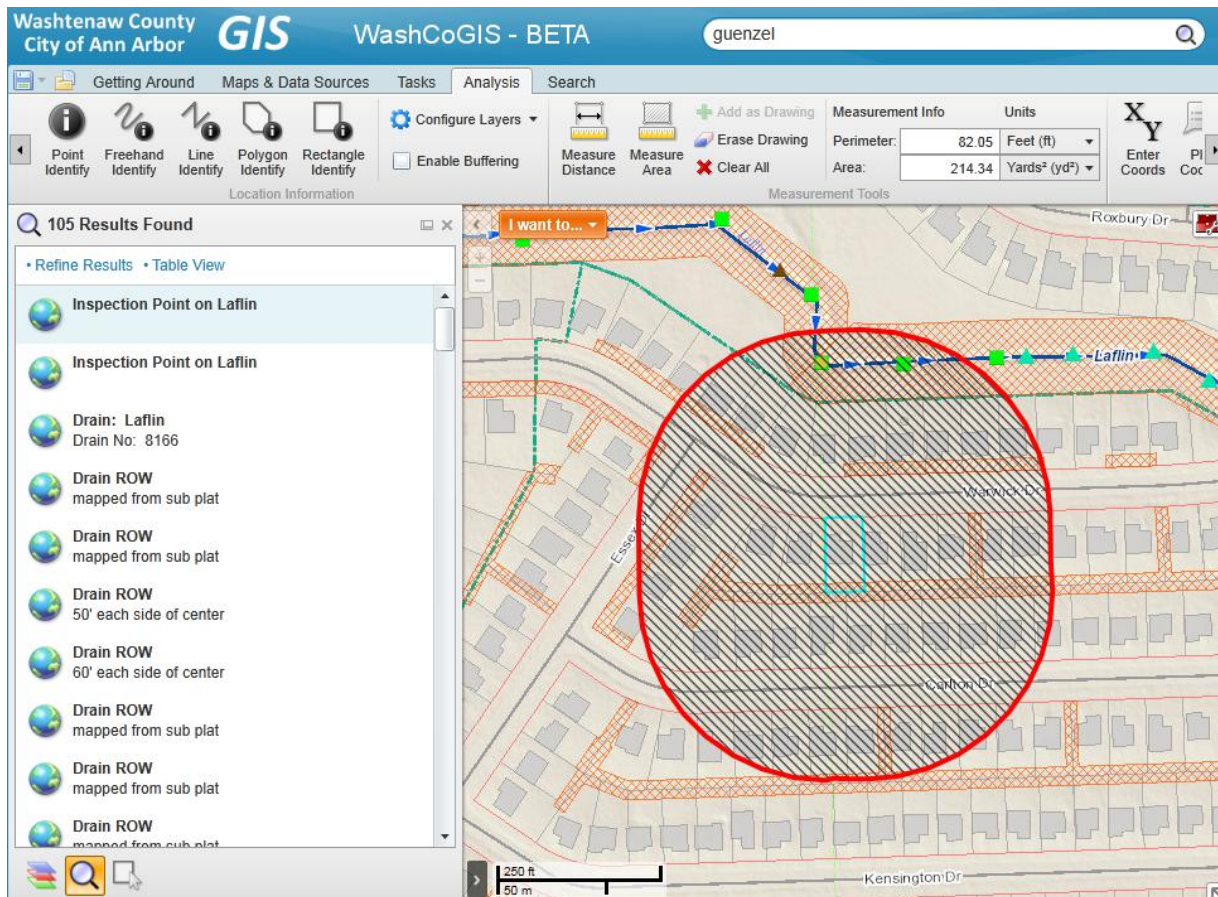
This section is under the Selection section because you need to have a selection first before you can buffer anything. When you have an active selection, there will be something in the Current Selection – for example, here there is one feature selected on the Parcels layer:



Right-click on the layer/features you want to make a buffer from and select Buffer Features:



From here, you can specify layers to intersect with the buffer and a distance with which to make the buffer. To get a quick look at the buffer before executing it, click the Preview Buffer button. Click the OK button to execute the buffer. If you check the box for *Add Buffer to Markup*, the buffer's shape will be added to the TOC as a graphics layer.



5. Redlining/Markup

The new sites allow you to draw custom graphics and text on the map and include them in prints. The Markup tools are on the Tasks tab of the toolbar. Click on one of the markup tools and start clicking around the map to make the corresponding graphic. You can change the graphic's fill and border colors before making the markup but not afterward.

After drawing is complete, you can modify shapes by clicking the Edit Drawing tool and then clicking on the shape of the graphic you want to modify. The vertices that define the shape will show as white squares, which you can move around by clicking & holding. On lines and polygons, you can also insert new vertices by clicking on the edge of the polygon/line - a small yellow circle indicates a new vertex will be placed:



6. Reports

Reports are configured on a layer basis. At this time, most of the reports in the websites are based on the parcels layer, and there are two basic types – (1) Property Sheet and (2) Mailing Labels.

1. Property Sheet:

This report is a property/parcel summary sheet, which displays all the basic information of the parcel along with a map thumbnail. The three most recent sales are shown, along with any drain assessment

2. Mailing Labels:

This report is a pre-formatted mailing label formatted to fit Avery 5160 labels. Fields included are Owner Name, Owner Name 2, and Property address information.

There are other specialized reports in the websites, and more will be developed in the coming months as users' needs are addressed. If you have a need for a report that is not included, please contact Nate Arnold with the details.

7. Printing

The websites allow printing to several page sizes and layouts:

Create a Printable Map ×

Select Layout: Letter Portrait

Output Format: Letter Portrait

Resolution: 11x17 Landscape

Map Scale: 11x17 Portrait

Title: Arch C Landscape

Notes: Arch D Landscape

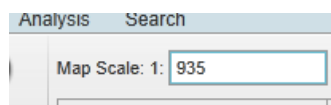
Arch E Landscape

Create File Cancel

The print function is available from either the *I want to...* button or the *Print Map* button on the *Tasks* tab of the toolbar.

There are a few options you can configure, but one of the most important is **scale**. One important aspect about scale is that many of the layers in the websites have scale dependencies for performance considerations. For example, when zoomed out to the entire county you cannot view the parcel annotation group layer because it would both take forever to draw and be illegible because the text would be smaller than a pixel on your screen.

When choosing *Current Extent* for map scale, note that this does not mean the same thing as current scale (which is not an option at this time). On the Getting Around tab of the toolbar, notice that there is a representative fraction scale box:



The number in this box will change when your zoom level changes. If you were to print a map and select *Current Extent* for the scale, there is a good chance the map will not print at 1:935 because the paper size you selected is likely different than the physical dimensions of your computer's monitor.

Large-Format prints

If you select any of the Architectural sizes, you will get a chance to enter your email address. The large-format prints can take several minutes to complete, and if you choose to enter your email address you can let the print job go while you continue to work with the map – the smaller letter and tabloid sizes force you to wait until the job is complete before getting back to the map.

8. Adding your own data

The new websites allow you to import your own data in either ESRI shapefile (points, lines, or polygons) or CSV tabular data (point layers only). Data added in this fashion will be added to the graphics layer in the TOC. You can add your own data by going to the Maps & Data Sources tab on the toolbar.

Adding a Shapefile

- Click the *Open Shapefile* button
- Navigate to your shapefile's location on disk
- Inside the Open dialog window, select the shapefile's .dbf, .prj, and .shp files and click the Open button.
 - Note that you must select all three files for the layer to display properly
- The default color is red, but you can right-click on the layer in the TOC and select *Symbolize Layer*.



Adding a CSV file (points)

CSV files must contain two fields, X and Y, with the point coordinates. The coordinates can be either in State Plane Michigan South or Latitude (Y) and Longitude (X). Remember that in the western hemisphere our longitude values are negative!

- Click the *Open CSV file* button
- Navigate to your CSV file's location on disk
- Select the CSV file and click the Open button

Alternatively (and more simply), you can open the CSV file location in Windows Explorer and drag and drop the CSV file onto the map.

9. Saving Projects

You can save projects to the server and retrieve them at a later time. NOTE – at this time, project files are automatically deleted from the server after a period of **30 days**. There is a Save Project button and an Open Project button in the upper left hand corner of the site:



To save a project, click the Save button and enter the project details. Note that this is not currently tied to your login credentials, so you can type anything you want in the Created By text box – although typing your user name is a good idea.

Once the project has been saved, you will be presented with a project link URL:



You can paste this URL into a browser to return to the project, or email someone the URL link so they can view your project. Alternatively, you can open your project by clicking the Open Project button and browsing for your project file.