Advanced Internet Mapping System User's Guide

Greenville County
Geographic Information Systems

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Introduction

This application was developed for the HTML5 environment using JQuery Mobile and ESRI's JavaScript Application Programming Interface (API). It is designed as a true cross-browser application that will function in all major desktop browsers as well as mobile devices such as smart phones and tablets.

The desktop environment provides users with tools and functionality consistent with the leading browsers used on PC and Mac machines.

- Designed and developed to work on all major desktop browsers including Google Chrome, FireFox, and Internet Explorer.
- Custom Auto Complete (predictive text) search technology provides search results with just a few key strokes.
- Printing, exporting, and report features allow users to extract information in formats that best suit individual requirements.

The mobile environment is optimized to make the best use of the smaller screen size of phones and tablets as well as leverage native GPS support of these devices.

- Designed and developed to work on all major mobile platforms including Android, iOS, and Windows 8.1 Mobile.
- Custom drawing tools allow users to annotate, symbolize, and draw graphics on the map using the touch capabilities of mobile devices.

This version of the user's guide is written for the desktop environment. Appendix A describes functionality and tools that are unique to the mobile environment. Additionally, user's guides for both environments are available from the Help menu at www.gcgis.org.

Application Layout

The mapping application consists of five main components. Each of these components provides tools to do certain tasks.

Navigation   Main Tools   Quick Tools

Scale Bar   Overview Map

Navigation

Tools used to move around in the map.

Hide	Hides navigation tools
Zoom In	Zoom-In on the map
Zoom Out	Zoom-Out on the map
Full Extent	Zoom to full extent of the map
Prev Extent	Return to previous map extent
Next Extent	Move from previous map extent to a successive map extent

Main Tools

Tools to perform searches, change map content and characteristics, print, and identify features.

Search

Search - Quickly search for property and other information	Search by Tax Map Number, Owner Name, Street Address, etc.
Select on Map - Select map features by clicking on the map	Select map features by drawing a point, line, or shape (polygon)
Advanced Search - Use a query builder to find specific information	Select features using queries

Maps

Map Themes - Choose a map theme	Select a map theme depicting a topic of interest
Basemaps - Choose a basemap	Display a particular year of orthophotography
Layers - Show the Layers menu	Control map content and display characteristics
Thematic Maps - Create shaded maps based on a database value	Create a shaded map based on a numeric value
Legend - Display the map legend	Display the map legend for all visible map layers
Overview Map - Display the overview map	Display map extent with respect to the county boundary
Bookmarks - Show the map bookmarks menu	Create short-cuts to locations of interest
Print - Print the map and data	Produce a paper map or PDF of the map

Tools

Tool	Description
Identify - Show map information by clicking on the map	Displays descriptive information for a specified map feature
Community Information - Show a variety of information by clicking on the map	Describes the "Community" surrounding a specified location on the map
Street View - Show Google Street View images by clicking on the map	View Google Street View images
Draw - Draw on the map	Draw graphics and enter text on the map
Measure - Measure or find a coordinate on the map	Measure an area, length, and display longitude and latitude coordinates on the map
Export Layers - Export visible map layers to many formats	Export and download (selected) visible data layers within the current map view

More

Tool	Description
Help - Show website help	Displays Help guide
Create Map Link - Create an HTML hyperlink text string to send by email	Creates a hyperlink to share the map via email or embed in a website
Map Links - Links to other mapping websites	Opens links to other mapping applications
Contact Us - Show website contact information	Displays contact information
County Home - Go to main County home page	Opens Greenville County home page
GIS Home - Go to the GIS home page	Opens Greenville County GIS home page
Privacy Policy - Show website privacy policy	Displays Greenville County privacy policy
About - About website	Displays information about current web browser

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Quick Tools

The Quick Tools menu provides easy access to frequently used tools.

Scale Bar

The scale bar, located at the bottom left of the map view, gives a visual representation of the scale of the map and helps determine distance on the map. Scale changes, depending on the extent of the map view. At the full extent of the map, the scale bar represents a distance of ten miles.

At the full extent of the map, the scale bar represents a distance of 10 miles in four 2.5 mile increments

Zoomed-in to a larger scale, the scale bar represents a distance of 1000 feet in four 250 foot increments

Overview Map

The overview map provides a frame of reference for the current map extent with respect to the County boundary. It can be accessed either by clicking the arrow in the bottom right corner of the map view or by clicking Maps, then Overview Map in the menu bar.

The mouse, keyboard, and the navigation tools provide means to efficiently move around the map. Basic map panning and zooming can be accomplished using several different approaches.

Pan

Left click and drag the mouse to pan across the map.
Or,
press shift + left click to re-center the map.
Or,
use the arrow keys to pan across the map.
- Up Arrow Key = North
- Left Arrow Key = West
- Right Arrow Key = East
- Down Arrow Key = South

Left click and drag the mouse to pan the map

Click and drag on the touchpad to pan the map

Zoom-In

Hold the shift key and left click the mouse.
Then drag the mouse to create a zoom extent box.
Or,
scroll the mouse wheel forward to zoom-in.
Or,
double click on the map to center it and zoom-in.
Or,
use the zoom-in button in the navigation tools.

Hold shift key then left click and drag mouse to zoom-in on map

Hold shift key then click, hold and drag on touchpad to zoom-in on map

Zoom-Out

Hold the shift and control key and left click the mouse.
Then drag the mouse to create a zoom extent box.
Or,
scroll the mouse wheel backward to zoom-out.
Or,
use the zoom-out button [Zoom Out] in the navigation tools.

Hold shift and ctrl key then left click
and drag mouse to zoom-out on map

SHIFT / CTRL   +   🖱   =

SHIFT / CTRL   +   🖐   =

Hold shift and ctrl key then click, hold
and drag on touchpad to zoom-out on map

Full Extent

Use the **Full Extent** button to return to the full extent of the map.

[Full Extent]

Prev Extent

Use the **Prev Extent** button to return to the previous map extent
after moving to a new map extent.

[Prev Extent]

Next Extent

Use the **Next Extent** button to move from a previous map extent
to a successive map extent.

[Next Extent]

Search

Query the map to find and display information of interest.

Search – A standard search tool to quickly find property, addresses, roads, subdivisions, schools, post offices, recycling centers, libraries, polling sites, parks, and other map features.

Select on Map – Select map features within a given layer by pointing, drawing a line, drawing a shape (polygon), using the current map view extent, or selecting all features. Additionally, features may be selected using a buffer distance.

Advanced Search – Select, add to an existing selected set, or deselect map features within a given layer using multiple criteria and a set of standard query operators.

Find Address – Find a location using an address or an intersection of two streets.

Sales Search – A search tool to identify and locate properties with similar sales characteristics.

Search

Search history

Layers/fields to search

Enter a search string

The default search parameters include all searchable fields in all searchable map layers and are recommended in most instances.

To begin, click in the **Search Here** text box and begin typing a word or phrase (search string) to search such as a property owner's name, a parcel identification number (PIN), a street address, a subdivision, or a more general term such as "recycle", or "post office". The search engine uses predictive text to find and display records as the search string is entered. It is not necessary (or desirable) to completely enter a search string before selecting a record of interest. For example, the complete address, 300 University Ridge, is returned after typing "300 Un" and can be selected from the list with a mouse click or by scrolling down with the arrow keys and pressing enter on the keyboard.

One record is returned displaying descriptive **Details** and the map zooms to the selected address point.

When one or more records are selected, the **CSV** (comma separated values) file export tool becomes active. This tool will download descriptive information for the selected record(s) to your computer for use in Microsoft Excel or similar software. To do so, click on the **CSV** button and specify a download location. Click **Save**.

The **Table view** button opens a new tab with the descriptive details displayed in tabular format. Table view also includes a Zoom to button to quickly zoom to the location of the selected feature.

The **Clear** button will clear the current search results, including any details displayed and revert to the **Search** dialog box.

If desired, new features (records) may be selected or added to the current selected set or existing features removed from the current selected set by typing a new search string and clicking on **New Selection, Add to,** or **Remove from.** Click on the search icon to apply the new search parameters.

To temporarily display the map under the **Search** dialog, click the **Map** button. The **Search** dialog will minimize but remain active. The search parameters or details of the selected features may be re-displayed by clicking on the respective button.

Tax Parcel Search Example

In most instances, the default search parameters are appropriate for a parcel search based on an owner's name or a PIN. In some cases, however, it may be advantageous to specify a single field to query such as the name of the street on which a parcel is located. This approach filters records that may partially match the search string, such as addresses or roads, but are irrelevant to the task at hand. In this example, the objective is to select tax parcels located on Timberjack Street in Simpsonville.

1. Click **Search** from the main menu and then click **Search** again from the drop down list to open the standard search dialog.

2. Click on the *All Fields* drop-down, scroll down and click on *Tax Parcel – Street* in the list.

3. Click on **Search Here,** type *timberjack* in the text box, and press enter on the keyboard or click the **Search** icon.

4. A list of selected records is displayed and the map refreshes, zooming to the selected parcels and highlighting them in red.

5. Several tools are now active and available to operate on the selected set of parcels.

- To display the descriptive **Details** of any of the selected records, click the *plus* icon next to a record and expand it. Note, the initial list displays 10 of the 20 selected records. Click *Next* to display the next 10 records.

- To select an individual record, out of the initial selection of 20 records, click the *right arrow* icon (next to the *plus* icon).

- To minimize the **Search** dialog, click the **Map** button.

- To exit the **Search** dialog, click the **Close** icon.

- Click **Zoom all** to zoom to the map extents of the selected parcels.

- Click **CSV** to export and download the selected records as a CSV file suitable for use in spreadsheet software such as Microsoft Excel. It is likely the exported PIN/Tax Map Number will either be displayed in scientific notation or will be truncated in the spreadsheet software. Formatting the PIN/Tax Map Number column will correct this problem.

  To format the Pin / Tax Map Number column in Microsoft Excel:

  Right click on the column Pin / Tax Map # and choose Format Cells...
  Under the Category section choose Custom.
  In the Type section enter 13 zeros.
  Click OK.

  To format the Pin / Tax Map Number in Libre Office Calc:

  In the text import wizard window, under the Fields section, select the Pin / Tax Map # column.
  For the column Type choose Text.
  Click OK.

  Note: In some cases, Internet Explorer will open the **CSV** file in the GIS application window instead of downloading the file. If this is the case, choose File >> Save As from the Internet Explorer menu and specify Text as the format type. Specify a download location and save the file. *Due to a Microsoft issue, the **Back** button will no longer function at this point, requiring the application tab to be closed and the mapping application to be re-opened. This limitation does not exist in Google Chrome or in Firefox.*

- Click **Table view** to open a new tab with the descriptive details displayed in tabular format. Table view includes a Zoom to button to quickly zoom to the location of the selected feature.

Zoom to	PIN / Tax Map #	Owner Name	Owner Name 2	Mailing Address	City	State	Zip Code	In Care Of	Previous Owner	Deed Date	Deed Book	De Pa
◎	0332010102000	Bargeron Kathy Suzanne B		2 Timberjack St	Simpsonville	SC	29680		Bargeron Don J	4/2/2012	2403	28
◎	0332010103400	Blando Iris	Blando John	111 Timberjack St	Simpsonville	SC	29680		Leonard Christopher W	8/4/2006	2220	
◎	0332010103600	Brannon Robert L	& Emily H	107 Timberjack St	Simpsonville	SC	29680		Sewell Nathan Russell Jr	8/1/2001	1961	18
◎	0332010104600	Caruthers Rebecca	Caruthers Scott (Jtwros)	5 Timberjack St	Simpsonville	SC	29680		Louf Simone R	3/24/2009	2354	55
◎	0332010103500	Cummins Shannon Nicki		109 Timberjack St	Simpsonville	SC	29680		Cummins Shannon Nichole	2/27/2013	2420	2
◎	0332010102700	Guy John T III		102 Timberjack St	Simpsonville	SC	29680		Wilson Chad E	10/4/2012	2413	1
◎	0332010102200	Haupfear James T	Haupfear Kelisha S	6 Timberjack St	Simpsonville	SC	29680		Prudential Relocation Inc	4/5/2004	2082	13
◎	0332010102800	Henderson James V (Jtwros)	Henderson Jerry T (Jtwros)	112 Timberjack St	Simpsonville	SC	29680		Evans Toni G	12/2/2010	2381	17
◎	0332010103200	Henderson James Vance	& Jerry Thomas	112 Timberjack St	Simpsonville	SC	29680		Seppala Homes Inc	8/28/2000	1922	17
◎	0332010103100	Kelley William A	& Gwen R	108 Timberjack St	Simpsonville	SC	29680			6/30/2000	1916	15
◎	0332010103800	Lebron Luz D		103 Timberjack St #37	Simpsonville	SC	29680		Schading Jack	3/7/2014	2440	18

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- Click **Mailing labels** and pick a style, either Avery 5160 or Avery 5161, to create and download a PDF file of labels for the selected records.

- Click **Clear** to unselect all records and return to the **Search** input dialog.

6. Expanding a single record activates additional, optional tools applicable only to tax parcels. Click on any of the eight links shown in blue text to run a tool.

Optional tools
For tax parcels

- Community Info – Assembles information describing the "Community" surrounding a specified location on the map; in this case, the selected tax parcel. The **Community Info** tool returns a list of descriptive information for the following categories: Tax Parcel, Zoning, City Limits, Flood Zones, Voter Information, Public Safety, Schools, Places of Interest, and Geodetic Survey Control. Click on the "plus" icon to expand a category and display details. Optionally, click the **Print** button to produce a paper copy of one or more expanded categories.

- Property Report – Creates a high quality report for the selected tax parcel. This is the standard tool to use when a paper copy of tax parcel information is required. The report includes a map thumbnail along with ownership, deed and plat references, values, taxes, history and other administrative information. For highest quality output, click the **Convert to PDF** link at the top of the first page of the report, download the file and then print it. Optionally, the report may be printed directly from the browser window (typically right-click-print, if supported by the browser).

- Property Card – Displays the archived property record card for the selected parcel. **Property Cards** were used to track transactions prior to 2003. These documents may be printed using the **Print** button at the top of the page or right-click print if supported by the browser.

- Estimated Taxes – Opens a new browser window containing the Real Property Tax Estimator webpage and an estimate of the taxes for the selected property.

- Ownership History – Displays an expandable, historical list of owners along with deed references, dates of sale, and sale prices for the selected parcel. This information is included in the **Property Report**.

- Assessment History – Displays an expandable list of assessment history from 1998 to the present and includes assessed values, owner names, taxable market values, and total taxes for the selected parcel. Like **Ownership History**, **Assessment History** is included in the **Property Report**.

- <u>Map Links</u> – Opens a new browser window with a set of links to Google Maps, Street View, Bing Maps, Bird's Eye, and web mapping applications available from surrounding counties.

- <u>Oblique Photos</u> – Opens a new browser window containing oblique "Bird's Eye" imagery with alternate views of the selected parcel.

7. The detailed, descriptive information for a single parcel contains links to additional information. Links are displayed as blue text, like the optional tools described above.

- Deed Book and Deed Page link to deeds and Plat Book and Plat Page link to plats on the Greenville County Register of Deeds website. Documents recorded after January 1, 1985 may be accessed directly by clicking on a link. Links to documents recorded prior to 1985 will display the Register of Deeds archive page for either deeds or plats. The books shown on the archive pages may be searched manually to locate the deed or plat page of interest.

- Tax District, links to the current millage sheet.

- Land Use, links to descriptions of the Real Property Land Use Classifications.

8. Selecting an individual record activates the tools mentioned above, plus an additional tool called **Sales Search**.

Clicking the **Sales Search** tool runs a preconfigured query that identifies properties with sales characteristics that are similar to the currently selected property. The conditions of the query are displayed and the map refreshes, zooming to the selected parcels and highlighting them in yellow. If desired, the conditions of the query can be changed in the sales search dialog. This is explained in detail on page 48 of this document.

Clicking the Details button displays a list of selected records with some basic information (Site Address Street, Sale Price, Sale Date, Number of Bedrooms and Baths, and Structure Size) immediately available.

The first three records in the Details pane indicate three properties that most closely match the characteristics of the originally selected parcel. How well the properties match is based on a score which can be viewed by expanding a record (clicking the green *plus* icon). The three closely matching properties are represented on the map with a *house* icon in a yellow circle. The originally selected parcel is highlighted in red.

Several tools are now active and available to operate on the selected set of parcels.

- Table View – described above, displays descriptive details of the selected parcels in tabular format.

- Export – creates a CSV file of the selected parcels for download and viewing in spreadsheet software such as Microsoft Excel.

- Clear – clears the selected records for the Sales Search.

- Report – creates a Similar Properties Report that displays the descriptive details of the three properties that most closely match the characteristics of the original parcel, along with the Average Sale Price and the Average Price/ SqFt.

Greenville County, SC
Similar Properties Report

	Subject	Property #1	Property #2	Property #3
Score		98.6	98	97.6
Distance		0.03	0.08	0.11
PIN / Tax Map #	0332010102000	0332010101800	0332010104400	0332010103800
Site Address Street	TIMBERJACK	Two Gait	Kwikaway	Timberjack
Property Type	RESIDENTIAL	Residential	Residential	Residential
Improved		YES	YES	YES
Sale Type		Cash (Land and Building)	Cash (Land and Building)	Cash (Land and Building)
Valid Sale		YES	YES	YES
Sale Date		7/31/2013	7/12/2013	3/7/2014
Sale Price	Appraised: $150,540	$164,900	$149,000	$145,000
Price Per SqFt	$81.90	$89.72	$81.07	$78.89
Deed Book	2403	2428	2427	2440
Deed Page	2883	4917	4527	1851
Land Use	1100	1100	1100	1100
Lot Size	0	0.437	0	0.4
Structure Size	1838	1,838	1,838	1,838
Bedrooms	3	3	3	3
Bathrooms	2	2	2	2
Half Baths	0	0	0	0
Subdivision	Martins Grove	Martins Grove	Martins Grove	Martins Grove
Market Area	000325	000325	000325	000325
Purchaser Name		Hopper Clinton M	American Homes 4 Rent Pr	Lebron Luz D
Seller Name		Mentrie Joseph L Jr	Henao Aline	Schading Jack

Average sale price: $152,966
Average price/sqft: $83.23

Properties can be added to, or removed from, the Similar Properties Report by selecting or unselecting records. The three properties that most closely match the original parcel are selected by default and are indicated by a green *check* icon.

Click the green *check* icon to unselect a record, and click another record to select it.

The Similar Properties Report can only contain up to three records. If more than three records are selected, the Report button will be greyed out and cannot be clicked.

The report can be printed by right clicking in the window, and then clicking print, or by clicking print from the browser menu.

Expanding a single record activates additional, optional tools applicable only to tax parcels. These tools, Property Report, Property Card, and Assessment History, are described in detail beginning on page 25 of this document. Click on any of the three links shown in blue text to run a tool.

Select on Map

Select map features within the **Selectable Layer** by pointing, drawing a line, drawing a shape (polygon), using the current map view extent, or selecting all features. Features may also be selected using a buffer distance and may be added to or removed from a currently selected set.

To begin, zoom-in to the area of interest on the map, click **Search** on the main menu, and **Select on Map** from the drop down. On the **Selectable Layer** drop down menu, select the data layer of interest. The Tax Parcel layer is the default.

Select a feature with a point

1. Left click on the **Point** button.
2. Drag the mouse pointer to the feature of interest in the map and left click. The selected map feature is highlighted in red and descriptive details are displayed in the **Details** pane.

Select one or more features with a line

1. Left click on the **Line** button.
2. Drag the mouse pointer to the feature or features of interest in the map and left click the beginning point of a line.
3. Drag the mouse pointer and left click again to add a vertex to the line.
4. Continue to drag the mouse and left click until the desired length and shape of the line is achieved.

5. Double click to finish the line and select the intersecting features. The **Details** pane will display the selected records and the map will highlight the selected feature(s) in red.

Select one or more features with a shape (polygon)

1. Click on the **Shape** button.
2. Drag the mouse pointer to the feature or features of interest in the map and left click the beginning point of a shape.
3. Drag the mouse pointer and left click again to add a vertex to the shape.
4. Continue to drag and left click the mouse to construct a shape which intersects the features to be selected.

5. Double click the mouse to close the shape and select the features.

Select Features within a Buffer Distance of a point, line, or shape

In addition to selecting only the features that intersect a point, line, or shape drawn on the map, features within a specified buffer distance may also be included in the selected set by checking **Add a buffer with distance (ft):** and selecting or entering a distance.

In this example, the center parcel of the three outlined in red is selected by drawing a **Point.** The two parcels on either side, within 100 feet of the location of the point, are also selected. The same buffering procedure may be applied when selecting features using lines or shapes.

Select features within a distance of one or more selected features

If one or more features in the **Selectable Layer** are currently selected, then the button, **Select nearby features within(ft):**, becomes active. Specify a distance and click this button to select nearby features.

In this example, parcels within 250 feet of the three originally selected parcels are now selected and presented in the **Details** tab.

Select features (in the selectable layer) displayed in the current map view

1. Zoom to the area of interest on the map.
2. Click the **Current View** button.

3. All features in the **Selectable Layer** and in the current map view (maximum of 1000) will be selected and highlighted in red.

Select All features in the Selectable Layer

1. Click the **All** button to select all features in the Selectable Layer (maximum of 1000).

The **All** option is intended for feature layers containing less than 1000 records. Using this option for large data sets, such as tax parcels, may produce unexpected results.

Advanced Search

The **Advanced Search** tool provides a mechanism to select, add to an existing selected set, or deselect map features within a single data layer using multiple criteria and a set of standard query operators.

Advanced Search Example

In this example, the requirement is to identify tax parcels that are between ten and twenty acres in size, are classified by the tax assessor as vacant-residential, and have been sold since January 1, 2010.

1. Click on **Search** from the main menu and then click on **Advanced Search** from the drop down.

2. The query will consist of a set of statements, each statement reflecting a single criterion from the requirement above. To begin, select Tax Parcel as the **Selectable Layer.**

3. To find parcels greater than ten acres in size, select *Estimated Acres* as the query field, *Greater Than* as the query operator, and enter *10* as the criterion. Click the **Add** button to add the statement to the query box.

4. To find parcels less than twenty acres in size, select *Estimated Acres* as the query field, *Less Than* as the query operator, and enter *20* as the criterion. Click the **Add** button to add the statement to the query box.

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5. To find parcels classified as vacant-residential by the tax assessor, select *Land Use* as the query field, *Equal* as the query operator, and *1180* as the criterion. Click **Add** to add the statement to the query box.

6. Refine the search further by limiting the search criteria to parcels that have been sold since January 1, 2010. Select *Deed Date* as the query field, *Greater Than or Equal* as the operator, and enter *01/01/2010* as the criterion. Click **Add** and then click the query icon to run the query.

7. The first ten records of the 103 selected are displayed as a list in the **Details** pane and all 103 parcels are highlighted in red on the map.

8. The **Zoom All**, **CSV**, **Mailing labels**, and **Clear** tools are active, just as they are using **Search** or **Select on Map**. Each selected record may be expanded to display descriptive details and may be "zoomed to" for closer inspection.

9. To modify the query, click the **Advan.** button to return to the query builder.

New query statements may be added, existing statements may be removed, and the selection type can be changed from **New Selection** to **Add to** or **Remove from.**

Find Address

The **Find Address** tool provides a mechanism for finding a location using an address or an intersection of two streets.

Find an address

To begin, click in the empty search box and begin typing an address. The search engine uses predictive text to find and display records as the search string is entered. For example, the complete address, 101 N Main St, Greer 29650, is returned after typing "101 N Main" and can be selected from the list with a mouse click or by scrolling down with the arrow keys and pressing enter on the keyboard.

When the result is selected, the map will zoom to the address, the location of which is indicated by a flag icon.

Find a street intersection

To begin, click in the empty search box and type one of the street names of the desired intersection. Follow this with an ampersand (&) and then the other street name. Street prefixes, suffixes, and types aren't necessary and the text is not case sensitive. For example, to find the intersection of East North Street and North Pleasantburg Drive, simply type north & pleasantburg. If a valid intersection is found, the result will display below the search box and can be selected with a mouse click or by scrolling down with the arrow keys and pressing enter on the keyboard.

In the above example, two results are returned because the intersection is located at the junction of two zipcode boundaries.

When the result is selected, the map will zoom to the intersection, the location of which is indicated by a *flag* icon.

Sales Search

The Sales Search tool provides a mechanism for identifying and locating properties with similar sales characteristics which include: Property Type, Location, Structure Size, Lot Size, Number of Bedrooms and Bathrooms, Market and Sales Price, Sales Date, and Valid Sale.

Residential Sales Search Example

In this example, the requirement is to identify residential properties that share specific characteristics and are within a mile of the intersection of East North Street and North Pleasantburg Drive. The criteria for the properties include the following:

- Structure size between 1100 and 2000 square feet.
- Lot size between 0.5 and 1 acre.
- Two to four bedrooms.
- One to three bathrooms.
- Sold within the last four years.
- Is a valid sale.

1. For the Sales Search results to be constrained to a specific area, that area must be displayed in the map extent. For this example, the results are to be constrained to the area surrounding the intersection of East North Street and North Pleasantburg Drive. To do this, click **Search** from the main menu and then **Find Address** from the drop down. Click in the empty search box, type north & pleasantburg, and click on one of the two returned results to zoom to the intersection of E. North St. and N. Pleasantburg Dr.

2. Click the green X button to close the Find Address tool, click **Search** again and click **Sales Search** to open the Sales Search tool.

3. The default Property type is Residential and Improved. For this example, we'll leave the defaults unchanged. In the Filter by region or search radius (miles) section, click the button labeled *Any* and choose 1 for a search radius of one mile. In the Structure SqFt fields, enter 1100 under Min and 2000 under Max. In the Lot Size (acres) fields, enter 0.5 under Min and 1 under Max. In the Bedrooms fields, enter 2 under Min and 4 under Max. In the Bathrooms fields, enter 1 under Min and 3 under Max. The default Sales period is three years. Change this to four years by clicking the Sale Date button and choosing 4 years. The default for Valid Sale is *Yes*, which we'll leave for this example. The results should look like the image below.

4. When the Sale Date is changed to 4 years, the map will refresh and all properties that fit the above criteria will be indicated as a yellow circle with a *house* icon.

Note that, depending on the number of records returned, you may see a red bubble with a number over some of the icons in the map. This indicates a cluster of properties that match the criteria. The cluster indicator is based on the map extent and the number will change, or disappear, as you zoom-in to the area with the cluster.

5. Click the Details tab to see the records of the selected properties. Several tools, which are described on page 31, are available to operate on the selected set of properties.

Commercial Sales Search Example

In this example, the requirement is to identify unimproved commercial properties that share specific characteristics and are near, or inside, the Greenville City limits. The criteria for the properties include the following:

- Lot size between 1 and 5 acres.
- Sold within the last five years.
- Is a valid sale.

1. Click **Search** and then **Sales Search**.

2. Under Property type, click the Residential button and choose Commercial then click the Improved button and choose Unimproved. In the Lot Size (acres) fields, enter 1 under Min and 5 under Max. Click the Sale Date button and choose 5 Years. The default for Valid Sale is Yes, which we'll leave for this example. The results should look like the image below.

3. When the Sale Date is changed to 5 years, the map will refresh and all properties that fit the above criteria will be indicated as a yellow circle with a *building* icon.

4. To constrain the results to an area near, or inside, the Greenville City limits, click the Draw Area tool in the Filter by region or search radius (miles) section. It may help to zoom-in to the area where the Draw Area tool will be used. Click once on the map to start the Draw Area tool, click again to change direction, and double click to finish drawing around the desired properties.

5. When the Draw Area tool is finished, the map will refresh with an orange polygon surrounding the selected properties.

6. Click the Details tab to see the records of the selected properties. Several tools, which are described on , are available to operate on the selected set of properties.

Additional Sales Search Comments

Property type

Additional property type search options include **Multi-Family**, **Mobile Home**, and the option to search for **Any** property type. The search result icon for each property type is displayed below.

Any property type

Residential

Multi-Family

Mobile Home

Commercial

Clustered records

Improved - refers to a property with a building or other development on it.
Unimproved - refers to a property with no building or development.

Filter by region or search radius (miles)

An additional option, not described above, is **Pick Region**. A Region refers to the Market Area the property is in.

The **Clear** button clears a filter on the selected records.

Valid Sale

YES - also referred to as an Arm's Length Sale. Is the comparable sale a Valid Sale? To determine if the sale is valid, the conditions of the transaction must meet ALL of the following criteria. If one item is answered "no", the Assessor will likely discount the sale.
- Was conveyance via a Warranty Deed or Trustee's Deed?
- Were all parties knowledgeable of the market?
- Were all parties able to make an informed decision without undue influence?
- Was the property exposed to the open market?
- Were the principal buyer and seller unrelated individuals or corporations?
- Were all parties NON-GOVERNMENTAL agents or agencies?
- If the sale was a foreclosure, was it the first sale after the foreclosure preceding (an REO)?

NO - Conditions of an Invalid Sale or Non-Market Sale. A sale is considered invalid if it meets ANY of the following criteria. If one item is answered "yes", the Assessor will likely discount the sale. Please note the below criteria are the most common reasons to exclude a sale from comparison. Exclusions include, but are not limited to:

- The transaction involves a government agency
- Multiple parcels are sold in the same transaction
- One parcel is being divided into multiple parcels or multiple parcels are being combined
- Individuals or corporations have same name or ownership
- The sale is mandated by the court (lender possession, divorce decree, interstate, etc.)
- Only a portion of the parcel or partial interest is transferred
- Parcels are traded
- A deed other than a Warranty Deed or Trustee's Deed is used to convey the parcel
- The property was not exposed to the open market
- Property was sold at auction
- Adjacent neighbor is principal to the transaction
- Agreement for Deed or Option to Purchase
- Sale-Leasebacks
- Transfers in payment of satisfaction of a debt

Maps

Choose map content, configure display characteristics, book mark areas of interest, toggle map components, and produce output in paper or digital format.

Map Themes -Refresh the map with a group of complementary map layers depicting a topic of interest.

Basemaps - Quickly change the background orthophotography.

Layers - Provides control over map content and display characteristics.

Thematic Maps - Symbolize *Tax Parcels* based on numeric descriptive data.

Legend - Displays the map legend or key, showing the symbols used to represent the visible map layers.

Overview Map - Toggles a smaller-scale map that shows the limits of the main map's extent with respect to the total surrounding area (typically the Greenville County boundary).

Bookmarks - Provides the ability to create and label shortcuts to areas of interest on the map.

Print - Produces a printable map layout, .pdf, or .jpeg image with optional title descriptive information.

Map Themes

Map Themes displays a group of complementary map layers depicting a topic of interest such as zoning, county council districts, fire districts, FEMA flood zones, etc. To view Map Themes, click on **Maps** from the main menu and then click **Map Themes** to display a list of available themes. Alternately, click **Map Themes** on the quick tools toolbar. Next, click the **Map Theme** of interest. The default theme is **Land Records.**

Example

To display zoning polygons and complementary map layers, click on the **Zoning** map theme.

Basemaps

Basemaps quickly changes the background orthophotography displayed in the map.   To view **Basemaps**, click on **Maps** from the main menu and then click **Basemaps** to display a list of available basemaps. Next, click on the basemap with the photography of interest. **County Basemap** is the default and displays the most recent photography.

Example

To change the display from the current orthophotography to 1997 orthophotography, click on the **1997 Aerial Photos** base map.

Layers

The Layers setting provides control over map content and display characteristics. More specifically, layer groups and individual layers may be turned on or off providing more control over map content than using **Map Themes.** Additionally, layer opacity may be adjusted to highlight or subdue layers within each map service.

Click on **Maps** and then **Layers** to display a hierarchical list, grouped by map services, by categories (if applicable), and data layers. This example shows a partial list of services.

Click the plus icon to expand services and categories. The first example shows the single **Municipal Boundary** data layer under the **Boundary** service. The second example shows multiple categories and multiple data layers under each category within the **Map Layers** service.

To toggle an entire service on or off, click the **Show** or **Hide** button respectively.

To toggle layers on or off, click the check box next to a layer or layers of interest.

To change the opacity of layers within a map service, drag the slider to the desired opacity, 0 being fully transparent and 100 being fully opaque.

Note: The main data categories and layers within the map reside under the **Map Layers** service.

Thematic Maps

Thematic Maps symbolize **Tax Parcels** based on numeric descriptive data. More specifically, it creates a shaded Map (Thematic Map) based on a numeric value.

Note: Tax parcels must be visible in the map view to create a thematic map.

1. Navigate to the area of interest and click **Maps** and then **Thematic Maps** from the main menu.

2. Click on the Theme dropdown to choose a field to use for symbolization.

3. Click on the Method dropdown to choose from available classification methods.

Natural Breaks: Divides a set of attribute values into classes based on natural groups in the data distribution. Natural breaks occur in the histogram at the low points of valleys. Breaks are assigned in the order of the size of the valleys, with the largest valley being assigned the first natural break.

Equal Interval: Divides a set of attribute values into groups that contain an equal range of values.

Equal Count: Divides a set of attribute values so that each has an equal proportion in the data distribution.

4. Click on the Classes drop down to choose the number of classes represented.

5. Click on the Color drop down to choose the map display color.

6. Adjust opacity to the desired level by using the slider and note the result.

Thematic maps will remain active (symbolized) until the clear button is pressed.

A legend will be available to interpret symbology.

Note: At present only the Tax Parcels map layer is available for thematic maps functionality.

Thematic Map Example

- Map zoomed-in to desired extent.
- *Theme* set to Square Feet.
- *Classification method* set to Natural Breaks.
- *Number of classes* set to five (5).
- *Color* set to Blue.
- *Opacity* set to 80%.

Legend

Displays the map legend or key, showing the symbols used to represent the visible map layers.

Overview Map

The Overview Map toggles a smaller-scale map that shows the limits of the main map's extent with respect to the Greenville County boundary.

The overview map can also be toggled by clicking on the ↖ icon in the bottom right of the map view. The main map extent can be changed by dragging the red rectangle in the overview map to a new location.

Drag to move to a new location

Bookmarks

Bookmarks are used to create and label shortcuts to areas of interest on the map.

To add a bookmark:

1. Navigate to the area of interest and click **Maps** and then **Bookmarks** from the main menu.

2. Click **Add Bookmark** and type a name into the text box (the default name is Untitled).

3. Click on the "pencil" icon to edit the bookmark or click the "X" icon to delete the bookmark.

Bookmarks are stored in browser cookies and will persist until browser cookies are cleared. Depending on the browser used and how browser history is managed, bookmarks may or may not persist from one session to another.

Print

The Print function is used to produce a printable map layout or an image in PDF or JPEG format with a title and optional descriptive information.

To create a printable map:

1. Navigate to the area of interest and click **Maps** and then **Print** from the main menu or click **Print** on the quick tools toolbar.

2. An orange graphic showing the extent of the print area will display.

3. Optionally, enter a title for the map.

4. Optionally, set a map scale. Map scale is initially set to **Default**. This setting will print the map at the largest scale possible for a given page size. To set a scale other than the default, choose the desired scale from the drop-down menu.

When a new scale is selected, the orange bounding rectangle and the map extents will change to reflect the new printable area.

Example

5. The default paper size is 8.5" x 11". Click on the drop-down to select an alternative paper size from the list.

6. To change the default page orientation from Portrait to Landscape, click the appropriate Orientation button.

Data Table:

If a feature is **selected**, an option to include the data table will be available. This option is not available when creating a .pdf or .jpg.

If the Data Table checkbox is checked, the feature information (attributes) will be included in the printable map. However, it is recommended to leave this option unchecked, as it reduces the printable map size dramatically. If descriptive (attribute) information is required, export to a **comma separated values (.csv)** file for Excel or create a **Property Report** for a Tax Parcel.

Optionally, create a **.pdf** or **.jpeg** image of the map.

Right click in map to save .jpeg image

Click icon to save or print .pdf

Tools

Identify features, get community information, view Google Street View images, draw graphics or text on the map, measure or get coordinates on the map, and export map layers.

Identify – The Identify tool displays descriptive information for a specified map feature. Map features must be visible in the map view to be identified.

Community Information – Assembles information describing the "Community" surrounding a specified location on the map.

Street View – View Google Street View images of a location by clicking on the map within 150 feet of a street in the desired location.

Draw – Provides the option to draw graphics and enter text on the map.

Measure – Provides the ability to measure Area, Length, and display Longitude and Latitude coordinates.

Export Layers – Export and download visible data layers within the current map extent (view) as a compressed (.zip) file.

Identify

The Identify tool displays descriptive information for a specified map feature. Map features must be visible in the map view to be identified.

Click on the desired feature in the map view to identify.

If identifying a feature in a map theme that returns more than one result, an option to toggle between identified layers will be provided.

Click to toggle between
identified layers

Descriptive details will be returned with the option to zoom to the identified feature.

Zoom to Identified feature

Optional tools for tax parcels

Descriptive details

Optional tools are applicable only to the Tax Parcel layer. These tools, which include: Community Info, Property Report, Property Card, Estimated Taxes, Ownership History, Assessment History, Map Links, and Oblique Photos are described in detail on page 22, under the Tax Parcel Search Example.

Community Information

The Community Information tool assembles information describing the "Community" surrounding a specified location on the map. It is described in detail on page 25, under the Tax Parcel Search Example.

Street View

The Street View tool allows for viewing Google Street View images for an area of interest.

Browse to an area of interest and click the Street View tool from the Tools menu or from the quick tools toolbar.

Click on the map within 150 feet of a street where Street View images are desired.

A window will pop up showing Street View images and the location of the area in Google Maps

Navigate in Street View:

- **To move around**, click the white arrows on the bottom of the screen. You can also move your cursor in the direction you want to travel. Your cursor becomes a white oval that decreases in size the further you want to move.
- **To look around**, click and drag your mouse. You can also use the arrows on the compass.
- **To zoom in or out**, scroll with your mouse or two-finger zoom with a touchpad. You can also use the + and - buttons below the compass.

Optionally, you can click the **Large View** button to open the Street View image in a new tab and the **Satellite** button to view satellite images in the Google Map. When viewing satellite images in the Google Map, you have the option to toggle labels and 45° oblique imagery.

Draw

The Draw tool provides the option to draw graphics and enter text on the map.

To draw graphics or text on the map, choose the graphic type to draw, and then select the options for that graphic. Tool tips will appear on the map indicating the action to take to draw a particular graphic or text.

Drawing a Point

1. Click the **Red** dropdown to choose the Point color.

2. Click the **Circle** dropdown to choose the Point shape.

3. Click the **8** dropdown to choose the Point size.

4. An option to label the Point with coordinates is available by checking **Label coordinate** in the menu and clicking the **Lat/Long DM** dropdown to choose between *Degrees Minutes*, *Degrees Minutes Seconds*, and *Decimal Degrees* for Latitude/Longitude coordinates and *XY Map Units* for South Carolina State Plane coordinates.

5. Click the desired spot in the map view for the Point to be drawn.

Once a graphic is drawn on the map, options to Undo, Redo, Clear, and Stop drawing will be available.

- Undo will remove the last graphic placed on the map.
- Redo will add back the last graphic that was previously removed using the undo tool.
- Clear will delete all graphics on the map.
- Stop will deactivate the **Draw** tools so that the map can be clicked on without adding new graphics.

Individual graphics can be removed from the map, without clearing all graphics, by selecting the desired graphic and then clicking Delete.

1. Click on the graphic to be removed and the Delete button will become active.
2. Click the Delete button in the menu to remove the graphic.

Drawing a Line

1. Click the **Red** dropdown to choose the Line color.

2. Click the **Solid** dropdown to choose the Line design.

3. Click the **Size** dropdown to choose the Line width.

4. Click once in the map view to start the Line.

5. Click again to change Line direction.

6. Double click when ready to complete the Line drawing.

Drawing a Shape

1. Click the **Red** dropdown to choose the Shape color.

2. Click the **20%** dropdown to choose the percentage of opacity desired for the Shape. The higher the number, the less transparent the fill color will be.

3. Click the **Size** dropdown to choose the Shape line width.

4. Click once in the map to start the Shape.

5. Click again to add a new vertex to the Shape.

6. Double click when ready to complete the Shape.

Shape (quick)

Draws a freehand polygon on the map.

1. Click **Red**, **20%**, and **Size** to choose the color, opacity, and line width of the Shape.

2. Click on the map and hold to start the Shape. Move the mouse while holding the left button to construct the Shape. Let go to finish the Shape.

Creating Text

1. Click the **Red** dropdown to choose the Text color.

2. Click the **Arial** dropdown to choose the Text font.

3. Click the **12pt** dropdown to choose the font size.

4. Type text in the text box and then click on the map where you want the Text placed.

More

Contains more graphical elements to draw on the map. These shapes include arrow, circle, ellipse, line-quick (freehand line), rectangle, and triangle.

1. Click the **More** dropdown and choose a graphical element.
2. Click **Red, 20%,** and **Size** to choose the color, opacity, and line width of the shape.

3. Click the map once to add the default size of the graphical element or click and drag to increase the size or change the direction of the element.

Note: For the Line-quick element: click, hold, and drag to create the line. Let go to finish the line.

Measure

The Measure tool provides the ability to measure an Area or Length, display Longitude/Latitude coordinates, and Zoom to Longitude/Latitude or State Plane coordinates.

An option to label all measurements is included for each measurement tool and is on by default. Uncheck the green check box to measure without labels.

Measure an Area

1. Select the **Area** icon and click **Acres** to choose the desired unit of measure from the dropdown menu.

2. Left click once on the map to start the measurement and left click once for every change in direction. The length and bearing of the current segment are displayed in the dialog box.

3. Double click to finish drawing the measurement polygon.

The measurement result will be displayed in the dialog box with the appropriate units. Available units of measure are Acres, Square Miles, Square Kilometers, Hectares, Square Yards, Square Feet, and Square Meters.

Measure a Distance

1. Select the **Distance** icon and click **Feet** to choose the desired unit of measure from the dropdown menu.

2. Left click once on the map to start the measurement and left click once for every change in direction. The length and bearing of the current segment are displayed in the dialog box.

3. Double click to finish drawing the measurement line.

The measurement result will be displayed in the dialog with the appropriate units. Available units of measure are Miles, Kilometers, Feet, Yards, and Nautical Miles.

Location

1. Select the **Location** icon and click **Degrees** to choose the desired coordinate system from the dropdown menu.

2. Left click once on the map and the coordinates will be displayed in the dialog with the appropriate units.

3. Other coordinate formats, in addition to the coordinate system chosen above, can be viewed by clicking the **Lat/Long DD** button in the dialog box. The coordinate formats include Degrees Minutes, Degrees, Minutes, Seconds, Decimal Degrees, and State Plane.

Note: To clear any measurement graphics in the map view, simply click on one of the measurement icons.

4. Optionally, all measurement tools allow you to **Zoom to Coordinate** if you know the Longitude/Latitude or State Plane coordinates of a desired location.

Export Layers

The Export Layers tool provides the ability to export and download most visible data layers within the current map extent (view) as a compressed (.zip) file. To see a list of the layers available for export, as well as the metadata, click here.

The **maximum** number of features (records) that can be exported is **1000** per data layer.

1. Zoom-in to a sufficiently large scale such that the number of features in visible data layers within the map view is less than 1000.

2. Click the button labeled **ESRI Shapefile (.shp)** to choose the appropriate file format.

3. Click the Export button and wait for export process to finish.

Format: ESRI Shapefile (.shp) ✓

Export

Note - Exported data will be clipped to the current map extents with a maximum of 500 records per layer.

4. Choose where to save the zip file and, optionally, name it something recognizable.

5. Extract the zip file to a known location.

6. View files with the appropriate software.

Note: If Pop-up blocking is enabled in your web browser, the file will not download correctly. Ensure that pop-up blockers are disabled, or that pop-ups are allowed for this site.

Small scale export example

Countywide Fire Districts with resulting shapefile viewed in ESRI's ArcCatalog.

Large scale export example

Tax Parcels and other data layers with fewer than 1000 features visible in the map. Tax Parcel shapefile viewed in ArcCatalog.

More

Help – Opens the webpage version of this help guide in a new tab in the browser.

Create Map Link – Creates a link to the mapping application (based on the current map extent) that can be shared via email or embedded in a website.

Map Links - Opens a new browser window with a set of links to Google Maps, Street View, Bing Maps, Bird's Eye, and web mapping applications available from surrounding counties.

Contact Us – Displays the Contact Information Page of the Greenville County GIS website.

County Home - Displays the Greenville County Homepage.

GIS Home – Displays the Greenville County GIS Homepage.

Privacy Policy – Displays the Website Privacy Policy for Greenville County websites.

About – Displays information about the browser being used to view the mapping application.

Mobile Device Navigation

Pan

Touch and drag on the device screen to pan the map.

Zoom-In

Touch and pinch apart on the device screen to zoom-in on the map.

Alternately, use the zoom-in button in the navigation tools.

Zoom-Out

Touch and pinch together on the device screen to zoom-out on the map.

Alternately, use the zoom-out button in the navigation tools.

Full Extent

Use the Full Extent button to return to the full extent of the map.

Desktop features not available on mobile devices

- Quick Tools.
- Scale Bar.
- Overview Map.
- Export Layers functionality.
- Map Links option.
- Deed and plat references in the parcel search results are both linked to the Register of Deeds public records system.