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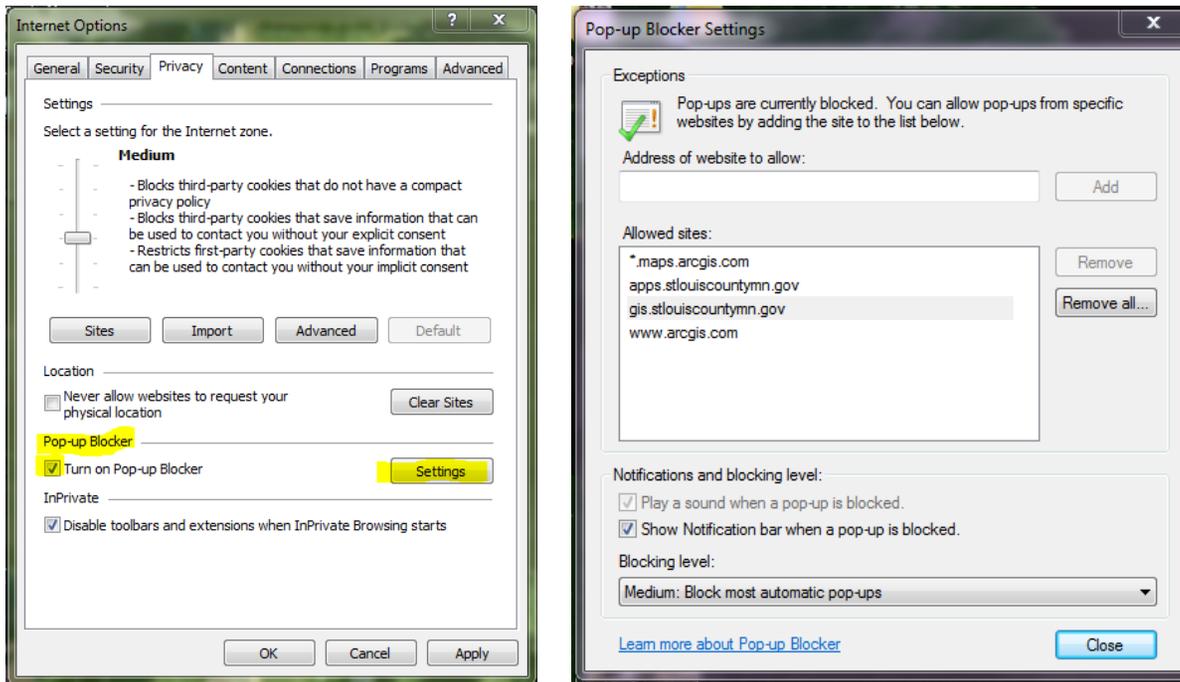
## How to access the map – tips & tricks

### System requirements

\*[Adobe Flash Player 11 or higher](#) – see the section under ‘About’ to access links for downloading Adobe Flash Player and other compatibility information.

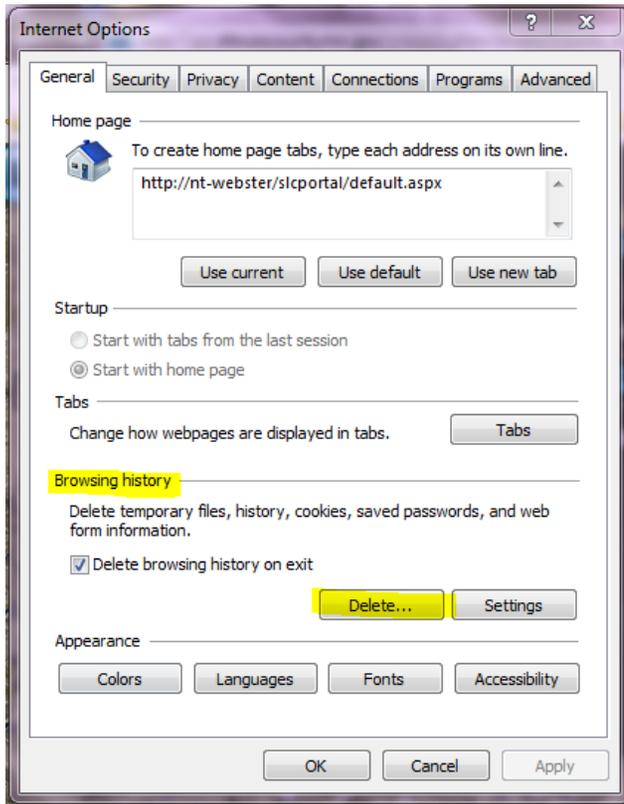
\*[JavaScript enabled in the browser](#) – see the section under the web browser of your choice for how to enable JavaScript.

For the Print widget, popup blockers must allow the website to open a new browser window. Alternatively, the pop-ups may remain enabled and the St. Louis County website can be added as an allowed site. From the IE browser, access the Pop-up Blocker Settings dialog from the *Internet options – Privacy tab*.



## Other tips – Browser History

Due to the nature of web browsers, the functionality of web maps may be affected by the browser history. If the website is not displaying correctly, or not showing changes that were recently applied by site administrators, you may need to refresh the browser and/or delete browser history. The method for deleting browser history varies with each browser. To delete browser history in Internet Explorer, go to the upper right hand corner of the browser, **Tools > Internet Options**.



## Still having trouble getting the site to work properly?

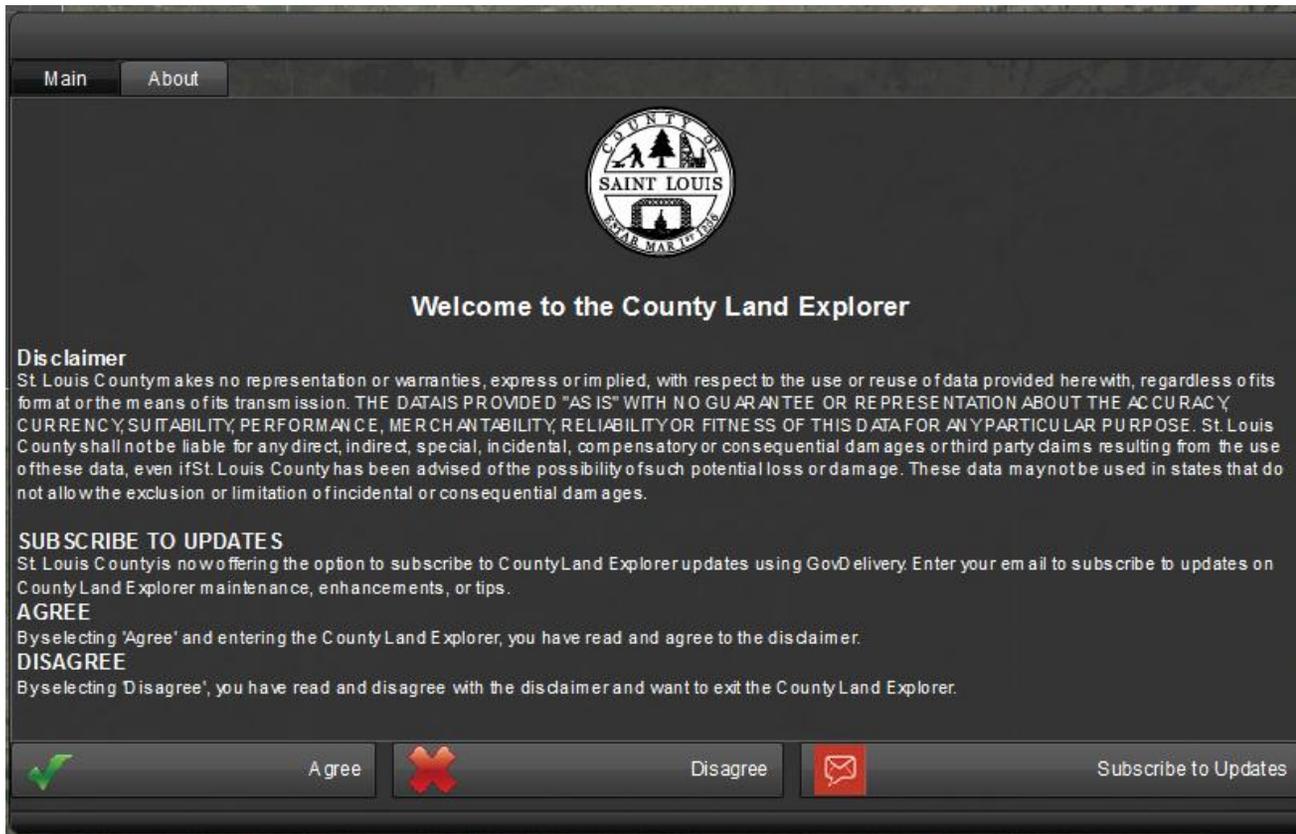
Try refreshing the browser and waiting for it to reload completely. The site should work with various systems and web browsers such as Internet Explorer, Mozilla Firefox, Google Chrome, Safari, and Opera. Ensure to check your browser has received the most recent updates.

## How to get started

Access the County Land Explorer from the [St. Louis County website](http://stlouiscountymn.gov) or directly from the following link:

<http://stlouiscountymn.gov/explorer/>

Each time the County Land Explorer is opened, the following dialogue box will appear for the user to read.



After reading the disclaimer, select the **'About' tab** to access more resources, or choose one of the three options at the bottom of the dialogue box. The first option is to **Agree** to the Disclaimer and continue on to use the web map application. The second option is to **Disagree** and exit the application. Selecting the option to exit the application will re-direct the browser to the St. Louis County home page. The third option is to **Subscribe** to updates via email. Selecting the third option will not close the County Land Explorer but will open a new tab in your web browser for [GovDelivery Subscriptions](http://stlouiscountymn.gov/govdelivery). The GovDelivery site gives users the option to subscribe to updates for the County Land Explorer. Users also have an option to access the [GovDelivery subscriptions](http://stlouiscountymn.gov/govdelivery) from the web map interface after agreeing to the disclaimer.

## How to get started

The 'About' tab has additional resources for users interested in more information or access to data from St. Louis County. Users can toggle back and forth between the 'Main' and 'About' tab.

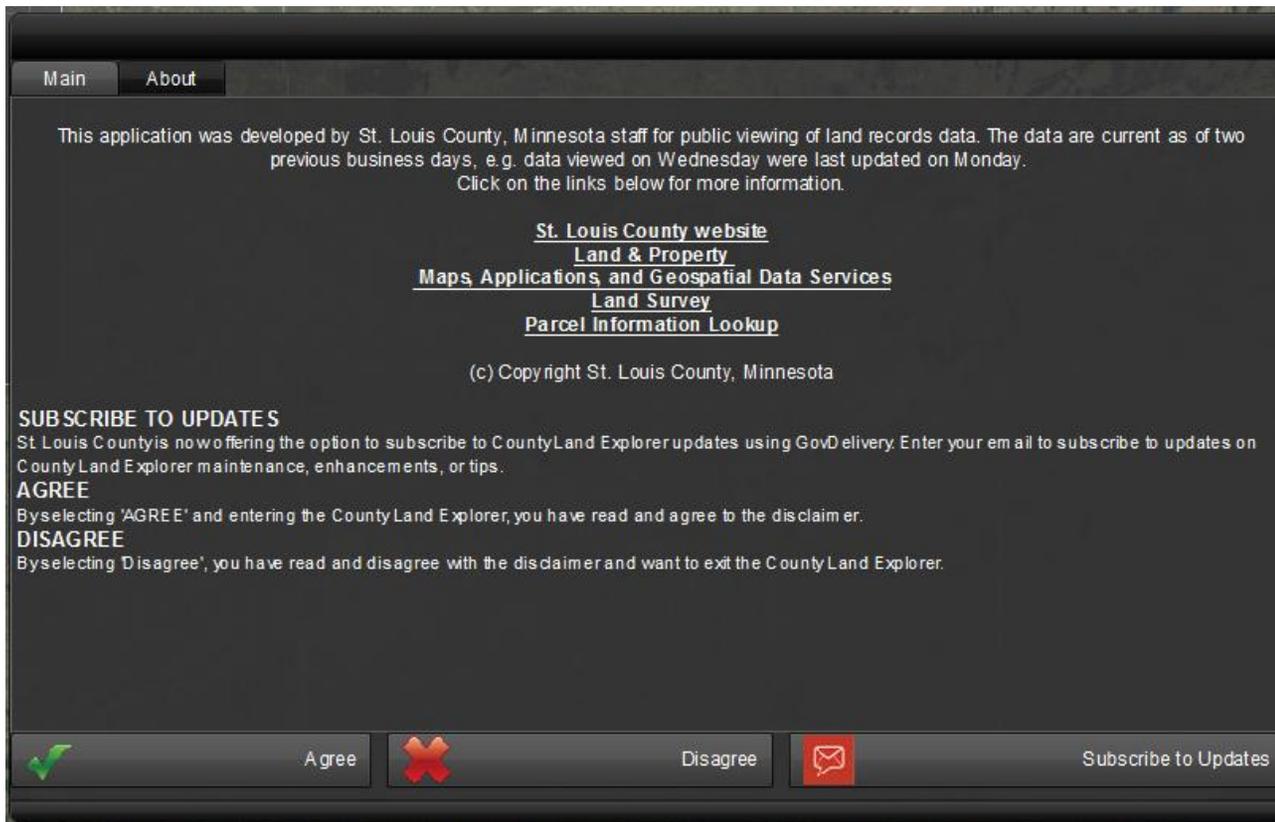
The links for the resources listed in the 'About' tab can also be accessed from this document:

Land and Property <http://stlouiscountymn.gov/LANDPROPERTY.aspx>

Maps, Applications, and Geospatial Data Services <http://stlouiscountymn.gov/LANDPROPERTY/Maps.aspx>

Land Survey <http://stlouiscountymn.gov/LANDPROPERTY/LandSurvey.aspx>

Parcel Information Lookup <http://apps.stlouiscountymn.gov/auditor/parcelInfo2005iframe/>



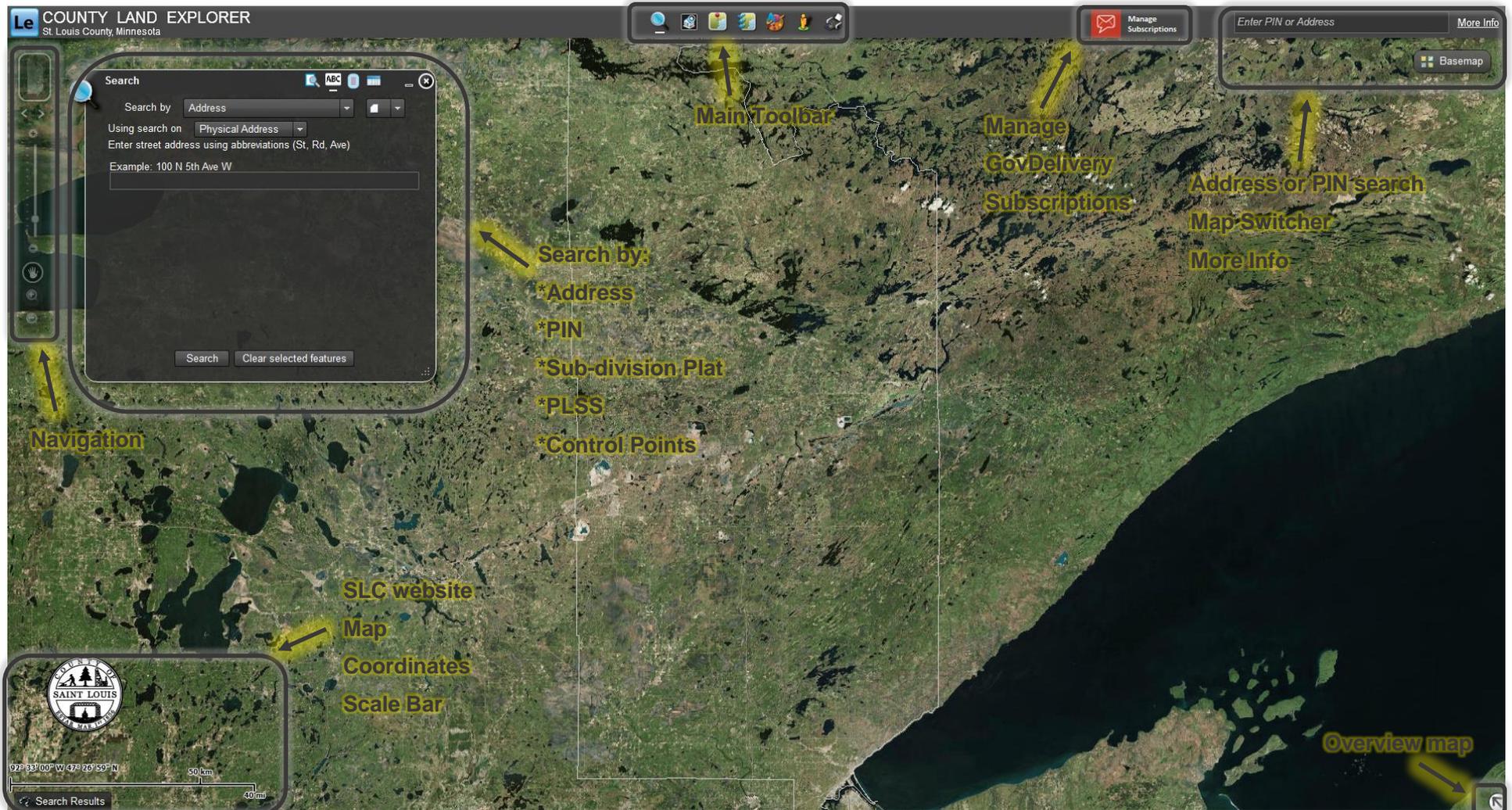
The same three options are available at the bottom for users to continue, exit, or subscribe to updates.

[Return to Main Menu](#)

<http://stlouiscountymn.gov/explorer/>

## How to get started

The County Land Explorer initially displays at the St. Louis County scale. Access the tools from the **main toolbar** or explore the map using the **mouse** or **keyboard**.



\*Note: if the County Land Explorer appears differently from the above example and you are experiencing difficulty, you may need to **adjust the resolution of your web browser**.

## Navigation

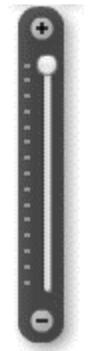
The navigation toolbar is located on the upper left side of the map. These tools are static on the map viewer and cannot be moved around by the user. For additional tips on how to use these tools, refer to [Using the mouse](#) section. The Overview map is located in the lower right corner of the map.



**Zoom to St. Louis County** – This allows for a quick method to zoom the map to the entire county.



**Previous/Next Extent** – This allows for zooming back to the previous extent or to the next extent.



**Zoom Slider** – Allows for setting the zoom level to pre-set scales.



**Pan** – Use the pan hand for moving around the map at the current zoom level.



**Zoom-in and Zoom-out to defined extent** – Use these tools to draw a box on the map for specific areas to zoom in to or out from.



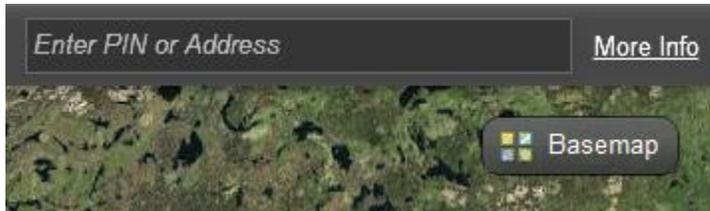
**Overview map minimized** – Located in the lower right corner of the map. The overview map is minimized by default. To expand the overview map select the arrow.



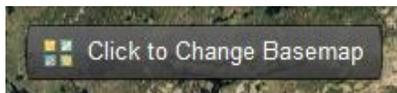
**Overview map expanded** – Shows the current spatial extent of the map display as a red rectangle relative to the entire spatial extent of the base map service. The red box will move and change in size as the zoom level and spatial extent are changed on the map. Click the arrow to minimize the overview map.

## Other map features – upper right corner

These tools are static on the map viewer and cannot be moved around by the user.



**Map Switcher** – Enables the ability to switch between basemaps. The available basemaps include Esri Streets\*, Esri Imagery\*\*, 2013 County Imagery\*\*\*, USGS Topo.



**\*The labeling component of the Esri Streets basemap is out of St. Louis County control.** The labels used in the Esri Streets basemap is based on data managed by other sources. For more information click to read more about the [Esri Streets basemap](#).

**\*\*It is possible to know the date or source of the Esri Imagery basemap.** This imagery is often a composite of multiple sources and dates, varying by scale and location of the map. Typically, this imagery is from the summer season as indicated by leaves on deciduous trees. To determine the source and date of the imagery for your area of interest, click to get more information on the [Esri Imagery basemap](#).

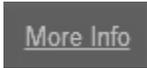
**\*\*\*The 2013 County Imagery is aerial photography acquired in the spring of 2013.** This imagery was paid for by St. Louis County and acquired by Pictometry International Corp. at 4 inch resolution in select areas and 9 inch resolution county-wide. The next Pictometry image acquisition for St. Louis County is anticipated in the spring of 2016 (available summer 2016).

**Geocode search** - This search toolbar is in the upper right hand corner of the web map interface. The search toolbar is based on a nation-wide geocoding service *and* on St. Louis County parcel data. In other words, this search option can be specific to St. Louis County (PIN search) but also gives results that are based on nation-wide data sources (address data).



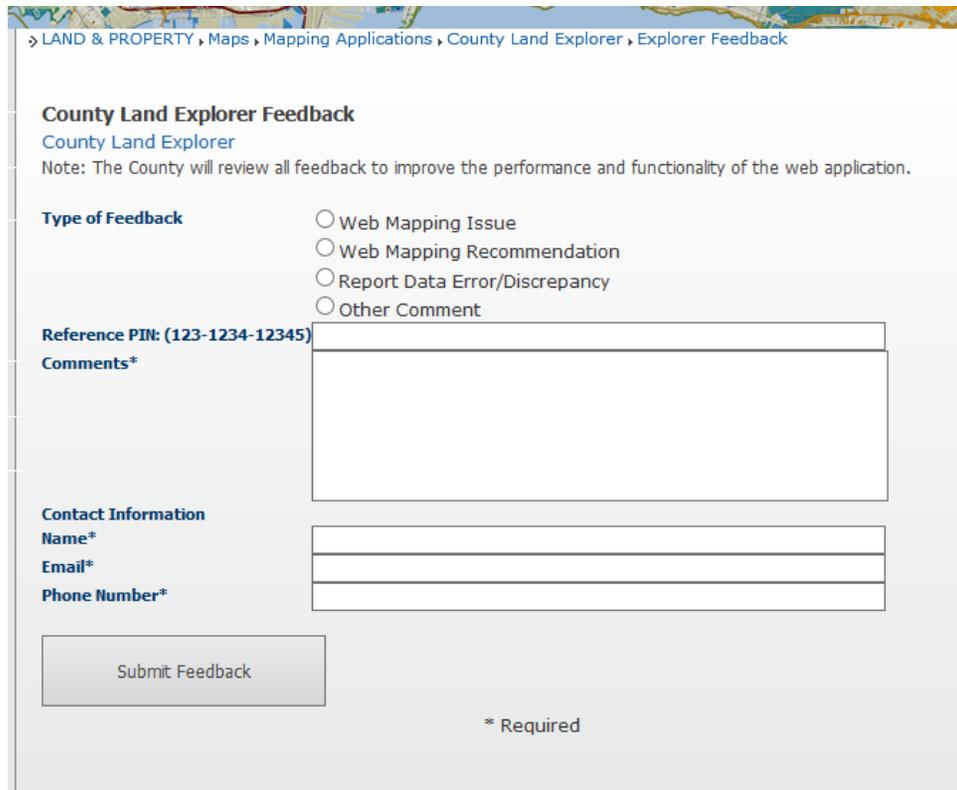
## Getting Help and Giving Feedback

Additional links are available for easy access to the St. Louis County website, to the latest version of the 'Help' document, and to the 'Feedback' page. Click on the **More Info** link in the upper right corner of the mapping application to get a pop-up in the center of the map.



**Help** – Users can access the latest version of the [Help document](#) for learning more about the tools, data, and troubleshooting tips. Be aware of the 'Last Edited' date in the upper right hand corner of the document. The document is updated periodically. To ensure you have the latest version, always access the document from the link provided.

**Feedback** – Site administrators welcome feedback in an effort to continually improve and enhance the County Land Explorer where possible. In the pop-up select the [Click to give feedback](#). A new tab in the web browser will open to a page on the St. Louis County web page where there is space to enter feedback.

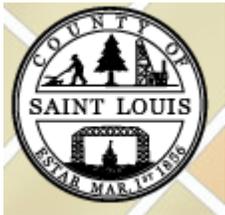


### Other map features – lower left corner

These tools are static on the map viewer and cannot be moved around by the user.



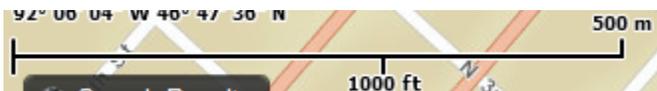
**St. Louis County website** – Click on the St. Louis County logo to open a new tab in your web browser to the St. Louis County homepage [www.stlouiscountymn.gov](http://www.stlouiscountymn.gov).



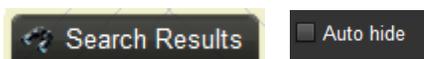
**Coordinates** – Latitude and Longitude coordinates display in Degrees (°) Minutes (') Seconds (") for the current location of the computer mouse on the map. These coordinates will change automatically as the mouse is moved on the map. [FAQ about XY coordinates](#)

92° 06' 04" W 46° 47' 36" N

**Scale bar** – the scale bar displays units in feet and meters for the map scale corresponding to the current zoom level on the map. The scale will change automatically as the zoom level changes on the map.



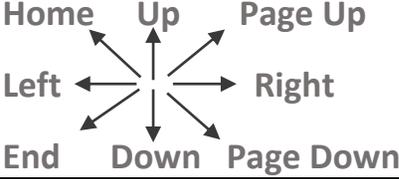
**Search Results** – this is a tab that can be activated to display search results in the table view. To keep the search results table open, un-check the *Auto hide* in the lower left corner of the table.



## Using the mouse

Map action	Mouse stroke	Description
Re-center	Pan tool 	Click the pan tool in the navigation tool bar to click and drag the map to a new location.
Zoom-in	Mouse wheel 	Scroll the mouse wheel forward (or up) to zoom in. Each wheel click will zoom the map in by approximately 50% in width/height
	Shift+Left click mouse 	Hold the shift key down while also holding the left mouse button down and drag to draw a rectangle. The map will zoom in to the area of the rectangle.
	Zoom-in tool 	Select the zoom-in tool from the <b>navigation toolbar</b> . Click once on the map to zoom-in and re-center the map on that point. OR click and drag a rectangle on the map to zoom in to the area of the rectangle.
Zoom-out	Mouse wheel 	Scroll the mouse wheel backward or down to zoom out. Each wheel click will zoom the map out by approximately 50% in width/height.
	Ctrl+Left click mouse 	Hold the Ctrl key down, then click the left mouse button to zoom out. OR hold the left mouse button down and drag to draw a rectangle. The map will zoom out to the extent of the rectangle drawn. The smaller the rectangle, the more the map zooms out.
	Zoom-out tool 	Select the zoom-out tool from the <b>navigation toolbar</b> . Click once on the map to zoom-out and re-center the map on that point. OR click and drag a rectangle on the map to zoom out to the area of the rectangle. The smaller the rectangle drawn, the farther the map will zoom out.
Zoom to full extent of St. Louis County	Zoom to full extent 	Select the St. Louis County boundary graphic from the <b>navigation toolbar</b> to zoom to the full extent of the county.

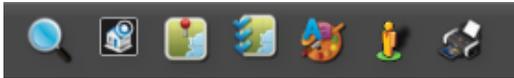
## Using the keyboard

Map action	Keyboard shortcut	Description
Zoom-in	<b>Shift + +</b>	Hold the shift key down and press the plus key (on numeric key pad only). Each click of the plus key zooms the map in by a fixed amount.
Zoom-out	<b>Shift + -</b>	Hold the shift key down and press the minus key (on numeric key pad only). Each click of the minus key zooms the map out by a fixed amount.
Re-center (pan) the map		To pan the map, use these keys on the numeric keypad and the map will move a small amount with each click. The arrow keys (up/down/left/right) move the map horizontally and vertically. The Home/End/Page Up/Page Down move the map diagonally.
Zoom to full extent of St. Louis County	<b>f</b>	One click of the 'f' key will zoom the map to the full extent (St. Louis County extent).
Print	<b>Ctrl + Alt + PrtScn</b>	To capture a screen shot of any object or map view on the computer screen, press the Ctrl + Alt + Print Screen buttons (in that order) on the keyboard. In open word document, select paste. A word document, Paint, or any image editing program. Save the screen shot in the desired file format for sharing or using in other programs.

Using the keyboard *and* mouse

Map action	Keyboard shortcut	Description
Adjust web browser resolution	<b>Ctrl + scroll mouse wheel</b>	To adjust the resolution of your web browser, click on the map application and press the Ctrl key on your keyboard while moving the wheel on your mouse. Click to see <a href="#">examples and more details</a> .

## How to use the main toolbar



The main toolbar contains tools that allow the user to interact with the map through a widget dialog. To use any of these widgets, select the desired widget icon from the main toolbar at the top of the map. This will open a floating widget dialog box. The widget dialog boxes can be closed or minimized as needed.



**Search** – open by default. The user can search county land records using an address, Property Identification Number (PIN), plat, Section, Township and Range, or Survey Control Points. The Search widget also allows the user to graphically select any of the above features by clicking on the map with one of the four different tools: point, line, rectangle, or polygon. The results from either the text or graphical search will be displayed in the results view of the widget.



**Address Locate** – The user can search for a specific address based on St. Louis County Master Address Repository (MAR). The results are scored based on how well they match the MAR database. Alternatively, a specific point can be searched for based on Latitude and Longitude coordinates. This is an alternative method for searching Addresses if the Search widget does not produce results. The database and back-end search engine of this widget is more robust and is more likely to produce results.



**Common Locations** – This widget displays a list of predefined spatial bookmarks in St. Louis County. The user can add/delete bookmarks and those changes are saved in the browser settings until the browser history has been deleted.



**Layer List** – This widget displays the available county data and labels to view by checking on/off the boxes for each layer. The layers are organized by groups and sub-groups. The check boxes for parent groups must be checked to display the layers below. Also available to view are the display settings (predefined size, colors, classes) for each layer. Mix and match the data you need for viewing or exporting images to reports and presentations.



**Draw & Measure** – Draw graphics, add text, and/or save drawings to your desktop for later viewing. The drawing tool can also be used to measure approximate areas and distances. The graphics can be included in a printed map.



**Google Street View** – View available Google Street View images for the location clicked on the map.



**Print** – This widget creates a PDF of the map as the user currently has it displayed. If a feature is selected, the selection and details will be included in the PDF version. The PDF can then be printed as a separate process.



## Search

The Search widget is open by default. If the widget dialogue is not open, select the search widget icon from the **main toolbar** at the top of the map.

There are many different ways to search the map:

1. Parcels
  - a. Address (Physical, Owner, Taxpayer)
  - b. PIN (Parcel Identification Number)
  - c. Lease PIN (Property Identification Number)
2. Subdivision Plat (Plat Name)
3. Public Land Survey System
  - a. Township and Range Numbers
  - b. Township Range Section
4. Survey Control Point

### Text Search



Enter an address, PIN, or survey control point number. The text entered must follow a specific format as displayed by an example above the space where the user can enter text. Alternatively, select from a drop-down list for a Plat name or Township-Range - Section.

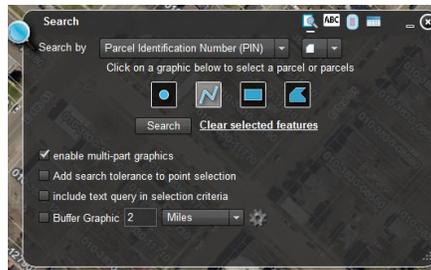


Click **Search** to activate the search.

### Graphical Search



Draw on the map using a point, line, rectangle, or polygon to search county data. Tweak the search by checking boxes. These options will return more results.



### Spatial Search



Search by a spatial distance from a point selected on the map. Modify the search to expand or contract the buffer area or to specify the spatial relationship of the point to the results (i.e. contained within, intersected by).





Search



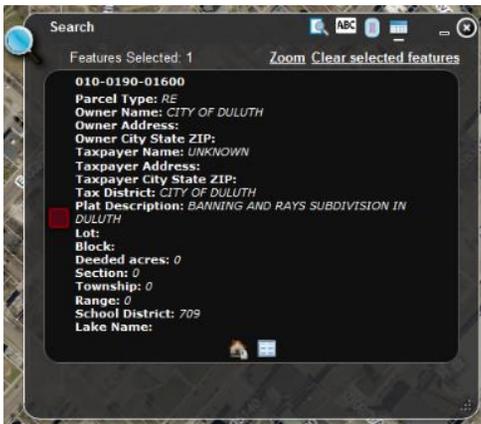
To add or remove records to/from the currently selected records, select the appropriate option in the text or graphical search, enter the search criteria, and click **Search**.

**Search Results**



The Results view is displayed in the widget. If no results are returned, check your text entry to ensure it is accurate and try again.

The selected feature will be highlighted in red on the map and information can be viewed in the feature pop-up.



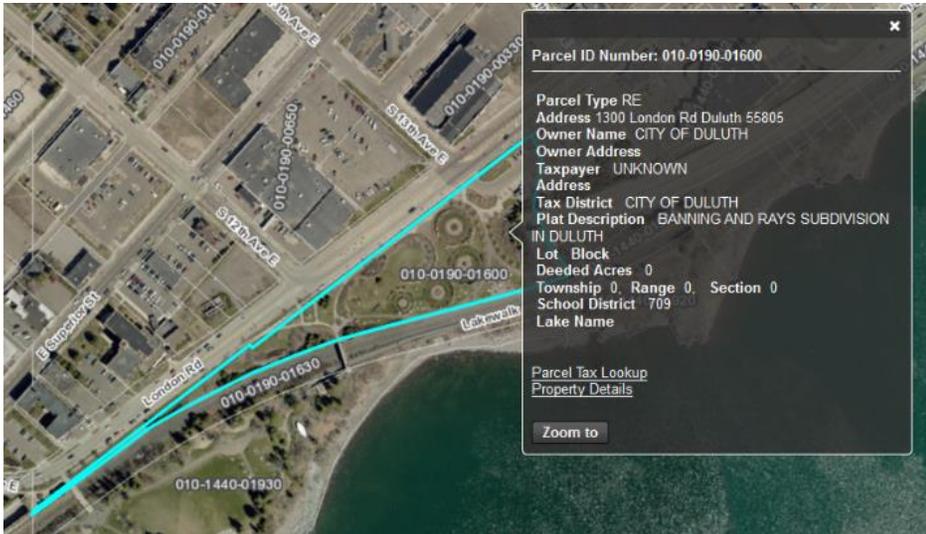
Details for the parcel will be displayed in the corresponding pop-up. Additional tax and property information can be derived from two links at the bottom of the results view or the popup. Clicking on these links will open new tabs in the web browser for displaying a PDF or another website from St. Louis County.

The selected records can also be viewed in a table. If the table is not displayed at the bottom of the map, select **Search Results** in the lower left corner. The records in the table can be exported as a CSV or text for further querying and formatting outside of the map.

PIN	Parcel Type	Owner Name	Owner Address	Owner City State ZIP	Taxpayer Name	Taxpayer Address	Taxpayer City State ZIP	Tax District	Plat Description	Lot	Block
010-0190-01600	RE	CITY OF DULUTH			UNKNOWN			CITY OF DULUTH	BANNING AND RAYS SUBDIVISION IN DULUTH		
010-1440-01930	RE	STATE OF MINNESOTA			DULUTH CURLING & SKATING CLUB	327 HARBOR DR	DULUTH MN 55802	CITY OF DULUTH	ENDION DIVISION OF DULUTH	0000	000

## Identify parcels on the map with pop-ups

Information can also be viewed for parcels by selecting the parcel of interest. To do this, ensure the parcels are turned on in the [Layer List](#) widget. Select the parcel of interest with a left-click on the mouse. This will prompt a pop-up to display information associated with the selected parcel, similar to the Search results. From the pop-up, there are links available for viewing the tax information and property details for the selected parcel. Clicking the [Parcel Tax Lookup](#) link will open a new tab in the web browser from the St. Louis County website. Clicking the [Property Details](#) link is a PDF document stored on the county web server.

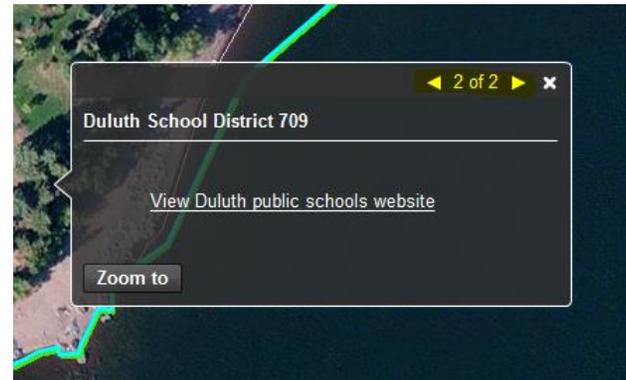
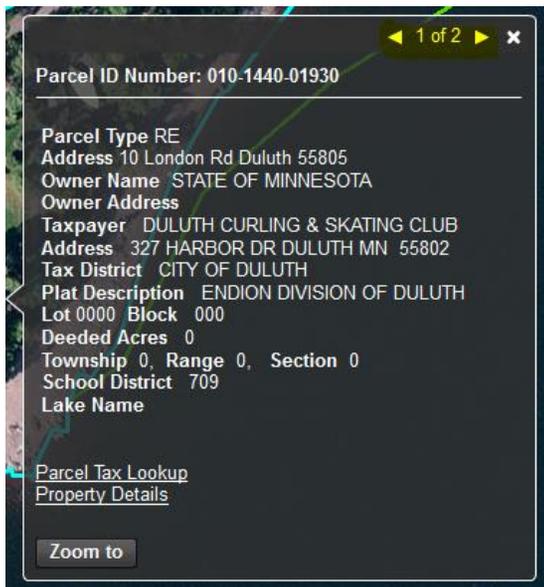


## Multiple pop-ups

It is possible to click on more than one feature with a pop-up from the same click. This means the data overlays another layer with the same spatial extent. In some cases there may be multiple parcels representing multiple ownerships. More commonly, there may be more than one layer turned on in the [Layer List](#) widget which has pop-up capability.

It is important to note that *not* all layers have the pop-up capability. If more than one feature with the pop-up capability is clicked on at one time, there will be numbers and arrows displaying in the upper right hand corner of the pop-up. The arrows allow the user to scroll through the pop-ups. The highlighted feature associated with the pop-up will display.

For example, if the parcels and school district boundaries have been turned on, there will be a pop-up available for both since they both have the pop-up capability.



## Address Locate

The Locate widget is not open by default. The Locate widget can be opened from the [main toolbar](#) at the top of the map.

The Locate widget opens to the locate address view  by default.

This widget allows users to search for an address based on the St. Louis County [Master Address Repository \(MAR\)](#) database. To search for an address, enter the following:

- Street address is required
- City/ZIP are optional

### Enter the address

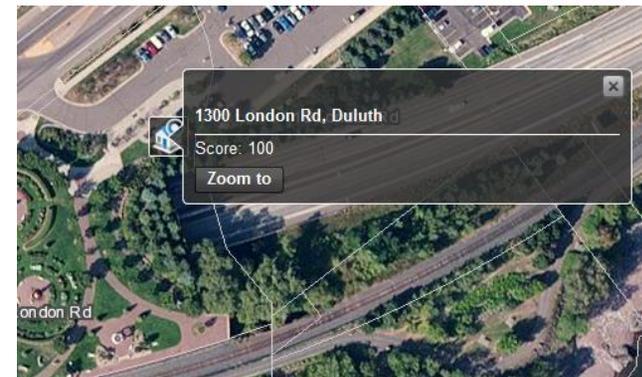
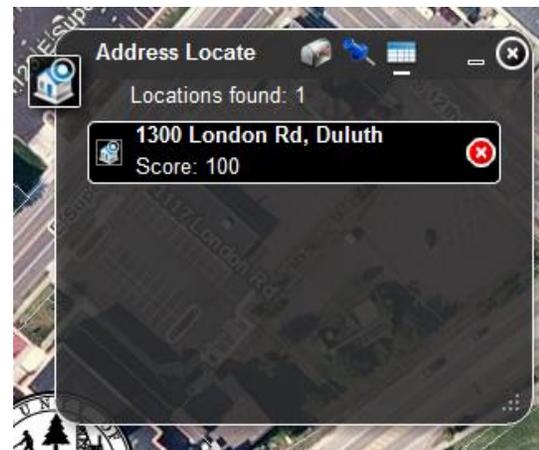
Enter the text for searching the address. Sometimes, entering less information will give better results. Click **Locate** to start the search.

### Locations found

The results view  is displayed in the widget. There may be no results, one result, or several results depending on the search criteria entered. The returned results display matched addresses and a match score.

### Location on map

Clicking on one of the results will zoom the map to that location on the map.



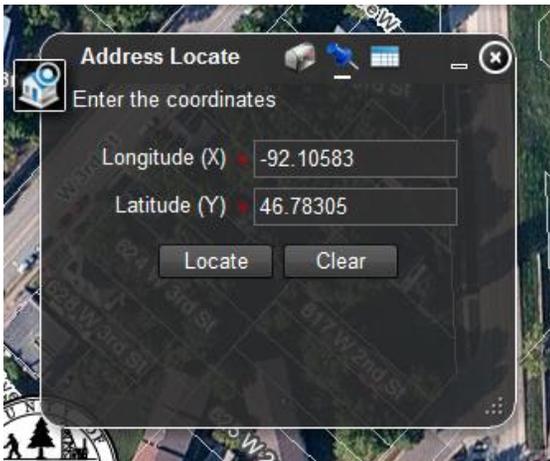
### [FAQ about address searching](#)



## Address Locate

### Enter the XY coordinates

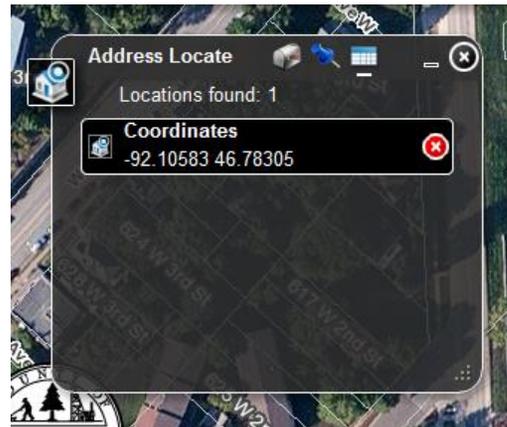
In the Locate widget it is also possible to locate a specific point by entering XY coordinates . The XY coordinates entered must be in *Decimal Degrees* format. Click **Locate** to start the search.



[FAQ about XY coordinates](#)

### Location found

The Coordinates result displays in the results view  of the Locate widget. For the coordinate results there will only be one result.



### Location on map

The returned result displays the coordinates entered at that point on the map. Clicking on the XY result in widget will zoom the map to that location.





## Common Locations

The Common Locations widget is not open by default. If the widget dialog is not open, select the Common Locations widget icon from the **main toolbar** at the top of the map.

This widget displays a list of  pre-defined spatial bookmarks in St. Louis County. Select a location from the list and the map will zoom to the extent set for that location.

Add  a bookmark by zooming to the desired location. Type in the name for the new bookmark, select **Add Location**. The customized bookmarks are saved in the browser settings until the browser history is deleted or the user deletes the bookmark.

Delete a bookmark by selecting the  next to the customized bookmark. The option to delete bookmarks is only available for the customized bookmarks.

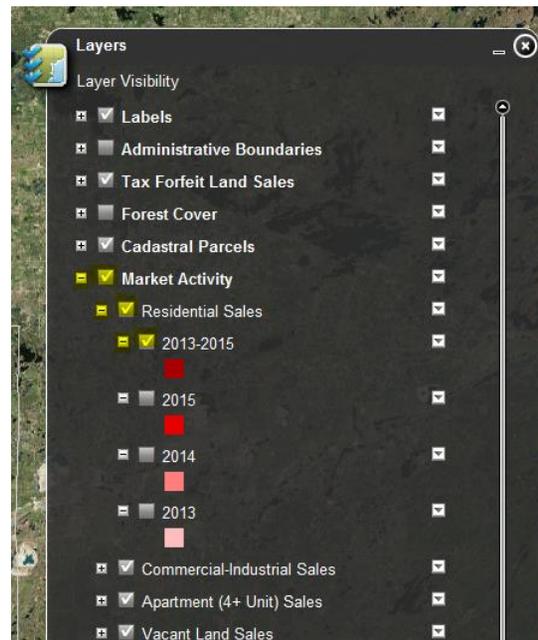
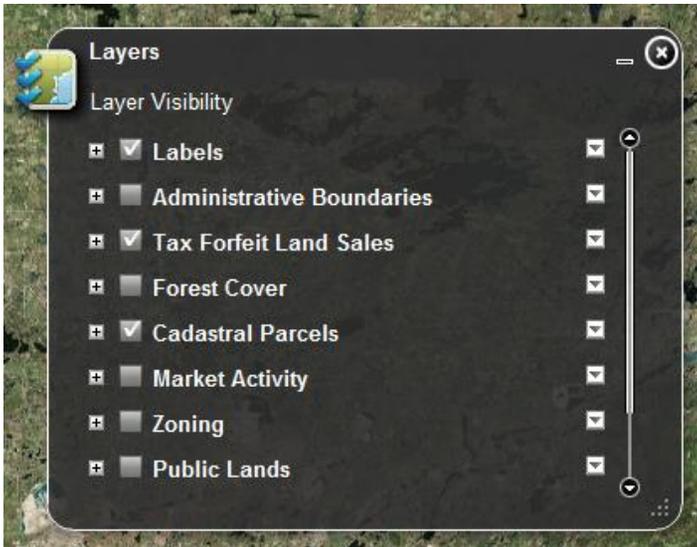


 **Layer List**

The Layer List widget is not open by default. If the widget dialog is not open, select the Layer List widget icon from the **main toolbar** at the top of the map.

The Layer List widget displays the available county data and associated labels for viewing on the map by checking the boxes on/off for each layer. The map automatically redraws to reflect the changes in layer visibility. If the layer does not draw as expected, wait patiently and/or try panning around on the map to get the map to refresh. Some layers may take longer than others to draw depending on the amount of data and how much it is being accessed by other users.

The layers are organized by groups and sub-groups. The check boxes for parent groups and sub-groups must be checked to display the layers below. Expand or contract the groups and sub-groups by clicking the + or – next to the layer name. Expanding the layer also allows for viewing the display settings (predefined size, colors, classes) for each layer.



Some layers may not be visible at the current map scale (zoom level). These layers are called scale dependent. This means the data will only display when map is within a specific scale range even if the box is checked. The checkbox next to each layer indicates if it is scale dependent. As the map scale changes, the checkbox may change to show it is in range for that layer.

 Current zoom level is out of scale range for this layer

 Current zoom level is within scale range for this layer

## Layer List

### Layer List options

Additional options for tweaking the display of layers. The options are available from the drop-down arrow  to the right of each layer.



### Layer Transparency

Layer transparency can be controlled by clicking on *Transparency* and moving the sliding bar to change.



### Layer Description

To get a brief description of the layers in a group, click on *Description* from the parent group.

A pop-up will appear with text describing the data in the layer



Mix and match the data as needed for viewing or exporting images to reports and presentations.

 **Draw & Measure**

The Draw & Measure widget is not open by default. If the widget dialog is not open, select the Draw & Measure widget icon from the **main toolbar** at the top of the map.

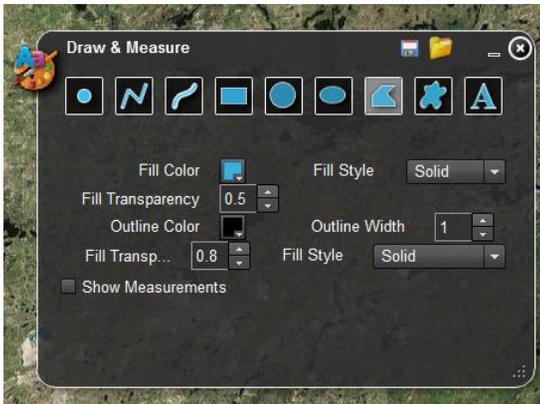
This widget allows for drawing graphics on the map to mark up or derive approximate measurement information. Choose one of the following geometry types:



Once a geometry type is chosen, the display options for that geometry type will be available. Set the desired display options before drawing. The display options allow the user to change the geometry or text colors and sizes. If using the tool for deriving measurements, check the box to 'Show Measurements' before drawing on the map. After drawings have been added to the map, the widget will change to allow the user to clear all or individual drawings.

**Draw & Measure**

The geometry tools and other options for display before any drawings or measurements have been added to the map.



**Display options**

The widget changes after drawings have been added and the option to show measurements have been checked.



Graphics can also be saved for use later on or for sharing with someone else. To save a graphic, select the save button  and specify a name for the text file.

To open  a saved graphics file, select the folder to open the text file and it will display as it did when created.

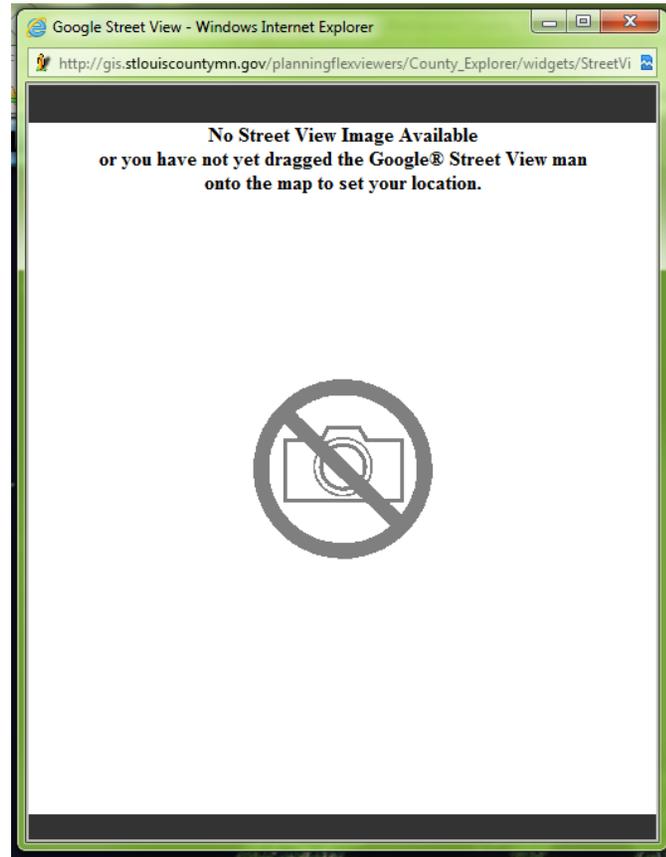
If the Draw & Measure widget tool is closed, the graphics will automatically be cleared from the map. If the widget is opened again within the same session, the graphics will display on the map as when they were created.



## Google Street View

If the widget dialog is not open, select the Google Street View widget icon from the **main toolbar** at the top of the map.

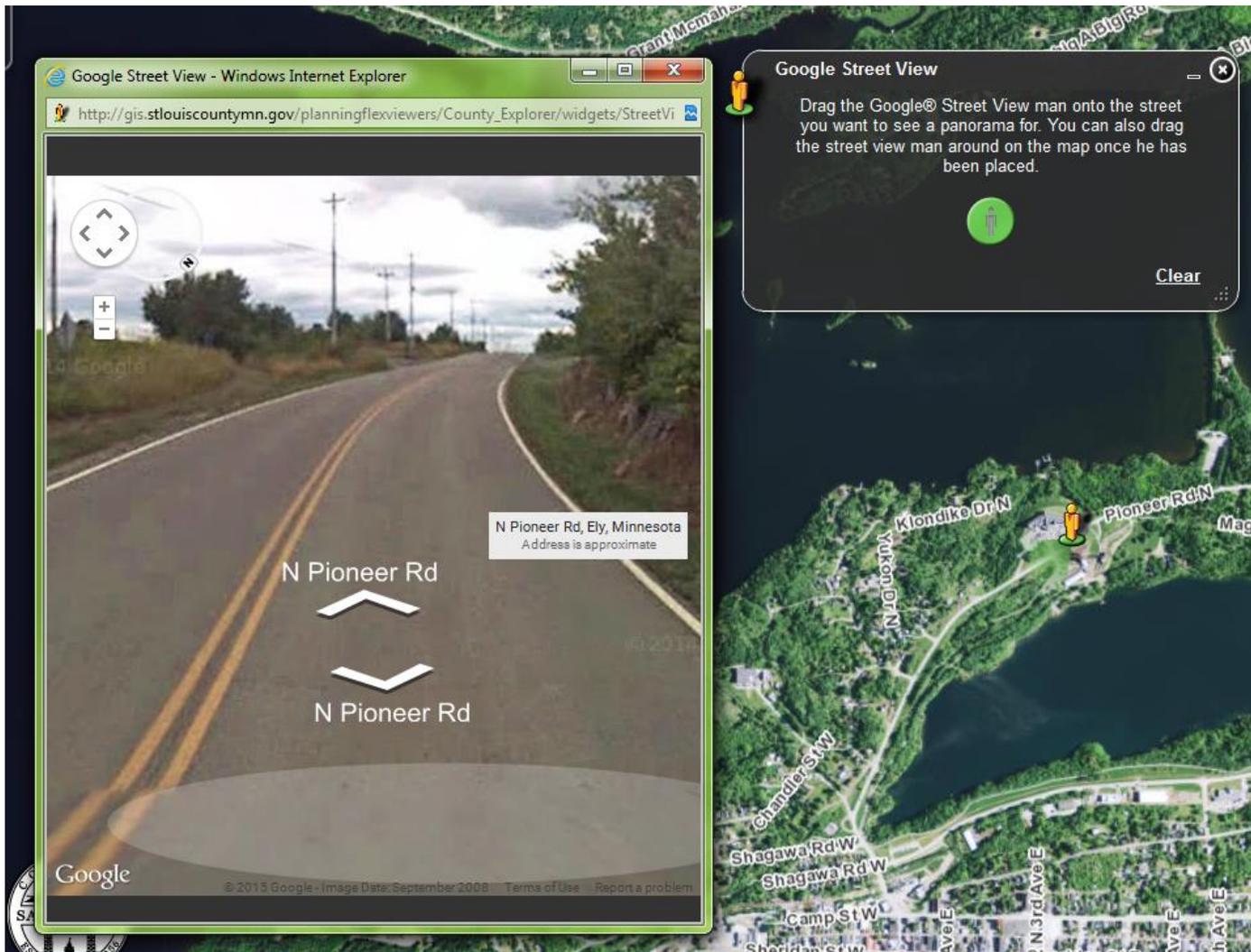
Initially when the Google Street View widget opens, the Street View image is empty.



 **Google Street View**

After the Google Street View person has been dragged to a street on the map, the image displays with the photos acquired by Google at that approximate location.

**\*NOTE:** Google Street View images exist only for some roads/streets as acquired by Google. These images are out of the control of St. Louis County.

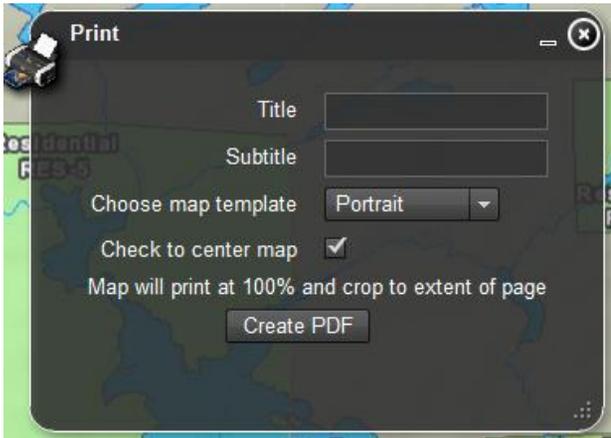




## Print

The Print widget is not open by default. If the widget dialog is not open, select the Print widget icon from the **main toolbar** at the top of the map.

The Print widget allows the user to create a map and save to PDF format.



See the example on the next page.

Learn about **alternative print methods** outside of the County Land Explorer.



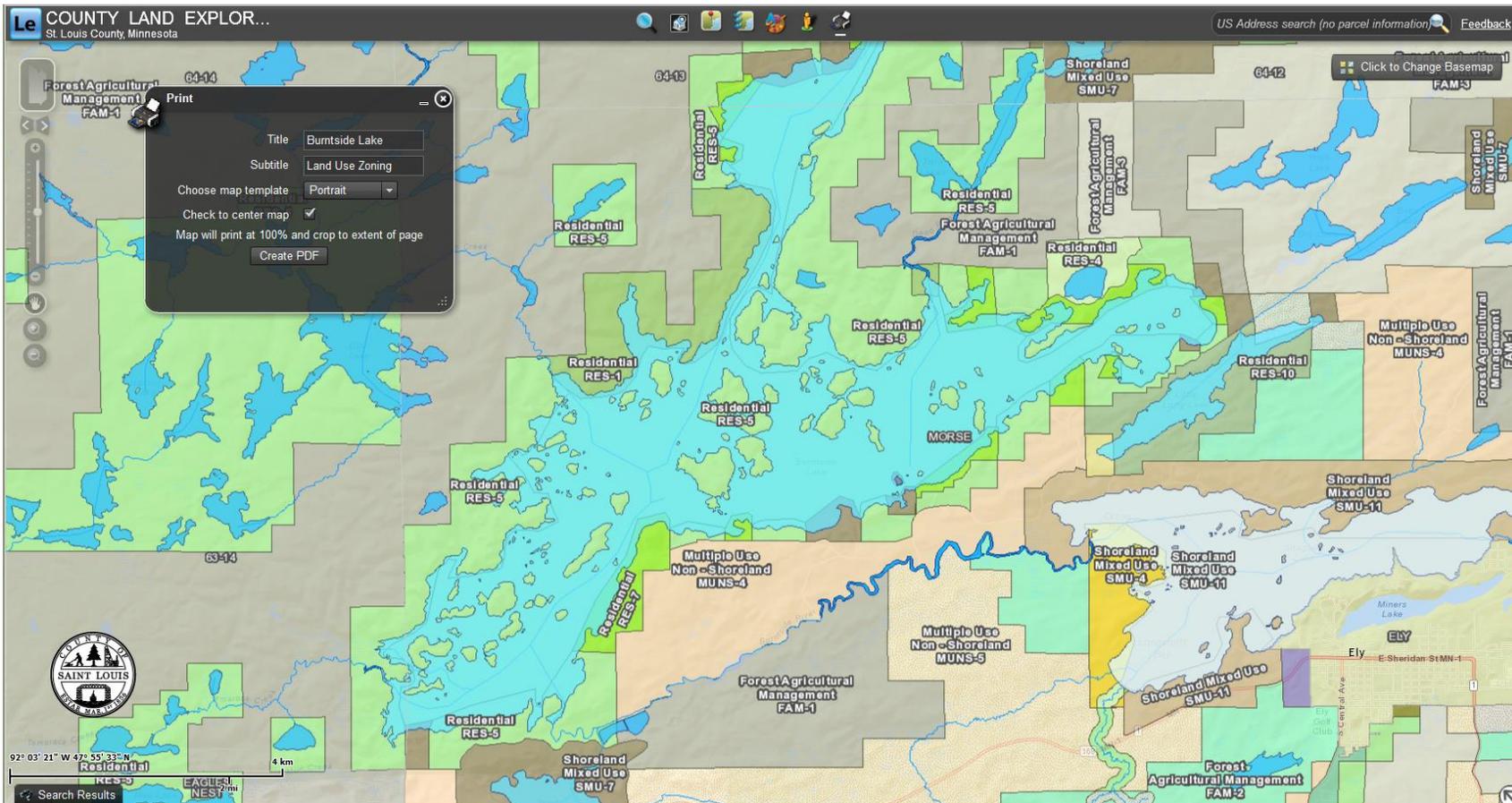
Print

### Print Example

Add a Title and Subtitle for the map, position the map for the desired zoom level and extent.

The map can be created based on a pre-set portrait template from the St. Louis County Planning Department, or not based on a template.

Select *Create PDF*.

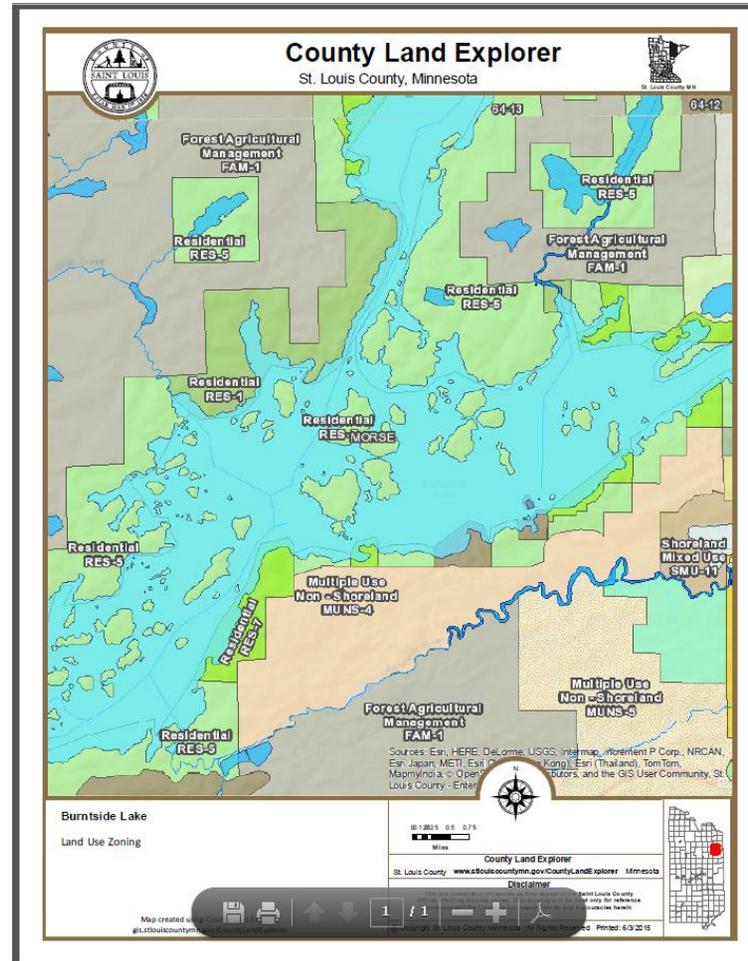




Print

### Print Portrait Map Template

The PDF from the portrait map template option will open in a new tab in the web browser. The map template provides a portrait layout with the standard components of a map (Title, North Arrow, Scale, Description, Source Information, an inset locator map) as in the example below. From here, the PDF can be saved or printed.

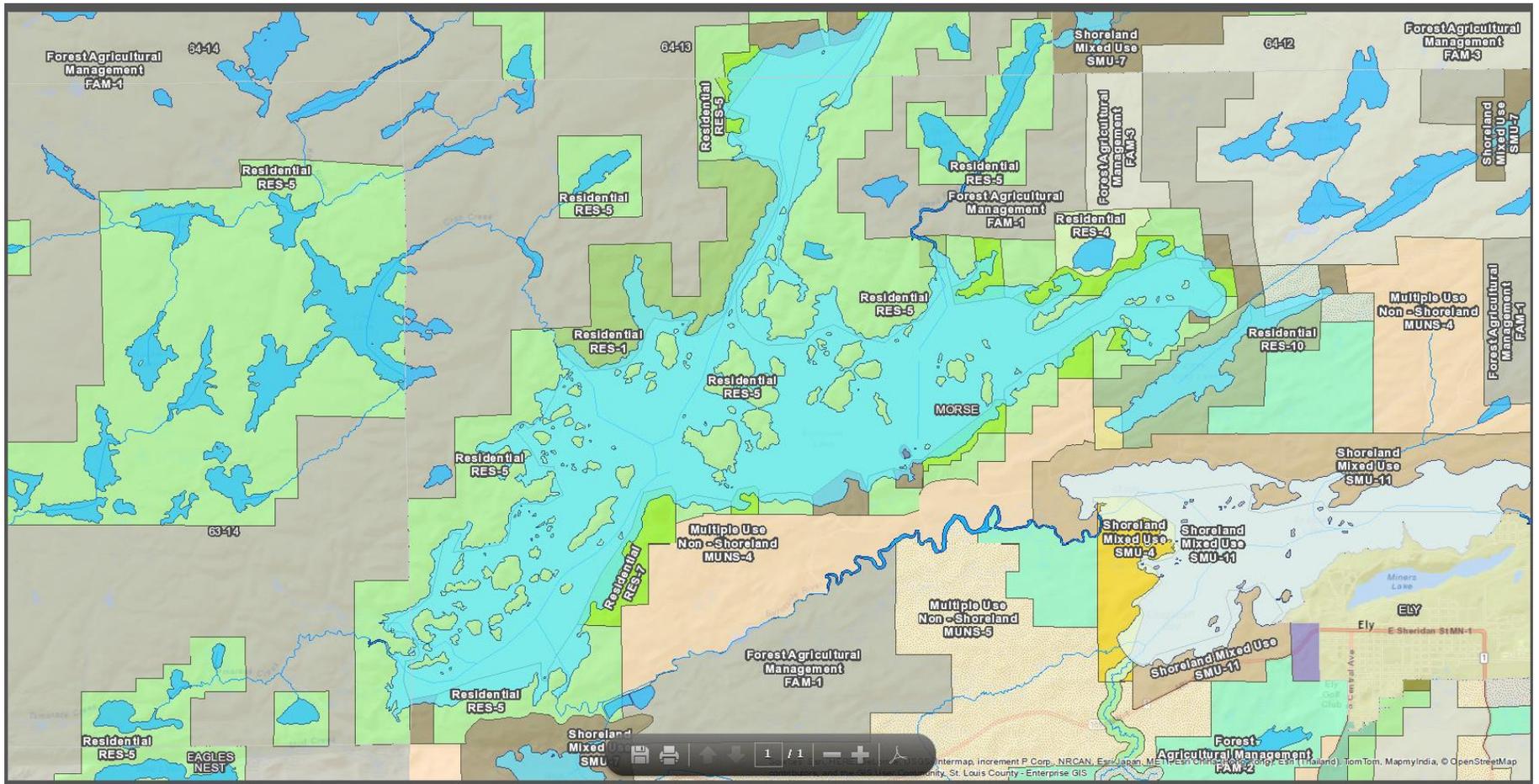




Print

### Print No Template

The option to print 'MAP\_ONLY' also creates a PDF but does not put the map in to a pre-set template. The 'MAP\_ONLY' option creates a map view in PDF format *without* the standard components of a map (Title, North Arrow, Scale, Description, Source Information, or an inset locator map) as in the example below. Using this option, the map layout may be landscape (as in the example below) or portrait, based on the extent of the web browser window when selecting to create the PDF. Once the map is opened in a new tab, the PDF can be saved or printed.



[FAQ about alternative print methods](#)

[Return to Main Menu](#)

<http://stlouiscountymn.gov/explorer/>

## FAQ about data and how to use it

### ***When and how often is the data updated?***

The County Land Explorer brings together multiple databases from across the county. The database updates are typically reflected within 1-2 days but some data are updated less frequently. Tax parcel data are updated regularly. However, some information (i.e. new owner name/address following the sale of a parcel) may take weeks or months to update depending on the processing time frames of recorded documents. Further inquiries regarding attributes displayed in the tax parcel data can be answered by calling the *St. Louis County Auditor's office* at 218-726-2380.

### ***What is the best use of the Tax Parcel data? How accurate is the data?***

The St. Louis County parcel data is available to the public for interpreting property tax information, approximate land ownership and physical characteristics of a property. The parcel data is *not* intended to be used for identifying property boundaries. Although the parcel data is overall fairly accurate across the county, the lines and polygons as drawn in the Geographic Information System (GIS), are often wrongly interpreted to be of survey grade quality, or assumed to “correct” as they are maintained by an authoritative government office. The accuracy of the data varies depending on the availability of survey corners and surveys of the associated properties. Even in areas where the survey information exists, property lines can *only* be derived from a survey and not from the digital parcel data. The accuracy of GIS data will never meet the requirements for identifying property boundaries and should be thought of more as a mere ‘representation’ of the parcel.

### ***What is accuracy vs. errors in the data?***

In some cases, errors do exist in the data where the parcel line is drawn incorrectly or the attributes attached to the parcel are incorrect. Errors are discrepancies in the data that do not even serve the purpose of ‘representing’ the parcel lines and associated attributes. These errors exist either due to errors in the original survey, change in the natural features from which the survey was originally based on, or due to human error. St. Louis County staff are continually working to clean-up errors that exist in the data and welcome feedback from the public where those errors are identified. Errors are different from accuracy in that the errors should be corrected. Parcel lines will never be accurate enough to be of survey grade quality.

**Why does the parcel data not line up with the features in the basemap image the way they should?**

It is common to conclude that the parcel lines are inaccurate based on a visual assessment of where the parcel lines draw over a basemap such as aerial photography or satellite imagery. There are several problems with determining the accuracy of GIS data based on how it overlays on another layer. The first problem with this conclusion is that the imagery itself, no matter its source, is also less than 100% accurate. Although some image datasets are more spatially accurate than others, there is always some degree of inaccuracy.

For many image basemaps, we do not know the accuracy statistics associated with the data. One reason for this is that metadata (i.e. information about the source of the data, the date of acquisition, image resolution, image post-processing methodology, or the accuracy of the final product) is often not provided to the end-user. More often than not, the GIS data representing parcel lines have been derived from sources at different scales and accuracy than the image basemap. A visual comparison of parcels in the same area (example below), over different image basemaps demonstrates how the difference in imagery can lead to different conclusions about the accuracy of the parcel data.

2011 City of Duluth Image Example:



Bing Imagery Example:



***Accuracy of parcel data and image basemap***

The horizontal accuracy changes across an image. The change in accuracy is dependent on the image product, the methodology used for post-processing the imagery, and the specific point of interest on that image in relation to the center of the original image acquired. The post-processing methodology may cause a slight shift in some areas of the image and not in other areas of the image. The center of an aerial image is generally the most accurate because this is where the camera was pointing straight down to the ground from the airplane. Visually this is obvious when the specific point of interest is focused on a building (or any object with height) which happens to be far away from the center of the original image and the building appears to be leaning as in the example below.

2007 Pictometry Example:



Bing Imagery Example:



**FAQ about the address data and search tools**

***What are all the available search methods?***

There are 3 ways to search for an address in the County Land Explorer:

**1. Geocode Search**

The address searching that many folks are familiar with is via a Global Positioning System (GPS) or searching from a private online search engine. These address searches are based on address ranges associated with each street segment. In the County Land Explorer, a similar address search option is available in the upper right hand corner and attributed with 'Enter PIN or Address'.

**2. Parcel Search**

Address searching on parcel data may be used for deriving tax information and property details on a particular parcel. The parcel data can be searched on from the **Search**  widget.

**3. Master Address Repository (MAR) points search**

The location for each physical address in the county is maintained by the St. Louis County Emergency 9-1-1 department in a separate point database known as the Master Address Repository (MAR). These points can be searched on from the **Locate**  widget.

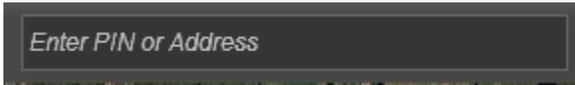
***What are the advantages to each Search method?***

	<b>Geocode Search</b>	<b>Parcel Search</b>	<b>MAR points Search</b>
Advantages	Provides an approximate location	The parcels can be searched on using a PIN, Physical address, Owner Address, or Taxpayer address	Can search any physical address in the county
	Geocode Search allows for more deviations in how the address is entered	Search widget produces results with all associated attributes in a table and selected parcels are highlighted	Locate widget allows for more deviations in how the address is entered
Disadvantages	Not based on actual address data and therefore is less accurate	Can search on only one physical address per parcel (primary address)	Search results only display the physical address and location as a point
	Location point is always displayed on the street segment the search was based on	Exact syntax of the address must be entered correctly	The attributes of the associated parcel are not displayed in the results

There are a lot of complexities inherent in address data. For this reason, the address search options are also fairly complex and therefore can be a great source for confusion. Address information is utilized in a lot of different ways and consequently stored in databases in different ways. For more details on the different search methods, their advantages/disadvantages, click on the Search method above.

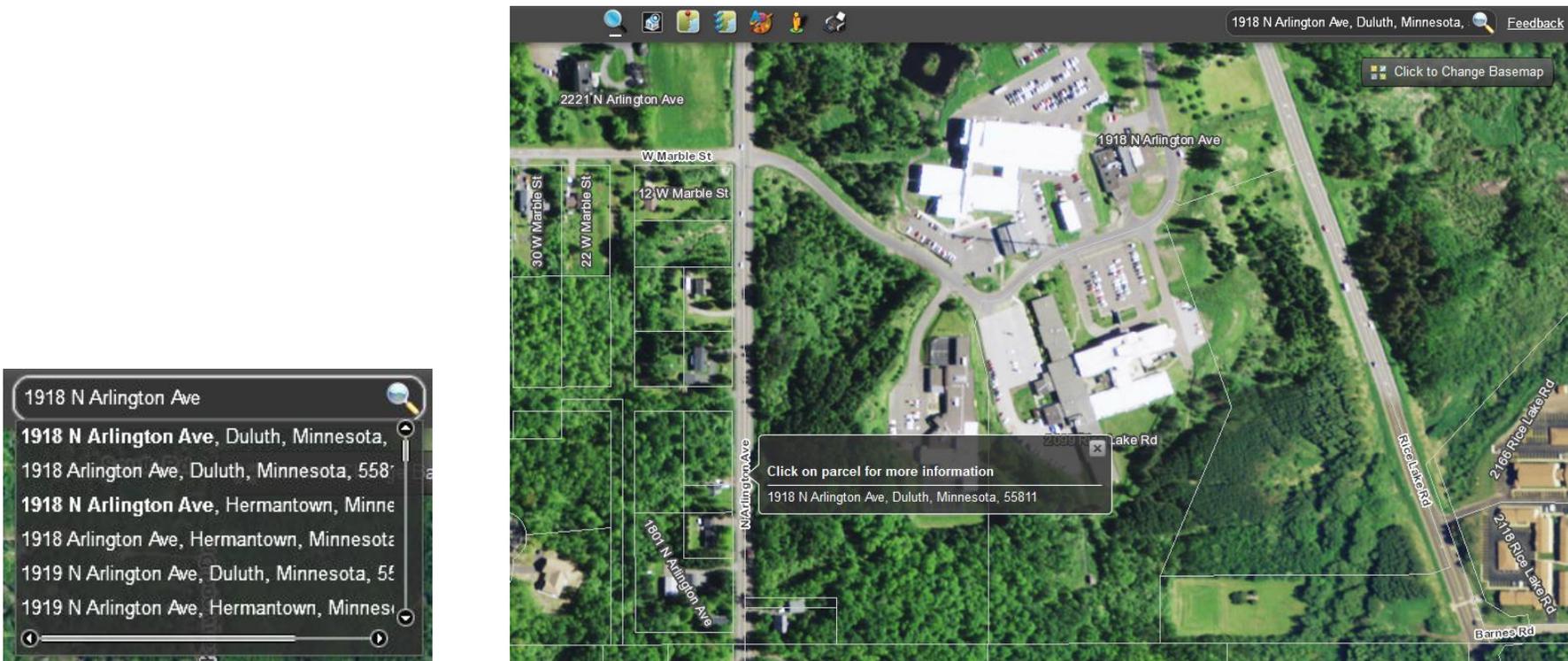
### Address Search from Geocode toolbar

The address search from the Geocode toolbar is available the upper right hand corner of the web map interface and is based on a nation-wide geocoding service. In other words, this search option is not specific to St. Louis County. This search option will place the location for the address entered in an approximate position within the address ranges of a street.



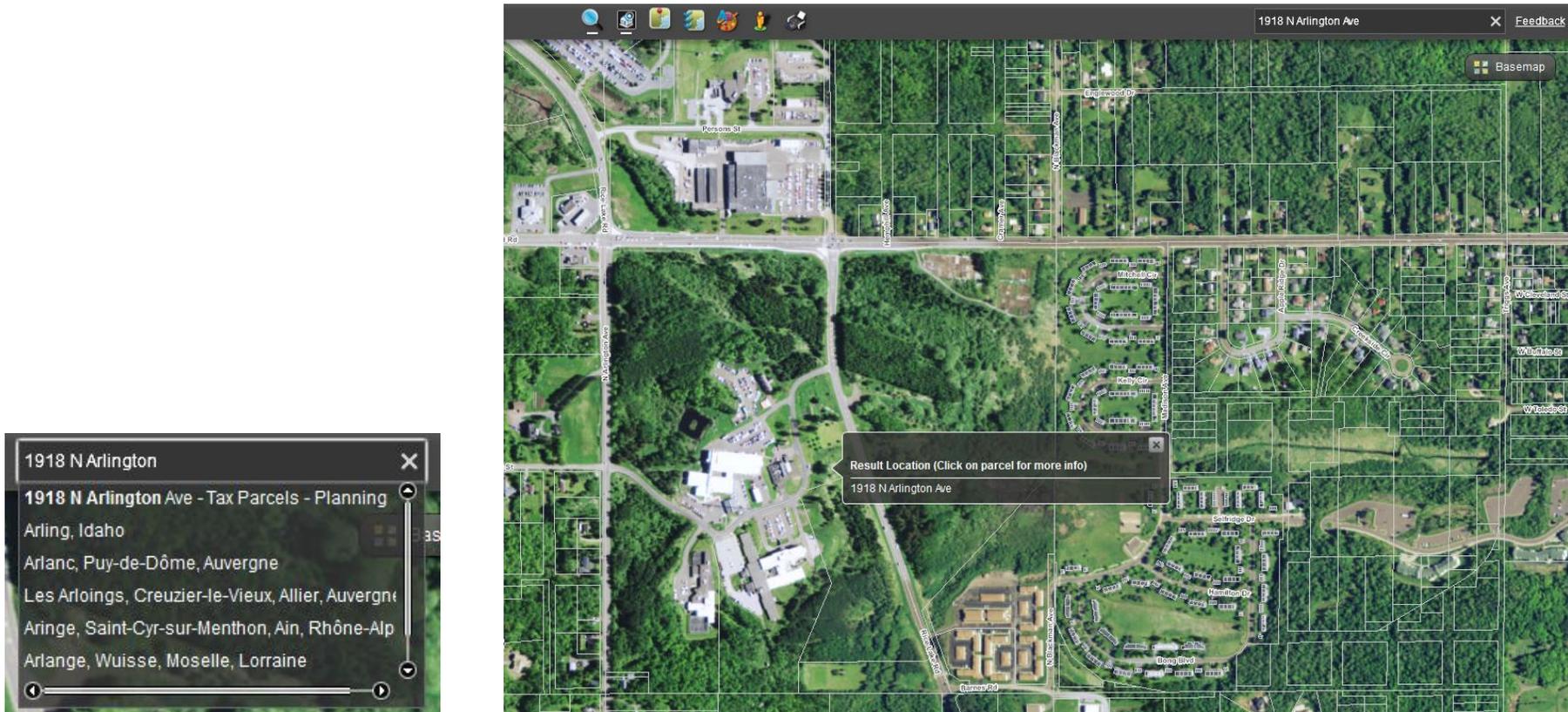
### Advantages to Searching on Geocode toolbar

The advantage of this method is that if searching for an address in the Search or Locate widgets does not reveal results, utilizing the Geocode toolbar may help the user to determine approximately where the address is located. After the map is zoomed in to an approximate location, the user has the option to view the address labeling on the parcels within close proximity. Once the address is entered in the Geocode toolbar, a drop-down of addresses will appear to select from. This may also be helpful if the exact address is unknown. A pop-up will display in the map along the road for the approximate location of the address entered.



### ***PIN and Address Search from Geocode toolbar***

The Geocode toolbar now also has the capability to locate a *parcel* by PIN or physical address. The indicator in the results list for the *parcel* result instead of the street range result is the string “-Tax Parcels – Planning” after the address. Compare the previous example (street range result) to the example below (parcel result).

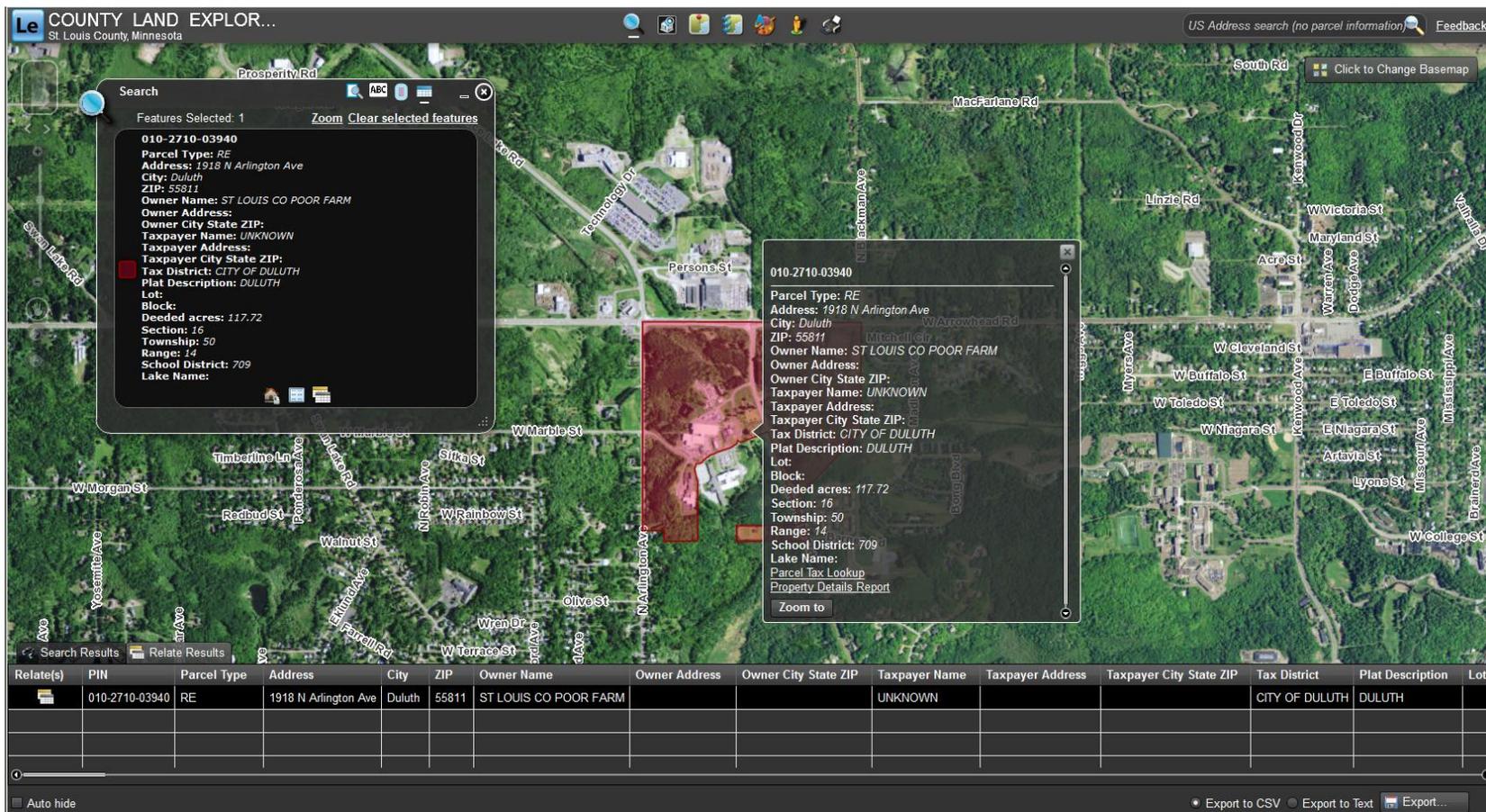


The capability to search by PIN has been enabled in the Geocoder toolbar to connect the [St. Louis County Parcel Tax Lookup](http://stlouiscountymn.gov/parcel-tax-lookup) to the County Land Explorer.

### Address Search on Parcel data from Search Widget

One of the methods available for searching St. Louis County addresses is by using the **Search** widget (open by default). If the Search widget is not open, it can be accessed from the **main toolbar** at the top of the map. This search method will allow the user to search the St. Louis County parcel data. In the parcel data, there are three different possible addresses for each parcel; physical address, tax payer address, and owner address. These addresses may or may not be the same for any given parcel. In some cases, a parcel may have **multiple physical addresses**. For parcels with multiple physical addresses, one address is considered the 'primary' address and is the only address that can be searched on in the Search widget. The 'primary' address designation is arbitrary.

The Search results will display in 3 different locations: in the Search widget result(s) tab , in the Search Result(s) table at the bottom of the screen, and the parcel(s) pop-up selected in the map.



**010-2710-03940**  
Parcel Type: RE  
Address: 1918 N Arlington Ave  
City: Duluth  
ZIP: 55811  
Owner Name: ST LOUIS CO POOR FARM  
Owner Address:  
Owner City State ZIP:  
Taxpayer Name: UNKNOWN  
Taxpayer Address:  
Taxpayer City State ZIP:  
Tax District: CITY OF DULUTH  
Plat Description: DULUTH  
Lot:  
Block:  
Deeded acres: 117.72  
Section: 16  
Township: 50  
Range: 14  
School District: 709  
Lake Name:

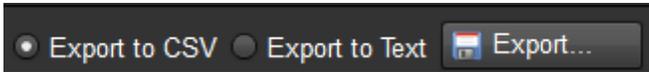
**010-2710-03940**  
Parcel Type: RE  
Address: 1918 N Arlington Ave  
City: Duluth  
ZIP: 55811  
Owner Name: ST LOUIS CO POOR FARM  
Owner Address:  
Owner City State ZIP:  
Taxpayer Name: UNKNOWN  
Taxpayer Address:  
Taxpayer City State ZIP:  
Tax District: CITY OF DULUTH  
Plat Description: DULUTH  
Lot:  
Block:  
Deeded acres: 117.72  
Section: 16  
Township: 50  
Range: 14  
School District: 709  
Lake Name:  
Parcel Tax Lookup  
Property Details Report  
Zoom to

Relate(s)	PIN	Parcel Type	Address	City	ZIP	Owner Name	Owner Address	Owner City State ZIP	Taxpayer Name	Taxpayer Address	Taxpayer City State ZIP	Tax District	Plat Description	Lot
	010-2710-03940	RE	1918 N Arlington Ave	Duluth	55811	ST LOUIS CO POOR FARM			UNKNOWN			CITY OF DULUTH	DULUTH	

**Advantages to Searching on Parcel Data from Search Widget**

There are two main advantages of the **Search** widget method for searching addresses in the County Land Explorer. First, the Search widget gives the user the ability to view parcels of interest as a highlighted feature. This can be useful for creating maps or visualizing a parcel of interest in spatial context to other features of interest. Second, the Table view of the results gives the user the ability to export results to a CSV or Text file.

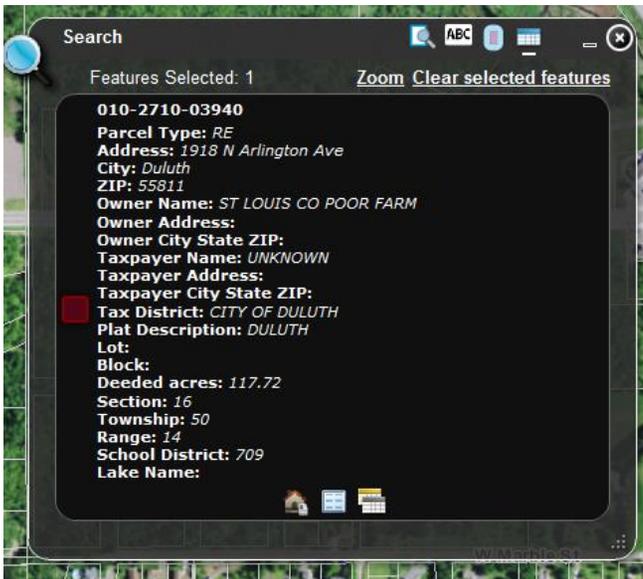
In the bottom right corner of the table, the user can select to export to either format. This functionality gives the user the option to work with the data further in an external program.



**\*Relate Results/Multiple Addresses**

If a parcel has multiple physical addresses, the search will show the related records in a separate table titled 'Relate Results'. To access the relate results click the icon for the Multiple Addresses in the Search Results (either from the widget display or the table display). The 'Relate Results' tab is in the same table with the Search Results.

**Search widget results tab**



**Search Results in table**

Relate(s)	PIN	Parcel Type	Address	City
	010-2710-03940	RE	1918 N Arlington Ave	Duluth

**Relate Results in table**

PIN	Address
010-2710-03940	2878 Rice Lake Rd
010-2710-03940	2503 Rice Lake Rd
010-2710-03940	2030 N Arlington Ave

### ***Address Search on MAR data from Locate Widget***

Another method available for searching addresses in St. Louis County is to utilize the **Locate** widget  (closed by default). If the Locate widget is not open, it can be accessed from the **main toolbar** at the top of the map. This Locate widget allows the user to search the Master Address Repository (MAR) data. This database contains a single point for every physical address in the county. Each physical address is stored as a single point. This means that if there are multiple physical addresses within the same parcel, each address can be searched on from the Locate widget.

### ***Advantages to Searching on MAR data***

There are two main advantages to utilizing the locate widget for searching addresses. First, searching on the MAR data allows the user to search for an address regardless of whether it is considered to be the 'primary' address in the parcel data or otherwise. Second, the Locate widget allows for more deviations in how the address is entered than the Search widget allows.

## FAQ about XY Coordinates

### ***What are the XY coordinates?***

The XY coordinates refer to Longitude (x) and Latitude (y) for any given point on the Earth. These coordinates can be specified in different formats including; **Decimal Degrees** (°) or **Degrees** (°) **Minutes** (′) **Seconds** (″). Both formats are referenced in this Help Document and may be used in the County Land Explorer.

The **Coordinates** widget in the lower left corner of the map displays the coordinates for the XY position of the computer mouse in DMS.

In the **Locate**  widget, coordinates entered must be in DD. It is useful to understand how to convert from one format to the other.

### ***How do I convert from Degrees Minutes Seconds to Decimal Degrees or vice versa?***

#### **Convert DMS to DD**

Ex. Convert (x) 92° 6′ 20.988″, (y) 46° 46′ 58.98″

$$DD(^{\circ}) = [\text{degrees} (^{\circ}) + (\text{minutes} (')/60) + (\text{seconds} (")/3600)]$$

$$DD(x^{\circ}) = [92 + (6/60) + (20.988/3600)] = 92.10583^{\circ}$$

$$DD(y^{\circ}) = [46 + (46/60) + (58.98/3600)] = 46.78305^{\circ}$$

$$(x) 92^{\circ} 6' 20.988'', (y) 46^{\circ} 46' 58.98'' = (x) -92.10583^{\circ}, (y) 46.78305^{\circ}$$

#### **Convert DD to DMS**

Ex. Convert (x) -92.10583°, (y) 46.78305°

$$\text{Degrees} (^{\circ}) = \text{int}[\text{decimal degrees}]$$

$$\text{Minutes} (') = \text{int}[60 * (\text{decimal degrees} - \text{degrees})]$$

$$\text{Seconds} (") = [3600 * (\text{decimal degrees} - \text{degrees} - \text{minutes}/60)]$$

$$X \text{ Degrees} (^{\circ}) = 92^{\circ}$$

$$x \text{ Minutes} (') = \text{int}[60 * (92.10583^{\circ} - 92^{\circ})] = 6'$$

$$x \text{ Seconds} (") = [3600 * (92.10583^{\circ} - 92^{\circ} - (6/60))] = 20.988''$$

$$Y \text{ Degrees} (^{\circ}) = 46^{\circ}$$

$$y \text{ Minutes} (') = \text{int}[60 * (46.78305^{\circ} - 46^{\circ})] = 46'$$

$$y \text{ Seconds} (") = [3600 * (46.78305^{\circ} - 46^{\circ} - (46/60))] = 58.98''$$

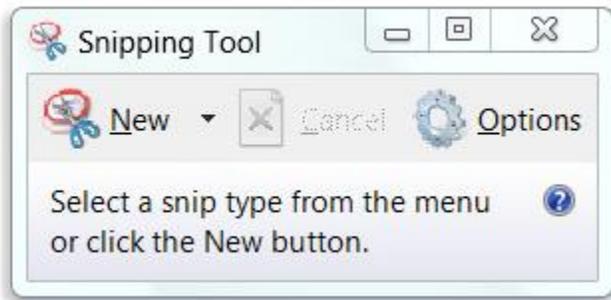
$$(x) -92.10583^{\circ}, (y) 46.78305^{\circ} = (x) 92^{\circ} 6' 20.988'', (y) 46^{\circ} 46' 58.98''$$

## FAQ about alternative print methods

### ***Are there other methods for printing a map from the County Land Explorer?***

On Microsoft Windows computers, alternative methods for printing a map is Print Screen **Using the Keyboard** or using the Snipping Tool.

The Snipping Tool allows the user to capture a screenshot, annotate, save as an image, and share. These options are available as a component of Microsoft Windows and are separate from the County Land Explorer. To access the Snipping Tool on a Microsoft Windows computer, go to Start Menu > Accessories > Snipping Tool.

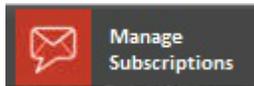


## Subscribe to updates

There is now an option for users to subscribe to updates to the County Land Explorer via email. Users will have the option to subscribe or unsubscribe at any time. At this time, subscribing to updates will include updates on the following:

1. Maintenance & Service Interruption notices – occur as needed
2. Additions & Enhancements – occur 2x per year
3. Tech Tips – occur 2x per year

GovDelivery subscriptions are for *email communication* in the event that site administrators have identified a technical issue with the site and if there is an update on the resolution of an issue. GovDelivery subscribers will be notified ASAP of the issues. Updates on enhancements to the site and tech tips will be shared only 2x per year. The optional and free subscription is administered through GovDelivery. To sign up or manage your subscriptions from the map application, click the 'Manage Subscriptions' icon in the header between the **main toolbar** and the **Geocode Search**.



*\*If the Manage Subscriptions icon is covering other tools in the header of the application, **change the resolution of your web browser.***

## New or returning Subscriber

If you are a new subscriber, enter your email address and select **Submit**. Updates will be sent to the email address entered. If you are already a subscriber, enter your email address as previously entered to login and manage your subscription(s).



### Email Updates

To sign up for updates or to access your subscriber preferences, please enter your contact information below.

\*Email Address

Submit

Cancel

Your contact information is used to deliver requested updates or to access your subscriber preferences.

[Privacy Policy](#) - [Help](#)

By entering your email address for GovDelivery, you will be listed as a subscriber to the County Land Explorer updates. Subscribing to GovDelivery is intended for email communication only and is not related to any other accounts. Subscribers have the option to unsubscribe at *any time*. Use of the County Land Explorer does not require a GovDelivery subscription.

### New Subscriber

The GovDelivery system will ask you to confirm your email previously entered. This extra step is to confirm you are a human being and not a robot. Click **Submit** to confirm. *Optionally*, you may enter a password to make your GovDelivery account password protected. Email confirmation will prompt GovDelivery to send an email welcoming you as a new subscriber.



#### New Subscriber

##### Primary Email Address

You must enter a primary email address. You will use this to access and update your subscriptions or modify your subscriber preferences.

\*Email Address

\*Confirm Email Address

##### Optional Password

Enter an optional password to add password protection to your subscriber preferences.

Password

Confirm Password

Your contact information is used to deliver requested updates or to access your subscriber preferences.

[Privacy Policy](#) - [Help](#)

### Subscriber Preferences

After you have confirmed your email and *optional* password, a message will display to indicate you have successfully subscribed to the 'County Land Explorer' updates. To unsubscribe, change or remove your password, or to change other preferences, click on the **Subscriber Preferences** link.



Welcome **shobergm@stlouiscountymn.gov**

#### Success

shobergm@stlouiscountymn.gov has been successfully subscribed to County Land Explorer for St. Louis County MN.

[Subscriber Preferences](#)

Your contact information is used to deliver requested updates or to access your subscriber preferences.

[Privacy Policy](#) - [Help](#)

## Subscriber Preferences

To unsubscribe, check the box on the line after 'County Land Explorer', click **Submit**. Alternatively, you may also select to **Delete my account** or **Add Subscriptions**.

Any changes made to your preferences or deleting your account will prompt an email from GovDelivery to notify the account holder of the change.

St. Louis County Minnesota

Welcome **shobergm@stlouiscountymn.gov**

**Subscriber Preferences**

Subscriptions Preferences Questions

**Subscriptions**

You are subscribed to the following topics:

Topic	Check to Delete
County Land Explorer	<input type="checkbox"/>

Submit Cancel

[Delete my account](#)  
[Add Subscriptions](#)

Your contact information is used to deliver requested updates or to access your subscriber preferences.  
[Privacy Policy](#) - [Help](#)

## Add Subscriptions

Additional subscriptions through GovDelivery are available on other topics through St. Louis County. Check a box or multiple boxes to add subscriptions.

St. Louis County Minnesota

Welcome **shobergm@stlouiscountymn.gov**

**Quick Subscribe for shobergm@stlouiscountymn.gov**

St. Louis County MN offers updates on the topics below. Subscribe by checking the boxes; unsubscribe by unchecking the boxes. Access your [subscriber preferences](#) to update your subscriptions or modify your password or email address without adding subscriptions.

**Subscription Topics**

- Assessor's Office**
  - Assessor's e-newsletter
- County Board**
  - Board Meeting agendas
  - Board Workshop agendas
  - County Board News Releases
- Human Resources**
  - Employment opportunities
- News Releases**
  - County Attorney's Office News Releases
  - County Board News Releases
  - Extension Office News Releases
  - Planning & Community Development News Releases
  - Public Health & Human Services News Releases
  - Public Works News Releases
  - Sheriff's Office News Releases
- Planning and Community Development**
  - Aquatic Invasive Species (AIS)
  - Planning & Community Development News Releases
- Public Health and Human Services**
  - HHS Conference Participant
  - HHS Conference Exhibitors
  - HHS Conference Presenters
  - Public Health & Human Services News Releases
- Land & Minerals**
  - Land Sale
- SLC Continuous Improvement**
  - CI Newsletter

Submit Cancel

Your contact information is used to deliver requested updates or to access your subscriber preferences.

### Subscriber Preferences

The 'Preferences' tab allows the subscriber to change the email address, reset the password or remove the password entirely for the GovDelivery account. If the password is removed, this means your GovDelivery account is *not* password protected. If the GovDelivery account is not password protected, anyone can enter your email address to alter your GovDelivery account without a password.

### Subscriber Questions

The 'Questions' tab is *not* applicable to subscribers of County Land Explorer updates. The 'Questions' tab can be clicked on but there is no functionality in this tab.



Welcome **shobergm@stlouiscountymn.gov**

#### Subscriber Preferences

**Subscriptions** **Preferences** **Questions**

##### Email Address

You currently receive updates at shobergm@stlouiscountymn.gov. To change this address, enter a different one below.

shobergm@stlouiscountymn.gov

Click to save your new address.

**Submit**

##### Password

If you would like to set an optional password or change your existing password, please enter it below.

**Remove Password**

**Enter New Password**

**Confirm New Password**

**Submit** **Cancel**

Your contact information is used to deliver requested updates or to access your subscriber preferences.

[Privacy Policy](#) - [Help](#)



Welcome **shobergm@stlouiscountymn.gov**

#### Subscriber Preferences

**Subscriptions** **Preferences** **Questions - (if applicable)**

##### Questions

Members

**Submit** **Cancel**

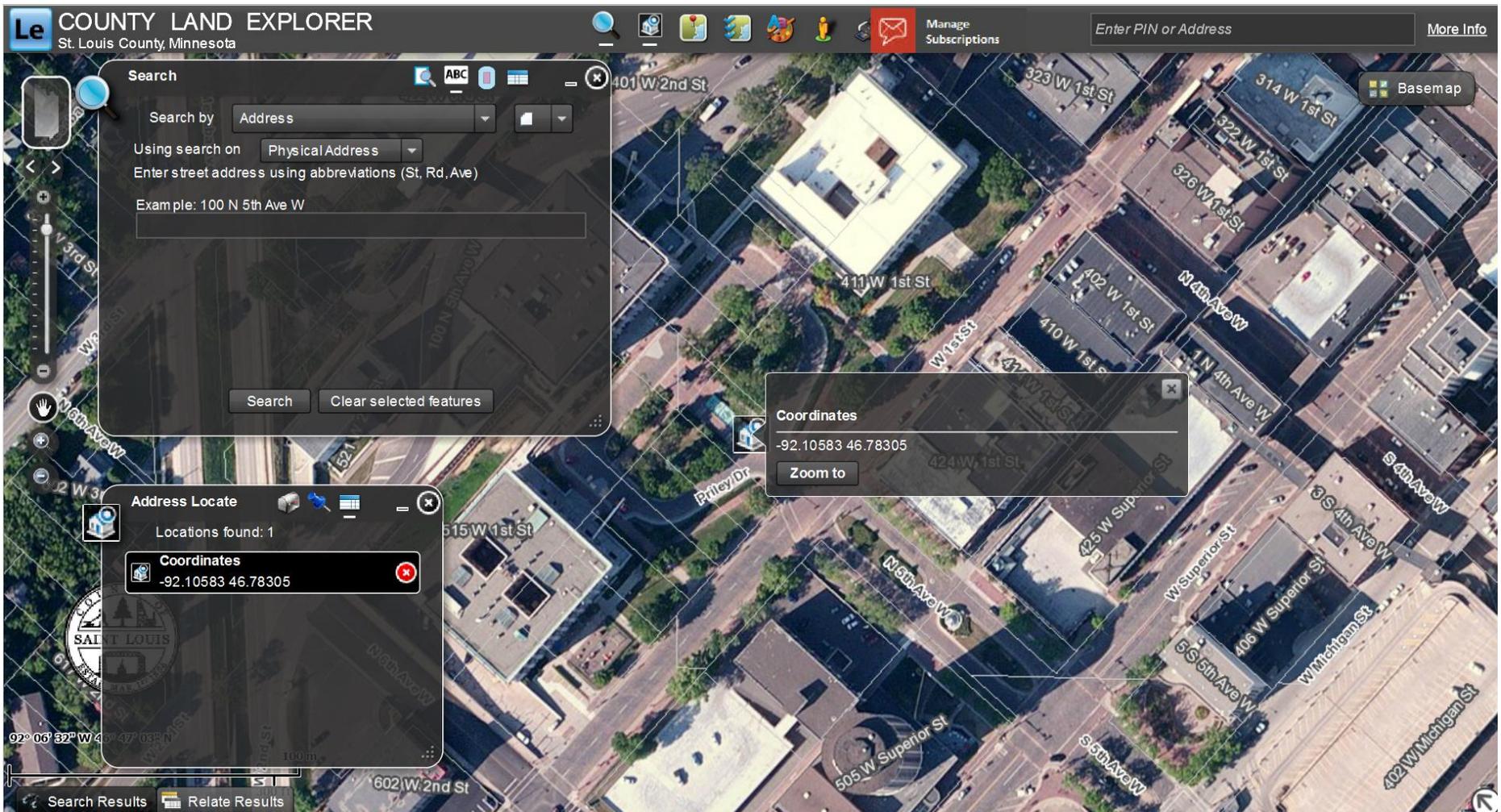
Your contact information is used to deliver requested updates or to access your subscriber preferences.

[Privacy Policy](#) - [Help](#)

## FAQ about the display

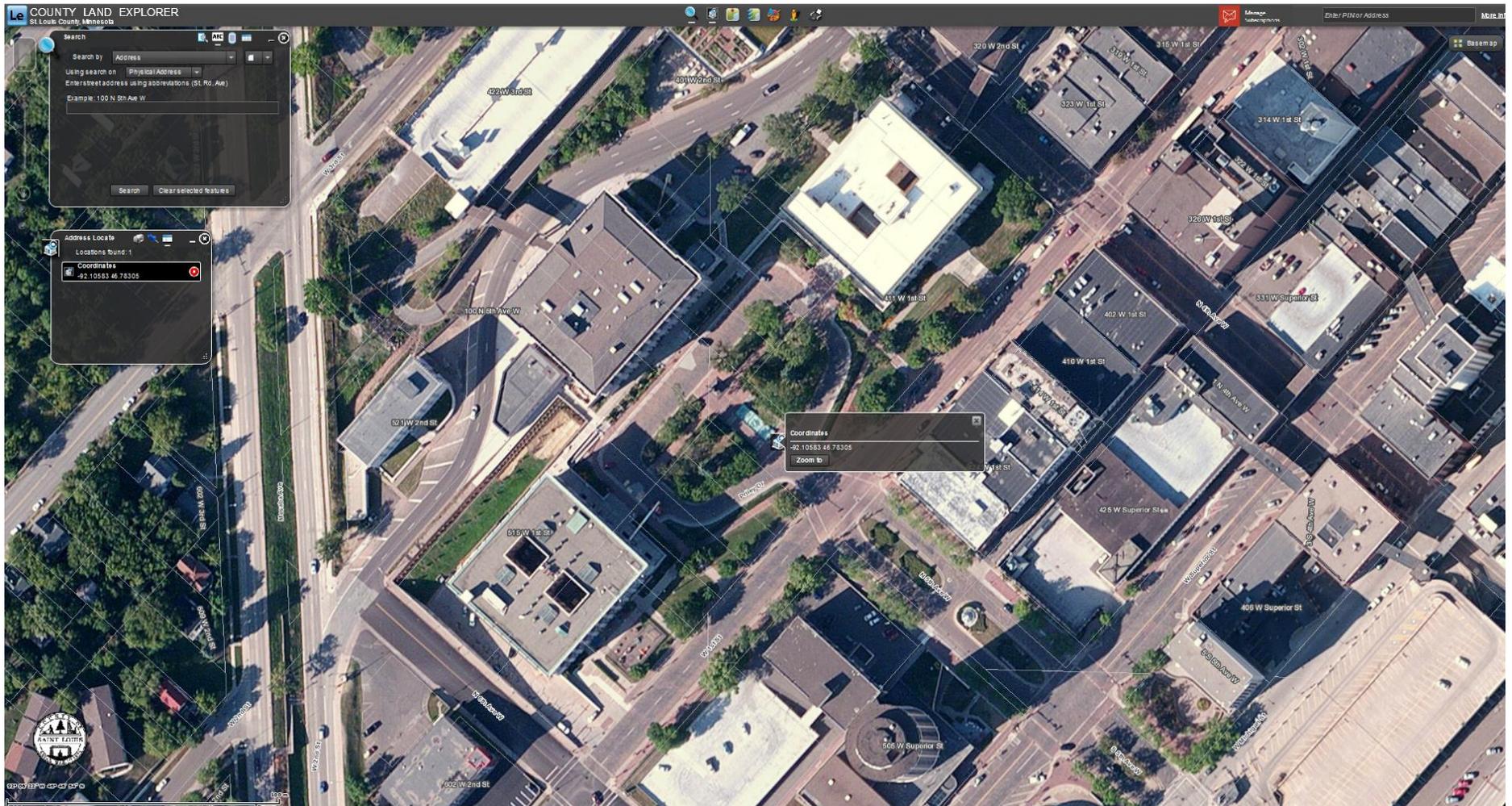
The resolution of your web browser may change, affecting the display of the mapping application. This may change without the user even realizing it. The flexibility to change the resolution of your web browser can be nice as it makes the interface flexible to every user. It can also be a point of confusion when the interface becomes too cluttered or the icons and text can become too small to interpret. Either way, the functionality of the interface becomes lost to the user.

**1<sup>st</sup> Example:** web browser resolution zoomed in too far making icons and tools in the header too cluttered and overlapping.



See next page for another example and the solution.

2<sup>nd</sup> Example: web browser resolution zoomed out too far making icons and tools too small to read.



The Solution

The user has the option to adjust the resolution of the web browser to fit their needs. Click on the application, hold down the *ctrl* key on your keyboard while *scrolling the wheel* on your mouse. You will notice as you scroll the wheel toward yourself, the resolution will zoom out, making icons and text smaller and more spread out. As you scroll the wheel away from yourself, the resolution will zoom in, making icons and text larger and closer to each other. Adjust as necessary until the resolution is where you need it. Often, the user's preference may change as the size of the window for the browser is adjusted. Note that the web browser resolution does not affect the zoom levels of the web map.

## Mobile County Land Explorer

The County Land Explorer can be accessed on mobile devices by using a free downloadable app from [Esri](#). The Mobile County Land Explorer will not work on mobile devices if accessed by a web browser. Download the 'Explorer for ArcGIS' app from the app store on your mobile device.



To access the County Land Explorer through the 'Explorer for ArcGIS' app, you do not need an ArcGIS online account.

In the app, select the menu in the upper left corner. Under search, select 'Find Maps' and type in 'County Land Explorer' or 'St. Louis County, MN'.

The mobile version of the County Land Explorer has a lot of the same functionality to the desktop version but not all. See the comparison list below.

Functionality	Desktop County Land Explorer	Mobile County Land Explorer
Explore		
Zoom in/out	X	X
Pan	X	X
Identify	X	X
Search		
Address Search	X	X
PIN Search	X	
Sub-division Plat Search	X	
Township-Range-Section Search	X	
Control Point Search	X	
Spatial Bookmarks	X	X
Layer List	X	X
Draw & Measure	X	X
Google Streetview	X	
Print	X	
More info – links to feedback and help document	X	
Location services		X (GPS enabled)

For more information about the app or to get support for the app, visit <http://www.esri.com/software/explorer-for-arcgis> . The app is supported by Esri. To get support for the County Land Explorer, access the [Quick Guides](#) available for iOS and Android devices from the St. Louis County website. Users may also contact site administrators via the County Land Explorer [feedback page](#). In the feedback, specify feedback for the Mobile iOS/Android or Desktop version.