Alaska Mapper

Version 5

User Guide

https://mapper.dnr.alaska.gov
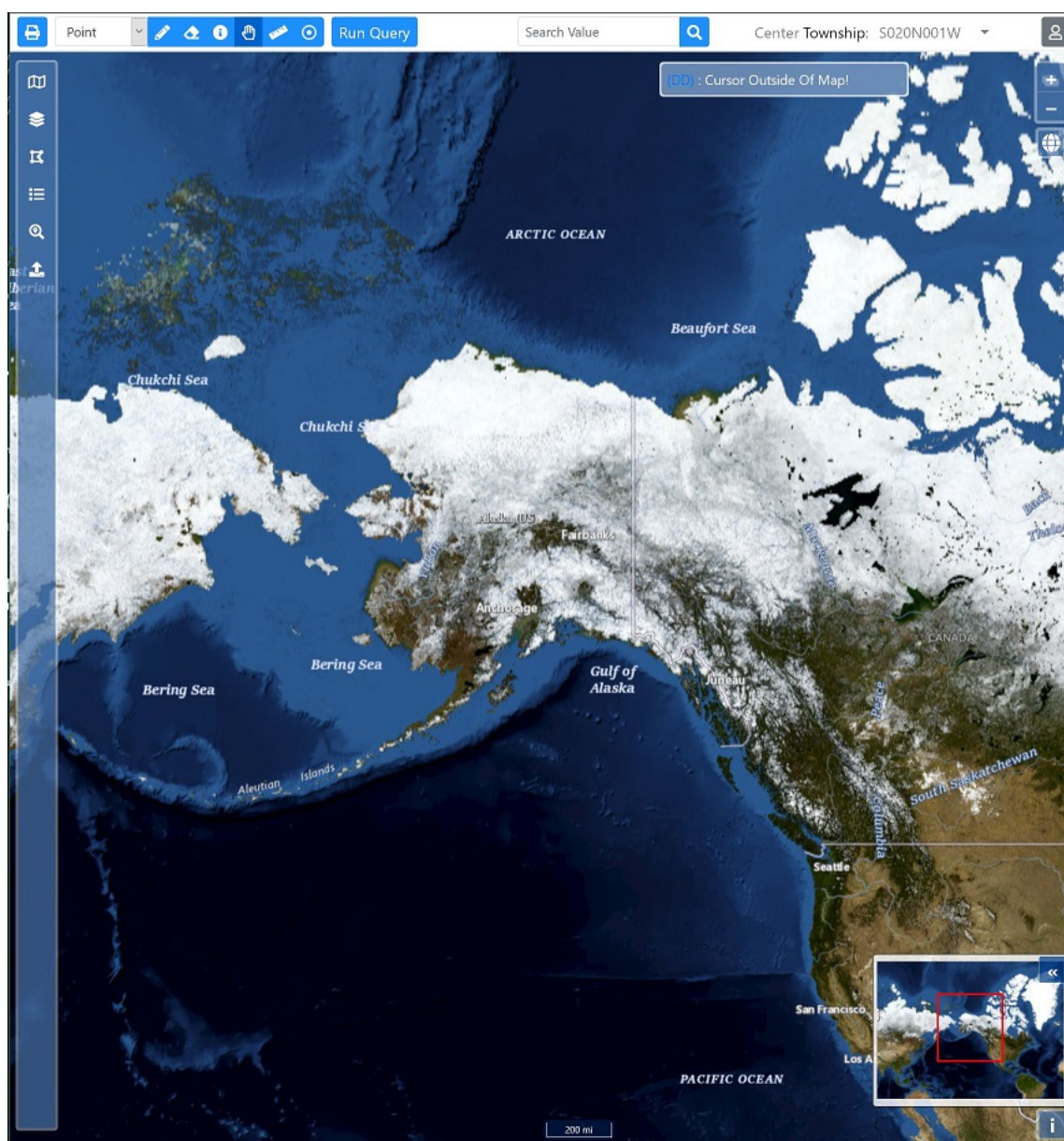
February 26, 2021

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Overview

What is new in Version 5?

- New and improved look and feel. Combined all functionality of previous two mapping applications into one, light-weight version.
- Ability to view and query external (to AKDNR) layers.
- Improved map legend and print map capabilities with markup possible.
- Added Quick Search (see explanation below) functionality.
- Improved Center Township Information to include Section level information.

What is Alaska Mapper?

Alaska Mapper is a web and mobile-based geographic information system (GIS) that allows you to locate Alaska land-records information by navigating an interactive map of the state. The land-records data provided by the system comes from the Department of Natural Resources (DNR) Land Administration System (LAS), the authoritative data source for all state land records. Land records may be displayed over a wide range of base maps, including Bing maps, USGS topographic maps, satellite imagery, elevation models, Department of Transportation road centerlines, Department of Fish and Game anadromous streams, and NOAA nautical charts.

With Alaska Mapper, you can zoom to an area of interest, turn map layers on and off, make live queries to the Land Administration System, download selected data for use in other geospatial systems and even construct your own maps using available map layers.

Much of the information displayed in Alaska Mapper is also used to produce status plats, which are the state's official graphical land records. Although status plats have been accessible through the Land Records Web site (https://dnr.alaska.gov/landrecords/) since 1999, these documents are not interactive. Using state-of-the-art GIS technology, Alaska Mapper makes this information readily and easily available to the public.

Alaska Mapper's primary purpose is to provide information on state land ownership and use. The system is versatile enough to help you conduct in-depth analyses of land issues with the proper training and experience. If you require assistance, please refer to the Land Records Support Web page.

System Requirements

Supported Browsers

Alaska Mapper is compatible with recent versions of Microsoft Internet Explorer, Mozilla Firefox and Google Chrome.

Recommendations for Best Performance

For best performance, we recommend that your system have the following:

- Screen resolution of at least 1024 x 768 pixels
- Ability to display at least 24-bit color video.
- Adobe Acrobat Reader browser plugin.

Getting Started
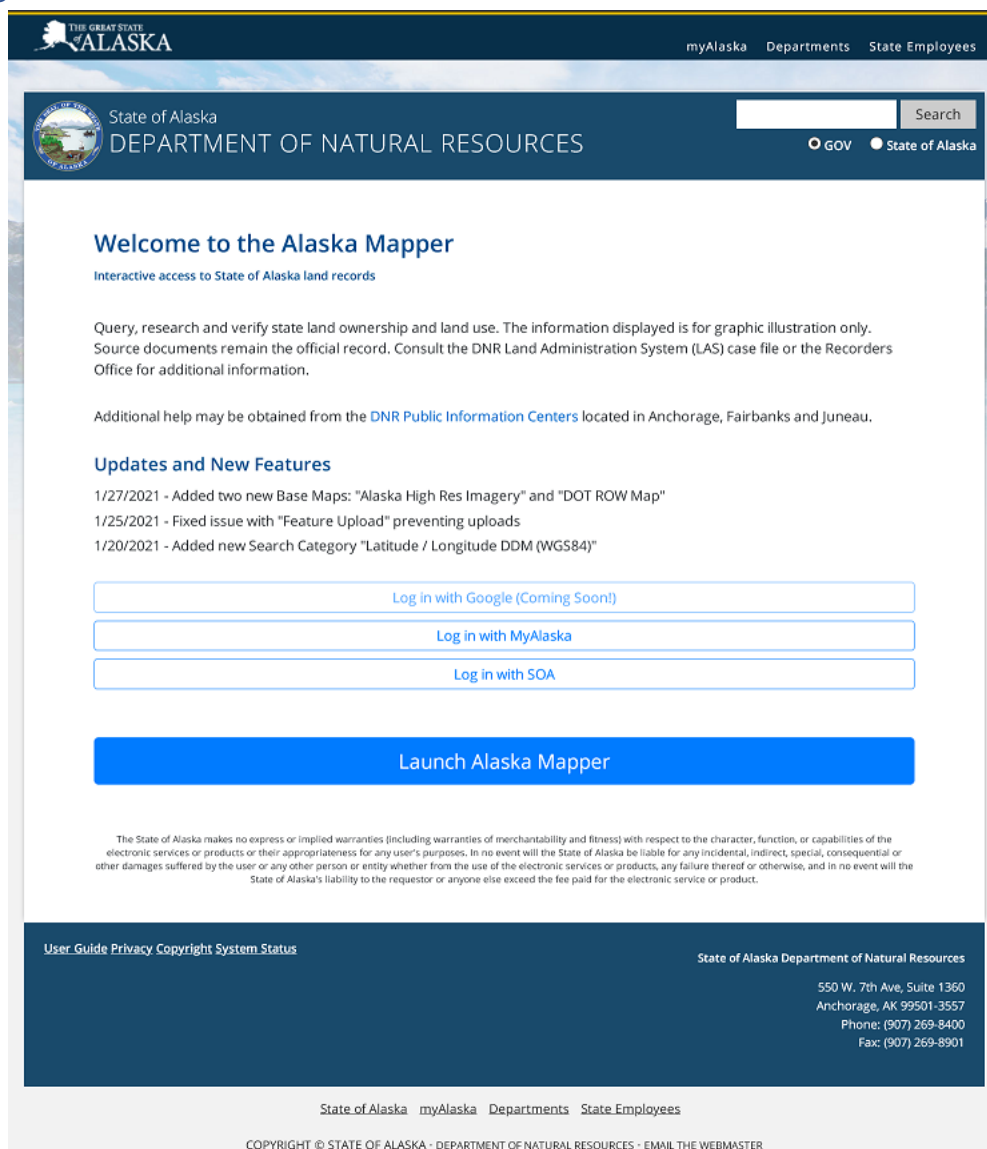
Figure 1 – Home Page

Accessing Alaska Mapper

To access Alaska Mapper, direct your Web browser to https://mapper.dnr.alaska.gov. The home page will appear as indicated in Figure 1 – below. To begin using the application click on the Launch Alaska Mapper link.

Using the Guest Account

By default, Alaska Mapper will log you in as a guest, which gives you access to the full range of map layers and application functions, except for the ability to save maps. If you wish, you may save maps by using a registered user account explained in the next section.

Registered User Accounts

If you wish to login with a State of Alaska account, click on the "***Log in with SOA"*** button and follow the instructions. The user ID and password are the same as those for your e-mail account. If you are unable to log in, contact your local computer support personnel or the Department of Administration.

If you wish to use your My Alaska account, click on the "***Log In using MyAlaska***" button. Follow the instructions on the My Alaska Login page. If this is the first time using your My Alaska account with Alaska Mapper, you will need to agree to the terms and conditions presented during the very first login.

If you wish to login with your existing Google account, click on the "***Log in with Google***" button. Follow the instructions presented by Google to authenticate.

Note: It is recommended to sign out of the application when finished to prevent unintended access to your saved Maps.

Getting Help

Help tips are a quick and useful source of information about many functions in Alaska Mapper. To display a help-tip, hover your mouse pointer over object you are interested in getting information about.

If you require further assistance, please refer to the Land Records Support Web page.
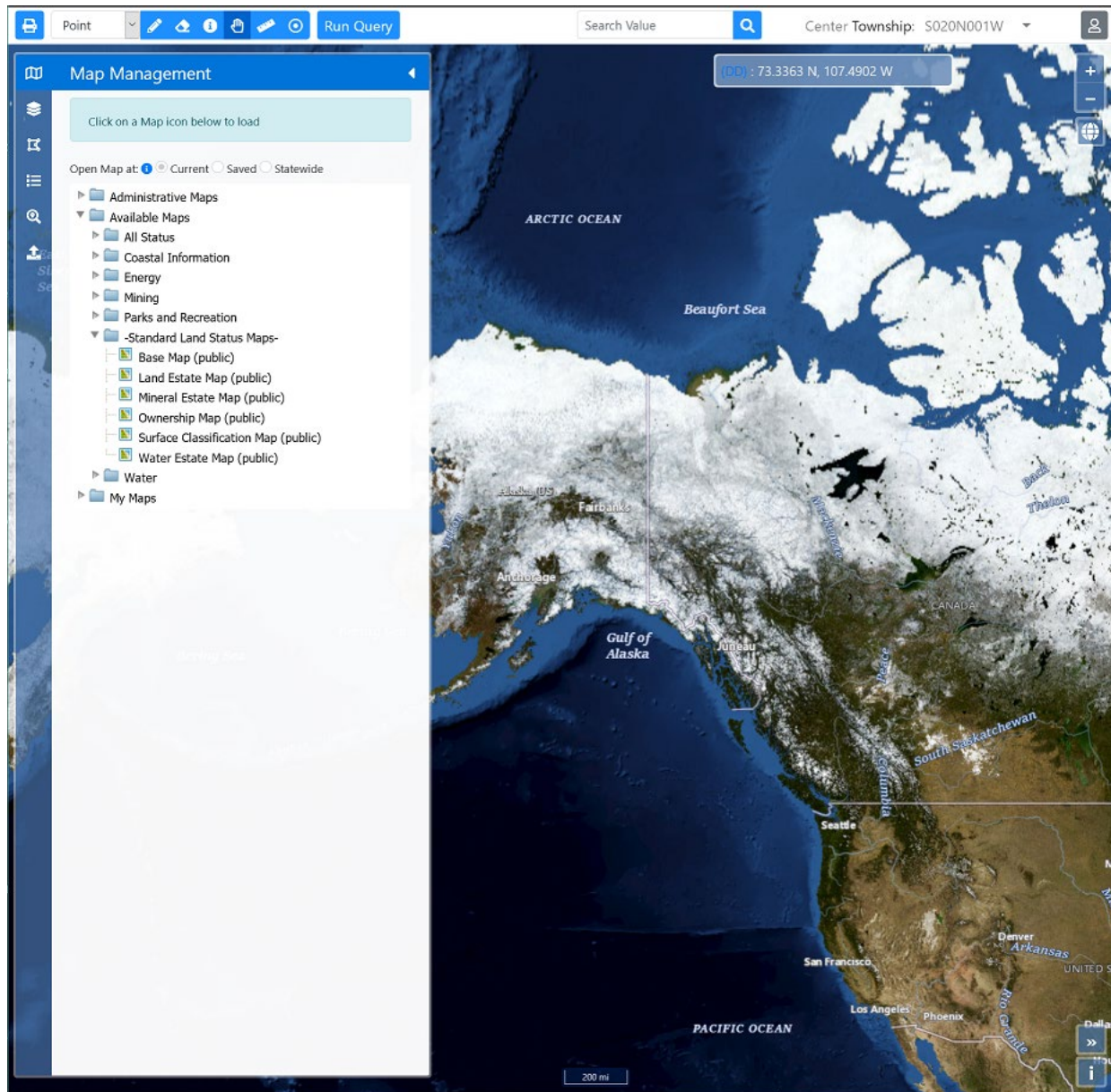
Quick Start Guide

Figure 2 - Map Page

The following steps provide a high-level outline of a typical usage scenario in Alaska Mapper. For more details, refer to the sections that are referenced in these steps.

Note: It is now possible to use the browser's "**Go Back**" button to return to the maps previous zoom level and position.
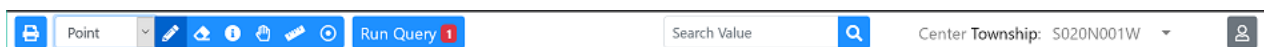

Figure 3 - Toolbar

Open a map

Initially the Map Management panel (see Figure 3 - Map Management Panel) is open when you first enter the application. From there, click the name of the map (🗺️) that you wish to view. You may need to expand the folders (📁) on the selection tree to find the map you need. To expand or collapse a folder, click the triangle to the left of it. Once a map is selected it will load. Selecting another map will replace the current map being viewed. See the "Maps" section for information.

Query a map

1. Make sure the selected map contains the layers that you need and that they are **"Active"**. See the "Map Layers" section for more information.
2. Navigate to a location on the map using either of the following methods:
   - Use the Pan and Zoom tools to manually navigate to the location.
   - Navigate to a specific location on the map by using the "Advanced Search Options".
3. Select an Area of Interest (AOI) which may consist of either a point, line, or polygon or any combination thereof using the one of the following methods:
   - Use the Draw Query Features tool with one of the Draw Feature Types selected (default is a point).
   - If you have navigated to a location using the "Advanced Search Options" you can use that feature for querying if it has been **Drawn**. See the "Advanced Search Options" section for more information.
   - It is possible to query with features imported from a spatial file such an ESRI Shapefile (SHP), Google (KML) or GPS Exchange Format (GPX). See the "Upload Data" section for more information.
4. Click the "**Run Query**" button. The Query Results dialog will appear and display the results of the query. It is possible to view the results in a sperate browser window by clicking on the "**View Results in a new window**" button. See the "Running a Query" section for more information.
5. From the results drop-down menu, select the specific layer you wish to see the results for. A grid of results will appear. It is possible to sort the results by the columns listed as you see fit. See the "Sorting Results" section for more information.
6. If desired, the results can be exported as a tabular report in the format of an Excel spreadsheet, a PDF or HTML by clicking on one of the three buttons. See "Export Results" section for more information.
7. It is possible to export the results of a query as a spatial file in the format of an ESRI Shapefile (SHP) or a Google (KML) file by clicking on the "**Export Results as Spatial Data**" button. See the "Export Results" section for more information.
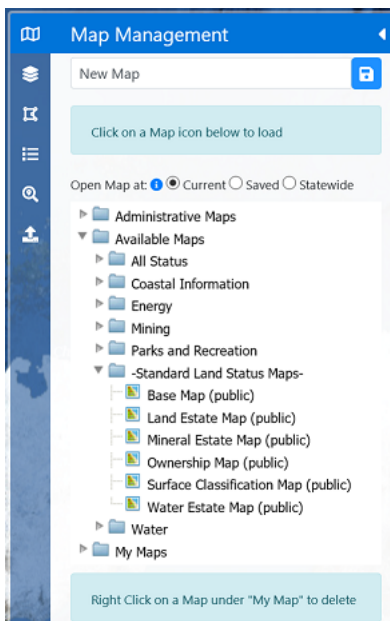
Maps

Figure 4 - Map Management Panel

Opening a map

When you initially enter the Alaska Mapper, the Map Management panel will be displayed with the Available Maps and Standard Maps folders expanded. This panel contains a list of maps to which you have access to. This list is organized according to DNR functional areas. To view the maps available in a particular folder (for example, **Parks and Recreation**), click the triangle to the left of the folder. Clicking the triangle a second time will collapse the folder.

To open a map, select/highlight the map you are interested in. The map will load in the background once it is selected. You can dismiss the panel to free up more map space by clicking on the left-pointing triangle at the top-right of the panel.

Initially when you enter the Alaska Mapper the map that appears is void of any Layers. One can add and remove Layers via the Layer Management panel. See the "Map Layers" section for more information.

User-created maps can be found under the "My Maps" folder. For more information, see "User-Defined Maps" section.

Open map at options

- Current – When map is selected, it is loaded at **current** zoom/scale.
- Saved – When a map is select, it is loaded at the zooms/scale at which the map was last **saved**.
- Statewide – When a map is selected, it is loaded at the **Statewide** (All of Alaska is viewable) zoom/scale.

Standard Maps

Seven standard maps are available to all Alaska Mapper users. These maps have the same content (layers) as the state status plats, the official graphical land records that describe the location of state

land, the classification of the land and assignments of state interest in the land. These maps are found in the "Standard Land Status Maps" folder of the "Available Layers" branch in the Map Management panel (see Figure 2 - Map Management Panel).

Following are descriptions of the standard maps:

Map	Description
Base Map	Contains the basic layers that are common to the other public maps, including hydrography, township and section grids, state outlines, roads, pipelines, etc. This is a good map to start with when designing your own maps.
All Status Map	Provides all the layers found in the other six standard maps.
Water Estate Map	Displays the statewide locations for water rights, water authorizations, reservations, and water management areas for surface and subsurface water sources.
Mineral Estate Map	A subsurface-use map that displays current oil and gas, mining and other subsurface resource uses on state uplands and tidelands. This map describes state lands as open or closed to mineral entry.
Surface Classification Map	Displays how state land may be used as a result of an area plan or site-specific classification.
Land Estate Map	A surface-use map that displays DNR authorizations or disposal of state uplands and tidelands to third party interests, such as individuals, businesses, municipalities, boroughs or other state agencies.
Ownership Map	Displays current state land ownership and the availability of those lands for use under specific rules and regulations of the State of Alaska.

Table 1 - Standard Maps

User-Defined Maps

Note: Only registered users can save maps. See the Registered User Account section for more information.

Alaska Mapper allows you to save your own customized maps. When you save a map, the system saves information such as the map name, the layers included on the map and the current zoom level and location. Alaska Mapper does not save the actual land-records data. Every time you open the map, it will be drawn using the latest land-records data available.

Creating a new User-Defined Map

When you first enter the Alaska Mapper a layer-less map is created and is ready add layers to.

You can create a new map (a map with no layers) by performing one of the options below:

- A new map (no layers) is the default when a user (guest or registered) first enters the application.
- You can sign-out by clicking on the user information button at the top-right hand corner of the application and then selecting "Sign-Out" option. This will log you out and return you back to the home page and thus have a new map when entering the application again.
- You can manually remove all the layers from the existing map by opening the Layer Management panel (see Figure 4 - Layer Management panel) and clicking the "Remove this layer" icon (⊖) to the right of each layer.

Creating a map from a preexisting Map

- Open an existing map as explained in the "Open a map" section above.
- Make modifications to the map as you see fit.
- There are two save options:
  - To save the current map with the name presented in the name input, click on the "**Save current map As**" button in the top most portion of the Map Management panel (see Figure 3 - Map Management Panel). **Note:** It is highly recommended to change the name of the map from its current name to avoid confusion when opening it in the future (see next option).
  - To save the current map with a different name, change the name in the name input and click on the "**Save current Map As**" button.
- If a map with the name specified already exists, a dialog will appear prompting if it should be overwritten or not. Click on "**OK**" if you want the existing map to be overwritten or "**Cancel**" if you do not.
- A dialog will appear indicating if the save was successful or not.

Note: all user-defined maps will appear under the "My Maps" folder in the Map Management panel.

Deleting User-Defined Maps

1. In the Map Management panel (see Figure 3 - Map Management Panel) select/highlight the map to be deleted.
2. Right-Click on the selected Map and then selected the "Delete" option in the menu that appears. The option will only be enabled (selectable) if you own the map.
3. Either confirm the delete by clicking on the **OK** button in the confirmation dialog or click the **Cancel** button if you do not wish to delete. **Note:** Deletions are permanent however if the map you deleted is currently open, you can resave it by clicking on the **Save As** button in the Map Management panel.

Note: The delete option is not available on maps the user does not own.

Map Layers

A map layer is a dataset that contains information about related map features. For example, one layer may contain all major lakes in the state, while another contains municipal boundaries. Each map has a number of layers available.

Layers available for mapping are listed in the Layer Catalog of the Layer Management panel shown below.
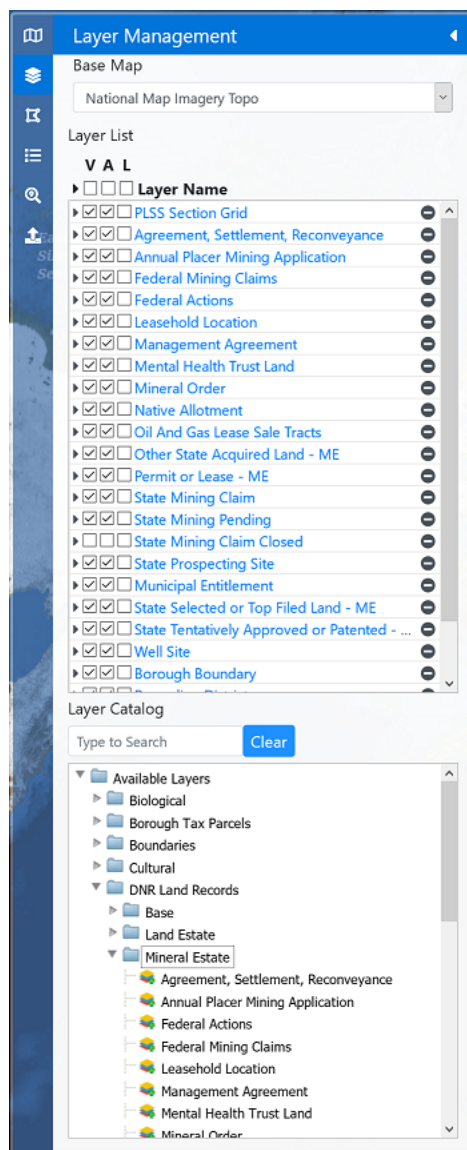

Figure 5 - Layer Management panel

Base Map Options

A Base Map is the background image that appears in every map to provide a visual reference for the Layers. The following is a list of the options and a description/information of each:

Base Map Option	Description
Open Street Map	OpenStreetMap project @ https://www.openstreetmap.org
ArcGIS World Imagery	ESRI World Imagery @ https://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9
ArcGIS USA Topo Map	ESRI USA Topographical @ https://www.arcgis.com/home/item.html?id=99cd5fbd98934028802b4f797c4b1732
ArcGIS Grayscale Canvas	ESRI Grayscale @ https://www.arcgis.com/home/item.html?id=ed712cb1db3e4bae9e85329040fb9a49
NOAA Nautical Charts	NOAA Raster Charts @ https://nauticalcharts.noaa.gov/charts/noaa-raster-charts.html#rnc-charts The NOAA base map option is composed of scanned images of the National Oceanic and Atmospheric Administration's (NOAA) Raster Navigational Chart for Alaskan waters. This chart is a graphic portrayal of the marine environment showing the nature and form of the coast and the general configuration of the sea bottom.
National Map Topo	The National Map @ https://basemap.nationalmap.gov/arcgis/rest/services/USGSTopo/MapServer The USGS Topographical base map option uses digital raster graphics (DRG), which are scanned images of United States Geological Survey (USGS) standard-series topographic maps. These images were originally georeferenced to the Universal Transverse Mercator (UTM) projection. Since then, they have been converted into a seamless layer and served under various projections (for example, Alaska Albers NAD 83). This map ranges in scale from 1:250,000 to 1:24,000.
National Map Imagery Topo	The National Map @ https://basemap.nationalmap.gov/arcgis/rest/services/USGSImageryTopo/MapServer
National Map Hydro	The National Map @ https://basemap.nationalmap.gov/arcgis/rest/services/USGSHydroCached/MapServer
Bing Aerial	Microsoft Bing @ https://www.microsoft.com/en-us/maps
Bing Roads	"
Bing Hybrid	"
SDMI BDL	Alaska Mapped Satellite Imagery (best data layer) Satellite and aerial imagery are obtained from the Alaska Statewide Digital Mapping Initiative (SDMI) (http://www.alaskamapped.org) through the University of Alaska. The imagery has been orthorectified, a process that removes distortions so that the images are geometrically correct and able to be used as planimetric maps. The detail of the imagery is set by the viewing scale of your map. As you zoom into an area, higher resolution images will appear if they are available for that portion of the state. The SDMI's goal is to provide new statewide data layers for imagery and elevation models that are more detailed than imagery presently available.
Alaska High Resolution Imagery	https://gis.dnr.alaska.gov/terrapixel/cubeserv/OIM_AlaskaHighResolutionImagery
DOT ROW Map	AKDOT&PF Right-of-Way Map @ https://tiles.arcgis.com/tiles/r4A0V7UzH9fcLVvv/arcgis/rest/services/BPR_Vicinity_Maps/MapServer

Table 2 - Base Map Options

To select a Base Map to suit your needs click on the Base Map options pull-down menu towards the top of the Layer Management panel and click on the option you desire.

Adding Layer

To add a layer into the current map, click on the desired layer in the Layer Catalog of the Layer Management panel and it will appear in the Layer List at the top. If the layer already exists, a dialog will appear indicating so.

Removing Layer

To remove a layer from the current map, click on the "Remove this layer" icon (⊖) to the right of the layer name in the Layer List of the Layer Management panel.

Ordering Layers

The order of the layers in the map determines the order in which they are drawn. The layer at the top of the list has the highest drawing priority, meaning that it is drawn last. The layer at the bottom of the list has the lowest priority and is drawn first. You must order the layers so that part of one layer is not obscured by another layer that is drawn on top of it.

Reorder Layers

1. Click a layer in the Layer List, and while holding down the mouse button, drag it up or down in the list.
2. Release the mouse button to drop the layer into its new location.
3. Repeat steps 1 and 2 to move other layers.

Layer Attributes

Map Data Layers (non-Base Map Layers) have three attributes: Visible (abbreviated "**V**"), Active (abbreviated "**A**") and Labeled (abbreviated "**L**") as depicted above the layer listing in the Figure 4 - Layer Management panel. The following describes each of the attributes in detail:

Visible

A layer's features will be visible in the map if the "visible" attribute is enabled (checked).

Active

A layer will participate in a query if the "active" attributed is enabled (checked). A layer can still be "active" even if it is not "visible".

Labeled

Labels will be added to features for a given layer with the "labeled" attribute enabled (checked).

Attribute Toggle All

To toggle all the layer attributes for a given type, click the checkbox above the desired attributes in the header, once of enable all, and again for disable all.

Layer Metadata

Information about the data contained within the layers is called layer metadata or dataset metadata. You can view this information by clicking the layer name in the Layer List. A new window or tab will appear containing information about the layer and how to download it in its entirety.

Map Legend

A **map legend** or key is a visual explanation of the **symbols** used on the **map**. The legend will only display layers that are "Visible" as indicated in the Layer Management panel.
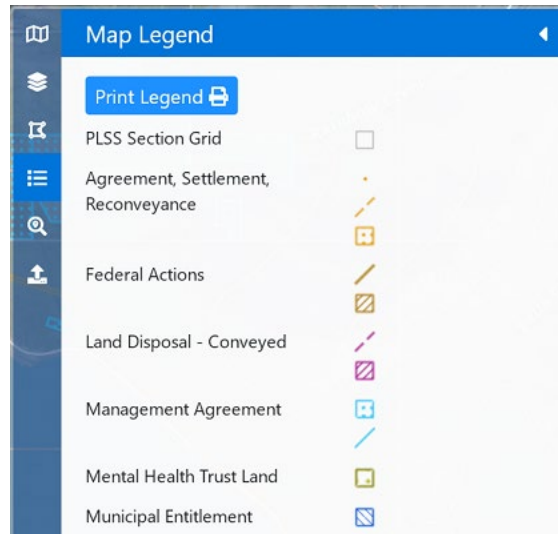
Figure 6 - Map Legend panel

Print Map Legend

It is possible to "print" the current map legend as presented in the Map Legend panel either directly to a printer or a file or even a PDF document. To access these options:

1. Click on the "**Print Legend**" button at the top portion of the Map Legend panel as seen in Figure 5 - Map Legend panel. A new browser window or tab will be opened.
2. To send the legend to a connected printer, click on the "**Print legend**" button. The printer dialog will appear. Follow the instructions presented.
3. To create a PNG image file of the legend, click the "**Save legend as PNG file**" button and a file dialog will appear. Follow the instructions presented.
4. To create a PDF of the legend, click the "**Save legend as PDF document**" button. The document will be created and downloaded to the browser.

Layer Legend

Layer symbology is also available at the individual layer level. The right-facing triangles before each of the Layers listed in the Layer List of the Figure 4 - Layer Management panel will reveal the symbology when clicked. The symbology will disable when the triangle is click again. To toggle all visible/invisible at once click on the triangle in the header.
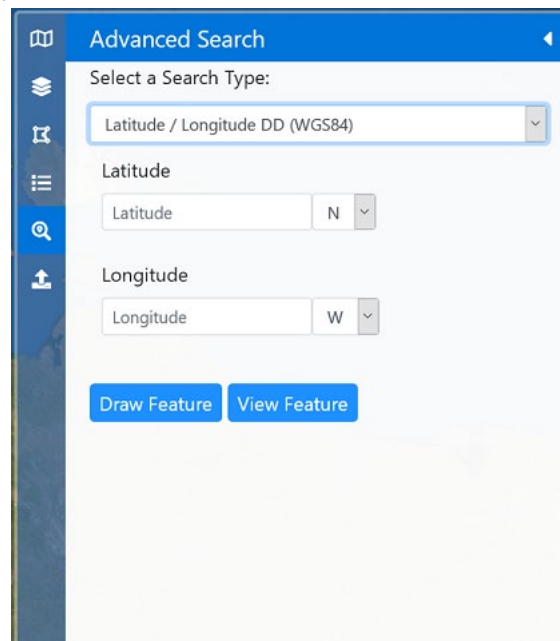
Advanced Search Options

Figure 7 - Advanced Search panel

Search Options

The **Advanced Search** options offer a quick way to navigate to an area of interest based on the categories of data you search. The variety of options allow you to search for features such as Alaska place names, boroughs, municipalities, and latitude and longitude coordinates. The following table describes each of the Advanced Search options.

Option	Description
Latitude and Longitude Decimal (WGS84)	Enter a latitude and longitude in Decimal Degrees. **Note:** In addition to providing the decimal number values, select the direction (**N**orth, **S**outh, **E**ast, **W**est) as needed.
Latitude and Longitude DDM (WGS84)	Enter latitude and longitude coordinates in Decimal Minute Degrees. **Note:** In addition to providing the decimal number values, select the direction (**N**orth, **S**outh, **E**ast, **W**est) as needed.
Latitude and Longitude DMS (WGS84)	Enter a latitude and longitude in Degrees Minutes Seconds (DMS). **Note:** In addition to providing the decimal number values, select the direction (**N**orth, **S**outh, **E**ast, **W**est) as needed.
ADF&G Game Management Units	Select an Alaska Department of Fish & Game Management Unit from the list. Select from predefined list of Management Units.
ANCSA Corporation Boundaries	Select an Alaska Native Claims Settlement Act Boundary from the list. Select from predefined list of Corporations.
Alaska Place Name	Enter an Alaska place name (e.g., "Juneau", "Kenai River" or "Knik Glacier"). As you type, a list of matching database entries will appear below the text box. When you see the location you are seeking, select it by clicking it the list.

	Note: once three or more letters are typed in, suggestions are presented for selection.
Borough/Municipality	Select a borough or municipality from the list. Select from the predefined list of boroughs.
Coastal District	Select an Alaska Coastal District from the list. Select from the predefined list of districts.
DNR Case (File Type and Number)	First select the Land Administration System Case File Type from the drop-down menu and then enter the Case File Number in the input box.
DNR Recording District	Select an Alaska Department of Natural Resources Recording District from the list. Select from the predefined list of districts.
DOT Centerline Milepost	Select an Alaska Department of Transportation Centerline Milepost route and milepost number. Select a Route first and then if available the mileposts will appear in the optional Mile Post drop-down menu.
PLSS Short Form	Enter a Public Land Survey System (short form) designation. Suggested format is: Meridian, Township, Township Direction, Range, Range Direction, Section (optional) and Aliquot Part(s) (optional).
National Geodetic Survey (NGS) monuments	Enter the name of the National Geodetic Survey monument. As you type, a list of matching database entries will appear below the text box. When you see the monument you are seeking, select it by clicking it. Note: once three or more letters are typed in, suggestions are presented for selection.
Rural Education Attendance Areas (REAA)	Select an Alaska Rural Education Attendance Area name from the list. Select from the predefined list of areas.
USGS 1:250,000 Topo Map Extent	Select an USGS Quarter Million scale Quadrangle Map name from the list. Select from the predefined list of names.
USGS 1:63,360 Topo Map Extent	Select an USGS Inch to Mile scale Quadrangle Map name form the list. Select from the predefined list of names.
Address Geocoding (Geocoder and Google)	Enter a street address, including city and state. Enter a place name or address.
North Slope Water Sources	Enter an Alaska Department of Natural Resources North Slope Water Source name (label). As you type, a list of matching database entries will appear below the text box. When you see the source you are seeking, select it by clicking it the list. Note: once three or more letters are typed in, suggestions are presented for selection.

Table 3 - Advanced Search options

Perform Search

- Select the Advanced Search panel as displayed in Figure 5 - Advanced Search panel.
- From the "Select a Search Type" pull-down menu, select an option that suits your needs.
- Fill in the parameters as needed. Refer to the Table 3 - Advanced Search options above for further details on the parameters.

- To just view the area of interest on the map click the "**View Feature**" button. A yellow-colored feature will appear for visual purposes only (cannot be used in a query).
- To view the area of interest on the map and use in a query, click the "**Draw Feature**" button. A gold-colored feature will appear for visual and query purposes.
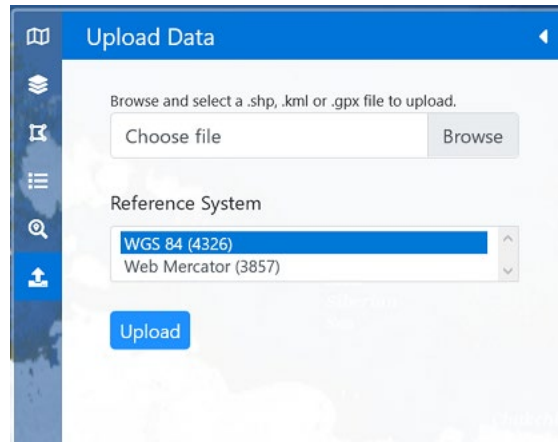
Upload Data

Figure 8 - Upload Data panel

Alaska Mapper allows you to upload features from three types of spatial data formatted files. The three formats are:

- .shp – ESRI Shapefile
- .kml – Google Keyhole Markup Language (KML)
- .gpx - GPS Exchange Format

To upload a file:

1. Select the Upload Data panel as shown in Figure 6 - Upload Data panel above.
2. Click the "**Browse**" button and select the file you wish to import from the file manager.
3. Select the Reference System of the data contained within the file. KML and GPX files are assumed WGS 84. Shapefiles not in one of the projections listed must be reprojected prior to being imported.
4. Click the **"Upload"** button. The file is uploaded, and the contents are displayed (gold in color) as features on the map and the map is zoomed to the area that displays the extent of the imported features.

Once feature(s) is successfully imported, it can be used in conjunction with a Query. For more information see the "Running a Query" section.

Manage Drawn Features

Graphic features (points, lines, and polygons) can be added to a map either by drawing them (see "Draw Query Features" section for more information) or uploading them from a spatial file (see the "Upload Data" section for more information).
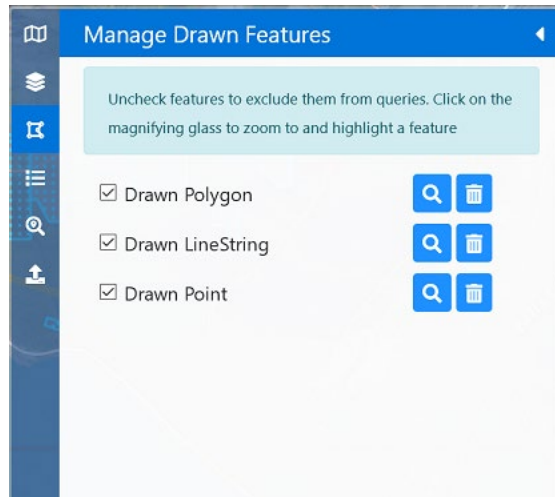
Figure 9 - Manage Drawn Features panel

Once a feature is drawn or uploaded to a map, they can be managed through the Manage Drawn Feature panel shown above.

Modify Feature

Zoom the map to the feature you wish to modify by either using the "**Zoom to and highlight this feature**" button in the Manage Drawn Features panel or pan and zoom the map to the location of the feature. The feature should be gold in color (editable).

- Points – can be moved by clicking on top of, holding mouse button down and dragging. Release mouse button to drop point feature.
- Lines – vertices can be moved by clicking on the apparent vertex, holding mouse button down and dragging. Release the mouse button to drop vertex. To add a vertex, click on a segment of the line and drag to desired location, release mouse button.
- Polygons – vertices can be moved by clicking on top of, holding mouse button down and dragging. Release mouse button to drop vertex. Additional vertexes can be added by clicking on the line segment where desired vertex is to be added, holding mouse button down and dragging to the new vertex location, release mouse button.

Zoom Feature

To zoom to a managed feature, click on the "**Zoom to and highlight this feature**" button in the Manage Drawn Features panel. If the feature is a point, the map with reposition itself so that it is centered on the point. If the feature is a line or polygon the map will be centered on the feature and zoomed such that the entire feature fills the map view.

Remove Feature

To remove a managed feature, click on the "**Remove this feature from map**" button to the right of the feature you wish to remove. The map will remain at the current location during this operation even if the feature is not visible in the map.

Draw Query Features

Features can be drawn on a map for use in a query against "Active" layers within the map. To draw a query feature:

1. Select the type of feature you want to draw in the Draw Feature Types drop-down menu list in the toolbar (see Figure 3 - Toolbar). The types are Points, Lines or Polygons where Point is the default.
2. Click on the map where you want to start your feature and release. A point is a single click whereas lines and polygons are made from a series of clicks (denoting vertices). Lines must have at least two and polygons must have at least three vertices.
3. For lines and polygons continue clicking vertices until you reach the last one. Double-click the mouse to place the last vertex and finish the feature.

Note: as you draw features they will appear in and can be managed in the Manage Drawn Features panel (see Figure 8 - Manage Drawn Features panel).

Draw Feature Types

There are three different types of features that can be drawn on the map and used in queries.

- Point – is a single vertex and contains no area.
- Line – must consist of at least two vertices and contains no area.
- Polygon – must consist of at least three vertices and defines the bounds of an area.

Erase Query Features

- To erase all query features from the map, double-click the "**Erase Query Features**" button in the menu bar.
- To erase a single query feature, click on the "**Erase Query Features**" button (selected) and then click on the feature you desire to erase.

Running a Query

Most of the Data Layers (non-Base Map) available in Alaska Mapper can be queried by a spatial area/point of interest (AOI) known as a query feature. Where the feature interacts with features of "Active" layers, those features will be returned is a table-like listing show below.

Figure 10 - Query Results

Run Query

To "run" a query:

1. There must be at least one drawn feature on the map.
2. Verify that the layers you wish to participate in the query are "Active". See "Map Layers" section for more information.
3. Click the "**Run Query**" button in the Toolbar (see Figure 3 - Toolbar for more information).
4. The "Query Results" dialog will appear displaying the **total** number of results displayed in a drop-down menu. See figure above.
5. Assuming there is at least one result, there will be other options in the result drop-down menu. Select the layer you wish to see the results for. The results will be displayed like in the figure above.

Query Results

Results from a "Run Query" will be displayed in a modal dialog or alternatively a separate browser window. To view the results in a separate browser window to help reduce obscuring the map, click on the "**View results in a separate window**" button.

Sorting Results

To sort on a value within the results listing:

1. Click on the column header to sort. If sortable, the listing will refresh, and a triangle will appear in the column header indicating the direction of the sort (ascending or descending).
2. To sort the other direction, click the column header again. The triangle will change appearance.

Note: if the column is not sortable nothing will happen when the column header is clicked on.

Export Results

Query results can be exported spatially (geographical) or in a tabular format. The export formats are described below.

Spatial Export

To export Query results to a spatial file format, click on the "**Export results as Spatial Data**" button. The "Export Query Results" dialog will appear and request your email address which is where the results will be sent once the processing is complete. Next, select the format of the file:

- ESRI Shapefile – This format can be used in many mapping applications. Also include are the attributes, projection, and metadata.
- Keyhole Markup Language (Google KML) – This file can be used in Google Earth and other applications. Output projection is assumed WGS84.

Finally, for the ESRI Shapefile format, you can select between three different coordinate references systems the results will be projected in.

Click the "**Submit**" button to execute the export.

Tabular Export

To export Query results in a tabular format, select one of the following formats:

- Portable Document Format (PDF): Click on the "**Export Results as PDF**" button. The resulting document will be downloaded to the browser.
- Excel spreadsheet: Click on the "**Export Results as Excel**" button. The resulting spreadsheet is downloaded to the browser.
- HTML Document: Click on the "**Export Results as HTML**" button. The resulting document is downloaded to the browser.

Note: Depending on the number of results, this process may take a few moments. Please be patient and check your browser's downloads for the results.

Quick Search

The Quick Search functionality allows for a hieratical search on a piece of text against three sources of data: LAS Cases, PLSS designations and finally Bing Geocoding services (addresses). To initiate a Quick Search, enter text into Quick Search field in the Toolbar (see Figure 3 - Toolbar) and either press the Enter Key or click on the "**Quick Search**" button. The text is evaluated in the following order:

1. Land Administration System (LAS) Case files – The text is evaluated as a LAS Case file identifier (Case File Type + File Number).
2. Public Land Survey System (PLSS) designation – Text is evaluated as a short-hand PLSS designation. E.g., F001N00E01-NE SW (note dash preceding the first aliquot part).
3. Bing Geocoding service – Test is evaluated as a name of a place or an address anywhere in the world.

If there is a match, the map will be zoomed to the location of the results and the results displayed as a Drawn Feature which can be used in a Query. If no match has been found against the three sources, nothing will happen.

Identify Tool

The Identify Tool works much in the same way as Run Query but simpler. A query is performed on all "Active" layers in the map by simply clicking on the map at a desired location. To perform an Identify:

1. Ensure the layers you want to query are "Active"
2. Activate the tool by clicking on the "**Identify Layer Features**" button in the Toolbar (see Figure 3 - Toolbar).
3. Click at the desired location on the map.
4. The identify results dialog will appear with the results if. A drop-down menu will indicate the total number of results. To view the individual results:
   a. Select the desired layer from the drop-down menu. The option will contain the name of the layer and the number of results for that layer.
   b. To view the next result (if any) click on the "**Next**" button.
   c. To view the previous result (if any) click on the "**Previous**" button.
   d. To close the results, click on the "**X**" at the upper right of the results dialog.
5. As the results are viewed, the features associated with the result is display in yellow on the map.
6. To make another Identify, click on the map in another location. The result dialog will update appropriately.

Pan Tool

The Pan Tool allows you to move the map view by clicking and dragging with the pointer. This tool also allows you to use the mouse scroll button to zoom in and out. The faster you scroll, the faster the map will zoom in or out. You can use the browser previous and next button tools to move back and forth through previous zoom levels.

An additional function of the Pan Tool is the ability to zoom to a defined box. To zoom to box, press the "Shift" key on your keyboard and hold, click on the map at a starting location and drag to the end location. Release the mouse button.

Zoom Tools

Zoom In

To zoom the map in one increment, click on the "**Zoom In**" button (+) just below the Toolbar at the upper right-hand side of the Map Page.

Zoom Out

To zoom the map out one increment, click on the "**Zoom Out**" button (-) just below the Toolbar at the upper right-hand side of the Map Page.

Zoom Full Extents

To zoom the map out to reveal the entire state of Alaska, click on the "**Zoom out to full extent of Alaska**" button. This button appears as a globe under the "**Zoom Out**" button.

Cursor Location Tool

This tool provides the geographic coordinates of the cursor when it is on the map. The coordinates can be displayed in three different formats by clicking on the format indicator link (toggles the options) that precedes the values. The three formats are:

1. **DD** – Decimal Degrees rounded to four significant figures.
2. **DDM** – Degrees Decimal Minutes rounded to four significant figures.
3. **DMS** – Degrees Minutes Seconds

Note: If the cursor leaves the map the tool will display "Cursor Outside Of Map!".
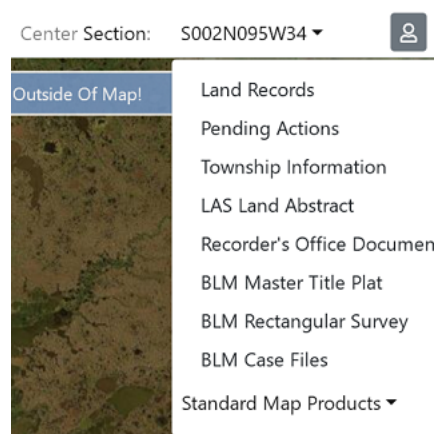
Map Center Information

Figure 11 - Map Center Information

Various Information related to the current center point of the map can be found in the Toolbar (see Figure 3 - Toolbar) at the right-hand side. If the current map is centered within the State of Alaska, the Township (by default) designation is displayed in the PLSS shorthand. It is possible to switch between Township and Section level information by clicking the Center designation. It will toggle between "Township" and "Section" each time it is clicked. Depending on the current designation the data within the drop-down menu with adjust accordingly.
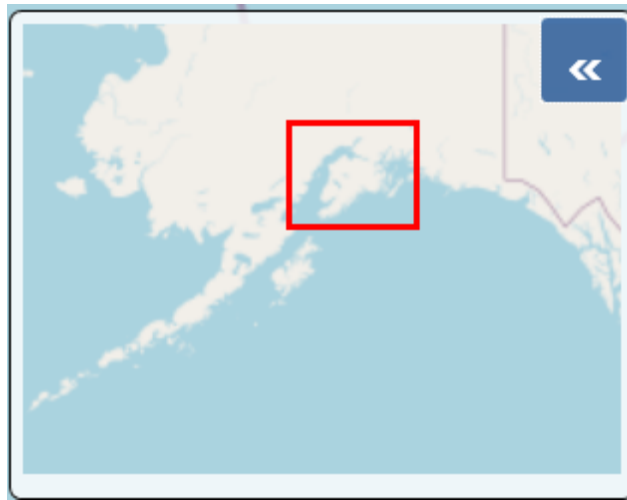
Overview Map

Figure 12 - Overview Map

The overview map located in the lower-right corner of the map page, contains a small map image that indicates the area displayed in the map in relation to the entire state of Alaska. The current map bounds are indicated on the overview map with a red rectangle. This is particularly helpful when viewing the map at large scales.

If the overview map is not visible (by default), click the blue double-arrow button in the lower right-hand corner to display it.

To dismiss the overview map, click on the blue double-arrow button in the lower right.

To quickly pan the current map, click on and drag the rectangle in the Overview map to a new desired location and release mouse button. The current map will relocate to the new location.

Print Map

The Print Map function allows the current map view (image) to be printed. To start the print process, click on the "**Print Map**" button at the left of the Toolbar (see Figure 3 - Toolbar). This will open a new browser window or tab with a clean map image. The map image can be printed in the following ways:

- Direct to Printer – Click the "**Print Page**" button (far left button in toolbar) and another window or tab will be opened with the Printer Dialog open. Following the instructions in the dialog to print to an available printer device.
- As a PNG file – To save the image as a PNG file, click on the "**Save map as a PNG image**" button - second from left in Toolbar. The resulting image will be downloaded to your browser.
- As a PDF document – To save the map image as a PDF document, click on the "**Save map as a PDF document**" button – third from the left in Toolbar. The resulting document will be downloaded to your browser.

Note: in most browser it is also possible to save the map image as a PNG by right-clicking the image and then selecting the "Save Image As" (or similar) option.

Map Markup

Markup capabilities on the map image are made possible by a third-party library called *marker.js*. The associated toolbar is found at the top-right of the Print Map window and is used to initiate the markup functions. For documentation and demonstrations on how to use this library to markup the map image, visit https://markerjs.com.

Registered User Account

The Alaska Mapper allows users to save personalized maps. To save a map, the user must be singed in as either a:

- State of Alaska employee – Automatic registration for all State employees.
- myAlaska – Registered myAlaska users can use their accounts to sign into Alaska Mapper.
- Google– Registered Google users can use their accounts to sign into Alaska Mapper.

Note: It is recommended that that myAlaska and Google user preregister with those providers before attempting to sign into Alaska Mapper.

Sign In

User can sign in at the Home Page (see Figure 1 – Home Page). The three options mentioned above are listed in the center of the page. Initiate sign in by clicking on one of the desired buttons. Additional steps may be presented by the provider during the sign in process.

To Sign into a different account while currently signed in, simply click on the desired button. There is no need to sign out first.

Sign Out

It is always recommended to sign out of the application after use to prevent tampering of user maps. There are two way to sign out:

1. A "Sign out" link is provided in the center of the Home Page following your username.
2. A "Sign Out" option in available in the Map Page in the User Information indicator to the far right-hand of the Toolbar. Clicking this will sign you out and return you to the Home Page.