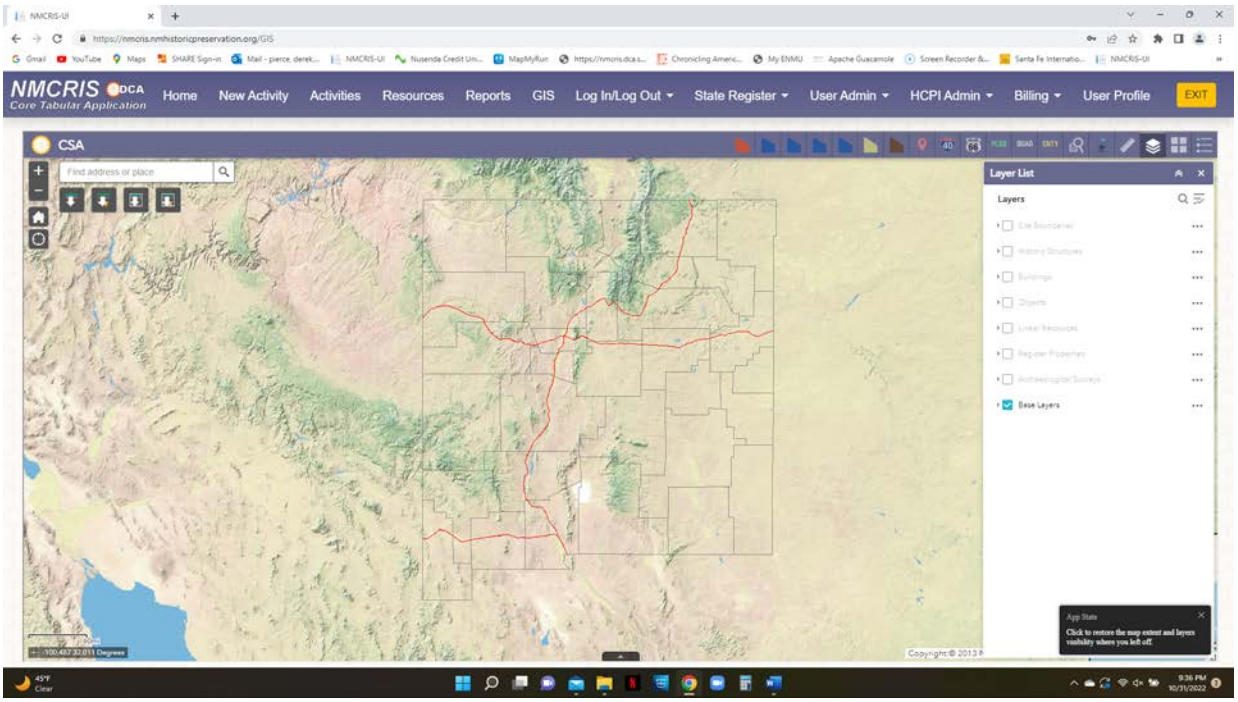
NMCRIS Map Service User's Guide



Draft

10/31/2022

Contents

What's new: a quick summary

- Address search

  A new street address search allows users to enter and find a street address. When a user clicks on a search result the map will zoom to that address.

- Increased control over layer properties

  Enhanced layer controls allow users to toggle data layers on and off, hide or show feature labels for each layer, adjust the transparency of data layers, and move layers up or down in the drawing order of the map.

- Map extents and layer properties stored from the user's last visit

  The application remembers the map extents and layer properties as set at the close of the last map session. When a user reopens the map service, an App State popup will appear for 10 seconds. Clicking on this popup zooms the map to where the user left off and recalls the previous layer properties.

- Upload and download data as zipped files

  With the previous iteration of NMCRIS the shapefile upload process required the user to navigate to and select each component file (.shp, .shx, .dbf, ,prj) separately. The new application uses zipped shapefiles for data uploads and downloads, so users only need to select a single file.

- Uploaded shapefiles re-projected on the fly

  With the previous iteration of NMCRIS, users wishing to upload shapefiles first had to re-project their data to match the native coordinate system of the map service. The new map service re-projects uploaded shapefiles on the fly. Users may upload zipped shapefiles in any projection.

- Select, extract, and download NMCRIS data layers

  The map service provides clip-and-ship functionality the allows users to select and download NMCRIS data layers. Users may draw a selection area onscreen or upload one as a zipped shapefile. Users may also buffer their selection area by a specified distance. Running the download tools extracts the selected NMCRIS layers in either shapefile or geodatabase format.

- GIS edit functions built into the NIAF, LA, and HCPI forms

  GIS edit functions are embedded in the online NIAF, LA, and HCPI forms. Users may add GIS content by drawing features onscreen, by drawing buffered lines, or by uploading the data as zipped shapefile in any projection.

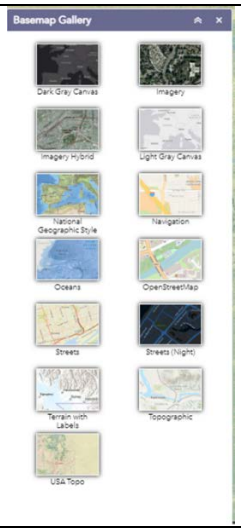
Map Display Properties

The NMCRIS map service allows users to customize map display properties. Users can select from a number of basemaps, toggle data layers on and off, hide or show labels, adjust the transparency of data layers, and modify the drawing order. These features can be particularly useful in areas where features from multiple data layers overlap.

Basemap Gallery

The Basemap Gallery provides a number of base maps to choose from, including two aerial imagery layers, two streets layers, and two topographic layers

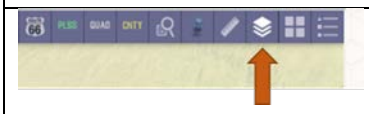
By default, the map service opens with the USA Topo base layer

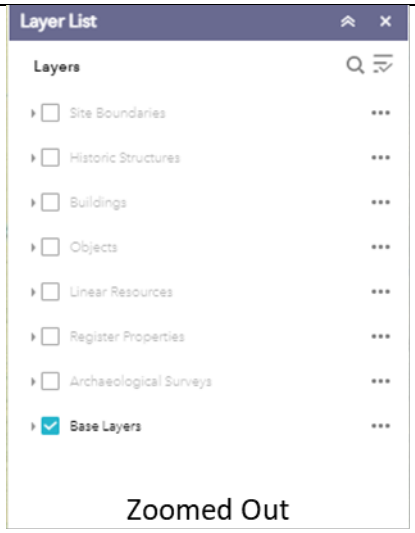


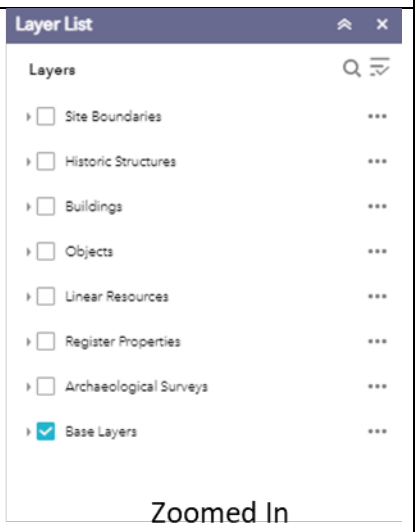
Layer List

The Layer List allows users to toggle data layers on and off.

Note that the NMCRIS map service utilizes scale dependencies. Data layers are not visible or selectable at smaller scales (zoomed in). As the user zooms in data layers become active.

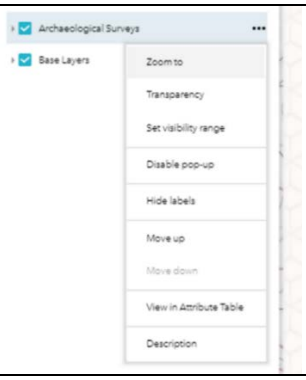






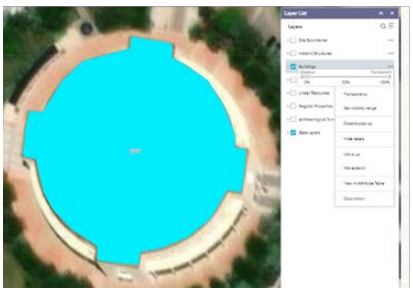
Layer Controls

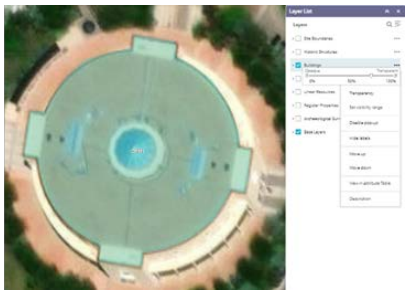
Clicking the ellipse to the right of each layer in the Layer List will open layer controls that allow users to control the appearance of data layers on the NMCRIS map. Users may hide or show feature labels for each layer, adjust the transparency of data layers, and move layers up or down in the drawing order of the map.



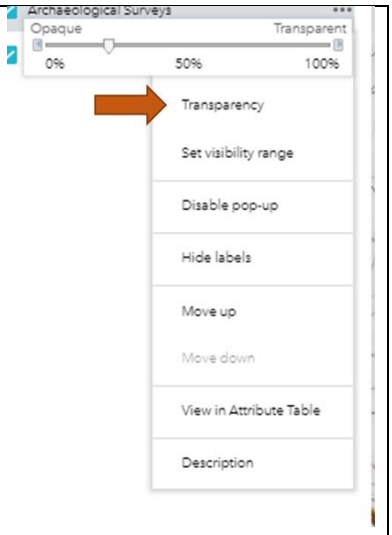
Transparency

The Transparency control allows the user to increase or decrease the transparency of the data layer, revealing more or less detail underneath.





1. Click on the ellipse to the right of a data layer
2. Click on the Transparency control
3. Move the slider bar to increase or decrease transparency

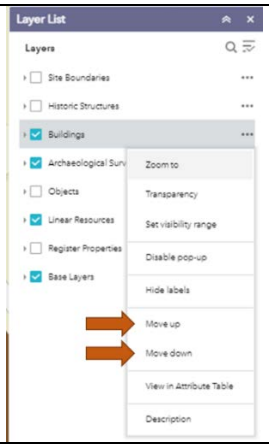


Drawing Order

The Move up and Move down controls allow users to promote or demote data layers in the drawing order.

Surveys above Buildings

Buildings above Surveys



Restore Map Extent and Layers

When a user leaves the Map Viewer tab or exits the NMCRIS application and then returns, the map will reopen to the full map extents and with the default Layer List settings.

However, the application remembers the settings from the user's last session. When the user reopens the Map Service an App State popup will appear in the lower right-hand corner of the Layer List.

Clicking the popup will zoom to the previous map extents and restore the Layer List selections as set at the end of the user's last session.

Note: The App State popup only appears for 10 seconds.

Map Searches

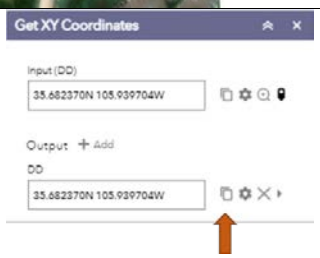
Get XY Coordinates

The Get XY Coordinates tool allows users to place a pin anywhere on the map. The application returns the precise coordinates of that location in decimal degrees, degrees-minutes-seconds, and UTM easting and northing.

1. Select the Get XY Coordinates tool on the menu bar
2. Select the pin icon to the right of the Input box
3. Click anywhere on the map to set the pin
4. The application will return the prcise XY coordinates of the location in multiple coordiante systems

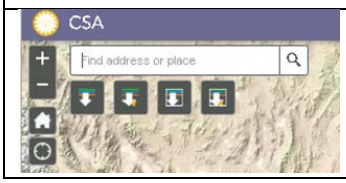
Users may copy the resulting coordinates to their clipboard.

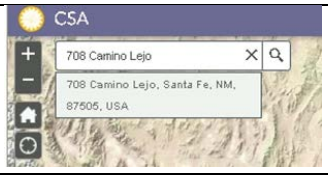
1. Click the Copy to Clipboard icon to right of the coordinate pair(s) you wish to copy
2. The application will copy the data to your clipboard

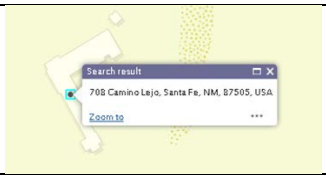


Street Address Search

The new map service provides users with the ability to search by a street address. Clicking on a search return will zoom the map to that address.

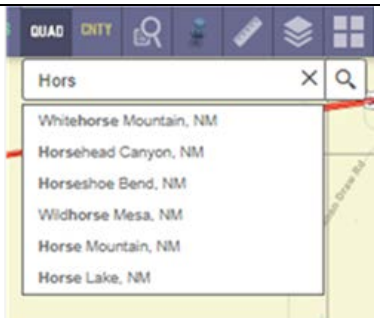


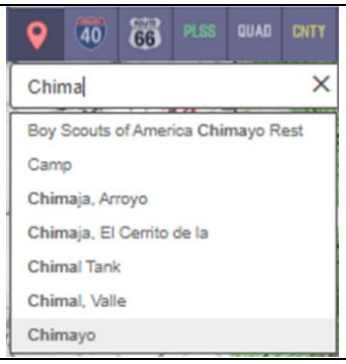




County, USGS Quad, and Geographic Names searches

The map service provides users with the ability to search by County, USGS Quadrangle name, or Geographic name. Clicking on a search return will zoom the map to that location.

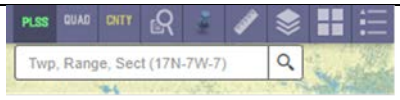




PLSS Search

The map service allows users to search for and zoom to a PLSS value (Township, Range, Section)

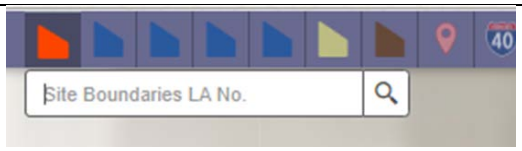
1. Click on the PLSS button on the menu bar
2. Follow the onscreen prompt to enter the PLSS value on the required format (e.g. 14N-9W-10)
3. Click on a search result to zoom to that location



Layer Quick Searches

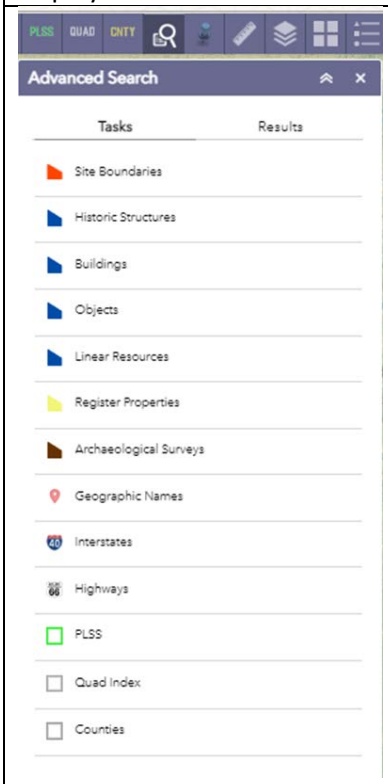
Quick searches allow users to query any of the NMCRIS production layers (Site Boundaries, Historic Structures, Buildings, Objects, Linear Resources, Register Properties, and Archaeological Surveys)

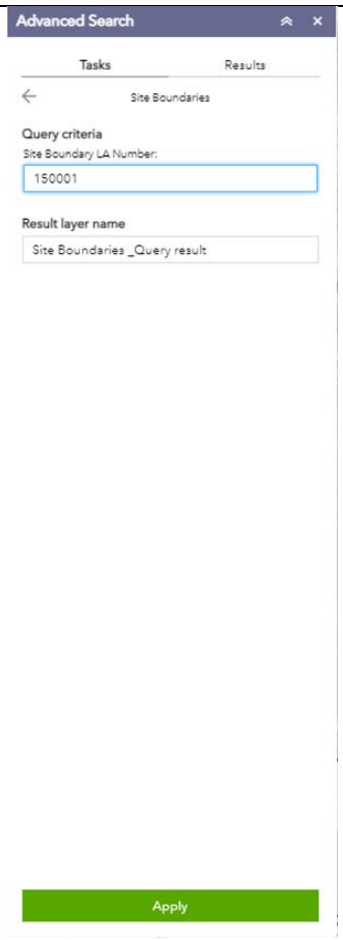
Clicking on the layer icon prompts the user to enter the appropriate identification number (exact match required). Hitting enter will zoom the map to that feature.

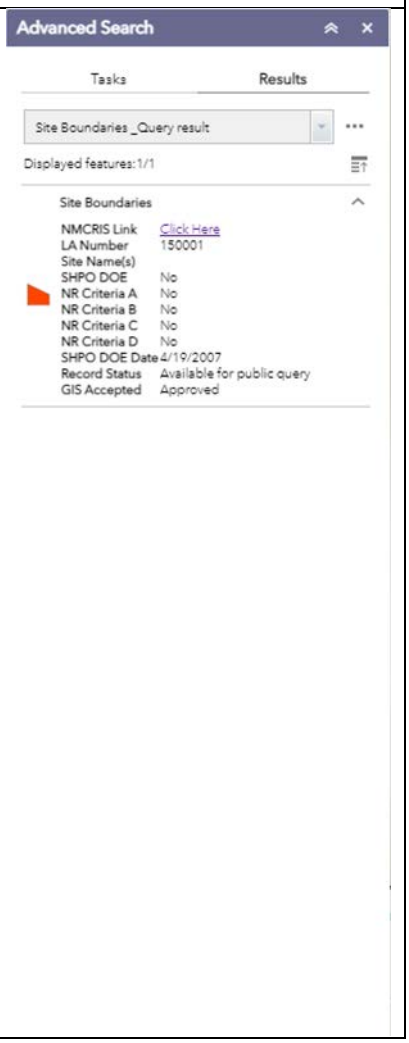


Advanced Search

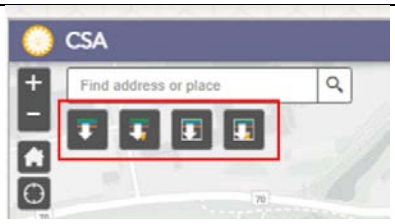
The Advanced Search tool pulls all of the data layer and locational searches into a single interface. Clicking on a search return will zoom the map to selected feature or location. The interface also displays the attribute data for the feature.



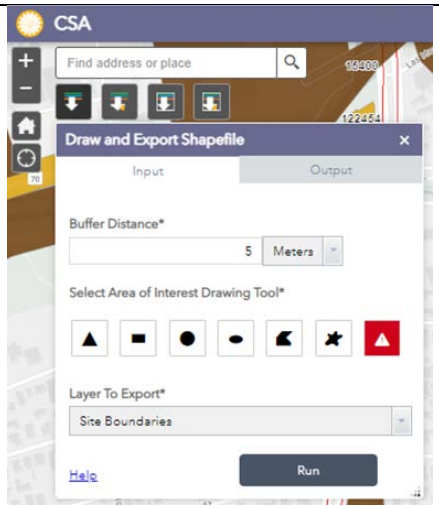
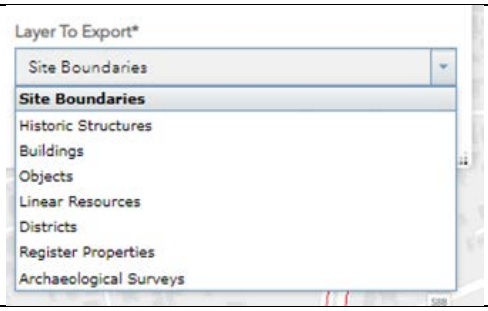


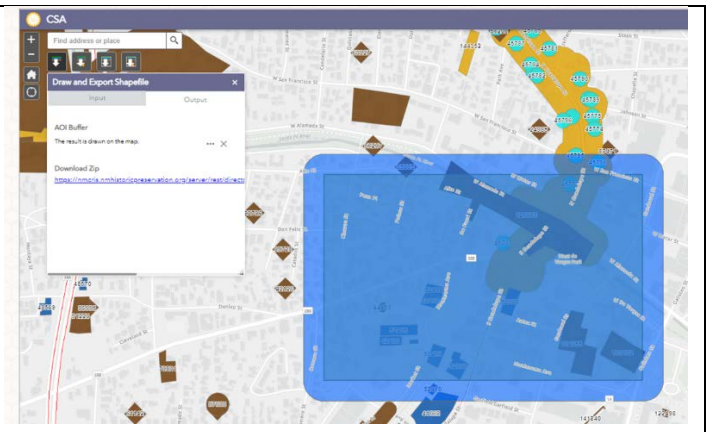


GIS Data Extract Tools

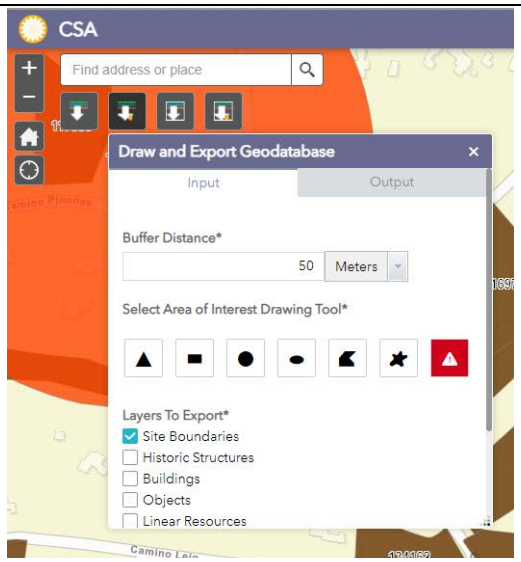
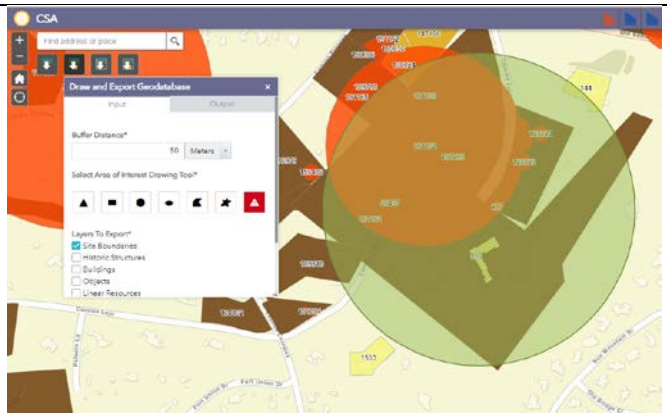
The new map service provides clip-and-ship functionality the allows users to select and download NMCRIS data layers. Users may draw a selection area onscreen or upload one as a zipped shapefile. Users may also buffer their selection area by a specified distance. Running the download tools extracts the selected NMCRIS layers in either shapefile or geodatabase format.	

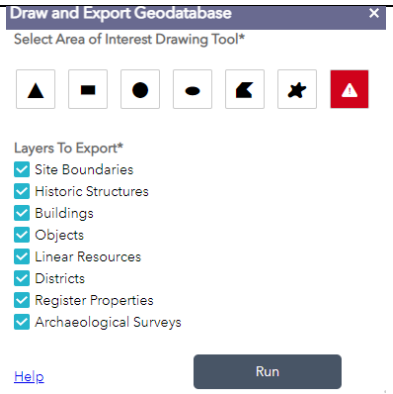
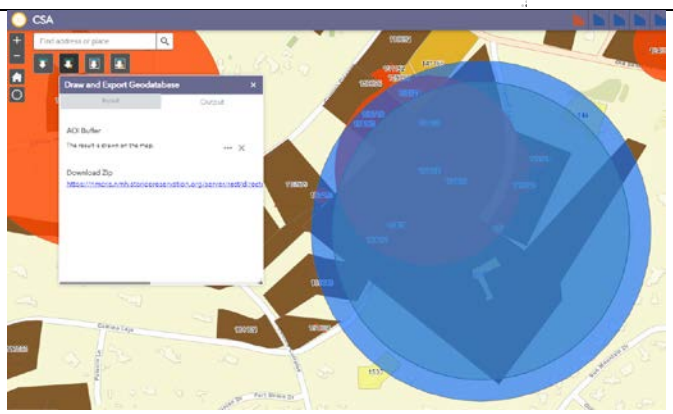
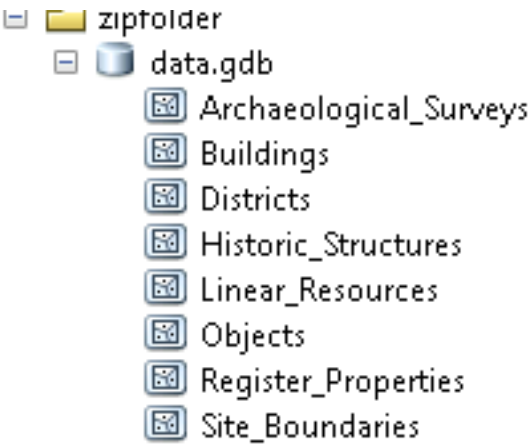
Draw and Export Shapefile

The Draw and Export Shapefile tool allows users to create a selection area onscreen, clip out a single NMCRIS data layer, and download the result in shapefile format. 1. Click on the Draw and Export Shapefile tool to open the dialog box 2. Enter a buffer distance, if desired. *Units are in meters – be sure to do the conversion if working in feet* 3. Click on one of the drawing tools to activate it	
4. Click on the map to begin drawing the selection area; double-click to complete the shape	
5. Select the NMCRIS data layer to export	

6. Click Run to start the geoprocessing task 7. When the task is complete, the application will provide a hyperlink to download the extracted data as a zipped shapefile 8. After downloading the file, click the X on the Output tab to clear the results 9. Click the red exclamation point on the Input tab to clear the selection area	

Draw and Export Geodatabase

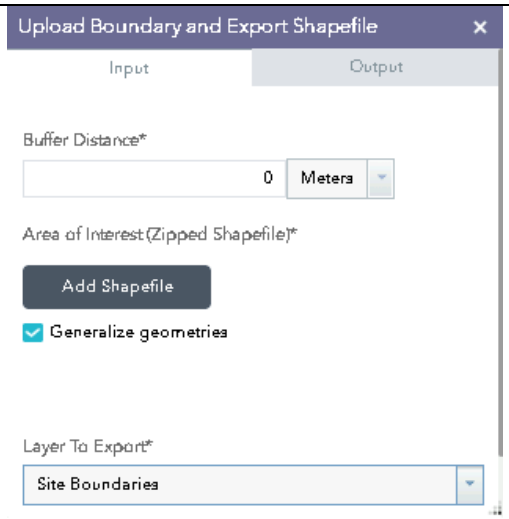
The Draw and Export Geodatabase tool allows users to create a selection area onscreen, clip out a multiple NMCRIS data layers, and download the results in geodatabase format. 1. Click on the Draw and Export Shapefile tool to open the dialog box 2. Enter a buffer distance, if desired. *Units are in meters – be sure to do the conversion if working in feet* 3. Click on one of the drawing tools to activate it	
4. Click on the map to begin drawing the selection area; double-click to complete the shape	

5. Select the NMCRIS data layers to export	
6. Click Run to start the geoprocessing task 7. When the task is complete, the application will provide a hyperlink to download the extracted data a zipped geodatabase 8. After downloading the file, click the X on the Output tab to clear the results 9. Click the red exclamation point on the Input tab to clear the selection area	
The zipped geodatabase will contain the extracted features for all of the selected NMCRIS data layers	

Upload Boundary and Export Shapefile

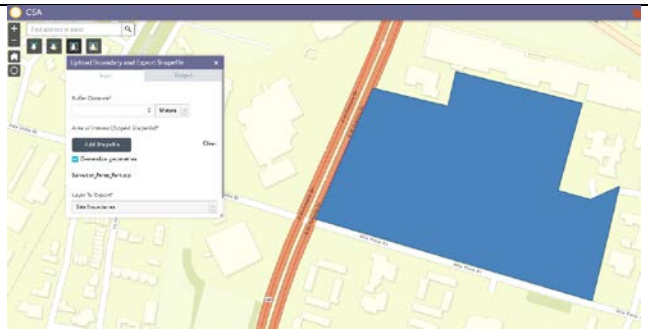
The Upload Boundary and Export Shapefile tool allows users to upload a zipped shapefile as a selection area, clip out a single NMCRIS data layer, and download the result in shapefile format.

1. Click on the Upload Boundary and Export Shapefile tool to open the dialog box
2. Enter a buffer distance, if desired. *Units are in meters – be sure to do the conversion if working in feet*
3. Click on the Add Shapefile button

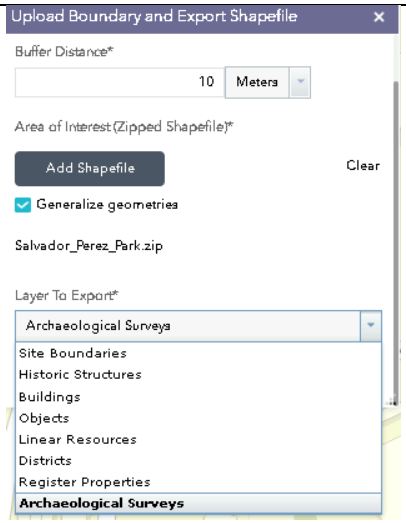


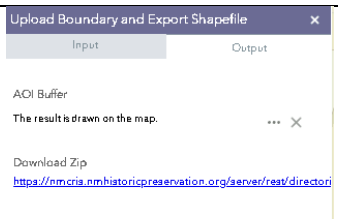
4. File Explorer will open
5. Navigate to the zipped shapefile you wish to upload
6. Double clicking on the file will load it to the NMCRIS map and zoom to the selection area

   Tip: The zipped shapefile may be in any spatial projection; the map service will re-project the data on the fly. The shapefile uploaded in the example at right was projected in a State Plane coordinate system



7. Select the NMCRIS data layer to export



8. Click Run to start the geoprocessing task 9. When the task is complete, the application will provide a hyperlink to download the extracted data as a zipped shapefile 10. After downloading the file, click the X on the Output tab to clear the results Click the red exclamation point on the Input tab to clear the selection area	

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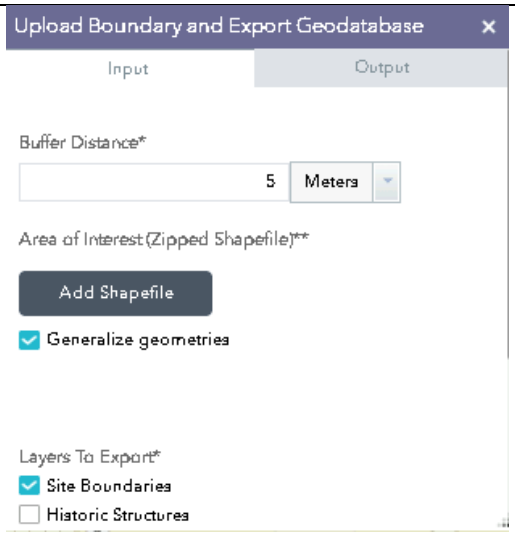
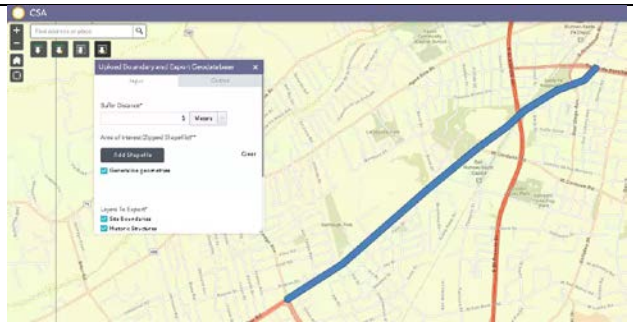
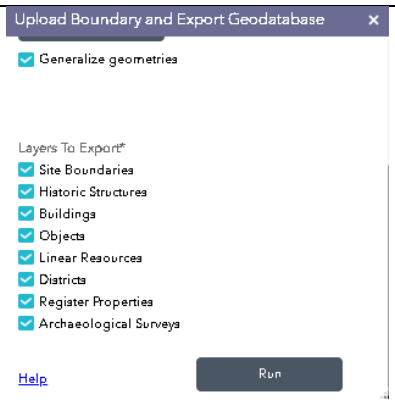
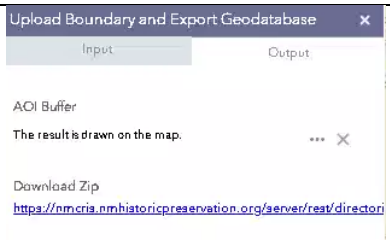
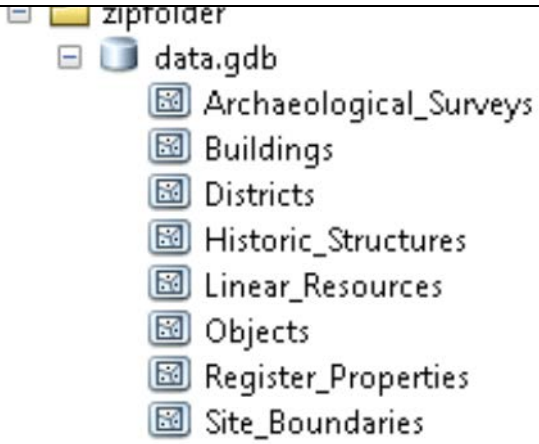
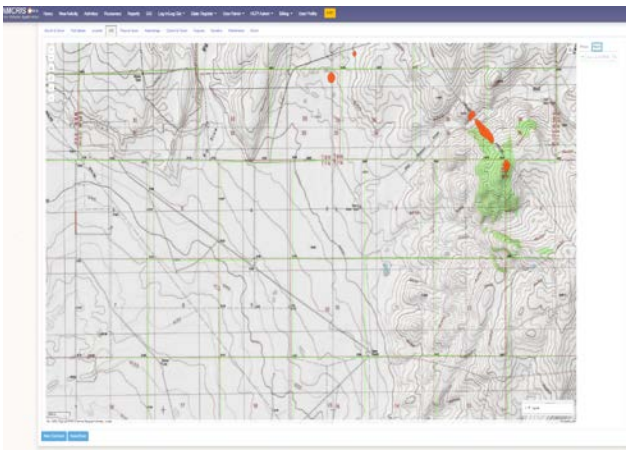
The Upload Boundary and Export Geodatabse tool allows users to upload a zipped shapefile as a selection area, clip out a multiple NMCRIS data layers, and download the results in geodatabase format. 1. Click on the Upload Boundary and Export Geodatabse tool to open the dialog box 2. Enter a buffer distance, if desired. *Units are in meters – be sure to do the conversion if working in feet* 3. Click on the Add Shapefile button	
4. File Explorer will open 5. Navigate to the zipped shapefile you wish to upload 6. Double clicking on the file will load it to the NMCRIS map and zoom to the selection area *Tip: The zipped shapefile may be in any spatial projection; the map service will re-project the data on the fly.*	

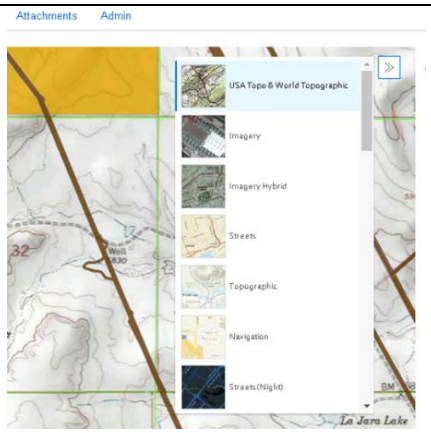
7. Select the NMCRIS data layers to export	
8. Click Run to start the geoprocessing task 9. When the task is complete, the application will provide a hyperlink to download the extracted data as a zipped shapefile 10. After downloading the file, click the X on the Output tab to clear the results Click the red exclamation point on the Input tab to clear the selection area	
The zipped geodatabase will contain the extracted features for all of the selected NMCRIS data layers	

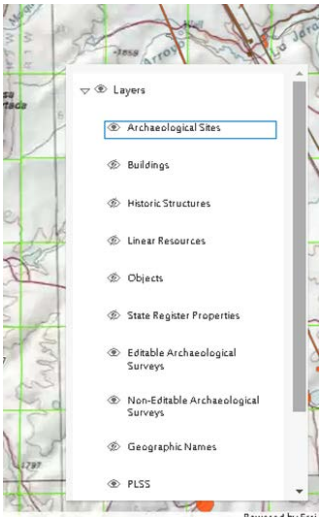
GIS Editing

The GIS viewer available on the menu bar is used for viewing and downloading existing GIS data only. Users may add new content to the map service by utilizing the GIS tabs incorporated into the online NIAF, HCPI, and LA forms. The edit tabs within these forms have similar controls, including a basemap gallery, a layers list, and search functionality	

Basemap Gallery and Layers List

The Basemap Gallery in located in the upper right corner of the map, while a simplified Layer List can be found in the lower right corner.



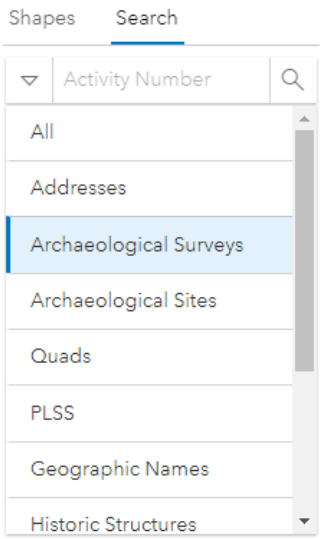


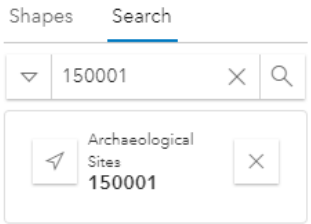
Search subtab and Shapes subtab

The Search subtab and Shapes subtab are located to the right of the map image on the GIS tab.

The Search subtab allows users to search any of the NMCRIS data layers and zoom to the results.

1. Click the dropdown arrow left of the search box to display the searchable layers
2. Click on the desired layer
3. The prompt within the search box will update to indicate the search parameter (LA Number, Quad Name, etc.)
4. Enter the appropriate query and hit Enter
5. The query result(s) will display
6. Clicking on the arrow immediately left of a search result will zoom the map to that feature

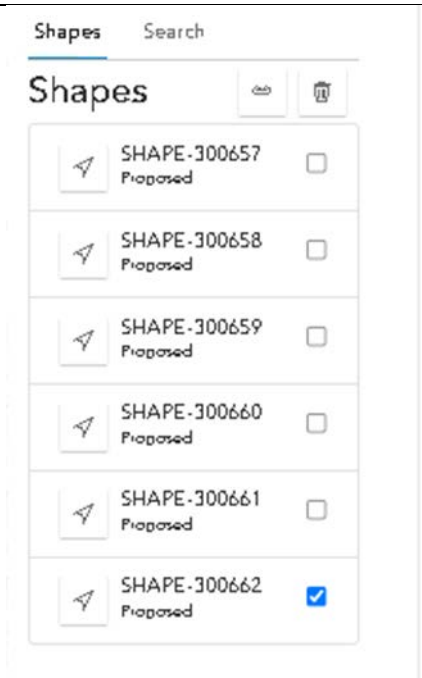




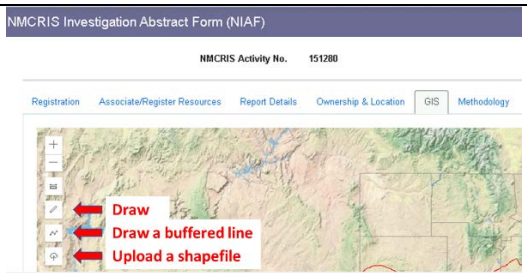
The Shapes subtabs displays all of the GIS features associated with the NIAF, LA Form, or HCPI Form currently open. Clicking on the arrow immediately left of a search result will zoom the map to that feature

HPD's policy is to merge these features so that each NIAF, LA, and HCPI has a one-to-one relationship with the GIS feature that represents it on the map. *Multiple shapes in the list may therefore represent unfinished work.*

The Shapes list can be used to merge two or more shapes together or to delete unwanted shapes. Please see the GIS Editing workflow below for details.



GIS Editing Tools

The GIS tabs within the NIAF, LA, and HCPI forms provide three tools for adding content to the NMCRIS map: the Draw tool, the Draw a buffered line tool, and the Upload a shapefile tool.	

Important Notes on GIS Editing and Data Standards

When adding data to the NMCRIS map, please be aware of the following:

- **Always click save at the bottom of the GIS tab before exiting an edit session!**

  GIS features are not saved until the save button is clicked. Leaving the GIS tab without saving will result in the loss of any features drawn or uploaded during the edit session.

- **To protect data from accidental deletion or change, features added to the map are only editable during the current session!**

  During an active edit session users may edit, move, merge, or delete any features drawn or uploaded during the session. However, as soon as the user navigates away from the GIS tab (terminating the edit session), all saved features become locked and will not be available for editing in the next editing session. In the return session users may add additional features but cannot make changes to features already saved.

  To avoid a proliferation of 'draft' features, please contact ARMS at e.nmcris@dca.nm.gov to have any unwanted features deleted before attempting to add 'replacement' features.

- **Because of the limitation above, uploading a 'finished' shapefile should be considered the preferred means of adding features to the map**

  The Draw tool and Draw a buffered line tools do allow users to construct complex shapes. However, accidently leaving an edit session, or an unexpected loss of network connectivity can result in unfinished features being committed to the database. Only HPD staff can remove these features. To avoid such complications, users who can construct complex GIS features offline on their desktop GIS software are encouraged to do so and upload only finished GIS features to the NMCRIS map

- **The 'parts' of an archaeological survey, archaeological site boundary, or HCPI boundary should always be merged to create one record.**

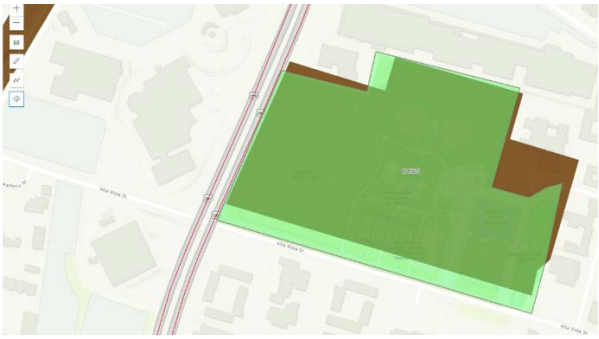
  Merged, multi-part features are acceptable. Multiple independent features for a single NIAF, LA, or HCPI number are not. Please merge all features associated with a given record.

Shapefile Upload Tool

The shapefile upload tool allows users to upload zipped shapefile.

1. Click on the Upload a shapefile button
2. File Explorer will open
3. Navigate to the zipped shapefile you wish to upload
4. Double clicking on the file will load it to the NMCRIS map and zoom to the newly added feature
5. Be sure to click Save!

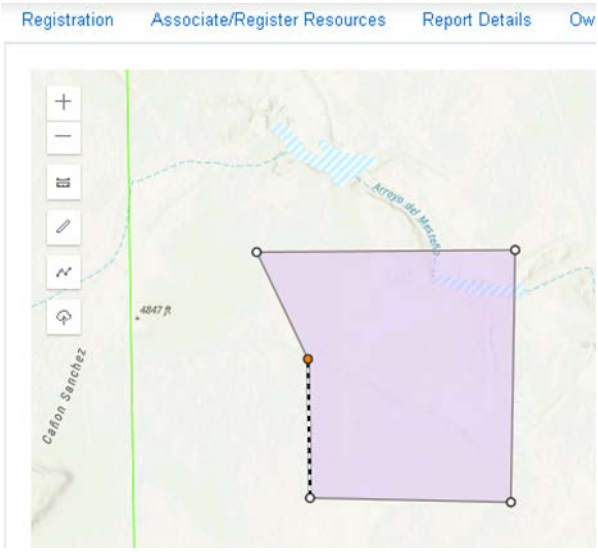
Tip: The zipped shapefile may be in any spatial projection; the map service will re-project the data on the fly.



Draw Tool

To draw a simple polygon shape onscreen:

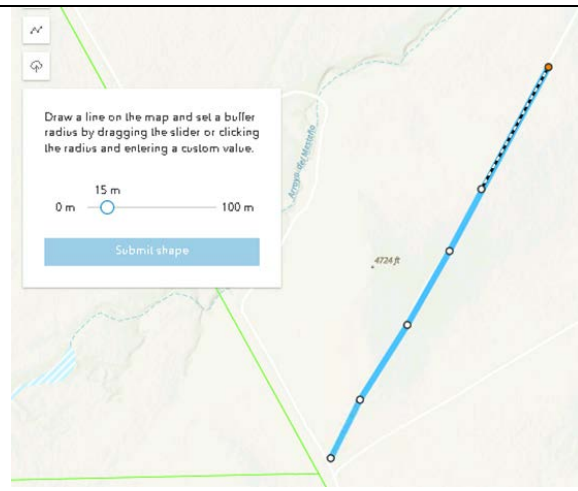
1. Click on the Draw tool to activate it
2. Click once on the map to start the sketch
3. Click once to add additional vertices
4. Double-click to finish the sketch
5. Be sure to click Save!



Draw a Buffered Line Tool

The Draw a buffered line tool allows users to draw a line onscreen and apply a preset buffer to create a linear polygon.

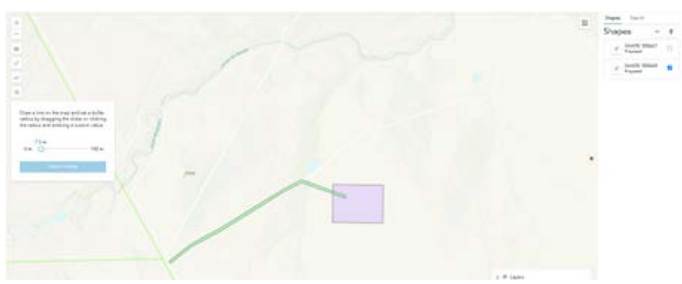
1. Click on the Draw a buffered line tool to activate it
2. Set the appropriate buffer distance (in meters) using the slider bar. Alternately, clicking directly on the buffer value allows users to type in a value, including decimal values (e.g. 7.5 m)
3. Click once on the map to start the sketch
4. Click once to add additional vertices
5. Double-click to finish the sketch
6. Click the Submit shape button to apply the buffer
7. Be sure to click Save! (*the Submit button does <u>not</u> commit the shape to the database*)

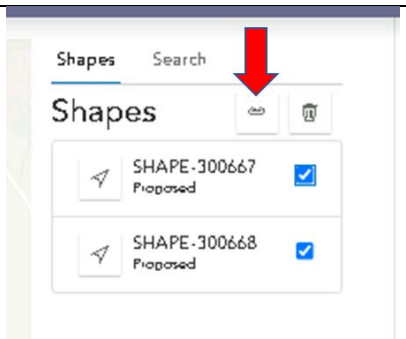
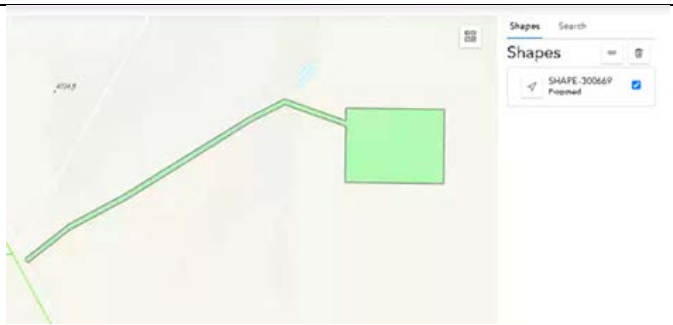


Using the Merge Function to Create Complex Shapes

The Merge function allows users to create or upload multiple shapes and then merge the shapes into a single GIS feature. The merge function may be used for both contiguous shapes and spatially separate.

The example at right simulates a typical well pad and well tie pipeline. The well pad was created with the Draw tool and the partially overlapping pipeline was created with the Draw a buffered line tool.



To merge shapes: 1. Select the check box to the right of each shape in the Shapes subtab 2. Click the Merge Shapes button 3. A popup box will appear. Click the blue Merge Shapes button to merge the selected shapes 4. Be sure to click Save to commit the merged feature to the database!	
In the example at right, the simulated well pad and well tie pipeline shapes have been merged together into a single feature.	

Technical Assistance

Please contact HPD's Archaeological Management Section (ARMS) for assistance troubleshooting any of the GIS functions described here.

You may also contact ARMS if you need to clear out incorrect or incomplete GIS features before submitting corrected data.

The best way to contact ARMS is through the bureau's customer service email address: e.nmcris@dca.nm.gov.

Also please check the announcements window on the NMCRIS home page for additional guidance documents, live or recorded trainings, and general announcements.