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1. Introduction
The City of Albuquerque Advanced Map Viewer 2.0 was created by the Department of Technology and Innovation. It can be used in any web browser including IE, Google Chrome, Firefox, and Safari. The objective of the GIS Viewer is to enable wide access to the City’s authoritative GIS data through a powerful set of web-based GIS tools. This means that you can search for data, zoom and pan to specific features in the City, perform basic spatial analysis, add text and draw shapes, measure features, and create and export a printable map. If you have previously used Esri ArcMap or any other GIS software, then this GIS Viewer should be relatively easy to use and navigate. If you are a new or novice user of GIS, then this document should be helpful to get you started.

2. Basic Navigation
Launch an internet browser, type in the following URL - http://www.cabq.gov/gis/advanced-map-viewer, and click the button to launch the Advanced Map Viewer 2.0.

An image of the main screen is below with descriptions of each item listed below the image.
Note: Changes are occasionally made to the GIS Viewer interface so it may appear differently than here.
“I want to…” menu: A menu of shortcuts to frequently-used tools.

**Show/hide map layers:** Shows or hides the information panel where you can select different layers to view on the map and adjust their transparency levels.

**Zoom buttons:** Use these buttons to zoom in or out on the map by clicking the + or -

**Global search box:** You can type in the name of a feature to search for it on the map.

**Toolbar:** Tabbed toolbar with available map tools organized by groups.

**Show/hide toolbar labels:** Shows or hides the toolbar labels when clicked.

**Base map toggle:** This button allows you to choose between different basemaps or aerial imagery.

**Information panel:** This interactive panel allows you to manipulate (i.e. hide or show) map layers, adjust the layer’s transparency, perform other layer functions, and displays results upon using the Identify tool or performing a search.

**Scale bar:** The current scale of the map.

**Scale widget:** Changes the zoom level of the map and the scale bar.

```
Scale: 36,112
```

**Coordinates widget:** Change the coordinate system on the map and see the position of the mouse cursor.

```
WKID: 4326 Lat/Long
Lat: 35.11393° N
Lon: 106.69926° W
```

**Context menu:** Right-click anywhere on the map to access this menu.

**Overview map:** Open and close the overview map to provide geographical context of the current map extent.
The toolbar contains many tools that are grouped together by their functions. The default tab that appears is the **Getting Around** tab:

<table>
<thead>
<tr>
<th>Getting Around</th>
<th>Maps &amp; Data Sources</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan</td>
<td>Print</td>
<td>Print and Share</td>
</tr>
<tr>
<td>Zoom In</td>
<td>Export</td>
<td></td>
</tr>
<tr>
<td>Zoom Out</td>
<td>Show Data</td>
<td></td>
</tr>
<tr>
<td>Initial View</td>
<td>Show Layers</td>
<td></td>
</tr>
<tr>
<td>Previous Extent</td>
<td>Show Legend</td>
<td></td>
</tr>
<tr>
<td>Next Extent</td>
<td>Upload Data</td>
<td></td>
</tr>
<tr>
<td>Bookmarks</td>
<td>Add Layers</td>
<td></td>
</tr>
</tbody>
</table>

**Maps & Data Sources** tab:

<table>
<thead>
<tr>
<th>Getting Around</th>
<th>Maps &amp; Data Sources</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show Layers</td>
<td>Upload Data</td>
<td>Text</td>
</tr>
<tr>
<td>Map Layers</td>
<td>Add Data</td>
<td>Draw</td>
</tr>
<tr>
<td>Google Street View</td>
<td>Coordinates</td>
<td>Find Data</td>
</tr>
<tr>
<td>External Mapping</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tasks** tab:

<table>
<thead>
<tr>
<th>Getting Around</th>
<th>Maps &amp; Data Sources</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td>Rectangle</td>
<td>Line</td>
</tr>
<tr>
<td>Export</td>
<td>Query</td>
<td>Edit</td>
</tr>
<tr>
<td></td>
<td>Filter</td>
<td>Edit</td>
</tr>
<tr>
<td></td>
<td>Find an active survey monument</td>
<td>Export Drawings</td>
</tr>
</tbody>
</table>

3. **The Layer List**

Because the City of Albuquerque has many available data layers, the layers in the Map Layers list are organized into groups that you can collapse and expand. When you first open the viewer some groups will be expanded and others will be closed. Similarly, some layers may be visible while others are not. Beside each layer and group, there is a check box that is used to turn the layers on or off. Beside layer groups there is a plus icon or minus icon that you use to expand or collapse the layers inside the group. Expanding and collapsing groups does not change which layers are visible on the map – it
simply helps the map stay organized. The transparency sliders beside some layers makes it possible to adjust the transparency so that you can see other layers and the basemap through them.

4. The Panel Actions menu

The functions available in this menu change depending on what you are doing in the map. For example, when viewing the Layer List the options are “Show Legend” and “Change Layer Drawing Order”. When viewing the details of a feature that you have identified, the menu options change to “Show Expanded View”, “Show Buffer Options”, “Zoom to Feature”, “Pan”, and “Copy to Drawing Layer”.
5. The “I want to…” menu
The “I want to…” button in the upper left of the map allows access to some of the most important tasks, including the Address Search, print a map, and identify features by rectangle or freehand shape. The Open, Save, and Save as project buttons are grayed out until you sign in. Only city employees can sign in and use the project tools. Projects are not available to the public.

6. Address Search
1. From the “I want to…” menu select “Find an address”.
2. Enter the street number and street name.
3. You can also search for a street intersection in the street name box by separating the street names with a &, @, or | symbol. For example: Central @ Carlisle, or 3rd | Lomas.
4. Choose the best selection from the results list and click Select.
5. When you run the address search the map will zoom to that location and the information panel will populate with a number of results from pre-configured layers that intersect with that point on the map. The data layers that populate are IDO Zoning, Land Use, Fire Station District, Bernalillo County Parcels, Neighborhood Association, Municipal Limits, Zone Grid, Police Area Command, City Council District, County Commission District, NM Senate District, NM Representative District, Flood Zones 2012, Elementary School District, Middle School District, and High School District.
7. Find Data Layers

7.1  Layer Themes

Layer themes are subsets of the Layer List that make it possible to quickly flip between sets of layers that are defined for different purposes. The layers that are included in a layer theme have something in common, like the city bus system, parks and open space, political boundaries, or schools. Using layer themes can streamline and simplify layer selection.

7.2  Layer Filter

The Layer Filter allows you to quickly find layers in the layer list by removing all layers that do not contain the letters typed in the filter.
8. Find Information

8.1 Global search tool
The search box allows you to search for features on the map, like an address, park, police station, survey monument, etc. Not all layers are searchable in this box.
When you type a word into the Search box and hit enter or click the **Search** icon, the results start to display in the results list immediately, even though the search is continuing in the background. More items display in the results list as they are found.

![Search Results](image)

**This search for “petroglyph” found 149 results.**

Click on any of the results in the list to zoom to that feature.

---

### 8.2 Identify tools

The default function for a single mouse click on the map is the Identify function. At any time just click a feature on the map and the application finds information about the features at that point or in that area and displays them in a map tip box. Point Identify is on by default at all times, unless you turn another tool on. Only the layers that are turned on will be identified in the map tip.

![Identify Tools](image)

**Drop down to select layers identified with mouse click**

**Map tip window**

**Click to view feature details**
In the Tasks tab there is a multi-tool that allows you to use the Identify function over areas larger than a single point. By choosing the method of Identify you can find information about features that intersect with a line, a polygon, or a rectangle that you draw on the map with your mouse.

- In the Tasks tab, click the arrow next to the Identify multi-tool to choose your selection method.

- To identify features in multiple locations at once, click “Enable Add Results”. With this turned on your Results List will continue to grow with each Identify shape you draw. Click “Enable Subtract Results” to remove specific features from the results list by selecting them on the map.

- To choose which layers you want to identify and which you do not, click on “Identifiable Layers”. To only identify a specific set of data, click “Clear All” then click the check box next to the layers you’re interested in.
  - NOTE: Making a layer identifiable Does Not turn the layer on in the map. To view and identify a layer, you must make sure that you have first turned it on in the Layer List by clicking the check box next to the layer name.
To identify surrounding features within a distance of the mouse click or the shape you draw, click the Enable Buffering button. Set the distance to buffer and the units, check the box next to Write to Drawing Layer to create a graphic of the buffer, click Continue, then click on the map or draw a shape to identify the features. See section 8.4 for more details.
8.3 How to use the Results

Once you have done a search or identified features from the map you can interact with the results to get more information.

- To highlight the returned feature, hover your cursor over the result in the Results Pane.

- To zoom to and highlight the returned feature, click anywhere in the light blue result box. This also opens the attribute details for that specific feature in the Results Pane. To return to the previous list of results, click the 'X' in the upper right corner of the Results Pane. Some layers, like Neighborhood Associations and City Council Districts, have links to view additional information. Click the link and a new window will open in your browser.
Attribute Details

- **Close feature attributes**
- **Highlighted Feature**
- **Hyperlink to additional information**

**Highlighted Feature**
- Name: The Manors at Mirehaven Community Association
- Acronym: MAN
- Status: Unrecognized

**Hyperlink to additional information**
- Association Acronym: MAN
- Recognition Status: Unrecognized
- Notify List: Not Applicable
It can be easier to view the results as a table rather than a list. To switch to table view, click the Panel Actions Menu at the top of the Results List and select Switch to Table.

In table view the individual layers that have been identified are separated into tabs and the features are highlighted in yellow on the map.

Click the three dots to the left of individual attributes to see the Feature Actions list, which has options that apply to that specific feature, like Buffer Options, Zoom and Pan, Remove from Results, and Copy to Drawing Layer (copies the feature to a graphic on the map).

Click the menu icon next to the layer name to see Additional menu options, like Zoom to All, Buffer Options, and Export to various formats. This menu applies to all selected features in the layer.
8.4 Buffer Options

Once you’ve identified a feature you may want to analyze the surrounding landscape from your current location. For example, you may want to get a list of all the parcels with a 300-foot radius of a selected parcel.

1. Identify a feature on the map, then click View Additional Details in the Map Tip window.
2. In the results pane, click the panel actions menu and then click show buffer options.

3. Set the Buffer Options.

Check box to write to printable drawing layer
4. The features that intersect with the buffer will display in the Results pane. The results will include all layers that are currently checked on in the Layer List. To switch to Table view, export the results to another format, or save as a project (City employees only) click the Panel Actions menu.
To view all selected features highlighted in yellow, while in Table View click the Panel Actions menu next to the layer name and click Zoom to All.
8.4.1 Buffer multiple identified features at once

If you have multiple features, like parcels, that you want to identify and then buffer, you can do that using the ‘Enable Add Results’ option in the Identify Tool Options region.

1. In the Tasks tab click on the Identify multi-tool. Click the gray arrow to select an identify mode.

![Identify multi-tool](image1.png)

2. Click the button to **Enable Add Results**. The description will change to **Disable Add Results** while turned on.

![Enable Add Results](image2.png)

3. Begin selecting features on the map. New features will be added to the selection every time you click or draw a shape. To see all of the features that have been selected in yellow highlight, click the Panel Actions menu button at the top of the results list and select **Switch to Table**.

![Switch to Table](image3.png)
4. Once all of the features have been selected, click the Additional Actions menu button next to the layer name and select **Show Buffer Options**.

5. Enter the buffer distance and units. Select **Write to Drawing Layer** to copy the buffer to a printable graphic.
6. Click Continue. All of the features that intersect with the buffer will be highlighted and added to the results table. For additional options, like export to Excel spreadsheet, click the Additional Actions menu button again.

The buffer is added to a graphic drawing layer that can be printed to a map.

Features that intersect the buffer are highlighted in yellow and added to the results table.

Additional Actions menu button for exporting, removing results, etc.
8.5 Simple Query

Use the Simple Query tool to create queries on a layer. For example, you want to know how many parcels in Bernalillo County are larger than 5 Acres. Go to the Tasks tab and click on the Query button.

![Query icon]

The layer you want to query is Bernalillo County Parcels. In the drop down menu, select Bernalillo County Parcels.

Map Area: indicates the scope for the query. Select All or Current Extent. For a spatial intersect with a drawing layer select All Polygon Drawings. This option is available when a drawing has been created from a feature selection (see section 10.4 Copy to Drawing Layer).

Find results area: Indicates the selected data source name that the query applies to. Select All of the following must be true to use the AND operator in the query. Select At least one of the following must be true to use the OR operator in the query.

Expression fields: Select the query subject in the field on the left. Select the operator for the expression in the center field (the list of operators is dependent on whether the subject represents an alphanumeric or numeric value). Type the value being searched for in the field on the right.

![Expression fields example]
Add Condition: If **All of the following must be true** (the AND operator) is selected, AND expression fields are added to the query. If **At least one of the following must be true** (the OR operator) is selected, OR expression fields are added to the query.

Add Subclause: Adds a nested clause to the expression. Note that you can nest only one subclause expression.

Click **Search** to run the query.

The results of a query are listed in the **Query Results** panel, and each item is highlighted on the map. The features do not need to be visible at the current map scale for highlighting to be shown. The number of results returned from a query is limited to 1000. If you need to perform a query with very large results you should perform the query in batches. Ensuring that your query is limited to the current extent instead of the entire map (All) will help reduce the number of results.

8.6 **Filter**

The Filter Builder enables users to filter the features that show on the map. Filtering does not affect which features are listed in search or query results. Filtering is the same as applying a definition query in ArcMap.

The Filter panel contains the same fields and options as the Query panel, but it includes **Clear** and **Filter** buttons at the bottom rather than **Search**. Clicking **Filter** shows the features specified in the **Filter** panel and hides those that do not match the filter criteria. Clicking **Clear** shows the features that were hidden by filtering.
Filter that shows only the ‘Residential’ category in the IDO Zoning layer.

Clicking Clear re-displays the hidden zoning categories on the map.
9. Add Data to the Map

9.1 Upload Data tool
Data files with spatial or address data can be uploaded by users via the Upload Data tool. A wizard will guide the user through the upload process and the results will be added to the map as a new layer.

1. Click the Upload Data tool on the Maps & Data Sources tab

2. Browse to the location of the file to be uploaded and click Upload.

3. Choose the mapping mode: Spatial Coordinates or Address Data. Spatial Coordinates will plot the coordinate pairs as points on the map. Address Data will batch geocode the table based on the address field (If your spreadsheet contains separate fields for street number, street name, street type, etc., you must concatenate them into one singular address field before using this geocode tool).

4. Select the field(s) that contains the full address or the coordinates from the drop down.

5. Select the spatial reference that the XY (or Lat and Long) coordinates are in.
   a. By default, the Spatial Reference drop-down menu is set to WGS 1984. If you require another spatial reference system not available in the drop-down menu, you may select Custom WKID/WKT and enter a custom spatial reference in the text input box.

6. You can leave the SearchExtent (Address Data mode) field empty.

7. Select or un-select the box to use the first row as a header.
8. Preview the table, and click Confirm.

**Mapping mode: Address Data**

9. Create a name for the new layer

10. The viewer alerts the user whether each table record passed or failed.
11. Modify how the new layer is represented on the map. You can choose the color, size, and shape of the layer's symbols.

12. The new layer appears at the top of the layer list. From there you can interact with the layer as you would any other layer in the layer list. Click the gray arrow next to the layer to see available actions.
9.2 Add Layers tool

The Add Layers tool lets you add layers and services from configured service connections. If you have a URL for a service, you can add it with this tool, or search for layers available through ArcGIS Online.

1. For example, if you want to add Census Tracts to the map you can search for census tracts available through ArcGIS Online.

2. Click the ArcGIS Online Service Connection

3. Select the service ‘USA Census Tracts’
4. Click the blue plus ‘+’ symbol to add the service to the map. This will automatically zoom the map to the extent of the United States. To return to the previous extent click on the Getting Around tab, then click ‘Initial View’

5. The service appears as a layer at the top of the Layer List. Click the gray arrow to see available layer options. Click a feature on the map to view feature details.
9.3 Plot Coordinates

The Plot Coordinates tool implements the ability for you to show the coordinates for specific locations on the map. To show the coordinates for a particular location, either select the location on the map or input coordinates using text boxes in the Plot Coordinates panel.

Alternatively, you can right-click the map and select the Plot a Coordinate option.
While the Plot Coordinates panel is open, the active coordinate system can be changed with the **Coordinate System** drop-down menu.

You can choose to show, hide, edit, or remove any saved plotted coordinate from a list of available actions by selecting the "***" icon next to a coordinate in the Plot Coordinates panel.

![Coordinate 1 Actions](image)

**Note:** Plotted coordinates can also be removed with the Edit Drawings multitool used to remove markup and measurements.

The icon and the callout map tips on the map indicate that the y are being edited by turning blue. The user can select a new location on the map or edit the coordinates using the text boxes and selecting the **Update** button.

![Plot Coordinates](image)

You can show or hide all coordinates with the Show All Coordinates, Hide All Coordinates, and Delete All Coordinates actions available from the Plot Coordinates panel's Action Menu. This menu is accessed from the "***" icon at the top of the panel.
10. Draw and Measure tools

10.1 Markup

The Draw tool, located in the Tasks tab, allows you to add markup text and shapes to the map. Markup is added to the map’s drawing layer. The drawing layer does not appear in the layer list.

Markup exists only for the duration of the session—when you close the viewer, the markup disappears. To save markup across sessions and share it with other users, a signed-in user can save a project. City employees can sign with their employee number.

To add a markup to the map select the drawing template from the multi-tool and use your mouse to draw a shape. For text, click on the map then type the text in the window.

To add a shape select the template, then click and drag on the map with your mouse. When you are finished drawing click the Draw Multitool button again to close the tool.
10.2 Edit Drawings

There are two ways to enter the edit mode for drawings: by clicking on the drawing and selecting it from the map tip window, or by turning on the Edit Drawings tool and clicking the drawing on the map.

- If you click a feature overlaid by the drawing, the feature and the drawing are included in the map tip.
If you click a drawing that does not include another feature:

- A map tip opens identifying the drawing.
- The drawing is placed in edit mode.
- Edit handles (not applicable to Points) are visible.

You can also enter edit mode by clicking on the Edit Drawings tool in the toolbar, then clicking on the drawing that you want to edit.
When the drawing is in edit mode:

- Depending on the type of drawing (point, text, circle, rectangle and so on), you can edit text, add, delete or move vertices, relocate the drawing on the map, rotate it, and resize it.
- Change the styles for the drawing by clicking **Styles** in the map tip to open the **Select Drawing Style** panel.

![Style options for a Polygon drawing](image)

**Style options for a Polygon drawing**

- You can edit drawings that are overlaid on the map. Each drawing can be selected in the map tip, either from the drop down list or by using the next page and previous page arrows.

To remove drawings from the map, select a drawing and enter edit mode. Click the dropdown arrow next to the edit tool and select Erase or Clear.

![Erase and Clear options](image)

**Erase and Export Drawings**
• **Erase:** While this is activated you can click individual drawings and remove them one at a time. If you click a point where more than one drawing overlap, both of the drawings will be removed.

• **Clear:** All drawings on the map will be permanently erased.

10.3 **Export Drawings**

Export all drawings from the map to shapefiles.

- The Export Drawings tool extracts the markup layer and creates an Export.zip file containing all of the drawings as shapefiles. This feature is enabled only after markup has been added to the map via the Draw tool.
- If the Edit Drawings tool is enabled, the Export Drawings tool will be disabled.
- When the Export Drawings tool is selected, a confirmation dialog will appear. Once accepted, the Export.zip file is saved to the user’s device.
10.4 Copy to Drawing Layer
If a feature is selected and the panel displays its feature details, the user can use the Feature Actions Menu to access the Copy to Drawing Layer action. This copies the geometry of the selected feature to the drawing layer. You can then interact with a markup version of the feature in the same way that you would interact with and edit other markup on the map.

10.5 Advanced Measure Tool
The Measurement tool, located on the Tasks tab, implements the ability to measure distances and areas on the map. Draw shapes by clicking with your mouse at each vertex (turn or corner). To finish a shape, double click. Draw lines to get length, and draw any of the closed shapes to get area.
When you add a measurement drawing to the map and then click the drawing, it is automatically placed in edit mode. The edit handles for the drawing are visible, and the map tip opens. The map tip includes the dimensions for the associated drawing.

When you change the length or shape of the drawing on the map, the dimensions change in the map tip.

**10.6 Measurement Data and the Results Table**

The Results Table opens when you complete the first measurement. Each measurement appears on a new tab. If the measurement shape is made up of straight lines, the table contains one line for each segment of the measurement.

When you select a row in the table the map pans to the shape that the row represents. It highlights the shape on the map and opens a map tip containing the data from that row.

You can export the measurement data to a file by selecting the Export Results option in the Panel Actions Menu.
11. **Print a Map**

Click the Print button from the Getting Around tab, the Tasks tab, or the “I want to...” button.

a. Select a Layout.

b. Select an Output Format.

c. Pan and zoom the map to center the area of interest in the map viewport. Zooming the map does not change the scale at which the map prints.

d. Select the Lock print preview with map checkbox to lock the print preview overlay (light red area) to a position on the map. Deselect the checkbox to move the print preview extent around the map. If you can’t see the borders of the print preview, zoom out.

e. Change the Map Scale setting as needed to ensure the overlay covers the desired area. The Map Scale setting's Current Extent option guarantees that everything in the viewport will be printed.

f. Click Print and wait to be prompted to download the printout.
Everything visible within the Print Preview red rectangle will be printed.

Click Print to create map.

Layers turned on in the Layer List will display in the Legend. Layers with complex symbology, like IDO Zoning, will fill the entire legend. If you don’t need the layer visible in the map then turn it off before printing.
12. **Google Street View**

You can view an image from Google Street View for a location on the map (there are some areas that do not have Google images). It will first open in a new window or tab in the internet browser, but it can also be docked inside the map application by using the tools in the top right corner of the Google Street View image.

*Google Street View opens in a separate window*
Moving the viewpoint indicator on the map will dynamically change the Google Street View location.

Moving in Street View by panning and clicking the arrows will also move the viewpoint indicator on the map.

Dock Street Viewer under map or open new window

Zoom Street Viewer to map location

Close Google Street View

Viewpoint indicator

Google Street View docked in map viewer