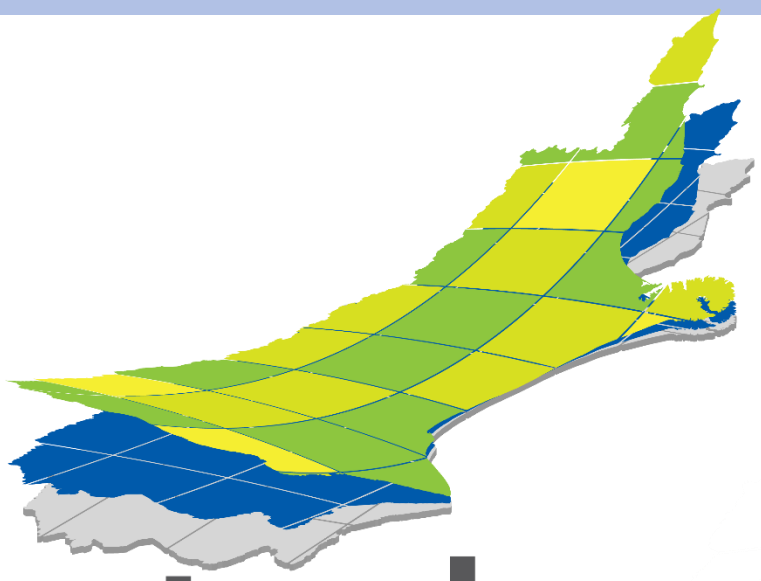

canterbury maps

CANTERBURY MAPS
INTRODUCTORY TRAINING

Training Workbook

info@canterburymaps.govt.nz

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Course Introduction

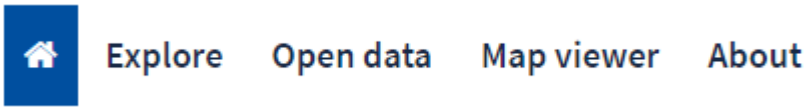
Canterbury Maps is a free to use public Geographic Information System (GIS) viewer brought to you by a collaboration of all local councils within Canterbury. It is a web based platform that is accessible from any computer with an internet browser and internet connection. It is also accessible from Apple and Android mobile devices via the browser or the app. This Introduction Training is designed to introduce you to the Canterbury Maps Map Viewer. It covers how to find and access the GIS layers available on the site and how to use some of the basic tools in the Map Viewer to explore those layers.

Lesson 1: Getting Started with Canterbury Maps

Canterbury Maps is a fully online system aimed primarily at consultants, local business and the public. You can access it from work or home from any computer with the internet via this URL https://canterburymaps.govt.nz/

Canterbury Maps homepage

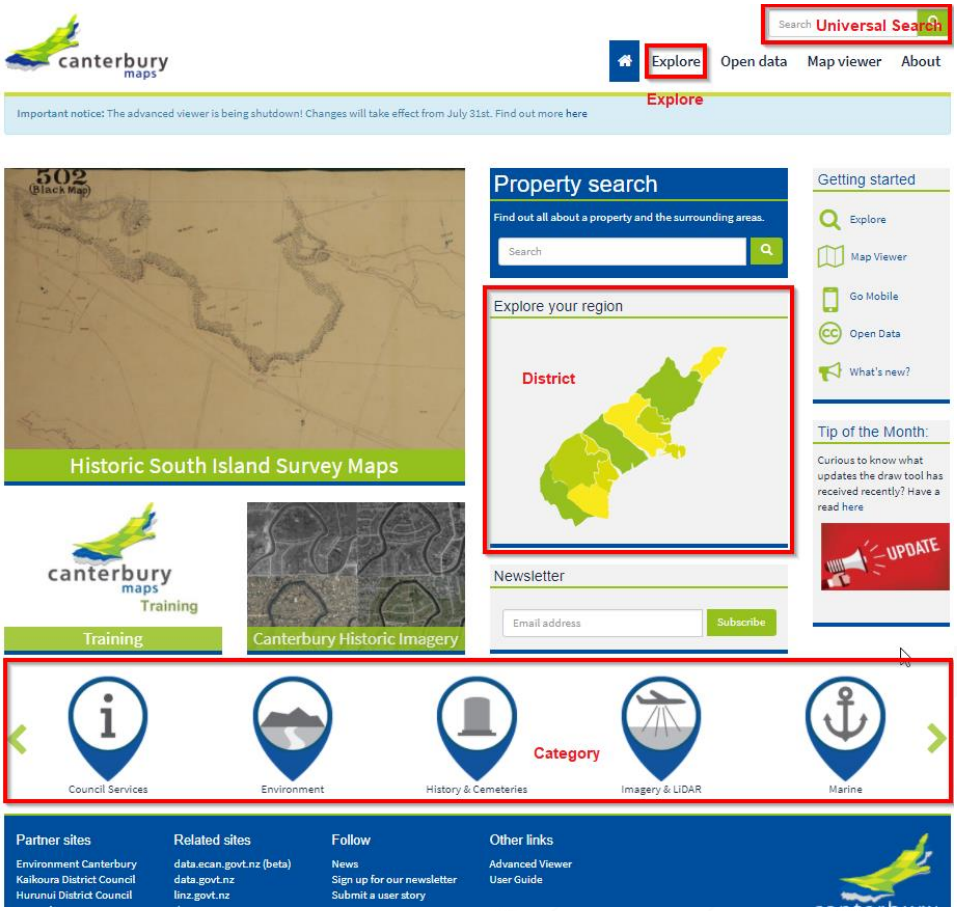
The Canterbury Maps homepage displays everything you need to get started from **featured content** to **district specific homepages**, an **open data site** and a **map viewer** plus much more.



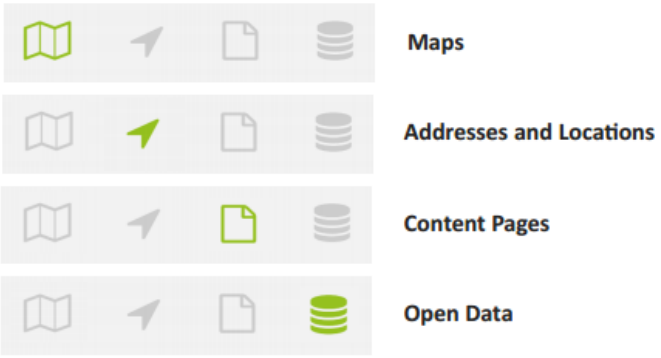
Explore

The explore tab lets you search for data available on the Canterbury Maps website. Interactively search for maps, addresses and locations, website content and open data. There are several ways to search for content from the Canterbury Maps home page. All search options will take you through to the explore page.

- Type a keyword, address or place name in the top right corner universal search box.
- Click on a district in Canterbury, then click on the explore tab to view maps and data results in the region.
- Choose a content category.
- Click on the explore tab.



You can also toggle **maps**, **addresses & locations**, **site content** and **open data** on and off to filter the search results.



- **Filter by maps**

- **Filter by content / help pages**

- **Filter by addresses & locations**

- **Filter by open data**

Open Data

Canterbury Maps offers access to a wide range of data, most of which is freely available for reuse and/or download from Canterbury Maps Open data.

You can access our open data on the site through any of the following methods:

Explore

1. Enter a search word, Category and/or District
2. Filter the results to show only Open Data
3. Select the data you want, this will take you to the Canterbury Maps Open Data site where you can download the data

Map viewer

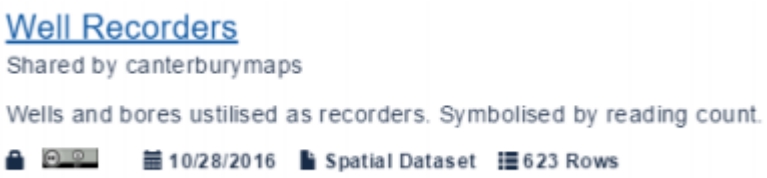
1. Open the Map viewer
2. Open the Add Data tool
3. Enter a search word or scroll through the available list
4. Select Download, this will take you to the Canterbury Maps Open Data site where you can download the data Canterbury Maps

Open Data

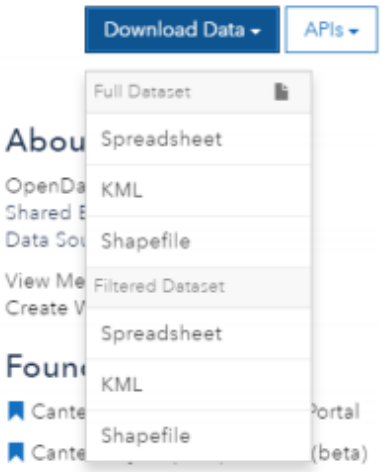
1. Go to Canterbury Maps Open Data by selecting Open data on the top menu bar.
2. Enter a search word or select a Category

Download Data

Click on a dataset name in the open data site to open the download options.



Choose from the available download types: Excel Spreadsheet, KML or Shapefile.



Spreadsheet - a way to view the data in a table format

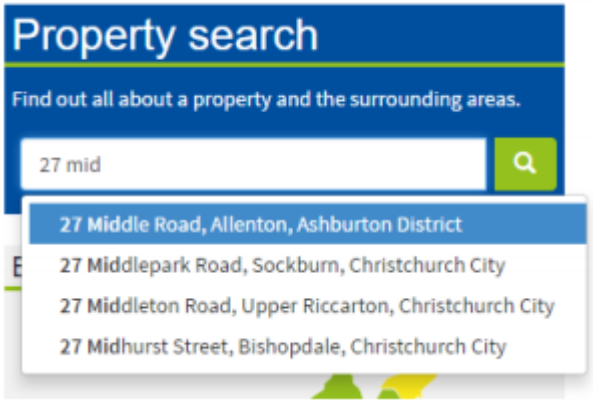
KML - is a file format used to display geographic data in an Earth browser such as Google Earth.

Shapefile - A shapefile is a vector data storage format for storing the location, shape, and attributes of geographic features.

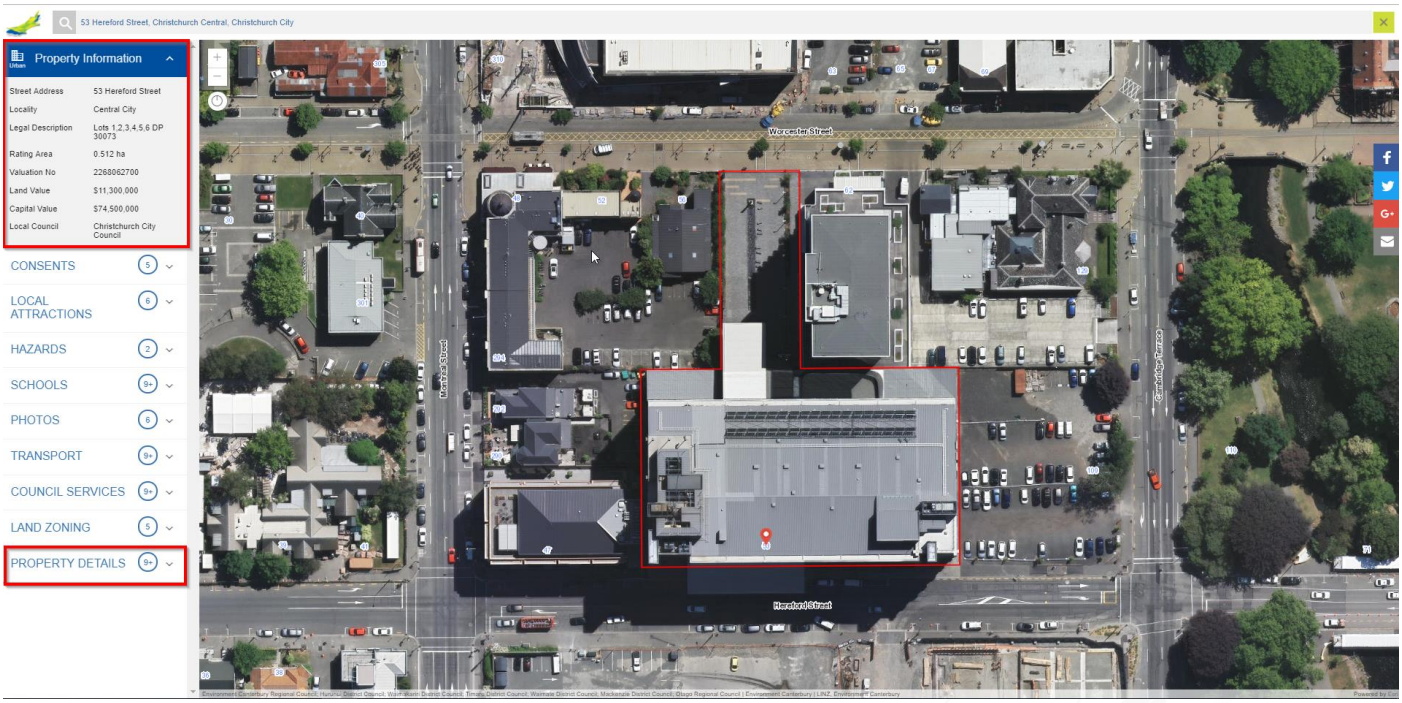
Property Search Tool

Use the updated property search for quick access to information about a property and surrounding areas.

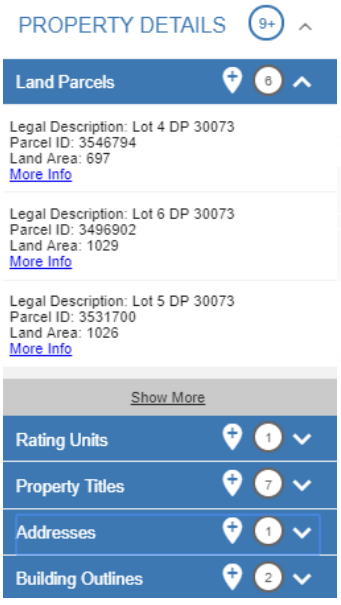
On the homepage type in an address in the **Property Search** box. Matching addresses are displayed to choose from.



A map opens that centres on the property and highlights the address extent based on ratings unit



Information about the property and the surrounding area is grouped into categories in the left panel.

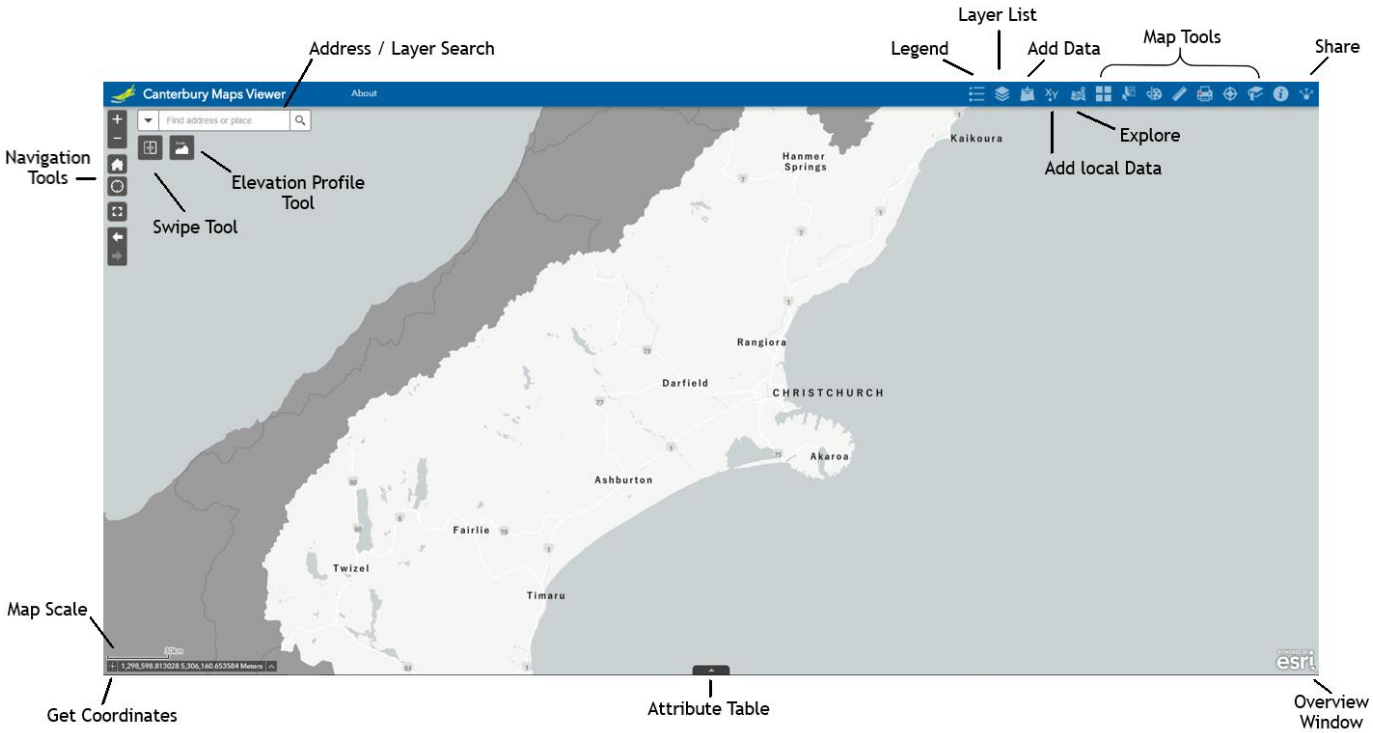


Click on category the drop-down arrow to display the available information (select again to collapse the group).

Lesson 2: Introducing the Map Viewer

The Map Viewer is the main way that you can view and interact with GIS layers in Canterbury Maps. There is a Standard Map Viewer, as well as customised maps that contain layers related to a certain project or work area located in the explore tab.

The Map Viewer contains a range of standard tools to facilitate your exploration of the maps and data available on Canterbury Maps:



Basic Tools

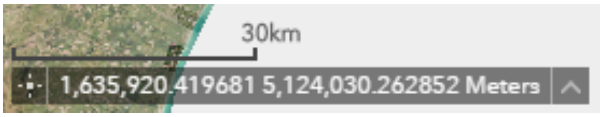
Navigation

The navigation tools found on the left-hand side do a variety of tasks. They allow you to zoom in and out, go back to the default extent, and locate your exact position (need to give permissions to do so). You can also go to the previous and next extents.

Current XY location and map scale

Map coordinates can be found in the bottom left hand corner and are displayed in New Zealand Transverse Mercator (NZTM). This can be changed to World Geodetic System 1984 (WGS 1984) by clicking the arrow. The coordinates dynamically change as you move around the map.

To capture a coordinate, click the **get coordinates** button in the bottom left hand corner to capture on screen coordinates. From here you can add a point on the map, highlight the coordinates, and make a copy of them.



Map Scale

The **scale bar** is displayed in the lower left corner of the viewer. The map scale will dynamically update as you zoom in and out.

Overview Map

Click the **expansion arrow** in the bottom right corner to expand or close the overview panel.

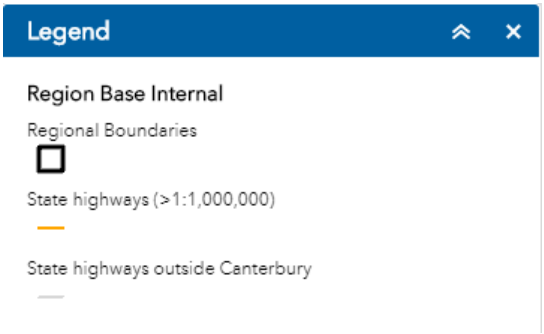
When expanded, click the **maximise icon** to temporarily maximise the overview map. Drag the grey box around the screen for quick access to far away areas of interest.

Full Screen Mode

Click on the full screen icon (located in top right of the map) to open full screen mode.

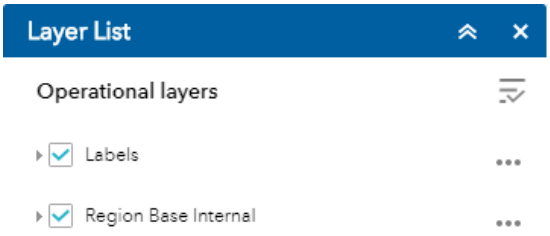
Legend

The legend shows all layers that are currently visible in the map and what the symbology is.



Layer List

The **Layer List** displays list of layers that are currently in the map viewer. At a basic level it allows you to turn layers on and off by ticking the tick box next to the layer. The Layer List is discussed in more detail later on in the course.



Basemap Gallery

The Basemap Gallery allows you to change the basemap of the Map Viewer. Street, topographic, current and historic aerial imagery basemaps are avaliable.

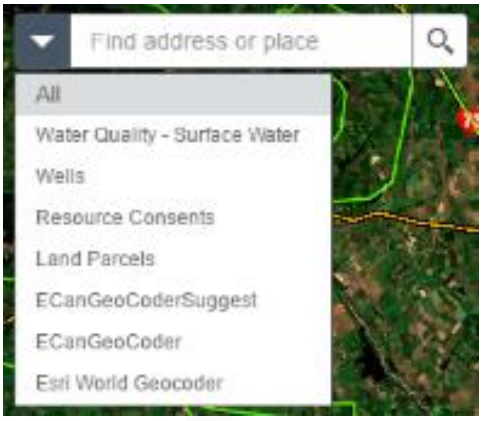
Map Pop-ups

Most GIS layers on the map have pop-ups. Pop-ups display the attribute information of a map feature. They can also contain links and photos.

To look at a feature's pop-up just click it on the map. If you click on one or more features, you will see the number of features in the top right of the pop-up.

Standard Searches

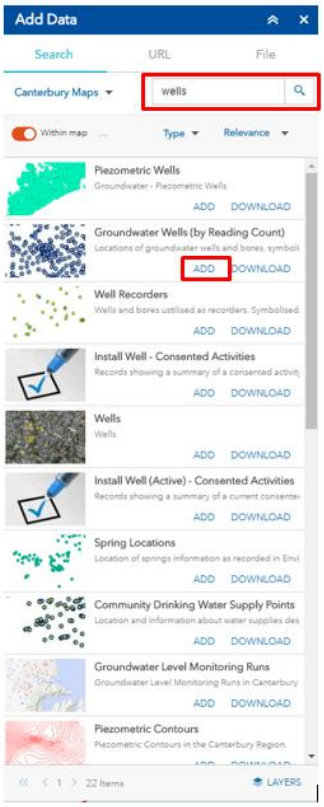
There are some standard searches configured in the Map Viewer. The **search box** in the top left corner operates as a predictive search. When you enter a consent number, well number etc. address or keyword you will see suggestions as you type.



Selecting a suggestion from the drop-down list will zoom the map to that location.

Lesson 3: Adding Map Layers to the Viewer

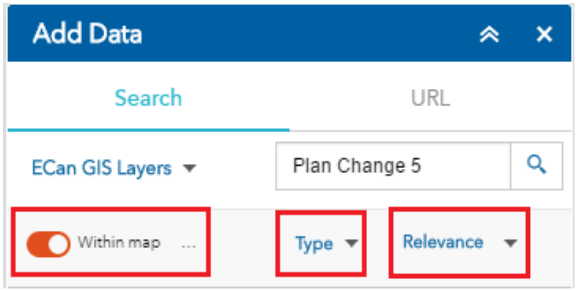
The Standard Map Viewer is pre-loaded with Canterbury place, road and address labels and a region base layer which has administrative boundaries, roads and land parcels. Depending on what map you open, there could be other pre-loaded layers available in the map. There is a tool called 'Add Data' which allows you to search through the entire layer catalogue using a keyword search and add additional layers to your map. The layers that you add in with the Add Data tool are not permanently added to the map and will be removed as soon as you close your browser.



Search for Layers

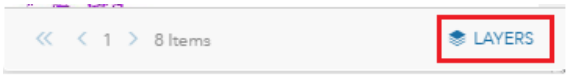
Click the **Add Data** icon  . Search for layers using keywords and click **Add** to add them to the map. When you add a layer to the map it will appear in the **Layer List** and **Legend**.

Clicking on either the **Type** or **Relevance** drop downs allows you to sort the content by the layer title, owner, date etc. Toggling the **Within map** button shows / hides layers within your current map extent

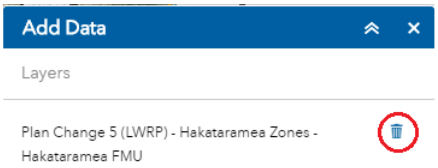


Removing layers from the map

To remove layers from the map that you have added in using the **Add Data** tool, click the **Layers** button in the bottom right of the Add Data



You will see a list of layers that you have added in with the tool. Click the rubbish bin icon to the right of a layer to remove it from the map.

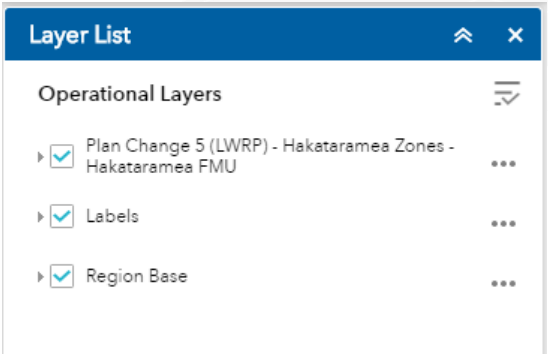


Lesson 4: Using the Layer List

You will have noticed that when you add layers to the map using the **Add Data** tool, they appear in the **Layer List**.

The **Layer List** displays the list of layers that are currently in the map viewer. It allows you to turn layers on and off plus a whole lot of other functionality.

Click on the **Layer List** icon to display the layer list / table of contents in your map viewer.



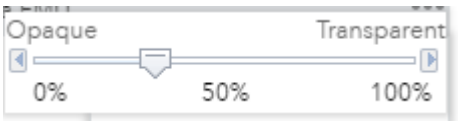
If a layer is greyed out like below, it means that a scale control has been applied to the layer and the features won't be visible in the map. Zoom in on the map until the layer goes from grey to black. The features will now be visible in the map.

Clicking on the three dots ••• to the right of the layer displays the layer menu. This menu includes the following functions:

Transparency

Transparency alters the fading of the layer so you can see features from layers below coming through

To alter the transparency, click the three dots and then adjust the slider as needed

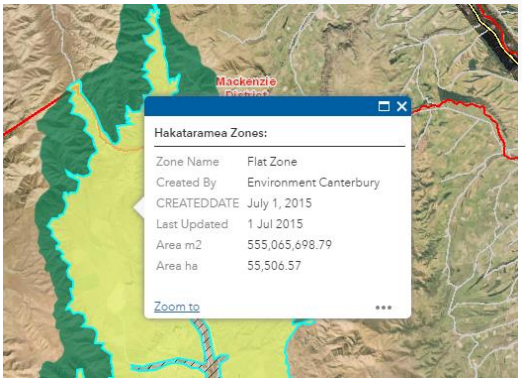


Zoom to

This will zoom to the extent of the layer on the map

Disable Pop-up/Enable Pop-up

Enable / disable the ability to have information pop up when you click a feature on the map

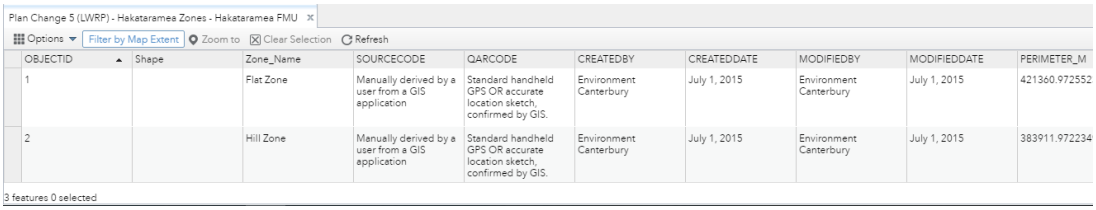


Move up/Move down

Moves the layers up or down one level (above or below other layers)

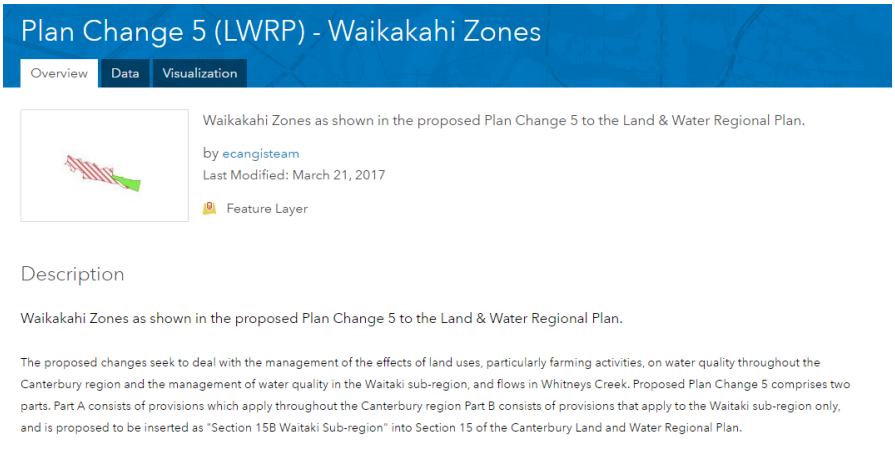
Open Attribute Table

Opens an information table for the layer. We will look at this in more detail later in the session.



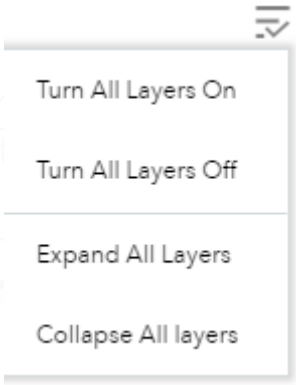
Show Item Details (Metadata)

Takes you to the metadata available for the layer



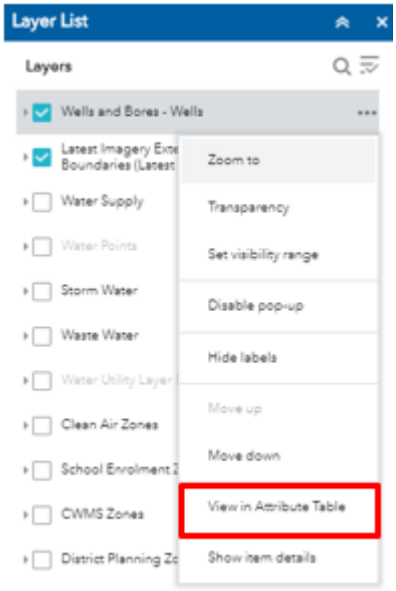
Bulk Operations

Click on the icon in the upper right hand corner of the layer list panel to control the behaviour of all layers. This gives you the ability to turn all layers on and off and expand or collapse all layers



Lesson 5: Attribute Table

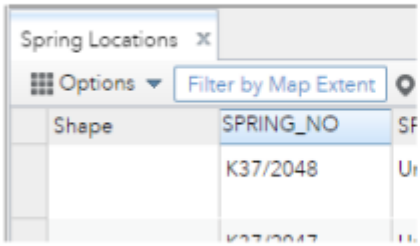
Every layer you add to the map, like wells, planning zones etc. has an attribute table with information about the individual features. Each row in an attribute table relates to a certain point/line/polygon on the map. The attribute values can be used to find, query and select features. To open the attribute table of a map layer, open the **Layer List**, then click the three dots to the right of the layer and click **View in Attribute Table**.



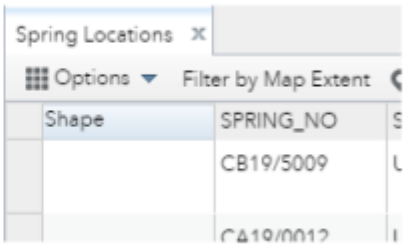
Filter by map extent

When the button is turned on the table will only show features that are displayed in the current map window

Filter by Map Extent On

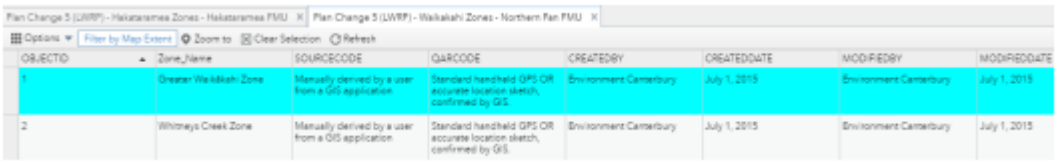


Filter by Map Extent Off

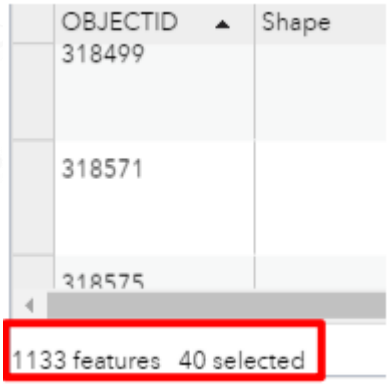


Select and zoom to a record

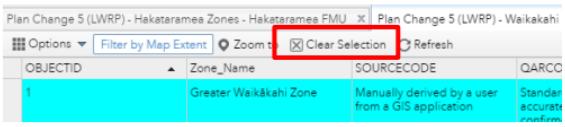
Clicking a record in the table selects it and highlights the corresponding feature on the map. Double clicking on a record will zoom to the feature on the map. Press the Shift or Ctrl key to select multiple records.



The number of features selected are shown on the bottom left of the attribute table

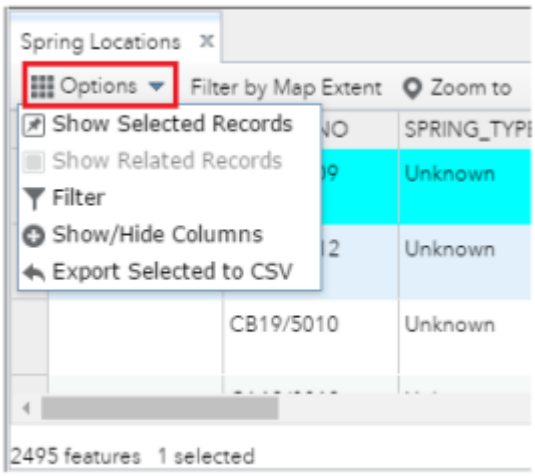


To clear a selection, click on the 'clear selection' button



Options

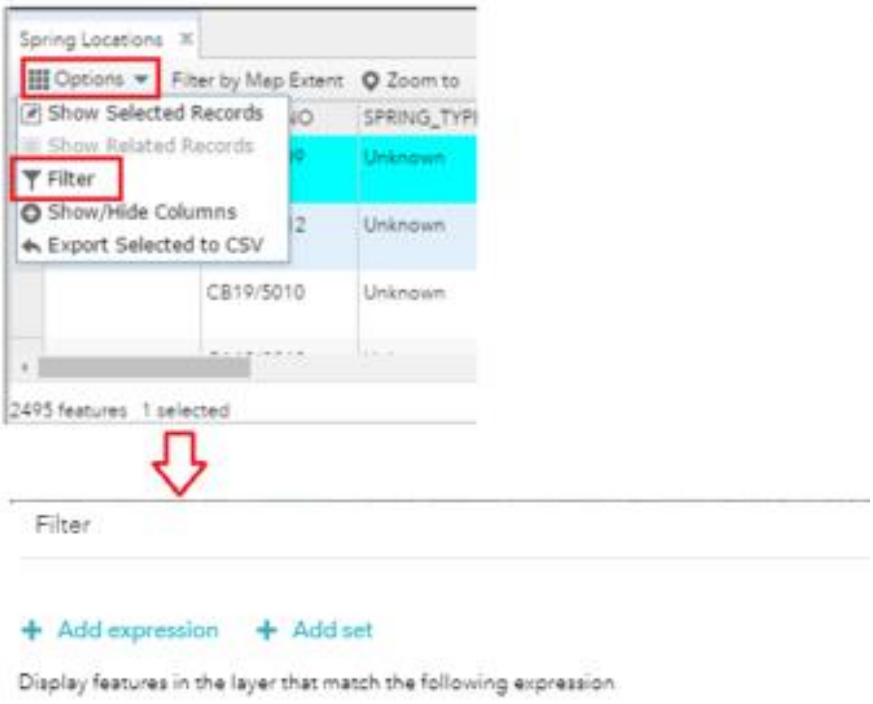
Click the options drop down for more attribute table tools:



- **Show Selected Records –** Only displays selected records
- **Show related records –** Displays related records if a selected record has a related table
- **Filter –** Allows you to filter records in the table on the map (for more information go to the Filter (Attribute Table) section)
- **Show or hide columns –** Equivalent to clicking the plus icon on the right side of the panel to set visibility for individual columns
- **Export to CSV (Excel) –** Exports the table to a CSV file. If records are selected, only the selected records are exported. If no records are selected, all the records are exported

Filter

The **Filter** option in the attribute table allows you to control what data will be shown on the map by applying a query using values in the attribute table. For example, if you had a map layer showing all the consents in Canterbury, you could apply a filter to only show the water take consents. In the attribute table select the layer tab that you want to filter. Click on the options drop down list and select **Filter**. Click **Add a filter expression**.

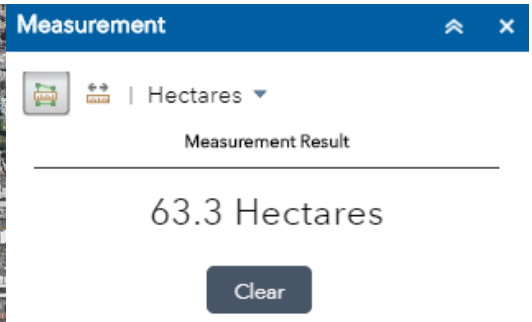


Lesson 6: Measuring Distances and Areas on the Map

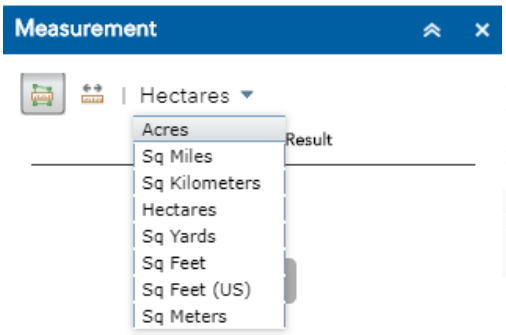
The **Measure Tool** allows you to measure distances and areas on the map.

Click on the Measure tool icon  to open the measurement results panel.

Click on the measuring  tools to start measuring areas or line distances. Click to start measuring and double click to finish.



The measurement units can be changed by choosing from the drop-down list.

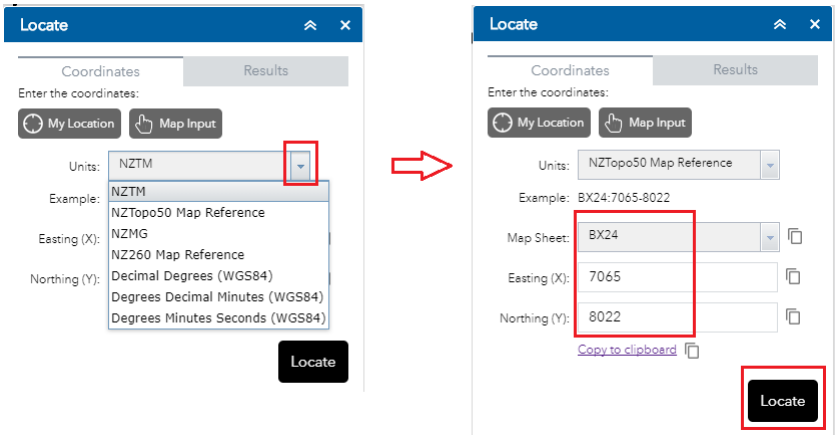


Lesson 7: Zooming to Coordinates and Capturing Coordinates

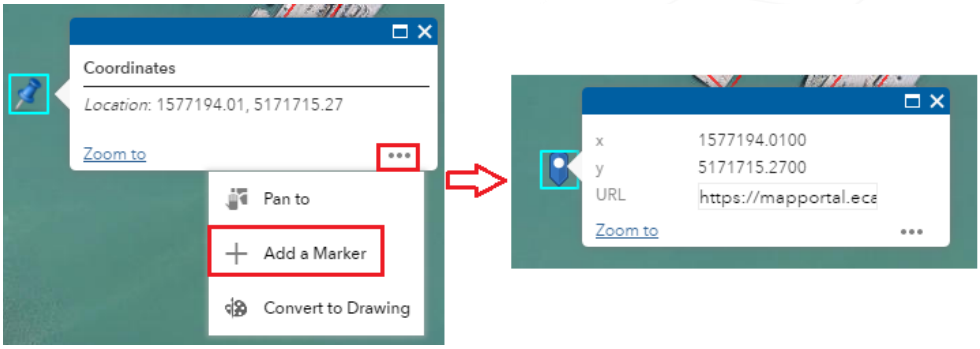
Zoom to Coordinates

Open the Locate tool by clicking on the **Locate** icon  . The Locate tool enables you to enter a coordinate and zoom to it on the map, or to click the map to capture coordinates that you can copy into a document.

Choose a coordinate system and format and enter in coordinates. Make sure you pay attention to the format that you need to enter coordinates in. There is an example of what's required for each coordinate system.



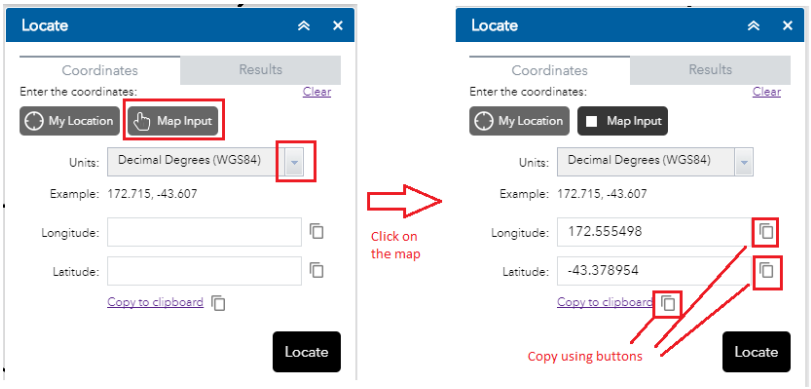
The map will zoom to the location. If you want to enter in a series of coordinates, click the three little dots in the pop-up and choose 'Add a Marker'. This will add a marker to the map at that location and you can go back to the Locate tool and enter further locations.



Capture Coordinates

There are two ways you can capture coordinates. The first is using your current location. This is only valid if you are accessing the map viewer on a device that has an inbuilt GPS.

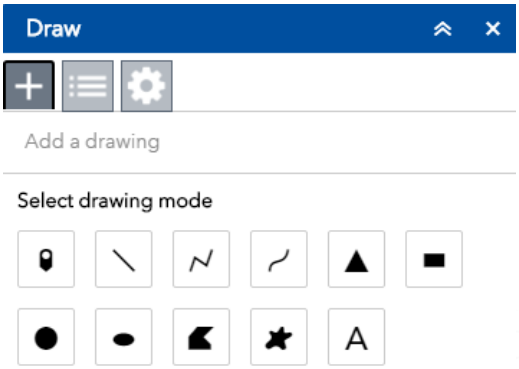
Click the 'Map Input' button, choose the coordinate system and click on the map. The coordinates will appear in the boxes. You can either copy the individual parts of the coordinates or the whole lot using the copy buttons.



Lesson 8: Drawing on the Map and Saving Drawings

Click on the **Draw Tool** icon to open the drawing tools panel. These tools allow you to draw graphics and add labels to your map. It is also possible to save the drawings you create so you can add them to a map in the future.

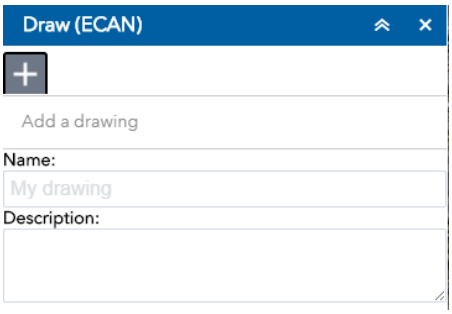
Choose from one of the drawing modes to start creating your graphics.



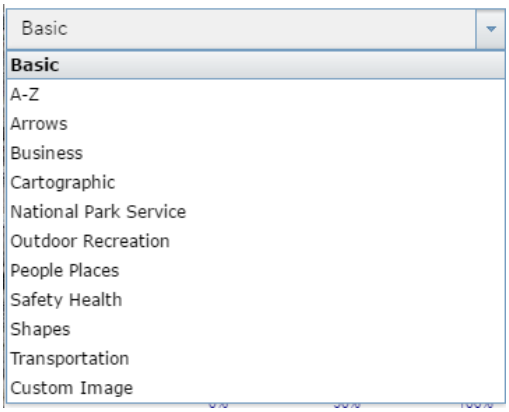
Add a Point

Select the point icon

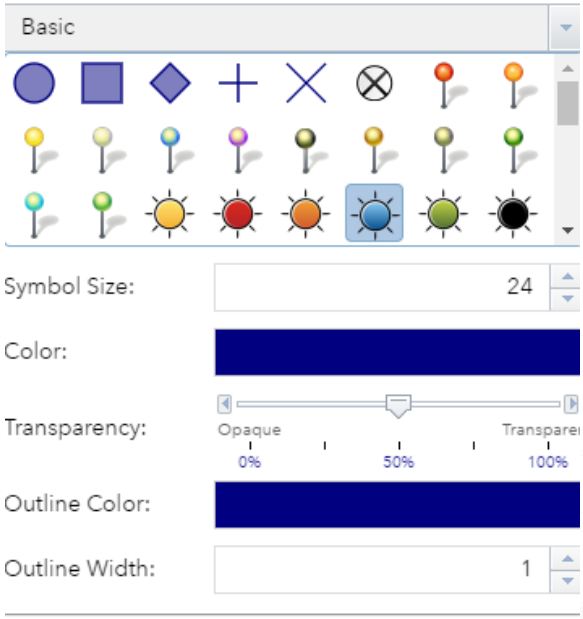
Give your point a name and a description if you wish



Choose a style from the templates available. Click on the drop down to choose from different categories



You can also change the fill and outline colours, the outline width and transparency of basic points. For more complex icons, you can adjust the symbol size



Once you have chosen your icon / marker, click to add a point to your map.

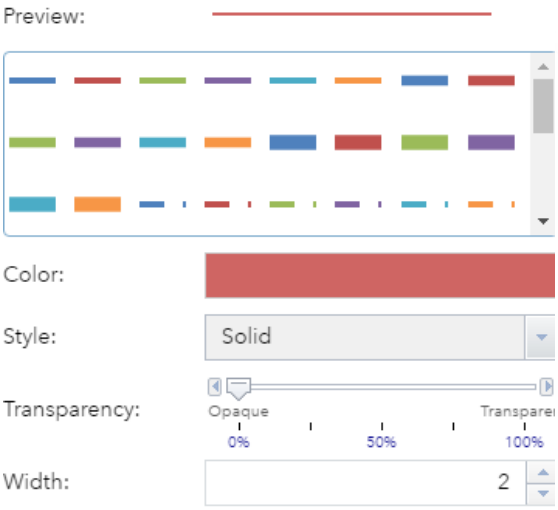
Optionally, you can choose to **Show measurements**. This will display the coordinates of the point with the following options:

- **Map unit** – New Zeland Transverse Mercator (NZTM) is the default map unit
- **Degrees Minutes Seconds** – The world Geodetic System 1984 (WGS1984) with the degrees/minutes/seconds coordinate format
- **Decimal Degrees** – The World Geodetic System 1984 (WGS1984) with the decimal degrees coordinate System

Add a Line

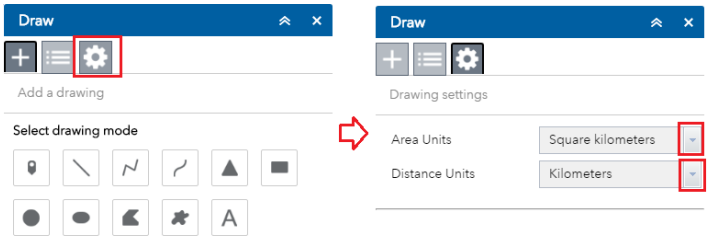
Select from the **line**, **polyline** and **freehand polyline** icons  to draw line graphics on your map

You can select a **template** or choose the **colour**, **width**, **style** and the **transparency** of the line graphics in your map using the settings provided.



As you start to draw your line, the app will dynamically tell you how long the line is as you draw it.

If you would like to change the units shown while you draw, before you start drawing, go to the cog icon. Here you can change the area and distance units

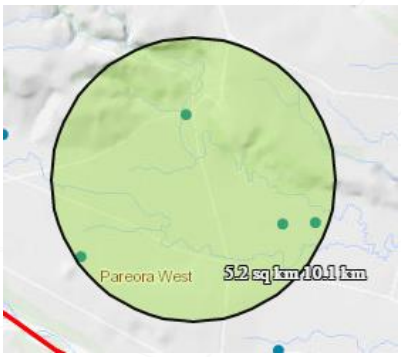


Add an Area/Polygon

Choose from one of the area / polygon icons to draw area graphics on the map

Select a **template** or choose from the **fill** and **outline colours**, **outline width** and **transparency** settings

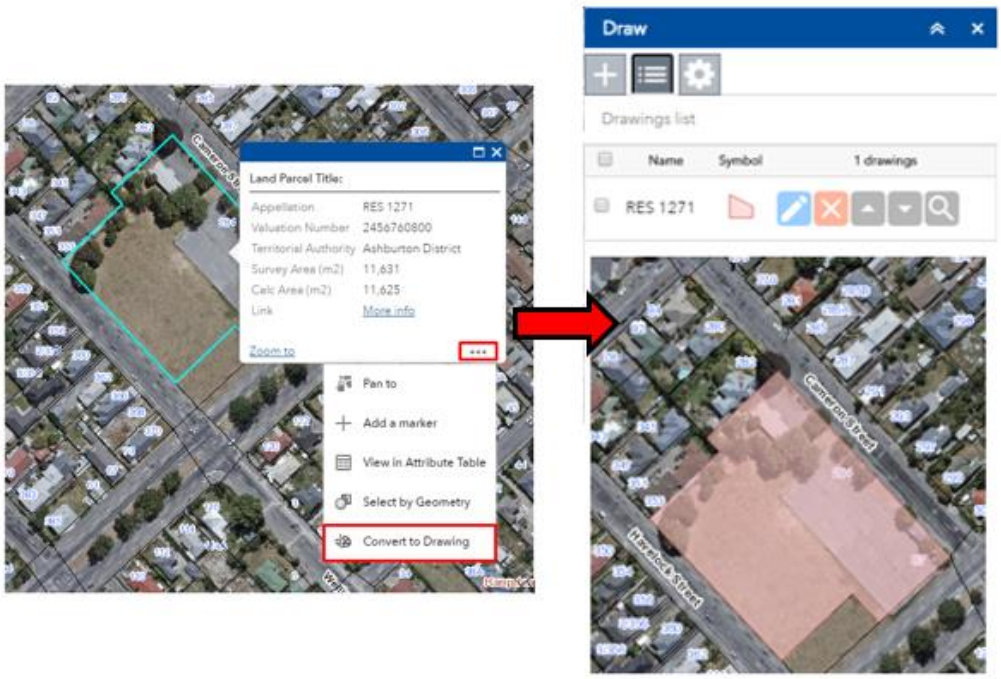
Click on the map to start drawing. As with the lines, the app will dynamically tell you the size of the area and length of the perimeter



Create drawings from existing map features

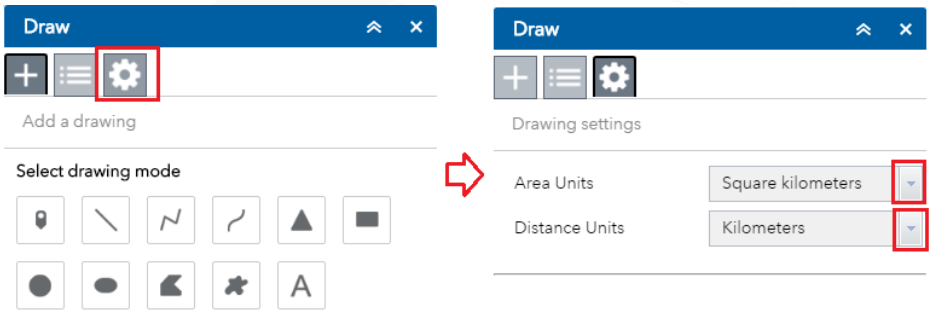
In addition to manually drawing a point, line or polygon you can also send the geometry of existing GIS features to the Draw Tool.

One way of doing this is to click a feature on the map to view its pop-up. Click the three little dots in the bottom right of the pop-up and click '**Convert to Drawing**'. The shape will appear in your drawing list.

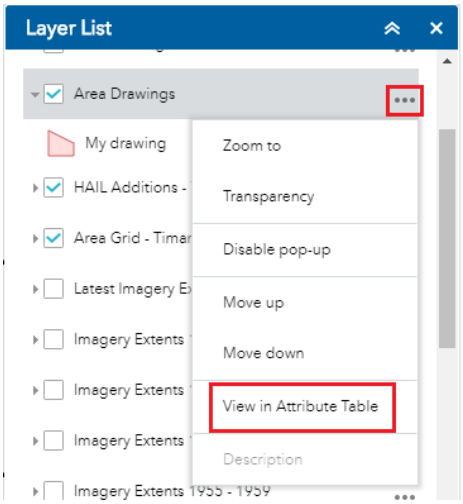


View Measurements in the Attribute Table

The coordinates, length and area of graphics, are stored in the Drawings layer attribute table. The measurements stored are dependent on the geometry type of the drawing and the units chosen before you drew the graphic:

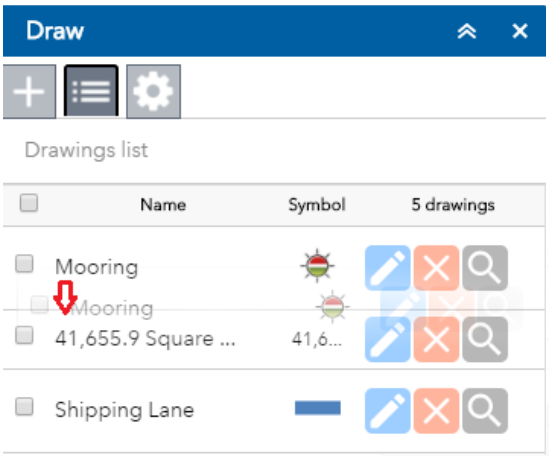


To view the measurements in the **Attribute Table**, go to the **Layer List**, click the three little dots to the right of a Drawings layer and click **View in Attribute Table**.



Edit Drawings

Click on the drawing list icon to open the list of drawn graphics. You can reorder the drawings in the list by dragging and dropping

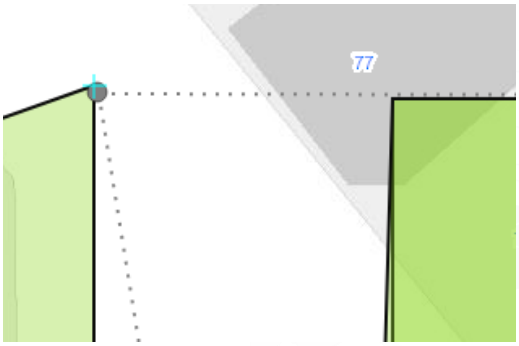


The options to the right of each drawing allows you to change the edit, delete and zoom to the individual graphics.

The edit tool allows you to change the drawing settings and the geometry of a drawing

Click and drag vertices to change the geometry of a shape. Alternatively, click on the centre of a graphic and drag to move the entrie shape

You can delete vertices by right clicking a vertex and then clicking delete



You can snap a vertex to a vertex of another draing by holding the Ctrl key down as you move the vertex, then letting go as the little blue cross appears

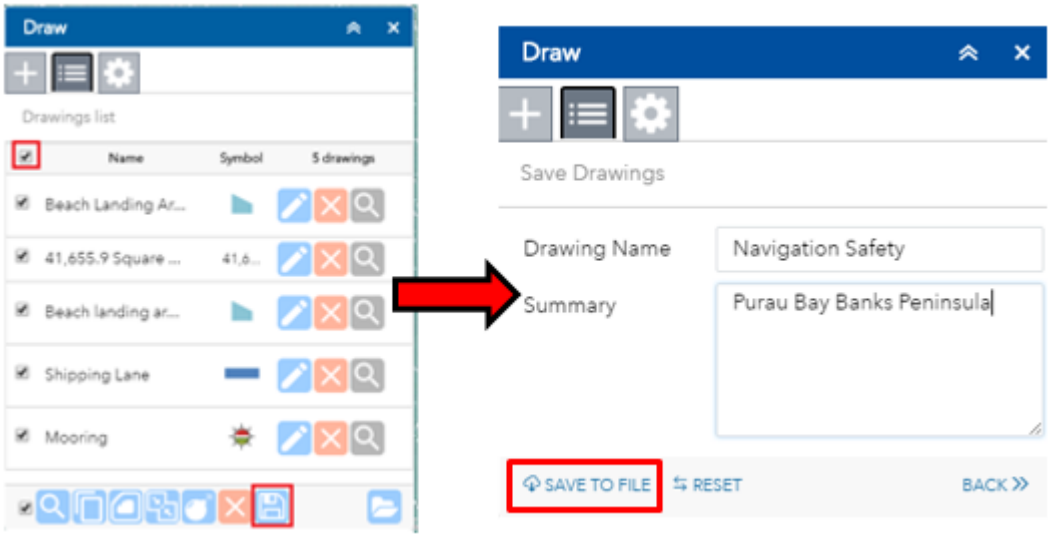
Save drawings

Canterbury Maps allows you to save drawings created using the Draw Tool and to load them back into the Map Viewer at a later date.

You can also share your drawings with others by exporting them as a .json file which they can then load into their Map Viewer session.

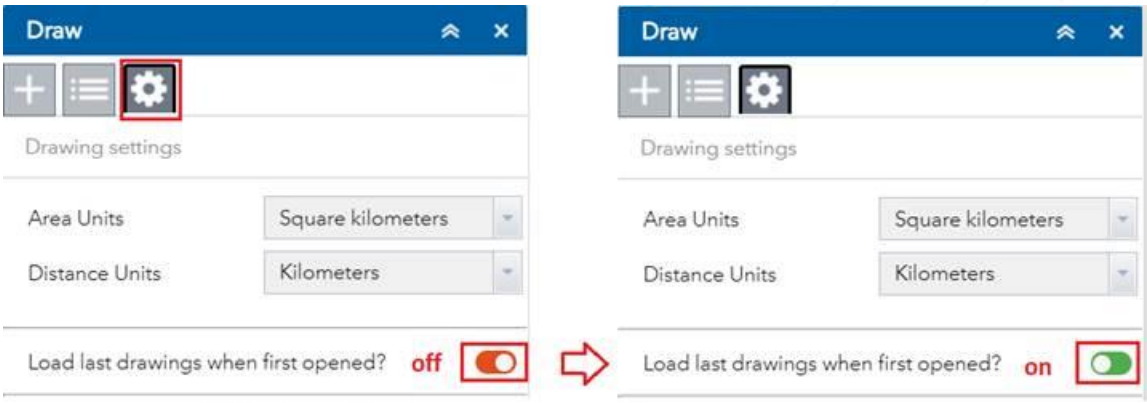
Tick the drawings that you want to save for later use and click the save icon

Give the drawings a name and description and click **Save to File**.



Auto-load Drawings

You can choose if you want the drawings from your latest session to auto load in your next session. Use the toggle in the Draw tool settings tab to turn this function on and off. If you leave it on, the last drawings you worked on will auto load as soon as you open the Draw tool when you next access the map viewer.

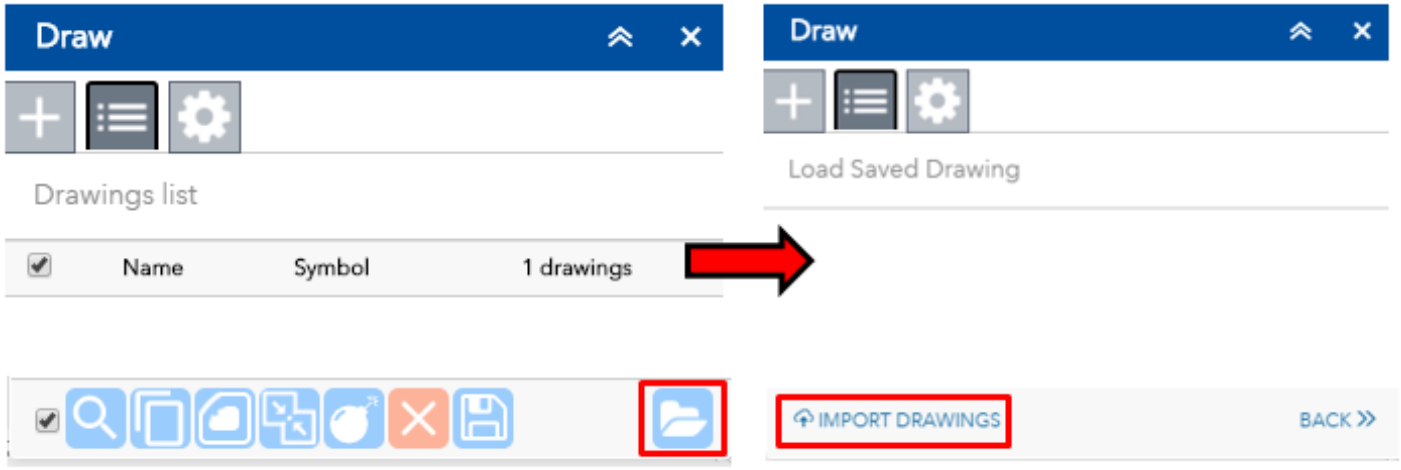


Load Saved Drawings

To load saved drawings into your map, click the **drawing list** icon in the top centre of the **Draw** tool.

Click the import drawings icon on the bottom left

Select **import drawings** at the bottom and locate the file you wish to import

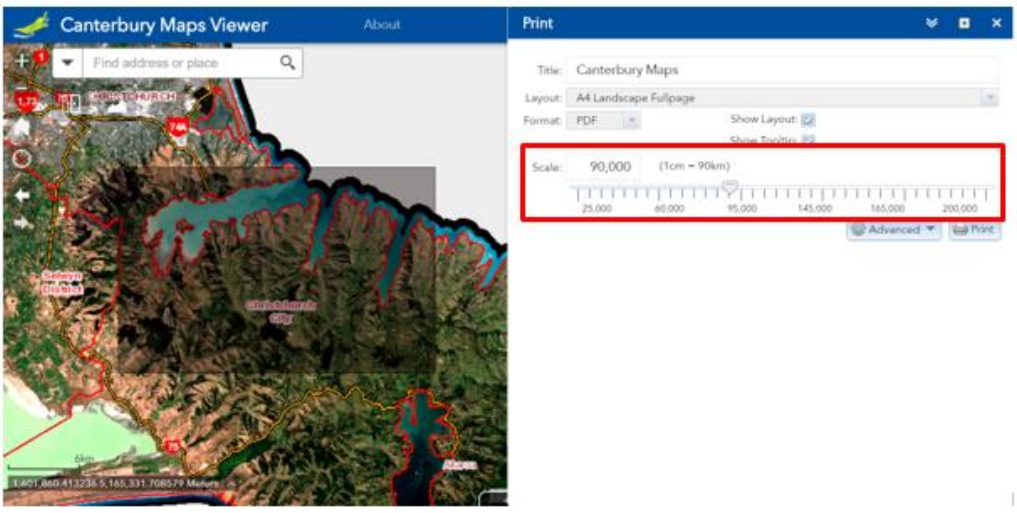


Lesson 9: Printing the Map

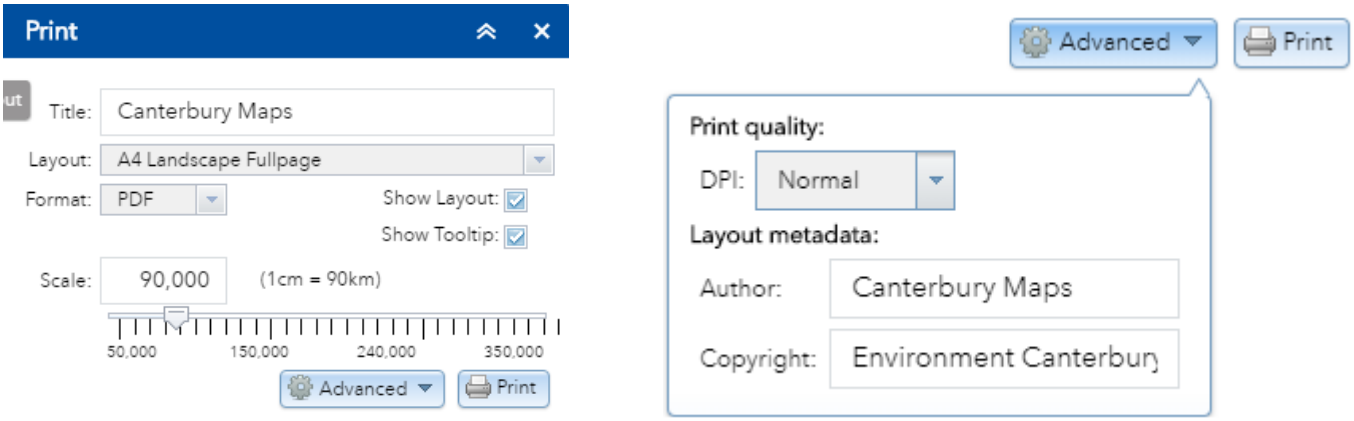
The **Print Tool** lets you print what you see on the Map Viewer to a template that includes a title, scale bar, north arrow, legend, date/time and disclaimers. You can now insert the map into a document or email it to someone.

To print the map, click the Print icon in the top right: 

You will see a box appear on the map. This shows what the print extent will be when the map is printed. You can zoom in and out of the map and drag the map around within the box to change the extent that will be visible in the printed map. It is also possible to specify a map scale by entering a number value or by using the slider scale in the right-hand side panel.



You can also enter in an appropriate title for the map and choose a layout and file type.



The **Advanced** options enable you to change the author and copyright of the map, set the print quality and choose to include the legend or not in the printed map.

Click print. It will take a few moments for the map to generate. Once it's finished, click on the map link which will open the exported map in a new browser tab. You can either print it from there or download it to your computer.