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Introduction

This quick help guide was compiled to assist users in exploring spatial information about the City of Cape Town. The interactive map viewer includes several spatial layers grouped into Themes, which users can interact with. Users can view details of all properties and other spatial data within the City of Cape Town. More detailed layers will be dynamically activated and displayed as the map is zoomed in.

1. User Interface

1.1 Map Area, Tools & Navigation Controls

When launching the viewer, a view similar to that in Fig.1 appears. Below is a description of the basic functions and their usage.

Fig.1 City of Cape Town Map Viewer

1. **Tools/Widgets** - Print, Measurement, Bookmark, Directions, Spatial Search, Identify, Free-text Search text-box, About(Help), Layer List, Overview Map

2. **Navigation Controls** - Zoom in, Zoom out (Alternatively, scroll the computer mouse wheel to zoom in/out on the map), Default/Full extent, My Location (Click to locate your current location in the map area using your internet IP-address)

3. **Moving the map** - Left click in the map area and, while holding down the mouse button, move the mouse in the direction the map should be moved (pan)

4. **Layer List Widget** - Click on the little arrow on the left to expand/collapse layers and Themes/groups. Use the scroll bar to view all the layers.

   To display a layer in the map area, click in the tick-box left of the layer name. To remove the layer from the map area, un-tick the tick-box left of the layer name.
(P.S. The layers are linked to their Themes hierarchically, i.e. If the layer is ticked on, but the theme is ticked off, the layer will not be displayed in the map area)
Click on the ellipses (…) to the right of a layer to see a menu of available options.

5. **Map Area** - The layers displayed in the map area depend on which layers and themes are ticked on in the Layer List and the scale of the map. Some layers cannot be switched on/off and do not appear in the Layer List. These layers form what is called the Base Map.
   
   *For example*: At Full extent only some of the larger roads are visible like freeways and main roads. Zooming in to a suburb will now display all of the roads and the property boundaries.

6. **Attribute Tab** - Click this arrow to open the attribute window that lists all the spatial datasets of the viewer. Click the arrow again to close the window.

### 1.2 Map/Layer Symbology and Labels

The features of the base map are displayed and labelled using a variety of colors and become visible at pre-set scales. The Base Map symbology is as follows:

- Freeways/Highways - thick Pink lines with dark Pink outlines;
- Main roads - thin Orange lines;
- All other roads - thin White lines;
- Property boundaries (Registered Properties) - thin Yellow outline;
- Property boundaries (SG-Approved Properties) - thin Light-Green outline;
- Protected Areas and Nature Reserves - Faded Light-Green shaded areas;
- Dams and Waterbodies – Faded Light-Blue shaded areas (Dams have labels)

The labeling of the Base Map layers can be seen in Fig.2 and Fig.3 below.

![Fig.2 Labels for layers within the base map. (Small Extent)](image)

**NOTE**: The Wards and Subcouncils layers do not draw by default anymore, but can be found under the “Political and Administrative Boundaries” theme in the Layer List.
Street names are labeled in black, street numbers in red, registered property numbers in dark-grey and SG-Approved property numbers in green, as can be seen in Fig.3.

![Fig.3 Labels for layers within the base map. (Large Extent)](image)

2. Basic Tools/Widgets

![Fig.4 Tools (widgets) which can be used to interact with the map](image)

2.1 Identify Tool

The Identify tool is used to retrieve attribute information on a feature clicked in the map area. When the widget is selected, a new window opens with the "Identify" tab selected as can be seen in Fig. 5 below.

![Fig.5 Identify tool/widget](image)
Click on the push-pin icon in the tool’s window. The mouse pointer will change when in the map area to indicate that the Identify tool is now active. Click on a feature and the related spatial attribute data of identified features will be listed in the "Results" tab of the Identify tool’s window. Click the plus sign to expand a specific result, See Fig. 6 below.

![Fig. 6 Identify tool/widget – Results tab (Spatial)](image)

Click “Zoom” to zoom the map area to the identified feature.

Other documents or webpages linked to the identified feature, if applicable, can be viewed under the “Links” tab as can be seen in Fig. 7 below.

![Fig. 7 Identify tool/widget – Results tab (Links)](image)
To open one of the links, simply click on the link result wanted. A new browser window will open and load the linked data chosen. For example, see the result of clicking the “Ward 57 details” linked result in Fig. 8 below.

![Fig. 8 Details of Ward 57 loaded into new browser tab](image)

**P.S.** To clear the results and start a new identify task, click the “Clear” button in the Identify tool/widget.

### 2.2 Measurement Tools

The Measurement tools allow the user to measure area by drawing a polygon, length by drawing a line, or find the coordinates of a specified location in the map area. When the widget is selected, a window appears as can be seen in Fig. 9 below.

![Fig.9 Measurement tool/widget](image)
2.2.1 Measuring Area and Distance

Click the “Area” or the “Distance” button in the measurement tools window depending on which measurements are required. Click on “Sq Meters”/”Meters” to change the unit of measure if required. See Fig. 10 below.

![Units of measure options - Area measurement (Left) and Distance measurement (Right)](image)

Click in the map area to start drawing the shape of the area/distance you want to measure. Move the mouse to the next boundary and click. Continue in this way and double click to end the measurement. The result is displayed in the “Measurement Results” area of the measurement tool window. See Fig. 11 below.

![Measurement result - Area measurement (Left) and Distance measurement (Right)](image)

**P.S.** The units of measure can also be changed after receiving the measurement results. This will convert and show the measurements in the newly selected unit of measure.

2.2.2 Location measurement

To locate the coordinates of a specific feature on the map, click on the “Location” button in the measurement tools window and click on the feature (point) in the map area. Change the unit of measure if required. See Fig.12 below.
Note that the measurement results show the coordinates of the mouse pointer in the map area (Which updates as the mouse is moved) and the coordinates of the clicked feature.

**P.S.** The units of measure can also be changed *after* receiving the measurement results. This will convert and show the measurements in the newly selected unit of measure.

### 2.3 Bookmarks

The Bookmark widget can store map view extents (Locations) that can be used to quickly zoom to a saved area. When the widget is selected, the Bookmark window is displayed.

To create a bookmark, simply type a name into the “Bookmark Name” textbox in the tool’s window and click the Plus button. A new bookmark is added below the textbox with the name specified. See Fig.13 below.

Click on a saved bookmark to automatically zoom and pan the map area to the saved extent. Bookmarks can be removed when they are no longer needed by selecting the bookmark, then clicking on the “Delete” button at the bottom of the tool window.
2.4 Print Tool

The Print tool can be used to create a PDF map of the spatial information seen in the map area. When the widget is selected, a window appears as can be seen in Fig. 14 below. (“Advanced” button clicked)

![Print Tool/Widget](image)

*Fig. 14 Print tool/widget*

Add a title for the map in the “Map Title” textbox and click on the “Advanced” button to change default settings if required. See Fig. 14 above. Click the “Print” button to generate the PDF map. A progress bar will appear in the tool window with the text “Creating Print”.

Once the PDF print has been generated, the progress bar will be replaced by the title chosen for the map. Click this title to open the PDF in a new browser window. See Fig. 15 and Fig. 16 below.

![Generating PDF Print completed](image)

*Fig. 15 Generating PDF Print completed*
The PDF can now be saved, e-mailed or printed using your preferred printer and print settings. **NOTE:** Browser popups must be enabled for printing to function correctly. **P.S.** Old prints can be cleared from the widget window by clicking the “Clear Prints” button.

### 2.5. Directions Tool

The directions widget allows the user to get a set of driving directions to an address or place. When the widget is selected, a window appears as can be seen in Fig. 17 below.

![Directions tool/widget](image)

There are four ways of obtaining a location for this tool’s origin or destination textboxes: An address, a place name, “your current location” or “select address from map”.

*Fig.17 Directions tool/widget*
2.5.1 Obtain locations using addresses or place names

Insert an origin address or place name in the first textbox next to the 📍 icon. Insert the destination address or place in the textbox next to the ✗ icon. If the results did not automatically appear in the tool window, click on "GET DIRECTIONS" to generate the route, distance and travel time.

2.5.2 Obtain locations automatically from map

Click the 📍 icon to retrieve your current location for either the origin or destination textbox.

To select a location from the map, click the pushpin button 📍 and click in the map area to retrieve the address at that location. Note that this button is a toggle switch, in other words it has a state of ON or OFF. While it is switched on, many destinations can be added in the sequence they should be visited. If the results did not automatically appear in the tool window, click on "GET DIRECTIONS" to generate the route, distance and travel time.

The result appears in the tool window as can be seen in Fig. 18 below.

Fig. 18 Driving directions
P.S. Advanced options can be changed by clicking “SHOW MORE OPTIONS” and the current results can be cleared by clicking on “CLEAR” in the tool window.

To print the directions, click the printer button in the tool window. A new browser window opens with the directions in a printable format. Click the “Print” button and select your desired printer and print settings.

2.6. Overview Map Tool

The overview map tool allows the user to view a secondary map of the location in the map area, but at a smaller extent (Zoomed out) to give context to the map area. This tool can be activated by clicking the small arrow in the bottom-right of the browser window as can be seen in Fig. 19 below.

![Fig. 19 How to activate Overview Map Tool](image1.png)

Fig. 19 How to activate Overview Map Tool

The overview map tool can be closed by clicking the same arrow used to open the tool. There is another button available when the tool is open to make the overview map full screen. Click this button again to close the full screen view. See Fig. 20 below.

![Fig. 20 Overview Map usage](image2.png)

Fig. 20 Overview Map usage
2.7 Attribute Table Tool

The green tab at the bottom of the City of Cape Town Map Viewer window opens the Attribute table. This tool/widget allows the user to see the attribute tables of the datasets in the Layer List. See an example of the Libraries attribute table selected in Fig. 21 below.

![Attribute Table Tool/Widget – One record selected](image)

A specific record can be selected by clicking in the grey square to the left of the record in the table. If more than one record needs to be selected, hold down the “Ctrl” or “Shift” button on the PC keyboard while selecting additional records. The selected records’ spatial components are highlighted in the map area, see example in Fig. 21. To zoom the map area to the selected record(s), click the “Zoom to” button as seen in Fig. 22 below. To clear the selected records from the attribute table, click the “Clear Selection” button.

Click the “Options” button to access advanced options. This dropdown menu allows the saving of attribute data to a CSV file and some other advanced options. Click “Filter by Map Extent” to see all the records in the table and not limit the attributes to the features visible in the map area. (This is a toggle switch and is “On” by default, i.e. by default the attribute table only lists records for features visible in the map area) See Fig. 22 below for buttons.

![Attribute Table tool/widget buttons](image)
3. Spatial Search Tool/Widget

The spatial search widget allows the user to search for a specific property using an address, property (erf) number or Farm number. It can also be used to find a specific Ward or all properties that share a specified street. When the widget is selected, a window appears as can be seen in Fig. 23 below.

![Spatial Search Tool/Widget](image)

**Fig. 23 Spatial Search tool/widget**

3.1 Property Search using Address

This tool can be used to locate a specific property using its address as the search criteria or to locate all properties that share a given street name in their address.

3.1.1 Search for a specific property using its address

In the spatial search widget window, click on “Address”. In the new window, as can be seen in Fig. 24 below, enter the street number in the “Address Number is” textbox, the street name in the “Street Name starts with” textbox and click on “Apply” to search for the property at the specified address.
A new window will display the results as can be seen in Fig. 25 below. Click on the wanted result to zoom to the property. (The results are ordered by Suburb name) If the search returned no results, check the spelling of the street name or try the “locate all properties that share a given street name” below.

**Fig.25 Search results – Choose the property searched for**

**P.S.** Click on "<OPTIONS" to return to the “Property Search using Address” tool and “<QUERIES" to return to the “Spatial Search Widget” window. Click “Clear Results” to clear values.
3.1.2 Locate all properties that share a given street name

In the spatial search widget window, click on “Address”. In the new window, as can be seen in Fig. 26 below, leave the “Address Number is” textbox empty, enter the street name in the “Street Name starts with” textbox and click on “Apply” to search for all properties that share the specified street name.

![Spatial search tool using only street name](image)

**Fig.26 Spatial search tool using only street name**

A new window will display the results as can be seen in Fig. 27 below. Click on the wanted result to zoom to the property. (The results are ordered by Suburb name) If the search returned no results, check the spelling of the street name.

![Search results – Choose the property searched for](image)

**Fig.27 Search results – Choose the property searched for**

**P.S.** Click on “<OPTIONS” to return to the “Property Search using Address” tool and “<QUERIES” to return to the “Spatial Search Widget” window. Click “Clear Results” to clear values.
3.2 Property Search using Property (erf) Number

This tool can be used to locate a specific property using its property (erf) number as the search criteria.

In the spatial search widget window, click on “Property”. In the new window, as can be seen in Fig. 28 below, enter the property number in the “Property Number is” textbox and click on “Apply” to search for the property.

![Spatial search tool using Property Number](image)

**Fig.28 Spatial search tool using Property Number**

A new window will display the results, as can be seen in Fig. 29 below. Click on the wanted result to zoom to the property. (The results are ordered by Suburb name)

![Search results – Choose the property searched for](image)

**Fig.29 Search results – Choose the property searched for**

If the search returned no results, check the property number specified.
3.3 Property Search using Farm Number

This tool can be used to locate a specific farm using its property (erf) number and portion (If applicable) as the search criteria.

In the spatial search widget window, click on “Farm”. In the new window, as can be seen in Fig. 30 below, enter the farm number in the “Farm Number starts with” textbox and click on “Apply” to search for the farm.

![Fig.30 Spatial search tool using Farm Number](image)

A new window will display the results as can be seen in Fig. 31 below. Click on the wanted result to zoom to the property.

![Fig.31 Search results – Choose the farm searched for](image)

If the search returned no results, check the farm number specified.

**P.S.** Click on “<OPTIONS” to return to the “Property Search using Farm Number” tool and “<QUERIES” to return to the “Spatial Search Widget” window. Click “Clear Results” to clear values.
3.4 Ward Search by Ward Number

This tool can be used to locate a specific Ward spatially.

In the spatial search widget window, click on “Ward”. In the new window, as can be seen in Fig. 32 below, enter the ward number in the “Ward Number is” textbox and click on “Apply” to search for the Ward.

![Spatial search tool using Ward Number](image)

Fig.32 Spatial search tool using Ward Number

A new window will display the results as can be seen in Fig. 33 below. Click on the wanted result to zoom to the Ward.

![Search results – Choose the Ward searched for](image)

Fig.33 Search results – Choose the Ward searched for

If the search returned no results, check the Ward number specified.

**P.S.** Click on “<OPTIONS” to return to the “Ward Search by Ward Number” tool and “<QUERIES” to return to the “Spatial Search Widget” window. Click “Clear Results” to clear values.
3.5 Advanced Spatial Search Options

All of the tools in the Spatial Search widget have advanced options to use a spatial filter and to add results of the search to the Layer List. See Fig. 34 below.

- Use spatial filter to limit features
- Add result as operational layer
  With this option checked, results will be kept on the map until the "Clear Results" button is clicked.

3.5.1 Using a Spatial filter

Click on the “Use spatial filter to limit features” checkbox to activate this advanced option. Two new options appear: Filter the search results according to what can be seen in the map area and an option for the user to draw a shape in the map area to limit search results within. See Fig. 35 below.

- Only features intersecting the current map area
- Only features intersecting the user-defined area

When the “Only features intersecting the user-defined area” option is selected, the user is presented with a selection of tools to draw a shape in the map area to limit the search. (Hover the mouse-pointer over a tool button to see the tool description.)

Click on the chosen tool and click in the map area to start drawing the required shape, making sure the shape includes the area that needs to be searched. Follow the instructions given in the box that appears near the mouse-pointer in the map area. See Fig. 36 below.
To clear the drawing from the map area, click on the red bin icon called “clear”. Once the spatial filter shape has been drawn, fill out the rest of the tool options as per instructions above in points 3.1 to 3.5.

**P.S.** The search results will only include results that fall within the shape drawn by the user in the map area.

### 3.5.2 Add search result as operational layer

When the “Add result as operational layer” option is selected, the result of the search as highlighted in the map area will be added as a layer in the “Layer List” of the viewer. Here the user can switch the layer on or off as with any other layer.

Using this advanced option; search results from many searches can be added as layers to the “Layer List” of the viewer. These layers can be independently switched on or off in the “Layer List” of the viewer.

**P.S.** To clear the search results and remove the operational layers created by the Spatial Search tool, click the “Clear Results” button in the Spatial Search widget.
4. Free-text Search text-box

The Free-text search textbox, as can be seen in Fig. 37 below, can be used to search for any location, address, place, etc. It functions similarly to an internet search engine.

![Fig. 37 The Free-text Search text-box](image)

Simply start typing in the textbox to see the results appear as in Fig. 38 below. The results keep updating as text is being entered. Choose the desired result to zoom to the feature.

![Fig. 38 Results update as text is being entered](image)

To refine the returned results, click on the down-arrow next to the magnifying glass icon and choose the criteria of the search to be performed. The tick-mark indicates the current search criteria being used. See Fig. 39 below.

![Fig. 39 Available search criteria](image)

**P.S.** The Free-text search tool is optimized for searching for points of interest and street addresses. If the search does not return the desired results when searching using a specific erf/land parcel/property number, try using the Spatial Search Tool/Widget that is optimized for this purpose.
5. About, Contact Information and Disclaimer

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