

SW MAPS

User's Manual

App Version: 1.3



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About this Manual

This purpose of this manual is to serve as a reference document for users of SW Maps.

Chapter 1 is a general introduction of SW Maps and its features.

Chapter 2 contains the system requirements for running SW Maps.

Chapter 3 contains information on installing SW Maps.

Chapter 4 contains a brief description of the main user interface of SW Maps.

Chapter 5 deals with creating and deleting projects.

Chapter 6 provides detailed information on layers, including layer attributes.

Chapter 7,8 and 9 deals with recording features, tracks and photos respectively.

Chapter 10 describes the various file formats used by SW Maps.

Chapter 11 contains information on sharing and exporting projects in various formats, and importing projects shared using the SW Maps swmz format.

Chapter 12 deals with templates, including its creation, installation and use.

Chapter 13 has the instructions for connecting and using external GPS instruments via Bluetooth.

Chapter 14 contains the instructions for viewing additional GPS information and satellite skyplot.

Chapter 15 describes the preferences that can be set in SW Maps

1 Introduction

SW Maps is a GIS app for collecting, presenting and sharing geographic information, for phones and tablets.

Features

- Online Base maps: Google Maps or Open Street Map
- Support for multiple mbtiles and KML overlays
- Shapefile layers, with attribute categorized styling
- Define multiple number of feature layers, each with a set of custom attributes
Feature Types: Point, Line, Polygon
Attribute Types: Text, Numeric, drop down Options or Photos
Save as Template for re-use or share
- Record GPS tracks, with distance measurement
- Import feature layers from templates or existing projects.
- Share or export collected data as KMZ (with embedded photographs) or as Shapefiles
- Share templates or projects with other users
- Connect to external GPS receivers through Bluetooth

2 Requirements

SW Maps is currently available for devices running Android 4.0.3 and above. Google Play Services is required and will be updated if necessary.

3 Installation

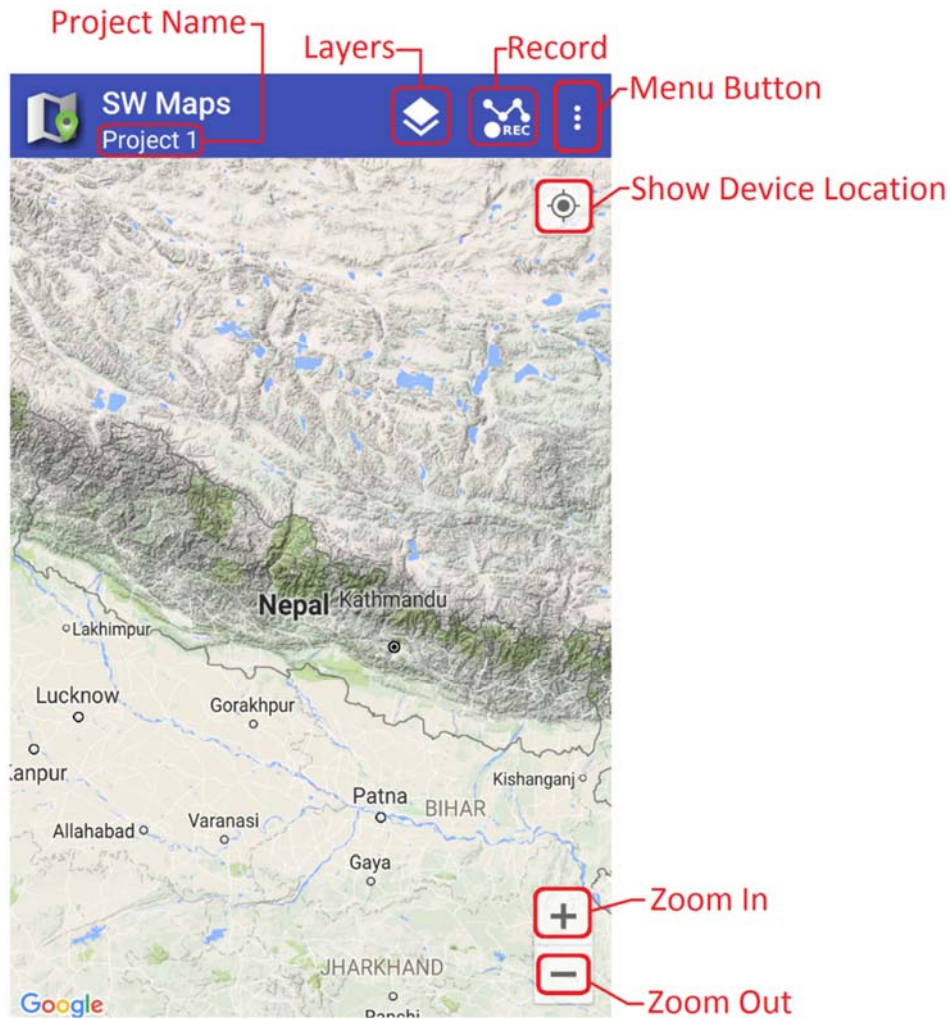
SW Maps is available from the Google Play Store.



4 Getting Started

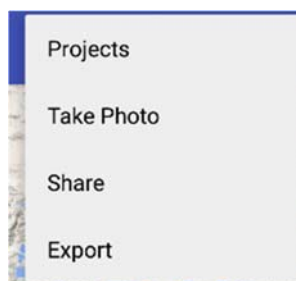
4.1 The SW Maps User Interface

The SW Maps user interface has the following components



The SW Maps app screen

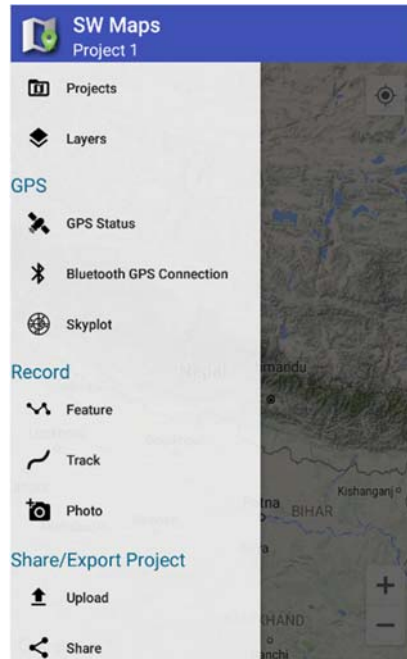
Pressing the menu button will reveal more common actions.



FMain Menu

4.2 The Navigation Drawer

Swiping the app screen from left to right will open the **Navigation Drawer**, which can be used to access all the features of SW Maps. The navigation drawer contains a scrollable list of actions.



The SW Maps Navigation Drawer

The navigation drawer has the following options

1. Project
 - Opens the **Projects** sidebar for creating, opening or deleting projects. See Chapter [5](#) for more information.
2. Layers
 - Opens the **Layers** sidebar for adding, editing and deleting layers. See Chapter [6](#).
3. GPS
 - a. GPS Status
 - Opens a sidebar showing GPS status.
 - b. Bluetooth GPS Connection
 - Press this button to connect to Bluetooth GPS receivers. See Chapter [13](#).
 - c. Skyplot
 - Shows the GPS satellite skyplot.
4. Record
 - a. Feature
 - Opens the **Record Feature** sidebar for recording features. See Section [7.1](#).
 - b. Track
 - Opens the **Record Track** sidebar for recording tracks. See Section [8.1](#).
 - c. Photo
 - Loads the camera application for quickly taking a photo. See Chapter [9](#).












5. Share/Export Project
 - a. Upload
Upload the project to an FTP server. More information on Section [11.3](#)
 - b. Share
Share project as kml or shapefiles. More information on Section [11.1](#)
 - c. Export
Export project as kml or shapefiles. More information on Section [11.2](#)

6. Templates
 - a. Share Project Template
Share the project as a template. See Chapter [12](#).
 - b. Export Project Template
Export the project as a template. See Chapter [12](#).

7. Other
 - a. Compass
Opens a compass to show the current bearing.
 - b. Preferences
Opens the app preferences. See Chapter [15](#)
 - c. About

4.3 Button Symbols Used in SW Maps

SW Maps uses different button icons to symbolize the actions performed by the button. Commonly used icons, along with their description, are shown below.


Symbol	Description
	This icon is used for buttons that are used to add items, such as layers and projects.
	This icon is used for buttons which delete items such as layers, attribute definitions, features, tracks and photos.
	This icon is used for buttons which change some settings or shows additional options.
	This icon is used for buttons which allow editing a value.
	This icon is used in the close button of sidebars.
	This icon is used in the Record Point button when recording features.
	The icon used in buttons which share items.
	The icon used in buttons which exports items.
	This icon is used in refresh buttons.
	This icon is used in buttons next to textboxes that save or update a value.
	This icon is used in save buttons.

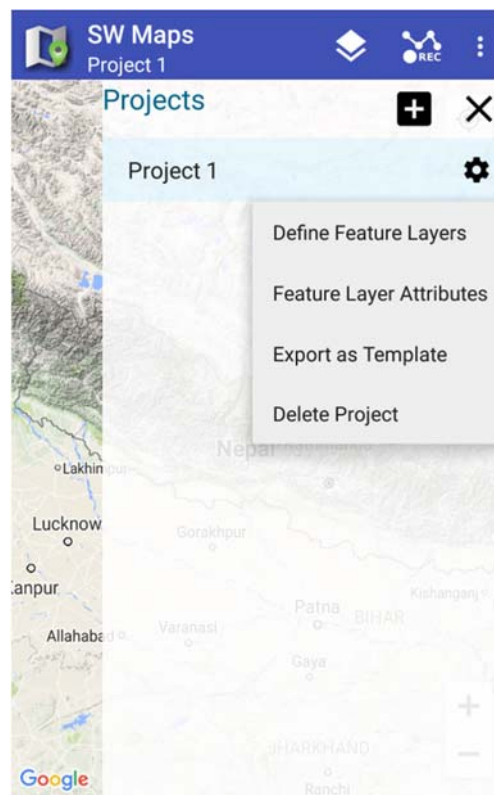
5 Projects

SW Maps stores all recorded data and layer definitions in a project database. Projects can be created or opened using the “Projects” Sidebar, which can be opened using the menu or the navigation drawer.

SW Maps will prompt you to create a new project when opened for the first time and whenever no projects are available. The last used project is opened at each startup.

5.1 The Projects Sidebar

The **Projects** sidebar can be opened using the  **Projects** button on the navigation drawer.

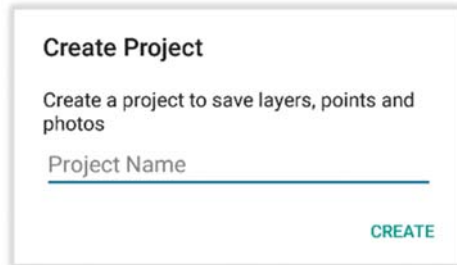


The Projects Sidebar

5.2 Creating New Projects

To create a new project, follow the steps below.

1. Press the **+** button to open the **Create Project** dialog.



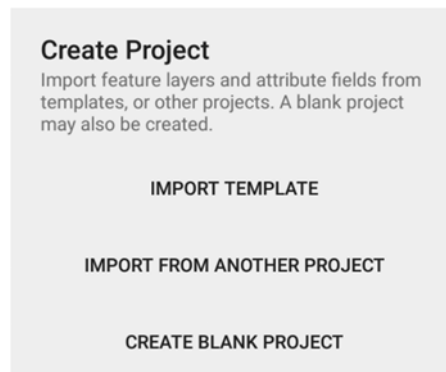
Create Project

Create a project to save layers, points and photos

Project Name

CREATE

2. Enter the name of the new project and press **Create**. The following dialog will then appear.



Create Project

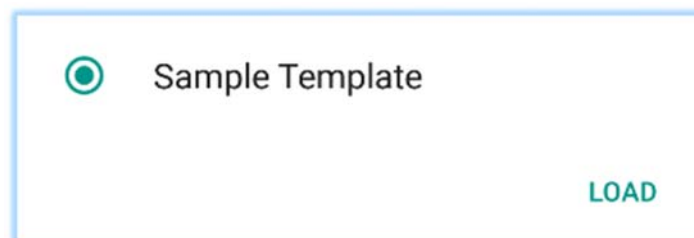
Import feature layers and attribute fields from templates, or other projects. A blank project may also be created.

IMPORT TEMPLATE

IMPORT FROM ANOTHER PROJECT

CREATE BLANK PROJECT

3. When creating projects, feature layers and attributes can be imported from other projects or templates.
 - To import feature layers and attributes from templates, press the **Import Template** button.
 - To import feature layers and attributes from another project, press the **Import from Another Project** button.
 - To create a blank project, press the **Create Blank Project** button.
4. If importing from a template or an existing project, a dialog showing the list of available projects or templates will be shown. Select the project or template to load, and press **Load**.



Sample Template

LOAD

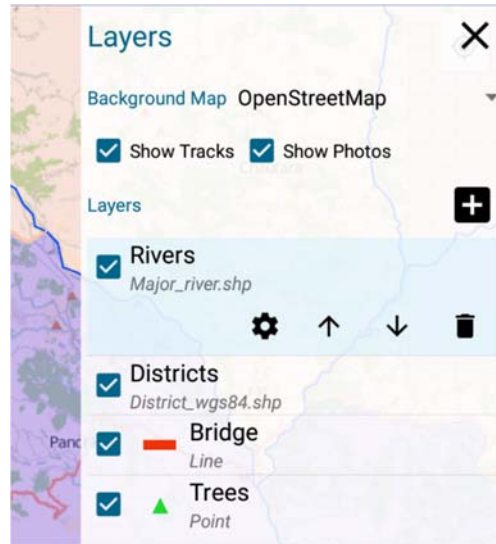
5.3 Deleting Projects

To delete a project, select the project in the list and then press the Settings icon **⚙** beside the project's name on the list. Then, press **Delete Project** on the menu.

6 Layers

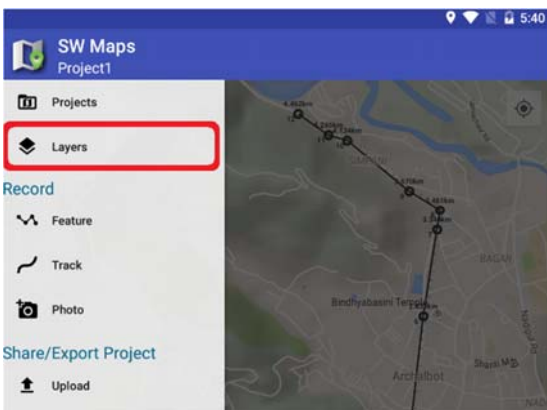
Layers are references to data sources which are symbolized over the map. Each layer needs to have a layer name. Shapefiles and recorded feature layers also require symbol information.

6.1 The Layers Sidebar

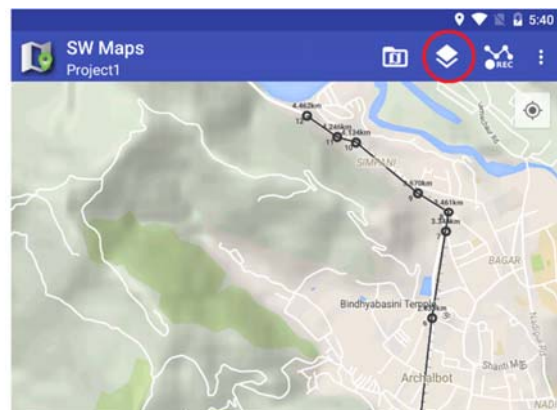


The Layers Sidebar

Layer settings can be accessed using the **Layers** sidebar, which can be accessed from the menu or the navigation drawer.



Accessing the Layers Sidebar



The following items can be accessed from the sidebar

6.1.1 Background Map

Online maps can be displayed in the background. Google Maps (Map, Satellite, Hybrid and Terrain) and OpenStreetMap are available for use as background maps. Only one background map can be active at a time.

6.1.2 Show Tracks





This checkbox allows toggling the visibility of recorded tracks.

6.1.3 Show Photos

This checkbox allows toggling the visibility of photo markers on the map.

6.1.4 Layer List

This list shows all layers defined in the currently open project. To select a layer, simply tap on the respective list item. Selecting a layer would reveal one or more of the following actions

1. Delete 
This button will delete the selected layer.
2. Layer Settings 
This button opens additional settings for the layer. This option is applicable only to shapefile and feature layers.
3. Move Layer Up 
Press this button to move the layer up.
4. Move Layer Down 
Press this button to move the layer down.

6.2 Adding Layers

To add layers, press the **+** button. In the menu that follows, select the desired layer type.

The following types of layers can be added.

6.2.1 Tiles

SW Maps supports adding offline map tiles stored as MBTiles files, as a layer. Mbtiles is an open format for storing tiled map data.

Copy MBTiles to the Maps/mbtiles folder in the SW_Maps folder of the device.

To add an MBTiles layer, select **Tiles** in the dropdown menu of the **+** button. In the dialog that follows, enter the layer name, and select the file from the list of available files.

6.2.2 KML

KML files must be copied to the Maps/kml folder in the SW_Maps folder of the device.

To add a KML layer, select **KML** in the dropdown menu of the **+** button. In the dialog that follows, enter the layer name, and select the file from the list of available files.

6.2.3 Shapefiles

To add Shapefiles to SW Maps, Copy the shapefile along with supporting files (shp, dbf and prj files are required) to the Maps/shp folder in the SW_Maps folder of the device.

To add a shapefile layer, follow the following steps:

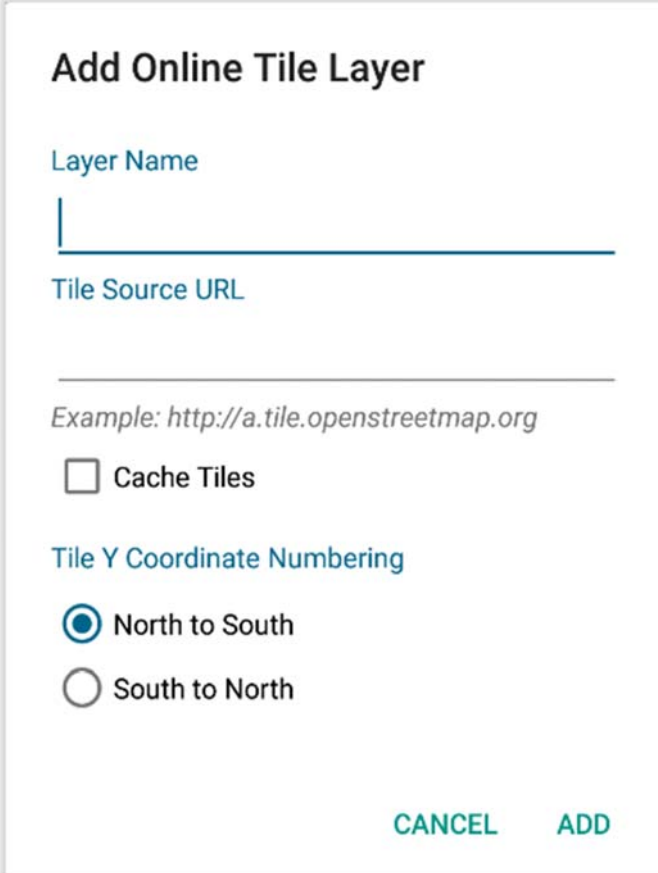
1. Press the **+** button and select **Shapefile** in the dropdown menu.
2. In the **Add Shapefile Layer** dialog, enter the layer name and select the file from the list of available files.

Note: Shapefiles using coordinate systems other than WGS84 are not supported.

6.2.4 Online Tiles

To load tiles from an online tile server, follow the steps below

1. Press the **+** button and select **Online Tiles** in the dropdown menu. This opens the **Add Online Tile Layer** dialog.



Add Online Tile Layer

Layer Name

Tile Source URL

Example: `http://a.tile.openstreetmap.org`

Cache Tiles

Tile Y Coordinate Numbering

North to South

South to North

CANCEL ADD

The Add Online Tile Layer Dialog

2. Enter the layer name.
3. Enter the tile source URL.
4. Check the **Cache Tiles** checkbox if you want to cache the tiles that are loaded. Caching saves the loaded tiles on your device and allows online tile layers to be used when the device is offline.
5. Select the Tile Y Coordinate numbering system used by your tile server.
6. Press **Add**.

6.2.5 GPS Recorded Features

All the spatial data (points, lines & polygons) recorded by SW Maps must be associated to a single layer.

To add a feature layer, follow the following steps

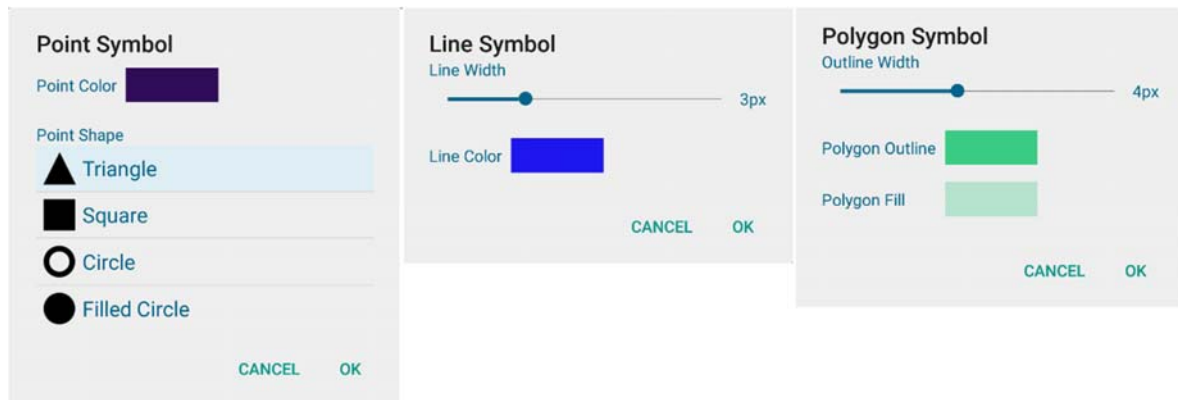
1. Press the **+** button and select **GPS Recorded Feature** in the dropdown menu.
2. In the **New Feature Layer** dialog, enter the layer name and select the required geometry type (Point, Line or Polygon)
3. Assign a geometry symbol by tapping the geometry symbol button. The symbol dialogs allow you to select colors, line width and point shapes, and are different for each geometry type.

6.3 Changing Layer Style

Layer styles set for shapefile and feature layers can be changed through the **Layers** sidebar.


6.3.1 Feature Layers

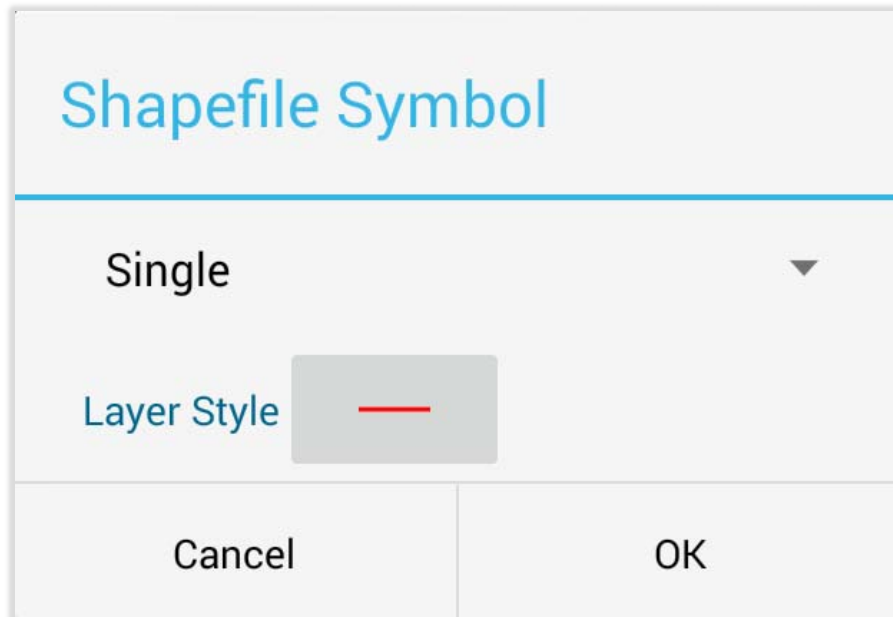
To change the appearance of a feature layer, press the button showing its current symbol on the **Layers** sidebar. A dialog will be shown which allows you to change colors, point symbols and line width.



Dialogs for changing symbols of Point, Line and Polygon features

6.3.2 Shapefile Layers

A dialog allowing you to set the shapefile symbol is shown when adding a shapefile layer. The dialog can be brought up at any time to change the shapefile layer symbol by pressing the  button on the selected layer in the layer list.



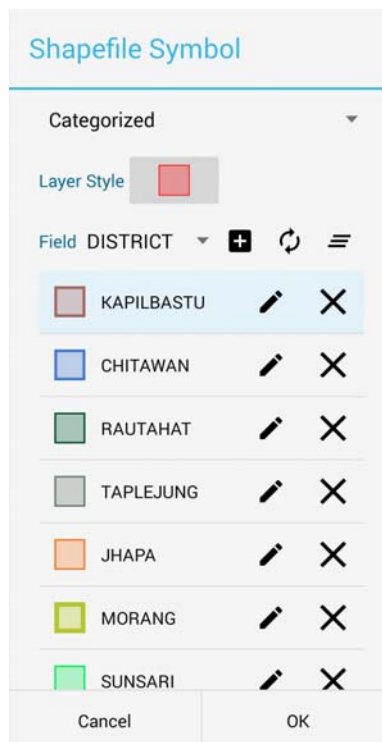
Shapefile Symbol Dialog

The **Shapefile Symbol** dialog can be used to set shapefile symbol by two methods

1. Single Symbol
Use this to apply the same symbol to all the items in the shapefile.
2. Categorized Symbol
Use this option to categorize the shapefile entities based on their attribute values and apply a different symbol to each category.

To apply categorized symbols, follow the steps below.

1. Select **Categorized** in the dropdown at the top of the **Shapefile Symbol** dialog.
2. Set a default symbol in the **Layer Style** box.
3. Select the field based on which the symbol will be set in the **Field** dropdown which lists all the attribute fields of the shapefile.
4. Press the **+** button to add an empty item to the list of attribute values. The value can be edited by pressing the **✎** button beside it. The value can be deleted using the **X** button.
5. Press **OK** to set the shapefile symbol.



Categorized Shapefile Symbols for a polygon shapefile

Pressing the **↻** button will fill up the list with all the values of the selected field present in the shapefile and assign random symbols.

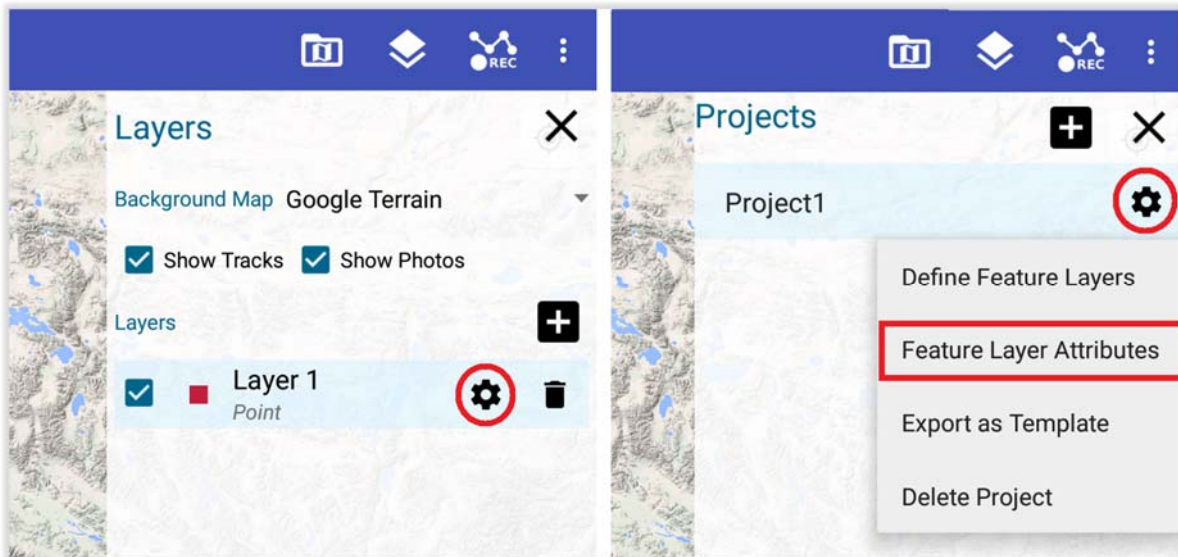
To change the symbol for an attribute value, tap its current symbol shown on the list.

Pressing the **≡** button will clear all the listed values.

6.4 Layer Attributes

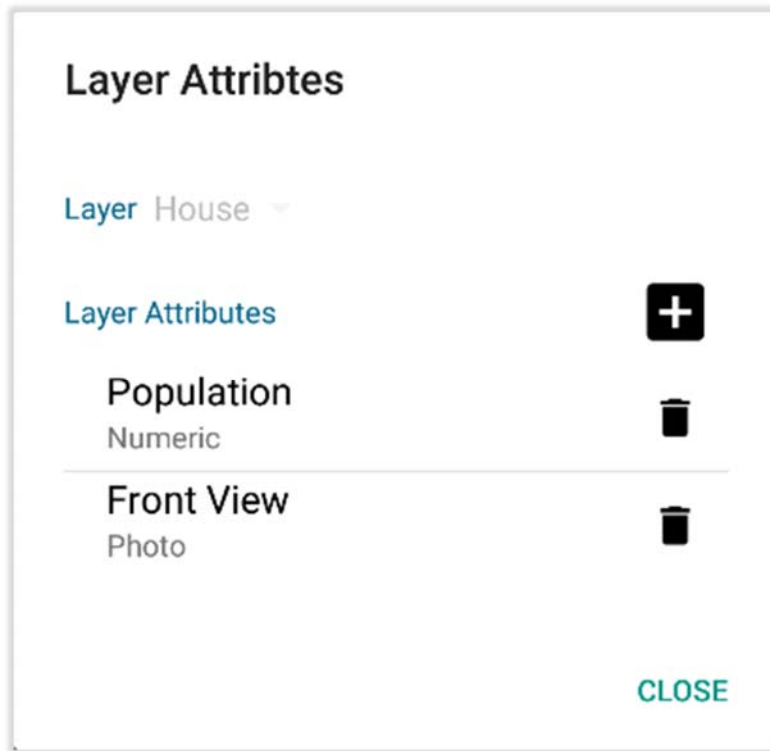
Feature layers can be associated with an attribute table, which allows you to record and attach custom data along with geometry. Attributes can be defined or deleted using the **Feature Layer Attributes** dialog, which can be accessed in either one of the following ways

1. In the **Projects** sidebar, press the **Settings** ⚙️ button alongside the currently active project. In the dropdown menu, select **Feature Layer Attributes**.
2. In the **Layers** sidebar, select the layer whose attributes are to be modified. Press the **Settings** ⚙️ button of the layer.




Opening the Layer Attributes Dialog

6.4.1 The Layer Attributes Dialog




The Layer Attributes Dialog

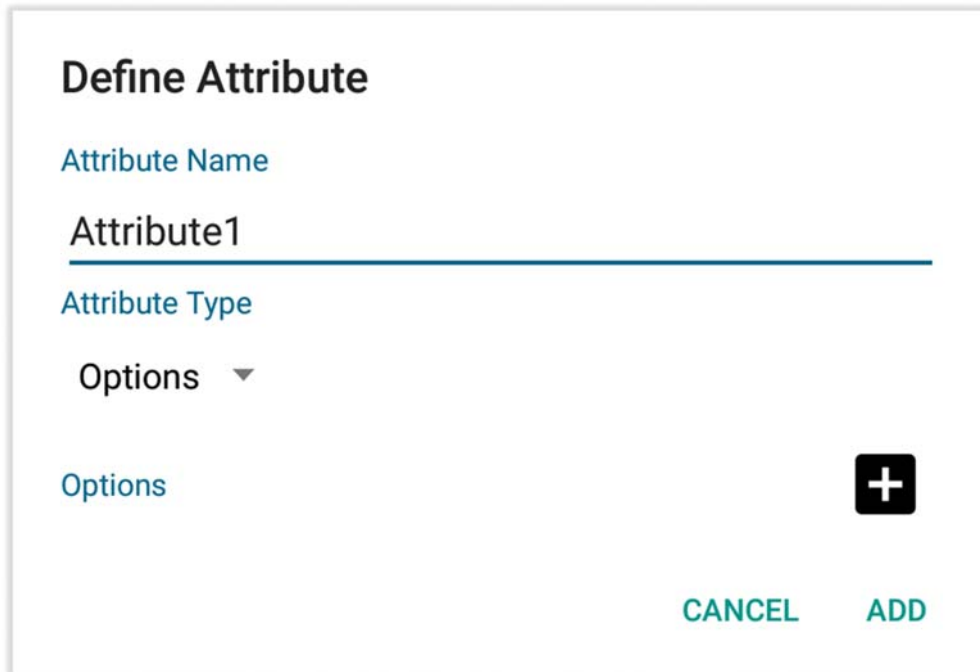
The Layer Attributes dialog allows you to add, remove or modify attributes for a feature layer. This dialog consists of a dropdown listing all the layers and a list of attributes for the selected layer.

To delete a defined attribute, press the  button beside it.

6.4.2 Defining Layer Attributes

To add an attribute to a layer, follow the following steps

1. Select the layer in which the attribute is to be added, in the **Layer** dropdown located at the top of the dialog.
Note: If the Layer Attribute dialog was opened from the Layers sidebar, the active layer in the Layers sidebar is automatically selected, and cannot be changed.
2. Press the Add button . The following dialog will appear:




Define Attribute

Attribute Name

Attribute1


Attribute Type

Options ▼

Options 

CANCEL ADD

The Define Attributes Dialog

3. Enter the attribute name.
4. Select the attribute data type from one of the following four options
 - Text: Use this type to save text.
 - Numeric: Use this type to save numeric data.
 - Options: Use this type to select a value from a list of choices.
 - Photo: Use this type to save a photo.
5. If the Options data type is selected, press the  button to add choices. At least one choice must be present.
6. Press **Add** to define the attribute.

6.5 Loading Layers from External SD Card

Mbtiles, kml and shapefiles can be loaded from external SD card. But, Android does not allow writing to external SD card since version 4.4 onwards. So, the following folders need to be created manually.

1. **SW_Maps/Maps/mbtiles** for Mbtiles
2. **SW_Maps/Maps/kml** for KML files
3. **SW_Maps/Maps/Shapefiles** for shapefiles.

Then when adding the files as layers, select the path of your external SD card on the dropdown above the list of files.

7 Features

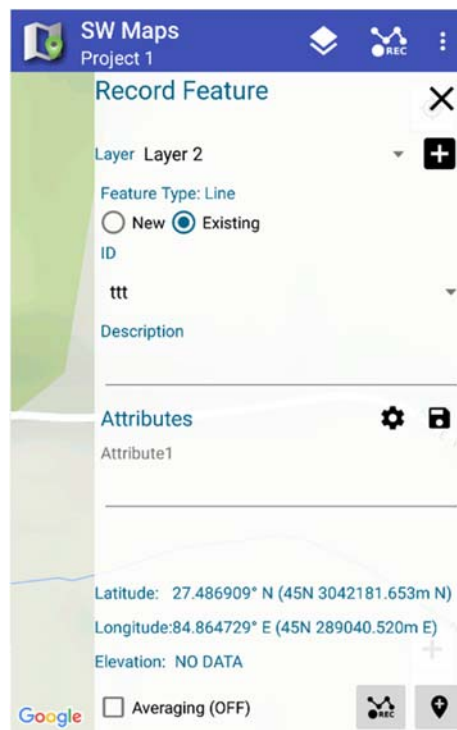
Features are entities comprising of geometry (points, lines or polygons) and attributes associated with them. In SW Maps, recorded features must be associated with one layer, and are displayed on the map itself.

Features are displayed on the map with their own layer symbol, and a point id. Elevation of the point is also displayed alongside the marker. The appearance of elevation on the marker can be toggled via the application preferences.

Features can be interacted with by tapping on their point markers.


7.1 Recording Features



The **Record Feature** sidebar allows you to record new features, append points to existing features and assign values to feature attributes. To open the **Record Feature** sidebar, press the **Record Feature** entry in the **Record** menu. Alternatively, press the **Feature** item under the **Record** entry in the navigation drawer.



The Record Feature Sidebar

To record features, follow the steps below.

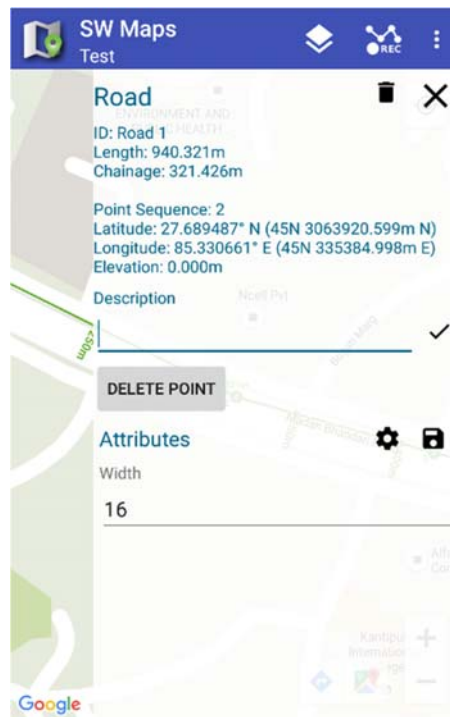
1. Select the feature layer from the dropdown.
2. For new Line and Polygon features, check the **New** option and enter a unique ID. To append points to existing Lines and Polygons, check the **Existing** option and select the feature ID from the dropdown.
3. Enter a description, and fill up attribute values. The description and attributed values may be changed later.
4. Press the **Record**  button.

Line and Polygon features may also be recorded as a track, in which points are continuously recorded. To start tracking, press the  button. To stop tracking, press the  button.

The track settings used for recording feature tracks are the same as those used for recording tracks. For more information, see Section [8.1](#).

7.2 Viewing Feature Properties

To view the properties and attribute values of a previously recorded point feature, press the point marker on the map. For lines and polygons, press one of its vertices. This will show the feature properties in a sidebar, including co-ordinates of the marker, length of lines, area and perimeter of polygon features.



Feature Properties


7.3 Editing and Deleting Features

Features can also be edited or deleted using the feature properties sidebar.

To edit feature attributes, enter the new values in the attribute list and press the Save button.

To edit the item description, type in the new description in the descriptions box, then press the ✓ button beside it.

To delete the selected point from the line or polygon feature, press the **Delete Point** button.

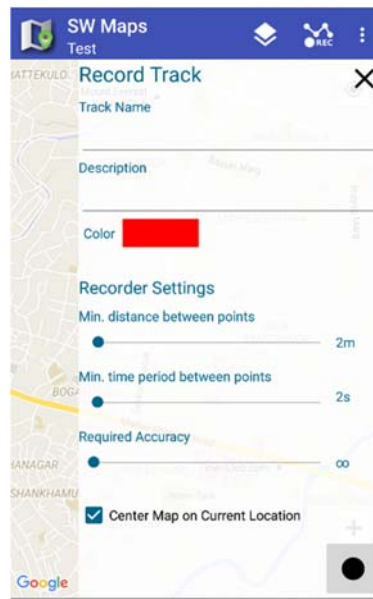
To delete the whole feature, press the **Delete**  button.

8 Tracks

8.1 Recording Tracks

To record tracks, press the **Record Track** entry in the **Record** menu. Alternatively, press the **Track** item under the **Record** entry in the navigation drawer.




This opens the **Record Track** sidebar.





Recording Tracks

This sidebar has the following options:

- 1. Track Name**
Enter a unique name of the new track here.
- 2. Description**
Enter an optional description for the new track.
- 3. Color**
Select the track color used to show the track on the map.
- 4. Minimum Distance between Points**
Select the minimum distance between two corresponding track points. Points are not recorded unless distance from the previous point exceeds this value.
- 5. Minimum Time Period between Points**
Select the minimum time period between the recording of two consecutive points. A longer period may be select
- 6. Required Accuracy**
Select the minimum required GPS accuracy to record point. If location accuracy is below this value, the location is not recorded.
- 7. Center Map on Current Location**
If checked, the map is kept centered on the current location.

To start recording a track, press the **Record** button . The record button is then replaced by track recorder status, the **Pause**  button and the **Stop**  button.

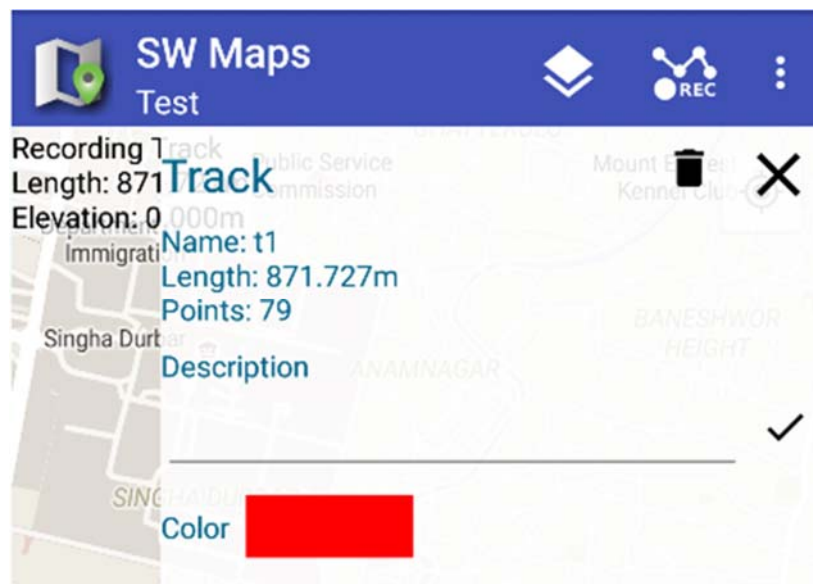


Press the  button to pause recording track. Press the  button to resume recording.


Press the **Stop**  button to stop recording and save the track.

8.2 Editing and Deleting Tracks


Tapping the track line on the map will display the track properties, including track length, number of points, description and color.



Track Properties

To edit the description, enter the new description in the textbox and press the  button beside it.

To change the track color, press the colored box beside the label reading **Color**.


To delete the track, press the **Delete**  button.

9 Photos


SW Maps also allows you to quickly take photos and save them with a location obtained from the GPS on the device. The photos appear on the map as icons and can be viewed by pressing the icon.

9.1 Taking Photos

To take a photo, follow the steps below.

1. Press the **Photo** button, under the **Record** group in the navigation drawer. Alternatively, press the **Take Photo** menu item. In tablets, the **Take Photo** menu may appear as a button on the action bar with the  icon.
2. The default camera app is then launched automatically. Take a photo using it.
3. A dialog will appear, showing the recently taken photo, with a **Get Location** button and an empty textbox labelled **Description**.
4. Press the **Get Location** button, which loads another dialog which starts averaging the location from GPS. Press the **Save** button in the dialog to save the location and close the dialog.
5. Enter an optional description and press **Save** to save the photo.

9.2 Viewing and Deleting Photos

Photos taken using SW maps are shown as  markers on the map. To view the photo, tap on the marker. This will load a sidebar showing the photo and its description.

Tap the photo thumbnail to open the photo in your default photo viewer app.

To delete the photo, press the **Delete**  button.

10 File Formats

SW Maps uses additional file formats for storing project data and for sharing projects and templates with other SW Maps users. These file formats are associated with SW Maps upon installation and will open automatically with SW Maps when opened from a file browser.

The file formats associated with SW Maps are described in the following sections.

10.1 The swmaps File Format

Files with extension “.swmaps” are used by SW Maps to store project data. These files are SQLite databases containing information on all layers and attributes defined in the project, as well as all the data recorded in the project. However, these files do not include photos.

All the projects listed in the **Projects** sidebar are present as swmaps files in the SW_Maps/MapProjects/ folder.

Opening an swmaps file using SW Maps will install the project to the SW_Maps/MapProjects/ folder and open it.

10.2 The swmz File Format

The swmz file format is the preferred file format for sharing projects with other SW Maps users. These files are created from existing projects by exporting the projects, or sharing them. This is also the file format used by SW Maps when uploading projects to servers.

The swmz file is a zip archive, containing the project data in an swmaps file, and all the photos associated with the project. Opening an swmz file using SW Maps will extract it, install the project to the SW_Maps/MapProjects/ folder and copy all the photos into the relevant folders. It will then open the project.

The swmz file does not contain any shapefiles, kml files or mbtiles referenced by the project. These files will have to be copied manually and should be present when installing the project in another device

10.3 The swmt File Format


The swmt file format is used for sharing templates. It is an SQLite database containing all the feature layers and their attribute definitions which is copied into projects when the template is used to create one.

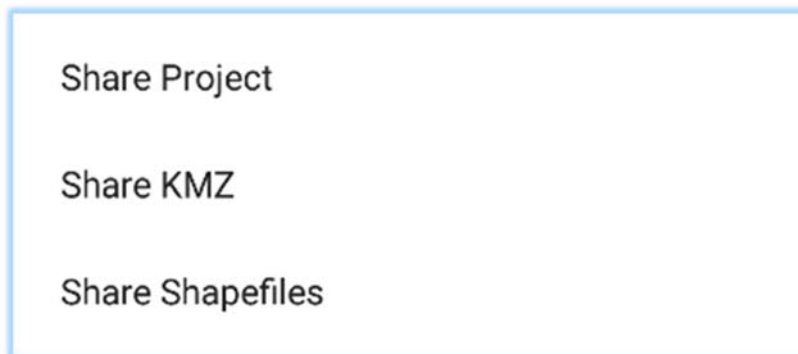
Installed templates can be found as swmt files in the SW_Maps/Templates folder.

11 Sharing, Exporting and Importing Projects

SW maps supports exporting and sharing of project data in KMZ, Shapefile or the SW Maps SWMZ format. Projects can also be shared or exported as templates, containing all the layer and attribute definitions but no data.

11.1 Sharing Projects


To share a project, Press the  **Share** button, present under the **Share/Export Project** group in the navigation drawer. A dialog will appear which will allow you to choose between sharing the project as KMZ, Shapefiles or SWMZ file.



The Share Dialog

Pressing any one of the three options will open a list of available applications to share with.

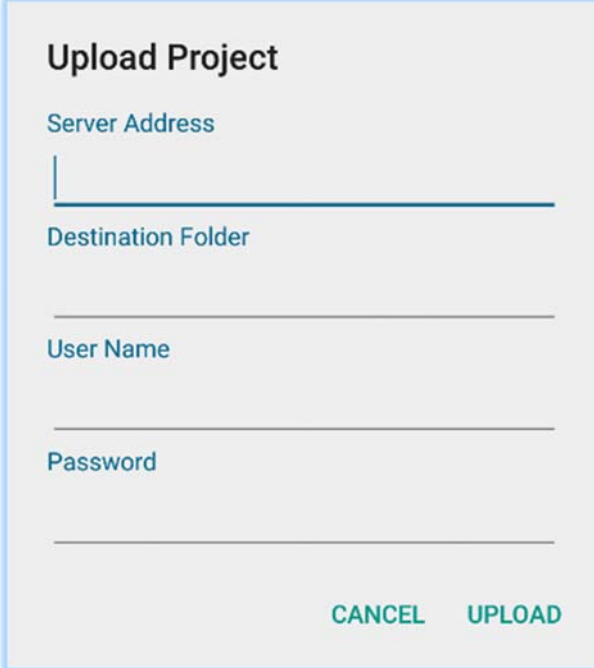
11.2 Exporting Projects

To export a project, press the  **Export** button, present under the **Share/Export Project** group in the navigation drawer. A dialog will appear which will allow you to choose between exporting the project as KMZ or Shapefiles.

The files will be exported with the name of the project in the SW_Maps/Export folder.

11.3 Uploading to FTP Servers

SW Maps also supports uploading projects directly to FTP servers as an swmz file. To upload to FTP servers, press the **↑ Upload** button, present under the **Share/Export Project** group in the navigation drawer, which will open the following dialog.



The dialog box is titled "Upload Project". It contains four text input fields, each with a label above it: "Server Address", "Destination Folder", "User Name", and "Password". At the bottom right of the dialog, there are two buttons: "CANCEL" and "UPLOAD".

The Upload Project dialog

Then, fill up the following details.

- 1. Server Address:**
The address of the ftp server. *Example: ftp://swmaps.softwel.com.np*
- 2. Destination Folder**
The subfolder in the FTP server where the uploaded files are to be stored.
- 3. User Name**
- 4. Password**

Then, press the **Upload** button in the dialog to begin the upload.

11.4 Importing Projects

Projects in swmaps format can be directly copied to the SW_Maps/MapProjects folder.

Projects in both swmaps and swmz format can be installed by opening the file through any android file manager.

Installed projects are listed in the **Projects** sidebar and can be used as if they were created in the same device.

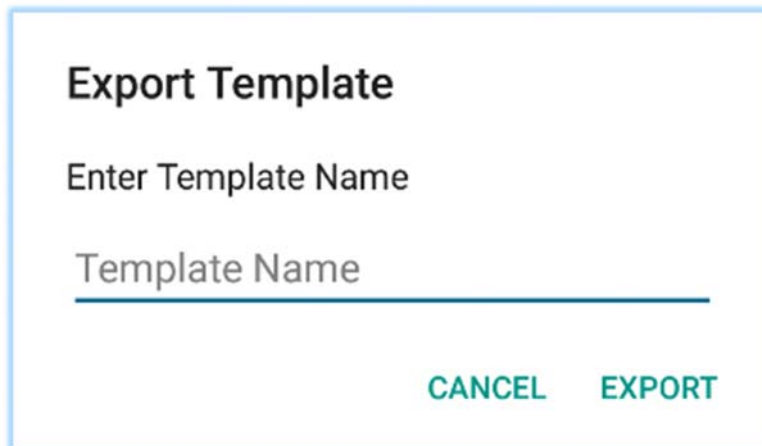
12 Project Templates

Project Templates contain a predefined set of feature layers and attribute definitions which can be used when creating projects. Templates can be created from existing projects and shared with other users.

12.1 Creating a Template

Templates are created from existing projects. To create a template, create a project with all the required feature layers and attributes. Then follow the steps below.

1. Open the navigation drawer and press the  **Export Project Template** button under the **Templates** group to export the project as a template in the SW_Maps/Templates folder.
Alternatively, press the  **Share Project Template** button to share the project directly through other applications.
2. In the dialog that follows, enter the name of the template file and press **Export** or **Share**.



The dialog box is titled "Export Template". Below the title is the instruction "Enter Template Name". There is a text input field with the placeholder text "Template Name". At the bottom right of the dialog, there are two buttons: "CANCEL" and "EXPORT".

The Export Template dialog

12.2 Importing a Template

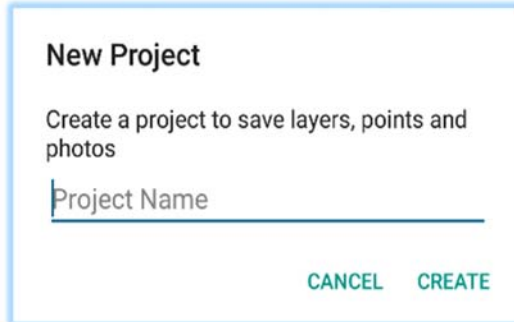
To import a template into SW Maps, copy the template swmt file into the SW_Maps/Templates folder of your device storage.

Templates can also be installed by opening a swmt file through any android file manager. Doing so will install the template and open SW Maps.

12.3 Creating Projects using a Template

To create projects using an installed template, follow the following steps.

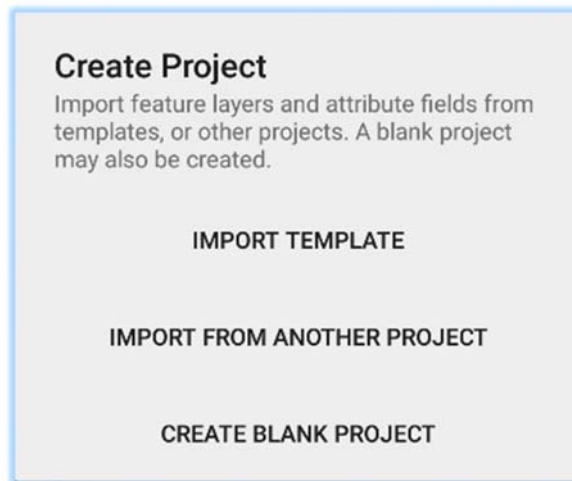
1. Press the **Projects** entry in the navigation drawer to open the **Projects** sidebar.
2. In the **Projects** sidebar, press the **+** button.
3. Enter the new project name in the **New Project** dialog and press **Create**.



The image shows a dialog box titled "New Project". Below the title is the instruction "Create a project to save layers, points and photos". There is a text input field labeled "Project Name" with a cursor inside. At the bottom right, there are two buttons: "CANCEL" and "CREATE".

The Create Project dialog


4. In the dialog that follows, press the **Import Template** button.



The image shows a dialog box titled "Create Project". Below the title is the instruction "Import feature layers and attribute fields from templates, or other projects. A blank project may also be created." There are three buttons: "IMPORT TEMPLATE", "IMPORT FROM ANOTHER PROJECT", and "CREATE BLANK PROJECT".

Options for creating a project

5. A list of installed templates will then be shown. Select the template to be used, then press **Load**.



The image shows a dialog box with a single radio button selected next to the text "Sample Template". At the bottom right, there is a button labeled "LOAD".

Dialog for selecting a Template

13 Bluetooth GPS Connection

SW maps supports connecting to external GPS devices through Bluetooth, which allows the use of high accuracy GPS instruments for data collection.


13.1 Mock Locations

If mock locations are allowed on the device, SW Maps sets the location of the device to the location obtained from the external GPS. This allows the use of an external GPS in other apps that use the location of the device.

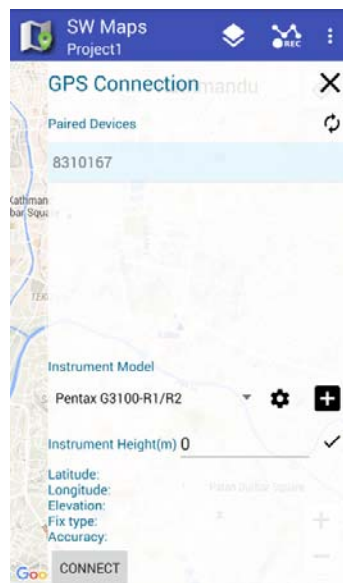
The settings for enabling mock location can usually be found under **Developer Options** in android settings. The instructions for enabling **Developer Options** and **Mock Locations** are device specific.

13.2 Connecting a Bluetooth GPS


To connect a Bluetooth GPS, follow the steps below:

1. Pair the GPS device with the phone or tablet.
2. Open the navigation drawer and press the  **Bluetooth GPS Connection** button to open the **GPS Connection** sidebar.

If Bluetooth is not enabled, a dialog will appear asking you to turn it on.



Connecting GPS devices using Bluetooth

3. The **GPS Connection** sidebar will show a list of all paired devices. Select your device from the list. If the list is empty or needs to be refreshed, press the .

4. Select the instrument model from the **Instrument Model** dropdown.
5. Enter the instrument height. The height can be changed at any time by entering the new height and pressing the ✓ button beside it.
6. Press the **Connect** button.

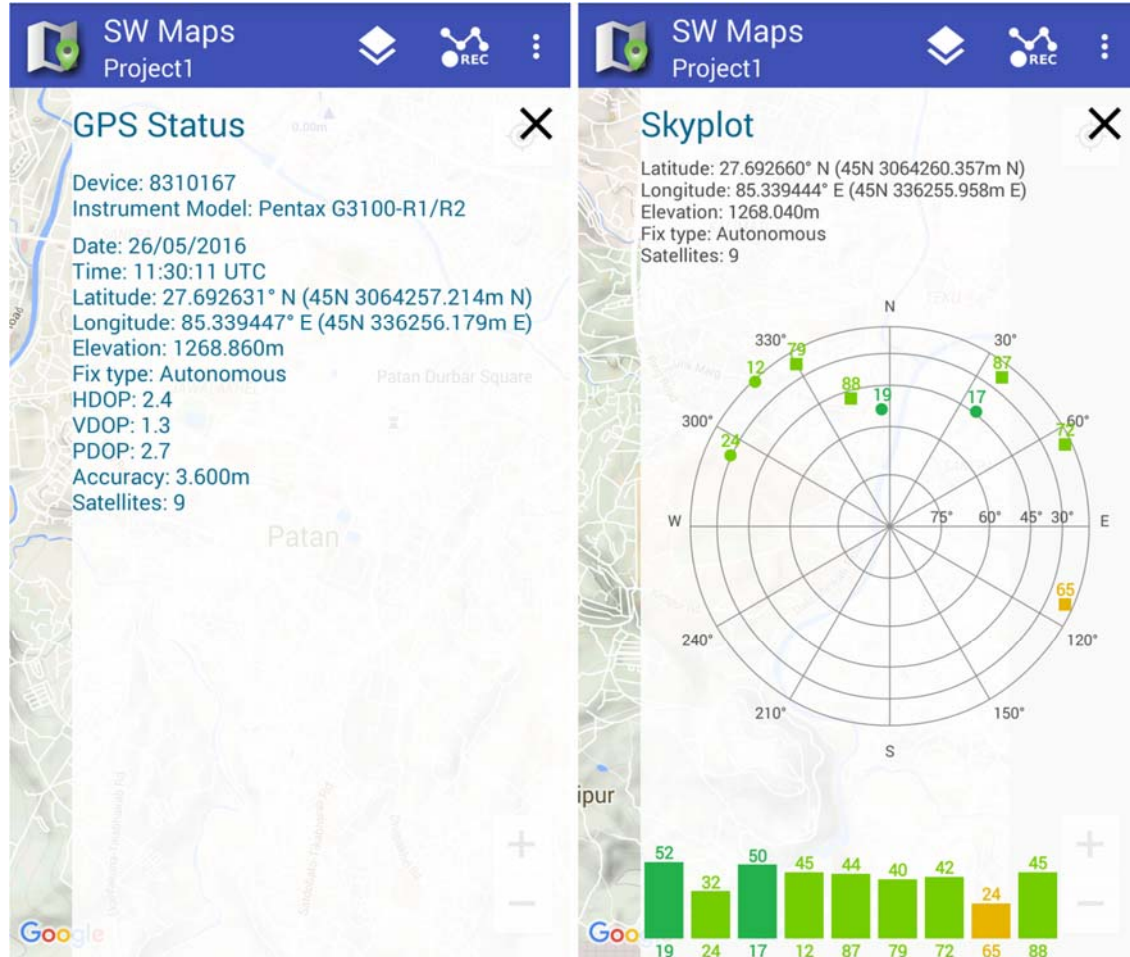
Once the instrument is connected a notification is displayed showing the current position as obtained from the external GPS.

Note: If the Generic profile is used, the instrument must be preconfigured to output NMEA messages.

13.3 Disconnecting a Bluetooth GPS

To disconnect a Bluetooth GPS, press the **Disconnect** button in the **GPS Connection** sidebar.

14 GPS Status and Skyplots




GPS Status and Skyplot

14.1 Viewing GPS Status

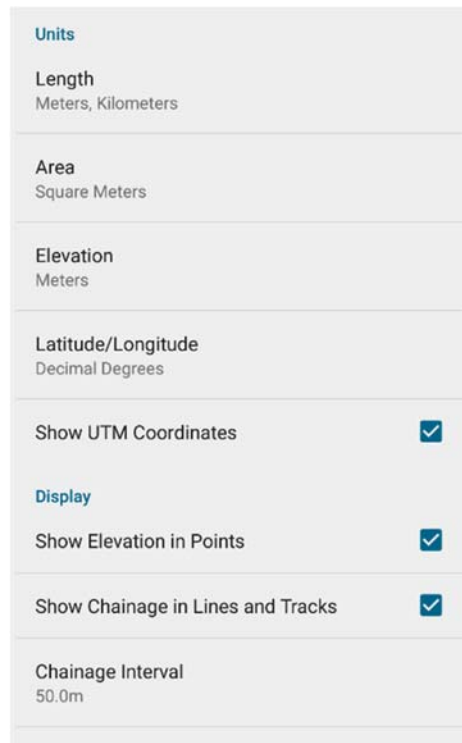
To view GPS status, open the navigation drawer and press the  **GPS Status** button.

14.2 Viewing Satellite Skyplot

To view GPS status, open the navigation drawer and press the  **Skyplot** button.

15 Preferences

The app's preferences can be accessed through the **Preferences** button on the navigation drawer.



The Preferences Screen

The following preferences can be changed

1. Units
 - a. Length: The unit of length used to show the length of lines and tracks, as well as perimeter of polygons.
 - b. Area: The unit used in displaying area of polygons.
 - c. Elevation: The unit used in displaying elevation.
 - d. Latitude/Longitude: Sets the format in which Latitude/Longitude is displayed.
 - e. Show UTM Coordinates: Check this option to show UTM coordinates alongside latitude and longitude.
2. Display
 - a. Show Elevation in Points: Checking this option will show elevation in point markers on the map.
 - b. Show Chainage in Lines and Tracks: Checking this option will display Chainage markers on lines and tracks.
 - c. Chainage Interval: Set the interval at which chainage markers are drawn.
 - d. Chainage Marker Size: Select the size of the chainage markers shown on the map.