

Using the CT Trail Finder Data Schema in Avenza Maps

Quick Reference Guide for Using the Trail Finder Schema in the Avenza Maps App



AVENZA MAPS

Avenza Maps is an app for iOS and Android mobile devices. It allows a person to use maps on a mobile device and locate your position using the GPS in the device. It does not require Internet or cell network connections. Avenza Maps allows a user to record GPS tracks, add placemarks, photos, and more. It uses geospatial PDFs, GeoPDFs, or GeoTIFFs as base maps. These can be imported from online sources or downloaded from the Avenza Map Store. Visit the [Avenza Maps website](#) for more information.

This tutorial covers using a geographic data schema in Avenza Maps to collect standardized GPS data for trails, specifically in the format required to be included in the CT Trail Finder website. It was last updated on 3/20/23 and written for the iOS version of Avenza Maps.

Download the Avenza Maps App: [iOS](#) and [Android](#)

An overview of [Avenza Maps features](#)

Visit the [CT Trail Finder website](#)

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Before You Start:

- Download the free Avenza Maps app from the Apple App Store or Google Play.
<https://store.avenza.com/pages/app-features>
- Create a free Map Store account (required for Android users, recommended for iOS users) in the app or on avenzamaps.com
- Obtain a copy of the Trail Finder Data Schema KML (CT_Trailfinder_AvenzaSchema.kml) and save it to your device before you start.

Note: this tutorial was written while using an iOS device. Instructions for Android devices will vary slightly.

Download a Map from the Store:

- Tap on the **Store** tab in the Avenza Maps app to access the Map Store. Here you will select a georeferenced topographic base map that will serve as a reference layer in the map. If your device asks to use your current location while browsing the Store, select yes.
 - o Under **Find a Map**, tap on the green **Free** button. This will filter results to show only free maps.
 - o Scroll down to **Category** and tap **Topographic**. This will filter results to show only free topographic base maps.
 - o Use the “search nearby” or “view on map” options to identify the United States Geologic Survey (USGS) map that covers your current location. Tap the green **Free** button to download it to your device.
 - o Once it downloads, tap **Open map** to open it in the **My Maps** tab within Avenza Maps.

My Maps:

- If you opened a map from the **Store** tab after downloading, it will open the map in the app. You will see your current location as a blue dot on the map.
- Tap on the green left pointing arrow at the top of the map to return to the main **My Maps** tab. You will see your newly downloaded USGS topo map listed as one of the maps stored on your device. You can tap on it at any time to return to the map.

Note, Avenza Maps is testing a new feature that utilizes Open Street Maps (OSM) as a basemap option within the app. If you see this at the top of the My Maps tab, tap the “Try now” button to open OSM Basemaps (beta) in the map. This is a nice (but not fully tested) addition to Avenza Maps because it can serve as a seamless basemap option that doesn’t require a user to find or download a basemap from the maps store. Layers can be linked to the OSM basemap like any other georeferenced map downloaded from the Map Store. Users may also download a section of the OSM basemap to their device for offline data collection.

Import the Trail Finder Data Schema:

- Tap on the **Layers** tab at the bottom of the app. This will display the library of layers you have stored on your device. It will be empty if you have not used Avenza Maps before.
- Tap the green + symbol in the upper left corner (iOS device) of the screen and select **Import**.
- Next you will locate and **Import** the **CT_Trailfinder_AvenzaSchema.kml** file from the location where you saved it on your device. Note the file can also be imported from cloud storage locations.
- Select your import location option and tap on it. A warning screen will appear noting that your imported layer must be linked to a map to see data. You can do this step now, or later. If you choose Select, in the next screen you will select the map you wish to link the

- schema layer to. In this case, select the topo map you previously downloaded and tap Apply.
- Next locate the KML file, tap it to select, tap **Open** to import it to your device.
 - You should see a new layer called “CT_Trailfinder_AvenzaSchema” listed in your Layers list.

Using the Trail Finder Data Schema in Avenza Maps:

- Tap on the **My Maps** tab at the bottom of the app. Open your UGSG topo map (or the map you linked your schema file to). Once in the map, tap on the green stack of layers icon in the lower right corner to open the map layers window. If you linked your schema layer to this map in the previous step, you will see it listed here. If you did not, the map layer library will be empty.
- If you do not see your schema layer listed in the **Map Layers** window, tap the green + symbol in the upper right corner and select **Link Layers**.
- In the **Link Layers** window, tap the circle next to **CT_Trailfinder_AvenzaSchema** and tap **Apply**. That will link the layer to your active map.

Note: Layers stored in the Avenza Maps Layers library can be linked to (used in) multiple maps stored on your device.

Set as the Active Layer:

- Before you can use the schema layer to collect trail features, you must set it as your **active layer**. This is a critical step. It will force all new points, lines, and areas to be stored in this layer, using the Trail Finder data schema.
- In the Map Layers window, tap on the name of the layer CT_Trailfinder_Features. This will display the sublayers called Trailfinder_Features. This is where we want to force new features (placemarks and tracks) to be stored.
- Tap on **the three dots** next to the **Trailfinder_Features** and select “**Set as active layer**”.

This will ensure all new features are added to the layer.

- Tap the **Close** option at the top of the window to close the Map Layers window.

Data Collection - Tracking:

- Hurray! You are ready to collect trails data with the Trail Finder Data Schema! Back in the map, Tap on the green **ruler/pencil icon** in the lower right corner and select “**Record GPS Tracks**” in the menu that appears. This will open the Tracking options. You can also get to this window by dragging your finger up from the bottom center of the map to open the Location – Tracking - Navigation options. Once there, tap the Tracking option in the middle.
- Tap the green “**Start Tracking**” button to begin recording your GPS track. This is your “breadcrumb trail” that will be laid down as you walk a path. Note that you can pause tracking, or stop tracking from this menu. It is often useful to stop and save a track between trail segments so they are recorded as individual and separate features.

Data Collection - Points of Interest (Placemarks):

- When you are ready to stop along your track to collect a point of interest, tap the **green placemark icon** at the bottom of the map window. This will open the **Add Placemark** window. The Placemark Name and Information options at the top of the window are available by default but are not linked to the CT Trail Finder Data Schema. You can

changes the values, but it is not necessary. You may however want to add a photograph or two if appropriate.

- To use the CT Trail Finder schema for the placemark, scroll down past the photographs until you see the word **ATTRIBUTES**. Below you will see the **Trailfinder_Features** schema and associated attribute fields.

To enter data, you will tap on each field to add a unique value or select from a pick list of options.

- **Tap 1 – Trail System.** Type in a value for the overall trail system you are mapping. Once you add it the first time, it will be available as a pick list option for future data entries. The Trail System will likely remain the same for each property you visit.
- **Tap 2 – ADA Accessible.** Select the appropriate pick list value (Yes or No).
- **Tap 3 – Trail Name.** Type in a value for the trail your point is located on. Once you add it the first time, the name will be available as a pick list option for future data entries.
- Continue to add values to the remaining attribute fields. When you are done, tap **Submit** at the top right corner of the **Add Placemark** window.
- Repeat for additional points of interest along your track/trail.

A Note of Caution! Avenza Maps will add a placemark based either on your current location (blue dot/show current location by tapping arrow in lower left corner of the map) OR by the position of the crosshairs on the map (tap/hold and move the map to position the crosshairs). Be sure you use the appropriate method for identifying where the placemark will be located or you may find that your point could be in the wrong location on your map.

Applying the Schema to your Track:

- To apply the same Trail Finder Data Schema to your track line, tap on the line feature on your map. Tap again on the pop up that appears above the track line. An **Edit Track** window will appear.
- Scroll down until you see the word **ATTRIBUTES**. Below you will again see the **Trailfinder_Features** layer and associated attribute fields. Tap on each field to enter a unique value or select from a pick list of options. Note, it may not be necessary or appropriate to submit values for each field. Skip the ones that are not relevant to the track line.
- When you are done, tap **Close** in the upper left corner.

Save Your Track:

- Tap on the **ruler/pencil icon** in the lower right corner of the map and tap “**Record GPS Tracks**” to return to the **Tracking** menu (alternatively, swipe up from the bottom middle of the map).
- Tap **Stop**. Avenza Maps will ask if you want to stop tracking. Tap **Stop** again to confirm.
- Your track line and placemarks will be saved in the **Trailfinder_Features** layer. They can be viewed and edited from the **Map Layers** window.

Review/Edit Features:

- Tap on the green stack of maps icon in the lower right corner of the maps window to open the **Map Layers** window.
- Tap on the **Trailfinder_Features** layer to view the placemarks and tracks stored in it. Tap on any feature to view its location on the map.
- Tap on the feature again from the map to open the **Edit** window. From there you can edit any of the information for that point or track.
- When you are done editing, click **Close**.

- You can continue collecting a track by using the **Start Tracking** feature again (ruler/pencil icon or swipe up from the bottom of the map).

Share Your Data:

- The data you collect and store in the Trailfinder_Features layer can be shared with others via email, Dropbox, or Airdrop (iOS). The data can be shared from the map or from the Layers tab.
- If you are in the map, tap on the green stack of layers icon in the lower right corner of the map.
- From the **Map Layers** window, tap the **share icon** in the lower left corner – it is the one with the box and the upward/outward facing arrow. Select **Export to Others** (Airdrop can be used if you are next to another person using an iOS device).
- In the **Export Layers** window, change the Filename. A good practice is to use the name of the trail system and the current date in the file name. Avoid using spaces or special characters.
- Tap **Format**. Select either GPX or KML. KML is useful if you are including photographs.
- Set **Track Export** to **Line**.
- Select **All Features** under **Data**.
- Change the image size to small if you have included photographs. This will reduce the file size.
- Tap **Export**.
- Select your Export to method. Email or Dropbox are good options. You can also save the file to your device or to iTunes File Sharing.
- Click **Close** to return to the map.

Pointers - Some things to know and remember:

- When you first obtain it, the TrailFinder_Features layer contains a data schema but no data (features). You will add track and placemark features to it.
- Layers are linked to a map (either a downloaded map from the Data Store, or the OSM basemap). Layers like the TrailFinder_Features schema and associated data (that you collect) can be linked to multiple maps.
- Once linked to a map, the TrailFinder_Features layer must be set as the “Current” (default) layer or any new tracks/placemarks will not be stored in it.
- Data within the TrailFinder_Features layer will not be deleted unless the user manually deletes it. Consider this when mapping new or different trail systems. You might want to start with a fresh copy each time. But be sure to export your data from your previous outing before starting over or deleting features.
- Save your track as a KML if you want to include photos. Keep in mind photos make file sizes large and often unable to be emailed.
- Remember to stop and save your track at trail junctions where two or more trails merge. This will create separate trail features in your TrailFinder_Features layer.
- The TrailFinder_Features schema can be applied to both placemarks and track lines. Not all feature types require values for every field. Fields can be left blank.
- The Avenza Maps team has created a great library of resources to help users. Be sure to check them out: <https://support.avenzamaps.com/hc/en-us>