Using A Mobile App To Find Boundaries



Using Your Mobile Device (Phone/Tablet) as a Tool in Finding Boundaries

- GPS Can Be Used to Supplement Traditional Methods for Finding Property Corners and Property Lines, such as:
 - Survey Maps
 - Compass
 - Tape Measures
 - Metal Detector
- It does not replace the Traditional Methods
- Avenza Maps is the app we started using in 2024
 - It is a Free App Available on iOS and Android

What is a Geospatial PDF Map?



- Farmington GIS Quick Map does not contain coordinate information required to navigate
- A Geospatial PDF Map does contain coordinate information that can be read by a Mapping App
- This type of PDF can be generated using GIS Software (in our case, the QGIS Open source GIS Package)

GeoSpatial Parcel Maps Are Now On-Line

- GeoSpatial PDF Maps for use in Avenza are now available for download from the Farmington Land Trust Website
- Menu Path About Us => For Our Stewards => Then Click on Parcel Maps button at the bottom of the screen
- Or enter the URL https://www.farmingtonlandtrust.org/referencemaps
- Some parcels are grouped together in a single map
- Use the Cross Reference Listing if a map does not appear under the parcel name (Button at the bottom of the Reference Maps page)
- Recommend using the download function so that the map retains the original name (and not the alias name it displays in the URL)

Reference Maps Screen Shot

Reference Maps

- Anderson Ridge Parcel
- Bailey-Granger Easement
- Balazy Easement
- Bancroft Memorial Parcels
- Benson Parcel
- Boulder Brook Parcel
- Boulder Brook Pond Lot
- Boxwood Road
- Bull Lot & Hornblow Easements
- Canal Aqueduct
- Chapman & Carroll Easements
- Clatter Valley Road Parcel and Easement
- Cowles Parcel
- Crary Taylor Easements
- Douglass-Mount and Zipp Parcels
- Emery- Smith Easement
- Feeder Canal Easements
- Godin- Torrey Parcel
- Griner Parcel
- Haviland Easement
- Hunter Easement
- Judson Lane Parcel
- Kendrick Parcel
- Kozlowski Easement
- Larkin Parcel-Schaus Easement
- Lidgerwood Parcel

- Little Reservoir Parcel
- Mason-McCook Easement
- Maxim-Conklin 1
- Maxim-Conklin 2
- Mountain Spring
- Nevius Tract
- Patrissi Wadsworth Parcels
- Pequabuck Parcel
- Pond Lot Parcel
- Powers Parcel
- Prattling Pond Parcel
- Prattling Pond Survey
- Quarry Parcel
- Red Oak Hill Parcel
- Rice Brook & Smith Parcels
- Rutz & Miser Parcels
- Savin Parcel
- Schlatter Parcel and Wildlife Preserve
- Scientific Leasing Easement
- Sheila Tracy Nature Preserve
- Steadman Parcel
- Thompson Meadow Easement
- Wadsworth Memorial Easement
- West District Nature Preserve

- All Parcels have either an individual map or are grouped with other parcels
- Use the Parcel To Map Cross Reference to find • the map for a given parcel
- Documents also exist for the Annual Steward • Process and Instructions for using Avenza



The above buttons are available at the bottom of the Reference Maps Screen

- Trevisan Parcel

- Walters Parcel

Steps to Using Avenza Maps in the Field

- 1. Install the Avenza Maps App on your mobile device (Smart phone or Tablet)
- 2. Download the GeoSpatial PDF map for the Parcel(s) to the mobile device
 - Can be done directly from the FLT Website
- 3. Load the Map into Avenza
 - Depending on your device, it may be possible to combine steps 2 & 3 into one step
- 4. Go into the field and walk the boundaries as shown on the device

Step 1 – Install the Avenza Maps App



- Search on "Avenza Maps App Free"
- You want to install the Avenza Maps: Offline Mapping
- Note: There is a paid version, but the free version is all we need
- You do not need to create an account to use the App

Step 2 – Download the GeoSpatial PDF Map to your device

- There are a number of options to get the map to your device
 - Download from the FLT Webpage using your mobile device directly to the mobile device (recommended)
 - Can go to a folder on the device (e.g., Downloads), and then load to Avenza
 - Can send directly to the Avenza
 - This will be demonstrated for both Apple and Android devices
 - Download the map to a cloud-based storage location (Dropbox, One Drive, etc), and then load from that location
 - Can be advantageous if you have more than 3 parcels that you want to access maps for on a regular basis
 - This will NOT be demonstrated
- There are many different devices manufacturers, running different operating system versions, and different browsers in use. Your results may be slightly different from what is documented here, but the end result should be the same.

Step 2 – Download the GeoSpatial PDF Map to your device (Continued)

- Three methods will be demonstrated
 - Step 2.1 Download IPad with Safari Browser To A Folder
 - Downloads Folder
 - This will then require a second step to load into Avenza
 - Step 2.2 Download IPad with Safari Browser Direct to Avenza
 - Step 2.3 Download Android with Chrome Browser To A Folder
 - Downloads Folder
 - This **may** require a second step to load into Avenza, or you may be prompted to load to Avenza as part of the download process
- Note: All of the following demonstrations may look different depending on the device, operating system, and browser you are using

Step 2.1 – Download – IPad with Safari To A Folder



2.1.1 - Navigate to the Reference Maps Page and Select a Map 2.1.2 - The Map will open. Select the Download Icon - 2.1.3 - A menu appears. To save to the device, scroll down to **Save to Files** and Select

Step 2.1 – Download – IPad with Safari To A Folder (Continued)



2.1.4 - Navigate to the Downloads Folder (or your preferred folder), Select **Save** 2.1.5 - The Map will now appear in the Downloads Folder

Step 2.2 – Download – IPad with Safari Direct to Avenza



2.2.1 & 2.2.2 – First two steps are the same as saving to the device. Select a map then Select the Download Icon 2.2.3 - A menu appears. To save to Avenza, scroll right or left through the apps until you reach Avenza and Select

2.2.4 - The Avenza App will open, and the map will be downloaded.

Step 2.3 – Download – Android with Chrome to a Folder ♥⊿ 177% 3:04 ▼⊿ 177% 3:02



Open with Avenza Maps Just once Always Use a different app File Viewer Dropbox . PDF Viewel Adobe Acrobat Adobe Acrobat D Get Insights with AI Assistant Ghostery Document Reader Drive 4 Drive PDF Viewe CamScanner Open in CamScanne CamScanner Open PDF CamScanner PDF to Images (CamScanner CamScanner

2.3.1 - Navigate to the **Reference Maps Page** and Select a Map

2.3.2 – Popup will display the folder where to download. Navigate to the desired folder, then Select Download

Cancel

2.3.3 – File is downloaded, then it asks which app should be used. In the above example, it is proposing Avenza. Select Just Once.

Step 2.3 – Download – Android with Chrome to a Folder (Continued)

My Maps

Library

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Anderson Ridge Parcel GeoSpatial

7.5 MB - Inactive

9.9 MB - 1.26 mi

8.4 MB - 1.326.83 m

13.8 MB - 1.96 mi

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2.3.4 - Avenza will open, and the Map will be loaded.





Click the 3 dots next to the map you want to take action on. A menu displays. When only 3 maps remain, all will be active.

Step 3 – Load Map to Avenza



3.1 - Open Avenza App, Select the 🕂





3.3 - Select Cloud Storage or Device, assuming you previously downloaded a map to this device.

Step 3 – Load Map to Avenza (Continued)





3.4 - Navigate to the appropriate folder and Select the appropriate Map from the List

3.5 - When the download is complete, the Map will show up in the Library



3.6 - Verify that the map is not marked as Inactive, and that there are no errors listed

The distance listed above (1.27mi in the above example) is how far the device is currently from the area listed in the map

Step 3 – Load the Map into Avenza (Continued)



3.7 - Selecting the map will load it into Avenza



Note: The free version of Avenza only allows the loading of 3 Maps at one time. To get around this, you would need to delete a map to add a new one.

3.8 - You can use your 2 fingers to zoom in or zoom out

Step 4 - Go into the field and walk the boundaries as shown on the device



- When in the field, your location will be indicated by a blue circle that will point in the direction you are heading on the map.
- You can now walk towards property corners, or along property lines
- When close to the location, move slowly to let the GPS adjust
- Note: This will <u>not</u> be exact there is a margin of error!
 - From my experience so far, this can be as small a few feet, to 20 to 30 feet

GPS Accuracy

- There are many factors that affect GPS accuracy, such as:
 - Quality of GPS Device (Phone or Tablet)
 - FYI My IPAD is producing very inaccurate results, while my Android phone is pretty good
 - Quality of GPS Signal
 - Weather conditions, time of day based on where the satellites are positioned, and tree cover can all impact
 - Quality of parcel data used to build Geospatial PDF Maps
 - Needed to tweak Farmington Parcel data, but have drastically improved accuracy
 - Can be discrepancies between Parcel data and Survey Maps
- We are only using GPS to find existing corner pins, not to mark where pins belong!

Can I record my findings in Avenza?

- Yes, you can for your own use, but **NOT** for submitting
- Avenza has the ability to set Placemarks
 - Type of pin
 - Color of pin
 - Add text
- This creates a layer in Avenza, that can then be exported as a file with a KML extension
- This file can be read into the QGIS software that is used to produce the maps, but color coding and text is NOT imported.
- Therefore, we would like to keep this process as simple as possible by just using a marked-up map.

Troubleshooting Avenza Issues

- If your map loads with a file name you don't recognize, you can rename it. Click the ••• (3 dots) next to the file name and select rename
- If your map loads as Inactive, you probably have more than 3 maps. Click the ••• next to the maps you don't require, and select delete. Continue until only 3 maps exist. The Inactive map should become active.
- A map has an error loading, and it can't be deleted. In this case, I would recommend deleting the entire Avenza app and re-installing.
 - I have found that trying to install a map directly from a URL specified in Avenza from the Land Trust webpage can cause this problem.

What if I find a problem with an Avenza Map

- We are using publicly available parcel information to produce our Avenza Maps
 - Ultimately the Town of Farmington is responsible for this information
 - Updates are not done frequently
 - We have found issues with the Town of Farmington GIS system, that then appear in our maps
- Parcels with easements also required additional steps to generate, so parcels with partial easements may be an issue
- It is also possible that a mistake was made in the generation of the GeoSpatial PDF
- Please report any issues to Office@FarmingtonLandTrust.org