This presentation contains QR codes

QR codes provide a very convenient way to transfer useful information from a meeting presentation like this to your smart phone, tablet or computer.

A QR code can give you fast access to a Web page. Scanning is convenient because your phone or table can scan faster than when you type a web page address (a.k.a. URL), and more accurately too.

The bottom line is that scanning each QR code saves you both typing time and the frustration of typos.

Save Now, Scan Later

At the end of this presentation, you will find a YouTube URL for my seminar on how to scan QR codes.

Since you may not know how to use your devices to scan a QR code, the Save Now, Scan Later technique enables you to save each slide containing a QR code on your computer so you can learn to scan QR codes later and then scan my QR codes at your convenience.

Save now, Scan later!

Windows: WIN+PRTSCR
Stores in Pictures/screenshots

Macintosh: COMMAND+SHIFT+5
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Learn how to scan QR codes with your smart phone or tablet

My presentation on how to do so can be found on YouTube. The URL is:

https://www.youtube.com/watch?v=8Fskl_RIh-w

The education starts at time point 20:00 and ends at 32:30.

For the modest investment of your time, you get a very useful capability!

Save now, Scan later!

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Stores in Desktop folder

OFFLINE MAPS
for your phone or tablet

Presented by John Krout

For

The Naples Techology

User Group

February 16, 2023

Why is this topic useful to you?

- If you use your smart phone for navigation in a car, instead of a car GPS receiver.

- If you like to visit national parks or other mountainous rural areas where cell towers are blocked by mountain ridges.

- If cell tower signals are weak, or cell towers are overwhelmed with demand, and you want to speed up response time of a map app.

- If you want maps to appear, scroll and magnify **fast**.

Agenda

- How smart phone map applications work

- Cell towers are not found everywhere, and other problems

- Map applications that can use free offline maps

- Advantages and disadvantages of offline maps

- How to obtain and install offline maps

- How to use offline maps in a map app

Maps and GPS

Mapping apps on your phone or tablet depend on **two data sources**:

- **Global Positioning System (GPS) signals** to determine your location. In your Settings app, ennable Location Services in order to use GPS signals.

- **Cell tower data** (**or WiFi)** to obtain maps for the region around you.

- Without cell tower or WiFi data, you will not see maps.

- When cell tower data service is slow, or demand exceeds supply, your maps will update **verrrry slowwwwwly.**

Cell tower data is NOT available everywhere

- Any sparsely populated area, especially away from interstate highways. Eastern Shore of Virginia.

- **Mountains** – West Virginia, western Maryland, Virginia, Pennsylvania, Carolinas, Kentucky, Tennessee, Georgia, the Rockies, the Black Hills, the Sierras.

- **Yellowstone National Park**. Cell sites are *intentionally* limited to the Villages (hotel and gas station sites).

- Other national parks.

- Anywhere a crowd overtaxes the one and only cell tower.

CAR GPS receivers

- These have offline maps built in, and no need for cell tower access.

- Map updates are available twice per year for Garmin GPS receivers.

- Some people do not want to spend money on a car GPS receiver (typically $100+)

- Some national parks intentionally limit number of cell towers, to avoid impacting the natural scenic beauty.

- I was very glad to have a car GPS receiver when I visited Yellowstone National Park!

What can you do when there is no cell phone data service?

- Use free **Offline Vector Maps**

- **Offline** means stored on your phone

- **Vector** means good sharp detail at any magnification

- Some phone/tablet map apps can display Offline Vector Maps.

- The trade-off: offline vector maps are often BIG FILES

Map Apps
that can use offline maps

Map apps supporting offline maps fall into 3 categories:

- **FLEXIBLE:** apps that use online maps and any compatible offline maps that you choose to install.

- **OFFLINE-ONLY**: apps that use only offline maps; use the app itself to do the downloading.

- **ONLINE+:** apps that use online maps and permit you to download maps for offline use, again using the app to do the downloading.

Map Apps
that can use offline maps

EXAMPLES OF THE FLEXIBLE APP GROUP:

- **Locus Map:** a versatile general mapping app for Android only.

- **c:geo:** geocaching app, displays a map showing geocache locations. For Android only.

More Map Apps
that can use offline maps

AN EXAMPLE OF THE OFFLINE-ONLY GROUP

- **Maps.me:** offline maps only, for iOS and Android. Works only with maps downloaded using the app.

AN EXAMPLE OF THE ONLINE+ GROUP

- **Google Maps**, for iOS and Android. You can download an save temporarily a map of an area, small or large.

About the offline-only and online+ map groups

If you use such an app, and you know or suspect you are about to visit an area with slow or no cell tower data service, then download the maps for that area **before you go**.

Because you may not be able to do so after you get there.

Offline Maps work like online maps

- You can Zoom in and Zoom out.

- You can set the map app can to stay centered on your position and scroll the map automatically as you move along on foot or in your car (or a train, ship or airplane).

- In some map apps, you can create a **track of you travel**, including the duration. This is useful for tracking walking pace during a hike, and for returning to your parked car.

- In some map apps, you can automatically plan a car travel route.

WHERE TO OBTAIN OFFLINE MAPS

for Locus Map

Where to download free offline vector maps

https://bit.ly/2lCoDTq
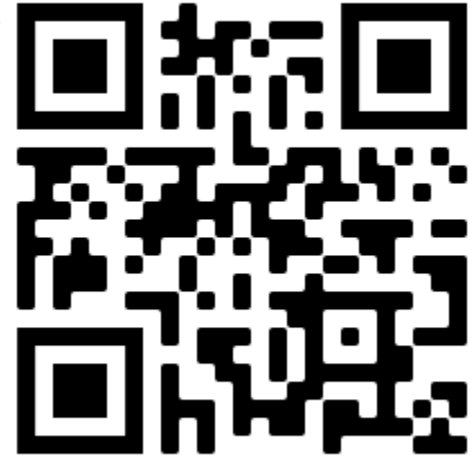
A German Mapsforge mirror site that provides free downloadable maps of US states, US regions, and Canadian provinces.

The maps of regions and provinces are BIG, some are more than 1 GB. The extension on each file name is **.map**

Scan the QR code

Save now, Scan later!

Windows: WIN+PRTSCR
Stores in Pictures/screenshots

Macintosh: COMMAND+SHIFT+5
Stores in Desktop folder

Where to download free offline vector maps

Each time you click a map file, it will start downloading. **US-South** and **US-Pacific** are the largest files.

US Regional Maps, US state maps

Index of /pub/Mirrors/download.m

Name	Last modified	Size	Description
Parent Directory		-	
canada/	2023-01-30 02:01	-	
greenland.map	2023-01-10 13:51	1.5G	
mexico.map	2022-12-11 21:46	585M	
us-midwest.map	2023-02-01 03:06	1.4G	
us-northeast.map	2023-02-01 13:38	1.0G	
us-pacific.map	2021-10-02 07:26	5.0G	
us-south.map	2023-02-03 10:21	2.3G	
us-west.map	2023-02-04 14:03	1.8G	
us/	2023-02-04 23:01	-	

Apache/2.4.54 (Fedora Linux) Server at ftp-stud.hs-esslingen.de Port 443

Scope of US regional offline maps from Mapsforge site

- **US-South:** DE, MD, VA, WV, NC, SC, GA, FL, AL, MS, LA, TX, OK, AR, TN, KY (2.3 GB)

- **US-Northeast:** PA, NY, NJ, CT, RI, MA, VT, NH, ME (1.0 GB)

- **US-Midwest:** ND, SD, NE, KS, MN, IA, MI, MO, OH, WI, IL, IN (1.4 GB)

- **US-West:** WA, OR, CA, NV, AZ, CO, NM, UT, ID, MT, WY (1.8 GB)

- **US-Pacific:** AK, HI (5.0 GB)

Make a map storage folder on your Android phone or tablet

- If your phone has a micro SD slot, then I recommend using micro SD card storage, at least 64 GB. As of February 2023, 64GB micro SD cards cost less than $12 online.

- Attach the card to a Windows computer, and **use Windows File Explorer** to create the folder for map storage, and to copy the downloaded offline maps files to that folder.

- Make sure the internal storage or micro SD card has several gigabytes of available space.

- Name the maps folder so that its purpose is *crystal clear.* I named mine **Mapsforge maps.**

If you device has no card slot

This is true of all iPhones/iPads and the Samsung Galaxy S6, S21/22/23 phones.

Either use internal flash memory, or add a flash drive to your device through its charging port.

Various flash drives are available with USB-C plugs or Lightning plugs.

Download to your computer, or to your portable device?

- The Mapsforge offline map files are BIG.

- If your computer has an ethernet connection, that will likely download the map files much faster than a download to your portable device via WiFi.

- Then copy the files from the computer to the phone or tablet.

- Also, keeping a copy of each offline map file on your computer is a good backup tactic.

Use Offline maps
in map apps
specifically Locus Map and c:geo

Two Steps

These instructions assume you have copied offline maps to a known storage folder on your Android device.

- **Configure** the map app to find offline maps
- **Select** an offline map for use in the map app

Offline Maps in Locus Map

version 4.14.2
a FLEXIBLE app

Quick map access icon

Main menu icon

Center Map at My Location icon
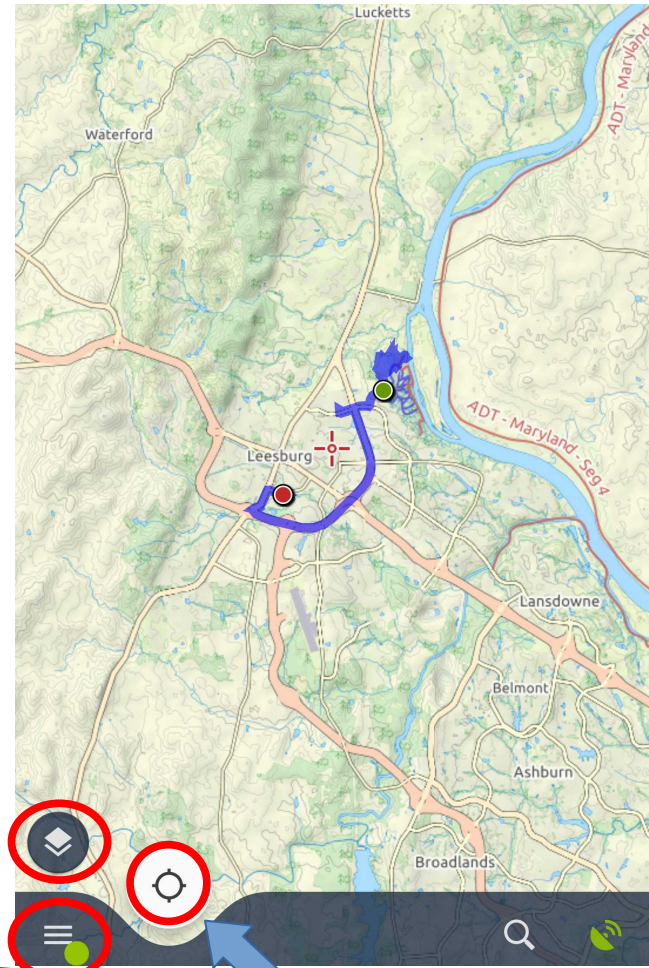
Why did I first use Locus Map?

- This app has a feature, **hike tracking**, that I use to record the distance and duration of my hikes, and specific GPS coordinates along the way. It can also be useful to find your way back to your starting point, such as where you parked your car.

- Later, I used another feature of Locus Map to create extensive groups of **Waypoints**, map markers with info on each marked site. These can be found either by browsing the map or by search for a keyword contained in the waypoint.

Locus Map configuration

- Locus Map on my Galaxy S10 smart phone detected the Mapsforge v5 Maps directory for offline maps immediately, with no action on my part.

- This is very convenient.

- On my Galaxy S5E tablet, and my Galaxy S20 phone, I found automatic detection did not happen.

- I had to tell Locus Map where to find offline maps.

Confirm Locus Map has detected offline maps

- Tap the **Main menu** icon: The Main Menu appears

- In the menu, tap the **Map Manager** icon. The Map Manager screen appears, with the ONLINE tab selected by default.

- Tap the OFFLINE tab. Offline maps are listed in that tab.
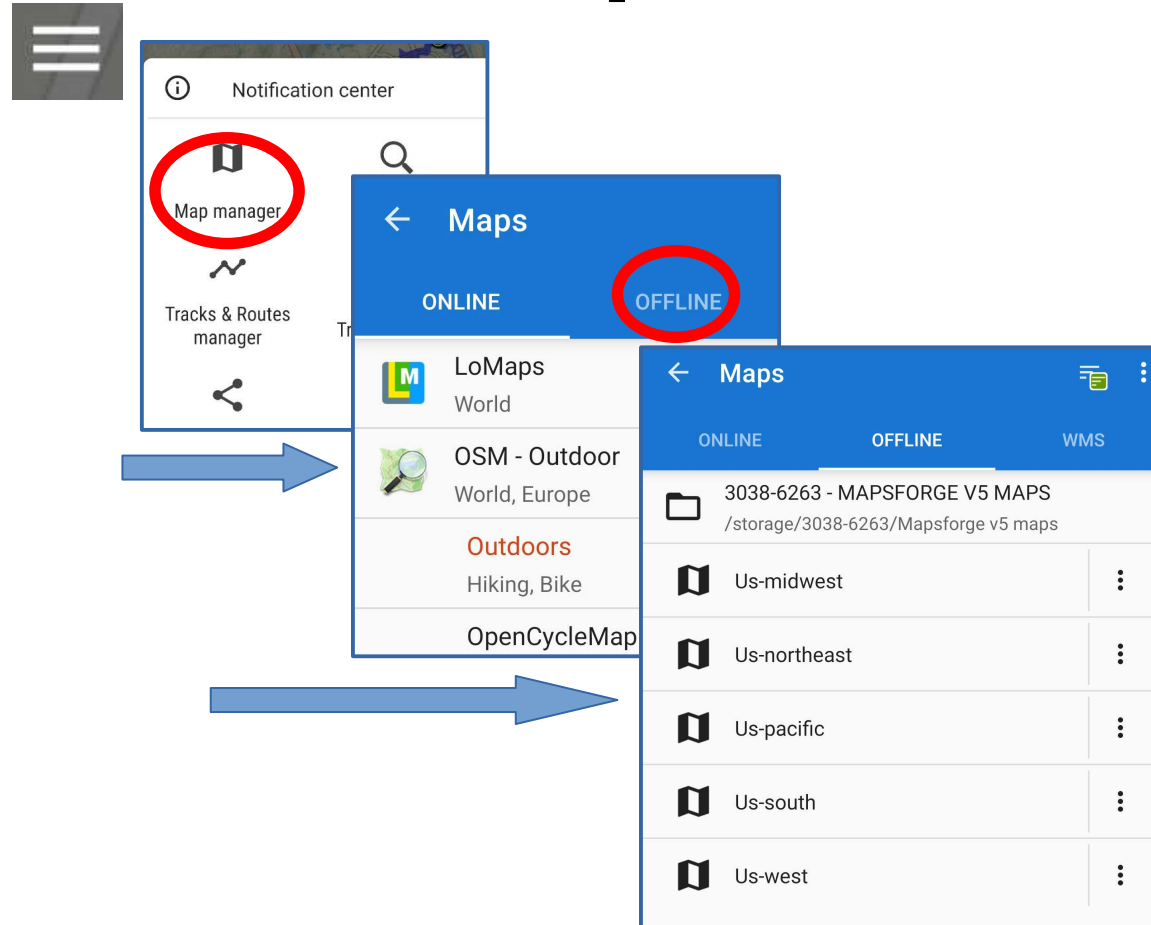
If Locus Map does *not* find offline maps automatically

- No map file will appear in the Offline maps tab.

- Instead, you will see the message "Nothing here yet"

- Tap the **+ icon** to browse to the offline maps folder you created
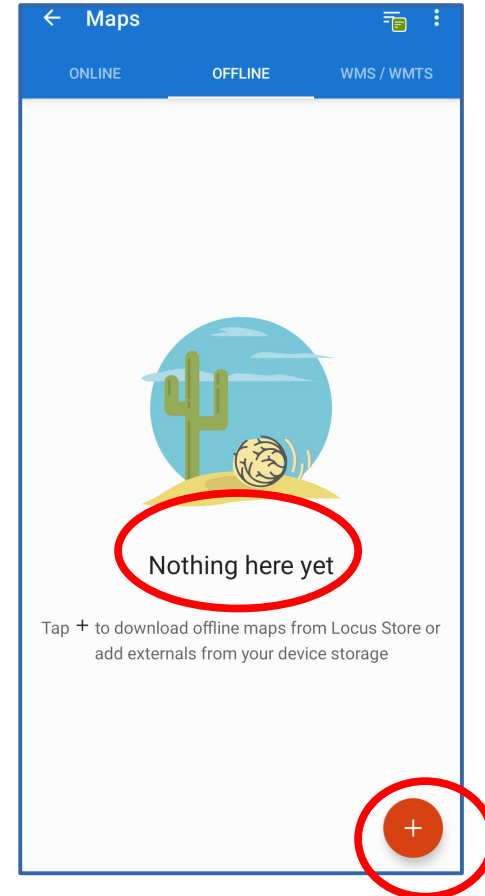
A pop-up appears

Tap **Import Map**

A **Select Source screen** appears with various locales from which to import a map
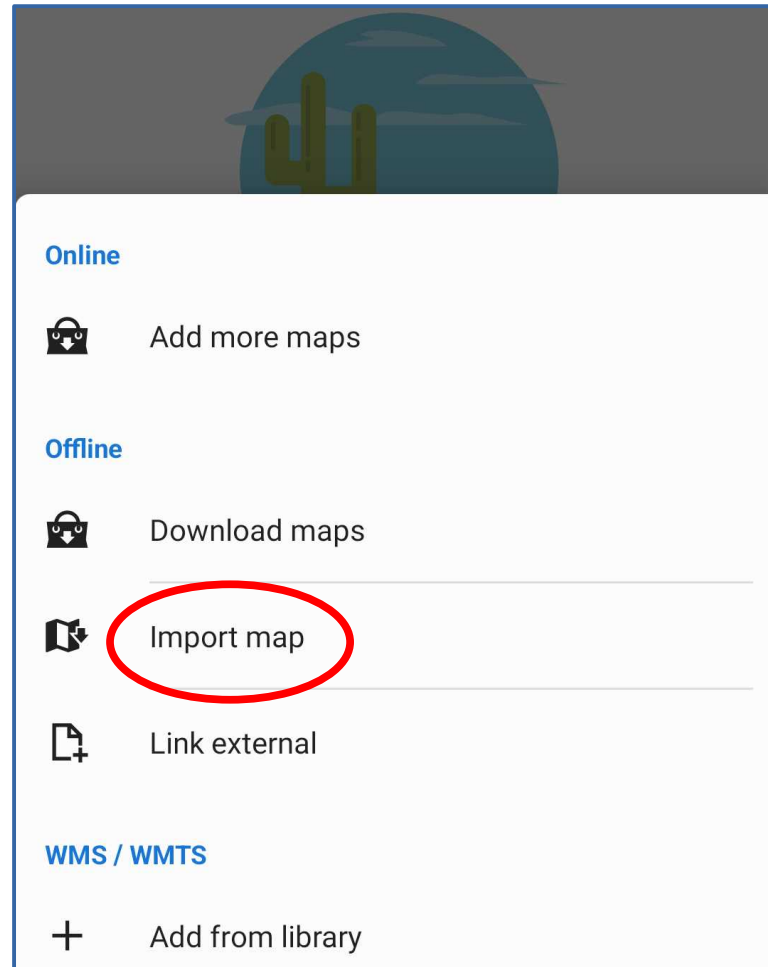
The Select Source screen

In this screen, tap **System File manager**.

That screen opens.
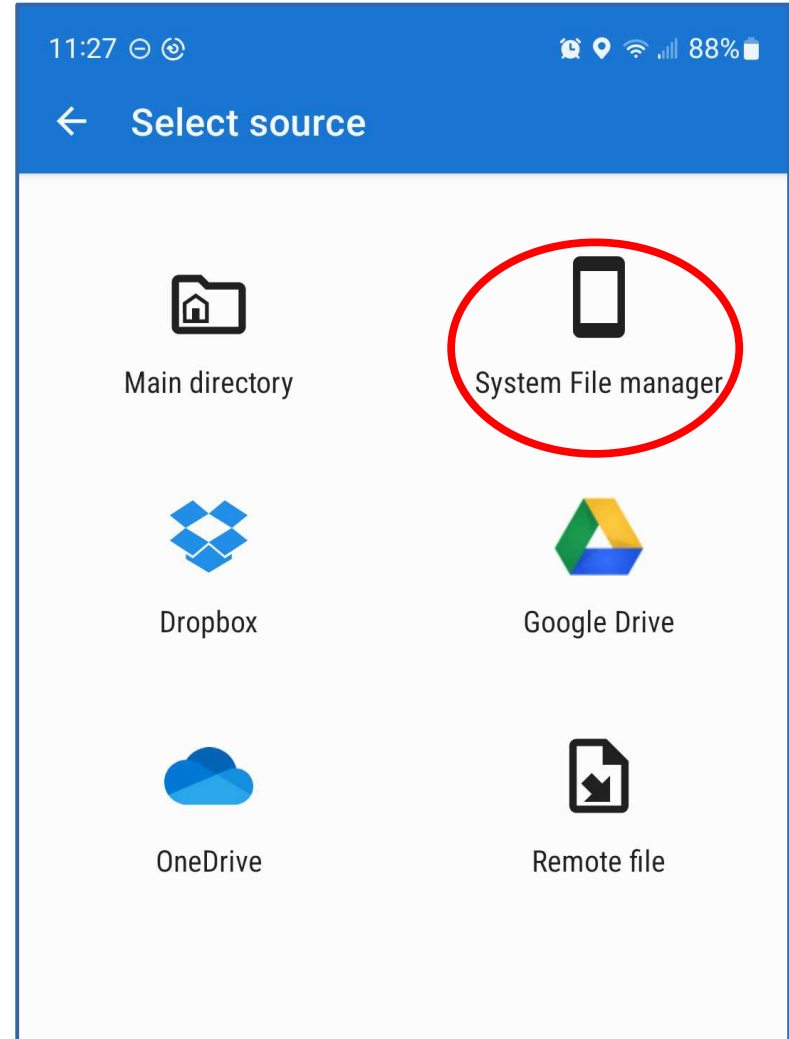
The System File manager

The System File Manager screen enables you to browse through your folders to find and open the folder containing map files.

The starting point, the path to the current folder, is shown at the top.

In my case, I had already used System file Manager to browse to my Mapsforge Maps folder, so the screen started there.
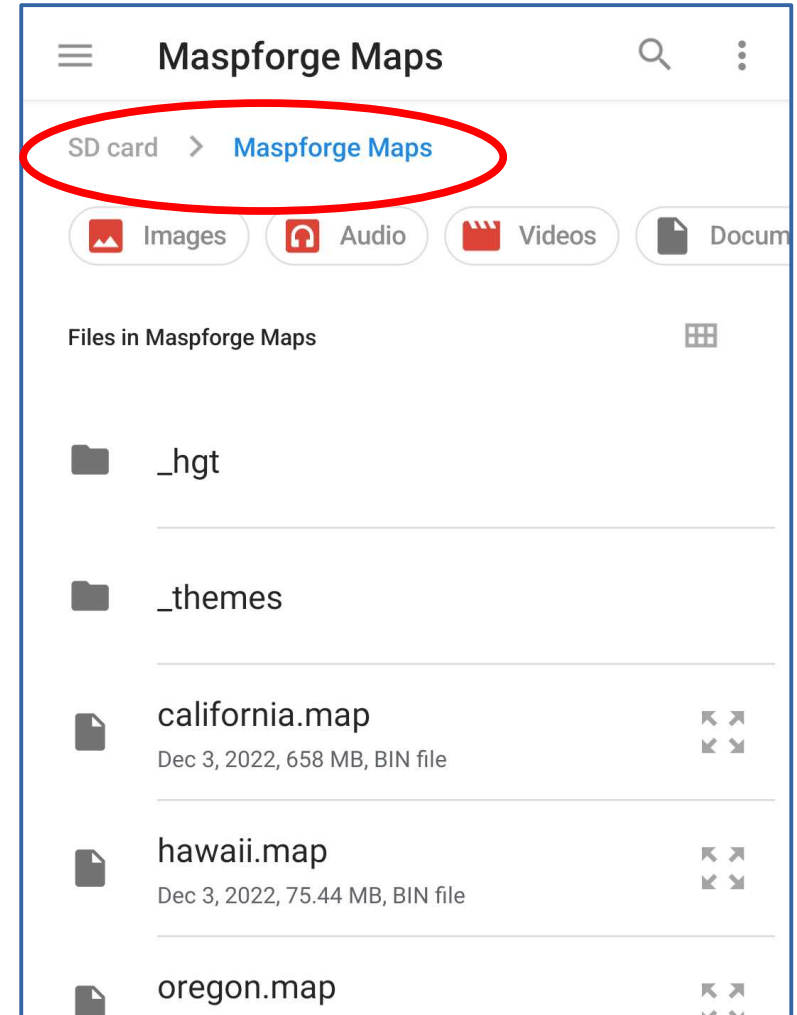
To find a different folder

To move UP the folder tree, tap the word at the start of the folder path

To move DOWN the folder tree, tap a folder in the files list
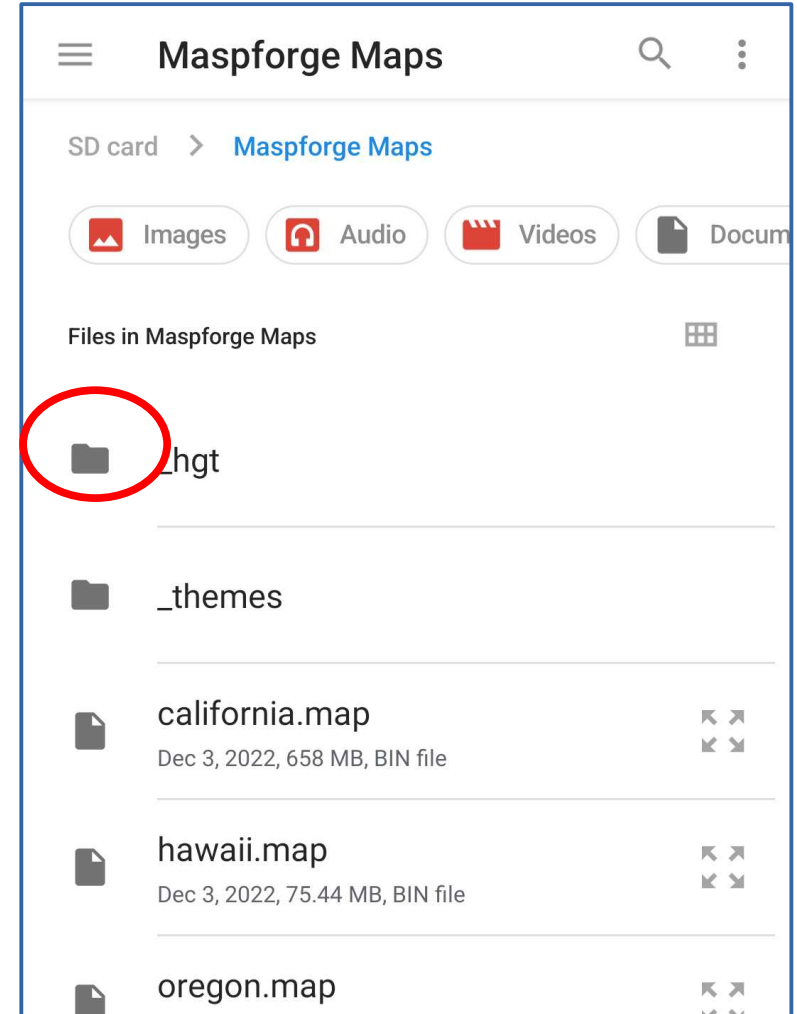
The System File manager

This part of Locus Map is designed to import **one map file at a time**.

Scroll to the map file of your choice, and long-tap the file name. A check-mark appears in a blue circle.

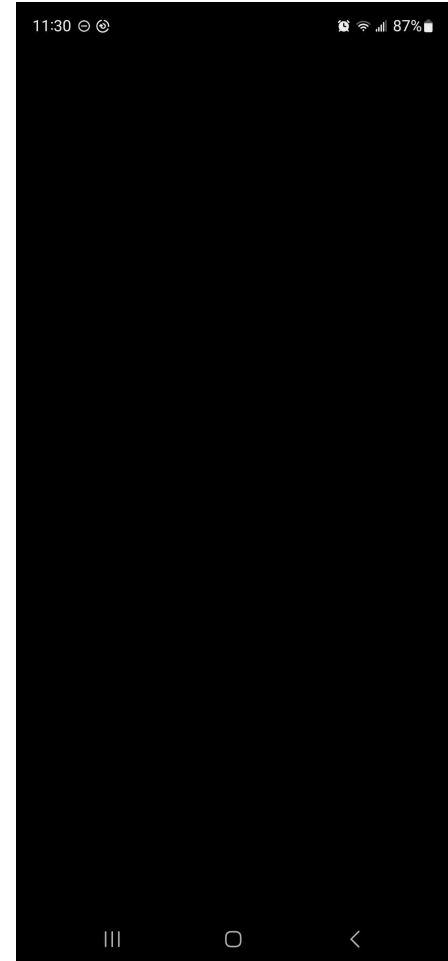At the screen top, tap the word **Select**.

For a few seconds, nothing happens.
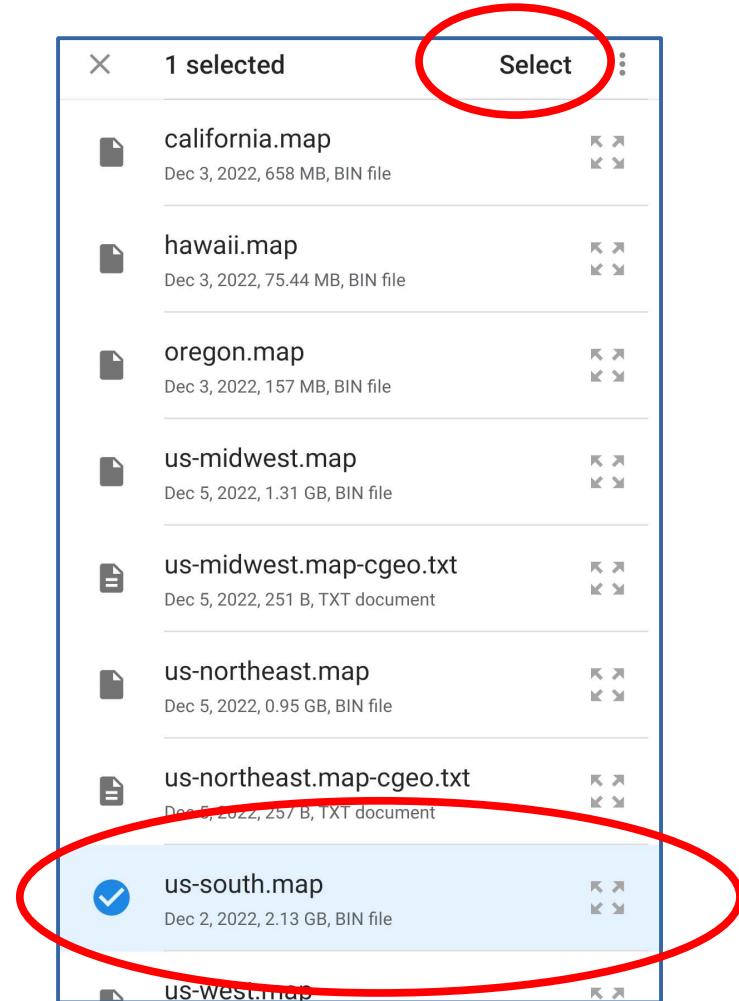
The screen goes black

This may last for several seconds.

I counted 20 seconds.

Be patient. The black screen will change.

The Import confirmation pop-up

This pop-up asks for confirmation that the map should be imported. Tap the word **IMPORT**.

On my screen, the **+ icon** at the bottom right flickered when the import was completed.

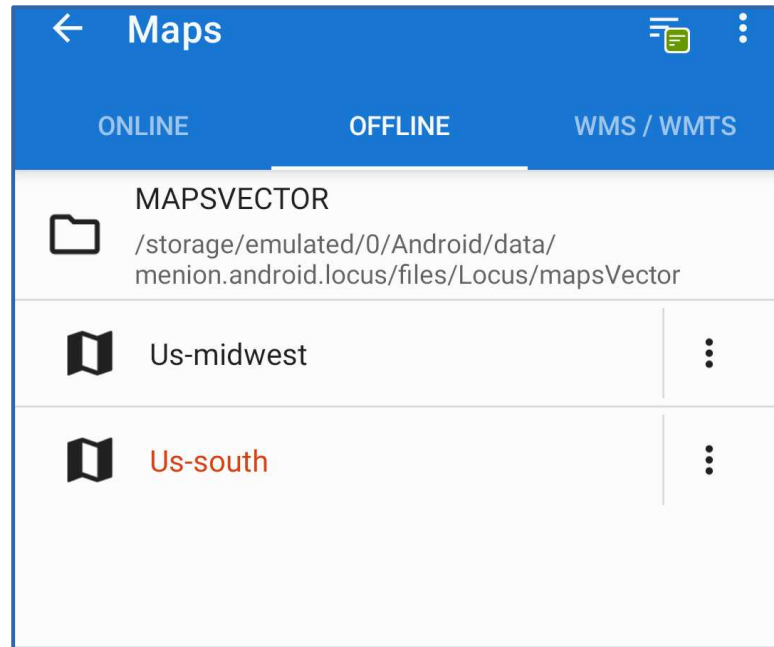At that point, the pop-up is still on the screen. Tap the word **CANCEL**. The pop-up closes.

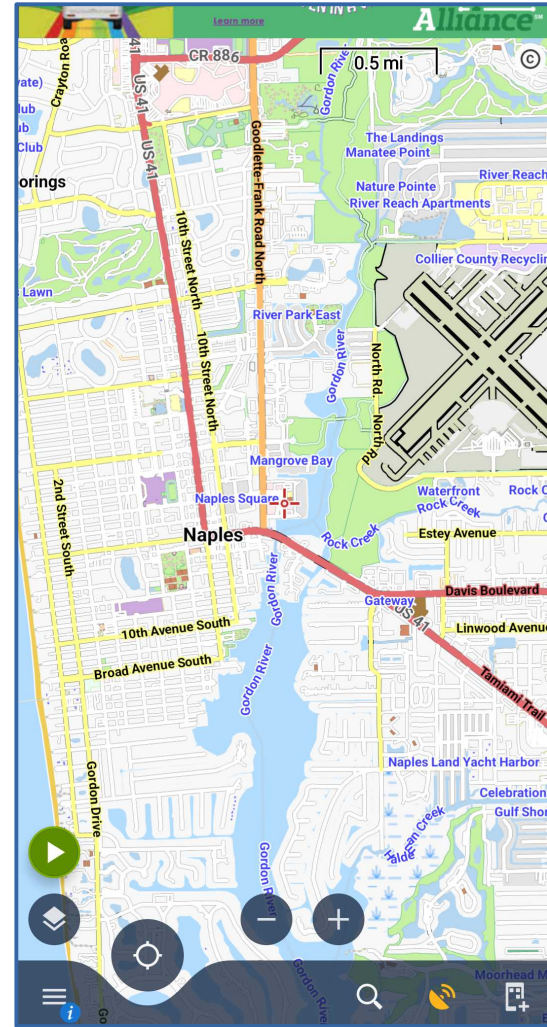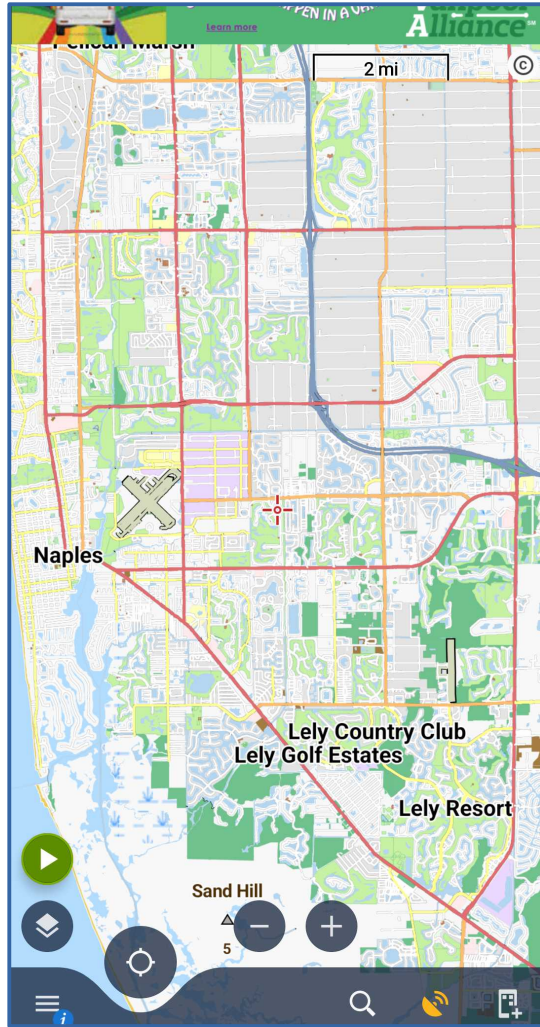If, instead, you tap IMPORT again, the file is imported again.
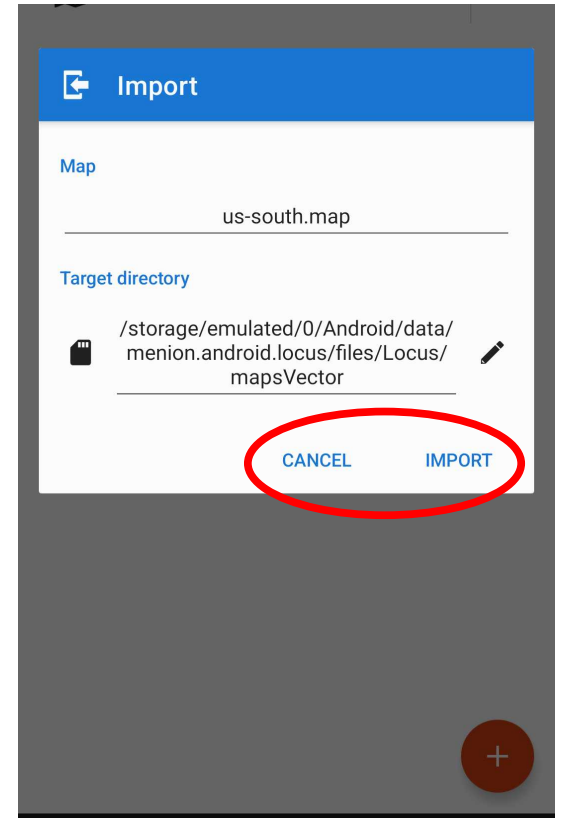
The Offline tab reappears

The tab now lists the newly imported offline map.

The imported map is now the current map.

Naples in Locus Map US-South map

Maps.me

for both Android and iOS
an OFFLINE-ONLY app

Maps.me

- Uses **OpenStreetMaps (OSM)**, the same data source used by Mapsforge. Its level of ***urban and suburban detail*** seems close to Mapsforge maps.

- It organizes US maps into 185 regions, each with its own map, and will prompt you to download each new region when you move the map there manually.

- The Android version has a Settings option to store maps on a micro SD card.
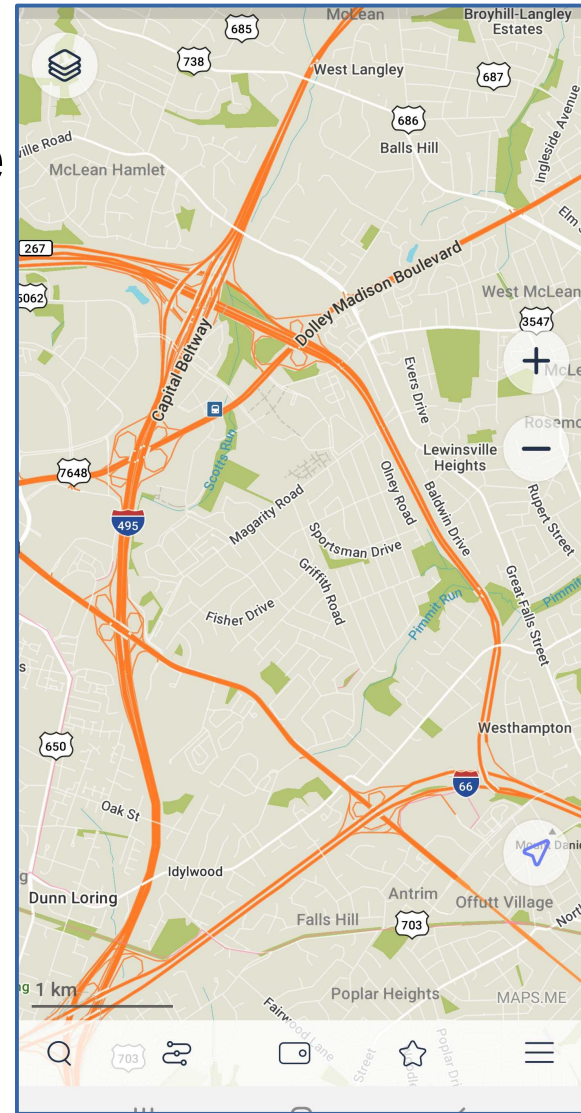
Maps.me features

- Maps.me supports creation of custom waypoints, which the app calls Bookmarks. It has an option to back up bookmarks on the Maps.me server farm, though you can do that on your computer easily.

- Each map needs to be downloaded only once, and will remain on your phone indefinitely. Whenever you need it again, it is there.

- Maps include many cities and other areas world wide.

- In some ways it is the easiest to use of any map app, but it conspicuously lacks a TRACK ME icon, so the map would scroll along as you travel.

Maps.me tradeoffs

- The app does not appear to have an option to use pre-installed offline maps such as the Mapsforge maps.

- Downloading using WiFi at home, to avoid impacting the contractual limit on you monthly cell data usage volume.

- You can download addition map layers. Examples include terrain and Metrorail, the DC subway system.

- The Maps.me map for West Virginia lacked both roads and trails that appear on the Mapsforge map.

- The map for my county, Arlington VA, lacks many but not all of the house numbers.

# Naples in Maps.me
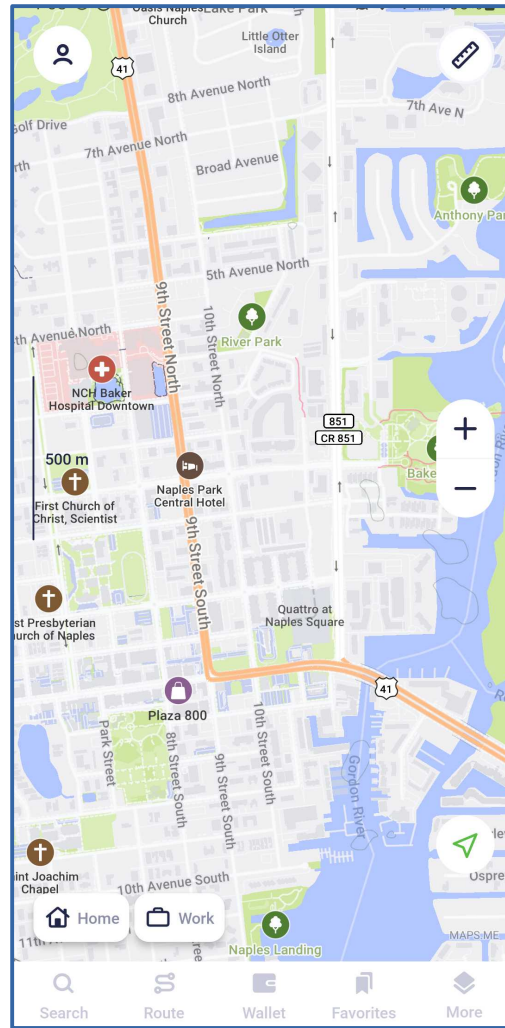
Google Maps

for both iOS and Android
an ONLINE+ app

Google Maps

- On both **Android and iOS**, this app does permit use of Mapsforge maps for offline use, but only maps downloaded using the Google Maps app.

- Use WiFi and download in advance, rather than cell tower to download on site.

- Offline maps are *temporary*, with expiration dates, typically 365 days. Expired maps are purged by the app, but you can download them again.
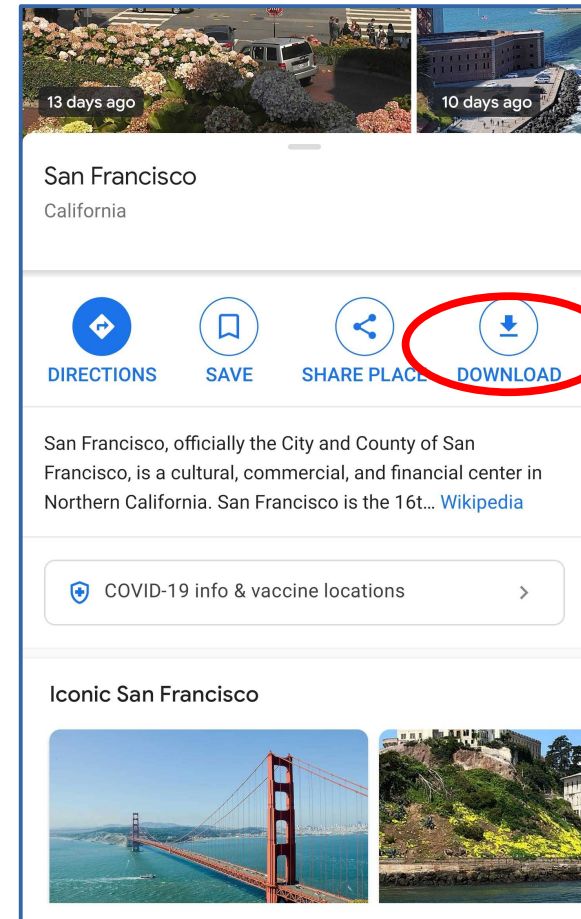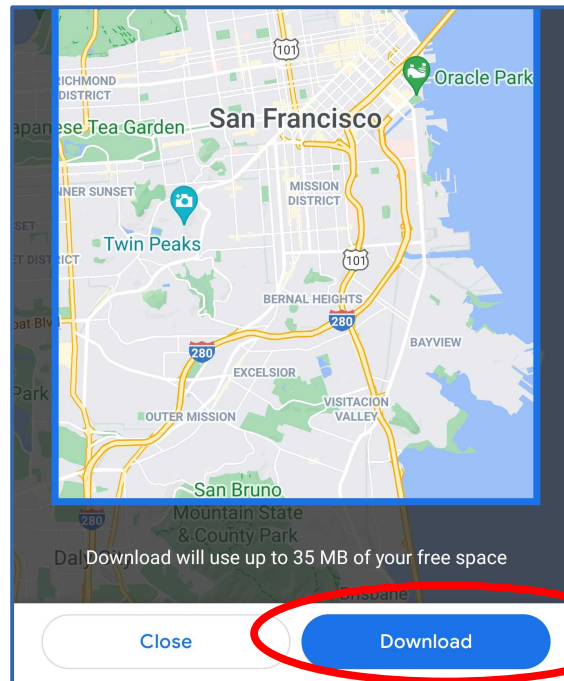
Google Maps: Store a map

- Ideally, do this while on WiFi, to avoid impacting your monthly ceiling on cell tower data downloads.

- Search for a specific city or location **by name**

- The location appears on the map, with its name at the bottom left.

- **Tap the location name at the bottom left.**
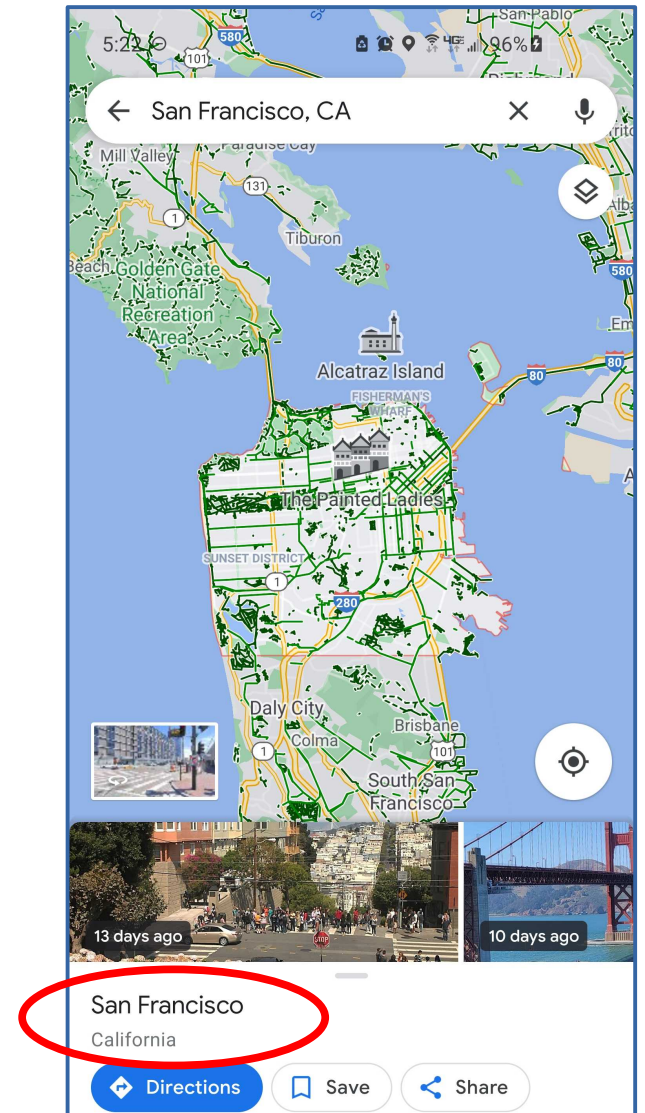
Google Maps: Store a map

- This screen of map options appears.

- **Tap the Download icon.**

- The screen changes, showing you the amount of space required to store the map offline.

- **Tap the Download button.**

Google Maps: Use a stored map

- Tap the Search field at the top (not shown)

- The app displays a list of Downloaded maps and Saved maps.

- **Saved maps** are stored *online only*, and are marked with a Star.

- **Downloaded maps** are marked with a Clock Face.

- **Tap a Downloaded map, and it appears.**
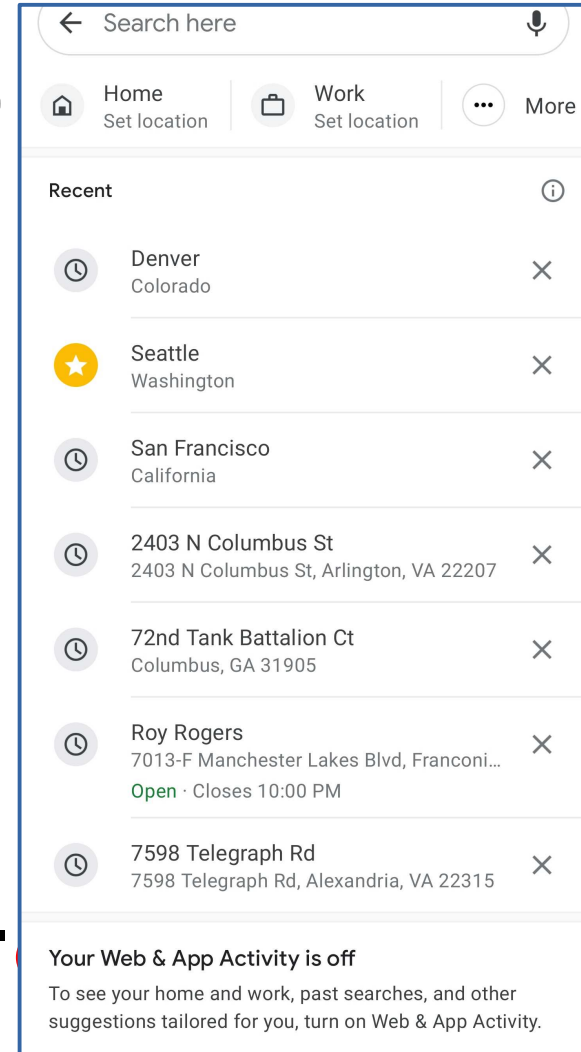
Preview of Coming Attractions

You are invited to attend the Saturday 2/18/2023 meeting of the Potomac Area Technology and Computer Society (PATACS) at 1 PM PM ET via Zoom.

This will include my updated info on three topics I originally presented in 2022 for PATACS:
(1) Internet Radio on the Road, Safely; and
(2) Record 4K Video with a smart phone or tablet; and
(3) Stream audio from your computer with VLC

You will also be given access to the video recordings and slide decks of those 2022 presentations.

Preview of Coming Attractions

How to obtain the PATACS Zoom meeting details for Saturday 2/18 at 1 PM (you do not have much time):

Send an email to ffxmtg(at)patacs.org and include your full name, city and state, and your user group name; OR

Scan this QR Code, which literally opens your email app and writes the email for you. You still must edit the email to include your full name and city and state, and then tap the **SEND** button.

Save now, Scan later!

Windows: WIN+PRTSCR
Stores in Pictures/screenshots

Macintosh: COMMAND+SHIFT+5
Stores in Desktop folder

THE END