Collector for TAMS-HydInfra – Manual

0. Recommended software and firmware versions for MnDOT Collector Inspections -- as of July 2019:

a. GNSS Status App = 3.0.5.615 -- *it looks like there have been improvements to Bluetooth connectivity in this recent version
b. R1 Firmware = 5.09 – this is not the most current version. Find 5.09 under Trimble's Archived Versions
c. Collector = 18.0.2

1. Get Started

a. Install or re-install **Collector for ArcGIS** App from Software Center

b. MNIT installs **GNSS Status** app on Tablet – email request to MN_DOT_ITServiceDesk

c. Login to Collector App **–** HydInfra Insp Train to practice or HydInfra Inspection for Production

d. Connect to R1 GPS in Collector --

    i. Bluetooth to R1 in tablet settings;

    ii. Connect to GNSS Status;

    iii. Connect R1 in Collector

e. Check location accuracy in map window matches GNSS Status location accuracy, about 3 feet

f. Work live or disconnected -- Live updates are best but need cellular data

2. Live Inspection Procedures

a. Open Collector App

b. Login to get Routes and asset layers (ad\last1fir and your MnDOT AD password)

c. Check Map Contents > Layers (upper left corner 3 dots . . . menu) has Route and asset layers listed

d. Zoom in on map to see HydInfra assets and Route

e. Create a new asset by clicking on Route (road red line), choose the listed route then scroll down to choose the asset type to add (Pipe, Structure, Pond)

f. Click on an existing asset to view information then edit (Be aware that assets close together may show only one asset ID. Click on the labeled asset to see all the assets listed, and choose from the list)

g. Add Inspections to assets – click on asset and scroll to bottom of asset window choose Inspection

h. Pipes only -- Add End Sections, Extensions and Components

i. Recommended procedure for inventory and inspection:

    a. Get accurate locations

        1. Look and identify upstream and downstream ends of pipe.

2. Sketch in the **upstream end of pipe first** and the **downstream end second** by clicking on the map in order

3. To get an **accurate** location, carefully stand at the pipe end on your side of the road and choose it so it highlights that end as a red circle.

4. Click on the GPS guy icon near upper right corner of tablet to log your GPS location (note the location accuracy and your own distance from the actual pipe end location)

5. Choose the **Data Source** for your upstream or downstream location – a good R1 location is usually "GPS < 1 meter" but only if you are at the pipe end

b. Update or correct the inventory data fields and start a new inspection on just this side of the road.

1. Later in the day, you can inspect all the other ends of pipes from the other side of the road. Re-open each pipe inspection to log the details you see on the opposite end

c. Log an accurate location on the second end of pipe, with the R1 connected in Collector (check location accuracy – the R1 should give location accuracy of less than 1 meter, set XY data source).

3. Disconnected Editing

Sync has 2 stages – do not remove until after TAMS "Full-Sync"

Disconnected editing requires 2 levels of syncing to push the Collector edits into the TAMS Server. You first sync your disconnected edits in the Collector app, which saves them on the Collector server. The second "Full Sync" takes your data from the Collector server and puts them in the TAMS database.

Full-Sync occurs at top of every hour in Production app (but not for Train) – Full Sync copies data from the Collector server to the TAMS server.

Cautions for using Disconnected Editing

- Download data before Disconnected Editing

- Once you edit in the downloaded data set you can't switch back to live until after you Sync map and features AND TAMS Full Sync (7:00 p.m. nightly) have completed.

- At end of day **Sync the disconnected edits -- Map and Features** -- in Collector. This first sync stores edits on the Collector server.

- **Wait for Full TAMS Sync** (7:00 p.m. nightly) **before you Remove disconnected Map and Features** (this is the Full Sync to the TAMS server).

1. If you will work in an area that has bad cellular data connection today, then download a new dataset for disconnected editing.

2. Sync Map and Features at end of day, before 7:00 p.m. Full Sync to TAMS occurs at 7 p.m.

3. When working disconnected, each morning check the **TAMS Collector Check Dashboard** to see yesterday's inspections and review reports to confirm that new assets and inspections were saved on the Collector server:

    a. In TAMS, set up a Dashboard on the Home page. Open TAMS https://tamsp.dot.state.mn.us, right-click on blank screen > Select Dashboard > Public > HydInfra Collector Check.

    b. Look for your Inspector Name and Inspection Date (you can customize report and dashboard)

4. Next morning in Collector app, Remove Map and Features from previous day's work (look first to see that these have been sync'd)

5. Download a new work area.

6. Inspect assets in your downloaded map area "On Device".

b. Add new or update and existing inventory in the field.

c. Add inspections, End Section, Components and Extensions on new or existing assets. (These add-ons won't show in TAMS yet even after full sync. The process to automatically move inspections from the Collector server to the TAMS server will be developed soon. They will wait on the Collector server until the process is developed.

7. End of day, sync your edits. Go to Maps > choose the app you are working in > . . . > Sync. (The map icon will have no numbers next to the sync arrows icon after your assets are sync'd. You can sync and then add more assets. Sync again to capture the newer edits before you Remove Map and Features.

8. Wait for the TAMS Full TAMS Sync job to run. (7:00 p.m. for Collector Inspection app. Collector Train app does not sync on a schedule but we must request a sync). Related tables – Inspections, Components, End-sections, Extensions sync separately from the Inventory records and a process will be developed soon to bring Collector inspections into TAMS.

9. Once your edits are Full Sync'd and are in TAMS, you can Remove the Map and features

10. Whew. After Remove, you can either work online or download again for disconnected editing.

4. Trouble-shooting issues, tips/tricks

a. If routes are missing your AD\ login probably didn't succeed. Close the app and come in again.

    a. Login as ad\last1fir and your AD password. The slash **leans leftward** \ leans leftward \. This login is also required before downloading data to work offline.

b. Create new feature – must click on the ROUTE alignment before you can see the assets to add them.

c. Choose the best route but route will update in TAMS, based on XY location.
d. Choose the new feature to add at the BOTTOM of the Routes-Detail window.
e. To download data choose MAP DETAIL tab (instead of Work Area) to get to the download button.
f. Data sets for disconnected editing that are huge will take more time to download or sync back in. Small sets 5 mb can be sync'd with a good cellular connection, but remember to wait for Full Sync before removing data on working online again.
g. If you selected something by mistake in the map interface, simply click anywhere on the basemap (where no features are) to unselect
h. Don't use AGOL (ArcGIS Online) on your Desktop PC. It has bugs still.
i. After clicking on the Route, the map zooms to the centroid of that route, away from your location. You can zoom back your location by using the location tool: Zoom to your location only works if your location accuracy is good – look at lower right in Collector Map window for the Location Accuracy box. Accuracy with the R1 connected should normally be less than 3 feet.
   a. Cellular GPS accuracy is quite bad for new asset locations. If not using an R1, set the Upstream and Downstream XY Source as **Hand-drawn**, to identify the sub-standard location accuracy. Change the Collector Settings location accuracy threshold to 50 feet or more to allow the use of the GPS zoom to location.