Collect Tree Inventory Data with ipad and ArcGIS Online

Background: The City of Rochester's Forestry Department provided two days of their time to share how they collect over 50,000 trees in the City of Rochester on near annual basis. The City of Rochester is one of the leaders in developing apps to collect all sorts of data (snow plow, street cleaning, tree maintenance, etc.). To prepare for this activity, a geodatabase was developed, and then published using ArcGIS Online. After taking GEG 130, a user could develop a specialized app to collect data of interest.

In this activity, the user will use the ArcGIS Online web app already created to collect Tree Inventory Data on four variables: dbh (diameter base height), tree name, condition, and maintenance. Collection of this data saves the city hundreds of thousands of dollars, damage from falling trees, etc.
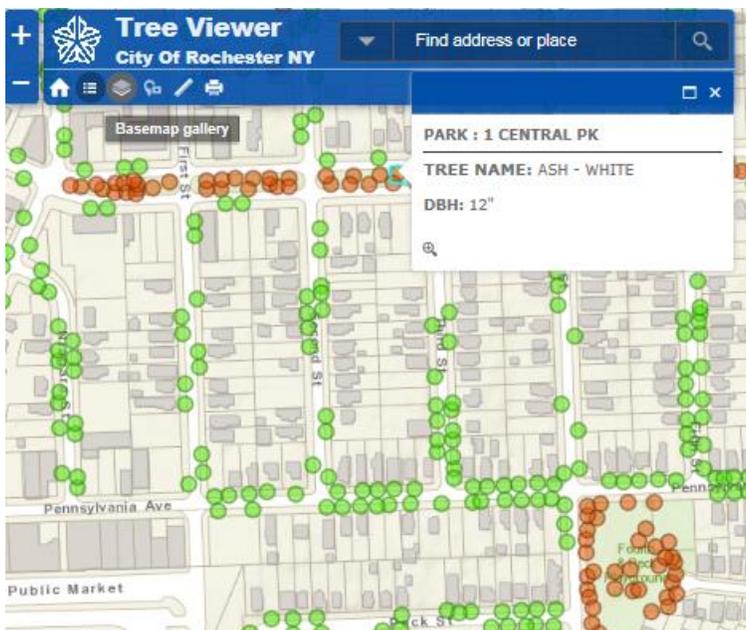

Get Connected to MIFI Service

1) Turn on ipad.
2) Connect to Internet service (mifi if using ipad). If you are using a smart phone, make sure your gps is enabled.
3) Go to settings and click on Wi-Fi.
4) Type in MIFI username and password.
5) Click button next to ipad screen.
6) Click Collector App.
7) Click Arcgis Online.
8) Sign in using username/password
9) Click "Collecting Tree Data". When you are outside, your unit should be able to determine your location.

Collector App: Tree Data (dbh, tree name, condition, and maintenance for a tree)

1) Click on the +
2) Click on tree icon. While you are recording the values, if you make a mistake, click cancel and redo. Make sure to stay next to the tree. If it says poor location accuracy, click retry.
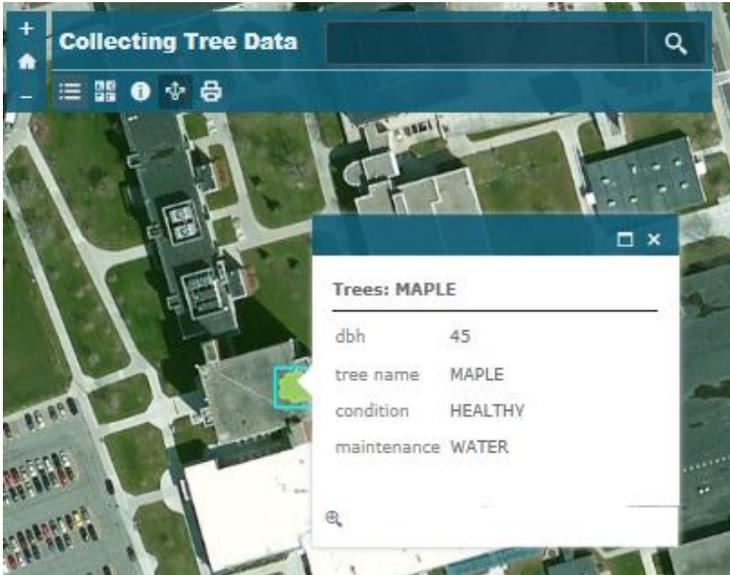
3) Using a specialized dbh measuring tape, one person from group measures the diameter of the tree. Make sure to be about 4.5 feet above the ground. The dbh is measured to assess growth. Here is a short video on how to determine dbh: https://www.youtube.com/watch?v=nUaeQI-J5u8
4) Click dbh and type in value.
5) Click done.
6) Click tree name and choose a tree type. This is for fun so just make a guess. With students, you could have a tree Identification manual. Here are some tree id manuals for the local area:
    a. http://bnriverkeeper.org/wp-content/uploads/2014/07/Section-5-Trees.pdf
    b. http://www.dec.ny.gov/docs/lands_forests_pdf/treeidkey.pdf
7) Click done.
8) Click condition and choose an option. Make a guess. For details on assessing the tree's condition, go to: http://www.urbanforestanalytics.com/sites/default/files/pdf/TreeHealth.pdf
9) Click done.
10) Click maintenance.
11) Choose an option. This is often a subjective decision based on a number of factors such as 1) if it falls down, is there a high risk of injury or damage, and 2) disease. Again, take a best guess.
12) Click done.
13) Click submit to finish collecting data on this tree.

Collecting more data

1) Stay together in the group and repeat for a few more trees.
2) Return to the classroom when you'd like to begin working on your GIS exercise.

NOTE: All of this data is being published to the map live!! Very cool!