



TECHNOLOGY SALON

GIS for Asset Management

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Hanover

Engineering Associates Inc

16 + years as a Planner specializing in GIS
Parcel-based analysis
ESRI software



[Data Collector APP](#)

[StoryMap Sample](#)



public_facilities

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ESRI MAPS


Sign In


Add Map


Go to Map


Arrange Maps


Link Map Views


Help


Getting Started

ArcGIS

J13 : X ✓ fx

	A	B	C
1	Facility	Address	Municipality
2	Municipal Hall	1000 Jacks Run Rd.	Aleppo Township, Allegheny
3	Police Department	340 Bouquet St	Aleppo Township, Allegheny
4	School	4514 Plummer St	Aleppo Township, Allegheny
5			

1000 Jacks Run Rd.

Aleppo Township, Allegheny

Allegheny County

15132

Y

Map 2

HOME

Contents

From Excel

Map Contents

No legend

Add Map

Choose the data you want to map.

Table
Recommended

Tables let you add data more easily.

Tables simplify data enrichment.

Cell range

\$A\$1:\$F\$116

Edit range

☒ First row contains headers

Named range

OK

Cancel

560 Washington Ave

Carnegie

Allegheny County

15106

N

600 N Bell Ave 15106

Carnegie

Allegheny County

15106

N

800 N Bell Ave 15106

Carnegie

Allegheny County

15106

N

813 Washington Avenue

Carnegie

Allegheny County

15106

N

113 Postup Drive

Carnegie

Allegheny County

15106

N

B	C	D	E	F	G	H
Address	Municipality	County	ZipCode	Flood Hazard		
1000 Jacks Run Rd.	Aleppo Township, Allegheny	Allegheny County	15132	Y		

Map 2

HOME

Contents

From Excel

From ArcGIS

Enrich Data

Layer Style

Cluster Points

Heat Map

Hot Spots

Find Nearby

Share Map

Share Layer

Create Slide

Copy Map

Add data from ArcGIS

flood

☒ Zoom to data All results | My organization

100 resu... 1 of 25

FEMA's National Flood Haz...

Web Map Details

Add

USDHS FEMA 100 Year Floo...

Map Service Details

Add

FEMA Flood Hazard Resour...

Web Map Details

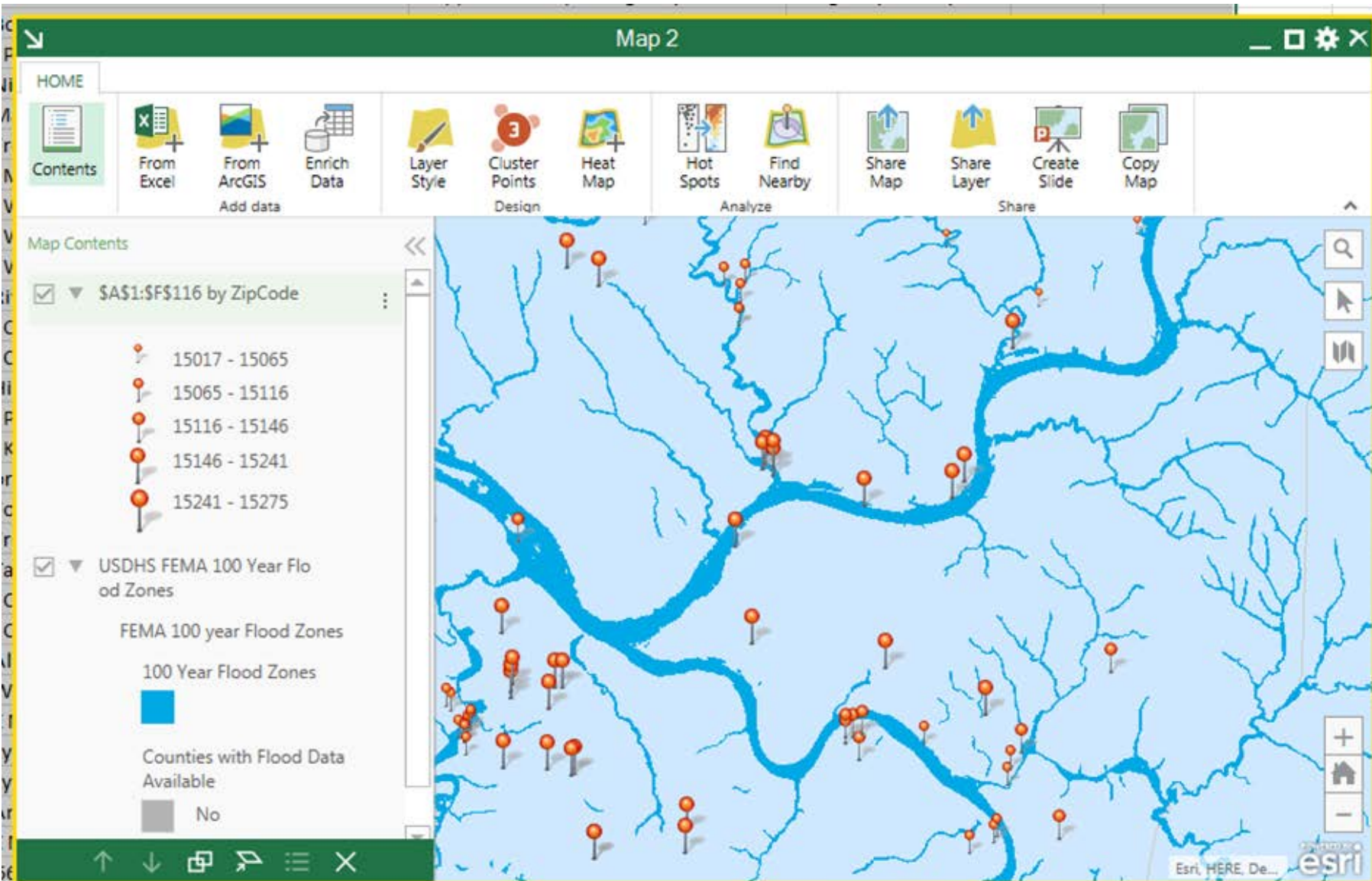
Add

Broward FEMA Flood Map E...

Web Map Details

Add

Back



Vashington Ave	Carnegie	Allegheny County	15106	N
Dell Ave 15106	Carnegie	Allegheny County	15106	N

Share the Map

The screenshot shows the ArcGIS 'Share Map' dialog box overlaid on a map of a river network. The dialog box has a title bar 'Map 2' and a ribbon with tabs: HOME, Contents, From Excel, From ArcGIS, Enrich Data, Layer Style, Cluster Points, Heat Map, Hot Spots, Find Nearby, Share Map, Share Layer, Create Slide, and Copy Map. The 'Share Map' tab is active, showing fields for Title, Tags, and Summary, and a 'Share with' section with checkboxes for 'Everyone (public)', 'Hanover Engineering Associates, Inc.', and 'These groups:'. The 'These groups' section includes checkboxes for 'HEA_Ellwood', 'SWEPI - Slippery Rock', 'HEA New Castle Map Gallery Sample', and 'HEA Group'. The 'Share' button is highlighted. The map in the background shows a river network with red pins indicating locations. A status bar at the bottom shows 'Washington Ave', 'Carnegie', and 'All'.

Map 2

HOME

Contents From Excel From ArcGIS Enrich Data Layer Style Cluster Points Heat Map Hot Spots Find Nearby Share Map Share Layer Create Slide Copy Map

Share Map

Publish the map with all of its layers to ArcGIS

Title

Enter a title for the map

Tags

Separate tags with commas

Summary

Description of the map

Share with:

☐ Everyone (public)

☐ Hanover Engineering Associates, Inc.

☐ These groups:

☐ HEA_Ellwood

☐ SWEPI - Slippery Rock

☐ HEA New Castle Map Gallery Sample

☐ HEA Group

Share Cancel

Sharing complete

The map has been shared. Please save the workbook.

OK

Washington Ave Carnegie All



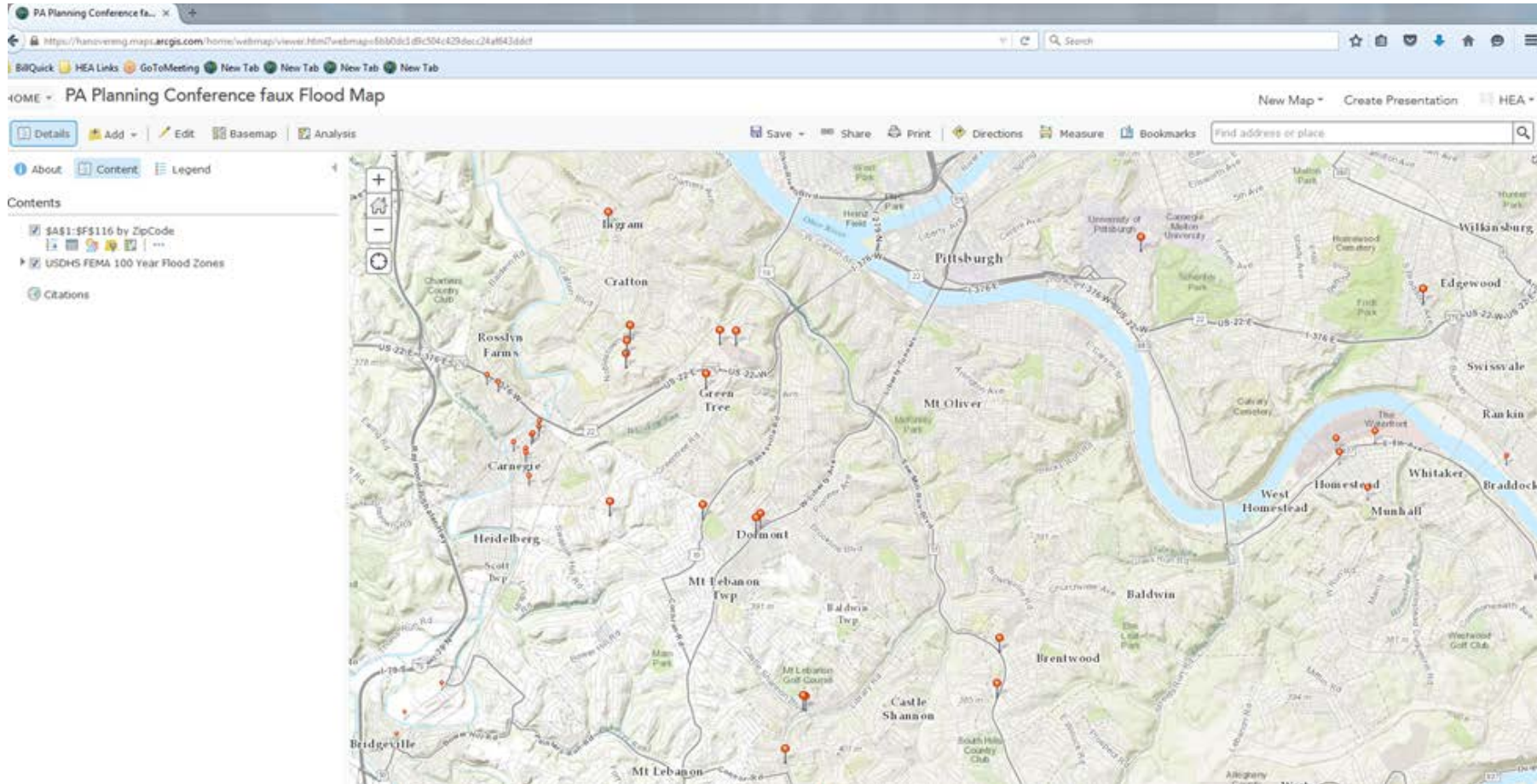
My Content

Folders

- NEW DELETE
- hea_gis_castle (Home)
- BAO - My Sites

+ Add Item Create Share Delete Move

Title	Type	Modified	Shared
PA Planning Conference faux Flood Map	Web Map	Oct 15, 2015	Everyone
\$A\$1:\$F\$116 by ZipCode	Feature Layer	Oct 15, 2015	Everyone



Asset Management

- **Collection Of Important Attribute Data**
 - **Specific Information About The Feature**
 - **Inspection Details/Notes**
 - **Attach Important Files (Inspection Reports, Photos, Etc.)**



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigator:		Form completed by:	
Temperature (°F):	Barrel (in.):	Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Comer:	Photo #:		

Land Use in Drainage Area (Check all that apply):

☐ Industrial	☐ Open Space
☐ Urban Urban Residential	☐ Institutional
☐ Suburban Residential	Other: _____
☐ Commercial	Known Industries: _____

Notes (e.g., origin of outfall, if known):

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ Circular ☐ PVC ☐ HDPE ☐ Elliptical ☐ Steel ☐ Box ☐ Triple ☐ Other: _____ ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ Depth: _____ Top Width: _____ Bottom Width: _____	Is Winter: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthm ☐ rip-rap ☐ Other: _____	☐ Triangular ☐ Parabolic ☐ Other: _____		

☐ In-Stream (applicable when collecting samples)

Flow Present? ☐ Yes ☐ No (If No, skip to Section 3)

Flow Description (if present) ☐ Trickle ☐ Moderate ☐ Substantial

Section 3: Quantitative Characterization

PARAMETER	FIELD DATA FOR FLOWING OUTFALLS		EQUIPMENT
	RESULT	UNIT	
☐ Flow #1	Volume	Liter	Bottle
	Time to fill	Sec	
	Flow depth	In	Tape measure
	Flow width	ft. In	Tape measure
☐ Flow #2	Measured length	ft. In	Tape measure
	Time of travel	Sec	Stop watch
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip

Mobile Data Collection

- **Level Of Accuracy To Fit Your Needs**
 - **Tablets/Smartphones**
 - **Accuracy Within 5-15 Meters**
 - **General Data Gathering, Database Updating**
 - **Trimble Handheld GPS Technology**
 - **Accuracy Range From 1-3 Meters To Sub-Foot**
 - **More Dependable Feature Locations**
 - **Trimble Survey-Grade GPS**
 - **Accuracy – Sub-Inch**
 - **Exact Locations In Real Time**



Minnesota DNR Garmin Converter

- Use inexpensive (select) Garmin devices
- More accurate than mobile device, less than Trimble



Ways to use mobile device
to collect data

Turn on picture locational tracking capabilities

Suggest Googling phone name plus “Geo Tagging”

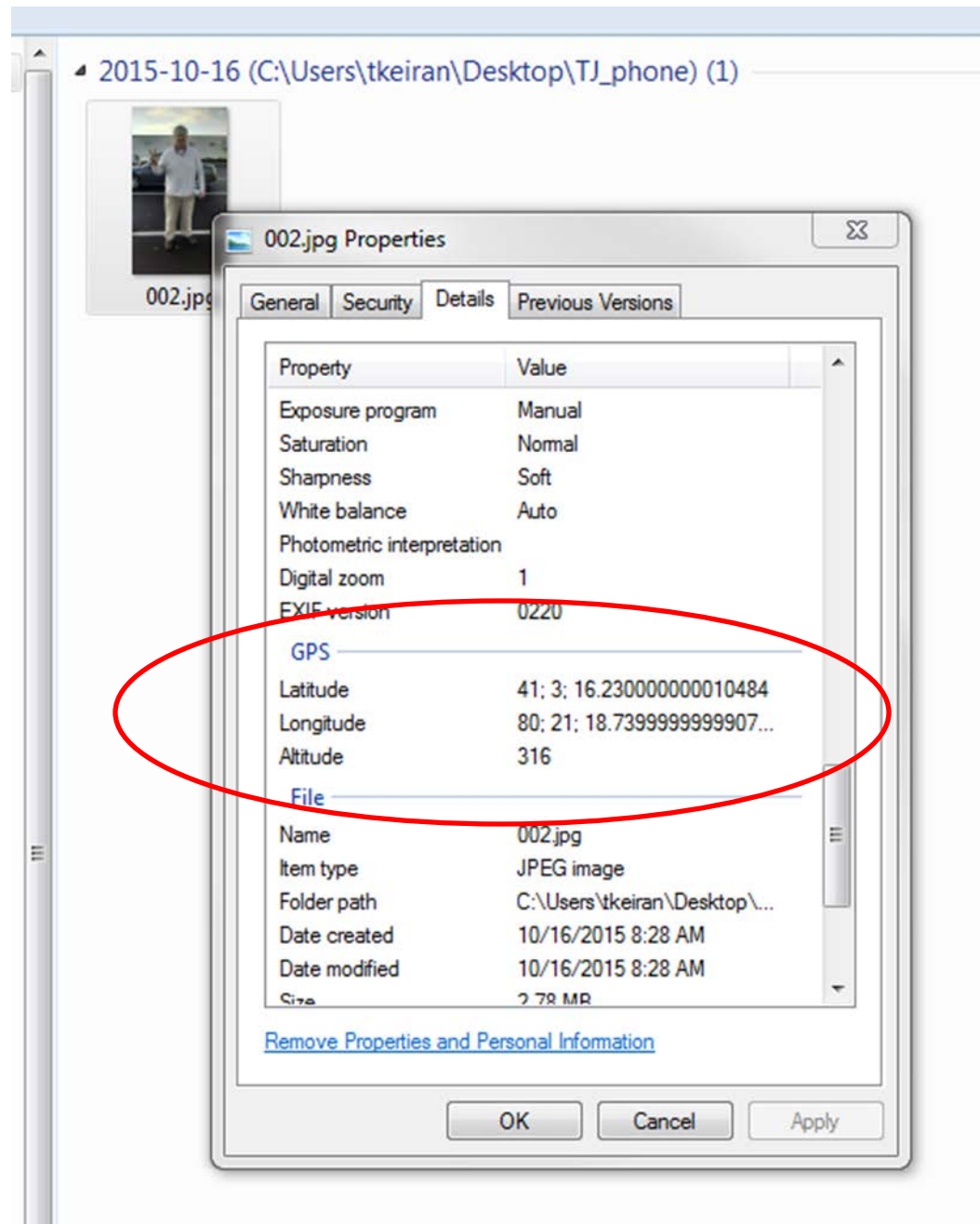
1. open camera
2. swipe left to right
3. scroll the options wheel to see bottom options
4. tap the location pin button
5. observe that text flashes up saying "Geo-Tagging on"

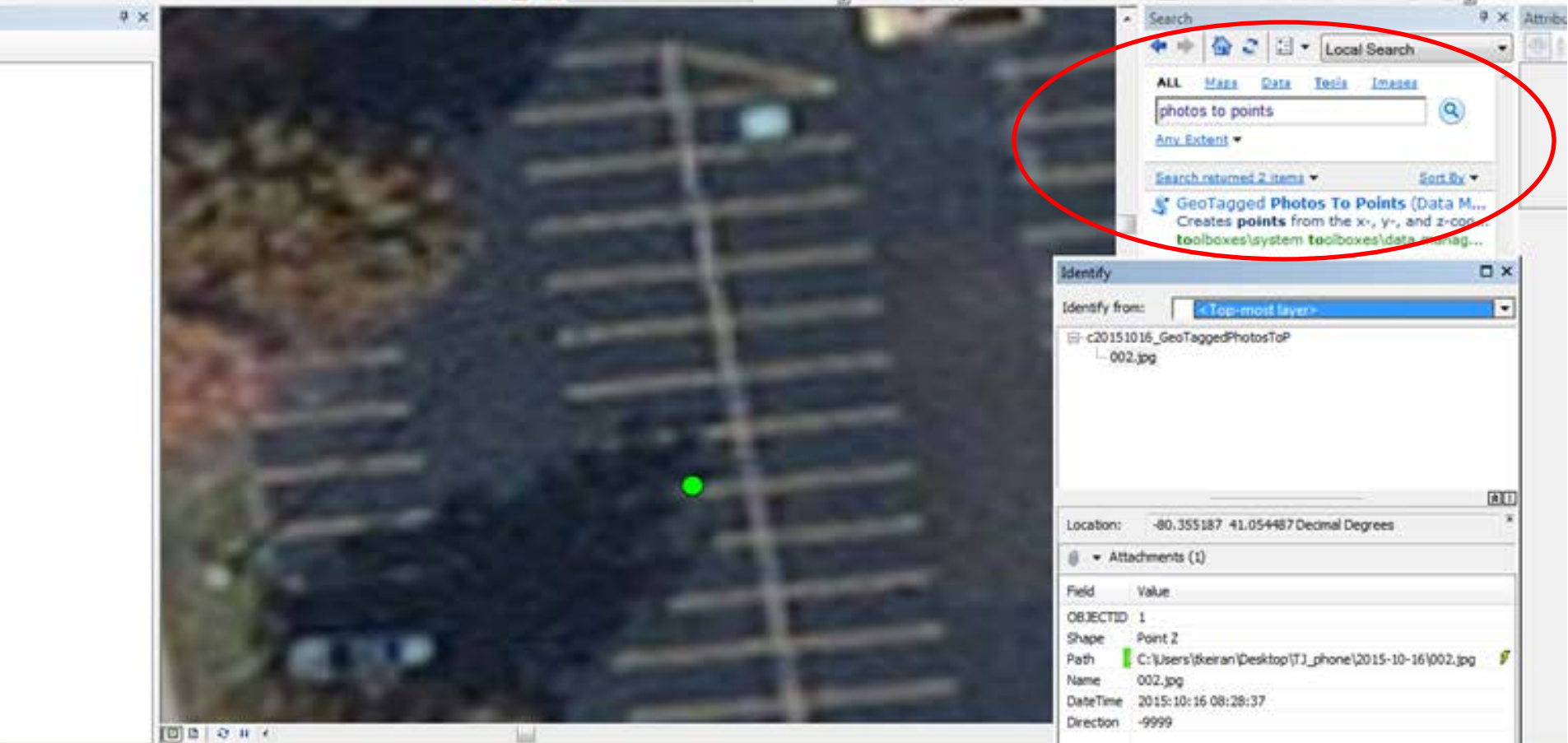


Lat/Long shows in
“Details”

Use ArcMap
Geotagged Photos
to Points tool

- ArcEditor license

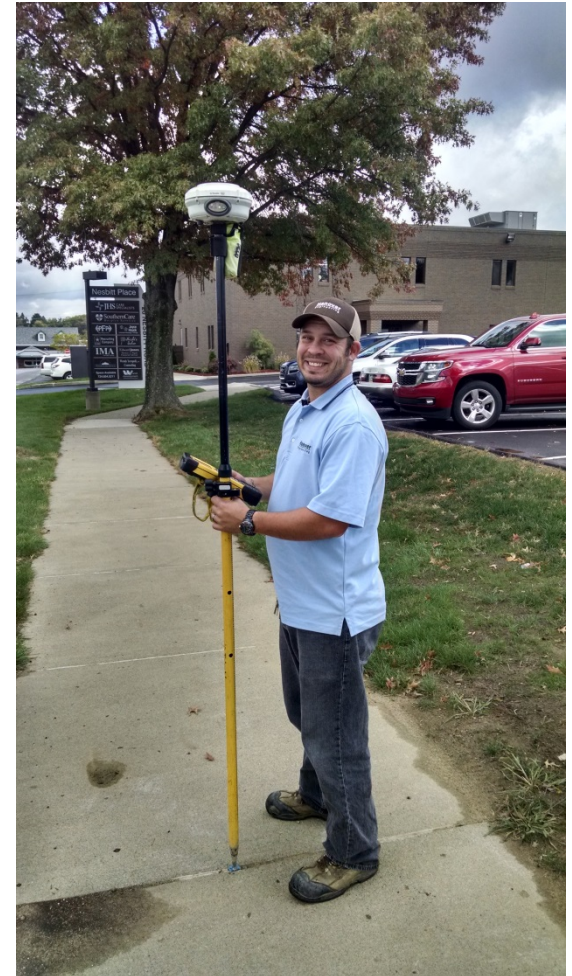




Path	Name	DateTime	Direction
c:\2015-10-16\002.jpg	002.jpg	2015:10:16 08:28:37	-9999



Level of Accuracy



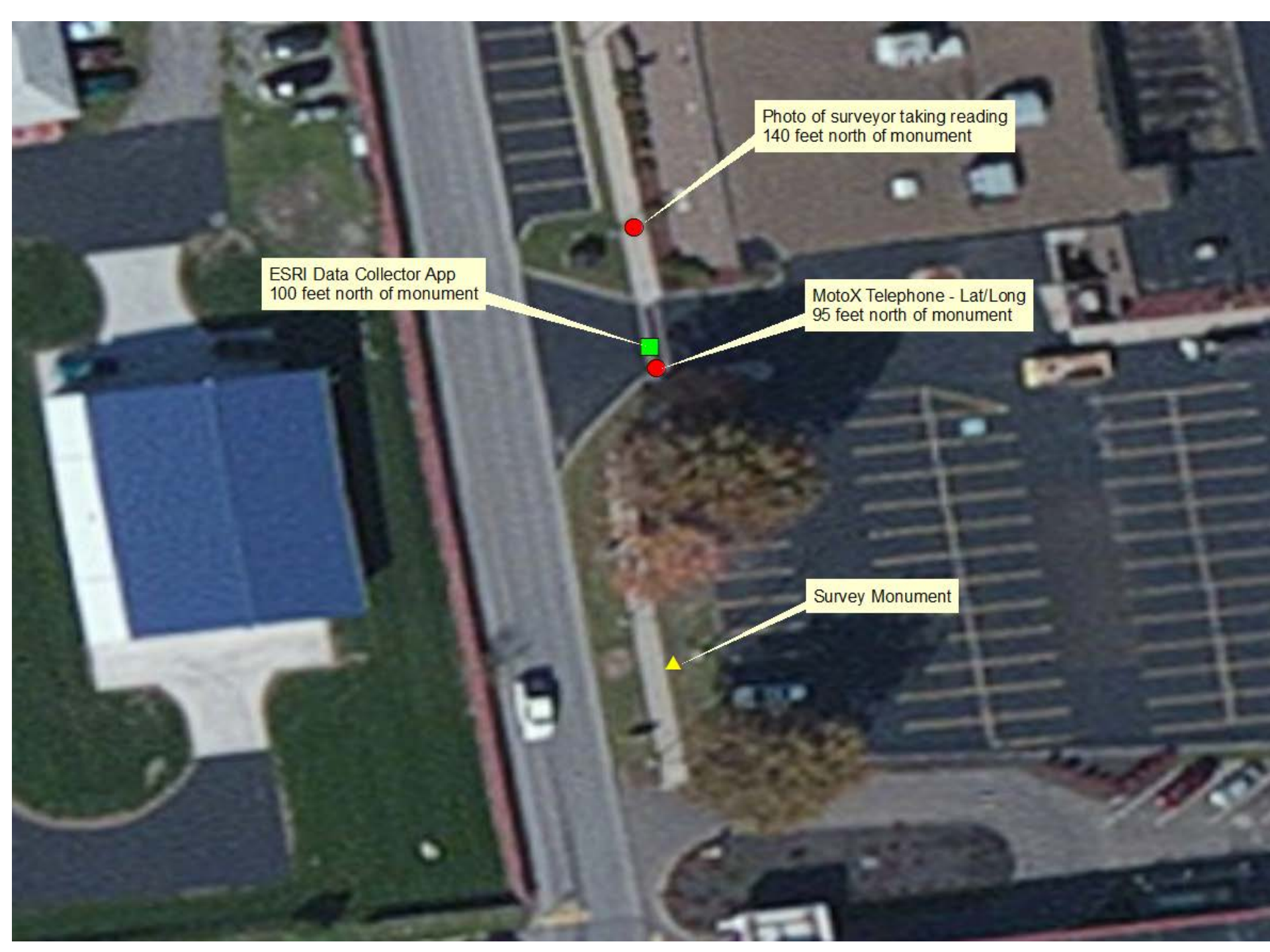


Photo of surveyor taking reading
140 feet north of monument

ESRI Data Collector App
100 feet north of monument

MotoX Telephone - Lat/Long
95 feet north of monument

Survey Monument



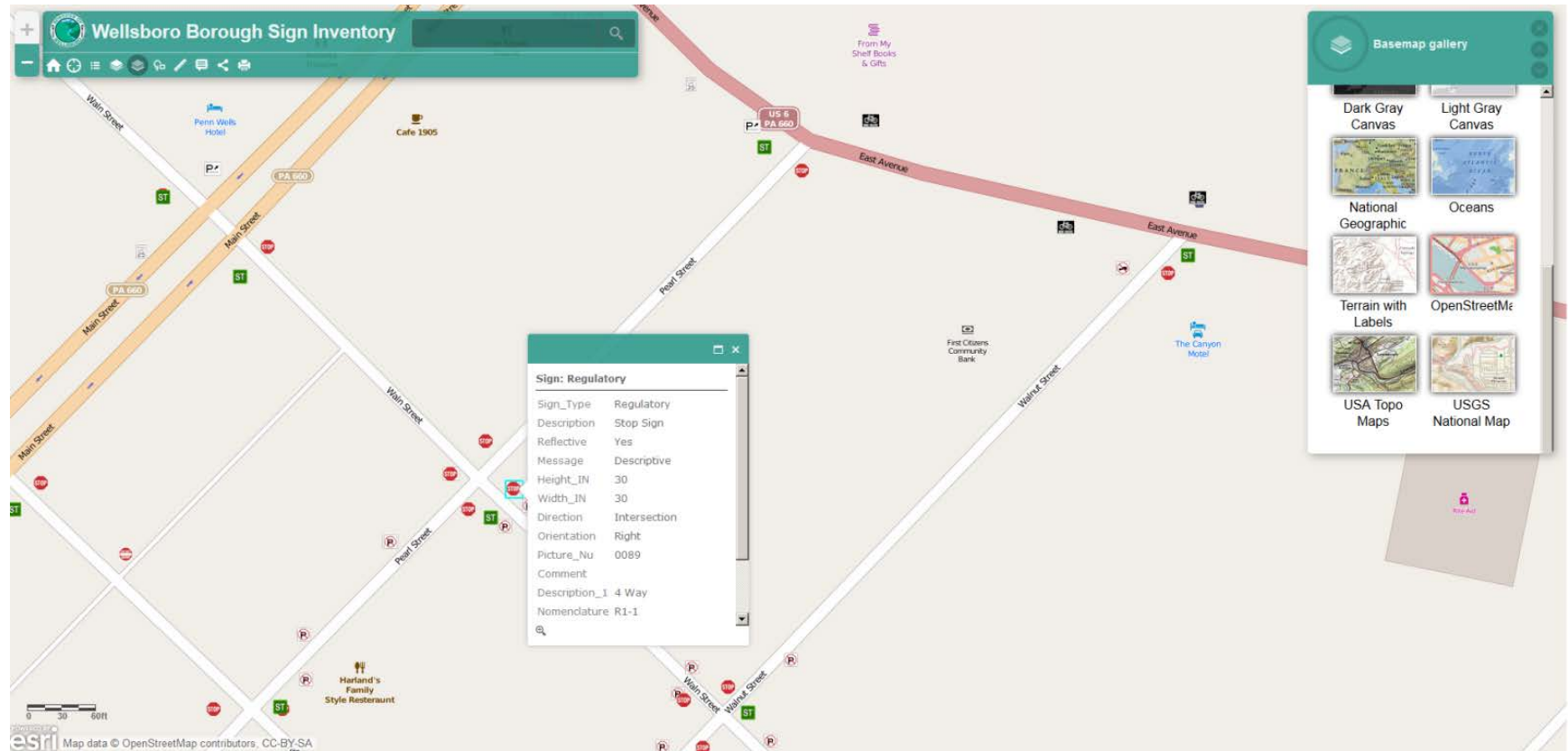
Collector for ArcGIS

- In ArcMap ...
- Create point feature class with attachment capabilities
- Sign into ArcGIS Online account
- Share as a service
- Load it into an ArcGIS Online map and share the map address
- Multiple contributors collect data using App
- Map is updated in real time
 - Drawback is need multiple maps for Android and IOS devices

[Data Collector APP](#)

Online Mapping

- Create custom app for end-user



[Wellsboro Sign Inventory](#)



Summary

- Create data using inexpensive tools
- Contributions from wide spectrum of participants
- Enhance data for analysis
- Display data using a myriad of platforms

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