Low-Cost GIS Apps for Field Data Collection

There are so many solutions to this problem…

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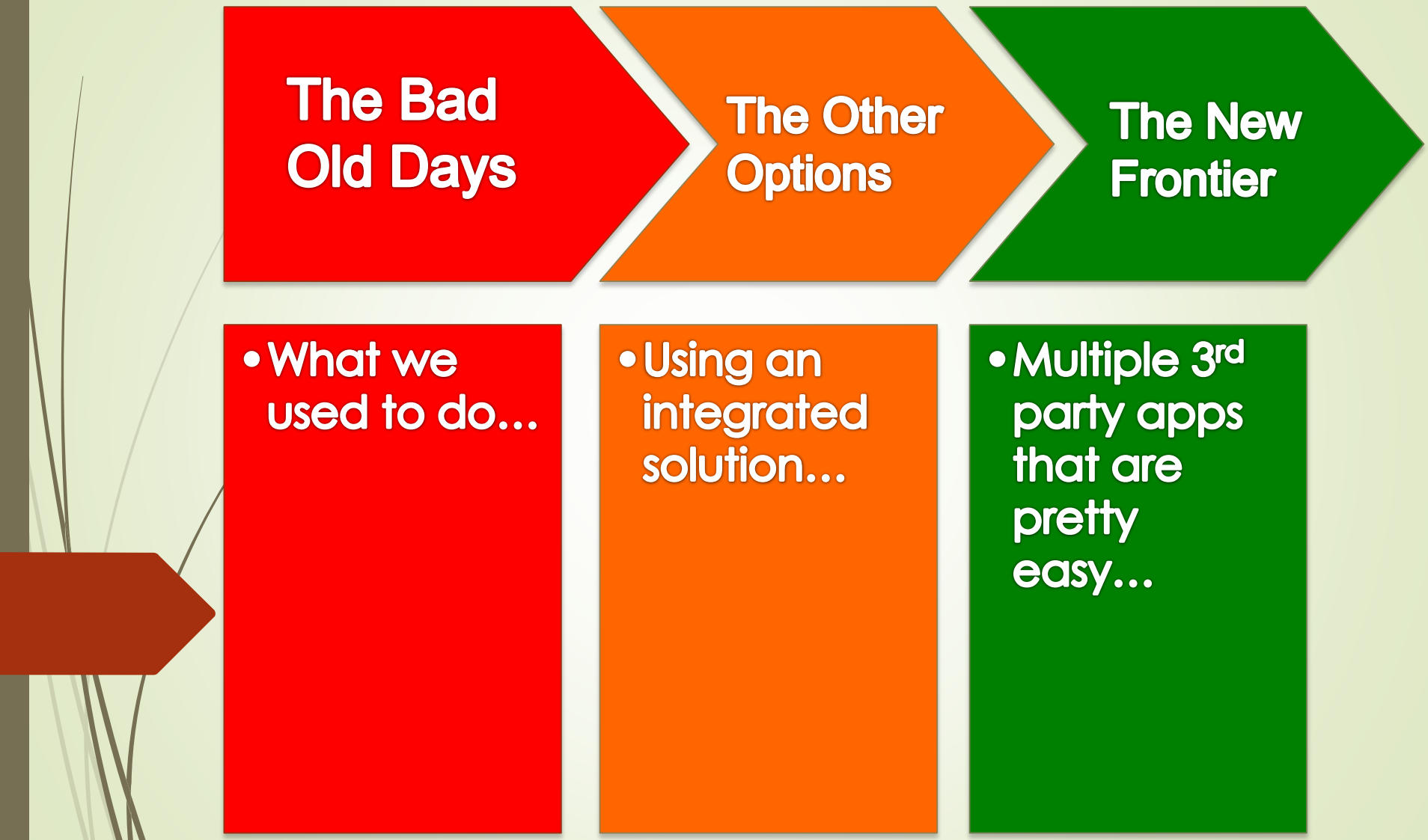
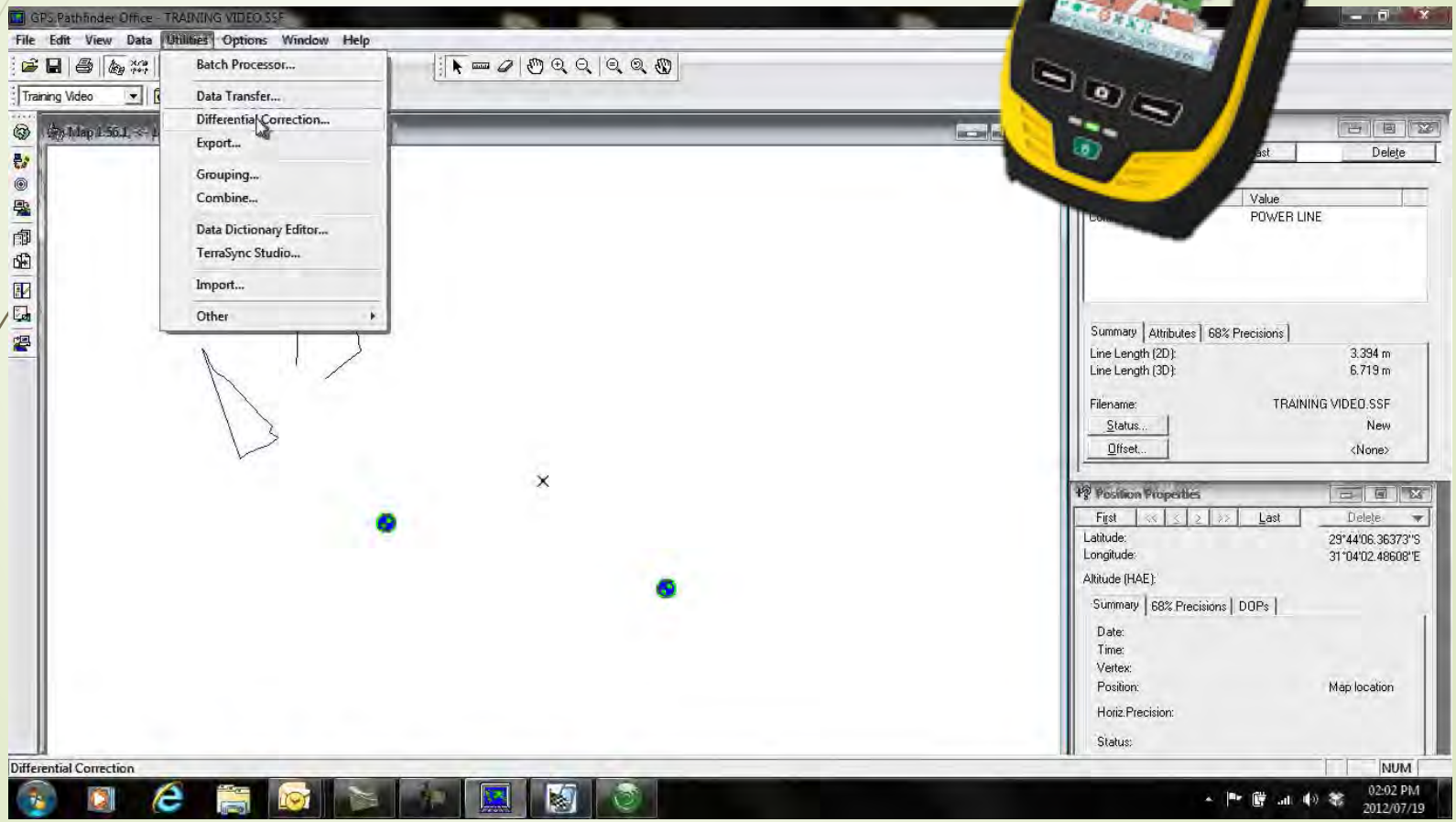
Presentation Outline



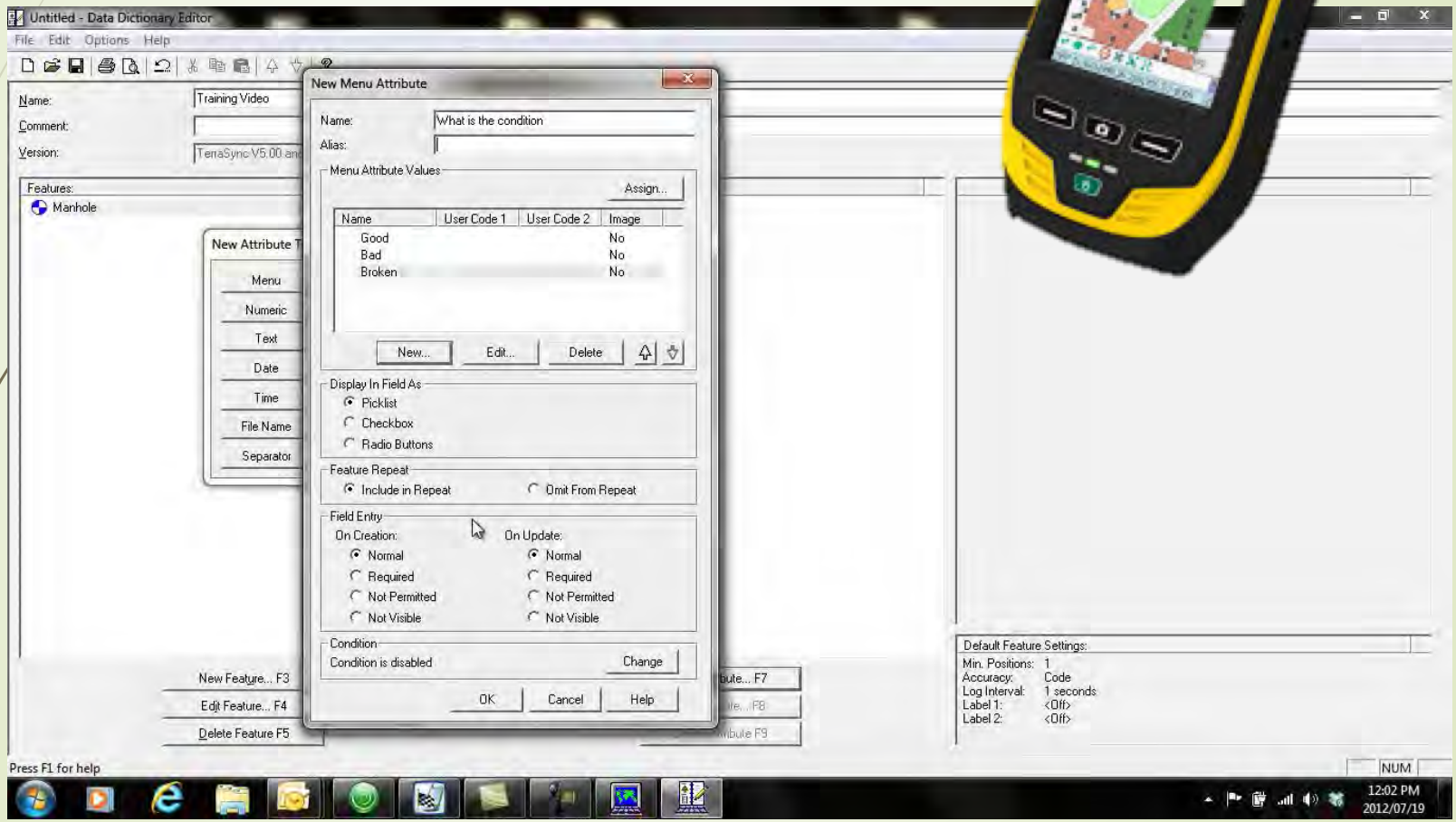
The Bad Old Days:

- **Trimble Unit –** very accurate, very expensive
- **Pathfinder Office** – also expensive, not very intuitive



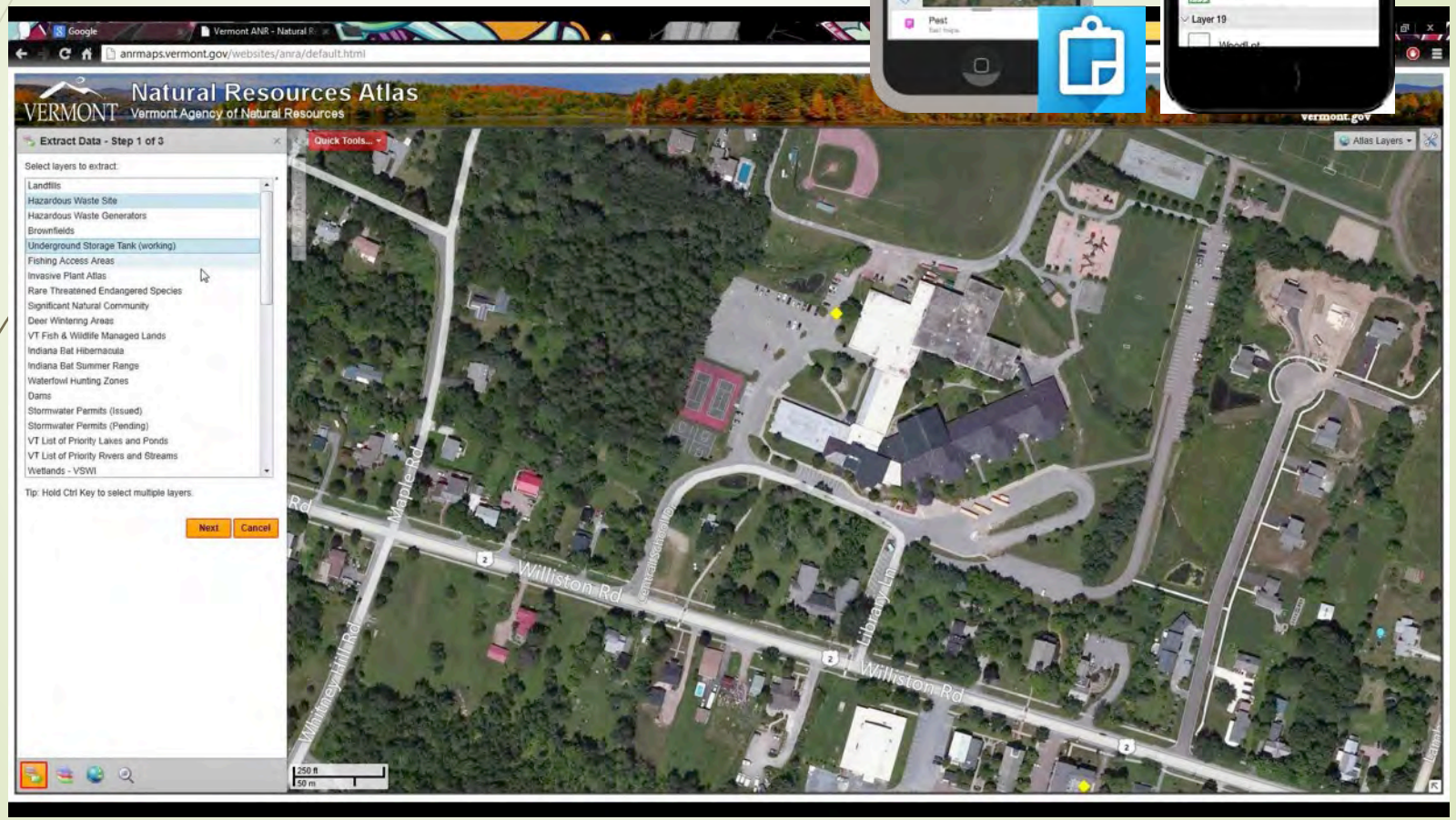
The Bad Old Days:

- **Data Dictionary –** OK at collecting info, but limited



The Other Options:

- **'Integrated' Solution –** ArcGIS Online and ArcGIS Collector



The New Frontier:

- **3rd Party Apps and Programs -**

Fulcrum App – Data Collection
www.fulcrumapp.com

Avenza PDF Maps– Navigation
www.avenza.com/pdf-maps

The New Frontier:

- **Case Study –** Illicit Discharge Detection and Elimination Study in VT
  - **Workflow –**
  - Visit SW Outfalls
  - Collect ~15 different characteristics (average)
  - Multiple Return Visits to Re-assess Outfalls
  - Prep Reports / Tables / Maps

The Old Approach:

- **Paper Forms and Paper Maps -**

The New Frontier:

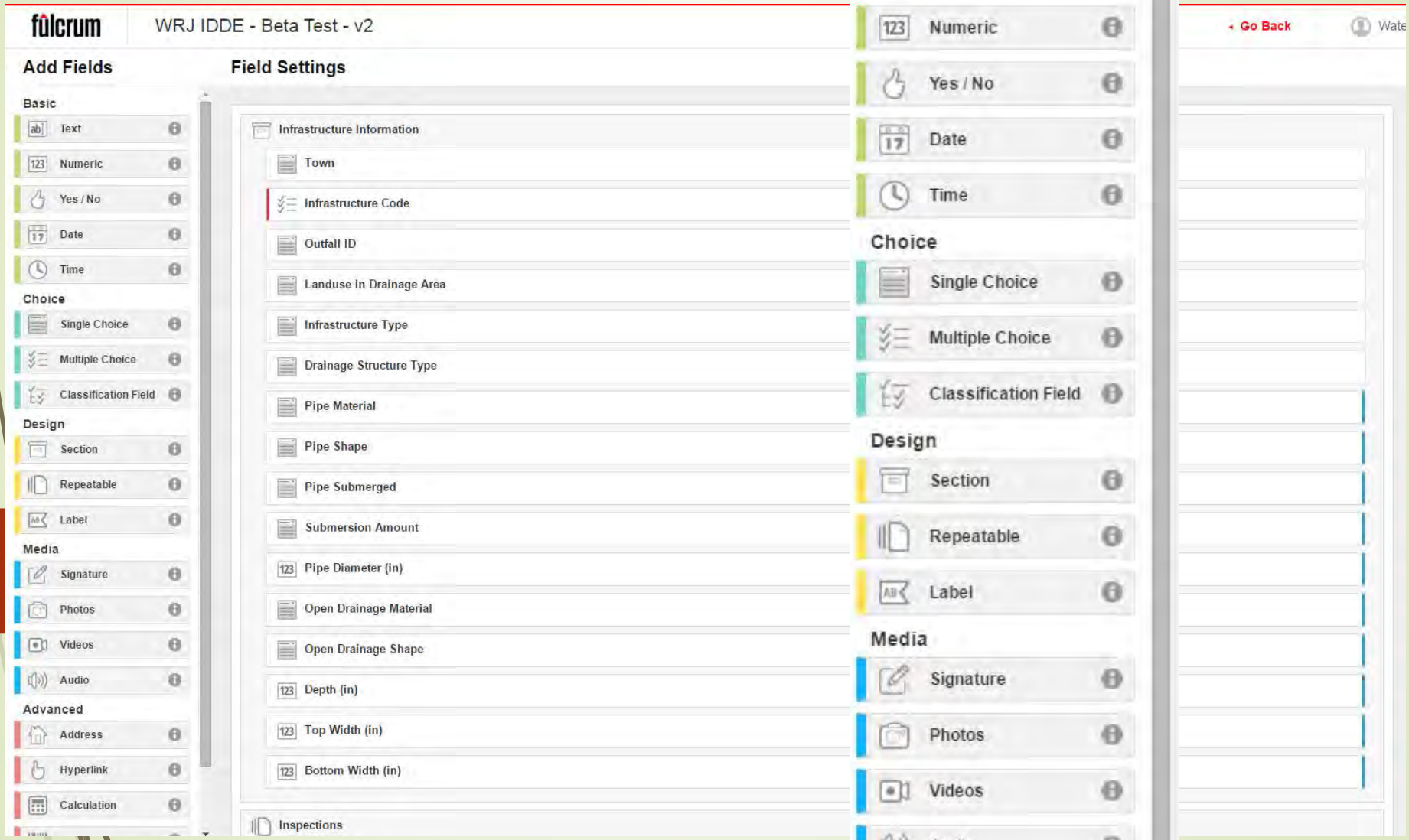
- **Put it on a phone!**

The New Frontier:

First Step – Sign Up for Fulcrum

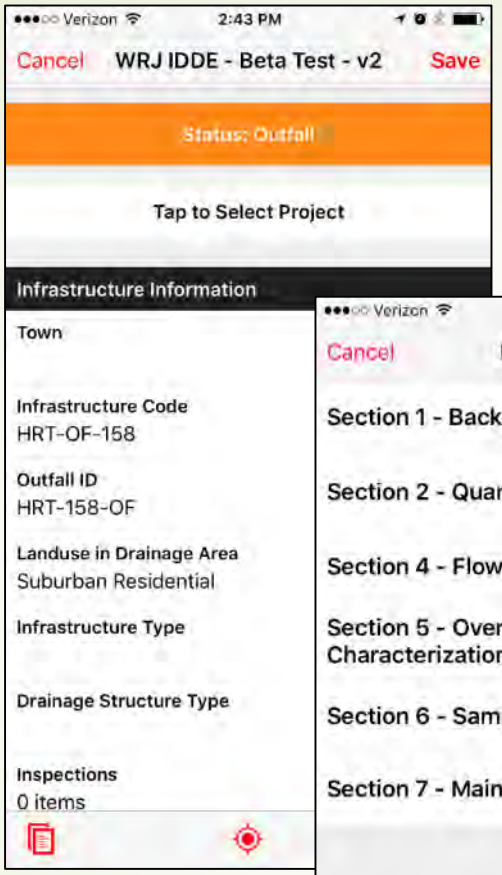
The New Frontier

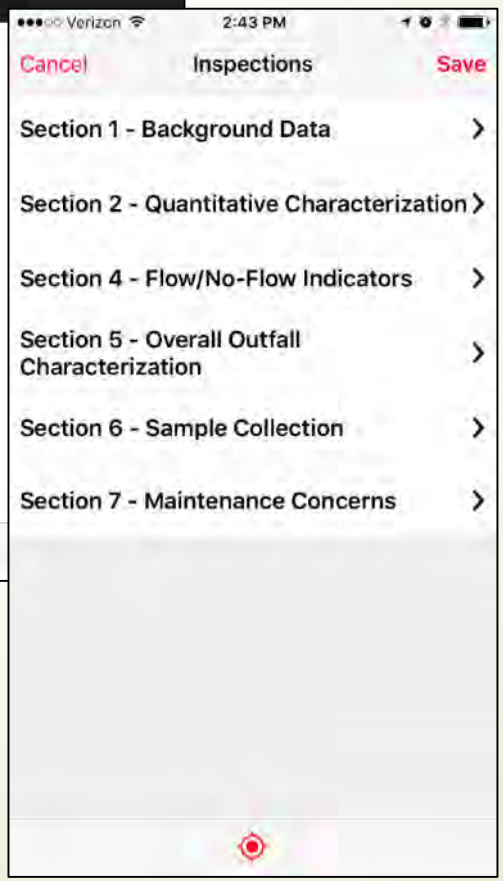
App Creation

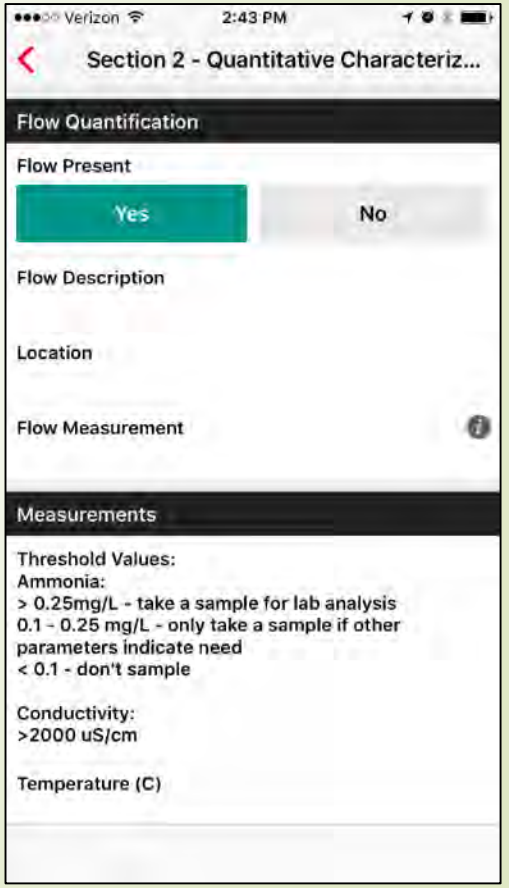


The New Frontier:

App Creation



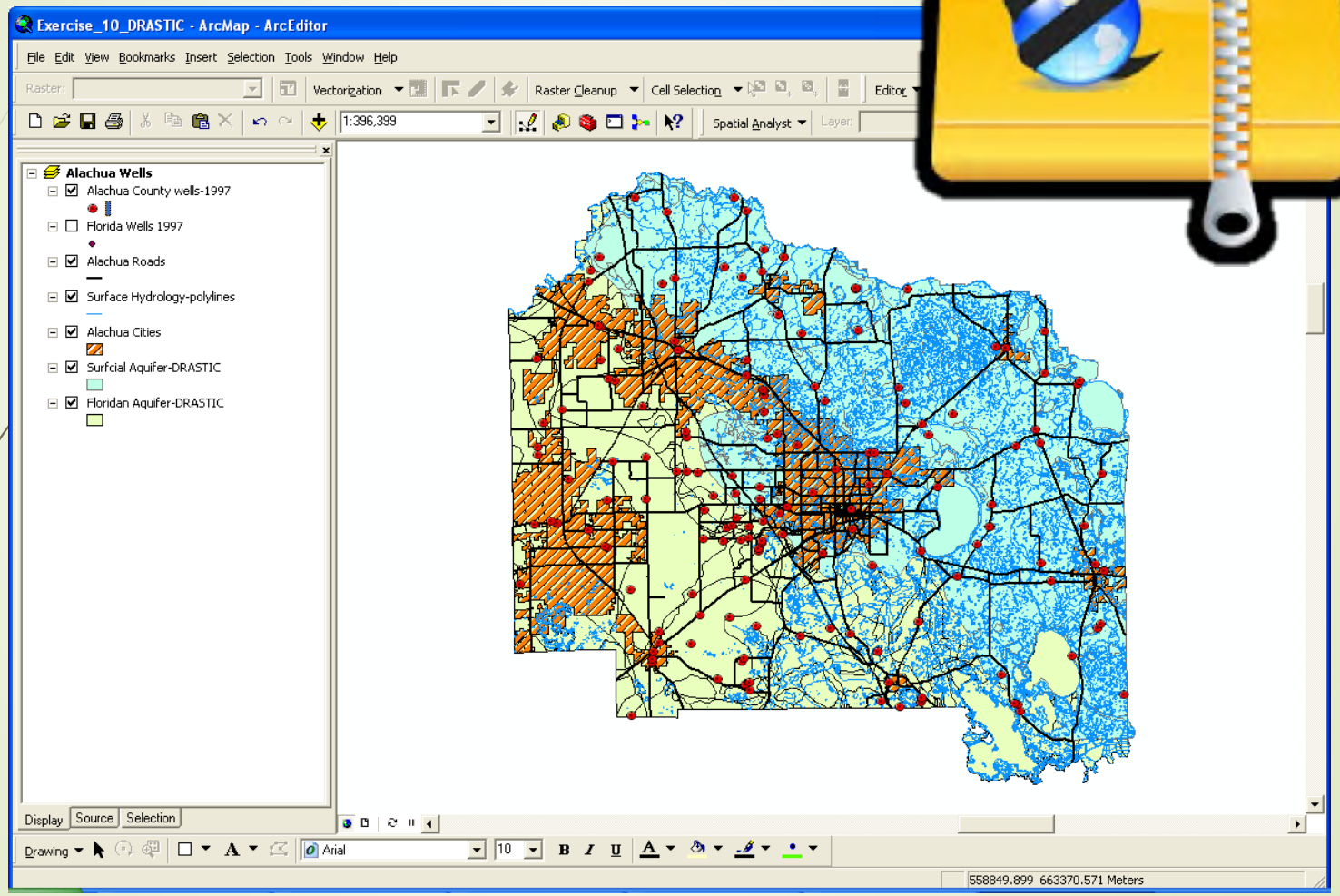




The New Frontier:

Once Signed Up:

Arc to Fulcrum - importing



The New Frontier

App Creation

Outfall Reconnaissance Inventory/ Sample Collection Field Sheet

Section 1: Background Data

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

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

☐ Industrial ☐ Open Space

☐ Ultra-Urban Residential ☐ Institutional

☐ Suburban Residential Other: _____

☐ Commercial Known Industries: _____

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

Section 2: Outfall Description

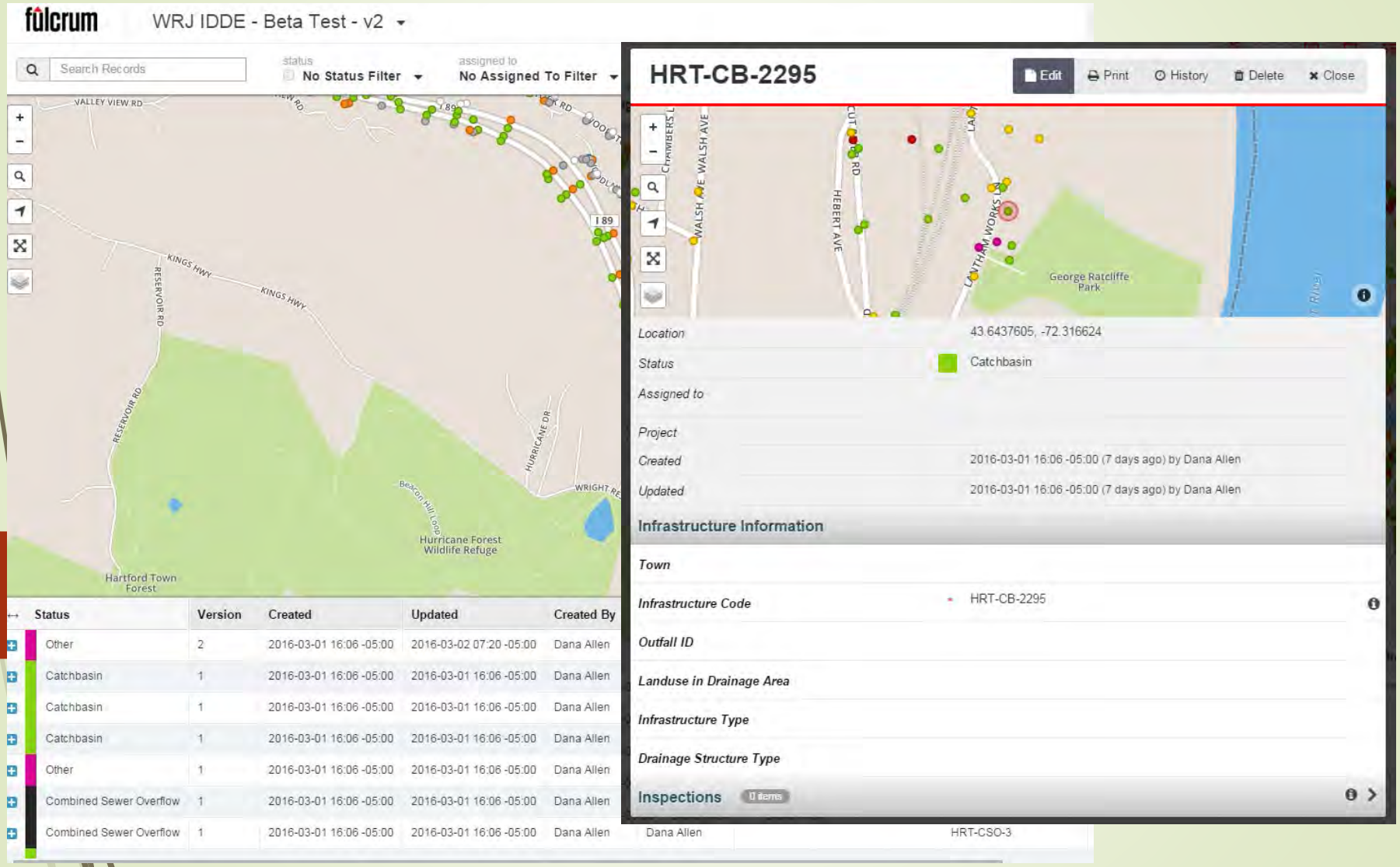
LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ☐ Other: ____	☐ Single ☐ Double ☐ Triple ☐ Other: ____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: ____	☐ Trapezoid ☐ Parabolic ☐ Other: ____		Depth: ____ Top Width: ____ Bottom Width: ____	
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☐ Yes ☐ No *If No, Skip to Section 5*				
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

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

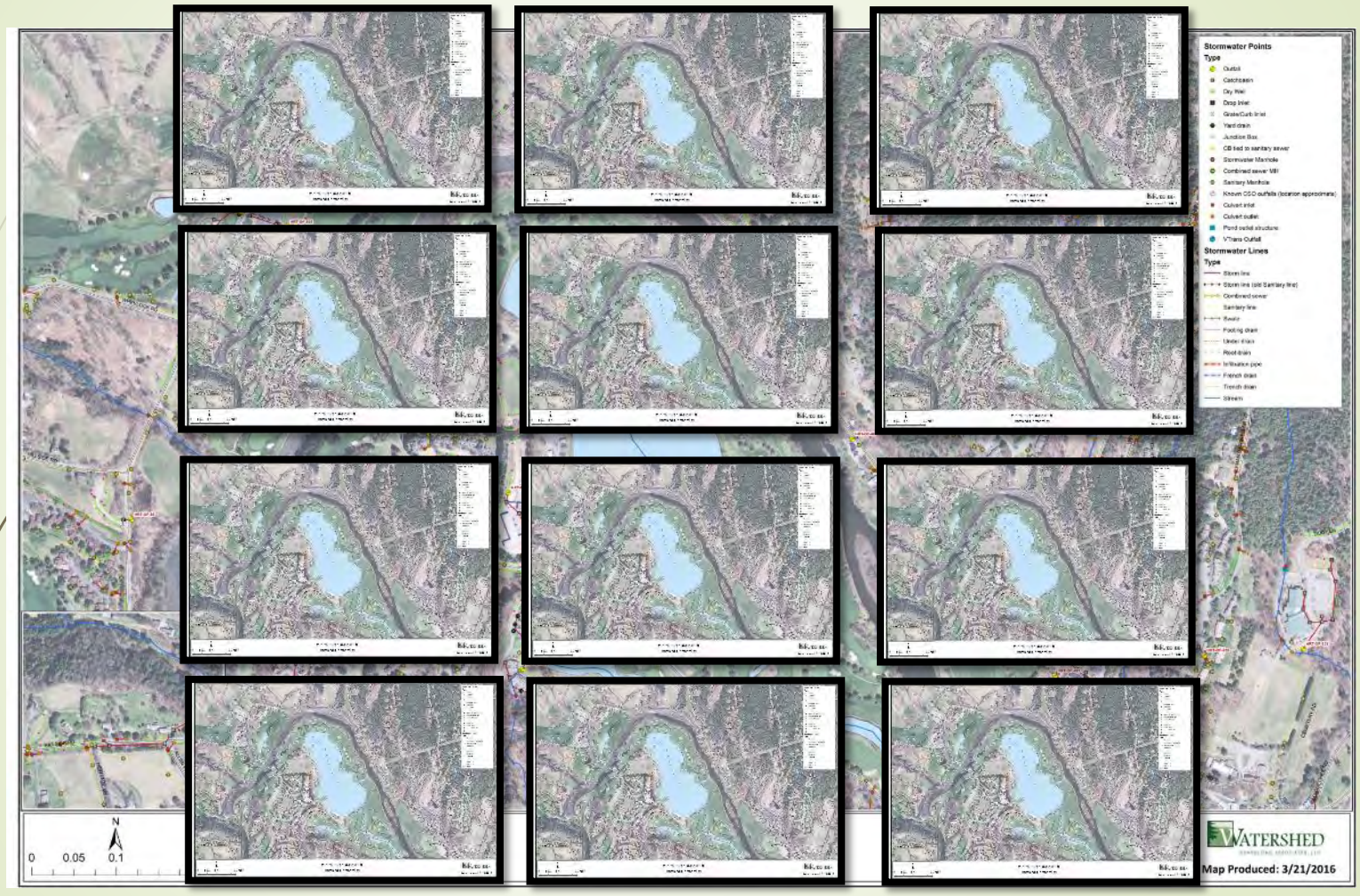
The New Frontier:

Browser-based data exploration:



The New Frontier:

Paper Maps to Phone Apps



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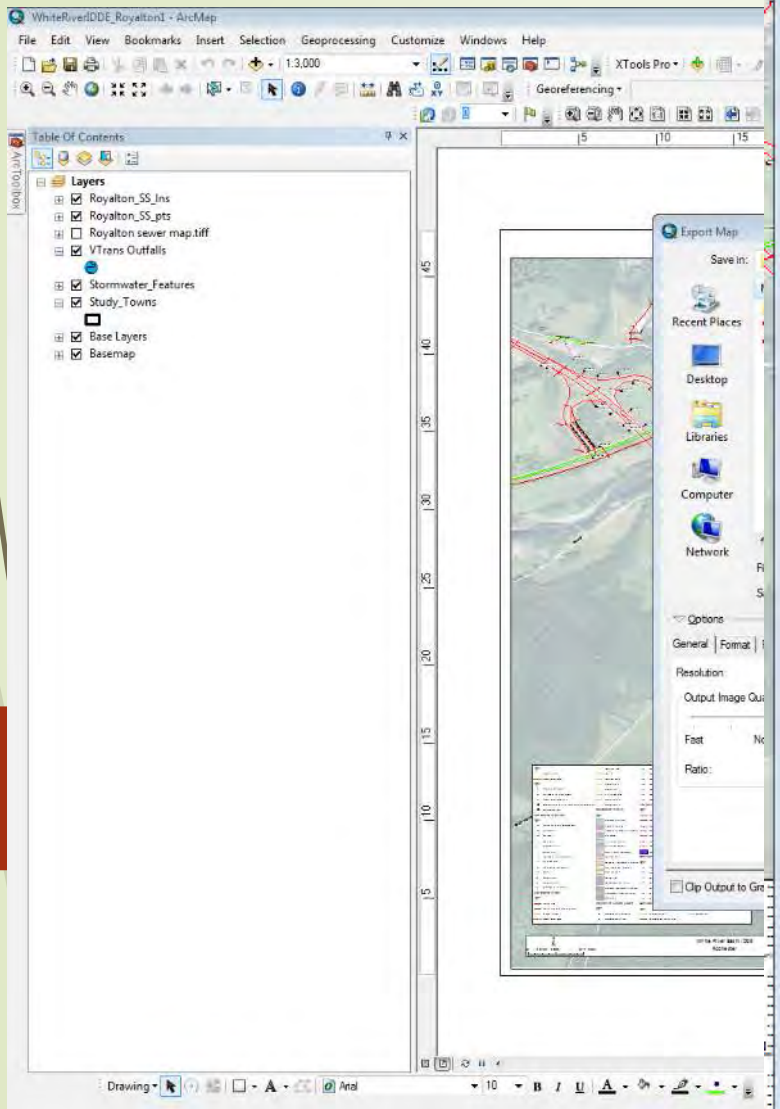

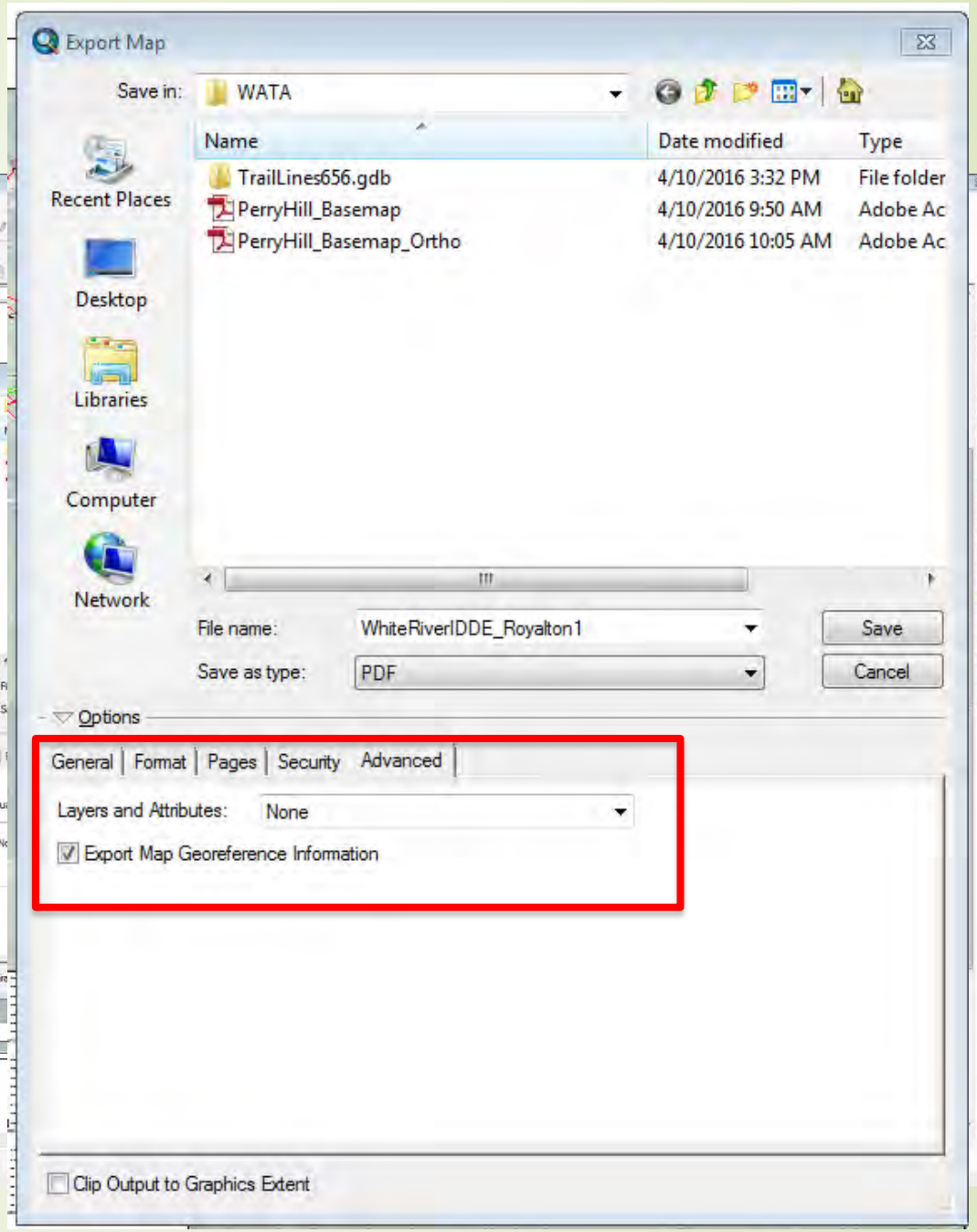

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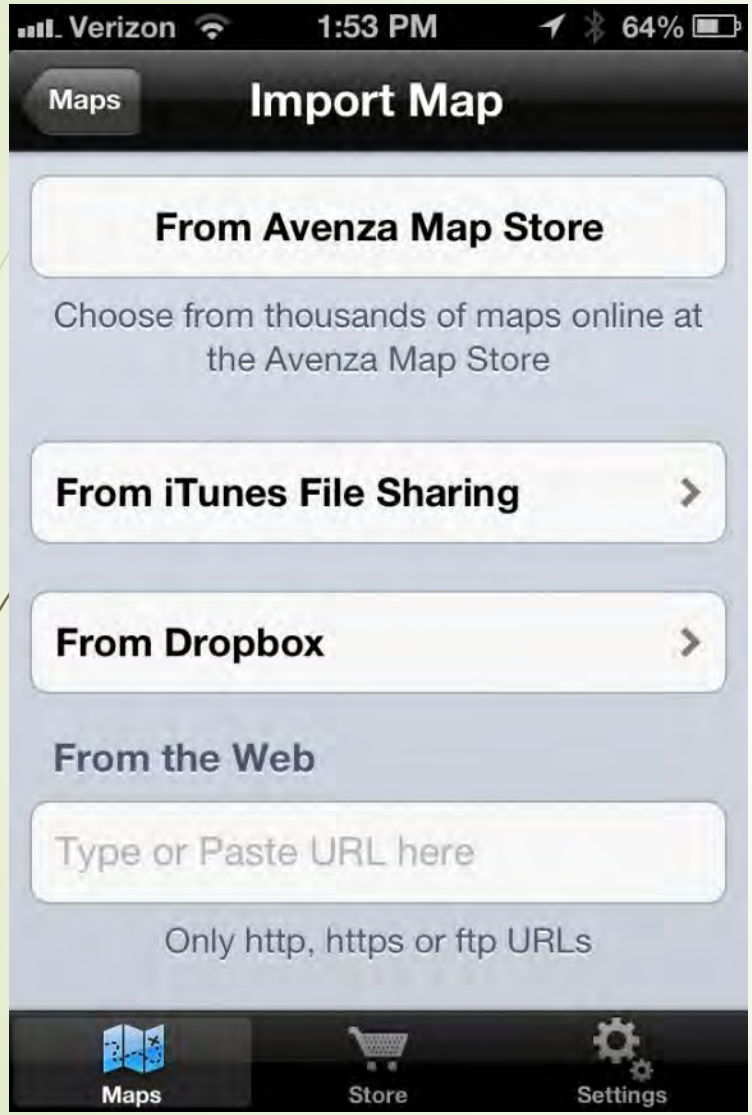

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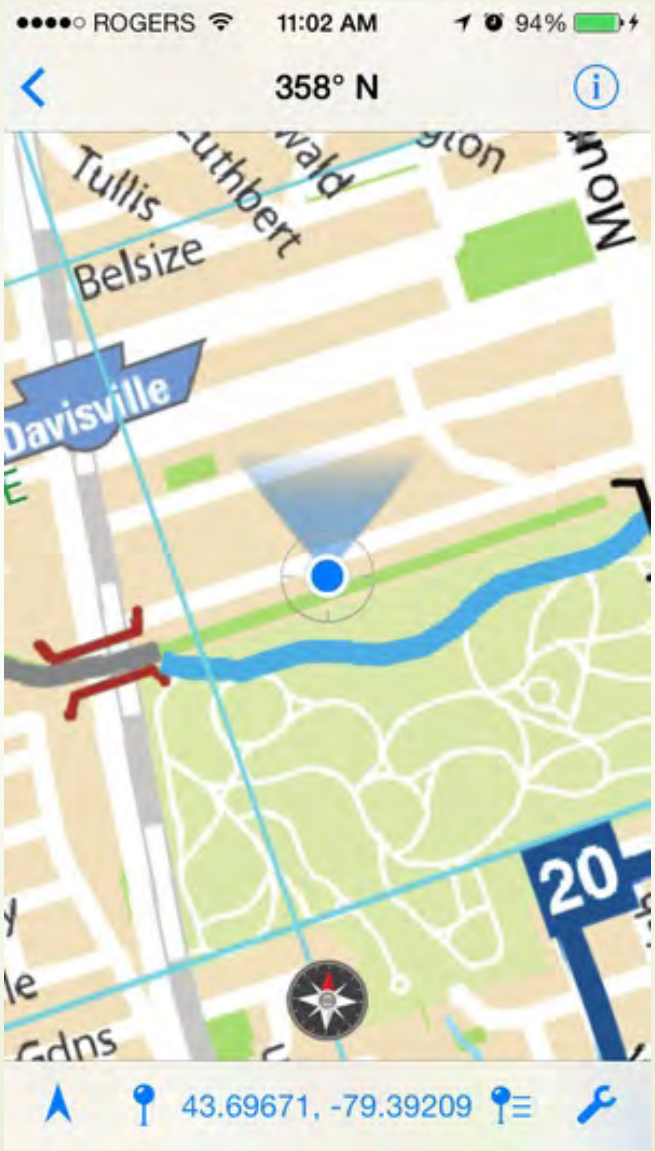

Thanks for Listening!

Feel free to reach out with any further questions:

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