

the Energy to Lead

Asset Lifecycle Tracking

-
- > Alicia Farag
 - > Ohio Gas Association
 - > March 2013

GTI Overview

- > Not-for-profit research, with 70 year history
- > Facilities
 - 18 acre campus near Chicago
 - 200,000 ft², 28 specialized labs
 - Other sites in DC, CA, MA, PA, and Alabama
- > Staff of 250
 - 170 scientists and engineers covering all fields
 - In-house Contracts, Licensing



Offices
& Labs



Flex-Fuel
Test
Facility



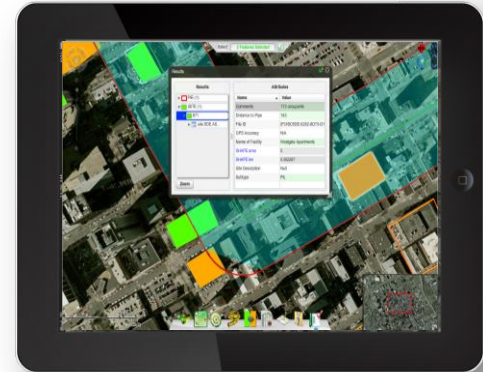
Energy & Environmental Technology Center

Intelligent Utility Program

- > Transition away from paper based data collection towards mobile, electronic data collection
- > Reduce the cost of compliance
 - Hardware and software
 - Data management labor
- > Decrease operational risk
 - Increased data quality
 - Enhanced awareness

Intelligent Utility Software

- > Partnership with 3-GIS
- > GIS-based software that operates on smart phones and tablet computers
 - Creates GIS features in the field
 - Update GIS feature attributes in the field
 - Attach inspection records to GIS features
- > Real-time data transfer from field to office
- > Cloud computing options

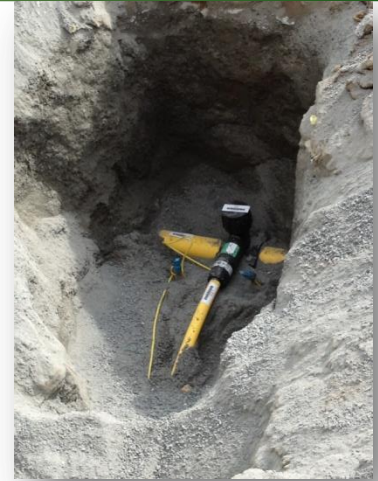


Industry Drivers for Asset Lifecycle Tracking

- > Excavation Damage Prevention
- > Pipeline Integrity Management
 - Traceable, Verifiable and Complete
- > Distribution Integrity Management
 - Know Your System
- > ASTM F2897-11a *Specification for Tracking and Traceability Encoding System of Natural Gas Distribution Components*
 - 16 digit alpha-numeric code that standardizes manufacturer, lot number, material, size and type
 - Manufacturers beginning to barcode pipe and components

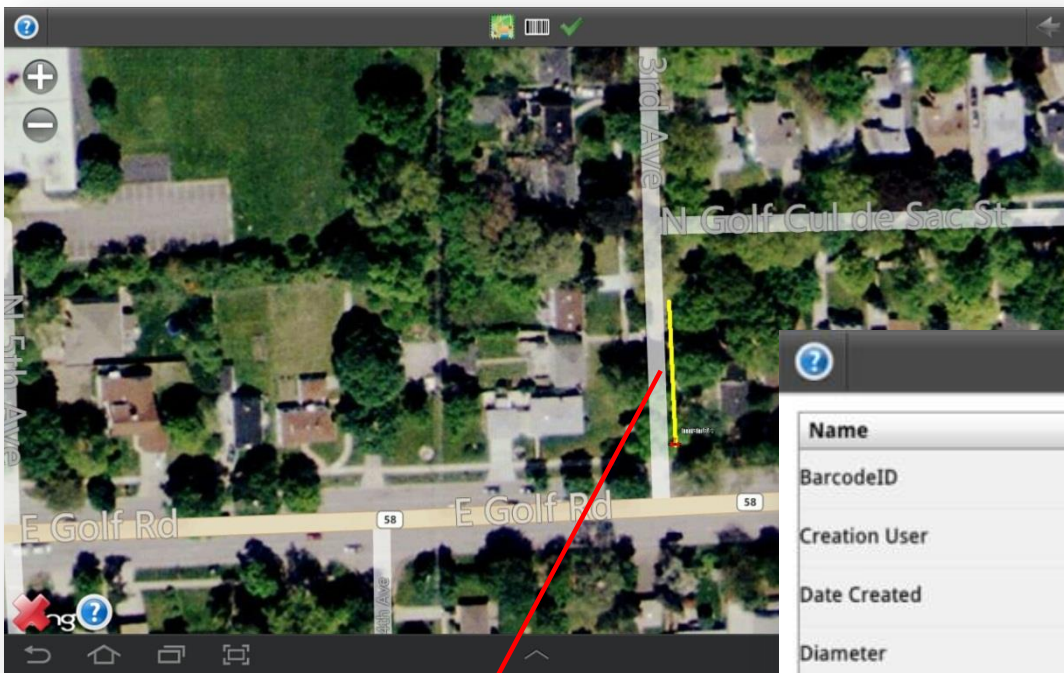
Asset Lifecycle Tracking

- > GTI's technology solution
 - Barcode scanner
 - High accuracy GPS receiver
 - Tablet device with GIS-based data collection software
 - Application to convert barcode into asset attributes to auto populate the GIS
- > Pilot projects
 - NiSource, Integrys



Asset Lifecycle Tracking

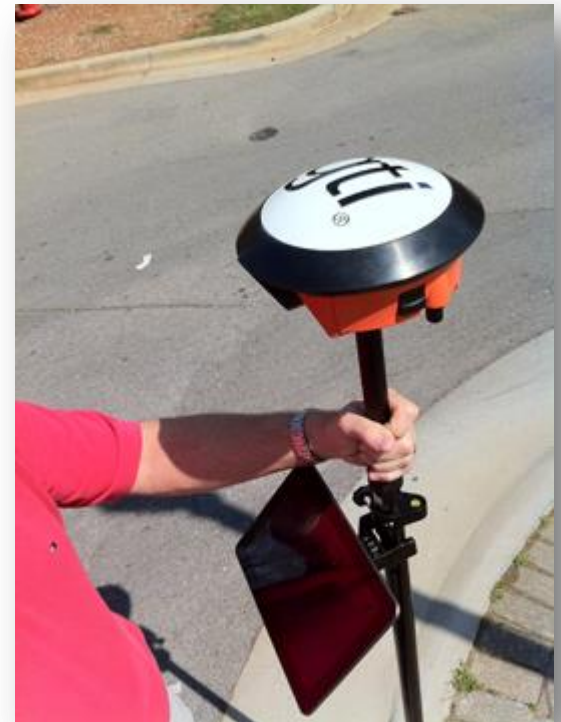
- > Automates the entire data collection process for documenting new installations
- > In less than one minute . . .
 - The barcode scanner captures asset attribute information and causes a new feature to be created in the GIS
 - GIS fields are automatically populated with asset attribute information (material type, batch number, etc)
 - The location of the new asset is positioned with the sub-foot accurate GPS in real time
 - Data is available in the back office immediately



Name	
BarcodeID	
Creation User	3gis
Date Created	5/8/2012
Diameter	2
Enabled	True
ManfBatchNum	17209AC
Manufacturer	Thrall Distribution
Material	Plastic PE
Nominal Diameter Units	inch
SHAPE.len	126.166246
Status	Active
Type	Plastic PE

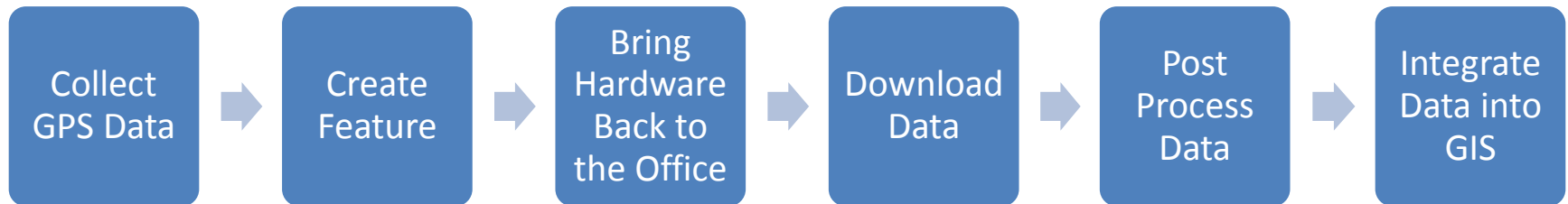
High Accuracy GPS

- > Integrated external high accuracy GPS receivers with tablet computers
 - Sub-foot quality data in real time
 - No need for post processing or a base station
 - Field data directly inserted into the GIS (with controls)
 - Integrated receivers, so far . . .
 - > Navcom
 - > Geneq
 - > Trimble



Data Collection Workflow

> Existing



> New



RFID Marker Ball Mapping

- > RFID marker ball programs are all the rage
- > But . . . need better mapping technologies
- > GTI's marker ball mapping application
 - Create new marker ball features in the GIS from the field
- > Pilot projects
 - PECO
 - ConEd

Lessons Learned

- > Tablet computers
 - Ruggedized?
 - Stability
 - Integration with external sensors

- > Cloud computing
 - More or less secure?

- > GPS experience
 - Simplicity vs high quality data

Lessons Learned

> Software

- Simple, simple, simple

> Training

- Interns vs “experienced” workers

Thank you!
