

## GPS- Keeping Track of the Unseen in the Right-of-Way

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## GIROW

Gas Industry Right of Way



APWA-AGA Committee  
Presentations

*UPROW*  
Sub-Committee  
LOCAL CHAPTER INVOLVEMENT

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## The GIROW Vision

- A 3 Prong Approach....
  1. Communicate and Educate
  2. Research & Studies
  3. New Technology



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# TECHNOLOGY TRANSFERENCE

- ? *Complex Process*
- ? *Dynamic in Nature*
- ? *Map Supported by:*
  - *Research*
  - *Experience*



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Enhancement and Introduction of New Technologies into Operations

- ❖ Technologies accepted into work force
- ❖ The right technology for the right circumstance



**Research & Development Challenge**

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## Acquisition

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## Implementation

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- GPS Applications for Damage Prevention
- Currently Available GPS Tools
- GPS R&D and Technology Transfer

### **GPS for Damage Prevention**

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- Capturing GPS data during locates
  - ? Improved mapping
  - ? Permanent records
- Using GPS data to perform locates
  - ? Assisted
  - ? Exclusive
- GPS-based satellite monitoring
- GPS-based real time monitoring

### **GPS Applications for DP**

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- Virginia Pilot Programs
  - ? Phase 1 – GPS-enabled cell phones
  - ? Phase 2 – GPS-enabled locators
  - ? Phase 3 – GPS-monitored excavation equipment
- GPS Integration at PECO
  - ? Demonstrating and integrating new real-time, high accuracy equipment into routine operations
- GPS Consortium

### **GPS R&D Overview**

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- Antennas
  - ? Primary
  - ? Secondary
- Dataloggers
  - ? Integrated
  - ? Stand-alone
- Accessories
  - ? Beacon
  - ? Laser Range Finder
  - ? Accelerometer/Gyroscope



**Currently Available Tools - GPS**

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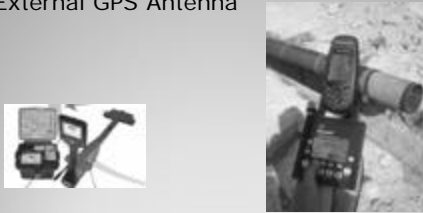
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- Internal GPS Antenna
- External GPS Antenna



**Currently Available Tools - Locators**

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- GPS ? GIS Integration
- GPS "Glasses"



**Currently Available Tools - Software**

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## GPS R&D and Technology Transfer

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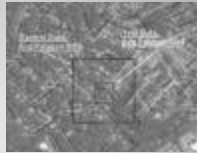
### • Phase 1

#### ? Purpose

- Demonstrate the ability to use GPS-enabled cell phones to call in one-call tickets

#### ? Results

- Over-notification reduced by 8%
- Ticket size reduced by 89%
- Commercialization



### Virginia Pilots

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### • Phase 2

#### ? Purpose

- Demonstrate the ability to use GPS-enabled locators to create electronic records
- Provide utility companies with more accurate mapping information
- Provide excavators with additional location information

#### ? Status

- Kicked-off in January 2008



### Virginia Pilots

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- Phase 3

- ? Purpose

- Develop and demonstrate a GPS-based excavation monitoring system

- ? Goal 1. Protect against excavators that do not utilize the one-call center

- ? Goal 2. Protect against excavator encroachment

- ? Status

- Kicked-off in January 2008



### Virginia Pilots

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- Task 1. Steering Committee

- ? Utility companies, locators, excavators, one-call centers, regulators, equipment manufacturers

- Task 2. Excavator Monitoring Antenna

- ? Standard GPS antenna

- ? Data transmission

- ? Trigger mechanism

- ? Additional benefits



### Phase 3 - Project Scope

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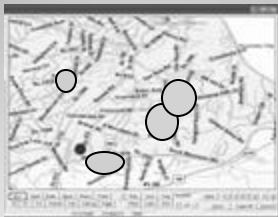
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- Task 3. One-Call Monitoring Software

- ? Cross reference one-call tickets (Phase 1)

- ? Notify of violation



### Phase 3 - Project Scope

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**Task 4. Excavation Encroachment Software**

- ?Cross reference electronic locate records (Phase 2)
- ?Notify excavator and utility of encroachment



**Phase 3 - Project Scope**

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**Task 5. Pilot Program**

- ?Coordinated with Virginia Phase 1 and 2
- ?Participants: Utility company, excavator, locators, one-call center
- ?Duration: 6 months
- ?Purpose: Evaluate feasibility and effectiveness

**Task 6. Implementation Guidelines**

**Phase 3 - Project Scope**

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- PHMSA
- Operations Technology Development (OTD)
  - ?APGARF, Atmos, ConEd, National Grid, National Fuel, Nicor, NiSource, NYSEG, ONG, Questar
- VUPS
- NiSource – Columbia Gas
- Trimble

**Phase 3 - Project Participants**

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**Questions?**

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