Tracking Municipal Snow Operations in Real-Time using ArcGIS Online
Prince George’s County, MD

Elizabeth Miller, Chief of Engineering
Marla Johnson, GISP
Beth Schrayshuen, PE
Agenda

• The Need – Prince George’s County Snow Operations
  - Liz Miller, Chief of Engineering

• The Set Up – using ArcGIS Online
  - Marla Johnson, GISP

• The Results
  - Beth Schrayshuen, PE
Prince George’s County Snow Operations

- All county maintained roads – 2000 miles.
- County divided into 5 Districts
- 12 hour shifts until roadways are clear, curb to curb
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Snow Operations

- Snow Routes are broken into:
  - Primary Routes – large feeder roads – 1st to be taken care of
    - 1-01P (District 1, Route 1, Primary Route)
  - Residential Routes
    - Broken into Snow Areas
      - 1 – 02 R Area 2 (District 1, Route 2, Residential Route, Area 2)
Current Route Map
- Given to Contractors and County Plows
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Snow Operations

- District Managers manage the District
  - Deploy County Plows and Contractors to Snow Routes within District
- District Managers are required to submit reports several times during a 12 hour shift
- Treated/Not Treated – 6 hours after precipitation begins
- Roadway Conditions – 6 hours after precipitation ends
  - Passable
  - Bare Pavement
  - Complete
Passable

- Conditions that would allow a passenger vehicle to negotiate the travel path using reasonable care. This usually means that the roadway is snow and/or ice covered and reasonably level with minimum rutting.
Bare Pavement

- Conditions where 75% or more of the travel lane surface shows. (Bare pavement may include isolated patches of compacted snow/ice of 1” or less.)
Complete

- Conditions that provide bare pavement for all travel and turning lanes, including paved shoulders (where applicable).
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Snow Operations

• Inspectors
  - Deployed by the District Managers to verify the road conditions
  - Traditionally call in treatment and road conditions for the District Managers to record in Reports
Application Audience

District Managers  Snow Inspectors

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Platform

- **ArcGIS Online**
  - Already have licenses access from ELA agreement
  - Already have Mobile Collector Application
  - Free Download to view and organize data
    - Operations
    - Dashboard
Existing Maps
Existing Map – New Application - Publishing
ArcGIS Online

• Created Maps referencing Rest Service Data
• Created Groups to allow users to access the maps
ArcGIS Online

- 1 Map per District
- 1 Map for Command Center Staff
- All referencing Rest Service Layers
- Enable Editing on the maps to have maps available in Collector

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Collector - Inspectors

- Collector – Available in Apple and Android store
- ESRI-sponsored Application
Collector - Inspectors

- Labels are not supported in the Collector
- Set up Display Field in Feature Layer to have important information displayed on the bottom
  *Android must, work around in Apple*
Operation Dashboard

List: Organizes data with the newest entry on the top of the list

Road way treated or not (has salt been spread?)

Is the Route Passable, Bare Pavement, or Complete

General Comment

Photos

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D2lllPhotos:

**CREATED_USER**  kthornton

**CREATED_DATE**  2/21/2015 03:50 PM

**COMMENTS**  lory ln just before lois ln....wash gas truck impede

D2lllPhotos_-1_0_ArcGISApp_1424551837155.jpg
Statistics

- From Feb 16 – March 7, 6 Snow Events called in Snow Inspectors
During Operations Challenges

• Users forgetting their password – Obtained access to ArcGIS Online Admin to work around the password problem
• Tablets needed to be shut down/restarted multiple times during Snow Event
• Limited Cell Service in District 5 hampering data collection
• Fat Fingers
Instructions for: Inspectors, District Managers, IT Coordinators, Data Retrieval

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Future Modifications

- Better Search Function for Routes
- Windows Authorization/Federating – to reduce log-in requirements for users
- Master Snow Account for ArcGIS Online
- Automatic entry of Route Number during data collection
- Would like to be able to dump the data into the required report
- Reports generate on specific routes
Questions

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