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

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Agenda

• Snow Operation Set Up – Derek Winogradoff
• Interactive Snow Map – Beth Schrayshuen
• Snow Operations Deployment – Derek Winogradoff
• Snow Inspection Application – Beth Schrayshuen
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
Prince George’s County
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)
Search – Route Number, Address, Road Name

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Prince George’s County 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).
Prince George’s County
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
Collector - Inspectors

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

- Inspectors select map for the District they are assigned to.
Collect a new feature

- Trees Down
  EOCIIEmergencyComments

- Road Closed
  EOCIIEmergencyComments

- Wires Down
  EOCIIEmergencyComments

- Accident
  EOCIIEmergencyComments

- NO
  District4|||TreatmentNew

- YES
  District4|||TreatmentNew

- D4IIIComments
  D4IIIComments

- D4IIIPhotos
  D4IIIPhotos

- BARE PAVEMENT
  D4IIIRoadConditions

- COMPLETE
  D4IIIRoadConditions

- PASSABLE
  D4IIIRoadConditions
Data Collection

- Condition already recorded based on Create a New Feature Table
- Inspector needs to record Route they are currently on, can include Comments
- Tablet automatically records Inspector Name, Time data was recorded, and location of Inspector
Operation Dashboard

Is the Route Passable, Bare Pavement, or Complete

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

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

General Comment

Photos
Select a data entry of interest
Zoom in using roller ball on mouse
CREATED_USER: kthornton
CREATED_DATE: 2/21/2015 03:50 PM
COMMENTS: lory In just before lois In....wash gas truck impede

D2lllPhotos_1_0_ArcGISApp_1424551837155.jpg
Prince George’s County
Snow Operations
Command Center

• All District Report to the Command Center

• Command Center – Headquarters for Snow Operations
  - Incident Commander
  - Operations Manager
  - Logistics Manager
  - Snow Coordinate
  - Public Information Officer
Command Center Dashboard

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Analytics

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

Snow Event Data

Inspectors vs. Number of Points and Photos

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<th>Date</th>
<th>Inspectors</th>
<th>Data Pts</th>
<th>Photos</th>
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</tbody>
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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

- Windows Authorization/Federating – to reduce log-in requirements for users
- 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
- Other Applications
Correction Facility – Litter Collection Data Input

Contents
- County Boundary
- Bags Collected
- Topographic

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Thanks to:

- Darrell Mobley – Director of Public Works and Transportation
- Gwen Clerkley – Associate Director of Office of Highway Maintenance
- Patrick Callahan – GIS Manager of Office of Information and Technology
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- Liz Miller – Chief of Engineering of Office of Engineering and Project Management
Questions

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