Snow in Georgia?

How the Cobb County Department of Transportation Uses GIS to Manage Winter Weather Events

Lynn Biggs, GIS Manager
Cobb County Department of Transportation
ABOUT COBB DOT

- Maintain the 2nd largest county-owned road network
  - 5,000 roads / 2,426 miles
  - 235 bridges, culverts

- Approximately 160 employees

- GIS Team
  - GIS Manager, Solutions Analyst
  - GIS Technician
Presentation Overview

- Evolution of our snow management
- Challenges
- Solutions
- Benefits
- Next steps
EVOLUTION OF SNOW MANAGEMENT

- Define treatment routes
- Define brine routes
- TMC Inclement Weather Activation
- Gear up with equipment
- Manage work on paper
Define treatment routes
Define brine routes
Key points about TMC activation:
1. When event impacts traffic
2. Executive management decision
3. Inclement weather procedures
Gear up with equipment

2010-2011
- (3) 6-yd spreaders
- (2) 12-yd spreaders

Now
- (4) 2-yd spreaders
- (5) 6-yd spreaders
- (6) 12-yd spreaders
- (5) plow trucks
- (1) pre wet system
- (3) 200-gallon brine tank sprayers
- (1) 600-gallon brine tank sprayers
- (1) 2,000-gallon brine production tank
DOT Route S4
Primary Roadway Routes- Snow and Ice Removal

Begin at Austell Rd and County Services Pkwy
work Austell Rd to Atlanta Rd

Turn Right onto Atlanta Rd
work in a southerly direction to Pat Mell Rd

Make a legal u-turn at Pat Mell Rd
work Atlanta Rd to South Cobb Dr

Make a legal u-turn at South Cobb Dr
work in a southerly direction on Austell Rd to East/West Conn

Make a legal u-turn at East/West Conn
work in a northerly direction on Austell Rd to County Services Pkwy

Work on these roadways will be accomplished by the most expeditious means possible; and preferably but not necessarily in the order given. This will conclude DOT S4, truck is to return to County Services Pkwy.

Treat all lanes on the route designated on the map.
Challenges

How can we:
- Manage snow work seamlessly?
  - Every event is different
  - Staff turnover
- Communicate road status to citizens during a snow event?
Solutions

- Streamline work by going paperless w/Cartegraph OMS
- Integrate systems to improve information flow
SOLUTIONS

- Snow work management in OMS
- Snow routes in Cobb Commute
- Waze data download
Jan. 16
Winter weather advisory
School activities canceled
TMC activated
Inclement weather: 8 p.m.
State of emergency

Jan. 17
Cold, icy conditions
Closures

Jan. 18
40° & sunny

Temperature and weather conditions for the week:

<table>
<thead>
<tr>
<th>Day</th>
<th>High Temperature</th>
<th>Low Temperature</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun 1/14</td>
<td>40°17'</td>
<td>0 a</td>
<td>0 m</td>
</tr>
<tr>
<td>Mon 1/15</td>
<td>40°23'</td>
<td>0 a</td>
<td>0 m</td>
</tr>
<tr>
<td>Tue 1/16</td>
<td>50°24'</td>
<td>0 a</td>
<td>0.1 a</td>
</tr>
<tr>
<td>Wed 1/17</td>
<td>25°12'</td>
<td>0.01 m</td>
<td>0.0 a</td>
</tr>
<tr>
<td>Thu 1/18</td>
<td>40°14'</td>
<td>0 a</td>
<td>0 m</td>
</tr>
<tr>
<td>Fri 1/19</td>
<td>50°24'</td>
<td>0 a</td>
<td>0 m</td>
</tr>
<tr>
<td>Sat 1/20</td>
<td>60°23'</td>
<td>0 a</td>
<td>0 m</td>
</tr>
<tr>
<td>Sun 1/21</td>
<td>60°31'</td>
<td>0 a</td>
<td>0 m</td>
</tr>
</tbody>
</table>
**SOLUTION:** Manage snow work seamlessly

<table>
<thead>
<tr>
<th>Inventory assets</th>
<th>Track resources</th>
<th>Manage requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor resources, performance, costs</td>
<td>Prepare budgets, measure ROI, make data-driven decisions</td>
<td>Work anywhere</td>
</tr>
<tr>
<td>Integrated with ArcGIS, and 311 systems</td>
<td>Citizen issue reporting app</td>
<td>Integrated with Cobb 911</td>
</tr>
</tbody>
</table>

**Cartegraph OMS**
- Capture data.
- Analyze it.
- Prepare for the future.
GIS Connections in Cartegraph OMS

Administration
- User Administration
- Role Administration
- Asset Administration
- Record Filter Administration
- Import / Export
- Scheduled Process Log
- Error Log

Settings
- System Settings
- Map Administration
- Geocode Settings
- GIS Integration
- Asset Color Manager

Manager
- Layout Manager
- Library Manager
- Preventative Maintenance
- Scenario Builder
- Asset Condition Manager
- Notification Manager
- Structure Manager
- Automation Manager
SOLUTIONS OMS work order dashboard

<table>
<thead>
<tr>
<th>TaskID</th>
<th>Activity</th>
<th>Status</th>
<th>Actual Start Date</th>
<th>Actual Stop Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>100523</td>
<td>De-ice</td>
<td>Completed</td>
<td>1/17/2018 12:00:0...</td>
<td>1/17/2018 2:08:...</td>
<td>Route completed by Kohants Haygood.</td>
</tr>
</tbody>
</table>
SOLUTION: Communicate road status to citizens

- OMS tasks geocreated to GIS point layer
- Spatial view created to join layers attributes
  - Work status
  - Snow routes
- Snow routes map Service added to Cobb Commute
- Live link between OMS and Cobb Commute
Snow routes in Cobb Commute

Inclement Weather Information
The information reported on this page only represents the timing of the most recent snow/ice route treatment performed by Cobb DOT, where treatment consists of the distribution of a salt and gravel (#88) mixture at varying proportions, or just gravel, depending on the weather.

Disclaimer
Cobb DOT hereby gives notice to all users that these maps and the data included hereon, lack the accuracy required for site-specific uses. Cobb DOT makes no representation, guarantee, or warrant, either express or implied, regarding the accuracy of these maps or the data furnished thereon, including, but not limited to, the condition of this product, this product's merchantability, or this product's fitness for any particular purpose or use.

More Info
- Georgia 511
- Documentation
Snow routes in Cobb Commute
Cobb Commute Use
- DOT social media
- EMA story map

January 18, 2018
SNOW AND ICE REPORTS: Waze vs. calls to DOT

Waze
Wednesday morning

Waze
Thursday midnight → 11 a.m.

Calls to DOT
Wednesday & Thursday
Benefits

- “Enter it once. Everybody sees it.”
  - Dashboards
  - Cobb Commute
- Efficiently track snow work
NEXT STEPS

**COMPLETED**
- Leverage GeoEvent to see truck locations

**POSSIBILITIES**
- Leverage GeoEvent to trigger task closures
- Publish to Waze
- Integrate OMS with Waze

[Connected Citizens logo]
OMS with AVL
Connect with #CCDOT!

- cobbdot.org
- cobbcommute.org
- yourgov.cartegraph.com
Questions?

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