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Background

- Why we needed a new system:
  - Better allocation and control of NJDOT resources
  - Ability to “playback” the location of our resources
  - Improve the collaborate with NJSP and other state agencies in an emergency
- Capitalized on the NJSP new state wide “P-25” communication system that was being installed by Motorola.
State owned GPS enabled vehicles and devices

"MARVLIS" server

NJ State Police network

End Users (NJ DOT Operations; NJSP; etc.)

Photos of the hardware installed in NJDOT’s fleet of vehicles

Radio Control Head

GPS and Cell Locator Devices

P-25 700/800 MHz Radio

Web-based, No end-user software required.
Only a web browser

Navigation: Zoom in/out; East/West North/South
Hover Over Icon: displays type of vehicle; direction; speed; time of update
- Dump trucks update about every 30 seconds
- Non-dump trucks update about every 60 seconds

Dump Truck Icon: red square to show plow up/down; spreader on/off; lights on/off; dump body up/down

“Stopped Vehicle” Indicator:
- When a vehicle stops physically moving for at least 15 min, the icon will turn into a circle with quarter sections ticking down to 60 min

** Do live demonstration **
MARVLIS Basic Functionality

- Search for a Vehicle. Allows a user to find the current location of a vehicle
- Playback Feature. Allows a user to replay the route a vehicle took for a select period of time
- Location Report. Allows a user to extract the exact locations a vehicle was for a select period time. Can be exported to Excel

** Do live demonstration **

Marvlis Advanced Functionality

- Bookmark: Allows a user to save a certain geographical view
- Draw Measure: Allows a user to ‘customize’ a view on the display for their specific purposes
- Layer List: Allows a user to select overlays like weather feeds; NJDOT snow sections
- SITREP-Tracker: The main folder to do the “basic functions”
- Find a Street Address: Allows a user to type in a specific address and the display will reformat to that location.
- Data Feeds: Allows a user to select different data feeds like traffic cameras or news
- Legend: Shows the NJDOT dump truck activities (e.g., lights on)
- Print Display

User Rights and Access

- LEVEL 1: System Administrators. 4 DOT and 2 NJ State Police Personnel
  - Full access to add/delete accounts; perform special queries; modify icons; adjust timing settings; etc.
- LEVEL 2: Operations Management; Traffic Systems Management; Area Supervisors
  - State–wide views to all types of vehicles; full ability to do playback and location reports
- LEVEL 3: Crew Supervisors and below
  - Regional view; playback of their area vehicles only
System Use and Potential

- Emergency Operations/Snowfighting:
  - “MARVLIS/Radio operators” staff our Regional Emergency Operating Centers
  - Function as the “eye in the sky” to Area and Crew supervisors. Can assist in diverting resources from one area to another area
  - Provide “real time” situation reports to NJDOT leadership

- Regular Operations:
  - Passively monitor NJDOT vehicle activity. (e.g. “Where in NJ is the Commissioner right now?”)
  - Deters crews from improper use of vehicles
  - Verification tool to prove or disprove NJDOT vehicle location or activity (e.g. “I saw an NJDOT truck speeding on I–80 today”)

NJDOT will install radio/GPS in every vehicle in entire fleet where feasible
We have experienced installation/roll out challenges
- Needed customized cabling for some trucks
- Software glitches and system performance issues needed to be resolved by Motorola
NJSP and NJDOT do not plan on making this public information because it is behind the NJSP firewall for security purposes

Other Information

Thank You
Any Questions?