



NJDOT
GPS "MARVLIS" System
OVERVIEW
RICH SHAW
ASSISTANT COMMISSIONER
OPERATIONS



Content

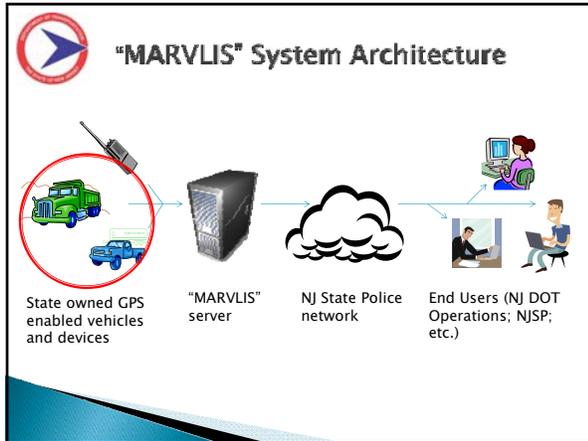
- ▶ Background
- ▶ System Architecture
- ▶ Basic Functionality
- ▶ Advanced Functionality (Bells and Whistles)
- ▶ User Rights and Access
- ▶ System Use and Potential



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.







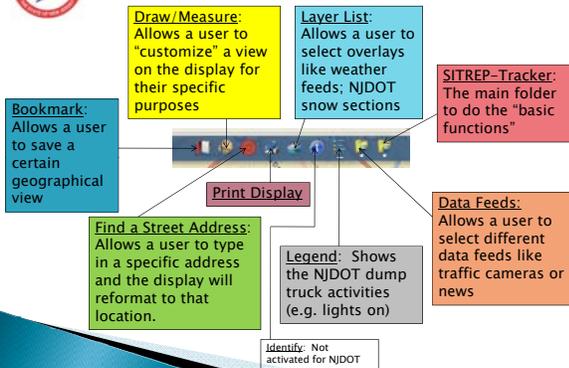
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- MARVLIS Basic Functionality**
- ▶ **Web-based.** No end-user software required. Only a web browser
 - ▶ **Navigation:** Zoom in/out; East/West North/South
 - ▶ **Hover Over Icon:** displays type of vehicle; direction; speed; time of update
 - Dump 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**



- 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"
- 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)
- Identify:** Not activated for NJDOT
- Print Display**
- Bookmark:** Allows a user to save a certain geographical view
- Find a Street Address:** Allows a user to type in a specific address and the display will reformat to that location.

 **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/Snow fighting:**
 - "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")



Other Information

- ▶ 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



Thank You

Any Questions?