GDOT Rural and Coastal Georgia Incident and Emergency Management Strategies

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Presentation Overview

- Incident Management Program (C.H.A.M.P.)
- Automated Incident Detection (AID) system
- Connected Data Platform (Big Data Analysis)
- Conclusion-incident Management/ITS Fusion
Roadway Maintenance
CHAMP provides quick response to the following maintenance issues:

- **Motorist Assistance**
  - CHAMPs assist motorists, when feasible, and if they are not dispatched to a major highway and the motorist is safely off the road. Incident enhances roadway safety by providing motorist assistance and temporary traffic control, which helps to reduce secondary incidents and increases responder safety.

- **Emergency Response**
  - CHAMPs serve as an on-scene incident responders, providing roadway clearance and traffic control and traveler information.

- **Other Services**
  - Detect, verify reports and provide all necessary assistance with traffic incidents to ensure safe and quick clearance on interstates outside of HERO territory and on non-interstate state routes within 10 miles on either side of interstates when requested.
  - Provide assistance to motorist needing help on interstates, when feasible
  - Assist the Department of Public Safety and other law enforcement agencies as needed in a support role (interstate and non-interstate state routes within within 10 miles).
  - Safely and expeditiously remove debris and minor non-hazardous spills from highways
  - Assist with removing and/or tagging abandoned vehicles or other incidents
  - Maintain and/or improve safe and efficient traffic flow
  - Identify, verify and report maintenance issues and/or property damage to infrastructure

**Major Maintenance**
- Bridge/roadway damage
- Down signs
- Missing roadway markings
- Traffic signal malfunction
- Commercial vehicle crashes and spills

**Minor Maintenance**
- Vegetation
- Blocked drainage
- Debris removal (including abandoned or disabled vehicles)
Automated Incident Detection
Automated Incident Detection

I-475 Corridor

- **Background Information**
  - 15 mile six lane Interstate
  - 1/3 mile ITS infrastructure constructed 1999-2000’s
    - Approx. $80 million roadway construction
    - Fun fact: Superbowl 33 - ATL vs. DEN
  - **Existing Infrastructure**
    - 84 ITS pole locations
    - 31 Pan-Tilt-Zoom Cameras
    - 99 Fixed Cameras (Video detection)
    - Legacy devices: 15-20 Y/O
  - **Other Factors**
    - Great candidate for ITS replacement budget
    - No planned construction along corridor
    - Consistent traffic volume
GDOT Office of Research/GT Partnership: I-475 Feasibility Study
- Developed map to ensure near 100% coverage
- 153 Fixed cameras
- 31 upgraded pan-tilt-zoom cameras
- 84 power management devices
- Longest continuous deployment in the Nation
- A.I.D. powered by TrafficVision
- Total cost of $1,086,293.25
Results

- Incidents Captured: 01/26/2018-9/25/2018
  - 30,834 Stopped Vehicles
  - 1,081 Congestion Alerts
  - 42 Pedestrian Alerts
- “Eye-opening” data
  - Incident detection 6-8 minutes before incident reported by credible source
  - Excessive stalls and truck parking along corridor
  - Impressive C.H.A.M.P. Response Time (year 2 since deployment)
- Cost Benefit Analysis
Notice time stamp
6:20 PM

Hero Response Time: 6:21 PM; 1 minute 45 sec.
Plenty of Data, Not Enough Time...

There is always more to learn from the data. What would improve the effectiveness of an analyst?

• Aggregate data from silos
• Get data on a map
• Assess data quality
• Move toward rate-based results
Connected Data Platform

Data Elements

I. Dashboard portal
II. Reporting
III. Notifications & alerts
IV. Pattern identification
V. Predictive analytics
VI. “What If” simulation
The CDP Vision

### Phase 1
- CHAMP & GDOT Vehicles (Verizon Networkfleet)
- WAZE, HERE, RITIS (historical, current)
- GEARs (crashes)
- NaviGAtor (incidents)
- HERO & CHAMP Dispatch & Activity
- Maximo (ITS Maintenance Tickets)
- Weather (historical, current, predicted)

### Phase 2
- ATSPM (Traffic Signals)
- RTOP Performance Measures Software
- MaxView (Traffic Signals)
- TEAMS (Traffic Signal and ITS Maintenance)
- SPaT and Connected Vehicle Data
- Pre-construction and Post-Incident Delay Cost Calculation
- New ATMS – Phase 2 or 3

### Phase 3
- Transit Vehicles
- Rail Vehicles & Highway / Rail Activity
- Oversize Vehicles and Weight-in-Motion
- Freight / Container / Port Activity
- First Responder Vehicles
- Law Enforcement Vehicles
- Asset Management via Video Processing

Users: GDOT, GDOT consultants

Connected Data Platform, with Analytics Platform support
Phase 1 Focus Areas

Safety and ITS Device Applications

• Vehicle and pedestrian crash reporting
• Incident program reporting (HERO, CHAMP)
• ITS device uptime status
• ITS device reliability tracking
CHAMP Vehicles (Freeway Service and Maintenance)
Program Vision: Planning and Designing for Safety

- Motorists behavior factors
- Influence of environmental factors
- Emergency vehicle routes and patterns
- Road characteristics
- Crash characteristics
Conclusion

“Creating ITS Implementation Solutions for all Communities”

- **C.H.A.M.P. INCIDENT MANAGEMENT**
  - CDP
    - FLEET STAGING
    - LIVE/HISTORICAL DATA REPORTS
    - BUDGET JUSTIFICATION
  - AID
    - INCIDENT REPORTING
    - OPERATOR TRAINING
    - PERFORMANCE MEASURES

- **CONNECTED DATA PLATFORM**
- **AUTOMATED INCIDENT DETECTION**
- **INCIDENT MANAGEMENT PROGRAM**
THANK YOU
QUESTIONS

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