



S.T.O.R.M.

Statewide Transportation Operations Response Map

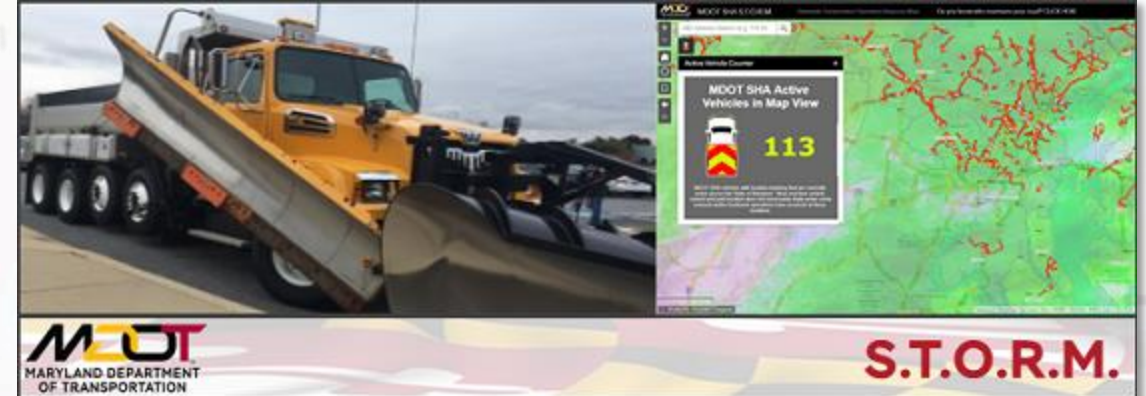
S.T.O.R.M. – Tracking Roadway Winter Weather Operations

MSGIC Winter Quarterly Meeting 1/16/2018

 **MARYLAND DEPARTMENT OF TRANSPORTATION**
STATE HIGHWAY ADMINISTRATION

Purpose

- ▶ Provide public real-time operation data
 - ▶ Location of winter fleet
 - ▶ Division of responsibility
- ▶ Provide maintenance managers comprehensive overview
 - ▶ Deployed resources
 - ▶ Operations type
 - ▶ Road conditions
 - ▶ Weather forecast
 - ▶ CHART Video



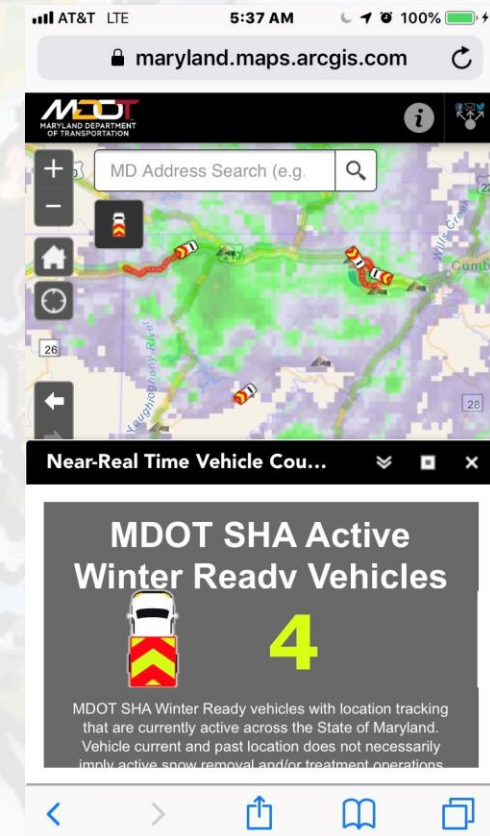
Industry Standards

- ▶ Literature on AVL in winter maintenance
 - ▶ No focus on public facing
- ▶ Online survey sent to 24 states
 - ▶ Identify states for detailed phone interview
 - ▶ Resulted in response from 10 states
- ▶ Detailed interviews
 - ▶ 5 survey respondents have public facing websites
- ▶ Web search - State 511 and standalone

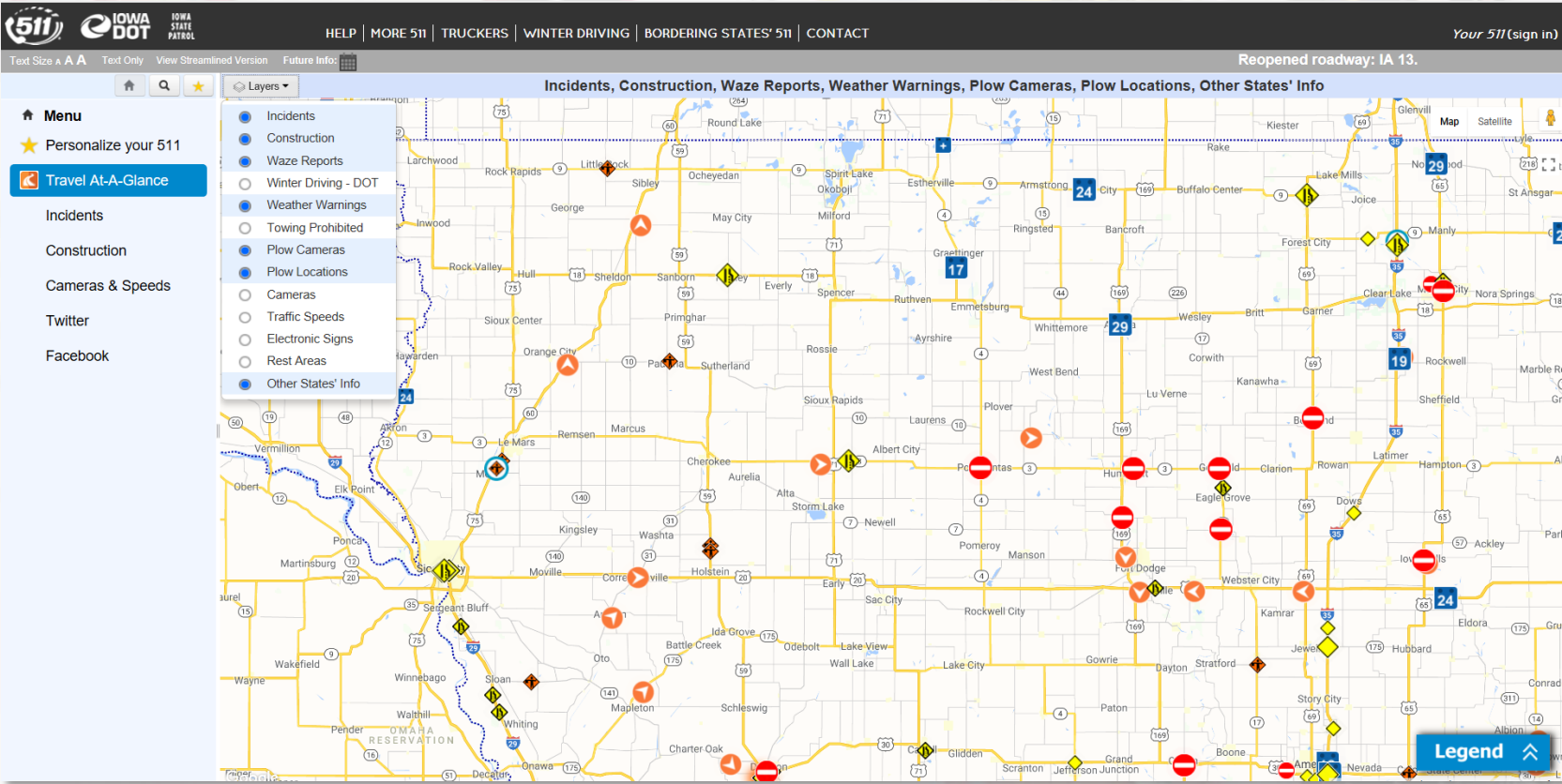


National Status

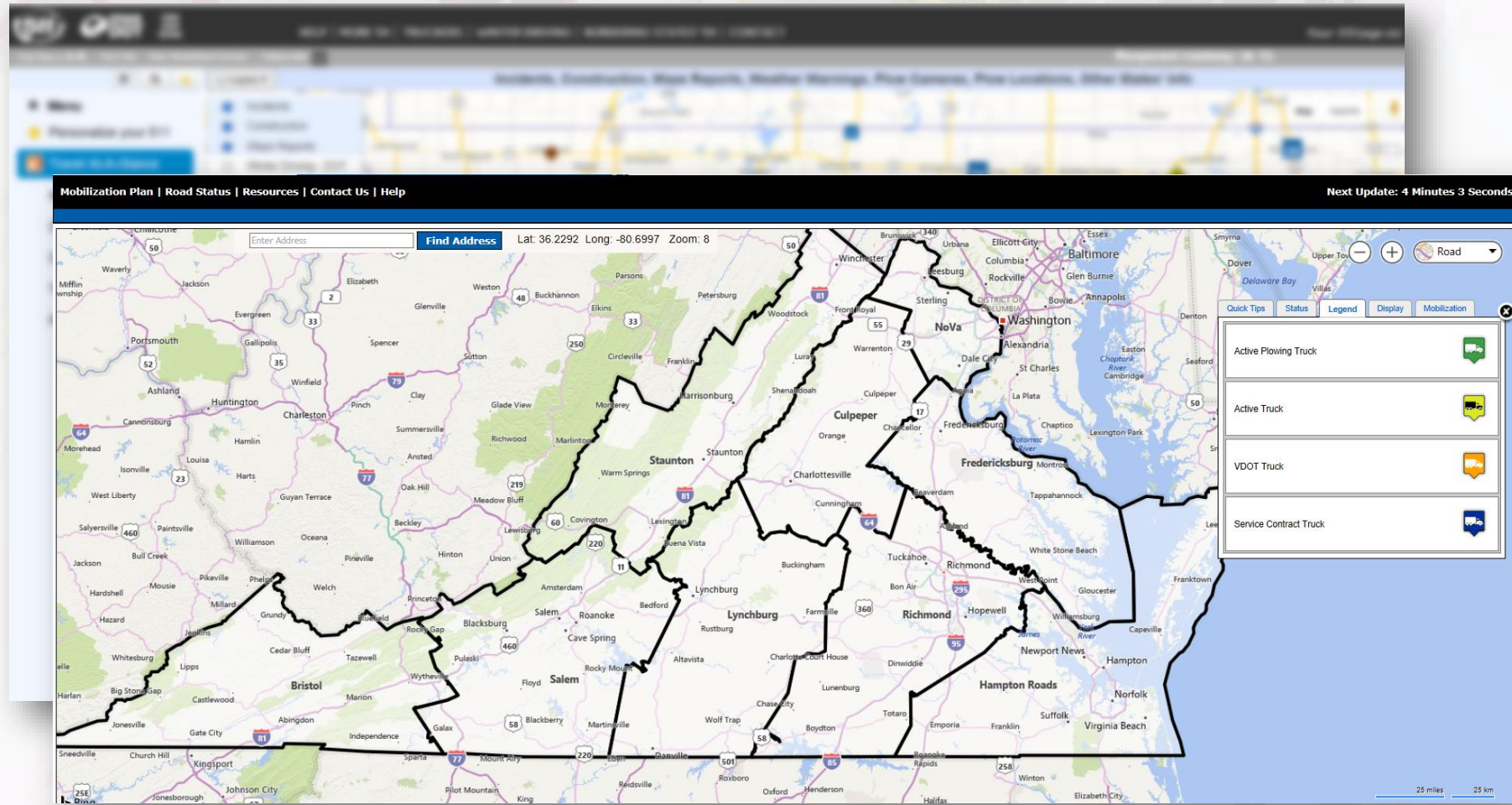
- ▶ Public fleet tracking website – 14 states (including DC, DE, PA, VA)
 - ▶ Operations Progress – 4 states
 - ▶ Route Condition – 9 states
 - ▶ Plow Cameras – 4 states
 - ▶ Activity Type (up/down, spreading, etc.) – 6 states
 - ▶ Active all year – 12 states
- ▶ Winter route conditions and no fleet tracking – 14 states



Iowa Example

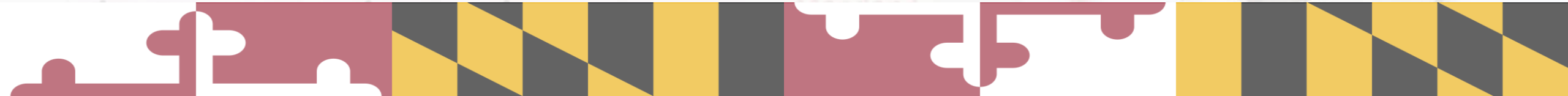


Virginia Example



Additional Questions

- ▶ DOT percentage of network
 - ▶ Range from 10 – 91%
 - ▶ Average of 30%
- ▶ Publication method
 - ▶ Thru 511 – 10 states
 - ▶ Standalone site – 3 states
 - ▶ Both 511 and standalone – 1 state



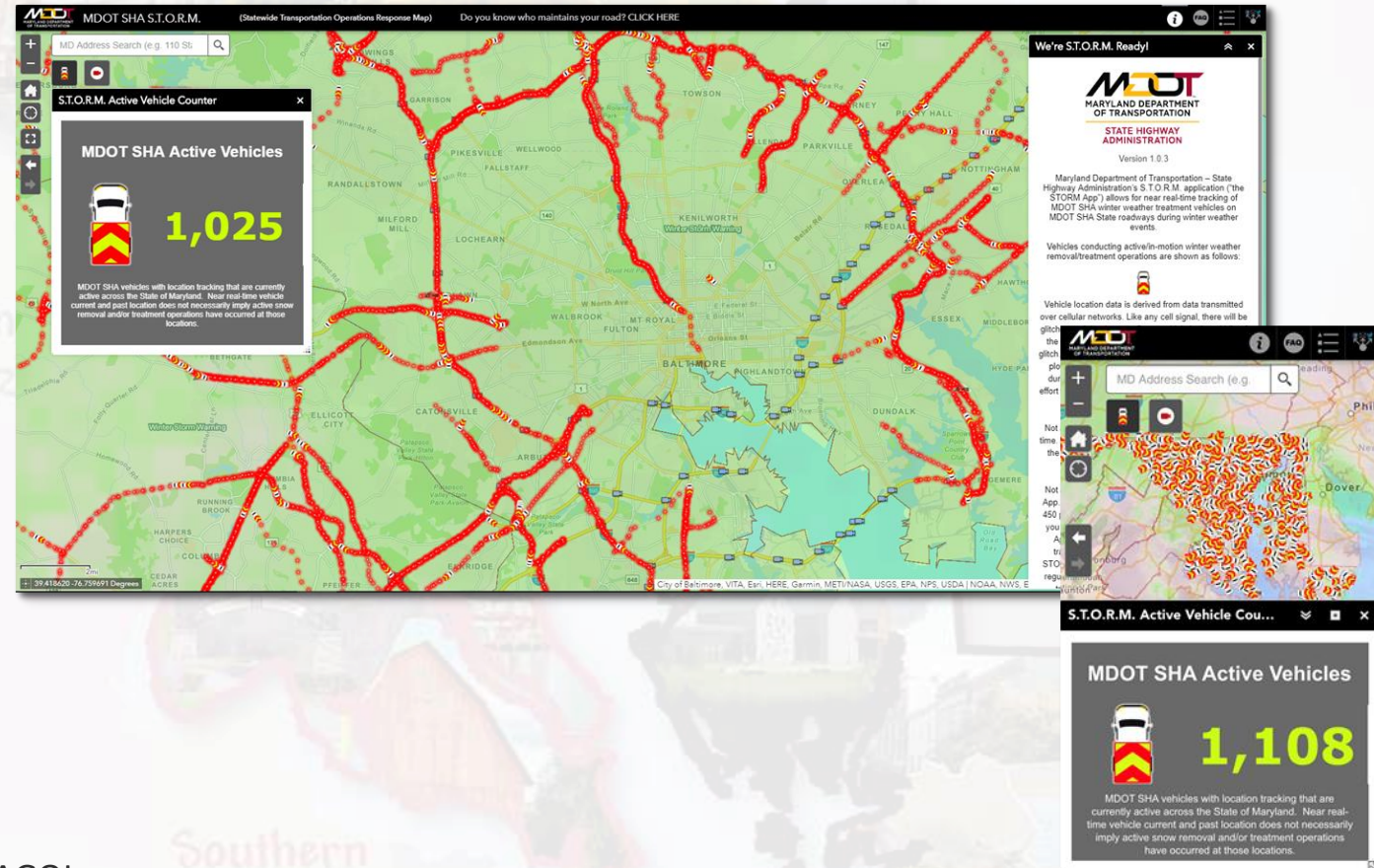
Challenges

- ▶ Cycle completion or plow schedule information
 - ▶ State DOT versus County Roads Department
- ▶ AVL Feed
 - ▶ Minimize disruptions to CHART AVL products
 - ▶ Duplicate feed
 - ▶ Inconsistent Mapped Data based on data cell coverage
- ▶ Classify vehicle types
 - ▶ Identification of vehicle class
 - ▶ Mask equipment out of state

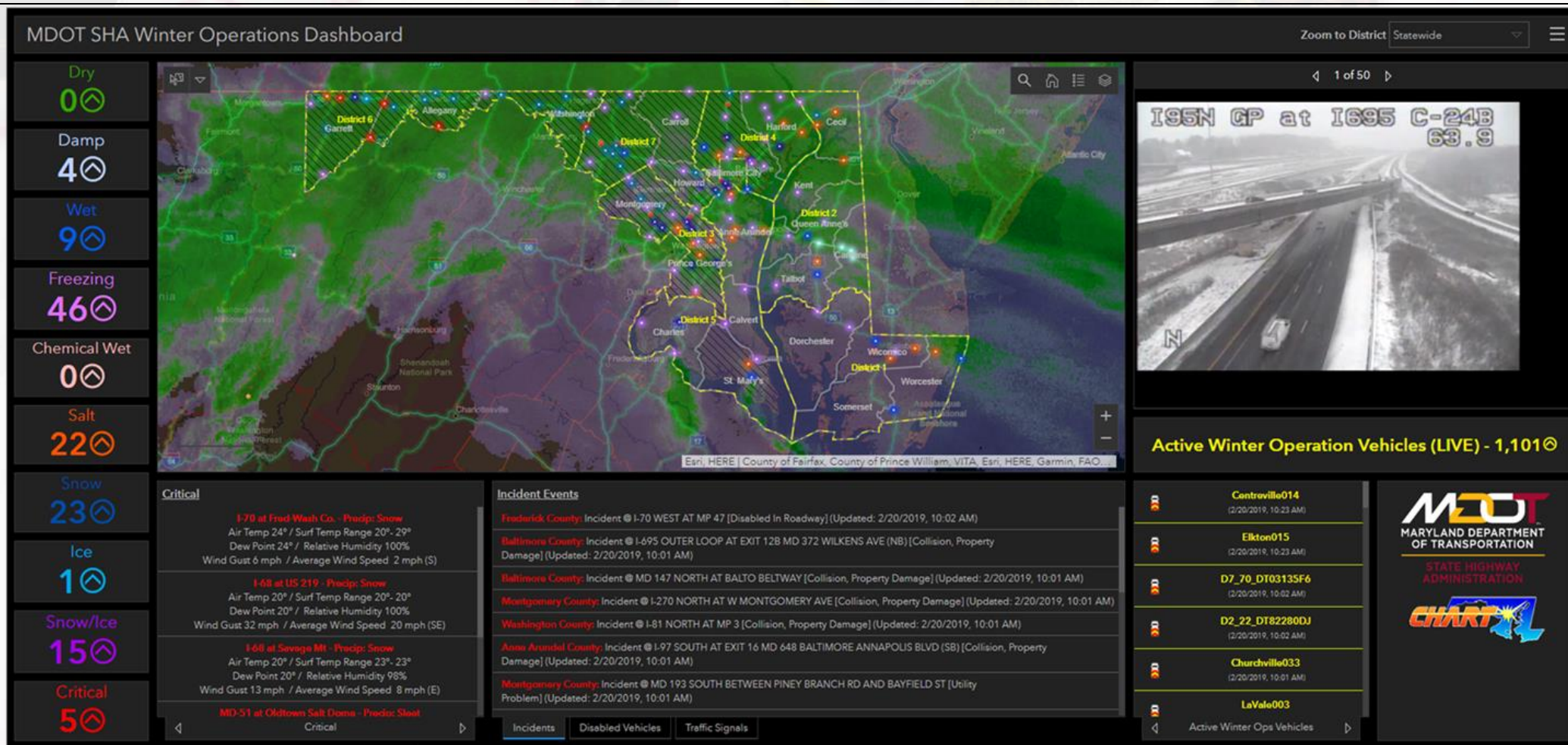


S.T.O.R.M. (Public Facing)

- ▶ Link active on MDOT SHA homepage November thru March
- ▶ Winter fleet location (state and hired)
 - ▶ >10 MPH
 - ▶ Data feed every 30 seconds
 - ▶ Last 30 minutes of activity (breadcrumb trail)
 - ▶ Delay feed by 5 minutes
 - ▶ Auto refresh counter every 30 seconds
- ▶ Active vehicle counter
- ▶ Address/Road name Search
- ▶ Mobile/Tablet/Desktop Friendly
- ▶ GPS/Locate Me Function
- ▶ Link to “Know Your Roads” application
- ▶ NWS weather radar and winter weather alerts
- ▶ Intro/Overview Video
- ▶ FAQ's
- ▶ Data lives on MD iMAP and Web Application Esri hosted AGOL



Winter Operations Dashboard (Internal)



Future Consideration

- ▶ Short Term
 - ▶ Comprehensive Situational Awareness
 - ▶ EORS SARS
 - ▶ MARWIS expansion
 - ▶ 50 new units this year
 - ▶ Ultimately expand to all route supervisors
- ▶ Long Term
 - ▶ Dash cameras
 - ▶ Included in MRWIS hardware
 - ▶ Plow operation type
 - ▶ Detailed AVL feed from state equipment



Questions?