In the spotlight...

Using RITIS for Extreme Weather “Bomb Cyclone” Nor’easter

Taran Hutchinson, MATOC Facilitator
By the numbers...

- Formed January 2, 2018; dissipated January 6, 2018
- Top wind speeds of 90 mph
- Highest gust was 126 mph
- Max. of 24 in of snowfall; 0.5 in of ice
- 300,000 power outages
- 22 confirmed fatalities
The MATOC Perspective

- The Metropolitan Area Transportation Operations Coordination (MATOC) is a joint operations program between DDOT, MDOT, VDOT, & WMATA to improve inter-agency information sharing and coordination.
- MATOC’s mission is to provide situational awareness of transportation operations in and around the National Capital Region (NCR).
- Focuses on DOT Operations and Traffic Incident Management issues.
- Works with DOT Maintenance representatives to improve coordination efforts in advance of, during, and after severe weather events.
- RITIS serves as MATOC’s core system to monitor transportation conditions in and around the NCR.
The MATOC Perspective

- **National Capital Region (NCR)**
  - Approximately 3,500 square miles: District of Columbia, Suburban Maryland, and Northern Virginia
  - Population: 5+ million people
  - Home to the Federal Government
  - Civilian Labor Force: 3 million jobs
    - 350,000+ federal jobs
    - 300,000+ state and local jobs
  - 3 state DOTs
  - 22 area local governments
  - 30+ transportation agencies
  - 100+ public safety agencies
  - Consistently ranked as one of the most congested urban areas in the nation
What Works, What Doesn’t

- **NWS**: The Nation Capital Region presents a challenging area to forecast given its geography.
- **Regional Weather Call** assists with decision making process (typically 3AM)
  - Federal, State, Local partners report out on their mobilization/response plans and provide status of their infrastructure (**200+ people**)
  - Discuss demand management strategies to get commuters to/from work and expedite recovery operations
- **US Office of Personnel Management (OPM)** provides guidance on status of Federal Government within the DC Metro Area
  - Most Federal, State, Local jurisdictions follow OPM’s guidance

- **MATOC provides an opportunity** for OPM/NWS to gather additional information from the area DOTS to improve the decision making process
National Weather Service Forecast for January 8, 2018

Projected Storm Track
“Coastal Storm/Nor’easter”
National Weather Service Forecast

- A Coastal Snow/Wind Event for January 8 (primarily east of I-95)
Issues & Concerns

› **Timing**
  › When will the system arrive?
  › Impacts to morning and/or afternoon rush

› **Temperatures**
  › Status of pavements/sidewalks after a prolonged cold snap
  › Refreeze issues expected at sunset

› **Wind Speeds**
  › Sustained winds impact high profile vehicles
    › Commercial vehicles, buses, trains, etc
      › 50mph winds impact Metrorail
      › 40mph gusts impact bridges
  › Wind gusts can bring down trees and wires
    › Roadway blockages and power outages
  › Blowing snow may impact recovery efforts
MATOC Severe Weather Coordination Process

- NWS
  - DPW/DDOT
  - MDSHA
  - VDOT
  - WMATA
  - NPS/USPP
  - Local DOTs
  - OPM

- MATOC
  - Regional Severe Impact Event
  - Regional Moderate Impact Event
  - Local or Low Impact Event

- MATOC Severe Weather Conference Call
  - No Formal Coordination
  - Agency Discussion & Decision Making

- MATOC Transit Agency Conference Call

- Regional MWCOC Weather Conference Call (200+ people)

- Forecastsed Weather Event
  - Start of Precipitation
  - End of Precipitation

- "One message, many voices"

- Agency Mobilization Plans Shared (12-48 hours before event)
- MATOC Severe Weather Alert Issued [Call/No Call] (12-24 hours before event)
- MATOC Inter-Agency Coordination & Information Sharing (2am, 9am, 2pm, 9pm)
- Regional Coordination & Decision Making (4-8 hours before event)

I-95 Corridor Coalition • RITIS User Group • The Center for Advanced Transportation Technology Laboratory

January 18, 2018
Speaking the same language
Coordination – RITIS Meeting

- **Simple** web meeting function that:
  - Streamlines call/meeting management
  - Multiple-presenter functionality
  - Interactive mapping, share documents and images, drawing functions
  - Shared view of an event or incident
  - Document meeting minutes
  - Open and transparent decision-making (e.g., real-time polling)
  - **Participants receive a PDF meeting summary at the end of the session**
- **Works on all internet browsers**
  - **No plugins required**
  - Supports up to 300 participants per session
Coordination – RITIS Meeting Summary

MATOC DOT Weather Call: January 4, 2018 Event (Call #1)

Jan 03, 2018 03:15 PM
Host: Tarun Hubsing
District of Columbia, District of Columbia
MATOC Severe Weather Working Group Conference Call to discuss the forecasted overnight/winter weather event expected to impact AM/Thu., January 4, 2018.

Recommendation
Recommend a 3pm MWCOG Snow Call on Thursday, January 4, 2018. Request DOTs to brief out on how effective pre-treatment activities have been in anticipation of AM rush in case we need to consider a new strategy.

Number of Attending Participants: 17

Timeline
WASHINGTON DC GREATER METROPOLITAN AREA FORECAST
137 PM EST WED JAN 3 2018

THIS AFTERNOON, MOSTLY CLOUDY. HIGHLIGHTS IN THE LOWER 30S. SOUTHEAST WINDS AROUND 5 MPH.

TODAY: CLOUDY. A CHANCE OF SNOW IN THE EVENING, THEN SNOW AFTER MIDNIGHT. TOTAL SNOW ACCUMULATION AROUND AN INCH IN THE LOWER 30S IN THE DOWNTOWN AREAS. AND AROUND 1-2 IN THE SUBURBS. NORTHEAST WINDS AROUND 5 MPH, BECOME NORTH 10 TO 15 MPH WITH GUSTS UP TO 30 MPH AFTER MIDNIGHT. CHANCE OF SNOW 90 PERCENT.

THURSDAY: CLOUDY WITH A CHANCE OF SNOW IN THE MORNING, THEN PARTLY SUNNY IN THE AFTERNOON. CLOUDY WITH HIGHS IN THE UPPER 30S. WEST WINDS 15 TO 25 MPH WITH GUSTS UP TO 40 MPH. CHANCE OF SNOW 90 PERCENT.

THURSDAY NIGHT: PARTLY CLOUDY. COLD WITH LOWS AROUND 9 ABOVE. NORTHWEST WINDS 15 TO 20 MPH WITH GUSTS UP TO 35 MPH. WIND CHILL VALUES AS LOW AS 10 BELOW AFTER MIDNIGHT.

FRIDAY: MOSTLY CLOUDY. COLD WITH LOWS AROUND 12 BELOW. NORTHWEST WINDS 15 TO 20 MPH WITH GUSTS UP TO 35 MPH. WIND CHILL VALUES AS LOW AS 10 BELOW.

FRIDAY NIGHT: MOSTLY CLEAR. COLD WITH LOWS 5 TO 10 ABOVE. WIND CHILL VALUES AS LOW AS 10 BELOW.

SATURDAY: COLD WITH LOWS 15 TO 20. WIND CHILL VALUES AS LOW AS 10 BELOW.

SATURDAY NIGHT: MOSTLY CLEAR. COLD WITH LOWS 5 TO 10 ABOVE.

Meeting Notes

06:18 PM William Winslow: DDOT will begin anti-skidding at 8PM/night. Salt trucks will have a full deployment at 1AM. Non-motorized staff monitoring bridges and sidewalks starting at 8AM. Creating more of a wet atmosphere rather than an icy atmosphere.

15:00 PM William Winslow: DDOT: Finalizing anti-skiding timing today. There is residual salt on the roads so no back working. Will be on a Level 2 mobilization (about 3,000 pieces of equipment), with the department on the east, there is a chance that equipment may be moved from the west.

15:20 PM William Winslow: MC COG: Deploying full MCOG staff tonight at midnight. Did not pre-treat due to the residual salt on the roads. Full deployment at 3AM.


15:22 PM William Winslow: WMATA Rail: Level 1 activation at midnight. Not expecting to have any service issues. Will be doing sidewalks and entrance clearance. Staff will ramp up with additional bus supervisors on the streets.

06:25 PM William Winslow: There will be a 3AM MWCOG Weather Conference Call.

Shared Media

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January 18, 2018
Outcomes – January 4, 2018

- **OPM Guidance (4AM)**: Open with 2-hour Delayed Arrival with option for unscheduled leave or telework
- **Area Schools**: Most closed, some on a 2-hour delay
- **Snowfall Totals**:  
  - A dusting to 3”
  - 3”-5” towards the southeast & shore
- **Wind Speeds**:  
  - Average: 18-24mph
  - Highest: 32-38mph
  - Highest Gust: 42-49mph
- **Temperatures**:  
  - Low: Low Teens
  - High: Upper 20s

Snowfall Map (Post Event)
Analysis – PDA Trend Map (6:00AM)
Analysis – PDA Trend Map (9:00AM)
Analysis – PDA Trend Map (5:30PM)
Analysis – PDA Performance Chart

Travel time index for I-495 (Capital Beltway) - Complete Loop
Averaged per five minutes for January 2017 (Every Thursday), December 7-21, 2017 (Every Thursday), and January 4, 2018

Clockwise

Decision Time

Commuters stayed put
Four days later...

Wintery Mix / Icing Event Expected During PM Rush (Jan 8)
Outcomes - January 8, 2018

- **DOTs & Transit**: Split decision
  - ½ Recommend early dismissal
  - ½ Recommend staying open, keep commuters at work
- **OPM Guidance (11AM)**: Remain open, will monitor and adjust as needed
- **Area Schools**: Some schools already closed for the day. Remaining opted for a 2-hour early dismissal
- **Precipitation Totals**:
  - Precipitation begins early afternoon
  - Transition from rain to freezing rain
  - Ice: Trace to 0.05”, mostly points north and west
- **Roadways**: Interstates/primaries okay, but.....
Analysis – PDA Trend Map (2:00PM)
Analysis – PDA Trend Map (6:00PM)
Analysis – PDA Performance Chart

Travel time index for I-495 (Capital Beltway) - Complete Loop
Averaged per five minutes for January 2017 (Every Monday), December 4-18, 2017 (Every Monday), and January 08, 2018

Clockwise Decision Time

Counter-clockwise

Early PM Rush (time shift)

Travel time index: Travel time represented as a percentage of the ideal travel time (Travel Time / Free-flow Travel Time).

- December 04, 2017 through December 18, 2017 (Every Monday) - INRIX
- December 04, 2017 through December 18, 2017 (Every Monday) 5th and 95th percentile - INRIX
- January 08, 2018 25th and 75th percentile - INRIX
- January 2017 (Every Monday) 5th and 95th percentile - INRIX
- January 2017 (Every Monday) - INRIX
- January 09, 2018 5th and 95th percentile - INRIX
- January 09, 2018 25th and 75th percentile - INRIX
Takeaways

- RITIS tools have a **direct impact** in the decision making process.

- Agencies want to know how effect their strategies have been and they want to know it **NOW**.

- Archived data helps to 1) **justify decisions**, 2) **provides critical feedback** during post-event analysis and 3) also helps **identify information gaps and new issues** that need to be addressed for future events.

- RITIS provides a **trusted information platform that strengthens relationships** between agencies and across sectors.
Thanks!

For more information, please contact:

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