Hurricane Evacuation & Sheltering Plan Overview

September 12, 2007

- Department of Transportation
- Department of Emergency Management
- Department of Transportation
- Department of Social Services
- Virginia State Police
- Virginia National Guard
Hurricane Forecast

- Annual hurricane forecast serve to remind us that we need to continually prepare for tropical weather events.

- If only one hurricane makes landfall during the season and it impacts the Commonwealth —

  That’s a bad year!
**El Nino**

- The presence of warmer than normal tropical Pacific Ocean temperatures which generates stronger westerly wind flows across the United States
- Stronger westerly winds limit the development of Atlantic hurricanes
- A rapidly developing *El Nino* during the 2006 hurricane season contributed to a shut-down in hurricane activity limiting impact to the USA.
La Nina

- The presence of normal to cooler than normal tropical Pacific Ocean temperatures which diminishes the westerly wind flows across the United States.
- Weaker westerly winds increase the development and intensity of Atlantic hurricanes.
- *La Nina* favors more Atlantic hurricanes and *El Nino* favors fewer hurricanes.
2007 NOAA Forecast

- 13-16 named storms (Avg/Yr 10)
- 7-9 hurricanes (6)
- 3-5 major hurricanes (Category 3-5) (2)

- The prediction for an above-normal 2007 hurricane season reflects the expected combination of two main climate factors: 1) the strong likelihood of developing La Nina conditions in the tropical Pacific Ocean and 2) the continuation of conditions that have been conducive to above-normal Atlantic hurricane seasons since 1995.
East Coast Strike Facts

- 92% of active seasons have had at least one hurricane strike
- 42% of active seasons have had at least two hurricane strikes
- The 2007 Forecast projects a 50 percent chance that at least one major hurricane will hit the East Coast.
Why we evacuate!


- Freshwater Flooding: 59%
- Wind: 12%
- Surf: 11%
- Offshore: 11%
- Tornado: 4%
- Other: 2%
- Surge: 1%

Source: Edward Rappaport—Chief, Technical Support Branch, Tropical Prediction Center
What has been accomplished since 2006?

- Hurricane Evacuation Workgroups
- Additional Hurricane Gates on I-64
- Lane Reversal Exercise – May 20, 2007
- Coordination of Emergency First Aid w/VDH-OEMS at designated locations along I-64
- Coordination of Emergency bulk fuel supplies along evacuation routes
- Annual Hurricane Readiness Checklist
Evacuation & Sheltering Coordination

- Virginia Evacuation Coordination Team for Operational Response (VECTOR) - Comprehensive oversight team in VEOC consisting of VDOT, VDEM, DSS (sheltering), VSP, VaNG, Tourism Commission and others
- SOPs under constant development
What will VECTOR do?

○ VECTOR will review storm impact potential and vulnerabilities, evacuation issues & timing, shelter needs, and prepare recommendation for Governor’s Evacuation Decision Consideration

○ Evacuation & Sheltering Con-Ops
Hurricane Evacuation and Sheltering
Concept of Operations - DRAFTED

- A cross-walk of mass care sheltering with the hurricane evacuation plan to combine related timelines for both activities

- Involved:
  - Localities – Hampton Roads and Richmond Metro jurisdictions;
  - State Agencies - VDEM, VDOT, VDSS, VSP, VNG
  - Red Cross and Others
State-Managed Shelters

- For those people seeking public shelter
  - ~10% of the total evacuating population
    - 40,000 evacuees
    - Includes transportation dependent
Potential Shelter Survey

- Started with higher education group in mass
  - Group with the most potential for large spaces and on-site mass care capabilities

- 107 total sites reported
  - Higher education
  - Other state departments
Shelter Site Assessments

- Four rounds of site assessments
  - 1st – Large Potential Capacity/ Zones A & B
    - Completed end of June
  - 2nd – Large Potential Capacity/ Zones B & C
  - 3rd – Large Potential Capacity/ Zone C
  - 4th – Small Potential Capacity

- Types of assessments:
  - Physical/Engineering
  - ADA
  - Security
  - Mass Care
  - Special Medical Needs Care
  - Animal Sheltering
Rounds One & Two Assessment
Preliminary Results

- 63 buildings assessed to date
- 28 have been determined viable
  - Potential capacity:
    - General Population: @57,000
    - Including 1,200+ Special Medical Needs Capacity
    - Pets: 5,240 spaces
Other Shelter Activities
Richmond – Norfolk MOU

- Pending reciprocal agreement for sheltering due to a mass city-wide evacuation
- Transportation Dependent and essential staff only
- Evacuating city to provide shelter management team and staffing
- Facilities: Richmond Coliseum, Greater Richmond Convention Center, and Norfolk Scope
Transportation Planning

- VA HES Behavioral Analysis
- VA HES Transportation Analysis
- VTRC Evacuation Transportation Study
- Continue to model effects from Hampton Roads Traffic Control Plan & updated Transportation Analysis
  - ODU/VMASC
Updated Storm Surge Maps
Mass Transit Evacuation

- State planning on-going with the DRPT as lead
  - Resource listing of potential Virginia mass transit resources (commercial included) is complete and updated

- Localities within the Hampton Roads area are working with the HRPDC to develop local plans for transportation dependent
  - City of Norfolk – pick-up points and distribution point
Rail Evacuation

- State planning on-going
  - MOUs being developed with CSX and Norfolk Southern for essential equipment
  - Plan to be drafted for committee review
- Local planning on-going
  - Determining need
  - Assessing acceptability of timeframe
Inmate Evacuation

- State owned facilities (DJJ/DoC):
  - Have plans in place
  - Plans have been tested and exercised in many cases

- Local facilities:
  - On-going planning – committee meeting regularly since November 2006
  - Similar challenges to general population evacuation but with the complexities of inmate segregation and security requirements
Lane Reversal Exercise- May 20

- 3 Goals for the exercise
  1. Test Communications
  2. Practice protocols and cooperation
  3. Close gates

- Great Success as exercise and for determining where adjustments or more work is needed
Lane Reversal Exercise – May 20

- **Lessons Learned**
  - Communications successful between the agencies and localities
  - Dead spots discovered with radio communications
    - Need redundant communications pathway
  - Sequence of closure, opening at I-295 Exit 200, needs adjustment
  - Media need a designated, protected area adjacent to command center
  - Crossover control to be added
  - Hardwire Mobile Command Post communication at site
  - Incorporate NIMS in all planning
  - Staffing needs being re-evaluated
The decision to evacuate

- Governor determines if an evacuation is to be mandatory and when and how implemented
  - Governor can delegate authority to Local jurisdictions who determine which areas to evacuate based upon risk

- Phased evacuations
  - Phase 1 & 2

- Lane Reversal (Contra-flow) can be used for any category storm at the Governor’s discretion
Hampton Roads Phased Evacuation Plan

Lane Reversal Population

Chesapeake Bay Bridge-Tunnel is NOT a designated Hurricane Evacuation Route.

Northbound lanes of Monitor Merrimac Bridge-Tunnel will close at Exit B (College Dr).

All Eastern Shore residents should use Rt 13 Northbound toward Salisbury, MD.
Evacuation Routes

- Major evacuation routes from Virginia’s coastal area are:
  - **Routes 58, 60, 460, 10, 17 and I-64** toward Emporia, Petersburg, Fredericksburg, Richmond and other inland locations
  - **Not everyone will use I-64!**
Evacuation Route Corridors
How many evacuees are we talking about?

- @ 700,000 people are located in storm surge areas (including tourists)
- @ 400,000 people expected to evacuate Hampton Roads Region including any remaining NC evacuees
- Approximately 10% of evacuees (40K +/-) will seek public shelter based upon hurricane behavioral analysis
- Others make private shelter arrangements with family, friends or in inland motels
Action Timeline For Evacuation

- 120 hr. - VECTOR stands up (as needed)
- 96 hr. - Alert state shelter facilities
- 72 hr. - Governor issues State of Emergency Declaration (*VDOT, VA National Guard & VA State Police put on alert*)
- 48 hr. - Mobilization of state resources
- 30 hr. - Governor’s evacuation decision point
  - Phased or Lane Reversal
  - Threat Dependent
- 27 hr. - Evacuation implemented
- 3 hr. - Road clearance both East & Westbound
- 0 hr. - Arrival of Sustained Tropical Storm Force Winds (39mph)
## Lane Reversal

### Resources Required for a 12 Hr Shift

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<tr>
<th>Agency</th>
<th>Personnel</th>
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<tr>
<td>VDOT</td>
<td>212</td>
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<tr>
<td>State Police</td>
<td>157</td>
</tr>
<tr>
<td>National Guard Guard</td>
<td>166</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>535</strong></td>
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LANE REVERSAL
VDOT Responsibilities

- VSP will provide On Site Command Post w/Regional Representation (State & Local) at I-295/I-64 Interchange

- Sandston Residency crews mobilize and close I-64 east mainline, ramps and crossovers

- “Tiger Teams” mobilizes to assist with Lane Reversal setup
Lane Reversal – Stranded Motorist

- Motorists stranded on I-64 will be transported to the closest designated drop off point via DMV vehicles (i.e. shelter, refuge of last resort, other)

- VDOT & VSP will be patrolling all other evacuation routes
LANE REVERSAL – VDOT

- VDOT crews assist motorists as needed
- Hampton Roads & Richmond STC monitors traffic conditions (sensors, cameras, field crews)
- Implement traffic changes as conditions warrant (traffic volume, weather, storm track, etc.)
- TEOC, STC & Public Affairs disseminate traffic information (media, signs, 511, highway advisory radio)
Evacuation Coordination Roles

- **Transportation Emergency Operations Center (TEOC)** manages roadway operations from a statewide perspective; coordinates with State EOC (VDEM)

- 5 Regional Smart Traffic Centers (STC) and District Maintenance staff manage events from a regional/district perspective; coordinate with TEOC

- Hampton Roads and Richmond District Maintenance and Regional STC’s are most involved
Returning Lanes to Normal Configuration

- Terminate evacuation 3 hrs prior to arrival of sustained tropical storm force winds (39 mph)

- VSP to sweep I-64 eastbound lanes (Reversed lanes) from East to West returning Interstate to normal flow
Additional Features and Services

- Hurricane gates on I-64 eastbound ramps to be added
- Coordination of bulk fuel distribution along evacuation route
- Use of VDOT Safety Service Patrol along I-64
- Emergency water/comfort/fuel stations at designated areas along I-64 & Rt 58
- Hurricane preparedness meetings on-going
- Portable traffic monitoring systems for evacuation routes not covered by camera system
I-295/I-64 Interchange

All traffic in reversed lanes must travel on I-64 West.

All reversed traffic in eastbound lanes will be directed through the crossover zone to the main line westbound and continue on I-64 West.
Additional Features and Services

- Contract towing services for vehicles that break down during the lane reversal on I-64

- Established towing procedures apply on all other evacuation routes

- Enhanced Public Education

- Continue to model effects from Hampton Roads Traffic Control Plan

- Full time VDOT liaison at VEOC
Summary

- VA continues to enhance its evacuation planning implementing lessons learned from recent hurricanes including Special Medical Needs and Pets
- Designated state facilities will be utilized as shelters or refuges of last resort
- Planning activities with localities and neighboring states continue
- Completion of VA Hurricane Evacuation Re-Study prior to the 08’ season