STATE OF VERMONT

TROPICAL STORM IRENE

AFTER ACTION REPORT / IMPROVEMENT PLAN

FINAL DRAFT

April 9, 2012

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4. Points of Contact:

Ross Nagy, Deputy Director Preparedness and Planning
Vermont Emergency Management
103 South Main St.
Waterbury, VT 05671
800-347-0488
ross.nagy@state.vt.us

Erica Bornemann, Emergency Management Program Specialist
Vermont Emergency Management
103 South Main St.
Waterbury, VT 05671
800-347-0488
erica.bornemann@state.vt.us

Emily Hamlin, Emergency Management Planner
Vermont Emergency Management
103 South Main St.
Waterbury, VT 05671
800-347-0488
emily.hamlin@state.vt.us

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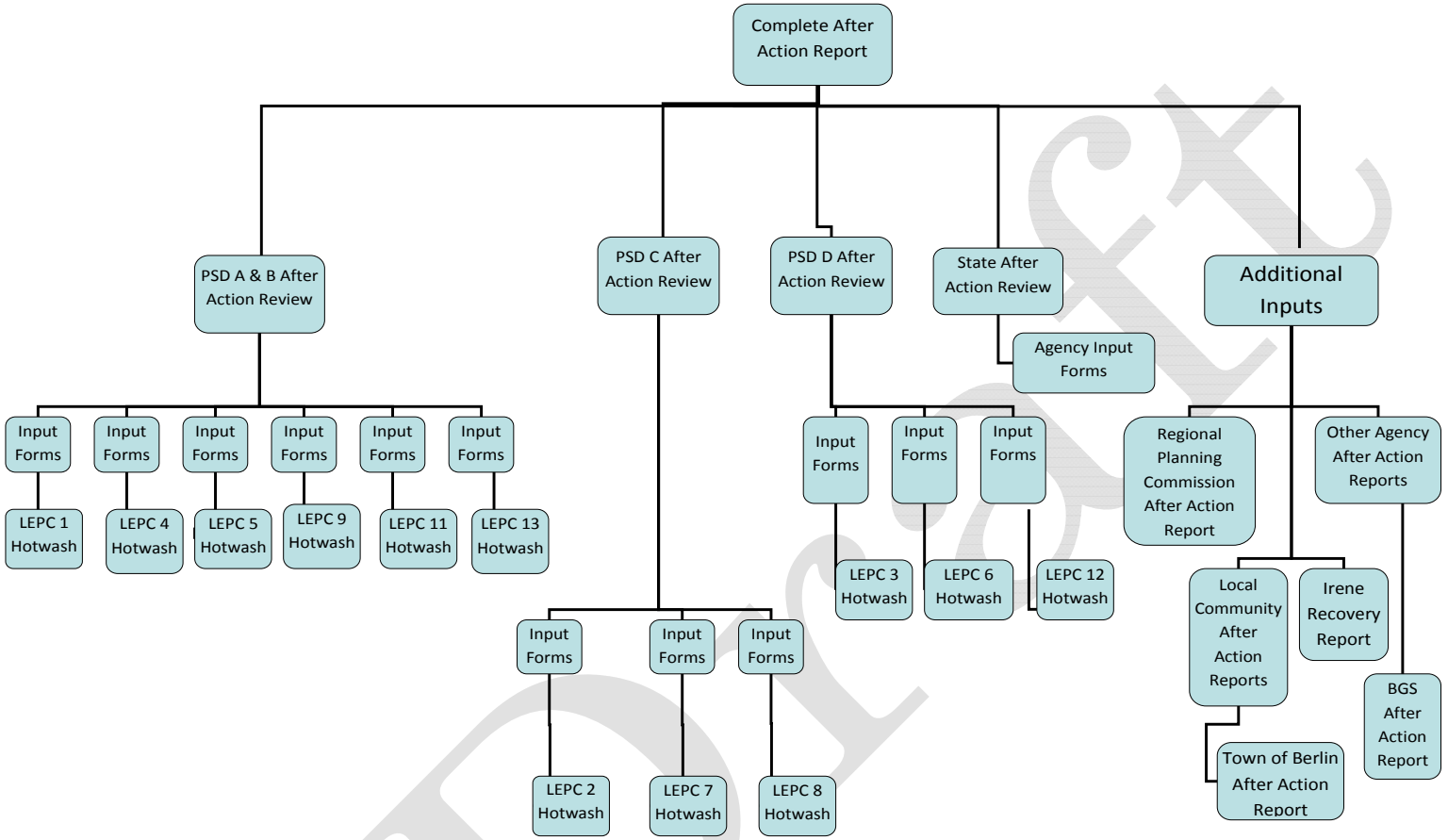
Executive Summary

Tropical Storm Irene was the largest natural disaster to occur in the State of Vermont since the Great Flood of 1927. The storm reached Category 3 hurricane strength before weakening to a Category 1 hurricane and making landfall in the coastal Carolinas. Hurricane Irene weakened to tropical storm status as it moved up the east coast finally tracking up the Connecticut River Valley of Vermont on August 28, 2011.

The purpose of this report is to analyze the operations of state, regional, and local entities in response to and recovery from the storm. Additionally the report and improvement plan will identify the responsible agencies and establish timelines to address the recommendations compiled and corrective actions assigned. This report is the result of a progression of activities in the aftermath of the storm meant to capture both strengths and areas for improvement. The observations and associated recommendations were assembled from a series of hot-washes and after action reviews conducted at the local regional and state level. Most of Vermont's Local Emergency Planning Committees (LEPCs) hosted a meeting in which representatives from Vermont Emergency Management (VEM) and the Vermont Homeland Security Unit (HSU) facilitated a hot-wash where attendees identified observations using Incident Review Forms based on their experience. The Incident Review Forms were collected and key observations from group discussion during the hot-wash sessions were noted. The top strengths and areas for improvement were identified from each session. The local hot-washes were followed by day-long after action reviews hosted in each Public Safety Districts. Participants engaged in interactive discussion based on the top observations gathered during the local hot-washes. State level agencies and organizations involved in the storm response and recovery followed a similar process where Incident Review Forms were completed and top topic areas were identified and discussed at the following after action review. The after action reviews were evaluated by qualified individuals tasked with analyzing the discussion surrounding each observation. The resulting analysis provides the basis for the recommendations in this report. An important component of this report is an improvement (Appendix A) that identifies the corrective actions to be implemented and assigns a responsible party as well as a deadline for completion. The completion of the after action process is essential to continue to sustain and improve upon the response and response support services provided to Vermonters during disasters.

The graphic below depicts the process used to gather information and observations that helped contribute to subsequent analysis resulting in recommendations appearing in the improvement plan.


Complete After Action Report
PSD A & B After Action Review
PSD C After Action Review
PSD D After Action Review
State After Action Review
Additional Inputs
Agency Input Forms
Input Forms
LEPC 1 Hotwash
LEPC 4 Hotwash
LEPC 5 Hotwash
LEPC 9 Hotwash
LEPC 11 Hotwash
LEPC 13 Hotwash
LEPC 3 Hotwash
LEPC 6 Hotwash
LEPC 12 Hotwash
LEPC 2 Hotwash
LEPC 7 Hotwash
LEPC 8 Hotwash
Regional Planning Commission After Action Report
Other Agency After Action Reports
Local Community After Action Reports
Irene Recovery Report
BGS After Action Report
Town of Berlin After Action Report

Towns, Agencies and Organizations Involved in Development of the After Action Report

Addison County Regional Planning Commission
Agency of Human Services
Alburgh Fire and Rescue
Alburgh Fire Department
AmCare Ambulance Service
American Red Cross
Americorps
Ascutney Fire Department
BBUFD
Bennington County Mutual Aid
Bennington County Regional Commission
Bennington Police Department
Bethel Fire Department
Brattleboro Medical Hospital
Cabot Cheese
Caledonia County Sheriff's Department
Cambridge Rescue
Castleton State College
Central Vermont Humane Society
Central Vermont Long Term Recovery Committee
Central Vermont Medical Center
Central Vermont Medical Center
Chittenden County CERT
Chittenden County Regional Planning Commission
Chittenden Fire Department
City of Rutland
Clara Martin Center
Concord Fire Department
Connecticut River Transit
Customs and Border Protection
East Dover Fire Department
Environmental Protection Agency
Federal Emergency Management Agency
Genesis Healthcare
Grafton Fire Department
Grafton Rescue
Grand Isle CERT
Grand Isle County Sheriff's Department
Grand Isle Fire Department
Health Care and Rehabilitation Services
Hinesburg Fire Department
I Am Vermont Strong
Jamaica Fire Department
Lamoille County Regional Planning Commission
Lamoille County Sheriff's Department
Manchester Police Department
Marble Valley Regional Correctional Facility
Marlboro Fire Department
Middlebury Police Department
Mount Snow
National Weather Service- Burlington
Newbrook Fire Department
News and Citizen
North Hero Fire Department
Northeastern Vermont Regional Hospital
Northern Vermont Development Association
Northwest Regional Planning Commission
Norwich Fire Department
Orwell Fire Department
Peacham Fire Department
Pomfret Emergency Services
Poultney Fire Department
Putney Fire Department
Regional Ambulance
Rescue Inc.
Restoring Rutland
Richmond Rescue
Rutland Area Visiting Nurses Association
Rutland City Fire Department
Rutland City Police Department
Rutland County Community Emergency Response Team
Rutland Mental Health Services
Rutland Regional Planning Commission
Rutland Town Fire Department
Ryegate Fire Department
Saxtons Rive Fire Department
SerVermont

Sheffield-Wheelock Fire Department
Southern Windsor County CERT
Southwest New Hampshire Fire Mutual Aid
Southwest Regional Planning Commission
St. Albans Police Department
Stowe Mountain Rescue
Sugarbush Resort
Town of Arlington
Town of Athens
Town of Barnard
Town of Bethel
Town of Brattleboro
Town of Bridgewater
Town of Cambridge
Town of Clarendon
Town of Corinth
Town of Dover
Town of Dummerston
Town of Enosburgh
Town of Fairlee
Town of Grafton
Town of Grafton
Town of Guilford
Town of Guilford
Town of Halifax
Town of Halifax
Town of Hubbardton
Town of Jamaica
Town of Londonderry
Town of Manchester Department of Public Safety
Town of Marlboro
Town of Marlboro
Town of Newfane
Town of Northfield
Town of Orwell
Town of Plymouth
Town of Randolph
Town of Ripton
Town of Royalton
Town of Shrewsbury
Town of Shrewsbury
Town of Springfield
Town of Stamford
Town of Strafford
Town of Tinmouth
Town of Townshend
Town of Tunbridge
Town of Waterbury
Town of Wells
Town of Westminster
Town of Weston
Town of Windham
Town of Windham
Two Rivers- Ottauquechee Regional Planning Commission
United States Coast Guard
United Way of Windham County
Upper Valley Ambulance
Upper Valley Medical Reserve Corps
Upper Valley Disaster Animal Response Team
VA Medical Center
VEM-RACES
Vermont 211
Vermont Agency of Agriculture, Food, and Markets
Vermont Agency of Commerce and Community Development
Vermont Agency of Human Services
Vermont Agency of Natural Resources
Vermont Agency of Transportation
Vermont Criminal Justice Training Council
Vermont Department of Buildings and General Services
Vermont Department of Environmental Conservation
Vermont Department of Finance and Management
Vermont Department of Health
Vermont Department of Health
Vermont Department of Labor
Vermont Department of Public Safety
Vermont Division of Fire Safety
Vermont Emergency Management
Vermont Governor's Highway Safety
Vermont Hazardous Materials Response Team
Vermont Homeland Security Unit

The significant strengths and areas for improvement identified in the report are summarized below.

Major Strengths

There were several major strengths identified in the response and recovery to TS Irene. These and several others are discussed in greater detail in Section 3, Analysis of Capabilities.

- *Established Relationships through Training, Exercises and Real World Experience were important to a more effective response or support of that response* - It is clear from both the local and state levels the amount of training and exercises conducted in Vermont increased the ability for officials to respond to TS Irene. Two of the most significant examples include the 2010 Catastrophic Exercise which gathered over 750 personnel and responders in a full-scale exercise based on a tropical storm making landfall in New England and the ongoing training and exercises conducted in preparation for an incident at the Vermont Yankee Nuclear Power Plant. Many other training activities, actual incidents and exercises were identified by participants of the hot-wash and after action review process. Local jurisdictions that knew and exercised their emergency plans generally fared better than those who did not.
- *Regional Planning Commissions (RPCs) provided an important link to local jurisdictions* - The RPCs around the state have a long-standing experience with emergency planning and fulfilling the role of liaison with local officials. This was clear in the days and weeks after the storm when this experience was demonstrated. RPCs worked with local emergency management directors, select boards, and responders to ensure their questions were answered and they were receiving accurate information. The role of the RPCs morphed as they formalized a relationship with the Agency of Transportation to gain a full understanding of the impact on local roads and bridges. This information proved to be invaluable as it painted an accurate and timely picture of the full extent of the damage to transportation infrastructure. Local officials at the Public Safety District after action reviews indicated that the role their corresponding RPCs fulfilled was integral to their recovery efforts.
- *Community Volunteerism was important to addressing emerging response and recovery needs* - It stands as a testament to the strength of this state that so many people came forth to volunteer their time, donate goods and money and assist neighbors get back on their feet. There are countless examples of these actions taking place in many hard-hit towns like Wilmington, Grafton, Rochester, Northfield, and Waterbury. Local jurisdictions appointed volunteer coordinators within their incident command structures in order to direct spontaneous volunteers towards the projects in most need. The volunteer coordinators were an excellent resource as the outpouring of support would have overwhelmed the ability of the responders to coordinate volunteers while preserving life safety and protecting property.
- *Emergency Responders and Personnel performed in an exceptional manner* - Whether it was the volunteers or career personnel on the local fire departments and rescue squads, the town and state highway workers, the volunteers providing food and

shelter for displaced families, or the State Emergency Operations Center personnel working to coordinate response support, the people responsible for the safety of Vermonters showed strength and courage in times of adversity. Long hours were worked and personal sacrifices were made in order to make sure Vermont's citizens were able to get back to a semblance of normalcy as quickly as possible. It was pointed out at the AARs that if it had not been for the hard work of the National Guard, the Agency of Transportation, and local road crews the repairs would not have been made as quickly as they were. It was also highlighted that although the State EOC was forced out of its primary facility due to flooding, the flexibility and work ethic of the personnel showed great tenacity when nothing seemed to be working correctly. Special team activities, including swift water resources, were responsible for saving scores of lives.

- *Local Emergency Operations Centers (EOCs) were activated in several towns to coordinate response and recovery activities* - Many towns impacted by Irene utilized the Emergency Operations Centers identified in their Basic Emergency Operations Plans. Those towns that did not have an EOC previously identified or in which the primary EOC was not available created EOCs on the fly and coordinated response and recovery activities from there. Sixty three towns had an EOC open at one point, more than during any disaster in recent memory. EOCs are a vital piece in the incident command structure of a response.
- *Pre-Incident Planning was important to a successful response* - At the local level, towns that brought stakeholders together to conduct planning before the storm found they were much more prepared than those that did not. The development of local and state policies, plans and procedures, resource lists, Mutual Aid Agreements and Memorandums of Understanding as outlined in the National Incident Management System (NIMS) and Vermont's NIMS Implementation Plan was integral to the success of many communities. The extensive progress made in Incident Command System training across all levels of emergency preparedness personnel was significant in establishing strong leadership in many communities. In addition, the information shared with the public by Vermont Emergency Management, the National Weather Service offices and other agencies prior to landfall assisted in the preparedness efforts of many communities in response to the potential danger posed by the storm.

Significant Areas for Improvement

While there are strengths to be highlighted in the aftermath of the storm, there are also several opportunities for improvement in the state and local response to TS Irene. Although there are many more detailed in the analysis that follows, below are the primary areas for improvement as identified at the AARs by independent evaluators.

- *Volunteer and Donations Management implementation in the early days of the response was overwhelmed* - Although there was a Volunteer and Donations Management Annex that existed in the State EOP, the magnitude of this event revealed the plan had not been adequately understood and exercised. Volunteer and donations management operations should have been started from the beginning of the

incident; however it took several days for a structure to be established. Personnel were forced to create a system from the ground up. It was difficult to inventory the needs of the communities, catalog the offers of volunteer and donations, and match the needs with the offers. During recovery operations, planning has been done to begin the process of resolving this issue, but the lack of an established system and resources to administer it hindered the overall program.

- *SEOC and Interagency Coordination was sometimes disjointed* - Although existing relationships in the SEOC and with responding personnel are strong, there remains a lack of understanding within the emergency management structure in the state of the role of an EOC. Additionally the understanding of the role of the SEOC was not universal across state agencies and departments. Therefore there were cases of duplication of efforts, duplicative methods of information gathering, inaccurate and conflicting information disseminated, and a high level of frustration on the part of the locals who were on the receiving end. As a result of Irene, it is clear training is needed for leadership in all state agencies and departments on the Incident Command System, the State EOP and the operations of the SEOC so there is a consistent picture across state government of the emergency management framework as it operates at the local, state, and federal levels.

  This lack of understanding contributed to several related areas identified as needing improvement, including:

  - Road Closure Information - Currently road closures are classified in two ways - local and state. State road closures are tracked through the Agency of Transportation and local road closures are tracked via the State EOC Planning Section. During and immediately after the storm the information was so abundant and changing so rapidly that neither entity could maintain an accurate and timely list. Therefore, the road closure information disseminated to the public and emergency responders during the initial response was not entirely accurate for several days. The system of how to track and then disseminate road closure information needs to be finalized and the method needs to be bolstered so that there is one reliable source.
  - Information Gathering - Many agencies and organizations around the state were trying to gain situational awareness of the impact Irene had on Vermont. The lack of coordinated requests for information, led to local officials being inundated with calls for information, leading to frustration and lack of confidence in the ability of the State to provide a coordinated response. A concise and uniform approach to information gathering needs to be taken state-wide to minimize conflicting information and interruption in local response and recovery efforts.
  - Joint Information Center (JIC) - Duplication of efforts across state agencies and departments as well as a lack of awareness of the role a JIC plays in a disaster led to conflicting information dissemination and an inefficient use of available resources. In a disaster, a JIC should be the primary answering and dissemination point for all state-wide public information pertinent to the response and recovery.

- *State Level Information Technology and Communications Redundancy had not been fully engineered* - During TS Irene, the Waterbury State Office Complex was inundated by the Winooski River. The flooding of the complex crippled IT & communications systems housed within it. This included email servers for many departments and agencies, systems relied upon by dispatch centers around the state, the disaster management software system for the State EOC, and servers that house important information for field offices and staff. Although there was redundancy measures built in for systems within the Department of Public Safety, these failed during the storm and took days to come back online. Many servers across the complex were housed in the basement and ground levels of building and were ruined. Measures need to be taken to protect these systems should record-breaking flooding occur again.
- *Continuity of Operations Planning (COOP) for state agencies did not fully address the possible hazards and loss of facilities that resulted from TS Irene* - This area for improvement was identified both at the local and state level. It is important for government at all levels to have COOP and COG plans in place should there be a need to be displaced or carry on essential functions away from the primary facility. This was experienced with the Waterbury State Office Complex and the displacement of approximately 1,500 state employees. While each state agency and department has a COOP plan written as mandated, it became clear that the assumptions of the state COOP plans conflict with actions that occur in a long-term displacement from the primary facility. Therefore, the plan it could not be followed and the essential functions for each agency were not carried out as detailed in those plans. Additionally, there needs to be a closer look at the basic assumptions of the state COOP plans to ensure they dovetail and are consistent with the state employees' contract.
- *State EOP Annex Revisions are needed by the responsible agencies based on lessons learned from the 2011 incidents* - There are several annexes to the State EOP that either need to be created or revised to incorporate the lessons learned from TS Irene. Among these are the Finance and Management, Volunteer and Donations Management, Recovery and Debris Management Annexes and annexes to cover information flow through the levels of government. TS Irene not only highlighted the need for updating these documents, it also pointed to the annexes that had been identified but not completed by the responsible agencies previous to the storm. Revisions and updates to these annexes will take intense work by interagency working groups to ensure relevancy and accuracy.

Incident Overview

Details

Incident Name
Tropical Storm Irene

Type of Incident
Hurricane and tropical storm

Incident Date
August 28, 2011

Duration
August 28, 2011 through September 2, 2011 (Incident Period for DR4022)

Location
State-wide Impact

Capabilities
Community Preparedness and Participation
Planning
Restoration of Lifelines
Intelligence and Information Sharing and Dissemination
On-site Incident Management
Critical Resource Logistics and Distribution
Emergency Operations Center Management
Volunteer Management and Donations
Communications
Economic and Community Recovery
Emergency Public Information and Warning
Mass Care (Sheltering, Feeding and Related Services)

Responding State and Non-Governmental Organizations

Agency of Transportation (SSF 1 and 3)
Department of Information and Innovation (SSF 2)
Division of Fire Safety (SSF 3, 4, 10)
Vermont Emergency Management (SSF 5 and 14)
Agency of Human Services (SSF 6)
American Red Cross
Department of Buildings and General Services (SSF 7)
SerVermont (SSF 7)
Department of Health (SSF 8)
Agency of Natural Resources (SSF 11)
Department of Forests, Parks, and Recreation
Agency of Agriculture, Food, and Markets (SSF 11)
Department of Public Service (SSF 12)
Vermont State Police (SSF 13)
Department of Public Safety
Vermont Department of Labor
Vermont League of Cities and Towns
Agency of Commerce and Community Development
Department of Finance and Management
Agency of Administration
Colchester Technical Rescue
Johnson Water Rescue
Stowe Mountain Rescue
Keene Fire Department
Two-Rivers Ottauquechee Regional Planning Commission
Chittenden County regional Planning Commission
Rutland County regional Planning Commission
Southwest Vermont Regional Planning Commission
Central Vermont Regional Planning Commission
Vermont Volunteer Organizations Active in Disasters
Windham Regional Commission
Bennington County Regional Planning Commission
Addison County regional Planning Commission
Northern Vermont Development Association
Lamoille County Regional Planning Commission
Northwest Regional Planning Commission
Vermont National Guard
Vermont Homeland Security Unit
Americorps
Vermont 211
Illinois National Guard
New Hampshire National Guard
Maine National Guard
West Virginia National Guard
Virginia National Guard
Maine Metropolitan Medical Response System Team
Maine Department of Transportation
New Hampshire Department of Transportation
South Carolina National Guard
Ohio National Guard
New Hampshire MMRS
University of Vermont
Burlington Police Department
Community Emergency Response Teams
Radio Amateur Civil Emergency Services

Responding Federal Agencies

Federal Emergency Management Agency
National Weather Service- Burlington
National Weather Service- Albany
US Department of Health and Human Services
US Department of Commerce Economic Development Administration

US Department of Agriculture
US Army Corp of Engineers
US Department of Defense
US Department of Transportation
US Environmental Protection Agency
US Occupational Safety and Health Administration
US Fire Service
Disaster Mortuary Operational Response Team
Disaster Medical Assistance Team
Massachusetts Task Force 1 USAR Team

Impacted Towns Involved in Response and Recovery

Addison
- Addison
- Bridport
- Bristol
- Cornwall
- Goshen
- Granville
- Hancock
- Leicester
- Lincoln
- Middlebury
- New Haven
- North Ferrisburgh
- Orwell
- Panton
- Ripton
- Salisbury
- Shoreham
- Starksboro
- Vergennes
- Weybridge
- Whiting

Bennington
- Arlington
- Bennington
- Dorset
- Glastenbury
- Landgrove
- Manchester
- Pawlet
- Peru
- Pownal
- Readsboro
- Rupert
- Sandgate
- Searsburg
- Shaftsbury
- Stamford
- Sunderland
- Winhall
- Woodford

Caledonia
- Barnet
- Danville
- Groton
- Hardwick
- Lyndon
- Lyndonville
- Peacham
- Ryegate
- Sheffield
- St. Johnsbury
- Stannard
- Sutton
- Waterford
- Walden
- Wheelock

Chittenden
- Bolton
- Burlington
- Colchester
- Essex Junction
- Huntington
- Jericho
- Jonesville
- Milton
- Richmond
- South Burlington
- Underhill
- Williston
- Winooski

Essex
- Brighton
- Concord
- Lunenburg
- Morgan

Franklin
- Enosburgh Falls
- Fairfax
- Montgomery
- Richford
- St. Albans
- Swanton

Grand Isle
- Alburgh
- Isle la Motte
- Grand Isle
- North Hero
- South Hero

Lamoille
- Cambridge
- Elmore
- Hyde Park
- Jeffersonville
- Johnson
- Johnson Village
- Morristown
- Stowe
- Wolcott

Orange
- Bradford
- Braintree
- Brookfield
- Chelsea
- Corinth
- East Randolph
- Fairlee
- Newbury
- Orange
- Randolph
- Strafford
- Thetford
- Topsham
- Tunbridge
- Vershire
- West Fairlee
- Westfield

Orleans
- Albany
- Barton
- Barton Village
- Brownington
- Charlseton
- Coventry
- Craftsbury
- Derby
- Greensboro
- Holland
- Irasburg
- Jay
- Lowell
- Newport
- Orleans
- Troy
- Westmore

Rutland
- Benson
- Brandon
- Castleton
- Chittenden
- Clarendon
- Danby
- Fair Haven
- Hubbardton
- Ira
- Killington
- Mendon
- Middleton Springs
- Mount Holly
- Mount Tabor
- Pawlet
- Pittsfield
- Pittsford
- Poultney
- Proctor
- Rutland
- Rutland City
- Shrewsbury
- Sudbury
- Tinmouth
- Wallingford
- Wells
- West Haven
- West Rutland

Washington
- Barre
- Barre City
- Berlin
- Cabot
- Duxbury
- East Montpelier
- Fayston
- Marshfield
- Middlesex
- Montpelier
- Moretown
- Northfield
- Northfield Village
- Plainfield
- Roxbury
- Waitsfield
- Warren
- Washington
- Waterbury
- Williamstown
- Woodbury
- Worcester

Windham
- Athens
- Brattleboro
- Brookline
- Dover
- Dummerston
- Grafton
- Guilford
- Halifax
- Jamaica
- Londonderry
- Marlboro
- Newfane
- Putney
- Rockingham
- Somerset
- Stratton

Townshend	Bethel	Rochester
Vernon	Bridgewater	Royalton
Wardsboro	Cavendish	Sharon
Westminster	Chester	South Royalton
Whitingham	Hartford	Springfield
Wilmington	Hartland	Stockbridge
Windham	Ludlow	Weathersfield
	Ludlow Village	West Windsor
Windsor	Norwich	Weston
Andover	Plymouth	Windsor
Baltimore	Pomfret	Woodstock
Barnard	Reading	

Total Towns Impacted- 223

Incident Timeline

Date	Action	Location
8.22.11	National Weather Service Advisories are provided to State Support Functions and Local Emergency Management Directors	State of Vermont
8.26.11	Initial State Support Function Conference Call	State of Vermont
8.27.11	Governor Shumlin declares a State of Emergency	VT SEOC
8.28.11	0700 hrs- State EOC activated to a Level 4 at primary facility	VT SEOC
8.28.11	1400 hrs- TS Irene moving northeast across Great Barrington, MA	New England
8.28.11	1700 hrs- TS Irene eye located just south of Halifax, VT with sustained 50 mph winds	Halifax VT
8.28.11	2000 hrs- TS Irene tracks along the Connecticut River Valley and exits the state in Canaan, VT	Connecticut River Valley, VT
8.28.11	2200 hours- State EOC relocated to FEMA JFO in Burlington	Burlington, VT
8.28.11	DisasterLAN & other IT connectivity down for about 24 hours, SEOC 800 line down until reroute next day	State of Vermont
8.29.11	Governor Shumlin requests Emergency Declaration	Vermont SEOC
8.29.11	President Obama signs Emergency Declaration FEMA-3338-VT	Washington, D.C.
9.1.11	Governor Shumlin requests Major Disaster Declaration	State of Vermont
9.1.11	President Obama issues Major Disaster Declaration FEMA 4022-VT	Washington, D.C.
9.1.11 – 9.3.11	Vermont National Guard Resupply Missions are conducted	State of Vermont
9.1.11 – 12.20.11	Intense Infrastructure Restoration	State of Vermont
9.12.11	VT SEOC reconfigured to recovery operations	VT SEOC

The State of Vermont received the extraordinary impact of Tropical Storm Irene beginning on August 28, 2011. The storm caused power outages statewide for approximately 50,000 households and widespread flooding that resulted on six deaths. Record amounts of rain fell in a short amount of time resulting is catastrophic flooding across the state. Rainfall totals were between 4 and 7 inches with some locally higher amounts up to 10 inches concentrated during a 6-8 hour period. The Otter Creek reached an historic crest (nearly 4 feet over the previous record in 1938) and the Mad, Winooski and White Rivers were very close to records established in 1927. Those main stem rivers were fed by many smaller tributaries that caused damaging flash flooding throughout the central and southern parts of the state. Sustained winds of 50 miles per hour with higher gusts were recorded as the storm crossed Vermont's southern border. More than 1500 Vermont families were displaced and the transportation and public infrastructure was decimated. Of Vermont's 251 towns and cities, 223 towns were impacted by Irene causing household damage, infrastructure damage or both. Forty-five (45) municipalities were considered severely impacted. Hundreds of state and local roads were closed for an extended period of time completely isolating numerous towns and limiting access to many others. This resulted in state and EMAC National Guard missions to deliver emergency supplies by ground and air. The flooding also caused the first-ever evacuation of the State Emergency Operations Center due to access challenges and the impact to the buildings and support mechanism in the state office complex in Waterbury.

Prior to 2011 it had been over ten years since Vermont had experienced a declared disaster that required Individual Assistance program support. Tropical Storm Irene established an historic mark in this area for number of applicants, individual assistance provided and number of homes sustaining major damage or being destroyed. Fifteen mobile parks and more than 561 mobile homes (both in parks and on private land) were damaged and destroyed with 161 maximum grants awarded under the Individuals and Households Program. When considered against the average amount of assistance per disaster as noted in 44CFR, the impact on Vermont is consistent with large states and a population of more than 20 times the size of Vermont. There are also many households and individuals struggling to pick up the pieces after the storm and will need to connect with their local Long Term Recovery Committees for un-met recovery needs.

The federal and state assistance provided as a result of the storm was unprecedented. During the response to TS Irene, 71 Action Request Forms were executed to receive federal support in the form of technical assistance and resources. Twenty interstate resource requests in the form of Emergency Management Assistance Compact missions were carried out to bring National Guard assets, medical help, transportation resources, and emergency operations center personnel from other states. On September 1, 2011 President Obama issued a Major Disaster Declaration for the state for Public Assistance in all counties and Individual Assistance in all counties except Grand Isle and Essex counties. This declaration enabled homeowners and public officials to apply for reimbursement for damage to homes and public infrastructure. The Federal Emergency Management Agency (FEMA) opened 14 Disaster Recovery Centers to assist individuals applying for aid. The Disaster Recovery Centers remained open until November 3, 2011.

Impacts to Infrastructure:

Governmental Services

The State Emergency Operations Center (SEOC) was activated on a 24 hour basis for five weeks and operated for extended hours for an additional three weeks. At the height of Tropical Storm Irene, the SEOC was flooded, necessitating their relocation to the FEMA Joint Field Office in Burlington, VT. There were two state agency and one non-governmental operations center open for several weeks. There were 63 local emergency operations centers open in the early days of the incident.

Additionally nearly 1500 state workers were displaced to multiple locations throughout the state as a result of the impact on the Waterbury Office Complex. Those displaced included employees of the State Hospital and the Agencies of Human Services and Natural Resources.

Roads and Bridges

More than 500 miles of state highway was damaged or closed, 200 bridges sustained damage, thirty-four bridges were completely closed, more than 200 miles of state-owned rail was impassible and six rail bridges were badly damaged. The privately run New England Central Railroad also received heavy damage, requiring repairs at 66 separate locations and Hartness Airport in Springfield and the Newport Airport sustained damage. Additional estimated damage to the state system that qualifies for Federal Highway Administration assistance is $175-250 mil. The local transportation network had 211 segments of local road closed 90 bridges closed and 335 culverts damaged. The Agency of Transportation opened regional incident coordination centers to address the restoration of the transportation infrastructure. Although state roads have reopened, some of the repairs made were emergency only and will need to be reassessed in the spring of 2012 for permanent repair. There are several local roads which remain closed.

Water/waste waters systems

The water/waste water support systems in fifteen (15) towns had varying degrees of damage ranging from major system renovation to multiple “boil water” orders for surrounding jurisdictions. The reservoir supporting the city of Rutland sustained significant damage to the primary and secondary supply systems that required water rationing measures in the city of 18,000 for weeks. This resulted in 28 emergency supply deliveries by air and 64 deliveries by ground in the beginning days of the incident totaling 107 pallets of MREs, 401 pallets of water, 19 pallets of cots, 19 pallets of blankets, 19 pallets of tarps.

Communications

Telephone, 911 and cellular service was interrupted for thousands of customers in Pittsfield, Jacksonville, Readsboro, Dover, Marlboro, Newfane and from Rochester to Bethel. Providers had equipment and fiber under water and had to relocate vehicles in anticipation of restoration efforts.

Additionally critical public safety primary connectivity between the Department of Public Safety headquarters in Waterbury and law enforcement communications centers in the field was lost for a number of hours. Despite innovative telecommunications efforts and focused access restoration activities, some Vermonters did not have service restored for weeks.

Long Term Economic Impacts:

The long term economic impact on the state, business and agricultural communities is yet to be fully determined. However, more than 300 businesses have reported damage and have applied for Small Business Administration and Vermont Economic Development Association loans amounting to almost $35million. Vermont farmers face hardships similar to other business owners. All told, statewide agricultural losses due to Irene are estimated at $10 million. The potential value of feed damage – mostly to an estimated 120,580 tons of corn silage – is still unknown due to fermentation and potential for molds within harvested feed. If all feed were to be condemned due to poor fermentation and high levels of mold, the cost to replace the feed would be over $8 million.

Vegetable and fruit farmers lost direct income from the loss of product inundated with floodwaters. Statewide, flooding damaged over 400 acres of land producing fruit and vegetables. Estimates from the USDA Agriculture Census from 2007 show value for fruits and vegetables at $4,500 per acre. Using this metric, the estimated economic loss related to fruit and vegetable farming from Irene is about $2.24 million. This income loss decreases the reserves that fruit and vegetable farms use for spring-planting needs. Considering the $2.24 million that will not be recovered, some farms that were adversely affected could experience viability issues during 2012.

Weather Summary

August 31, 2011

MEMORANDUM: For the Record

FROM: Scott Whittier, Warning Coordination Meteorologist
National Weather Service – Burlington, Vermont

SUBJECT: Hurricane/Tropical Storm Irene Weather Summary for Vermont

Hurricane/Tropical Storm Irene moved across coastal New Jersey, New York, western southern New England and eventually the Connecticut River Valley of Vermont during August 28th. Irene delivered copious amounts of rainfall that caused record, devastating flooding to Vermont as well as damaging winds that resulted in nearly 50,000 customers without electricity. The widespread devastating flooding across Vermont from Irene is the second greatest natural disaster in the 20th and 21st century (November 1927 Flood) for Vermont.

Synopsis

Tropical Storm Irene developed in the Lesser Antilles during the evening of August 20th and proceeded northwest crossing Puerto Rico on August 21st as it strengthened into a minimal Category 1 Hurricane (75 mph) on the morning of August 22nd.

Hurricane Irene continued to travel just north of the Dominican Republic as it strengthened into a Category 2 storm during the evening of August 22nd. Hurricane Irene moved across the Turks and Caicos Islands on August 23rd and 24th while intensifying into a Category 3 storm.

Hurricane Irene passed through the southern and Eastern Bahamas on August 24th and 25th as a strong Category 3 storm (120 mph) then moved north-northeast paralleling the southeast coast of the United States until the morning of August 27th.

By mid-morning on August 27th, Hurricane Irene came ashore just east of Morehead City, NC as a Category 1 (85 mph) storm and proceeded north-northeast across eastern North Carolina and then paralleled the mid-Atlantic Coast until making landfall near Atlantic City, NJ during the early morning of August 28th.

Hurricane Irene passed just east of New York City, NY as a minimal hurricane (75 mph) during the mid-morning hours of August 28th, before weakening to a tropical storm (60 mph) near Carmel, NY at midday. Tropical Storm Irene moved northeast to near Great Barrington, MA by 2 pm EDT and was located along the Vermont/Massachusetts border just south of Halifax, VT at 5 pm with sustained winds of 50 mph. Tropical Storm Irene proceeded to track along the Connecticut River Valley of Vermont before exiting the state near Canaan around 10 pm EDT (Figures 1, 2).

Hurricane Irene had a similar path to Hurricane Floyd (1999) that had widespread impacts across Vermont as well (Figures 3 & 4).

Rainfall and Record Flooding

Rainfall from Hurricane Irene entered southern Vermont around midnight EDT on August 28th, reaching the Vermont-Canadian border by 8am EDT. Rainfall became steady and very heavy during the morning and afternoon hours and persisted for more than 12 hours. The relative slow forward progress of Irene during the morning hours led to a prolonged period of very heavy rainfall in southern Vermont and to a slightly lesser extent across northern Vermont as Irene's forward storm motion accelerated during the afternoon and evening hours.

Rainfall rates of 0.5-1.0 inches per hour for 6 to 10 hours led to the initiation of devastating flash flooding during the morning hours in Bennington and Windham counties and quickly spread north into Rutland and Windsor counties by midday.

Although Irene was downgraded to a tropical storm by midday, heavy rainfall continued across all of Vermont with flash flooding expanding into portions of central and northern Vermont during the afternoon.

Irene rainfall totals were generally 4 to 7 inches across Vermont with very localized higher amounts up to 10 inches (Figure 3). The greatest rainfall totals were along the higher elevations of Vermont's mountain ranges, which greatly contributed to the severe flash flooding.

Flash flooding of creeks, streets and small streams created flash flooding at the headwaters of some of the larger rivers, such as the White, Ottaquechee, Otter Creek, New Haven, Mad, Winooski, Missisquoi and Walloomsac rivers.

Eventually, the flash flooding transitioned into record or near record flooding of the larger rivers across the state during the afternoon and evening hours which continued into Sunday night and Monday. In addition, the Connecticut River witnessed significant flooding as well. On Monday, most rivers had crested and were receding but the Otter Creek and Winooski River at Essex remained well above flood stage.

Some of Vermont's larger rivers witnessed NEW record crests or crests second only to Vermont's greatest natural disaster, the November 1927 flood.

Irene caused devastating flooding on a large, widespread scale that included many locations that have witnessed similar flooding on a more localized, individual scale that have been rewarded past Federal Declaration Disasters. The Mad, New Haven and White Rivers (1998), Grafton (2003), Ripton/Hancock (2008), Winooski (2011), Lamoille (1995, 2011) and Passumpsic (2002, 2011).

Damage was not limited to public infrastructure, individual housing and businesses as many farmlands were at the peak harvest and have lost a full growing seasons worth of work.

The United States Geologic Survey (USGS) owns, operates, maintains river gages and provides statistical analysis of dozens of rivers in Vermont. A preliminary analysis of some of these gages described the flooding at these locations as at or above;

100-year recurrence interval

AYERS BROOK AT RANDOLPH, VT
WHITE RIVER AT WEST HARTFORD VT
WILLIAMS RIVER NEAR ROCKINGHAM, VT
SAXTONS RIVER AT SAXTONS, VT

OTTER CREEK AT CENTER RUTLAND, VT
NEW HAVEN RIVER NEAR MIDDLEBURY, VT
MAD RIVER NEAR MORETOWN, VT
MISSISQUOI RIVER NEAR NORTH TROY VT

50-year recurrence interval
BLACK RIVER AT COVENTRY, VT
CONNECTICUT RIVER AT WEST LEBANON
WALLOOMSAC RIVER NEAR NORTH BENNINGTON
WELLS RIVER AT WELLS RIVER, VT

NEW RECORDS

Attached as Figures 6-19 are ***available*** hydrographs of rivers that witnessed a Top 5 flood crest during this event.

Again, IRENE caused extensive, devastating damage across Vermont that places this event as the second largest natural disaster in modern Vermont history.

Damaging Winds

Vermont witnessed widespread sustained winds of 20 to 30 mph with gusts up to 50 mph with higher elevations exposed to wind gusts exceeding 60 mph at times. Mount Mansfield recorded a wind gust of 85 mph. These winds along with saturated soils accounted for scattered to widespread tree damage that caused power outages throughout the state which affected 50,000 customers.

The greatest wind impact was along Lake Champlain with north winds of 30 to 45 mph sustained and wind gusts up to 60 mph that created lake waves of 4 to 6 feet and localized reports up to 8 feet. There have been numerous reports of damaged and capsized boats that were tied to moorings or docks. In addition, these strong winds in the Champlain Valley affected apple orchards with some estimates of at least 10 percent of crop damage.

Figure 1

Irene's Track – August 20th to August 28th, 2011

Figure 2

Irene's Track across New England – August 28, 2011

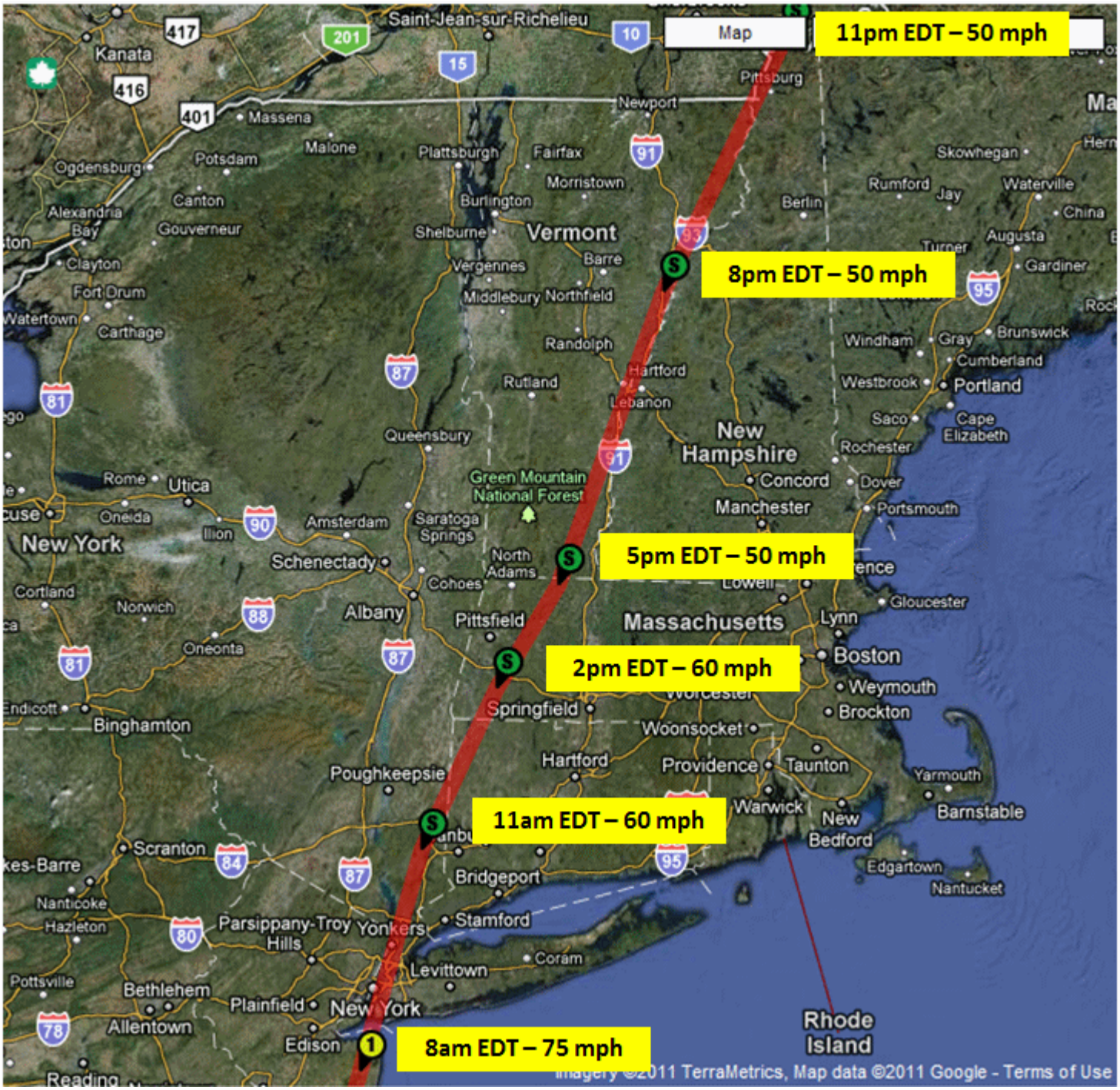


Figure 4

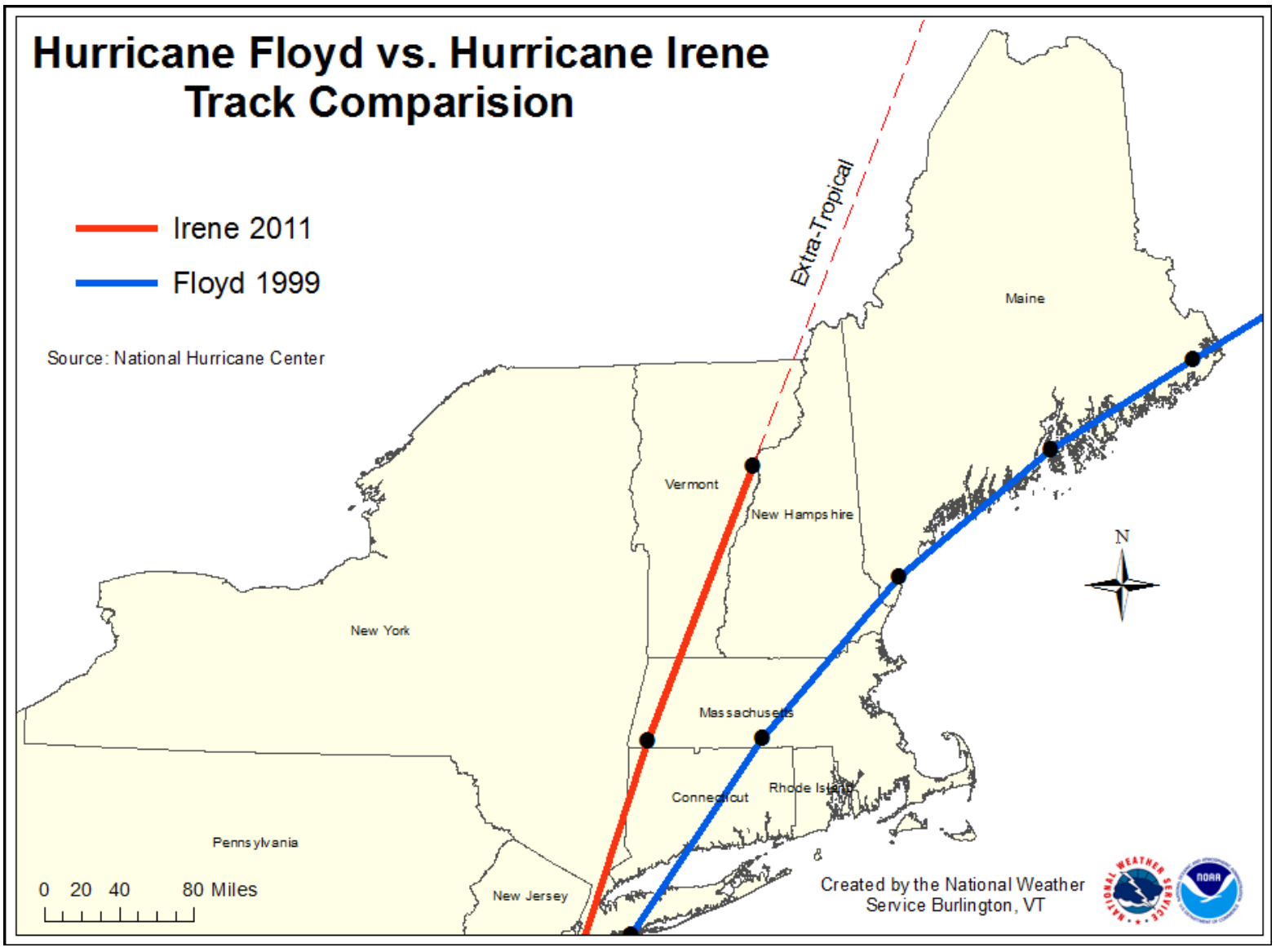

Hurricane Floyd vs. Hurricane Irene
Track Comparision
Irene 2011
Floyd 1999
Source: National Hurricane Center
Extra-Tropical
Maine
Vermont
New Hampshire
New York
Massachusetts
Connecticut
Rhode Island
Pennsylvania
New Jersey
N
0 20 40 80 Miles
Created by the National Weather
Service Burlington, VT

Figure 5

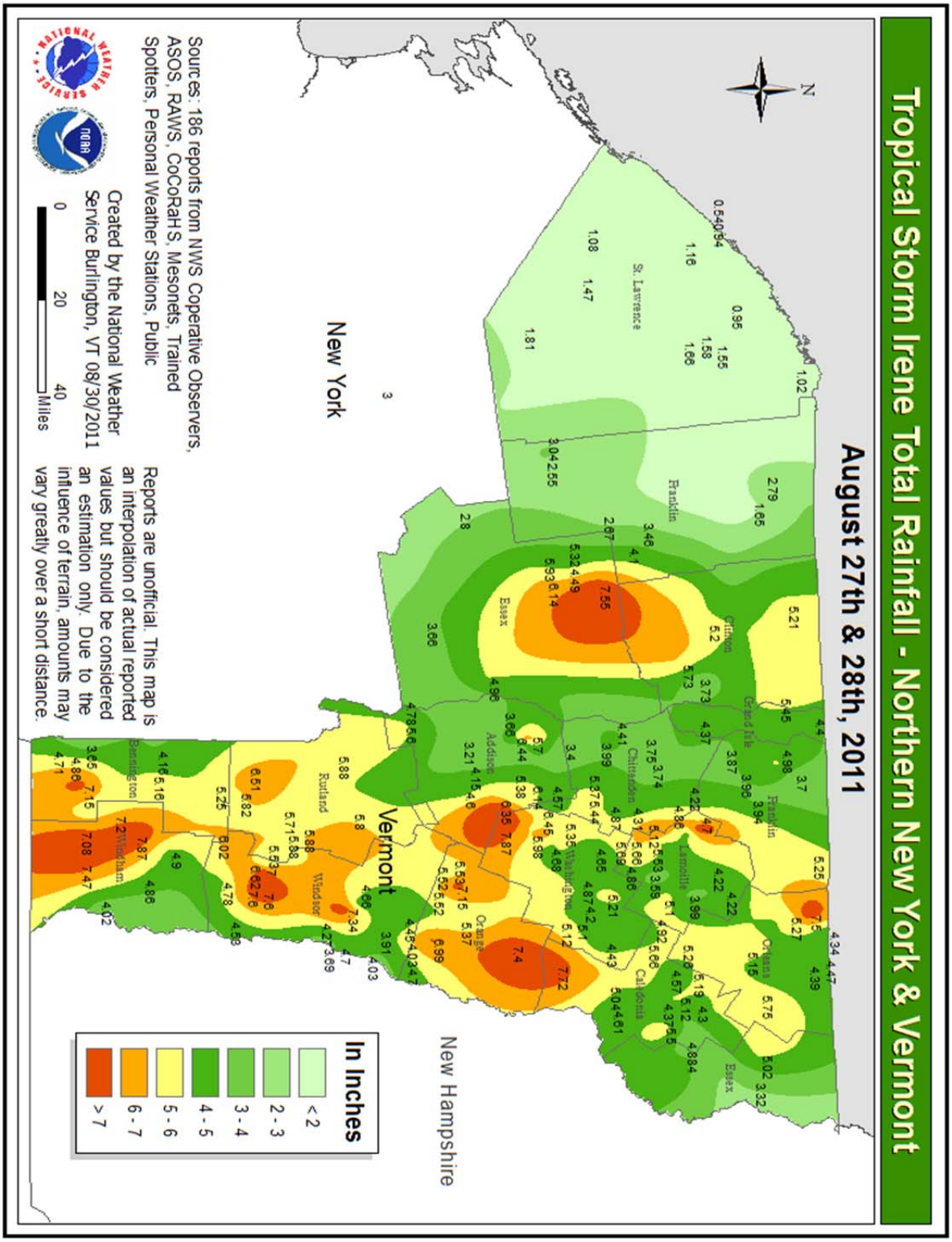

Tropical Storm Irene Total Rainfall - Northern New York & Vermont
August 27th & 28th, 2011
N
New York
Vermont
New Hampshire
Franklin
Grand Isle
Chittenden
Addison
Rutland
Windsor
Windham
Orange
Caledonia
Essex
Orleans
Lamoille
Washington
Bennington
St. Lawrence
Clinton
In Inches
< 2
2 - 3
3 - 4
4 - 5
5 - 6
6 - 7
> 7
Sources: 186 reports from NWS Coperative Observers, ASOS, RAWS, CoCoRaHS, Mesonets, Trained Spotters, Personal Weather Stations, Public
Created by the National Weather Service Burlington, VT 08/30/2011
0 20 40 Miles
Reports are unofficial. This map is an interpolation of actual reported values but should be considered an estimation only. Due to the influence of terrain, amounts may vary greatly over a short distance.

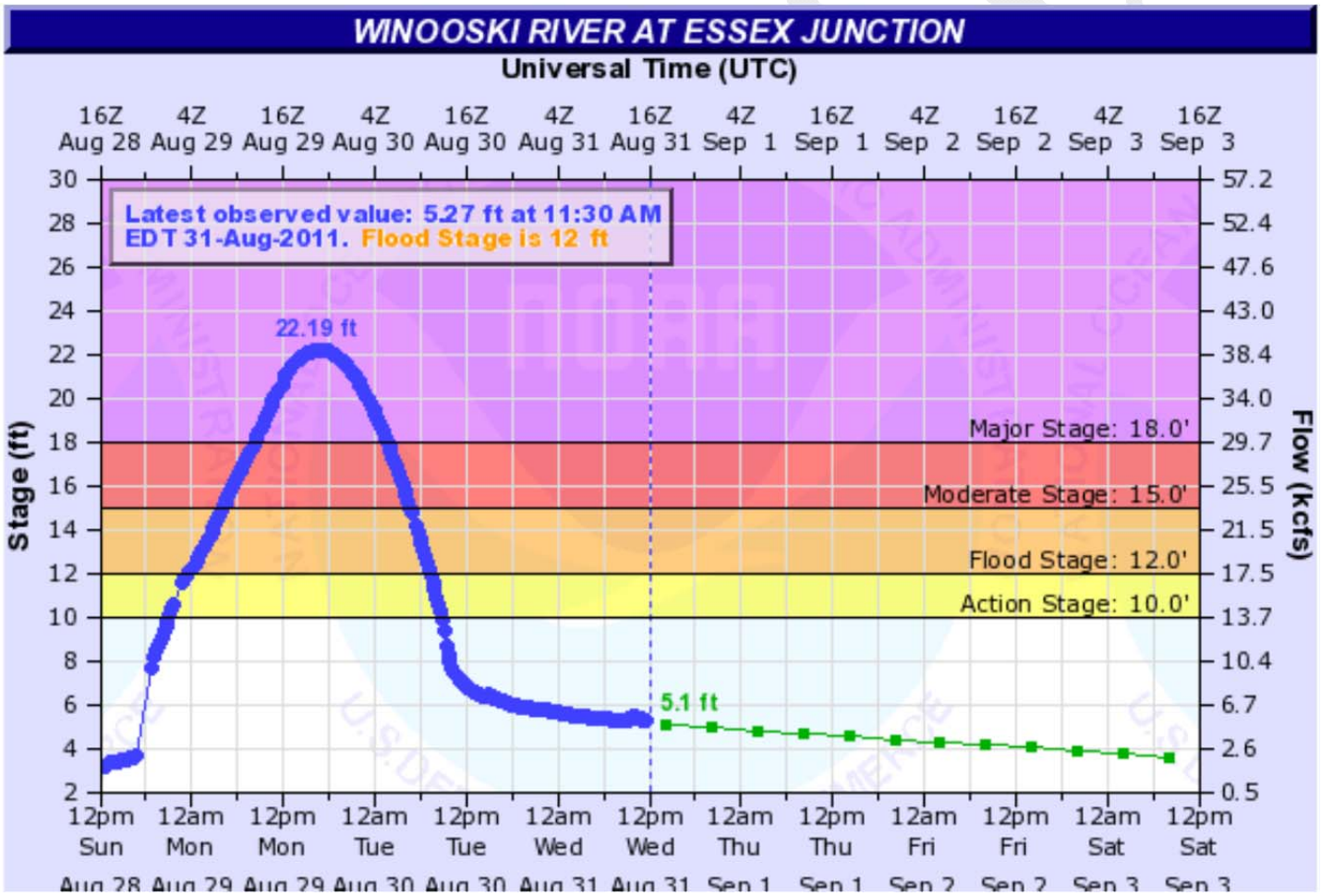
Figure 6

Winooski River at Essex Junction, VT

Flood Stage is 12.0 feet

Historical Crests

(1) 51.40 ft on 11/04/1927
(2) 24.54 ft on 03/19/1936
(3) 22.19 ft on 08/29/2011
(4) 22.17 ft on 02/21/1981



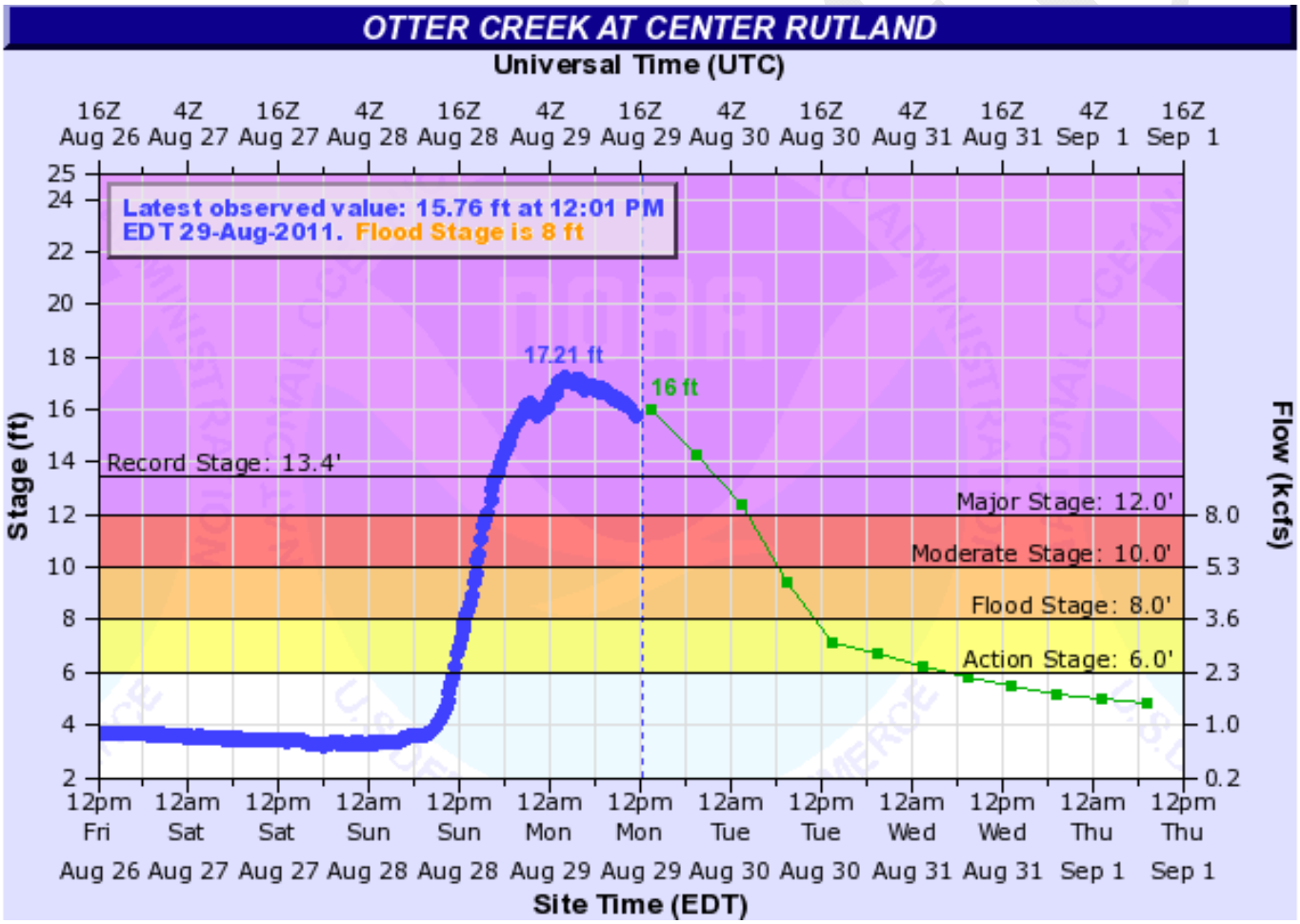
(5) 19.06 ft on 03/14/1977

Figure 7

Otter Creek at Center Rutland

Flood Stage is 8 feet

Historical Crests
(1) 17.21 ft on 08/29/2011
(2) 13.45 ft on 09/22/1938
(3) 13.25 ft on 06/30/1973
(4) 13.01 ft on 04/06/1987



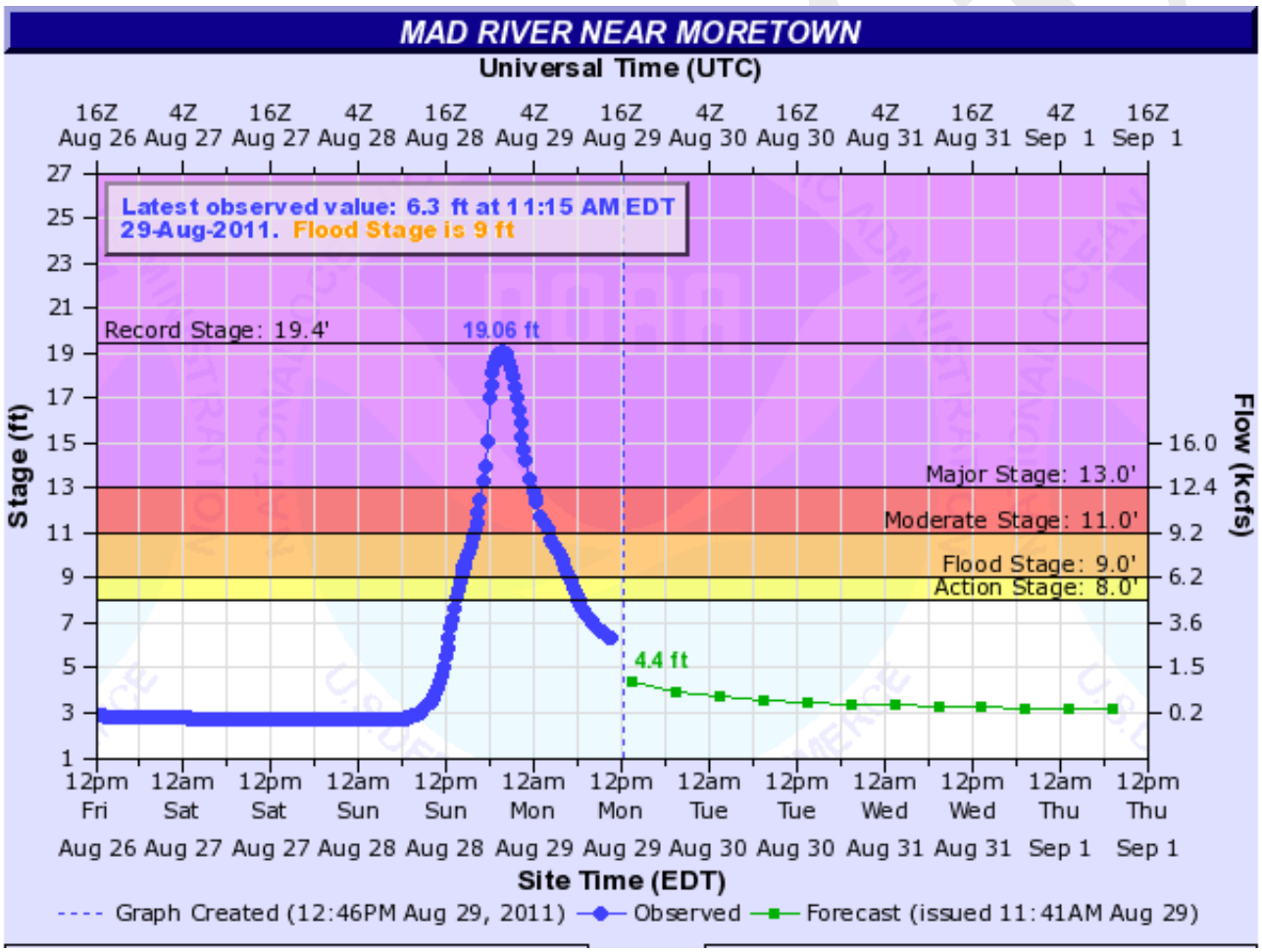
(5) 12.70 ft on 08/11/1976

Figure 8

Mad River near Moretown, VT

Flood Stage is 9 feet

Historical Crests
(1) 19.40 ft on 11/03/1927
(2) 19.06 ft on 08/29/2011



(3) 16.34 ft on 09/22/1938
(4) 14.45 ft on 02/11/1981
(5) 14.13 ft on 06/27/1998

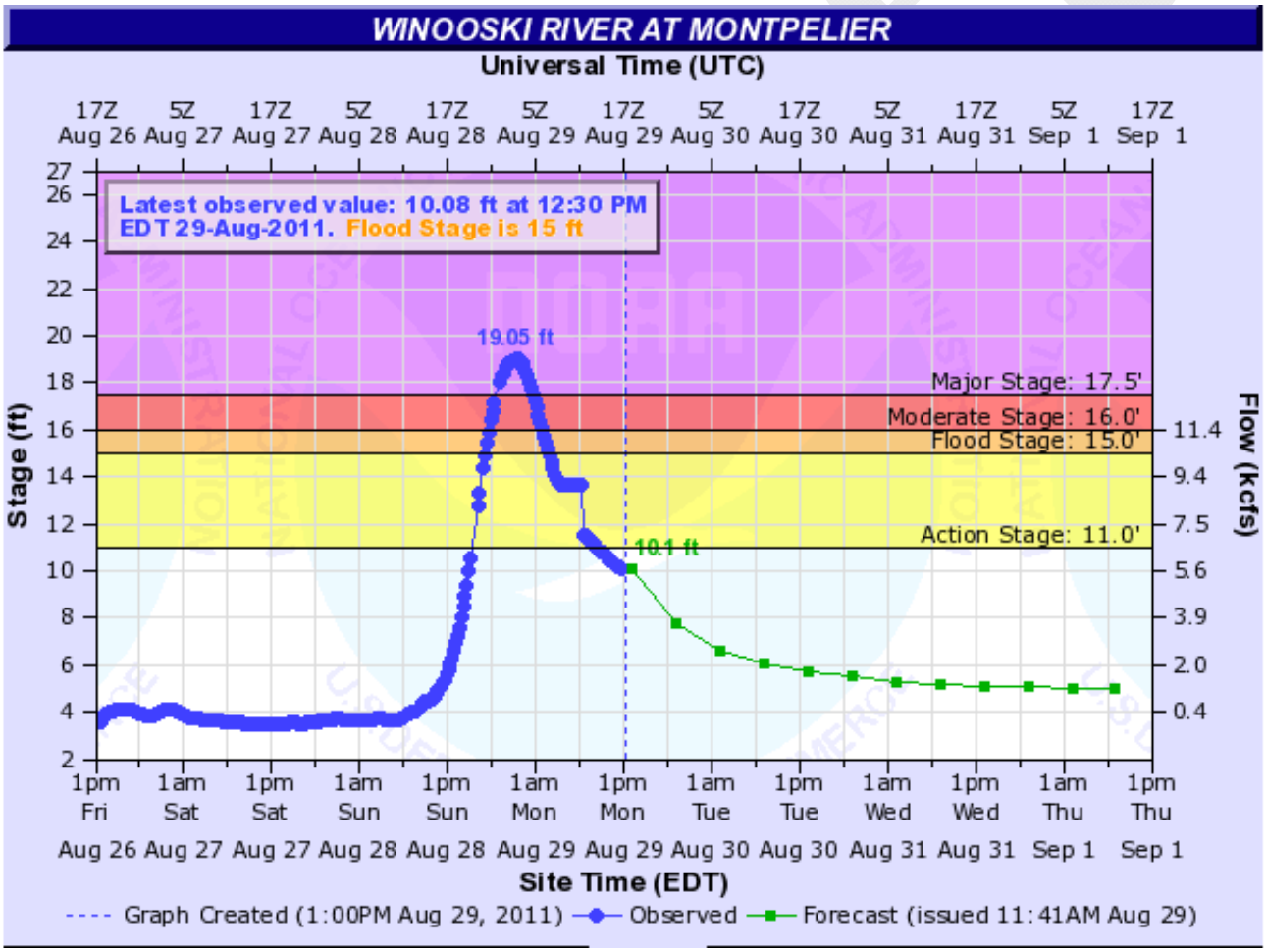
Figure 9

Winooski River at Montpelier, VT

Flood Stage is 15 feet

Historical Crests

(1) 27.10 ft on 11/03/1927
(2) 19.05 ft on 08/29/2011
(3) 17.59 ft on 05/27/2011



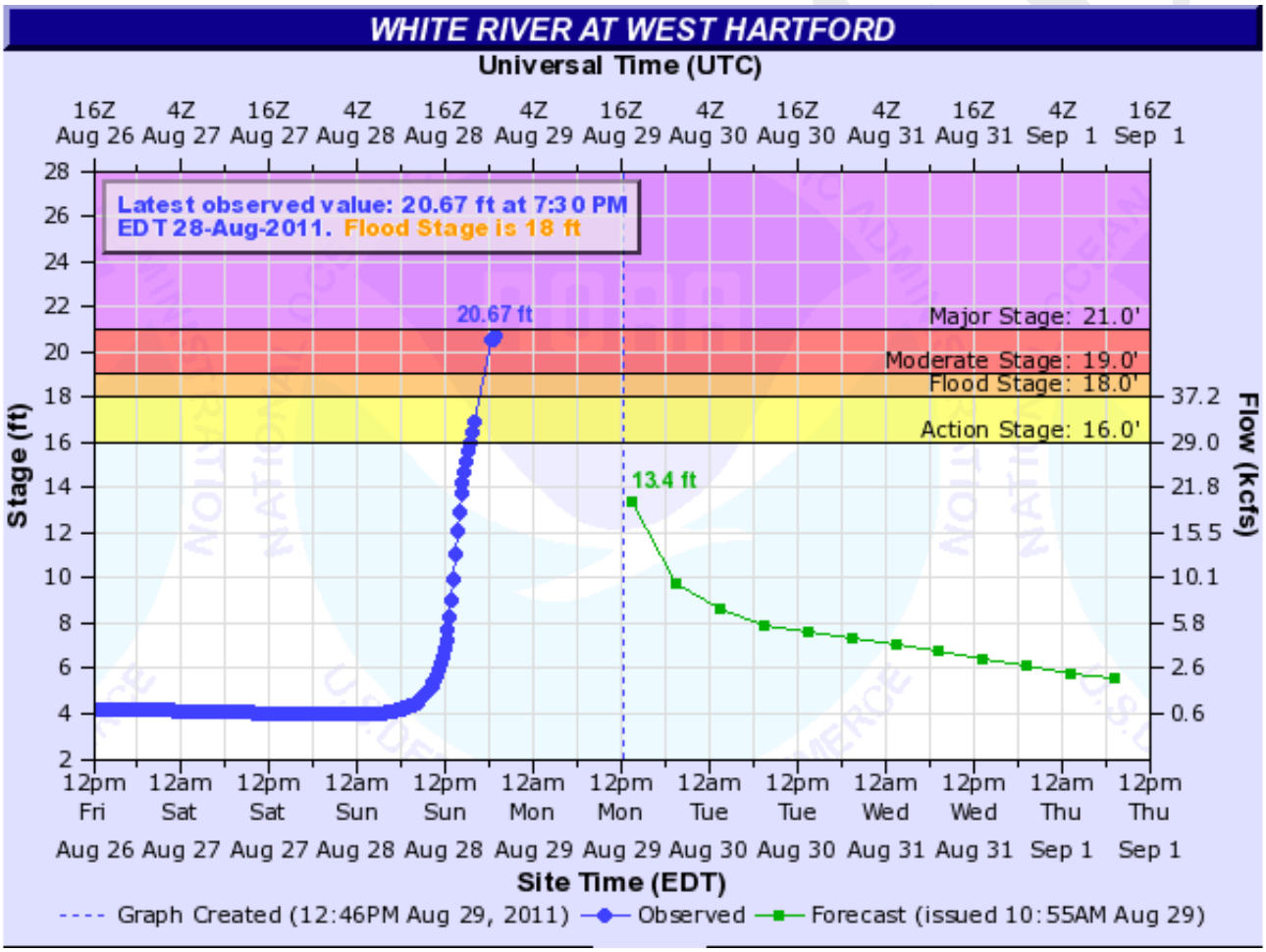
(4) 17.55 ft on 06/30/1973
(5) 17.31 ft on 04/07/1912

Figure 10

White River at West Hartford, VT

Flood Stage is 18 feet

Historical Crests
(1) 29.30 ft on 11/04/1927
(2) 28.40 ft on 08/29/2011**



(3) 19.26 ft on 09/22/1938
(4) 19.13 ft on 06/30/1973
(5) 18.89 ft on 03/18/1936

** As measured by USGS personnel after outage

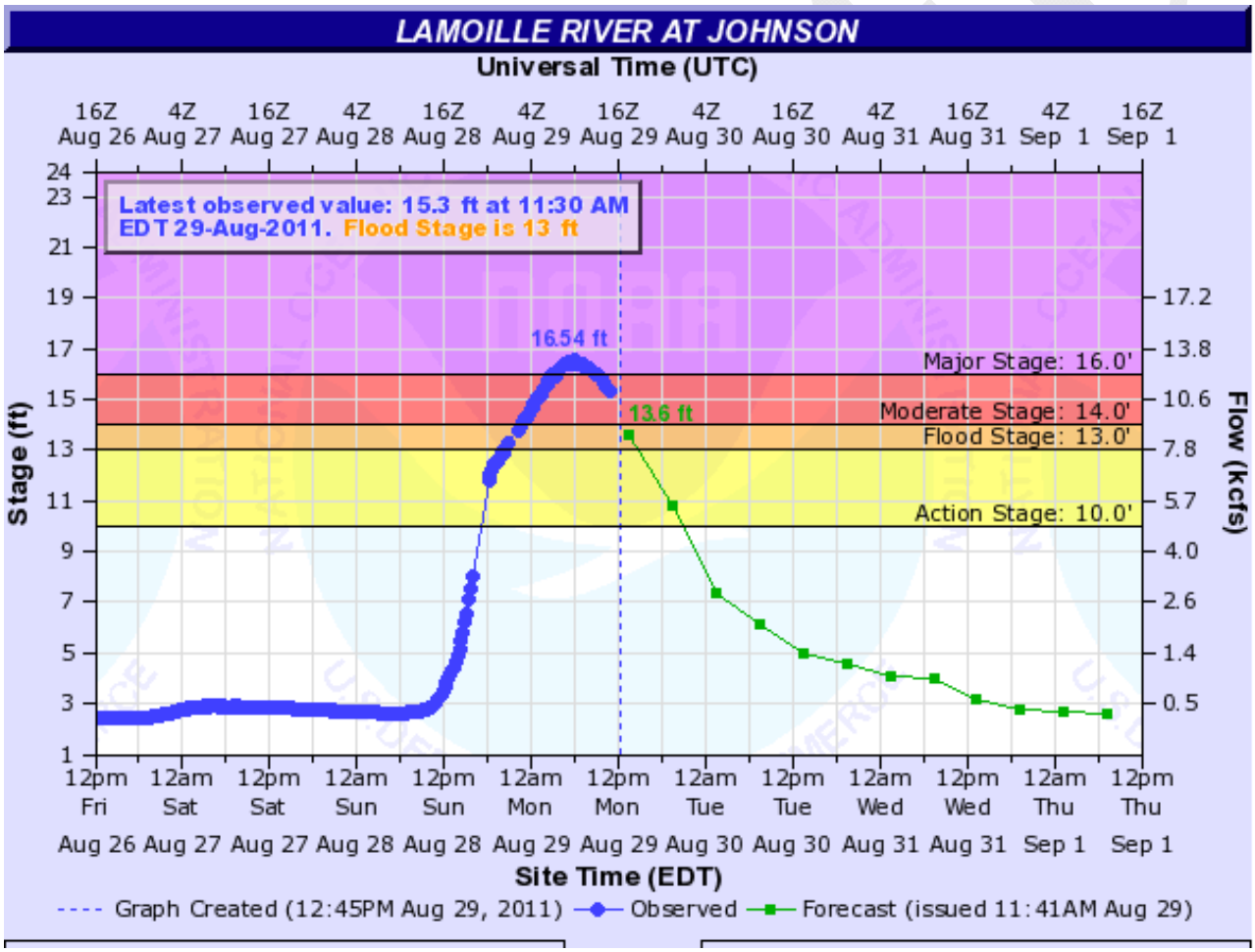
Figure 11

Lamoille at Johnson, VT

Flood Stage is 13 feet

Historical Crests

(1) 27.00 ft on 11/04/1927
(2) 19.98 ft on 08/06/1995



(3) 17.33 ft on 07/01/1973
(4) 16.97 ft on 04/27/2011
(5) 16.54 ft on 08/29/2011

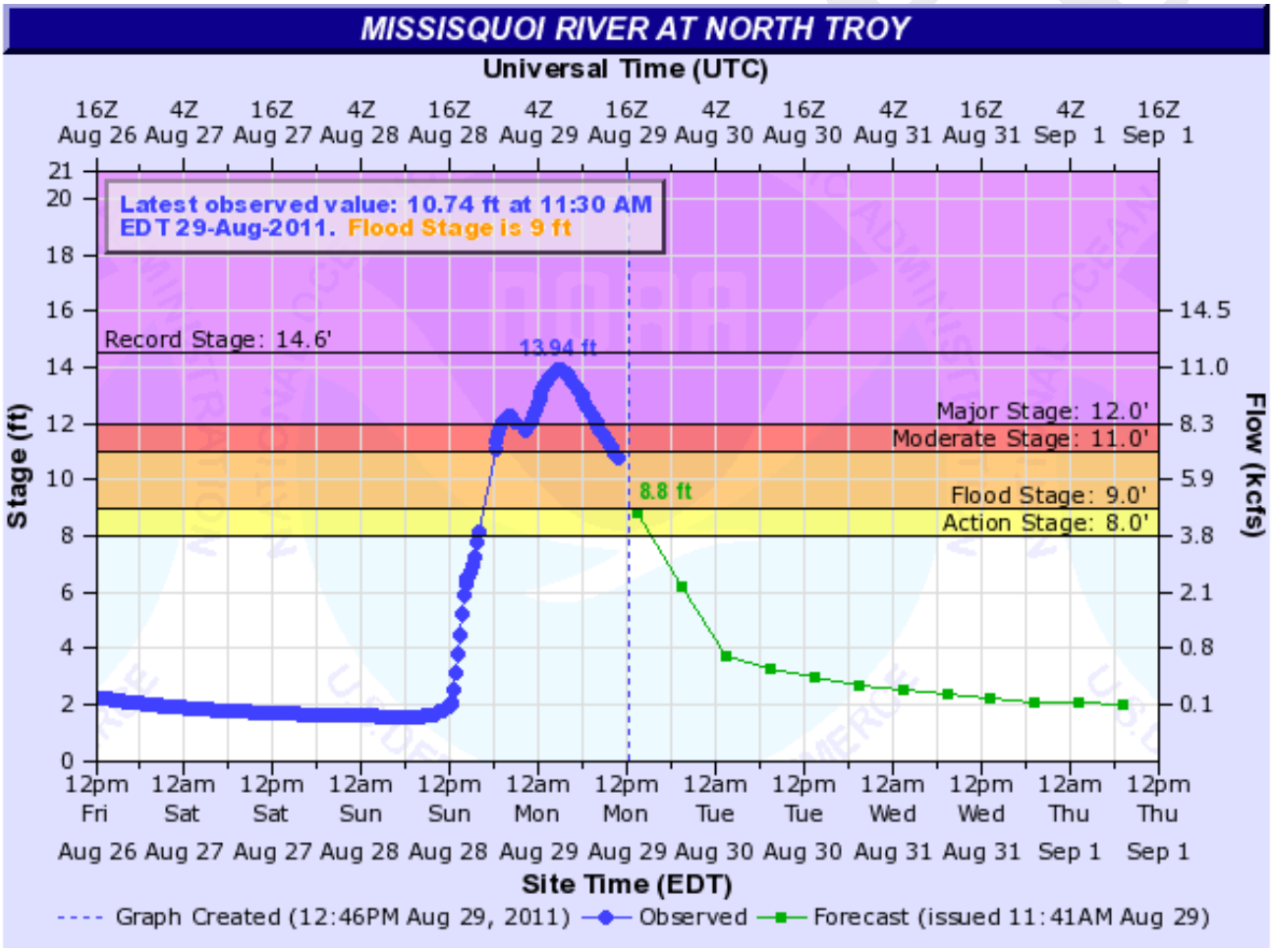
Figure 12

Missisquoi at North Troy, VT

Flood Stage is 13 feet

Historical Crests

(1) 14.55 ft on 06/12/2002
(2) 13.94 ft on 08/29/2011
(3) 13.84 ft on 07/15/1997



(4) 13.21 ft on 04/18/1982
(5) 12.95 ft on 04/27/2011

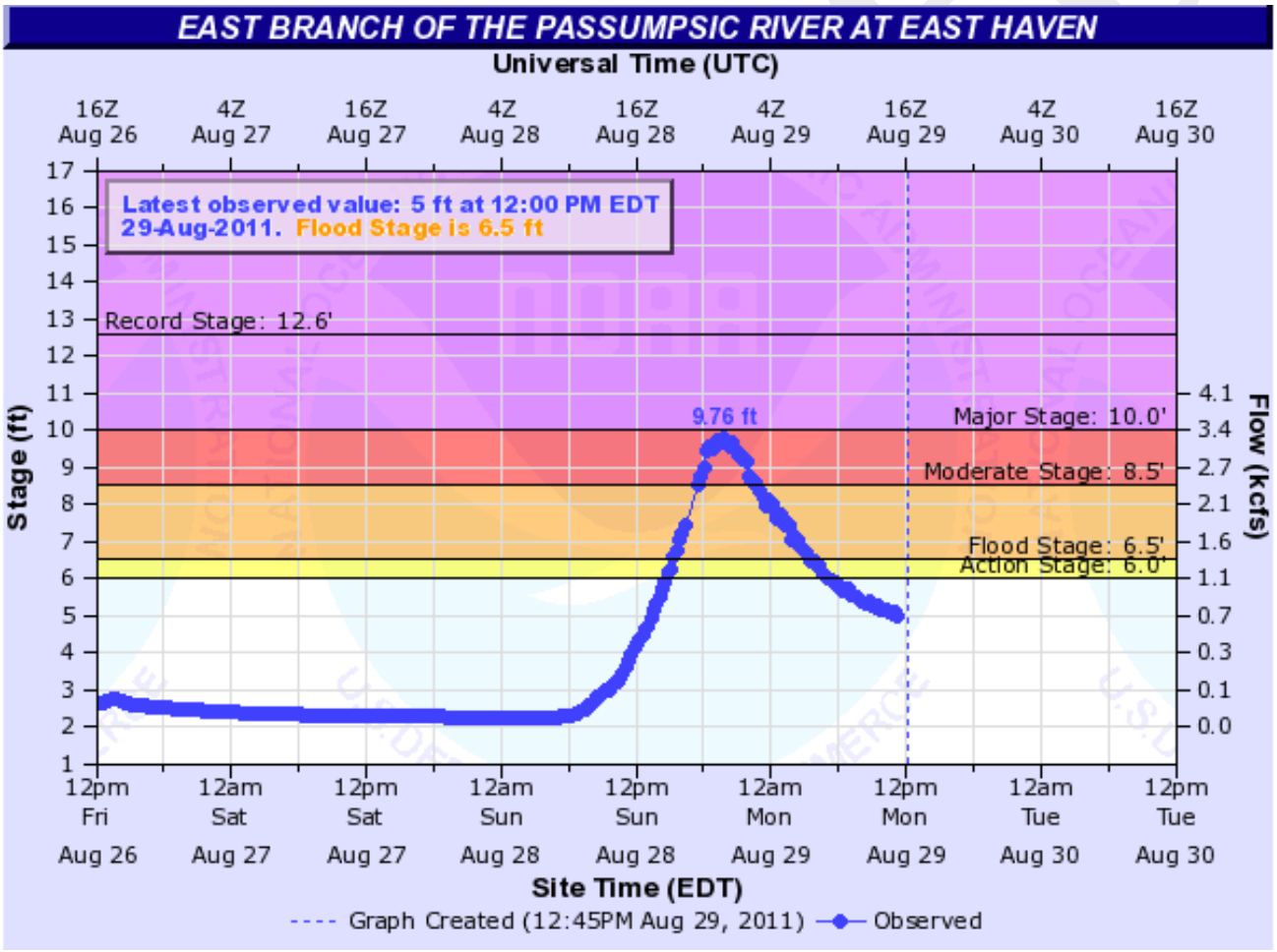
Figure 13

East Branch of Passumpsic River at East Haven, VT

Flood Stage is 6.5 feet

Historical Crests

(1) 12.60 ft on 11/04/1927
(2) 11.45 ft on 06/30/1973
(3) 10.65 ft on 06/12/2002



(4) 9.76 ft on 08/29/2011

(5) 9.09 ft on 04/27/2011

Figure 14

Walloomsac River near Bennington, VT

Flood Stage is 7 feet

Historical Crests

(1) 12.82 ft on 08/28/2011
(2) 12.04 ft on 09/21/1938
(3) 11.60 ft on 12/31/1948
(4) 11.50 ft on 09/01/1950
(5) 11.44 ft on 03/18/1936

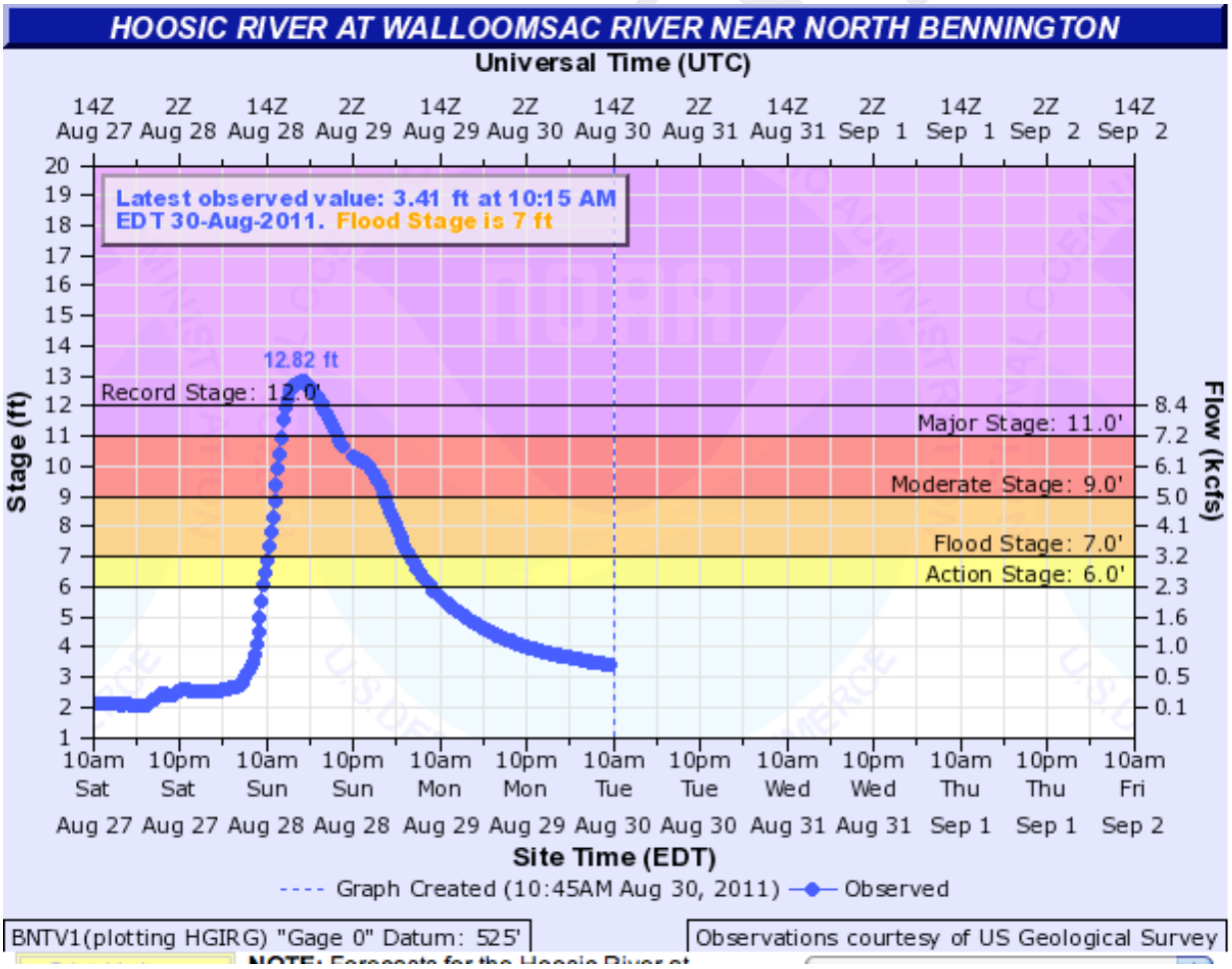
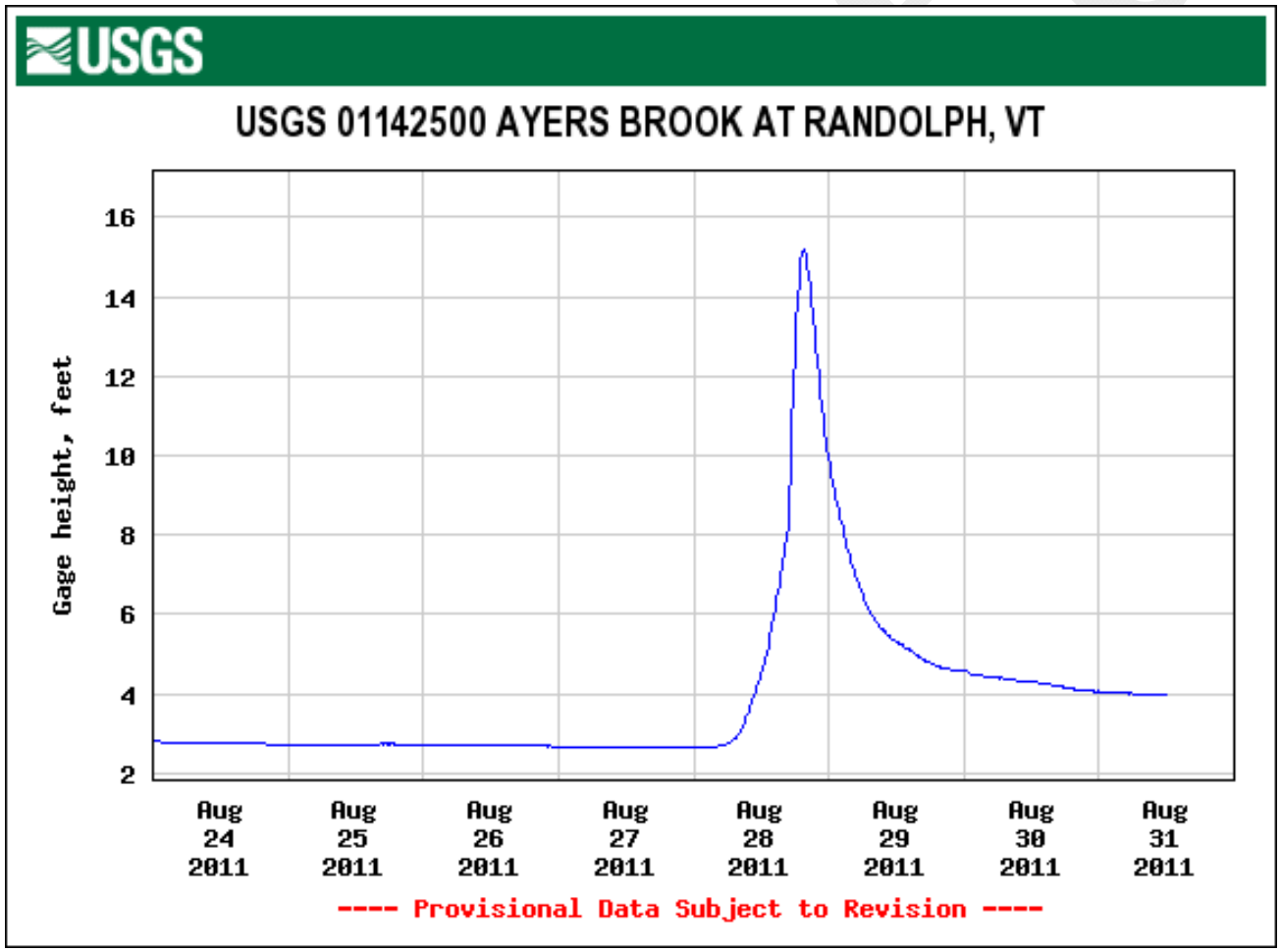


Figure 15

Ayers Brook at Randolph, VT

Flood Stage is 8 feet

Historical Crests
(1) 16.00 ft on 11/01/1927
(2) 15.17 ft on 08/28/2011
(3) 11.93 ft on 06/27/1998



(4) 9.55 ft on 07/12/2007
(5) 9.12 ft on 06/30/1973

Figure 16

Saxtons River at Saxtons River

Flood Stage is 10 feet

Historical Crests
(1) 19.31 ft on 08/28/2011

(2) 17.90 ft on 09/22/1938
(3) 14.06 ft on 08/10/1976
(4) 13.26 ft on 06/30/1973
(5) 12.34 ft on 01/22/1959

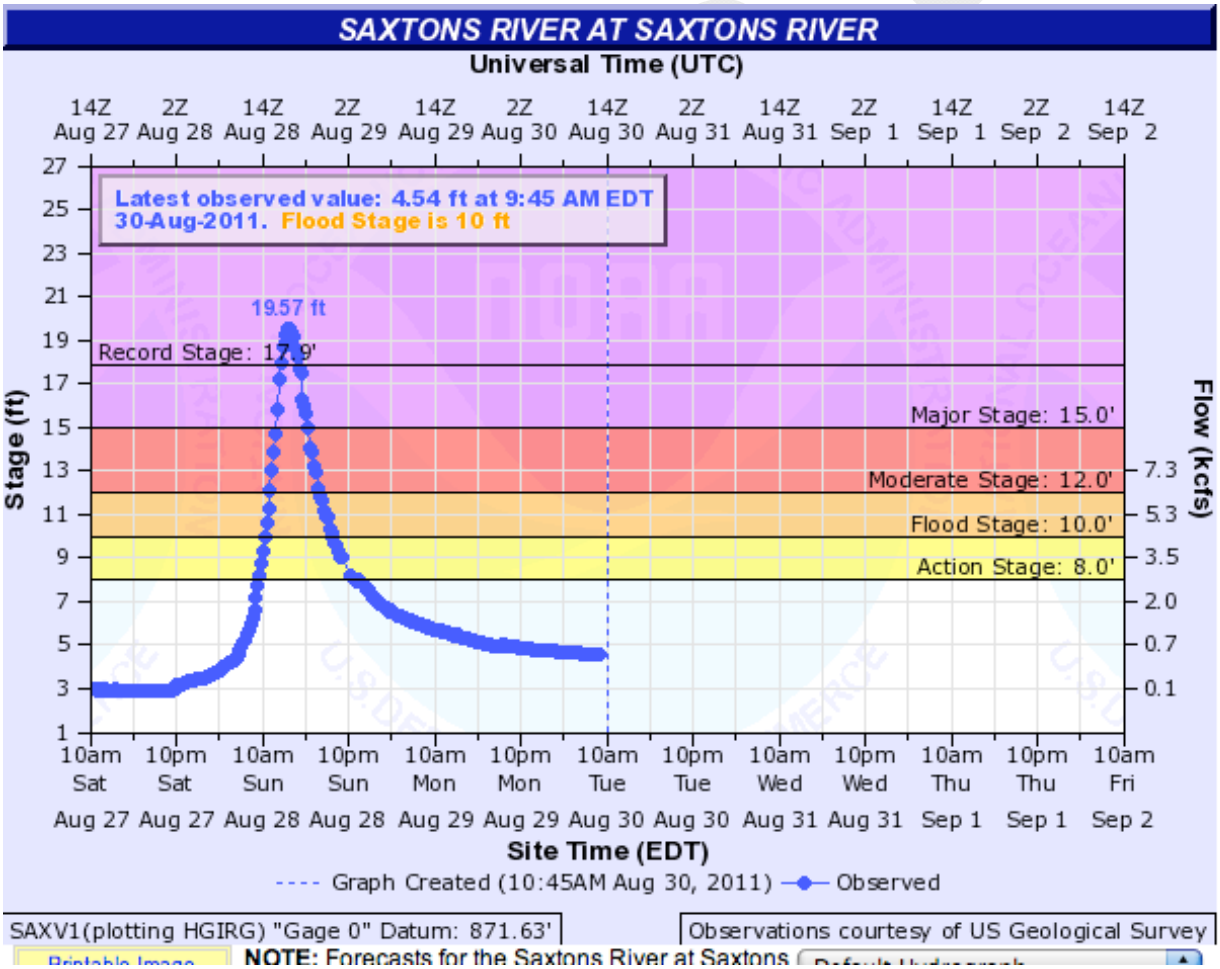


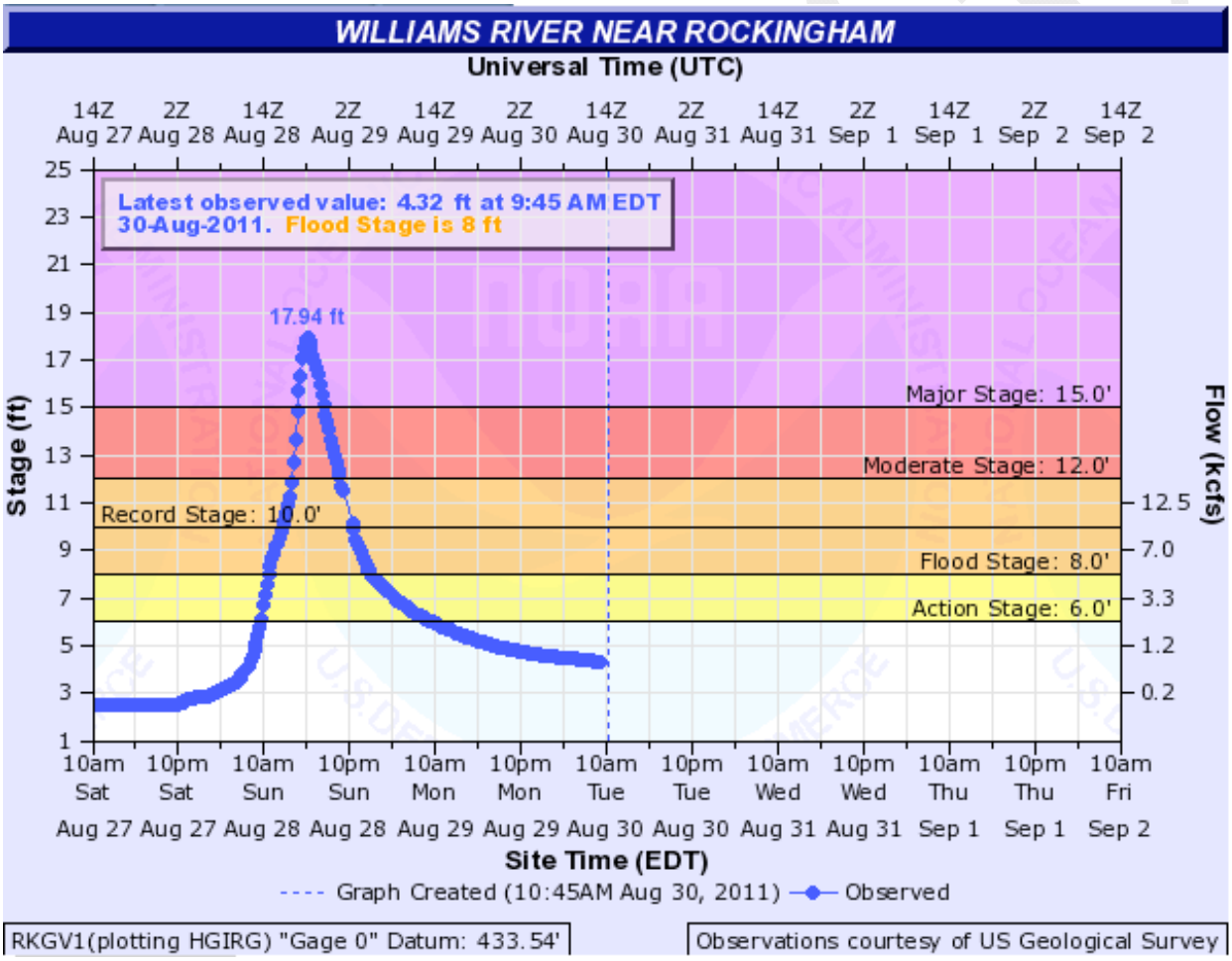
Figure 17

Williams River near Rockingham

Flood Stage is 10 feet

Historical Crests
(1) 17.94 ft on 08/28/2011

(2) 9.98 ft on 03/29/1993
(3) 9.69 ft on 04/03/2005



(4) 9.54 ft on 05/14/2006
(5) 9.41 ft on 01/19/1996

Figure 18

Ompompanoosuc River at Union Village Dam

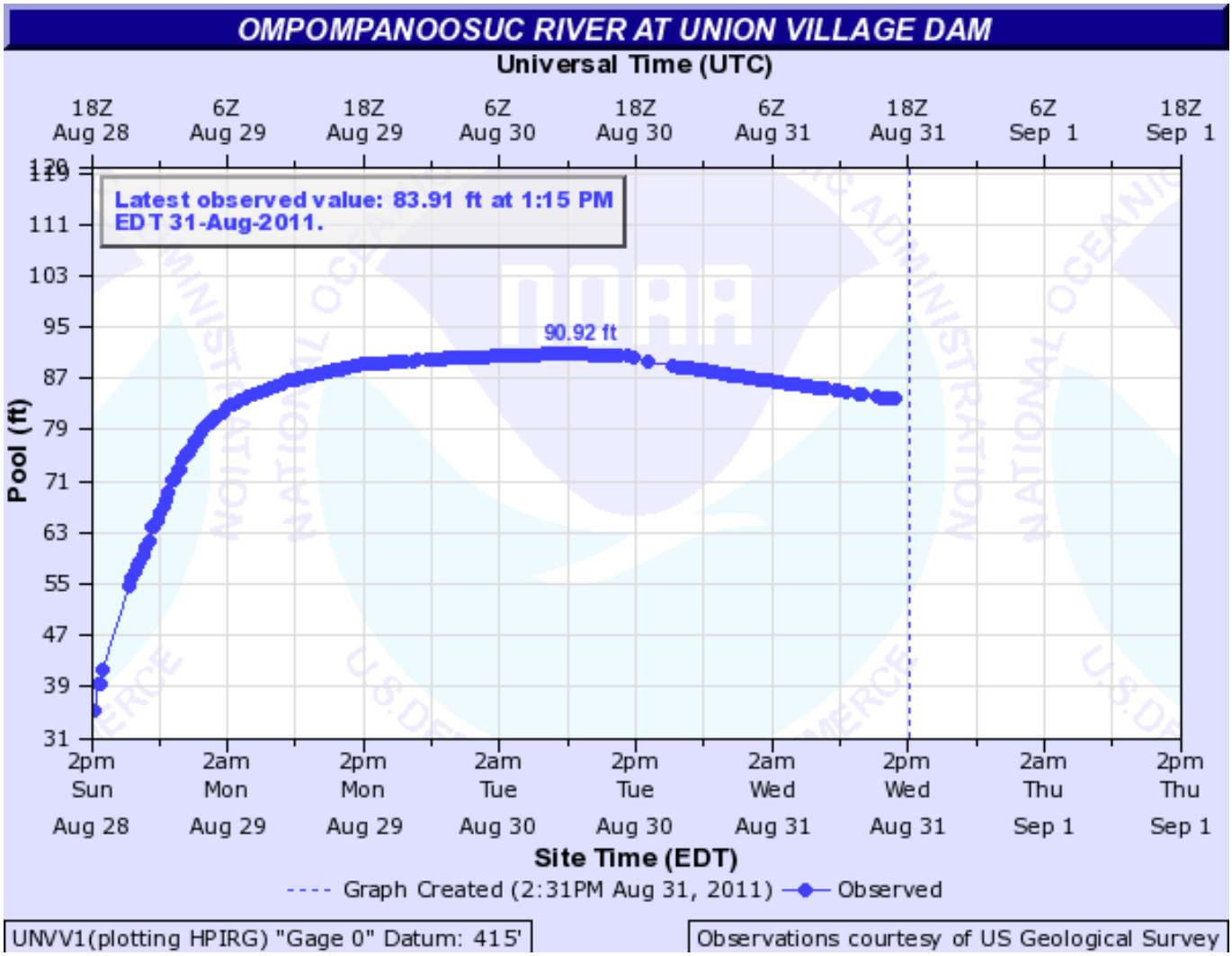
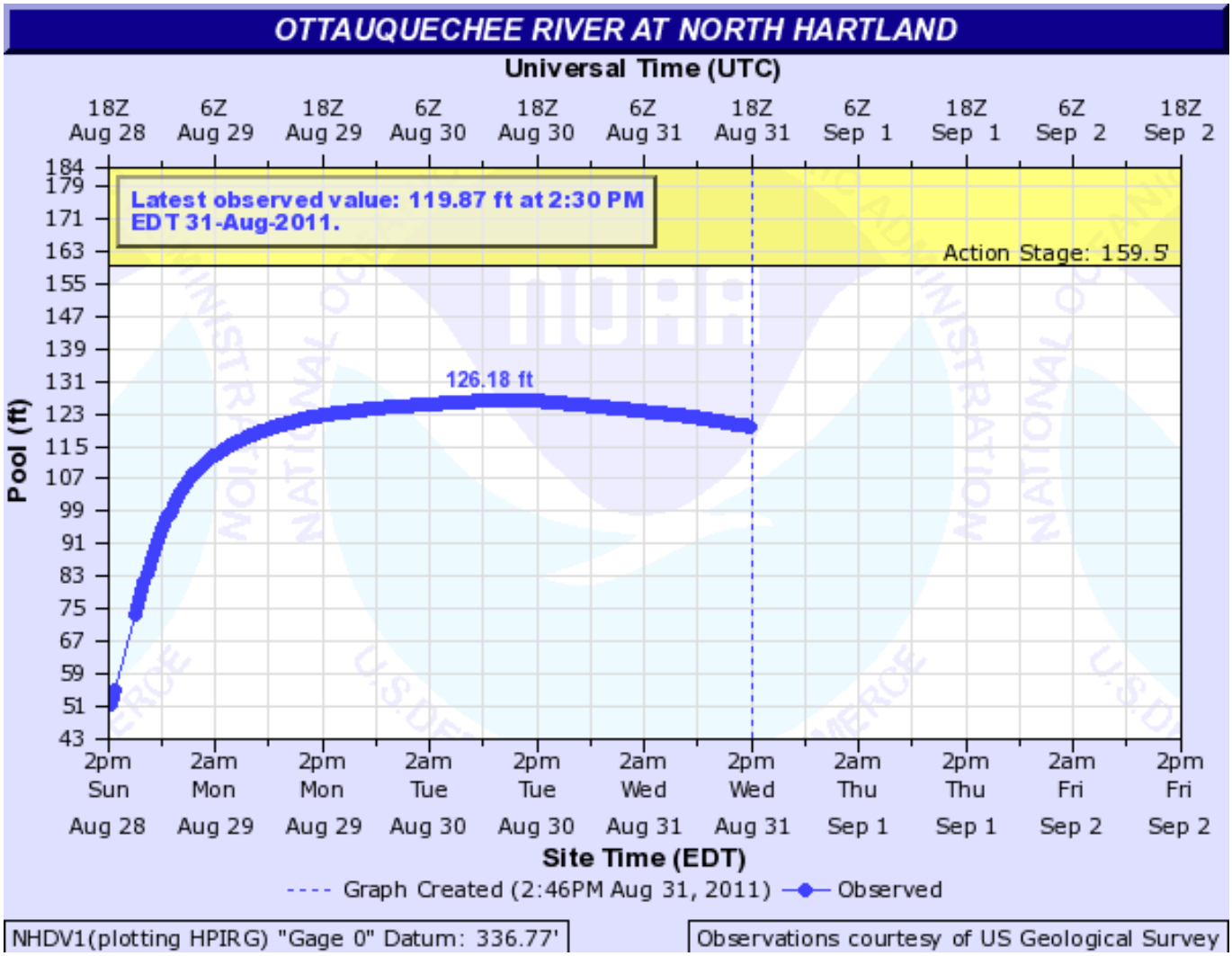


Figure 19

Ottauquechee River at North Hartland



Analysis of Capabilities

This section of the report reviews the performance of the demonstrated capabilities, activities, and tasks associated in the response and recovery of the Tropical Storm Irene. In this section, observations are organized by capability and associated activities. Each activity is followed by related observations, which include references, analysis, and recommendations as identified by independent evaluators are each review session. Each observation is labeled with the specific after action review it was derived from. This does not mean, however, that one observation does not apply to the entire audience dependent on the location it was identified. All observations below are applicable to the entire audience.

Capability 1: Community Preparedness and Participation

The Community Preparedness and Participation capability provides that everyone in America is fully aware, trained, and practiced on how to prevent, protect/mitigate, prepare for, and respond to all threats and hazards. This requires a role for citizens in personal preparedness, exercises, ongoing volunteer programs, and surge capacity response. Specific capabilities for UNIVERSAL preparedness, including knowledge of all-hazards (technological, natural, and terrorist incidents) and related protective measures, skills, and supplies, will be determined through a collaborative process with emergency responders.

Activity 1.1: *Integrate Public Outreach and Non-Governmental Resources into Emergency Operations Plans and Exercises*

Observation	State Level AAR- Towns that had effective and working Emergency Operation Plans, and knowledgeable, trained elected and appointed officials, fared far better during the prolonged response and recovery operations following Tropical Storm Irene.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Planning ☐ Organization ☐ Process ☐ Personnel ☐ Training	
References (Standards, Policies, or Plans)	1. State After Action Review
Analysis	Towns with trained and supported EMDs and knowledgeable town managers and select boards could provide effective response and recovery efforts, even in the devastating aftermath of Tropical Storm Irene. Towns without established EMDs or EOPs had to rely much more on outside assistance, which prolonged their recovery. In the aftermath of TSI, there were EMD resignations, as the reality of their jobs became clearer. Well thought out continuity of operations and emergency operations plans on the local level enabled towns to efficiently establish shelters, stage materials and equipment, and respond to the constantly changing conditions throughout their areas. In many instances, well organized and trained town personnel were able to provide much more assistance to neighboring towns because of their capabilities and preparation. As is often the case, a real-life disaster proved to towns the viability of their plans; those towns which had participated in exercises and planning were far better able to respond to conditions which compromised the plans on paper.
Recommendations	See Appendix A: Improvement Plan

Activity 1.2: *Provide Education and Training for the Public in All Mission Areas*

Observation	State Level AAR- The public had difficulties knowing who to call to assist them and getting hold of that agency of organization with that request.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. Local Basic Emergency Operations Plan (BEOP)
Analysis	Many members of the public are not generally aware of how to request assistance or get information in a disaster. A wide spread disaster such as Tropical Storm Irene caused special challenges because many state agencies were displaced and phone systems were disrupted. The situation was fluid for a number of days. United Way 211 was fully committed to the effort but was frequently overwhelmed by the number of calls and the effort to track down accurate information that frequently changed without notice. Citizens called 211 for many types of information that they had not been tasked to provide. When the 511 system experienced difficulties or was not effective for people, they called 211. Although the 211 operators identified themselves as "211" at the beginning of the call, many people still thought they were talking directly with some state or federal agency. Some participants in the AAR suggested that a call center should have been established to direct the public to the proper agency for assistance. This might have been staffed by displaced state workers.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Many members of the public are inadequately informed about disaster preparedness, response and recovery issues which places a heavier burden on getting information out to the public before, during and after the disaster.
☐ Noted Strength	**X** Area for Improvement

Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. Local Basic Emergency Operations Plan (BEOP) 3. Family & Business Emergency Preparedness Workbook
Analysis	One of the most effective tools in the State and local disaster tool kit is a knowledgeable and well prepared citizenry and business community. Although the people in Vermont responded courageously and unselfishly during and after the disaster there was a lot that should have been done in preparedness prior to the disaster. Many victims would have prepared differently had they known more about flood insurance, the probable time a significant wind storm or rain event will disrupt power and communications, what assistance they might receive for disaster damage, who to contact in certain situations, etc. Although Tropical Storm Irene caused a lot of damage, it happened in a very favorable season of the year in Vermont. Power outages of similar duration in the late fall, winter or Spring could be catastrophic. Many residents who live on rural roads do not understand that the appropriate power company strategy in re-establishing power focuses on the high density lines first, working out to the isolated and low density lines last. Because a lot of people in Vermont live on rural roads with relatively low density that means that they should be prepared for extended power outages. Many damaged private and business properties in Tropical Storm Irene were vulnerable to flooding. Many damaged areas suffered in previous storms such as the flood of 1927. Every bit of storm knowledge possessed and preparedness efforts made by the public lessens the load on responders during response and recovery efforts. There still may be damage but the citizenry is better prepared to take care of themselves while repairs are being made. It was stated in the after action review that the National Weather Service and Vermont Emergency Management have made public service announcements, preparedness campaigns, etc. for years with limited success. It is suggested that if those efforts were made more robust that damage might be reduced, lives saved and the intensity of response and recovery made slightly less urgent.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- The lack of understanding by both the public and local officials concerning the state and federal government's ability to respond during disasters and to make citizens and communities whole after a disaster inhibits preparedness efforts on both a local and an individual level.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	
Analysis	The public and local officials have made some assumptions and have expectations about the capability and capacity of government to respond as opposed to having as understanding of the limits of various levels of government to assist in a widespread incident. Both the federal and the State governments have limits to their response and recovery efforts and the reimbursement levels that they can achieve. Tropical Storm Irene was no exception, local governments and individuals were disappointed about state and federal government limitations. In many cases these limitations are known by state and federal government officials well in advance of a disaster. They are often statutory or regulatory limitations. Because these limitations are not well known by municipalities and citizens, who have not suffered damage in a disaster recently, there were unrealistic expectations. If municipalities and citizens had realistic and accurate expectations, many of them would prepare themselves better for disasters.
Recommendations	1. See Appendix A: Improvement Plan

Observation	PSD D- Response was hindered by citizens refusing to evacuate, and needing to be rescued when the situation worsened.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process X Training

References (Standards, Policies, or Plans)	1. N/A
Analysis	During Tropical Storm Irene, many individuals refused to evacuate when first responders asked them to leave; and then had to be rescued by first responders when the situation worsened. Citizens need to be educated on an individual level about what the time is to evacuate, where shelters are located, and how you get to the shelters. In some locations if you refuse to evacuate after being asked to evacuate by a rescue worker, rescue workers will not evacuate you at a later point.
Recommendations	See Appendix A: Improvement Plan

Activity 1.3: *Incident Response*

Observation	PSD A/B- Local relationships are more important than regional relationships
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Local Emergency Management Directors Handbook
Analysis	During Tropical Storm Irene, some resources, including shelters, were staged regionally. Unfortunately, due to the isolation that this incident created, these regional resources were not usable. This emphasizes that when you are planning for a community, you should be able to shelter in place for 72 hours.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Without personal consideration, responders immediately began working and did an excellent job.

X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Planning ☐ Organization ☐ Process X Personnel ☐ Training	
References (Standards, Policies, or Plans)	1. N/A
Analysis	During this emergency situation, many responders were able to respond to the emergency early on and for extended hours. The fact that this incident began on a Sunday, and that many responders were unable to leave town to go to work, assisted responders in having the time to dedicate to response. As individuals were unable to leave towns, some town officials that wouldn't normally perform response work, such as town constables and health officers, were able to assist in the response effort. As this was a known event, staff members were alerted early on that there might be a need for staffing. Early notification gave responders the chance to plan their personal lives in advance of the incident, contributing to a large response. One town had 30 volunteers on ATVs delivering food every day. These volunteers were also able to provide health and welfare checks. First responder agencies that don't normally work well together were able to set aside differences and work together for this incident.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Additional resources are needed for first responders to improve response efforts.
☐ Noted Strength	X Area for Improvement
Capability Element	

X Equipment ☐ Organization X Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Local Emergency Operations Plans
Analysis	Volunteer first responders and Local Emergency Management Directors were unable to respond for an extended period of time, since they need to support their families by going to other jobs. There was confusion with some volunteer Fire Departments; these departments thought they were going to get paid since they were performing a disaster response. When these departments learned that there was no automatic payment for disaster response, relationships were injured. Towns do not have the money for the level of response needed, so they should consider a regional response; including a regional Emergency Operations Center. Towns need to have better equipment so they can respond to emergency situations on their own without outside assistance. It should be standard that towns should be able to shelter in place for 72 hours, because regional responses may not work in Vermont due to geographic isolation. Towns should plan for worst case scenario, understanding their own limitations. Worst case plans make a good starting point, and can assist towns in requesting resources in an emergency. For instance, if a town only has 2 dump trucks, it can still write in the plan that they need 10 for the worst case scenario – they would then know during a disaster to immediately request 8 dump trucks. During Irene, towns were unable to quickly procure needed supplies because they didn't have the appropriate credit lines. There weren't enough ambulances to transport everyone that requested one, resulting in additional onsite treatments and judgment calls by first responders about who required and ambulance. If citizens were adamant that they needed an ambulance, the first responder would wait for an ambulance to become available.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- As Mutual Aid wasn't available, First Responders worked with the resources available in their community.

X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	As responders were working with limited resources, the Incident Command System was used to prioritize resource use. As a result of this response, many communities feel empowered; on their own, and with limited resources, they were able to keep communities together and limit loss of life and property. Using a model from Pennsylvania, one town requested that horse riders be available to assist isolated individuals with wellness checks and deliveries. Even though Memorandums of Understanding were not in place, towns that were less affected assisted the towns most impacted.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Road crews should fall into the category of First Responder, and be provided with the appropriate training and equipment to fill that role
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A

Analysis	During an incident, if the road crews aren't out on the road, no one can respond. For Tropical Storm Irene, many road crews were not considered 'first responders', so they were not provided with the appropriate training or equipment to do their jobs. Road crews were not trained in ICS, so they were unable to understand the structure. Road crews created working environments that were unsafe for incidents, such as putting large machinery near a river that was about to flood. In addition, road crews were not equipped with radios, so they were unable to communicate with other first responders.
Recommendations	See Appendix A: Improvement Plan

Activity 1.4: *Establish Collaborative Structure and Process for Government and Non-Governmental Entities at All Levels*

Observation	PSD A/B- In many towns, local relationships existed before Tropical Storm Irene and aided incident response.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	□ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	2. N/A
Analysis	Many relationships were established in previous incidents when communities needed resources that weren't available. During this incident, towns that weren't as heavily impacted offered assistance to other communities, in the form of staff, equipment, shelters, swift water teams, volunteers, food, etc. In many of these communities, the towns are very close geographically and emotionally; many of the children have gone to school together. Some of these relationships come with training, coordination, and trust. Once you have established these relationships, they remain for future incidents. During the spring storms, emergency responders were coordinated for response; these coordination efforts continued during Tropical Storm Irene. In one town, paperwork was already assembled from the spring storms – it just needed to be filled out for Tropical Storm Irene. Emergency Operations Centers were already set up, and ready to be activated.

	Some of the relationships in town get taken for granted. For instance, some town clerks know everyone in town and what they are doing at every hour of everyday. Though these communities have close relationships, many do not have official agreements. This means that communities either can't, or have a difficult time, receiving reimbursement for goods and services provided to other towns during an incident. Memorandums of Understanding or Mutual Aid Agreements should be established pre-incident with costs agreed to in writing. This issue needs to go to policy makers now and show the benefits of written agreements and fostering relationships ahead of time.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B Many State and Regional agencies have developed positive local relationships that aided in incident response
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Vermont 2-1-1 has established positive local relationships over the years, and is part of their planning efforts. Vermont 2-1-1 has contact with several EMDs and has worked with them over the last 5 years. These relationships led to good reporting to Vermont 2-1-1 from town officials, but there were some expectation issues that need to be addressed. Local officials knew to call Vermont 2-1-1, but they didn't know why to call them and what to expect. Vermont 2-1-1 explained processes when local officials called them, but it was frustrating for towns. For example, in one town the select board said that they needed to call Vermont 2-1-1 because the Federal Emergency Management Agency was coming to town the next day, and this confusion came from the Federal Emergency Management Agency response during spring flooding. Regional Planning Commissions have established positive local relationships over the years, and is part of their planning efforts. Continuing to build those relationships through face-to-face networking

	pre-incident is very important. Members of the Vermont State Police have established positive local relationships. When Vermont State Police members were at the State Emergency Operations Center, these local relationships were already in place, as well as the local knowledge to help respond to the incident. It is important to develop these relationships in advance so there is already trust built; you don't want to meet the town fire chief at the incident. Vermont Hospitals meet monthly, so they are used to aiding each other. These monthly meetings keep relationships strong, but hospitals should also create more local relationships. Some of these hospitals now also include contacting Vermont 2-1-1 in their emergency plans. One local hospital also has relationships with Vermont Emergency Management and the Vermont State Police; which made it a lot easier to communicate back and forth during this incident. Vermont Department of Health District Offices have had limited relationships with Town Health Officers. Due to budget cuts, all town health issue calls are answered centrally. During Irene, relationships between Town Health Officers and Vermont Department of Health District Offices were re-established. It is important to keep these relationships local, while creating trust at the state level. All officials, local, regional, and state, that would be responding during an event should go out and meet people. When you get a new role, you should go introduce yourself to the people you could be working with; EMDs, town officials, even local stores. Everyone is busy, but you need to make time for those connections. Local Emergency Planning Committees are a great place to meet officials; and through Local Emergency Planning Committees responders can participate in drills and exercise. If drills and exercises aren't happening through your Local Emergency Planning Committee, you need to make them happen. Emergency Response officials should also attend meetings of civic groups (Lions, Elks, Moose), and other local groups. It is important to know all of the community, not just those involved in emergency response.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- It is important for local, regional, and state officials to be involved in Local Emergency Planning Committee.
☐ Noted Strength	X Area for Improvement
Capability Element	

☐ Equipment ☐ Organization X Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Local Emergency Planning Committee (LEPC) By-laws
Analysis	It is important for more officials to become involved in emergency planning, specifically in their LEPC. This can be accomplished by having food at LEPC meetings, providing training, and making the meetings relevant to local officials. Paying for trainings becomes tricky, because if you pay for trainings for responders, then other groups will not come. You can also include a mutual aid meeting after the LEPC to give people another reason to come. One LEPC has raised membership by doing a lot of outreach, one LEPC rotates the location of the meeting, and another committee does an exercise at every meeting to get people involved. One LEPC is currently considering disbanding if people do not get more involved in the commission. Getting people to the LEPC table is town specific – there is no broad solution to get people involved. In some towns, the Fire Chief might be on the select board or school board, so unable to attend meetings. LEPC need new blood. There is a core group of people who attend meetings because they care about their communities, but they can't do everything. There are a lot of people that want to sit back and let people help them, without volunteering themselves. Post-incident is the teachable moment on the importance of Emergency Planning and trainings/exercises. The Homeland Security Unit has worked with LEPCs on exercises, but you can't keep exercising without fixing issues. Exercise participants need to fix the issues before any new exercises begin. LEPCs should work to get one person from each town to attend the regular meetings. LEPC Chairs should hold an annual meeting; with participation from Regional Planning Commissions. This should be an unstructured event that is a few hours for LEPC Chairs and Officers to sit around a table and discuss issues and propose solutions. LEPCs should work together on officer training; or at least have the State Emergency Response Committee create job descriptions for officer positions. There was a draft document that include the duties of LEPCs and the by-laws; but this document really just described what they should be doing, not what they were actually doing. Some people wouldn't mind being LEPC Chairs, but they aren't sure that they could fill the role properly. Most of these people are first responders that are being asked to fill out a lot of documentation with

	limited assistance. The State should develop and sponsor training for potential chairs.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Due to pre-established relationships, towns were able to assist each other in Tropical Storm Irene response and recovery
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Due to past incidents, many towns know that when flooding starting in one town, it will show up in other towns just a few hours later. Many of these communities have worked together to create early warning relationships that assist towns in preparing for imminent floods. Mutual aid does help to know what resources are available, and to assist in reimbursement. It is great that towns want to help, but if the aid is planned out, it makes it much easier to recover expenses. During the recovery phase, towns that had Long Term Recovery Committees opened these committees up to towns that didn't establish committees. This strengthens town to town relationships.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Emergency Response staff should be prepared to work in an emergency response environment
☐ Noted Strength	X Area for Improvement
Capability Element	

☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Emergency Response agencies should work with staff to ensure that they are prepared to function during an incident; including ensuring that staff are prepared to work in the same building without leaving for one week. Staff should be encouraged to create and use go kits, and have an emergency plan with their family.
Recommendations	See Appendix A: Improvement Plan

Capability 2: Planning

Planning is the mechanism through which Federal, State, local and tribal governments, non-governmental organizations (NGOs), and the private sector develop, validate, and maintain plans, policies, and procedures describing how they will prioritize, coordinate, manage, and support personnel, information, equipment, and resources to prevent, protect and mitigate against, respond to, and recover from Catastrophic events. Preparedness plans are drafted by a litany of organizations, agencies, and/or departments at all levels of government and within the private sector. Preparedness plans are not limited to those plans drafted by emergency management planners. The planning capability sets forth many of the activities and tasks undertaken by an Emergency Management planner when drafting (or updating) emergency management (preparedness) plans.

Unlike the other target capabilities, the attributes of planning are difficult to quantify, as individual planners may have considerably varied education and experience and still produce plans that lead to the successful implementation of a target capability. The focus of the Planning Capability is on successful achievement of a plan's concept of operations using target capabilities and not the ability to plan as an end unto itself. Plans should be updated following major incidents and exercises to include lessons learned. The plans should form the basis of training and should be exercised periodically to ensure that responders are familiar with the plan and able to execute their assigned role. Thus, it is essential that plans reflect the preparedness cycle of plan, train, exercise, and incorporation of after action reviews and lessons learned.

Activity 2.1: *Develop/Revise Operational Plans*

Observation	State Level AAR- Pre-incident planning was effective but challenged when the State Emergency Operations Center was forced to relocate.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont Department of Public Safety Continuity of Operations Plan. 2. Vermont State Emergency Operations Plan

Analysis	Having staff arrive on site ahead of the storm worked well; staff members were able to arrive on site and prepare for the upcoming incident. The advanced planning for this event was great – all agencies were communicating, until the State Emergency Operations Center (SEOC) was forced to move. Once the State Emergency Operations Center had to move, communications and information technology connectivity issues continued which negatively impacted incoming phone calls, interrupted email and listserv access and restricted external DisasterLAN access. People were in a new facility and untested facility with an unfamiliar communications and IT network. Overall, people did well working with these limitations because of previous training opportunities in which the team worked together, but there was a period of 24-36 hours in which the magnitude of the communications gap with the towns and external partners was unclear. The technology pieces were available when the SEOC Incident Coordination Team (ICT) arrived on site but the limitations of the provided systems were not immediately clear. Operational briefings before shifts were very helpful; agencies were able to see goals and what had already been accomplished.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The State Emergency Operations Plan (SEOP) should be updated, trained, and exercised based on the lessons learned from recent incidents.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State Emergency Operations Plan

Analysis	Parts of the SEOP were not effectively implemented during Tropical Storm Irene. The SEOP discusses the use of Emergency Operations Centers by specific agencies. These Agency Emergency Operations Centers might work well for some agencies, but it is important to consider the type and magnitude of the incident and how the components of the state multi-agency coordination system are most effectively employed. Agency Emergency Operations Centers take additional resources, and can lead to duplication of efforts. The SEOP doesn't clearly map communications from top to bottom. Contacts exist, but they do not get contacted because there isn't a map. When the SEOP is exercised, it generally focuses on response, with limited attention paid to recovery. Businesses and the private sector should be more effectively integrated into the SEOP; the state should reach out to the business community and find out how they are willing to assist. Upon change in administration or annually, the senior administration leadership should be familiarized with agency roles and responsibilities as outlined in the SEOP.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Emergency Statutory Authorities were not understood by all agencies.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. Vermont Statutes

Analysis	During Tropical Storm Irene, the Department of Public Safety was able to utilize a statute that allowed the Vermont State Police to fall under the Department of Public Safety Commissioner. This solved a lot of issues and allowed the Department of Public Safety to get information out in a consistent way. Some agencies did not realize the Emergency Statutory Authorities available to them, and this lead to an ineffective use of resources. Agency reviews of existing emergency authorities are appropriate at this time.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Many towns do not understand the importance of the Emergency Management Director position.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment X Organization ☐ Personnel ☐ Planning ☐ Process ☐ Training	
References (Standards, Policies, or Plans)	1. N/A
Analysis	There is a lot expected from the local Emergency Management Directors, but this position hasn't really been emphasized. Usually the person filling this role is wearing multiple hats, and not fully trained in how to fill any one of them. A few days into this incident, each Emergency Management Director should have known the status of their roads, what had been accomplished, and what was being planned; as well as who to report all of this information to. This is a huge position with lots of responsibilities; when people realized that during Tropical Storm Irene, some just quit. Many Emergency Management Directors receive emails, and assume they will never be needed to fill that role. It is getting tougher to fill volunteer positions on the local level; select boards and towns need to take this position seriously. Vermont Emergency Management holds Emergency Management Director trainings, and they should be contacted with specific needs. LEPC should host Emergency Management Director trainings in conjunction with their LEPC meetings. To capitalize off Tropical

	Storm Irene, Emergency Management Director training should happen now; so there isn't time for people to forget about it. This needs to be marketed in a positive way to encourage people to get involved. Town meeting time is the perfect time to advertise – all Emergency Management Director information is updated at town meeting day.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Agency Continuity of Operations Plans (COOP) are not complete or current.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Agency Continuity of Operations Plans
Analysis	Every Agency and Department has a Continuity of Operations Plan, but many agencies are unaware of this plan and didn't execute it during this event. Some agencies know their Continuity of Operations Plans, but their plans didn't adequately address the use of alternate facilities. The plans reflected personnel challenges based on pandemic planning. Additionally, the plans didn't include adjustments for large-scale events regarding identifying essential tasks. Some essential functions don't become essential until a certain amount of time has passed, and they should be addressed in Continuity of Operations Plans. This approach has the potential to more effectively use the work force. Some of these agencies also found that, because the Continuity of Operations Plan went into action, the contact numbers in the plan no longer worked. To circumvent this issue, one agency kept the same phone number and had it forwarded to a different phone. This allowed anyone who had their contact number to continue to reach them, even though they were no longer on site. Some agency Continuity of Operations Plans directly conflict with other agency Continuity of Operations Plans. For example, one

	agency Continuity of Operations Plan alternate site is the primary site for another agency. Some agencies found that their alternate sites were sites that would be affected by similar events; alternate sites were found either in the same town or a near-by town. When agencies have written Continuity of Operations Plans, they should also exercise these plans. Plans should be executed to make sure that they work.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Continuity of Operations Plans may not be consistent with the current Vermont State Employees collective bargaining agreement.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Employees Collective Bargaining Agreement 2. Agency Continuity of Operations Plans
Analysis	The number of state agencies and employees for which alternate work sites had to be found was overwhelming during Tropical Storm Irene. There was confusion about the implications of designating alternate work locations, indicating that state offices were "closed" and use of employees to perform essential functions in the field or in the SEOC or other state facilities supporting response or recovery. Some Continuity of Operations Plans say that employees should work from home, but under the current state contract language, those employees would be paid double pay if they worked from home. The double pay section of the contract was based on the theory that if you told someone to work when the office was closed, like during a snow storm, that being forced to work would be dangerous and subject to additional pay. This section was put in the contract without thinking that an office could be closed for multiple weeks, and it created many issues during an emergency situation. If the Vermont State Employees Contract stated that, during an emergency, all state employees should go to their designated

	Continuity of Operations Plan site; it would act as a 'reassignment' of employees and eliminate many issues. Burnout was a common factor as the many state workers who were on their jobs were stretched further and further to address the needs. A further consequence of Irene was the apparent waste of manpower as hundreds of state employees sat idle instead of contributing to response and recovery efforts or continuing work for clients. All Continuity of Operations Plans should be revised now, since it might take a while for the state contract to be revised.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The closure of state office buildings caused some confusion with the public about available services.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State After-Action Review
Analysis	A combination of the severity of Tropical Storm Irene and the perfect storm of communications breakdowns and emergency relocations exposed weaknesses in many departmental continuity of operation plans. Most plans dealt with options for providing services within the framework of phone outages or short-staffing; few dealt with computer and database failure or complete relocation of offices and staffing. Infrastructure impact was often not a part of continuity planning or had not been fully thought out with multiple options in place. Even communicating the status of offices was not consistent from department to department and served to confuse the public. "State office closed" led many to believe there were no services being provided at all; while some programs continued to provide services but failed to communicate that to clients and the public. There was inconsistent implementation of policies restricting work from home or emergency sites and administrative misinterpretations of policies conflicted with plans for continuing operation. In addition, planning for alternate locations for departments has always been handicapped by a lack of readily available

	facilities convenient to staff or lack of capacity to make investments that would make designated facilities functional upon occupation. There was a lack of awareness and education in offices on the part of staff who did not know of their emergency plans and who had never been trained on them.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The lack of consistency with State agency district boundaries causes difficulties in coordinating information flow either to or from the towns and the general public.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment **X** Organization ☐ Personnel ☐ Planning ☐ Process ☐ Training	
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. State agency administrative plans
Analysis	Because Counties are not effective governmental entities in Vermont each state agency with district offices has drawn up boundaries that make sense to that agency. The number and location of district offices varies among agencies. When disasters occur, state agencies and organizations involved in response and recovery are impeded in those areas where there are coverage conflicts. For example agency X includes towns ABC in its district while agency Y includes those towns in a different district with an office many miles away.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- As Mutual Aid wasn't available, First Responders worked with the resources available in their community.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning X Process ☐ Training	
References (Standards,	1. N/A

Policies, or Plans)	
Analysis	As responders were working with limited resources, the Incident Command System was used to prioritize resource use. As a result of this response, many communities feel empowered; on their own, and with limited resources, they were able to keep communities together and limit loss of life and property. Using a model from Pennsylvania, one town requested that horse riders be available to assist isolated individuals with wellness checks and deliveries. Even though Memorandums of Understanding were not in place, towns and areas that were less affected assisted the areas most impacted. **Previously identified on page 55.**
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Based on emergency planning that was done ahead of the storm, First Responders were able to more effectively respond.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	As this was a foreseeable event, some communities checked on culverts ahead of the storm and cleared out any drainage issues. These communities felt that this was an effective process and resulted in fewer culvert issues in their town. Some community's emergency planning efforts included identifying areas that were prone to flooding, and then identifying trigger points for those areas as well as emergency contact information. Through those plans, towns were able to monitor the progress of the storm and foresee issues before they arose. Irene was able to test most Emergency Operations Plans, and because of these 'tests', plans are now in the process of being updated to include identified issues, gaps, and best practices. Unlike the statutory requirement for the SEOP, there is no such

	requirement for local EOPs.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- First Responders would have been able to respond more effectively if they had better situational awareness about water levels.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Responders were unable to make educated decisions about evacuations and driving routes because they didn't have up-to-date situational awareness. All communities would benefit from having trained spotters updating river and stream gage information. These trained spotters should not be from the pool of first responders, they should be community members that are trained to safely monitor river levels from a safe distance. Reassess the placement of or need for additional river gages.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- The Regional Planning Commission (RPC) role during incidents is not clearly identified.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan

Analysis	During Tropical Storm Irene, RPCs took on the role of quasi-governmental agencies that created, provided and gathered information. The capability of RPCs to do this or other roles that some RPCs assumed during Irene, are not consistent with each RPC. As Vermont doesn't have county government, Regional Planning Commissions tend to fill that role. Regional Planning Commissions act as clearing houses for towns – and they should simply expand this role during emergencies. Regional Planning Commissions already have the knowledge, contacts, and equipment within their regions to effectively fill this regional role – there is no reason to create another agency. 12 Regional Planning Commissions are able to handle 251 towns easier than 4 Public Safety Districts. Regardless of what you call it, some sort of regional coordination body needs to be created at the beginning of the incident to take the load of local Emergency Operations Centers – easing communication and allowing local Emergency Operations Center staff to go home at the end of the night. These coordinating bodies need to have boundaries that are similar to Vermont Agency of Transportation and Vermont State Police, so they can work together. Plans for a regional coordination body should not be created – it will restrict the actions that the agency can take during an incident. Sometimes they may need to function one way, sometimes another – they shouldn't be forced into a role, rather they should be allowed to evolve into whatever role is needed. Regional Coordination Centers shouldn't have plans written for them, but there should be a broad statement about what they are and that they are a potential asset.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Regional Planning Commissions did an excellent job acting as mappers during Tropical Storm Irene.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A

Analysis	Regional Planning Commissions serve towns on a regular basis with information relating to maps; they already have culverts and roads mapped out, and have relationships with town road foremen and emergency responders. During Tropical Storm Irene, towns requested that Region Planning Commissions create local road maps. Regional Planning Commissions were able to utilize their resources, such as GIS software, a plotter, and trained personal, to produce the most detailed local road maps. These local road maps were utilized by towns, Central Vermont Public Service, Vermont State Police, and emergency responders. When the Vermont Agency of Transportation requested local road information, Regional Planning Commissions were able to provide it; even though it wasn't in a format that Vermont Agency of Transportation wanted. During Tropical Storm Irene, RPCs discovered culverts and bridges that they were not aware of – making their standard maps even more detailed.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- There needs to be a long term statewide river management plan with knowledgeable local and state input developed.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. ANR River Management Plan
Analysis	There is considerable concern at the local level among officials and citizens alike that the current condition of rivers and streams is a serious potential hazard the next time Vermont gets a significant rainfall or snow melt. Traveling in recent disaster areas reveals widespread debris fields that could enter these streams again and damage recently repaired or not previously damaged bridges and roads. Even if a review of the current river management plan were conducted and the plan were found to be perfect, local officials do not feel that they have had adequate input to the plan and do not agree with the way it is implemented. Stream channel changes affect property lines and access to homes. There may be considerable pressure in the upcoming legislature to

	placate constituents and make changes to the way rivers and streams are managed in Vermont. Some of these changes may be contrary to the science of river management.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- The State of Vermont should plan for and implement Regional Coordination Centers before the next disaster.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Continuity of Operations Plan (COOP) page 45. 2. SSF Annex 5 Emergency Management, Recovery and Mitigation Standard Operating Guidelines page 2 and Tab 2 page 26. 3. State of Vermont SEOC Base Plan 2009, Table of Contents-Roles and Responsibilities. 4. VT SEOP Tab B SSF Annex 5 Alternate EOC, Page 12.
Analysis	The SEOP refers to Regional Coordination Centers (RCCs). Written plans and procedures for those RCCs developed during the CATEX were not implemented during TS Irene. Additional work on how those RCCs are going to be staffed, trained, equipped or how they will interact with municipalities, RPCs, state agencies, State Support Functions or the State EOC. Even when there is a disaster considerably smaller than TS Irene, the State EOC may have difficulty managing and prioritizing resources with large numbers of affected municipalities. Because it is Coordination and not Command, the number of municipalities dealt with effectively by an RCC will be higher than 7 but certainly a lot less than 251.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Continuity of Operations Plans need to be exercised
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. Department of Public Safety Continuity of Operations Plan 2. Vermont 2-1-1 Continuity of Operations Plan 3. Vermont Department of Health Continuity of Operations Plan 4. Dispatch Continuity of Operations Plan
Analysis	The State Emergency Operations Center had a plan for Continuity of Operations with Information Technology, but it didn't work during the incident. Phone lines should have been ready to use at the auxiliary site, but they weren't. The Department of Information and Innovation connections that were in Montpelier should be moved and backed up. These lines are currently located in a basement that is known to flood. Vermont 2-1-1 Continuity of Operations Plans also didn't work; the plans weren't comprehensive enough. The Vermont Department of Health lost email for a week, and the Continuity of Operations Plan didn't take that into consideration. The Continuity of Operations Plan should plan for a storm that was worse than Tropical Storm Irene. Some Vermont Department of Health staff felt that without email they were better informed; and that once email came back, staff members were out of the loop again. Some Vermont Department of Health staff felt that email was a necessity, and that not having a backup email system hindered response. The Department of Health did not allow staff to utilize Gmail for legal purposes; but some staff members were able to receive updates through Facebook. One hospital said that they were not contacted by the Vermont Department of Health about the Vermont State Hospital being evacuated, and that they had psychiatric patient beds that could have been utilized. The Vermont Department of Health used HC Standard to move patients. Dispatch computers went down, so operators resorted to paper and pen as well as mobile data machines. Some aspects of this worked, but it needs to be planned out better.

	Email, DisasterLAN, cellular phones, landline phones, and radios should all be redundant communications systems. It is in the state's best interest to ensure that there is 100% cellular phone coverage throughout the state of Vermont. If there isn't 100% coverage, you can sometimes order temporary cellular phone sites (COWS) that can be set up in an emergency. These can be attained through the carrier. The state should consider getting a few of these to store in state. The State Emergency Operations Center should have a bank of cellular phones that are used during all emergencies. These cellular phone numbers, along with a list of local Emergency Response numbers, should be made available to local officials so you know who to contact in an emergency. There should also be a backup 800 number to the regular 800 number in case the regular number is unable to work.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Towns need to coordinate Animal Shelter Planning
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Agency of Agriculture Disaster Animal Response Team plan.
Analysis	If a formal process is not in place for moving pets with people, people will not evacuate. One town found a local kennel that would take pets if people had to evacuate, but that needs to be planned for in the future. The Agency of Agriculture has some general Disaster Animal Response Team information; LEPCs should review the resources available. During this event, people showed up at one shelter location with a litter of puppies; and the shelter allowed it. Most general population shelters do not allow domestic animals other than service animals. The designated regional mass care/medical surge facilities around the state have provisions for pet care.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Towns were able to establish Disaster Animal Response Teams in response to this incident
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Towns have wanted to establish Disaster Animal Response Teams for a long time, but the planning efforts weren't able to take off until Tropical Storm Irene. One Vermont Department of Health District Office found that shelter residents were cohabitating with animals. They were able to make contact with the local Humane Society, based on relationships that were established during the spring flooding. The cohabitating issue was addressed, and now this town has a Disaster Animal Response Team. Some LEPCs are looking beyond companion animals into dealing with larger animals. Phase one will be figuring out companion animals, phase two will be working with agricultural animals. University of Vermont already does a lot of work with agricultural animals and have been an excellent resource.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Towns are now scheduling Community Emergency Response Team trainings to incorporate Disaster Animal Response Teams and Medical Reserve Corps
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A

Analysis	Post-incident, communities realize the importance of having Disaster Animal Response Teams, Medical Reserve Corps and Community Emergency Response Teams. One community is working to combine these teams into one, with a single oversight committee. These teams would be Community Emergency Response Teams, and members could choose to specialize in Medical Reserve Corps or Disaster Animal Response Team. Currently, there are 40 people interested in this team; and the Humane Society has a facility that the team could use to house animals.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The Financial Management Annex of the State Emergency Operations Plan needs to be updated.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State Emergency Operations Plan 2. Local Emergency Operations Plans
Analysis	During past incidents issues have been very localized and small, so the Financial Management portion of response and recovery was easier to understand. During Tropical Storm Irene response, the Financial Management Branch was not present at the State Emergency Operations Center. The Financial Management Branch is currently reviewing the Financial Management Annex and making updates based on Tropical Storm Irene. There are gaps between what the plan is, and what the Finance Branch feels the plan should be. Emergency procedures for state financial commitments were not in place or available during response and response support operations. A Finance and Management working group has been developed, but there are still issues with understanding Federal Emergency Management Agency Guidance. Vermont should consider establishing a fund that is used for emergencies only. This fund would be one pot of money that would make ordering and billing a much easier process.

	Town finance is an ongoing issue; some concerns include cash flow, timing, and taxes. The Federal Emergency Management Agency can take a long time to reimburse funds, and towns hold the debt until they are reimbursed. The Irene Recovery Group is trying to work around the cash flow issue by providing towns with letters stating how much money the town is expecting to receive from the Federal Emergency Management Agency. The State has also been able to borrow some money with the AAA credit rating.
Recommendations	See Appendix A: Improvement Plan

Activity 2.2: *Validate Plans*

Observation	State Level AAR- Some agencies use the Incident Command System on a daily basis, making it easier for staff to utilize during an incident.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment X Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Some agencies are organized using the Incident Command System as a model; this normalizes the Incident Command System structure and makes emergency response easier. Some agencies are currently working to have people identified ahead of time to fill the Incident Command System roles when an incident occurs. For this model to work, it must have the understanding and support of senior leadership. Some appointed officials aren't exposed to the Incident Command System, so it is important to familiarize them with it to gain their confidence in it. Incident Command System classes are available online, but it would be nice if there were statewide trainings.

Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The inability of state agencies occupying the Waterbury Office Complex to fully execute their COOP plans initially had a negative impact on services provided to Vermonters.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State Continuity Of Operations Plan (COOP) 2. The Vermont State Emergency Operations Plan (SEOP)
Analysis	State Agencies are all required to have and be part of a consolidated Continuity Of Operations Plan (COOP). This plan is designed to enable state agencies to continue to operate when affected by disasters. State agencies with offices in the Waterbury Complex were in a known vulnerable location with multiple single points of failure. Preparations for the storm which was forecast days in advance varied but generally were not sufficient. Agencies were able to tell employees by public media not to come to work but had difficulties contacting those employees individually to determine their safety or to assign them to other locations. Many employees were left at home with full pay and benefits without a place to work. It was a major time consuming effort by Buildings and General Services to relocate various offices. Meanwhile routine work normally performed by those offices did not occur and the ability to assist in disaster response and recovery was diminished. It was not clear from the After Action Review (AAR) whether the COOP was deficient or whether it was not followed or some combination of both.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Previous drills and exercises were helpful to those who had participated.
X Noted Strength	☐ Area for Improvement
Capability Element	
☐ Equipment	☐ Planning

☐ Organization ☐ Personnel	☐ Process **X** Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. Local BEOPs
Analysis	There have been a number of drills and exercises over the last few years that have been very beneficial to participants from state, regional and local organizations. In many cases there have been people with several years' experience. These folks help form the nucleus of a good disaster response and recovery command/coordination post or center. CATEX 2010 was one of these exercises. Its' scenario was very similar to the situation in Tropical Storm Irene. In addition to this exercise experience some of the participants in Tropical Storm Irene had been involved in small incidents that provided additional experience. Special Team (USAR, Hazmat and NG Units) training and exercising led to successful life saving response for at least 60 people.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- There needed to a more defined process for emergency closing of the state offices.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	There seemed to be confusion as to if there is a COOP that is followed for emergency closing of offices or complete complexes. With the emergency closing it was then questioned as to how many of the employees unable to go into their normal jobs could then be asked to respond and work in the SEOC. It was noted by some that security at the Waterbury complex was lax as some, when it was safe, went to their labs to gather supplies and found strangers in the labs going through supplies. This was noted for several office areas at the complex.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- The group consensus identified the HSEEP exercises along with ICS training prepared the attending communities to begin planning and defining the command structure up to a week before Hurricane hit.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning ☐ Process X Training	
References (Standards, Policies, or Plans)	1. HSEEP VT Guidelines 2. ICS Guidelines 3. Local BEOPs
Analysis	The consensus of the group was that towns who took advantage of the state exercise and training program fared better than those who didn't. All-Hazard scenarios helped them know their plans for response. The CATEX was greatly appreciated by those in the Troop C facility in Rutland. They practiced at the CATEX by having to evacuate the facility and set it up at the alternate site. It became a reality during TS Irene. Communities and response agencies began their planning several days in advance of TS Irene many identifying the ICS training they have taken over the past few years helped them in defining their command structure for this incident.
Recommendations	See Appendix A: Improvement Plan

Capability 3: Restoration of Lifelines

Restoration of Lifelines is the capability to initiate and sustain restoration activities. This includes facilitating the repair/replacement of infrastructure for oil, gas, electric, telecommunications, drinking water, wastewater, and transportation services.

Activity 3.1: *Develop and Maintain Plans, Procedures, Program, and Systems*

Observation	PSD D- There is a strong need for Memoranda of Understanding (MOU) and/or Area Mutual Aid Agreements (MAA) between towns concerning assistance with road repair.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Towns should not expect the state or federal governments to provide direct assistance in repairing road and bridge damage, particularly in widespread disasters. There are a limited number of contractors available during an event of such size and scope. Towns should also be prepared to help each other. This needs to be carefully documented in a Memorandum Of Understanding (MOU) or a regional Mutual Aid Agreements (MAAs). There are many models to use and there have been successful examples adopted and used in Vermont. These MOUs and MAAs are particularly useful in receiving reimbursement from FEMA in the event of a disaster.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Towns communicated with each other to address known road issues.
X Noted Strength	☐ Area for Improvement
Capability Element	

☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Local Emergency Operations Plans
Analysis	Many towns share common roads that have experienced issues in the past. When a road in one town is no longer usable, many times this isolates areas of other towns. Pre-incident, towns worked together with highway departments to discuss how to provide access to isolated areas, in particular access for emergency vehicles. Plans were created establishing alternate routes and emergency workers in all towns knew how to respond if certain roads became cutoff. Plans were also created to address rising waters surrounding the roadways. The plans identified trigger points, such as a river reaching a certain level, which would prompt a local Agency of Transportation worker to physically visit the site. Towns communicated with each other so no one was surprised.
Recommendations	See Appendix A: Improvement Plan

Activity 3.2: *Implement Restoration of Lifelines*

Observation	PSD D- Vermont National Guard Engineer units were eager to help and communicated often and very effectively with town officials and road crews.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State of Vermont Emergency Operations Plan

Analysis	National Guard engineer units are highly trained and experienced in making quick and effective repairs to a variety of bridges, roads, streams, etc. Military training provides an emphasis on clear and concise communications. Guard officials involved local officials in frequent briefings to describe what equipment and capabilities the Guard had in their community and what the Guard proposed to do. This allowed local officials to adjust their work plans accordingly. Local officials had input to daily work plans and received frequent verbal status reports. The towns receiving the assistance by the Guard not only appreciated the assistance but also the collaborative manner in which it was provided. The Guard assisted many towns including Wilmington and Pittsfield. These attributes were greatly appreciated by the towns who received their assistance.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Because of the massive damage to state highways, the Agency of Transportation was unable to directly assist towns or coordinate resources for towns.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	As a result of Tropical Storm Irene, the state highways were so severely impacted that every state resource was needed to assist in state highway repairs. The towns had to use their own local resources to repair the damage. Towns with disaster experience in the recent past appeared to be better prepared to make these repairs. Most Vermont towns have relatively small road crews. For example; the towns of Dummerston, Guilford, and Vernon have from 25 to 66 town road miles to maintain with 3 or 4 persons on their road crews. These road crews are overseen by a select board of 3 elected officials. Towns generally hire people with the necessary licenses and some construction experience for their road crews, but training consists of mostly on the job experience and consists of mostly equipment operation. Town road crews are generally intimately familiar with the roads in

	their town but have very little design or engineering experience. If a road crew needs training on a new piece of equipment or how to make special repairs in a disaster, it generally must come from an external source. Select board members often have little formal road building or repair training or experience.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- State and town road crews were highly motivated and focused on repairing roads as quickly as possible.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Clearly the feat of repairing over 500 roads and 200 bridges to an acceptable level of use in about four months should be celebrated and acknowledged as a monumental accomplishment. Both State and local road crews should take great pride in the success of their effort. Organizational abilities and teamwork were clearly identified. In many towns great stretches of road were destroyed and many bridges and culverts washed out. Hundreds of thousands of yards of gravel and crushed stone had to be delivered and placed in gaping holes to bring the roads back to a passable condition. For example, Vermont Route 107 had to be rebuilt from scratch with large rocks brought in by train. Construction companies went from having little work to being maxed out in a matter of hours. Both state and town officials had to quickly come up with repair plans and find and employ the resources to accomplish them. This required exceptional organizational abilities and teamwork. As an example, in the town of Grafton the Incident Command System Resource Unit "T" card system was used to document where each resource was being employed each day.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Further assessments need to be made of state and local roads that were temporarily repaired, as well as streams and rivers that were affected in the process.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Some of the repairs made to restore transportation routes before winter were temporary. Local officials have expressed concerns about these short-term repairs for both state and local roads. In an effort to restore transportation lifelines as quickly as possible, in most cases there was not enough time to conduct engineering studies of the roads and bridges prior to repairing them. In some cases the repaired roads may settle in places or become impassable in mud season. In other cases repairs to stream banks may not be sufficient to keep the stream from washing the road out again. Some of this hasty repair may change the stream flow when high water occurs again. It is probable that some of these repairs will need to be revisited. Some of the rivers had repairs made that may cause future issues. There is still a lot of debris in the vicinity of damaged streams and roads that could become part of the next disaster.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- The cooperation and assistance provided to impacted towns by neighboring towns was exceptional.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A

Analysis	The concept of neighbor helping neighbor was truly exhibited in many communities. Not only were private citizens helping each other but neighboring towns were helping each other in the repair of road, bridge and culvert damage. If there were any issues between the towns before the disaster, they were dropped and assistance rendered promptly. In some cases the assistance arrived without a request needing to be made.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Some towns organized citizens who owned various types of useful equipment into effective teams to assist their town road crews.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	The rural character of Vermont causes many of its farmers, loggers and citizens to own tractors, skid steers, dump trucks and a wide variety of useful attachments such as back hoes, hydraulic booms, landscape rakes, chain saws, etc. Many of these owners are quite competent using their own equipment. If not organized with prioritized tasks by town officials, these folks may become a problem by self- deployment to fix town roads. If properly organized, supervised and tasked with projects appropriate to the equipment that they own, these individuals can be a very powerful addition to the town road crew. It can be a town decision on whether to provide them with fuel, food or reimbursement. Quite often there are citizens in a town who have experience organizing and supervising people and equipment who can assist the town road crew in making a good use of this resource. This worked particularly well in the town of Cavendish. If town officials maintain a contact list of skilled citizens with useful equipment, they can be mobilized and assigned appropriate and prioritized tasks in a timely manner. It is understood that many of these pieces of equipment are not construction sized and may take longer to accomplish a task but in an emergency they are a lot better than waiting days or weeks for town or contractor equipment to make a road passable.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- Both State and local road crews worked long hours and made difficult repairs to a variety of damaged roads, culverts, bridges, etc.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	State and local road crews worked long hours and in sometimes dangerous conditions to repair roads and restore access to communities. What was accomplished in the weeks after Tropical Storm Irene struck on August 28, 2011 is remarkable. The dedication and training of these road crews was evident in the results that they achieved. Public opinion recognized their efforts because of very favorable media stories.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- Cooperation between road crews of neighbouring towns and cities was generally superb.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Due to the rural character of Vermont, most local road crews and officials in adjoining areas know each other and work with each other regularly on various routine matters. When disasters occur they are quick to help each other. Interpersonal communications tend to be very effective. In some cases road crews from neighboring towns arrived to assist in Tropical Storm Irene without being requested.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C & D - Many local roads are not built to a standard to withstand the challenges of frequent rain events much less tropical storms and hurricanes.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Local Road & Bridge Standards 2. CFR 44, 406 mitigation standards
Analysis	Frequently damaged culverts, bridges and stretches of road are replaced with ones of the same size and design. Sometimes this is because of FEMA policies or other budget constraints and sometime it is because local municipalities do not have the engineering resources to determine what is appropriate. In many cases the town is relying upon road crew memory as to the size and condition of culverts and bridges and the construction details of the various roads in town. Given the normal turnover that occurs with road crew personnel, hidden damages to old bridges and culverts may not be identified until a flood occurs. This may cause significant damage to roads that could be prevented with an annual improvement plan based on accurate information that is well documented. Many Vermont towns, particularly ones with few paid staff, will need assistance creating and implementing improvement plans. Although many facilities were reconstructed to local road and bridge standards (AOT guidance), there appear to have been 406 mitigation opportunities missed due lack of understanding of the program at the local and state levels.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- A collaborative working relationship needs to be established between local road crews and local officials and the Agency of Natural Resources, the Department of Environmental Conservation and its River Management Program.
☐ Noted Strength	**X** Area for Improvement
Capability Element	

☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	The perceptions by local road crews and local officials of the performance of agency officials and the River Management Program before, during and after Tropical Storm Irene are not conducive to effective collaboration between state and local personnel. These perceptions may not always be accurate but they affect the quality of interactions between many state and local officials concerning river management issues. One attitude generally endorsed by local officials was expressed on a T-shirt used by a southern Vermont town during the response and recovery efforts: Front- "Fix It Now!", Back- "Apologize Later!" Many local officials feel that officials from the Agency of Natural Resources are more interested in enforcing their rules than in working with local communities to find solutions to common problems. There appears to be very little belief by many local officials that they can expect real help from this agency. They feel that they have very little "buy-in" concerning agency river rules. The feelings expressed by local officials and participants in the AARs are an issue that needs to be addressed and resolved.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- State and local road crews often do not identify and mark alternate routes to closed roads in disasters.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	It has been observed in may storms over the last few years that road crews erect "Road Closed" signs but do not place detour signs to route the public and emergency crews around the closure. Some of the time it is a closed state road and the best detour would be over town roads. Inadequate state and local coordination may be the cause in some cases. Sometimes it is a

	case of not feeling that it is the role of the road crew to establish a detour. Sometimes it is the reluctance of a neighborhood through which the detour would go to have increased traffic. At least some of the traffic over roads that were "closed" during Tropical Storm Irene was caused by the lack of a posted alternative. In the absence of an identified detour, the public will find a route that may not be helpful to the repair effort. If the posting of detours is not well planned before the storm, there may not be enough time to do so in the response and recovery phases. It should be noted that the town of Halifax did have a very effective system of posting effective detours with minimal cost during Tropical Storm Irene.
Recommendations	See Appendix A: Improvement Plan

Activity 3.3: *Demobilize Restoration of Lifelines Operations*

Observation	PSD D- There is considerable concern among local officials that local roads may not be up to a standard likely to withstand future significant weather events.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Local roads need to be at an appropriate standard to withstand serious storms. Do we have the correct standard? Is there agreement of that standard by experts? If so, what is it? Do town road crews and selectpersons have that standard and understand it? There is considerable public discussion about climate change and the likelihood of there being more storms and stronger storms in the near future. Having three significant storms in Vermont in one year is cause for concern. There are questions about whether the categorizing of floods in the number of years between floods method is appropriate. There can be more than one of what is characterized as a 100 year flood in a hundred years. Perhaps there are more useful descriptions that are more easily understood by the public. There is evidence of culverts too small, ditches improperly sized and drained, and poor drainage on many local gravel roads.

Recommendations	See Appendix A: Improvement Plan

Activity 3.4: *Direct Mechanisms to Facilitate the Restoration of Lifelines*

Observation	PSD D- There was a perceived lack of communication between state and town officials regarding the repairs of state roads in affected towns caused concern among town officials that it was an uncoordinated effort.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	State highways and town roads are intertwined. Most state highways pass through cities, towns and villages. If street, road and highway repair is not coordinated between affected municipalities and the state, delays and blockages will occur even in non-disaster times. It is even more critical in disasters. There is a shared responsibility by both towns and the state to coordinate with each other. Additionally town roads may be the best detours for damaged state highways. This requires close coordination. State road crews were sent to fix portions of state roads going through towns. There were reported instances of a lack of coordination between the state and local officials concerning these improvements; specifically where town officials were not aware of what work was to be done.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- There were reported instances in which ANR representatives gave orders directly to town employees and contractors without the knowledge of town officials.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training

References (Standards, Policies, or Plans)	1. N/A
Analysis	Individual employees and contractors are put in a difficult position when state officials order them to do to or stop doing something they have been assigned to do or not do by the town road crew, Incident Command Post or town elected officials. It causes delays and makes for increased work for all. The town of Grafton had to issue orders to their employees and contractors to pay no attention to state officials giving them specific orders. They were instructed to have the state officials go directly to the town Incident Commander. Reportedly the state ANR officials never went to the town officials to discuss or communicate their concerns. If the concerns by the ANR officials were valid, they may never have been implemented.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Federal and state officials with authority over streams and rivers offered conflicting guidance to towns about best practices in correcting the damage caused by the streams and rivers.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning **X** Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Some local officials were visited by different federal and state officials concerning stream and river management and regulation. Conflicting guidance and directives were provided to the local officials. A woman from the Army Corps of Engineers was upset that Grafton did not go through the Army Corps of Engineers, but used other agencies instead, to fix the river. There needs to be a unified message to the public and local officials about river policies. Perceived disagreement by the experts provides justification for local and state road personnel to remove gravel and debris from the river and ask questions later.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- The regulatory and assistance role of state and federal agencies with authority over streams and rivers are not fully understood by the towns.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Because the river management education efforts have not progressed sufficiently, or because they have not been completely accepted by the public or local officials, ANR engineers found themselves trying to educate, regulate and assist towns all at the same time during the disaster response and recovery. Many local officials do not accept the river management policies as they understand them. There were confusing statements quoted in the media by state officials about the ability to go into the rivers without permission. There was difficulty in contacting river engineers and in knowing what the correct process was. Combined with the urgency in restoring roads to reach isolated citizens there was a sense of completing tasks quickly and reevaluating them later. Hindsight shows that there should be a greater urgency to promote credible river management education for the public and for state and local officials before we have another disaster.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- There was a lack of agreement with and understanding of state and federal river management practices on the part of many town and state road crews and town officials.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. N/A

Analysis	One of the most common concerns from local officials and road crews was how the rivers were managed by the state. Many local road crews and officials see the state (ANR) as a barrier to be overcome in fixing the river and retrieving what they view as their gravel. Joining ANR engineers with AOT engineers quieted some of the reaction from state road crews. The State road crews were more receptive to the DEC "river rules" because DEC river engineers were working directly with the AOT engineers. That kind of collaboration did not occur with towns. There were too many towns with damage and too few DEC river engineers. State river engineers have a different view of the rivers than the local officials. This gap needs to be bridged before meaningful management can proceed. There must be an accelerated and more robust education program on rivers for both the public and local officials. There must be an open exchange of comments and questions. Legislators should also be included. This affects not just town road crews and select persons but zoning administrators, planning committees, etc. This is more than a repair issue. It includes significant community development issues. Where we allow future building and rebuilding will affect the impact of next disasters.
Recommendations	See Appendix A: Improvement Plan

Capability 4: Intelligence and Information Sharing and Dissemination

The Intelligence and Information Sharing and Dissemination capability provides necessary tools to enable efficient prevention, protection, response, and recovery activities. Intelligence/ Information Sharing and

Dissemination is the multi-jurisdictional, multidisciplinary exchange and dissemination of information and intelligence among the Federal, State, local, and tribal layers of government, the private sector, and citizens. The goal of sharing and dissemination is to facilitate the distribution of relevant, actionable, timely, and preferably declassified or unclassified information and/or intelligence that is updated frequently to the consumers who need it. More simply, the goal is to get the right information to the right people at the right time.

An effective intelligence/information sharing and dissemination system will provide durable, reliable, and effective information exchanges (both horizontally and vertically) between those responsible for gathering information and the analysts and consumers of threat-related information. It will also allow for feedback and other necessary communications in addition to the regular flow of information and intelligence.

Activity 4.1: *Horizontal Information Flow*

Observation	PSD A/B- There was limited discussion between towns during Tropical Storm Irene
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	During this incident, many people within towns were talking about what was happening, but they weren't talking to other towns. This caused a lot of duplication, and these duplicative efforts didn't deliver consistent results. Different town Emergency Management Directors wanted different information from each town; there was no standard form of information to report.
Recommendations	See Appendix A: Improvement Plan

Activity 4.2: *Vertical Information Flow*

Observation	PSD D- There was nearly universal agreement among local officials that the AOT 511 Road Status System needed replacement or major improvement.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning **X** Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Even when there is no disaster, state and local officials require accurate and timely road status information. Accurate and timely information assists decision making about what route to take for emergency vehicles, heavy equipment transfer, creating safe detours, etc. In disaster response and recovery this information is even more important. Local officials saw the following as challenges with the system: o Only state roads are included. o The mapping feature is weak and not user friendly. o Unclear or inconsistent definitions of road status were used. o Changes were not made in a timely manner. o Inaccurate information was often displayed. o The lack of an accurate "How do I get from here to there?" feature. o The mapping feature does not show detours.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- The new or improved 511 Road Status System must be both negative and positive in displaying both roads closed and routes open information and be useful to both the motoring public and to state and local officials making critical decisions.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning **X** Process ☐ Training
References (Standards, Policies,	1. N/A

or Plans)	
Analysis	There was discussion of whether there should be two versions of the same 511 road status system. One proposed version would be open to the public and one proposed version would be password protected and provide emergency vehicle access information and greater access to GIS data. The difficulty in getting passwords to the appropriate individuals versus having quick access was an issue to be resolved. There was agreement that the system needed to be used for routine issues to be a useful tool during disasters. It takes too long to become trained on a technical solution to be useful in a disaster unless the user is fully trained and experienced before the disaster. In at least the public official version, there would be the ability to obtain recommended detours around damaged roads and bridges using roads that are open only in a limited way for emergency vehicles if needed.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Towns became inundated with duplicative requests, hindering response
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Incident Command System 2. Vermont State Emergency Operations Plan
Analysis	The State Emergency Operations Center was working with towns, but the Federal Emergency Management Agency, the Vermont Agency of Transportation, State Police, the National Guard Key Leader Engagement teams, Department of Health and other agencies were requesting information from towns as well. Three different Federal Emergency Management Agency teams visited the same town, but none of the teams talked to each other, so the town had to repeat the same information every time. This lack of coordination resulted in an information overload and made it difficult for towns to respond to requests. Regional Planning Commissions work with their towns on a regular basis, so they already have established relationships with town officials and have local knowledge. Regional Planning Commissions are able to

	act as information clearinghouses to reduce the amount of duplicative requests. The SEOC did effectively or consistently use existing tools (the spot report and the local situation report) to collect critical information from the towns. Requested essential elements of information should be reviewed by requesting agencies and requests to the towns be consolidated where possible.
Recommendations	See Appendix A: Improvement Plan

Activity 4.3: *Incorporate All Stakeholders in Information Flow*

Observation	PSD D- There was considerable confusion and disagreement among the state and towns over road status classifications and their definitions which led to an unclear picture of road status.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Communication and understanding between organizations in routine situations can be difficult where there are terms used for which there are no mutually agreed upon definitions. The road status classification terms used by state and local officials is a good example. Road Open, Road Closed, Road Closed except for Local Traffic, Road Closed Except for Emergency Vehicles, and various other similar terms had a variety of different meanings. The fact that some roads had state and local road crews adding and removing each other's signs and barriers was one indicator of this lack of agreement.
Recommendations	See Appendix A: Improvement Plan

Activity 4.4: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	PSD C- The inadequacies of the current 511 Road Status system were made

	obvious by Tropical Storm Irene.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning **X** Process ☐ Training	
References (Standards, Policies, or Plans)	1. N/A
Analysis	No town or city road information was gathered or displayed by 511. The lack of a single accurate source of road closure information was a safety hazard because it was difficult for ambulances to find a safe route to hospitals. It was difficult for Correctional facilities to get workers to and from their homes. There was difficulty in moving responders, contractors and supplies to disaster areas because of the lack of accurate information. Getting milk trucks to and from farms to collect milk was initially difficult. It is perceived that there is no appreciation at state level that accurate road open/closed information is essential for both local and state decision makers and not just the motoring public. In the current configuration, DisasterLAN was not an adequate substitute for 511. The use of Google maps was an improvement but not the whole solution.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- Information requests from State to Local, Community to Community, and Local up to State became overwhelming.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning X Process ☐ Training	
References (Standards, Policies, or Plans)	1. N/A
Analysis	So many requests for equipment were going up to the SEOC and/or appropriate SSFs and often coming back to the requestor requesting the same item. The Regional Planning Commissions followed through and gathered information for the SPOT reports. Many times soon after this information was sent to the SEOC either a State Rep or an SSF were

	calling the RPC or local community asking the same questions. Disaster LAN became very cumbersome for data input at the height of the storm. Each input to 911 takes up to 5 minutes and at the height of the storm dispatch started noting calls on a simple spread sheet but stopped input into Disaster LAN. Those in attendance were concerned that there were several people seen on the media with multiple different public messages. Many local communities were looking for support on messaging at the community level. However, many were unable to access assistance so some worked on their own to provide information for the community needs.
Recommendations	See Appendix A: Improvement Plan

Capability 5: On-site Incident Management

Onsite Incident Management is the capability to effectively direct and control incident activities by using the Incident Command System (ICS) consistent with the National Incident Management System (NIMS).

Activity 5.1: *Develop and Maintain Training and Exercise Programs*

Observation	PSD A/B- Trainings and exercises should be held to increase Emergency Response resources
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. Vermont's Implementation Plan for the National Incident Management System
Analysis	While towns were willing to share Swift Water teams during incident response, there weren't enough teams to meet local needs. Trainings should be held to increase the number of Swift Water teams, and increase awareness of Swift Water rescue best practices. Historically, Vermont Emergency Management hasn't formed additional mobile support teams, and though this option is being considered, some towns are currently working to fold new Swift Water teams under other pre-existing teams. In addition to creating more teams, first responders should also receive a basic training in swift water best practices to ensure that first responders know how to safely operate during a swift water event. In addition to swift water training, more individuals need to be trained in the Incident Command System. If town officials and first responders had Incident Command System training, they could assist other towns that required assistance in their Emergency Operations Center. During Tropical Storm Irene, there were a lot of people in the north that could have assisted the south if they had Incident Command System training. One town has developed a basic Emergency Operations Center manual which contains checklists and basic position information. This manual allows for on-the-spot location specific training for personnel that already have Incident Command System training.

Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Training and exercising is needed for responders and emergency personnel on existing plans and procedures.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. American Red Cross Shelter Plan 2. Vermont Emergency Management Family Emergency Preparedness Workbook 3. Vermont's Implementation Plan for the National Incident Management System
Analysis	Prior to Tropical Storm Irene, many communities didn't meet the standards to operate a pre-established American Red Cross shelter. As events unfolded, some of these communities decided that they needed to operate community shelters; but isolation left communities unable to receive assistance from the American Red Cross. These communities opened shelters with no plans in place and with no previous training in shelter operation, leading to shelters that didn't follow established best practices. Some responders and emergency personnel realized during the incident that they weren't well versed in their existing emergency plans and procedures. Some individuals were forced to learn plans during the incident, but it was time consuming and resulted in plans not being executed as written. Some responders and emergency personnel were not prepared to work in austere conditions, such as alternate work sites, extended hours, or not being able to return home after a shift. This lead to inefficiencies and reduced available staffing. Responders and personnel would benefit from training on working in austere conditions, role expectations, and from making personal and professional go kits.
Recommendations	See Appendix A: Improvement Plan

Activity 5.2: *Direct On-Site Incident Management*

Observation	PSD C- Coordination of road closures should occur between the State and towns.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. State Emergency Operations Plan
Analysis	During Tropical Storm Irene, there was limited coordination of road closures between the State and local road crews, and within individual agencies. On some occasions, signs or barriers were removed by individual crews without notification to other agencies, or roads were opened or closed by one crew, only to be closed or re-opened by a different crew soon after. When there was coordination, there was a lack of common definitions for phrases like "Road Open", "Emergency Vehicles Only", "Road Closed" and other classifications. Definitions should be established and agreed upon by all parties participating in road classification. Sufficient signage noting these different statuses should be on-hand during events. The lack of coordination and common language lead to confusion about the status of roads, and hindered disaster response.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Vermont State Police, Colchester Police and other law enforcement agencies were excellent resources.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization X Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont's Implementation Plan for the National Incident Management System

Analysis	The Vermont State Police, Colchester Police and other law enforcement agencies acted as excellent resources for affected towns. The Vermont State Police were able to effectively handle difficult situations, such as uncooperative individuals. Colchester Police filled the role of additional staff members when initial responders needed to rest.
Recommendations	See Appendix A: Improvement Plan

Activity 5.3: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	State Level AAR- Many affected towns did not have adequate staffing, plans, training, or experience during this event, which limited information flow to and from the State.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan 2. Local Emergency Operations Plans
Analysis	Some towns lacked the appropriate staff, plans, training, or experience for effective information coordination. Often towns relied on limited full time personnel, part time staff, and a variety of volunteers, many of which had limited training or experience in the position they were holding. In some cases, there were very limited plans and procedures to assist officials and volunteers. Many plans did not clearly identify the appropriate state entity to contact and personnel were not trained to respond to an event of this nature, leading many towns to experience difficulty in obtaining assistance. As information flow in and out of the town was not coordinated through a Public Information Officer, information requests were not properly answered or were answered with conflicting information. This lack of consistent information led to difficulty in procuring needed assets.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Towns that conducted pre-disaster planning meetings which included road crews and took preparedness steps before Tropical Storm

	Irene found that their response and recovery efforts were more effective than they would have been without these preparedness efforts.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. Local Emergency Operations Plans
Analysis	Many towns, such as Strafford, Grafton and Halifax, organized themselves ahead of time and exhibited techniques that may be considered best practices. These best practices included: • Pre-disaster, contacting owners of construction equipment and small contractors willing to work with the town road crew, and placing these groups on alert. • Using the town road crew to supervise the contractors instead of hiring a general contractor. • Handling contractors on a documented "time and materials" basis instead of a bid process. • Using real time methods to keep track of materials, labor and equipment used by a number of indices such as road name and number, date, etc. • Paying the contractors weekly to keep them solvent and loyal. • Utilizing the Incident Command System Resource Unit procedures to keep track of large numbers of equipment. These procedures did not require computers or power. • Utilizing the Incident Command System to operate the town Incident Command Post and Emergency Operations Center. • Posting colored plates on trees and posts to guide vehicles through town on approved detours. These best practices were the result of previous experience and pre-disaster planning.
Recommendations	See Appendix A: Improvement Plan

Capability 6: Critical Resource Logistics and Distribution

Critical Resource Logistics and Distribution is the capability to identify, inventory, dispatch, mobilize, transport, recover, and demobilize and to accurately track and record available human and material critical resources throughout all incident management phases. Critical resources are those necessary to preserve life, property, safety, and security.

Activity 6.1: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	PSD D- Some potentially available resources weren't utilized to their full capacity.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning X Process X Training
References (Standards, Policies, or Plans)	1. Keene Mutual Aid agreements 2. Community Emergency Response Team Operational Guidebook 3. State Emergency Operations Plan
Analysis	Most LEPCs in Vermont have a Community Emergency Response Team (CERT), but this resource was only utilized in Windham County. Various resources, such as staffing and equipment, were available in non-affected regions. As many agencies didn't have Memorandums of Understanding, they were unable to utilize these resources. Some agencies utilized resources without Memorandums of Understanding, and post-incident are experiencing issues with reimbursement. As previously mentioned, displaced state workers or those not performing essential functions as defined in the COOP plan were not fully utilized. Many Southern Vermont locations made use of Keene Mutual Aid, but many places in Northern Vermont, as well as the state level, are not aware of this resource. Keene Mutual Aid dispatches to 100 towns and has an interoperable communications system that can be used to communicate with a wide audience; this interoperable communication system should be looked at as a model. If the State Emergency Operations Center had contacted Keene Mutual Aid, they could have sent a message to all of the Southeastern towns at once.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Resources should be regionally pre-positioned.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont's Implementation Plan for the National Incident Management System
Analysis	The Department of Health experienced issues with getting water test kits to District Offices, because all of the water test kits were centrally located and many roads were closed. If water test kits were pre-positioned throughout the State, it would have been easier to get them to District Offices. Many Technical Rescue Teams had difficulty getting where they needed to go because the storm was widespread, and many roads were closed. If more Technical Rescue Teams were pre-positioned throughout the State, it would have been easier for these teams to arrive at needed sites. Although some special teams were pre-positioned, the widespread impact generated an overwhelming need. A review of available resources, such as sandbags which are regionally pre-positioned, should be considered to address this need.
Recommendations	See Appendix A: Improvement Plan

Activity 6.2: *Develop and Maintain Training and Exercise Programs*

Observation	PSD A/B- Some agencies did not effectively utilize resources from unaffected or minimally affected areas to support heavily impacted areas.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training

References (Standards, Policies, or Plans)	1. Vermont Department of Health Emergency Operations Plan
Analysis	In Vermont Department of Health District Offices, resources were not utilized to their full extent. Southern Vermont offices didn't have enough staff, while the Northern Vermont offices were functioning normally and could have taken on some additional work load. If staff members were shared between offices, it would have reduced the strain on Southern District Offices and allowed the Southern District Offices to be more effective.
Recommendations	See Appendix A: Improvement Plan

Activity 6.3: *Direct Critical Resource Logistics and Distribution Operations*

Observation	PSD A/B & PSD D- Due to lack of/miscommunication, supplies were inappropriately delivered to towns.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan 2. Vermont's Implementation Plan for the National Incident Management System
Analysis	During Tropical Storm Irene, there were communication gaps between local officials and the State with regard to delivery of supplies. In one town, roads were open; but as this information was not communicated between the State and local officials, supplies were delivered by helicopter. Some towns received supplies that they did not request, or received more supplies than they requested, resulting in an increased burden on towns. To effectively use these supplies, some towns opened up Points of Distribution to allow impacted towns to pick up supplies and some towns delivered supplies directly to impacted towns. Many towns that received excess supplies have stored these materials for future use, utilizing schools or shelter locations for storage; unfortunately, some affected towns do not have adequate space to store these materials.

	The resource request process, either push or pull, was not adequately developed or defined (means or form by which requests were made – phone, fax, DisasterLAN) to meet the need. The logistics section in the SEOC was not adequately staffed process the requests for assistance.
Recommendations	See Appendix A: Improvement Plan

Capability 7: Emergency Operations Center Management

Emergency Operations Center (EOC) Management is the capability to provide multi-agency coordination (MAC) for incident management by activating and operating an EOC for a pre-planned or no-notice event. EOC management includes EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, State, and Federal EOCs; coordination public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities. Similar entities may include the National (or Regional) Response Coordination Center (NRCC or RRCC), Joint Field Offices (JFO), National Operating Center (NOC), Joint Operations Center (JOC), Multi-Agency Coordination Center (MACC), Initial Operating Facility (IOF), etc.

Activity 7.1: *Support and Coordinate Response*

Observation	PSD D- Local officials had difficulty in submitting requests to the State EOC and often never heard back on the status of their requests.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning X Process ☐ Training
References (Standards, Policies, or Plans)	State Emergency Operations Plan National Incident Management System Vermont NIMS Implementation Plan
Analysis	The resource request process, either push or pull, was not adequately developed or defined (means or form by which requests were made – phone, fax, DisasterLAN) to meet the need. The logistics section in the SEOC was not adequately staffed process the requests for assistance.
Recommendations	See Appendix A: Improvement Plan

Observation	State AAR & PSD D- The State Disaster Management Software (DisasterLAN) was not fully or effectively utilized during TS Irene.
☐ Noted Strength	X Area for Improvement
Capability Element	

X Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. NIMS 2. SEOP 3. Vermont NIMS Implementation Plan
Analysis	During TS Irene, DisasterLAN was not seen as an effective tool by several towns. At the beginning of the incident, some towns attempted to enter information into the system but as the system wasn't functioning properly, the State Emergency Operations Center couldn't respond to tickets. Tickets began building up, and when they system was once again operational; the number of tickets became unmanageable. This was aggravated by the loss of internet connectivity in the hours surrounding the displacement of the SEOC to the JFO and subsequent less than full system implementation when it was restored. The major concerns/considerations expressed were: • System not user friendly • Potentially a good documentation tool but not necessarily an operational tool • Training knowledge loss • Could be a good situational awareness tool if the process and benefits fully defined • RPC use vs individual town use • Fully define system use in consideration of other available media (information/requests provided/submitted and not acknowledged) While DisasterLAN is a good tool for documentation, you need additional staff members, which weren't available, in order to input information into DisasterLAN. When using DisasterLAN, you also need to have someone follow up to make sure individuals received and understood the ticket, which means you need even more staff members. DisasterLAN was not working at certain points during the operation, so it didn't act as a full documentation tool. When DisasterLAN wasn't available everyone went back to pen and paper. Sufficient staff aren't trained to use DisasterLAN, and it isn't used enough to keep people current on training. There were several comments on the effective use of a system like DisasterLAN. The steps needed to input data for situational awareness was too time-consuming to enter making updated awareness difficult for some agencies. Several agencies identified much of the information that

	was being entered into DisasterLAN needed first to be reviewed; much of it was not relevant. This made it hard for agencies to prioritize what information was relevant for them to respond to vs. what could be put on the back burner. Routing and prioritizing of calls became confusing by those receiving the messages. It seemed to some the calls that were put on high priority were from callers who were very upset and this pushed their call up to high priority when it may not have needed to be there. As calls arrived and were input into DisasterLAN they were often not routed to the correct SSF nor were they checked on to see if the request was acted upon. Initially several HOT calls were dropped and not acted upon in a timely fashion.
Recommendations	See Appendix A: Improvement Plan

Activity 7.2: *Develop and Maintain Training and Exercise Programs*

Observation	PSD D- From a local perspective it appeared that many state officials did not to implement the Incident Command System (ICS) in the Tropical Storm Irene response and recovery efforts.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	NIMS SEOP Vermont NIMS Implementation Plan
Analysis	What appeared to occur from the outside to local officials was that most state agencies worked independently in the performance of what they considered to be their statutory roles and responsibilities. There were a few instances of State agencies working together such as AOT engineers and ANR river engineers but generally each agency was viewed as doing its own thing with little collaboration with or communication to other state agencies or local officials. Often high level state officials including Department Commissioners and Agency Secretaries (and Deputy Secretaries) made announcements from their headquarters or on the road with little or no coordination or collaboration with other state agencies. There appeared to be little or no

	use of a Joint Information Center (JIC) to ensure coordination between messages. This caused conflicting or misleading statements to be issued. It appeared that state officials were so focused on what they considered an overwhelming situation that they were fixated on their own issues. It also appeared to town officials that much of the decision making was occurring at department and agency locations and not at the State Emergency Operations Center (EOC). This made coordinated and collaborative decision making even less likely. Agency representatives at the State EOC did not appear to have decision making authority and those persons with that authority did not go to the State EOC. Local officials were insistent that ICS principles and training should apply at both the local AND the state level. The fact that the State EOC had to be evacuated and located further from much of the damaged areas may have contributed to some of this fragmentation.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- The effectiveness of the SEOC/Local EOC interface was not consistent throughout the incident.
☐ Noted Strength	XX Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning X Process ☐ Training	
References (Standards, Policies, or Plans)	1. VT State Emergency Operations Plan – Base Plan 2. VT SEOP – SSF Annex 5 – Emergency Management 3. NIMS 4. Vermont NIMS Implementation Plan 5. Executive Order 03-05 NIMS
Analysis	During this event, Regional Planning Commissions were enlisted for their ability to work at a jurisdictional with impacted communities during response and recovery phases. Participants commented that earlier involvement of RPC resources would improve the ability for communities to recover from events where state level resources are overwhelmed. Communication with the SEOC was not clear for many communities. What manner of communication was sought/ preferred and what information was wanted? Many options were available (good to have multiple options), but it became a matter of "do what you want". Participants commented on the value of identifying the form and manner of communication. Some communities used spot reports while

	others were unfamiliar with communicating with the SEOC in general. Some communities used DisasterLan while others did not have access to the system nor the expertise to use the system effectively. Participants recommended a re-evaluation of the use of DisasterLan as the disaster management software. Problems with the time delay of information flow thru DisasterLan, the service outage with no backup and ready access to the system all were viewed as possibly due to the scope of the event. Community leaders and state agency leadership did not appear to fully understand what response resources were available to them nor were they aware of the status of resources that were pressed into service. The "institutional knowledge" of resources was limited and the fast-paced nature of the event precluded the timely education of decision makers. Due to the extended nature of this event, the process for effecting shift changes at the SEOC became a problem. Subject matter knowledge and skill levels for SSF representatives varied from shift to shift. Participants noted that the SEOC provided missions without having a proper situational awareness of conditions on the ground. This was reported to be most prevalent during times of shift change and was believed to have been the result of: 1) incomplete shift change briefing, and 2) variance of subject matter knowledge and skill among SSF representatives and SEOC staff. Participants recommended a staggered shift change to allow for better continuity of information. Also noted was the need for "just-in-time" training for personnel assigned to roles as SSF representatives or SEOC positions; the basic, this is what I need you to do and this is how I need you to do it, information. Participants also recommended a form of executive training for EMDs and select board members. Many communities were not prepared to manage the type of requests for information and the resultant influx of assistance that arrived by virtue of the federal resources that were available in this event. Recognizing that this is perishable information, participants suggested VLCT as a vehicle for dissemination of this information during the annual town officers training opportunities.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Interagency Coordination was limited in some circumstances.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Planning	

☐ Organization ☐ Personnel	X Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan 2. NIMS 3. Vermont NIMS Implementation Plan
Analysis	While there was good cooperation, coordination between agencies was limited. Single agencies decided to solicit information on their own without coordinating the effort through the State Emergency Operations Center. This resulted in towns receiving multiple information requests within the same day, sometimes for the same information. The State Emergency Operations Center should produce a checklist of information required by all agencies so all questions can be asked/answered at the same time. This list should include information about road closures, power outages, boil water notices, and any other information agencies may need. This information should be collected on a regular basis so agencies can have the most up-to-date information when decisions are being made. If necessary, the State Emergency Operations Center should consider using the Emergency Management Assistance Compact to get additional staff for the State Emergency Operations Center. Training and exercise participation would help to improve interagency coordination. This would allow people from all agencies and levels to understand their role, and to see their role in action. Agencies should be trained in ICS 100, and should have to attend a day-long full scale exercise at the State Emergency Operations Center to see how the system actually works.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Interagency Coordination worked well in some field activities.
X Noted Strength	☐ Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. NIMS 2. Vermont NIMS Implementation Plan 3. SEOP

Analysis	A really hectic first half of the year with multiple small disasters and a full exercise schedule allowed agencies to develop effective working relationships ahead of time, which enabled excellent interagency coordination during Tropical Storm Irene. The line between job descriptions was blurred during this event. The Agency of Natural Resources and Hazmat worked together on clean up, the Fire Department was camped out in Rochester putting bodies back into graves, and the Department of Health, Hazmat, and the Agency of Natural Resources all worked together on soil work. No agency ignored what needed to be done simply because it didn't fall within their day-to-day role, nor did any agency engage in 'turf wars'.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Tropical Storm Irene improved relationships between agencies.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	As a result of this incident the American Red Cross and Vermont National Guard gained an understanding of what each agency does. Since Tropical Storm Irene, they have held cross trainings and have gained an even greater understanding of the role each agency plays. Vermont Emergency Management, Vermont National Guard, and the Vermont Agency of Transportation have always had a good relationship, but it was strengthened during this response and recovery. Though generally there has been interagency coordination, many agencies were not specifically aware of the roles different agencies filled. This information is spelled out in the State Emergency Operations Plan, but a roundtable discussion would really help agencies gain the necessary knowledge. Irene Recovery Offices have had excellent coordination and we need to ensure that we keep that coordination going through trainings and exercises.

Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The National Guard proved to be an invaluable emergency team member by providing and delivering resources effectively, and coordinating their services with and among state agencies.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State After-Action Review 2. SEOP 3. NIMS 4. Vermont NIMS Implementation Plan
Analysis	Despite the severity of Tropical Storm Irene and the lengths to which the Guard was called upon to assist in response and recovery, the working relationships which it had established through the CATEX and 2011 spring flooding proved invaluable. The partnership of the Guard, VEM, and AOT was especially successful as a unified system as evidenced by the timely and efficient delivery of manpower, materials, and equipment. The CATEX experience enabled a fast ramp-up of response and coordination between state agencies and the Guard. Providing equipment that the state did not have ready access to, such as high water vehicles, made the Guard indispensable in getting the state's transportation system to a level of accessibility by the public and responders. The ability of the Vermont Guard to work seamlessly with Guard units from outside the state was also very instrumental in recovery efforts. There were some glitches with communications between the Guard, the SEOC, and local EMDs regarding delivery of commodities that were either not needed at all, or not needed in the quantities that were provided. The Guard should continue to be made aware of, and adjust with the understanding that they have an invaluable role in the SEOC and state agency partnerships.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The lack of a viable and effective interface between the State and many local governments significantly impeded the flow of

	information between them.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment **X** Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. NIMS 3. Vermont NIMS Implementation Plan
Analysis	Some state agencies have district offices that lower the span of control for their headquarters. Those districts are notoriously different from each other in territory boundaries. The State Emergency Operations Plan (SEOP) designates the four Department of Public Safety (DPS) districts as locations to locate regional coordination centers. Four locations are probably not enough in a major disaster. Regional Planning Commissions cover the state providing various planning services to towns in their territory. Their territories typically do not match up with state agency boundaries. Additionally there are thirteen LEPCs in Vermont. They are typically made up of response personnel. They are a great resource for planning and should be consulted about this issue but in a disaster the members are fully committed to their own departments. In small scale disasters the SEOC and state agency representatives can and have dealt reasonably well with a limited number of towns. It was not a perfect solution but it was made to work. TS Irene should not be considered the benchmark for storm damage. It could have been much worse and future storms may be. Tropical Storm Irene did show us that we were not prepared to send and receive information to and from a large number of towns. A regional location able to quickly staff up with trained, experienced and equipped personnel in each affected area of the state at the same time as outlined in the SEOP should be further considered and developed. This staff needs to have representatives from all of the appropriate state agencies and organizations similar to the SEOC. In TS Irene many of the RPCs performed tasks of gathering and disseminating information from and to towns. Because they have an on-going relationship with their client towns and are familiar with town strengths and weaknesses they are a very useful resource. Public Safety Districts as Regional Coordination Centers were exercised during CATEX but not used during TS Irene. State Police were overwhelmed by requests for assistance and numerous communications failures. The Department of Public Safety headquarters and the Rutland PSAP both had to be evacuated. Even without these issues there was no trained, experienced and equipped

	staff ready to open up effective Regional Coordination Centers. The AOT with some representation from ANR did open up two command posts in Dummerston and Rutland to effect road and stream repair. These were very effective for their specific purpose of repairing state highways but provide little support to towns. Partly because of having to move to a new location with limited communications and partly because the span of control with so many towns was impossible state support to affected towns was not effective. It got better as time went on with RPC support but never reached optimal levels in many areas.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Generally State agencies and organizations did not cooperate and coordinate well with each other when sending representatives to impacted towns which caused difficulties with the flow of accurate information to and from the towns.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning **X** Process ☐ Training
References (Standards, Policies, or Plans)	1. VT State Emergency Operations Plan (SEOP) 2. State Agency SOPs 3. NIMS 4. Vermont NIMS Implementation Plan 5. Executive Order NIMS 03-05
Analysis	State agency personnel not located in the SEOC tended to operate in the disaster in the same focused way that they approached normal business. They would not normally check with other state agencies when making field visits and did not do so very often during the disaster. Much was made of the cooperation between AOT officials and DEC river engineers but those cooperative arrangements were not the norm among other agencies unless it was part of their normal operating procedure. There were multiple opportunities where multi-purpose teams would have worked well. This would have limited the conflicting information and lessened the burden on local officials and the public. Even when teams were used they were not well coordinated. State official A spoke with local official B while state official C spoke with local official D and conflicting information was often provided in both directions, state and local. When appropriate and well managed, strike teams and task forces accomplish more than the same number of individuals working on their

	own. The SEOP proposes using an interagency team called the State Rapid Assessment & Assistance Team (SRAAT) for this purpose. This concept was not effectively employed during TS Irene although it had been used in smaller scale incidents.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The flow of information between towns and State agencies and organizations was hampered by both technical and procedural challenges.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan (SEOP)
Analysis	In many cases state and local officials are not used to talking with each other on a routine basis. They are not aware of each other's capabilities, roles and responsibilities. In extended disasters when stress is high and tempers short, it is easy for communications to fail. Towns and many state agencies rarely talk to each other except when there is an infrequent disaster. Information protocols understood and used by both state and local officials often did not exist. Often local officials answered the state questions accurately as they understood them but the state official did not get what they needed. It is not clear how much the problem is caused by the failure to listen on the part of either or both parties. One essential ingredient to exchanging information is having a common language. This language often consists of forms and likely questions. If both parties understand the questions and the most likely acceptable answers, communication is greatly improved. Existing information collection tools, the spot report, local situation report and essential elements of information, were not fully used to address some of the challenges noted above.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Information coordination between the State and Federal Governments frequently did not occur or was not effective which caused problems for local government and the public in general.

☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning **X** Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP)
Analysis	Although the staff of the FEMA Center and the State EOC were in the same building coordination was an issue. This was in part because they were not used to working together this early in a disaster. Also the co-location occurred with a minimum of planning. Although in the same location the two organizations operated independently. This may have been an opportunity for a unified command. As FEMA set up additional centers around the state the coordination became increasingly difficult because the State had no parallel network of centers or liaison officers in the FEMA centers. Relationships and processes changed frequently as FEMA and State personnel changed. It was noted that FEMA workers, particularly in the regional centers, had a wide disparity of experience and rotated often. Frequently the State EOC was unaware of what information was being collected or disseminated by these FEMA centers until a problem was reported. This was particularly an issue of changing process in Individual Assistance and Public Assistance out reach.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Not all policy and public information was coordinated through the State Emergency Operations Center which caused confusion for local officials and the public.
☐ Noted Strength	**X** **A**rea for Improvement
Capability Element ☐ Equipment **X** Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. NIMS 3. Vermont NIMS Implementation Plan
Analysis	The concept of State Emergency Operations Centers is that this is the organization at a single location that plans, coordinates and manages the

	response and recovery of a disaster of sufficient level to warrant activation. Agency representatives to the SEOC when activated are expected to have decision making authority or direct access to those who can. That was not the case for most of the SEOC activation supporting the response to TS Irene. Sometimes there was extensive back and forth between the EOC representative while gaining access to the agency decision maker. This takes additional time and increases the likelihood of mistakes because of faulty communications. This also makes interagency coordination and collaboration difficult at best. Some departments and agencies sent decision makers as trained representatives while others sent representatives with no authority. There was confusion about the information flow between the towns, the SEOC, department or agency operations centers or headquarters, the general public and regional offices. This created conflicting information to the public as agencies issued press releases from their offices and made announcements to the media in the field. It left decision makers who did go to the EOC unable to coordinate and collaborate face to face with their peers from departments and agencies that did not send decision makers. It was also a drain on scarce resources. By having personnel staff multiple operations centers, key personnel were in short supply. For example, where should the Public Information Officers (PIOs) be assigned? To the SEOC Joint Operations Center or the Department Operations Center? There was a shortage of trained and experienced PIOs to begin with. Having more places to spread them between was not helpful. Additionally this split location of decision makers makes it more difficult for municipalities to know where to contact state officials with the authority to help them. The comments from the AAR clearly indicate that state agencies must embrace the National Incident Management System and follow the recommendations outlined in the Vermont NIMS Implementation Plan for all of their staff.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Once the SEOC functions completed the move to the alternate SEOC they worked within their guidelines but had difficulty with administrative requirements and resource tracking.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment	☐ Planning

☐ Organization ☐ Personnel	☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. SEOP 2. NIMS 3. Vermont NIMS Implementation Plan 4. State Training and Exercise Plan
Analysis	Not all SSFs were fully aware of what other SSFs did during this type of emergency response. This made it difficult and often delayed important messages to the correct SSF. Resource tracking was difficult for the Agency of Agriculture making the review of needs and what had already been provided difficult for the section chief to determine. Overall tracking of resources and donations became overwhelming and a challenge to keep everything in a format that can be referenced as the incident continued. The move from the primary to the alternate SEOC provided a challenge for all agencies but it was noted how VEM/BGS worked very efficiently at getting the SEOC moved out and to a safe location.
Recommendations	See Appendix A: Improvement Plan

Activity 7.3: *Direct Emergency Operation Center's Tactical Operations*

Observation	PSD C- The Vermont Emergency Management Division and the State EOC staff made timely decisions and promptly evacuated to a new location in the midst of Tropical Storm Irene.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. SEOP 2. NIMS 3. Vermont NIMS Implementation Plan

Analysis	To move an Emergency Operations Center in an expedited manner in the midst of a very serious emergency to a location not previously planned to be a State EOC and have it work at all is an achievement. It was not without issues and it had a negative impact upon the response effort but the staff should be commended for their dedication and efforts to make do with a bad situation.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Being co-located with the Federal Emergency Management Agency at the Joint Field Office had positives and negatives for the State Emergency Operations Center response support coordination.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont Department of Public Safety Continuity of Operations Plan
Analysis	During Tropical Storm Irene, the State Emergency Operations Center had to move from its primary location to an alternate site. The alternate site was the Joint Field Office. It was remarkable how smoothly the State Emergency Operations Center integrated into the Joint Field Office, but the two operations should remain separate. During this co-location, the Federal Emergency Management Agency planning cycle was forced upon the State Emergency Operations Center, leading to abnormal reporting with unpredictable deadlines. When the planning section in the State Emergency Operations Center is left alone, there is a very concise planning section that notices duplication of efforts and issues in DisasterLAN. Due to the disruption of the planning cycle, there was confusion and the planning section was unable to be concise. There was a State Situation Report, but there was also a Federal Situation Report being written upstairs; people were confused about which one they should be reading. Resources would overlap each other so there were a lot of meetings. The word 'assessment' meant different things to different agencies so one entity was told that they didn't need to evaluate because the Federal Emergency Management Agency had an assessment team. This assessment wasn't the same assessment the

	entity needed. Co-location with the Federal Emergency Management Agency led to security issues. These security procedures were not always consistent, so you were never sure what would happen. On some occasions, individuals were permitted to bring in limited electronics with a security check, on other occasions individuals could bring in any electronics and they were not subject to security checks. On some occasions escorts were mandatory, but that wasn't true on other occasions. Some days you needed escorts, some days you didn't. The lack of consistency made it difficult. The Federal government has rules about vendors entering the Joint Field Office so the State was unable to speak with vendors interested in assisting the state. It was helpful for agencies to hear about available resources, but some of those resources were deployed or attained before they were requested. Federal Emergency Management Agency employees kept changing, so you were never sure who to go to. When you did find someone that might be able to help you no one was able to make a decision. The layout of the State Emergency Operations Center changed every few days. This led to confusion in finding agencies, as well as time wasted moving all of your agency items. Moving caused unnecessary stress.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The Planning Section at the State EOC which is a primary gatherer, analyzer and disseminator of information at the state level was not robust enough to be effective.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment **X** Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan 2. SEOC Planning Section Procedures 3. SEOC Staffing Chart 4. NIMS 5. Vermont NIMS Implementation Plan
Analysis	The planning section of any command post, emergency operations center or emergency coordination center is a vital part of the center and its main purpose is to gather, analyze and display information. Without

	a robust and effective planning section the information flow becomes a problem and activities suffer. Decision makers are deprived of accurate information. The Planning Section in the SEOC has frequently been staffed more based upon available space than needed function. The planning section of the SEOC in Tropical Storm Irene had several limitations. It was uprooted in the midst of the storm and placed in a different and unplanned location. That it functioned at all is a tribute to the dedication of the personnel. However it was not sufficiently staffed, equipped, trained or prepared to function well when there was so much information in the flow. The Situation unit needed to gather, analyze and display more information and more types of information. Coordination with various sources of information such as 511 and 211would have helped sort and distribute information. State Support Functions (SSFs) should have provided information to the Situation Unit in a more timely and complete manner. This was partly because personnel in some of the SSFs were unfamiliar with SEOC protocol on where to get and send information. There needed to be a quality control function to ensure that all relevant information was displayed in the SEOC, on DisasterLAN or both. Sometimes information by passed the Situation Unit and went directly to SSFs.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The people staffing the State EOC in various capacities did an exceptional job considering the scale of the disaster and the evacuation of their own facility in the midst of the disaster.
X Noted Strength	☐ Area for Improvement
Capability Element	
☐ Equipment ☐ Organization **X** Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. NIMS 3. Vermont NIMS Implementation Plan
Analysis	The people in the State EOC did their very best under trying circumstances. Not only were they challenged by the biggest storm in many years, but the status of their own homes and families and their own safety was in doubt as well. With flood waters approaching a danger point, they moved the State EOC from its recently renovated location to a location in Burlington. Communications systems failed and then the back-up communications systems failed. Despite this the

	move was made and operations restored.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Internal communications went well especially with the move and all the changes that came from it however Finance and Admin (F&A) felt they had a difficult time with internal communication.
Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process X Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	The overall consensus with those in attendance was the internal communications did go very well. Finance and Admin (F&A) felt if they had a seat in the SEOC they would be able to keep a better handle on monies being spent through resources acquisition and staffing. The concern throughout the discussion from F&A was being kept aware of monies being spent. This was not to say sections should not be spending money but tracking this spending in a more controlled way would support a timelier paying of invoices. After the move the SEOC was in the same location as JFO. It was helpful as many quick meetings could be done face to face and some decisions acted on a bit faster. But, the downside came with SEOC leadership being pulled into meetings at the JFO they would normally not be a part of which pulling them away from their duties in the SEOC. Along with this other FEMA leadership injected themselves into meetings the SEOC had. This was over and above the FEMA liaison that was to be at these meetings. At times the SEOC staff felt they were being pushed to meet the FEMA timelines. This was an unusual move and will probably not occur again but some issues to keep in mind. Each ICS organizational structure includes a Finance/ Admin Section which should be fully staffed with training personnel throughout the entire activation. The activation of this section was hindered not only by the fact that the section had not been officially activated before, but also

	the potential staff members had no knowledge of NIMS. Planning and training prior to an event of this magnitude clearly would have stemmed much of the confusion that delayed the effective operations of this section.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Staffing for sections and within SSFs was a concern for this large of an event.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. SEOP 2. NIMS 3. Vermont NIMS Implementation Plan
Analysis	Some agencies and organizations have been dedicated to providing an adequate number of representatives to training, drills and exercises. Others have not. This shortage creates problems for the other members of the EOC staff who have to assist untrained or exhausted personnel from other agencies and organizations in addition to responding to the disaster on behalf of their own agency. Many agencies were looking at a depth of 3 staff to support the operations but the Red Cross noted they have 5 staff and it was still difficult to staff on this long of an operation. It was noted on day 2 and 3 people that had been working at the SEOC were exhausted and there was lack of trained staff to relieve them. . RPC staff in attendance noted that some training and staff could come from their offices to support the SEOC. In addition to staffing depth, it is also important to establish a staffing pattern or cycle based on that depth. An example of such a cycle is four days on, four days off and switch shifts after the off days. Staffing had been requested through EMAC but they were unable to really get a response that would cover very many positions. By providing a model for identifying staff and training the staff to respond at the SEOC the model could then be used at the local level as well. Although there were several volunteer agencies attached to the SEOC they were unable to get very few volunteers because of training

	requirements and some were already working with other agencies.
Recommendations	See Appendix A: Improvement Plan

Activity 7.4: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	PSD C- The failure of the State EOC facility and supporting systems during the storm was a major blow to the response effort despite the prompt move to the Joint Field Office in Burlington.
☐ Noted Strength	**X** Area for Improvement
Capability Element **X** Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Continuity of Operations Plan (COOP) page 45. 2. SSF Annex 5 Emergency Management, Recovery and Mitigation Standard Operating Guidelines page 2 and Tab 2 page 26. 3. State of Vermont SEOC Base Plan 2009, Table of Contents-Roles and Responsibilities. 4. VT SEOP Tab B SSF Annex 5 Facility Staffing Pattern Page 5.
Analysis	Although the SEOC itself was on the second floor of the Department of Public Safety Building in Waterbury and water never got to the first floor, the building was rendered unusable because the systems in the basement were compromised and access was problematic for a short period of time. Water came through the State Complex tunnel system and flooded the basement. The building lost normal power and went onto its outdoor generator. The outdoor generator was on the verge of being flooded and was shut down to avoid catastrophic failure. The cables to the email servers were affected. Without power the building was unusable. Because the various communications systems were also affected, even when the SEOC relocated to Burlington at the FEMA facility many functions normally conducted at the SEOC were impacted. The Back-up servers at McFarland House in Barre also failed. No alternate exclusive-use SEOC (hot site) (redundant site) was ready and equipped to be activated promptly in the event of issues with the primary SEOC. The severity of the storm damage would have challenged the staff even if the SEOC did not need to be evacuated. Moving into a strange building and trying to get reorganized was a serious distraction at a time when a maximum effort was needed.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- More community Emergency Operations Centers opened during Tropical Storm Irene than ever before.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Many communities opened Emergency Operations Centers for the first time during Tropical Storm Irene. It is important to perform outreach efforts now to ensure that the resource will be there in the future. The State should work with these communities to write their actions and contact information into plans for the future, while also identifying gaps that should be filled in the future. The local EOCs were essential to the coordinated local response.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The Vermont National Guard should be an official State Support Function
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State Emergency Operations Plan
Analysis	Florida has a model where the National Guard is their own State Support Function. Conversation on this topic pointed out that the missions of the National Guard support several SSFs and therefore does not fit neatly under a separate function. It would be worth some research and review to find out if the organizational structure of the SEOC would benefit from following the Florida model or keeping the structure the way it is and training personnel on the support of the

	National Guard.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The state lacked a robust, user friendly and widely accepted information system to support a two way flow of information between the State and the towns.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP)
Analysis	DisasterLAN is the State's designated disaster management information system software. It has many good features and is administered by the Emergency Management Division. However, there are some issues with it during disasters, particularly during Tropical Storm Irene. Like most software, DisasterLAN works best when used by trained and experienced users. Because most potential users have little reason to use it except for a disaster most of them have difficulties signing onto the software or using it effectively when the infrequent disaster occurs. Those infrequent users that get into the system often cause difficulties for other users because of the way they enter information. Many local users abandon the system early in the disaster because of problems. The SEOC did not have sufficient redundant system in place to accommodate users unable or unwilling to use DisasterLAN. For example the state EOC had a fax machine but many towns either did not, did but did not think of using it or did not have the SEOC fax number. There was a need expressed for a mechanism to identify issues or cases and multiple agencies to work on the same case or issue in a coordinated manner. There were confidentiality concerns expressed. If this capability exists on DisasterLAN, it is not well known. There were also comments made that the process for entering and managing data entered into DisasterLAN kept changing without much notice. One stumbling block with the way DisasterLAN is configured currently requires a user to know and enter the county that the town is located in to make an entry. Few Vermont residents know which towns are in which counties except for a few near where they live or work.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- There was some confusion identified with defining emergency versus non-emergency purchasing and how much could really be purchased.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Planning ☐ Organization ☐ Process ☐ Personnel ☐ Training	
References (Standards, Policies, or Plans)	1. N/A
Analysis	As noted by BGS and AOT, once the event was declared an emergency by the governor the ability to purchase resources opened up. The resource unit did this but at times seemed to feel uncomfortable about it. They noted many times they were told if someone wants an item order it and if questions need to be asked they will be asked later. It was not clear to many as to who would authorize large expenses and what was met by large expenses. There are guidelines that BGS noted for spending which was Bulletin 3.1 Title 29 but was not sure if this covered other agencies. Most other agencies were unsure of their authority for spending especially during the initial responses. Finance and Admin (F&A) was also unclear and was not comfortable not being a part of this process. They have found paying the invoices in a timely fashion has been difficult with so much research needing to be done first. This research could be minimized if they were a part of the process from the beginning.
Recommendations	See Appendix A: Improvement Plan

Activity 7.5: *Gather and Provide Information*

Observation	PSD A/B- Information received from the state for responders, communities, and the public was sometimes confusing and conflicting.
☐ Noted Strength	XX Area for Improvement
Capability Element	

☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	4. VT State Emergency Operations Plan – Base Plan 5. VT SEOP – SSF Annex 5 – Emergency Management 6. VT SEOP – SSF Annex 14 – Public Information; Crisis Public Information
Analysis	Pre-incident information has been noted as a strength for this event. However, information flow during the event and post- event was characterized as confusing and conflicting at times. A variety of information sources (state agencies; elected officials; federal agencies) while trying to provide useful information, often appeared to be providing information on topic areas in which they were not expert. This led to conflicting information that required subsequently corrected information releases, all compounding the information overload expressed by many participants. During the initial stages of the event, commercial radio stations in some areas of the state provided timely and critical updates to keep the public informed of quickly changing conditions. Participants noted that this was not true for all media sources in the region. Some media outlets continued with normal programming without providing listeners information on road closures and flooding. Participants suggested this as an area for improved networking between VEM and media outlets. The lack of information on road closures was another area of concern. The state 511 system, while severely challenged, still provided some level of travel information on state highways. Road closure information for local roads was characterized as non-existent. As the event progressed *over days*, road closure information became more available with the activation of Google Map site. Participants noted that emergency responses were delayed in many instances by road closures that were unreported. Although some of this was due to the rapid deterioration of conditions across the region, participants believed that a local roads monitoring system (similar to the 511 state system) would have been helpful in providing closure updates for responders. The evacuation of the SEOC compounded the problem of managing a timely flow of information. Local communities reported that they were unaware of this until hearing the information from commercial media sources. For those communities monitoring DisasterLan, service outages in that system were their first indicator of problems at the state level. DisasterLan is intended to be a significant tool for local and state

	emergency managers to effectively manage incident response. In addition to the loss of the system due to flooding in Waterbury, which resulted in a gap of time with no access through this system, participants noted a lack of user skills (local and state) and difficulty determining proper routing protocol for requests, information, and follow-up. The VEM public information officer provided updates via email distribution and Facebook postings. Participants noted information could go stale quickly and there were instances where answers to questions changed frequently. Participants understood the dynamic circumstances of the event but felt that the quality and accuracy of information was more important than sheer volume of information. The feeling of information overload was expressed by participants; it was not practical to take the time to sort through all of the information to discern the information relevant for individual communities. This came along with a recommendation to establish a schedule of daily update releases instead of what was perceived to be a "shot-gunning" of information. A further recommendation was the establishment of a singular incident website which could *provide links* to the relevant information provided by each agency rather than trying to convey a broad spectrum of information via messaging or by a single site that would be too complex to manage or comprehend. VEM established and conducted informational conference calls for local emergency management directors. It was noted that it was often hard to hear speakers on the call and hard to participate in the conversation. Conference calls, at times, spent too much time trying to resolve an individual issue rather than providing the general information that most callers were hoping to receive. Daily situation reports were sometimes not produced consistently and the distribution of the reports varied, apparently the result of multiple mailing distribution lists. This was also mentioned with respect to the information overload issue. Participants who may have been on multiple distribution lists found themselves managing repetitive copies of the same update.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Vermont Department of Health District Offices felt uniformed and underutilized.
☐ Noted Strength	X Area for Improvement
Capability Element	

☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont Department of Health Emergency Operations Plan
Analysis	During Tropical Storm Irene, although the State Situation Report was provided to SSF8, it was not retransmitted to Vermont Department of Health District Offices. District Offices felt that they were under informed about the current situation, and that their resources were underutilized. Some District Offices were not impacted significantly by Tropical Storm Irene, and their staff could have been utilized at impacted District Offices or at shelters.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Information was sent to the state, but it wasn't acknowledged or redistributed.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	During Tropical Storm Irene, towns and Regional Planning Commissions sent information, such as spot reports, to the State Emergency Operations Center through a variety of mediums (email, fax). Regardless of the medium used to submit information, the information was neither acknowledged nor redistributed to other agencies. Towns and Regional Planning Commissions didn't know if the information was received, and had to respond to other information requests to other agencies for the same information. Some towns were unable to submit spot reports, due to infrastructure damages. One of these towns was later visited by a state employee that stated the reason no assistance was provided was because spot reports weren't provided. This created a lot of frustration between the town

	and the State.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The Vermont Department of Health did an excellent job sharing information between the state and local levels.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	Every day, the Vermont Department of Health's Health Operations Center provided a briefing to the people on the ground. This briefing shared what the State Emergency Operations Center and Health Operations Center were doing on a daily basis. This opened up pathways of communication at a higher level and at a district level. The District Offices utilized this communication chain, and communication flowed well both ways.
Recommendations	See Appendix A: Improvement Plan

Observation	Regional Planning Commissions did an excellent job during Tropical Storm Irene, and should be utilized for Emergency Response and Recovery in the future.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training

References (Standards, Policies, or Plans)	1. State Emergency Operations Plan
Analysis	When the Agency of Transportation realized that their local resources were not enough, they handed over some roles to the Regional Planning Commissions. The Regional Planning Commissions took over the existing road data and reclassified it to be useable across the state using Google Maps. Multiple agencies contacted each town for different information. There should be a single comprehensive report request sent to all towns that includes road closures, power outages, etc., and this report should go through the Regional Planning Commissions.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Regional Planning Commissions filled a critical role during Tropical Storm Irene as district/county/regional coordinators of information and services.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State After-Action Review
Analysis	The scale of Tropical Storm Irene's impact, along with events that compromised communication systems, created an information vacuum which the RPCs ending up filling quite successfully. When communications between VEM and other state agencies and the local EOCs were compromised by problems with internet and communications connectivity caused by Waterbury flooding, the RPCs took it upon themselves to assist in that role. Their existing relationships with EMDs and familiarity with many towns' EOPs were invaluable in keeping information flowing. While this was a regional effort that RPCs were able to provide rather seamlessly with their local relationships and LEPC connections, there was no previous model for them to follow; nor were there, in many instances, adequate personnel to take on this role. RPC engagement definitely helped the SEOC and responding state agencies to have far better situational awareness than they would have otherwise had under the extreme circumstances. RPCs were able to

	accurately assess and map the ever changing local road conditions, community damages, needs of supplies and materials, and residents in distress in real time, and coordinate that information as necessary. In some cases communities had more familiarity with RPC staff and communicated much more readily with them on a daily basis. However, towns and EMDs who were not as familiar with the emergency management capabilities of their RPC did not always understand how valuable this relationship could be in the first days and week of Irene response and recovery.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Conference calls before and during the response and recovery phases were very helpful to those who participated.
X Noted Strength	☐ Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning **X** Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP)
Analysis	Conference calls can be very effective interactive mechanism to disseminate information and get feedback. They have to be reasonably brief and focused to be effective. The National Weather Service, particularly in Albany, New York has used this method prior to storms to discuss forecast weather events with state and local officials. The Vermont Department of Public Service, FEMA and Vermont Emergency Management have all used this technique effectively. Participants at the AAR credited the use of conference calls to have been very useful. They encouraged continued use both prior to and during disasters. Conference calls with AOT and the utilities facilitated the rapid restoration of power outages.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Local officials received information from multiple sources and had to give information to multiple sources – creating information fatigue.

☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan
Analysis	During Tropical Storm Irene, towns and the State became inundated with information, creating inefficiencies and information fatigue. Towns reported that the challenges and problems with communications for them generally fell into three areas: inability to keep information current; inability to respond back or acknowledge requests and questions; and the difficulties with technology, including DLAN. One of the most common complaints was the frequency with which different agencies and departments were calling towns, often for the same information. While appreciating the reaching out, EMDs reported growing weary of multiple calls every day asking "how are you doing?" One consequence was not knowing where information should go or towns being unclear of the chain of reporting up to the state. The communications issues with email at the state level not only disrupted regular flows of information, but also devastated list serves and other well-known and used sources. Towns' perceptions of the SEOC and state functions were that prioritization of request and issues was not working – some towns described their requests disappearing; similarly, that the state was having difficulty establishing single points of contact to gather legitimate, timely, and accurate information on the local level. DLAN requests were not uniformly responded to, nor were open tickets followed through. DLAN, itself, is not viewed by many towns as either helpful or practical for the local level. Some EMDs resorted to faxing information, but initially did not have any working fax numbers for the SEOC. Regional Planning Commissions acted as information clearinghouses for towns and the state; and this role worked well. Regional Planning Commissions received information from State and Federal sources, and then explain that information to towns. Regional Planning Commissions worked to ensure that towns received information from one source, and that the state received requested information from one source. Regional Planning Commissions work with towns on a regular basis, so the relationship was already established. Regional Planning

	Commissions were able to respond to phone and email requests quickly, when the State Emergency Operations Center was inundated. Regional Planning Commissions were viewed by towns as more reliable sources to send information to, as well as to receive information. While it doesn't matter who fills the role of information clearinghouse during an event, the role needs to be filled. During Tropical Storm Irene, people didn't know who they were supposed to get information from, or what information they were supposed to provide to agencies; this led to everyone getting the same information multiple times from different individuals and listservs, and the appropriate people not getting the information at all. Having an information clearinghouse would avoid duplication, save time, and make sure people received the information they needed to make decisions. The system needs to be consistent, regardless of the incident size, so there is always awareness of what is supposed to happen. These clearinghouses should ensure that information flows both ways – towns felt that they were constantly providing information, but weren't receiving any information back. Anything that goes through an information clearinghouse would have to be redistributed in multiple formats. Some town officials will not use email; so if you send email to the town, no one will receive it.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The state lacked a disaster information protocol that listed the types of information needed by state agencies and how to gather the information with a minimal impact upon affected communities.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP)
Analysis	State Agency representatives at the SEOC and traveling out in the towns affected by the disaster were contacting town officials with very narrow lists of information needed. Often they were not a complete list of what their agency needed and almost never was the list coordinated with other agencies and organizations. Representatives in the field and at the SEOC could easily have gathered more information had they

	known what was needed and how it should be gathered. Consequently town officials were often overwhelmed by requests for information and gave conflicting information because some of the questions were phrased differently. Representatives at the SEOC and in the field were hampered in their efforts because they did not have a comprehensive and coordinated list of needed information and had to make repeated calls and trips.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The Agency of Agriculture, Food and Markets failed to have an effective and timely system of outreach contacting its client/constituents to gather information about the situation, analyze and display the information and then provide useful information to the client/constituents in a timely manner.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan (SEOP) 2. Agency of Agriculture, Food and Markets SOP
Analysis	The Agency of Agriculture, Food and Markets has already been made aware of this shortcoming as a result of a number of Vermont Yankee drills and exercises over recent years and as recently as the Winter and Spring of 2011. The Agency's GIS capability has apparently decreased significantly. Recent staff changes have made it unable to develop and maintain easily retrievable and manageable data concerning all of the farms, food producers, stores, etc. that it is charged to serve. This data system should include data such as client location, contact information with redundancy, crop or product information, etc. supported by GIS in a compatible format. This system should be used in routine daily business and would be doubly useful in a disaster situation. Given the history of Montpelier floods this data and GIS capability should be highly transportable. Because of the damage to farms including buildings, fences and crops in Tropical Storm Irene this capability should have been available.
Recommendations	See Appendix A: Improvement Plan

Activity 7.6: *Develop and Maintain Training and Exercise Programs*

Observation	State Level AAR- Many state personnel whose jobs do not directly involve emergency response or preparedness were not aware of the role and makeup of the SEOC, nor aware of the command structure (ICS) or their own EOPs governing how they would operate in a disaster.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning ☐ Process ☐ Training	
References (Standards, Policies, or Plans)	1. State After-Action Review
Analysis	The severity of Tropical Storm Irene impacted many state personnel from every level, especially if their roles involved finance and logistics. Unfortunately, these were the staff that were often least knowledgeable about emergency management systems and structure. Most of these staff had never been involved in an exercise or even planning, but found themselves having to deal with totally unfamiliar terminology and procedures through the course of their involvement in processing response and recovery requests. This appeared to especially impact financial and budgetary personnel who found themselves dealing with totally unfamiliar billing and payment procedures at times when timely decisions and actions were necessary. Upper level financial staff members were not familiar with DLAN and in many instances, with the SEOC, so were at serious disadvantages when called upon to perform roles and tasks they were not accustomed to, such as emergency purchasing. Similar unfamiliarity with having to deal with shifts often made staffing for fiscal departments grow thin. Many departments did not have back-up plans in case of disaster or prolonged emergency, nor did they have the flexibility in procedures to easily move from normal day-to-day models. For instance, the usual procedures for vetting and approving billings could not always be followed, and no options were in place. Having more financial management present in or around the SEOC would have been most beneficial.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Training and exercising enabled agencies to more effectively surmount the extreme difficulties and challenges presented by the devastation of Tropical Storm Irene.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State After Action Review
Analysis	Even though Tropical Storm Irene presented conditions and response needs that surpassed any previous incidents in the experiences of those involved, a variety of favorable factors made response by most agencies and departments more effective than might have been possible. These factors included the timely CATEX, based on a hurricane scenario, Vermont Yankee exercises, and the experiences from the Spring 2011 flooding. Because of these operations, pre-established relationships allowed for coordinated responses and communications for TSI, as well as increased familiarity with each agency's roles and resources. This in turn led to faster response implementation and the necessary blurring of agency boundaries and responsibility silos to accomplish tasks. The extreme nature of TSI, however, did mean that even these pre-established relationships and prior experiences were constantly under stress and testing.
Recommendations	See Appendix A: Improvement Plan

Capability 8: Volunteer Management and Donations

Volunteer Management and Donations is the capability to effectively coordinate the use of volunteers and donations in support of domestic incident management.

Activity 8.1: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	State Level AAR- A better tracking system for donations and volunteers need to be developed to support a response.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	
Analysis	It was noted by several that a cash donation should also be accounted for just as other goods donations are accounted for. There were so many spontaneous volunteers along with those who came from organizations that work with VT VOAD groups it has been very difficult to track these volunteers. Towns too have had many volunteers from their local communities come to volunteer. Tracking all of this has become difficult. There are grants that may be received for which volunteer time can be used as part of the match. This is one of many reasons why tracking volunteers a very important.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Spontaneous volunteers and donations played a large role in Tropical Storm Irene Response and Recovery effort
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training

References (Standards, Policies, or Plans)	1. Local Emergency Operations Plan
Analysis	The coordination of spontaneous volunteers is very important. In one town, 100-300 volunteers showed up every day; to handle this large load of spontaneous volunteers, most towns established a volunteer coordinator or a coordination group. These coordinators organized the needs of families with the abilities of volunteers, planned for future volunteer efforts, and kept documentation about which projects volunteers were working on. The Volunteer Coordinator position needs to be a sole job; it should not be rolled into any other position, there is too much to do. Some towns did not have volunteer coordinators, and it hindered response. There is nothing worse than volunteers showing up and being asked to go home; that is a wasted resource. Volunteer Coordination training should occur to teach individuals how to fill this role. To create a pool of trained organized volunteers, there are pre-established organizations that spontaneous volunteers can associate themselves with. The American Red Cross should look into contacting Irene volunteers and arranging for them to become associated volunteers for future incidents. Vermont 2-1-1 has already contacted their Tropical Storm Irene volunteers, and has invited them to their trainings. This has allowed Vermont 2-1-1 to expand their volunteer base. It is important for communities to have a cache of volunteers for all events. In one town, a cache of volunteers was going to be utilized for a Labor Day party; when that was canceled, that group of volunteers was able to shift focus to assisting with Tropical Storm Irene. In another community, college students were used to help muck out homes and knock out walls. These college students created challenges with each other, making the volunteer effort fun. When the community ran out of other things to do, they gave the students Personal Protective Equipment and had the get trash out of the river. Since there was a lack of coordination of volunteers during Tropical Storm Irene, there is now a discrepancy over what work was performed. Some agencies report that work was performed weekly on a trailer park, but the town where that trailer park is housed says that no one volunteered to help clean the trailer park up. Volunteers not only need a coordinator, but equipment to support them. In one community, there was a kitchen and food; volunteers were able to utilize these resources to feed groups of volunteers working in the field. In another community, a local Inn donated community meals for a week; in addition to a volunteer coordinator, communities need a donation

	coordinator. It is important to establish volunteer and donation coordination early on in an event to ensure safety as well as ensure that resources are not wasted. Without volunteer and donation coordination, you run into issues. The food shelf in one town had too many food donations, and not enough space or refrigeration to store to food in. The food shelf was able to use the elementary school to keep the food cold, but this was the result of a coordination effort. One woman showed up on her horse to assist people, but the road didn't exist anymore. Without coordination, it is possible that volunteers may have been injured, or resources wasted. Towns should step out of the middle and allow people to work together on their own. One town had a forum on their website that asked citizens to post their needs, volunteer capability, and donations – and this seemed to work for the town. Liability is an issue with volunteers and donations, and this issue should be addressed before another incident. One town ensured that all volunteers were given proper Personal Protective Equipment, given a safety briefing, and had safety officers patrolling; but this didn't happen in all communities. One community had all volunteers sign a waiver relieving the town of any responsibility, but they are unsure if this would meet any legal test. Some cases were reported of respiratory issues in volunteers as a result of cleaning up; the liability issue must be addressed. The Governor requested that people open up their second homes to flood victims, but there is a liability issue for this 'donation'. People did give up their homes for people during Tropical Storm Irene, but the liability issue was never addressed.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- There is a lack of planning, training, and understanding on Volunteer and Donation Management.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	XPlanning XProcess XTraining
References (Standards, Policies, or Plans)	1. State Emergency Operations Plan 2. Local Emergency Operations Plans

Analysis	Neither state nor local governments were prepared for the need to enlist and manage volunteers and donations during such a large scale incident. Vermont has not had an event of this magnitude in the recent past, and most exercise scenarios have had limited recovery efforts. When the Volunteer and Donations Management Coordinators at the State Emergency Operations Center were given the Emergency Operations Plan for their group, they realized that the annex was incomplete as there were no implementing procedures to provide specific guidance that supports the general guidance provided by the annex. Since Tropical Storm Irene, Buildings and General Service's staff have been working to make the annex more robust; the new annex will include trainings, participants, roles, contacts, and specific plans for the management of volunteers and donations. A state-level Volunteer and Donations Management training has already been scheduled. The goal of the Volunteer and Donations Management Annex within the State Emergency Operations Plan should be to assist towns with Volunteer and Donations Management, not to direct them. State Support Function 7 should develop relationships with local volunteer and donations managers in order to understand the big picture; including what resources are available, where they are available, and where resources are needed. Local communities created their own systems, managing volunteers as a part of an Emergency Operations Plan or as an impromptu effort through the town Emergency Operations Center, and establishing disaster funds as opportunities became available. Non-profits took a lead role in Volunteer and Donations Management by providing coordination. Local long term recovery planning existed in areas affected by the Spring 2011 flooding, so the Federal Emergency Management Agencies' role in organizing regional committees had to begin from scratch. The resulting committees have no centralized leadership or model, so each is inventing their own process for assessing loss and damages, managing case management, and implementing funding assistance. Many of these regional long term recovery committees are also working with an unpredictable pool of agency staff and both trained and untrained volunteers.
Recommendations	See Appendix A: Improvement Plan

Activity 8.2: ***Organize Volunteers and Assign Them to Disaster Relief Efforts***

Observation	PSD A/B- The Vermont Emergency Response Volunteer system was underutilized
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont Department of Health Emergency Operations Plan
Analysis	The Vermont Department of Health central office never activated their Vermont Emergency Response Volunteers system. Though one Vermont Department of Health District Office activated their own Vermont Emergency Response Volunteers system, this was still an underutilized resource.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- The groups agreed their communities really stepped up to support the effort to help those in the community however the majority in attendance were unaware of the established volunteer programs they could contact in the state.
Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization X Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	There are several agencies in Vermont that worked with and recruited local volunteers. Many of the volunteers may need to have just in time training for the required activity but they are available. Most of these organizations were not contacted for support. Grassroots organizations to support communities were quickly put together by local volunteers this included distribution of food, coordinating help for affected community members along with any

	additional needs for their community.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Community involvement and volunteerism was engaged and mostly effective for most of the communities impacted by TS Irene.
X Noted Strength	☐ Area for Improvement
Capability Element	
Equipment	Planning
Organization	Process
Personnel	Training
References (Standards, Policies, or Plans)	1. Local after-action documents 2. PSD-D After Action meeting
Analysis	Most communities dealt with a spontaneous outpouring of volunteer and community assistance, although some EOCs were hampered by lack of training, over-enthusiasm, and coordination. In more than one case, town EOCs found volunteers at their door before the town had a chance to even partially assess and catalog conditions. Some homeowners found volunteers on their property and at their door before the town had a chance to assess. A neighbors-helping-neighbors organization was especially helpful, as in Grafton and other towns that had them, because they were accustomed to managing and keeping track of volunteer assignments. Phone trees and lists of fragile residents that these organizations already had in place proved to be most beneficial. Grafton recognized the need to organize volunteers as quickly and efficiently as possible, and set up a coordinating location removed from the EOC. Churches proved to be ideal volunteer coordinating centers for many towns. Almost every local EOC was faced with volunteers trying to perform tasks which they weren't trained or equipped – for instance, chain saws but no protective gear. On the plus side, every town noted that they now have a list of volunteers, and in some cases, full or partial listings of volunteer skills and resources (such as heavy machinery, carpentry skills, etc.) Halifax noted that a database was established which enabled them to bring volunteers right to the EOC and assign from there. Towns which had preplanned for emergency shelters – for instance, warming facilities for winter – were better equipped with staffing who were familiar and in some cases even trained to assist displaced residents. A majority of towns struggled to

	overcome not having been able to anticipate the severity of the storm, so dealing with volunteers was, in many cases, a lower priority of need. Towns with PIOs or central communication points also struggled with volunteers inadvertently spreading rumors or ill-timed information.
Recommendations	See Appendix A: Improvement Plan

Capability 9: Communications

Communications is the fundamental capability within disciplines and jurisdictions that practitioners need to perform the most routine and basic elements of their job functions. Agencies must be operable, meaning they must have sufficient wireless communications to meet their everyday internal and emergency communication requirements before they place value on being interoperable, i.e., able to work with other agencies.

Communications interoperability is the ability of public safety agencies (police, fire, EMS) and service agencies (public works, transportation, hospitals, etc.) to talk within and across agencies and jurisdictions via radio and associated communications systems, exchanging voice, data and/or video with one another on demand, in real time, when needed, and when authorized. It is essential that public safety has the interagency operability it needs, and that it builds its systems toward interoperability.

Activity 9.1: *Provide Incident Command/First Responder/First Receiver/Interoperable Communications*

Observation	PSD C- Communications - Hardware
☐ Noted Strength	X Area for Improvement
Capability Element	
X Equipment	X Planning
☐ Organization	☐ Process
☐ Personnel	☐ Training
References (Standards, Policies, or Plans)	1. Rutland PSAP Communications Plan
Analysis	As communication hardware encompasses a wide variety of technology the following were noted as needs for improvement: - The Equinox repeater for Shaftsbury Barracks was knocked out and not restored for several days, congesting of other channels and in some cases eliminating communication to patrol area with radio coverage issues. - Cell phone congestion was noted as problem for some agencies trying to communicate when radios were not functional. Also noted that several Wireless vendor's who advertised they are Public Safety oriented, did not live up to expectations. - During response and recovery operations it was found that public works and highway department are or became first responders and lacked interoperable communications with normal first responders (police, fire, rescue). - The PSAP noted that the telecommunications vendor was unable to efficiently and effectively transfer phone lines to

	relocation/evacuation facility and has not been able to completely restore functions that were transferred during the incident. - Concern was expressed about the incomplete VCOMM build out and the need for UCALL/UTAC and VCALL/VTAC channels for base stations other than at PSAPs.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B & D- Radios were not used to their full extent.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. State of Vermont Emergency Operations Plan
Analysis	During Tropical Storm Irene, when email and phone systems were no longer useable, the State did not utilize the Radio Amateur Civil Emergency Services system to communicate with towns and hospitals. Towns can always access their radio systems, either through their own or dispatch. It would have been an effective way to re-establish communications that were lost when other infrastructures failed. The State has a protocol for different radio channels, but elements of this protocol need to be expanded on. The State hasn't defined where people should meet up to access the radio during a regional failure, or what channel certain people should be tuned into. We have all of this technology, but not a communications plan so we know how to use it. Radios should be used every day between towns and the State. If you work with radios every day, you won't forget how to use them. While towns have the radio channels to communicate with the Vermont State Police, towns believe that they are not allowed to use those channels. Towns should only utilize Vermont State Police radio channels for non-trivial matters. Vermont State Police sometimes utilize radio silence, and this silence should not be broken. The State radio system is transferring to digital, but not every town is ready. Towns are concerned about a loss of signal strength in hills and

	valleys, cost to transition, and the possibility that this transition will occur without everyone; leading to a loss of interoperability. Even if there is equipment interoperability, many agencies choose not to be on the same channel for different reasons. Road crews and Fire Departments are on the same channel, but the road crew chooses not to be on radio. One town is setting up their own radio and communication system so they can communicate within town and cut out the outside chatter.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- Cellular phones were used as an effective alternate form of communication during Tropical Storm Irene
X Noted Strength	☐ Area for Improvement
Capability Element X Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Continuity of Operations Plans for all first responder agencies. 2. State of Vermont Emergency Operations Plan
Analysis	When primary forms of communication, such as email and landline phones failed, cellular phones were used as an effective alternate form of communication among locals. At the state level, when primary forms of communication failed, there was a 45 minute period of silence; with no communication entering or leaving the State Emergency Operations Center. After the initial 45 minute period, some individuals in the State Emergency Operations Center gave out their personal cellular phone number to locals as a contact; though this was an effective work around for this situation, it isn't the best system. These primary forms of communication should be fortified to not fail. The State Emergency Operations Center should be fortified so it will not have to move during an incident. During this fortification, there should be two separate phone lines from two separate companies exiting the State Emergency Operations Center. After these lines are established, someone should physically walk these lines to make sure they do not cross at any point – as that would create a weakness in your system. Due to the geographic layout, service in southern Vermont is always

	sporadic; but it remained available through the duration of the incident. When some towers became unusable, temporary towers were brought in. The Fire Department in one town believes that they could have powered the unusable towers, but they didn't due to liability issues. Talking on cellular phones uses a lot of bandwidth – personnel should utilize text messages instead of cellular phone conversations. Rather than using cellular phones during an incident, the State COMM Trailer could have been used. This is a resource that is already in place, so nothing else would need to be purchased.
Recommendations	See Appendix A: Improvement Plan

Activity 9.2: *Provide Emergency Operations Center Communications Support*

Observation	PSD D- State infrastructure issues had some effect on town's ability to respond to Tropical Storm Irene.
☐ Noted Strength	X Area for Improvement
Capability Element X Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont Department of Public Safety Continuity of Operations Plan
- Analysis	During Tropical Storm Irene, the State infrastructure system was affected; and email and phone systems did not work. This made it difficult for some towns to get information from the State Emergency Operations Center. Some Regional Planning Commissions and State employees began using Google email to communicate – and this worked effectively when you knew the individual's alternate email address. No government entity should use commercially available email sources unless they have already sorted out issues relating to liability. The Department of Information and Innovation (DII) should have had a load balanced system running as the backup to the email system. With a load balanced backup, two servers are running simultaneously so if one server goes out, the other continues to run.

	The state should continue to utilize the internet for communication and information dissemination. The internet continues to get better, faster, and easier to use. Even though the State had to find work around for Tropical Storm Irene, the State shouldn't revert to pen and paper for communication. Some towns felt that the State infrastructure issues didn't affect them, since their town infrastructure was out as well.
Recommendations	See Appendix A: Improvement Plan

Activity 9.3: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	PSD C- Vermont State IT Systems have some vulnerabilities that need to be corrected.
☐ Noted Strength	X Area for Improvement
Capability Element X Equipment ☐ Organization ☐ Personnel	X Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	It was discussed that the placement of Vermont State IT systems showed poor judgment by having essential hardware located in areas below grade susceptible to flooding. Also noted was the similar placement of redundant hardware. It was noted that there are no or limited avenues for streaming video from incidents into the SEOC. It was noted that mobile data computers in the field do not have digital media slots to read cards from cameras to upload images to be sent to SEOC. The EOC DisasterLAN system was of major concern to those trying to utilize the system advising of shortcomings in search ability, organization, antiquated interface, non-user friendliness and limited use for local users (although no specific needs were identified) concerns were still prevalent with acknowledgement of coming upgrade to DLAN .
Recommendations	See Appendix A: Improvement Plan

Capability 10: Economic and Community Recovery

Economic and Community Recovery is the capability to implement short- and long-term recovery and mitigation processes after an incident. This will include identifying the extent of damage caused by an incident, conducting thorough post-event assessments and determining and providing the support needed for recovery and restoration activities to minimize future loss from a similar event.

Activity 10.1: *Activate Economic and Community Recovery*

Observation	PSD D- Federal team visits to communities were often not coordinated.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	Federal Recovery Framework
Analysis	Federal Officials, particularly FEMA, must coordinate their travel with towns that they plan to visit at least the day before they go and must consider the impact versus the benefit to the officials and residents of the town of their visit. Many of the FEMA workers brought in from other areas of the US to assist in the recovery efforts had little idea of how government was organized in Vermont, the large number of local gravel roads, the population of many towns or the small number of paid employees in many Vermont towns. Many federal employees did not understand the impact of arriving unannounced in a small town, particularly one with significant damage. To do so with no perceived benefit to the town was injurious to local-federal relations and delayed the recovery effort. Individual Assistance and Community Relations teams visited towns two or three times a week. They were a distraction to recovery efforts and provided very little assistance. Early in the recovery effort one FEMA employee tried hard to coordinate visits in the Windham County area; however, when that employee moved on to another assignment, the replacement did not put forth the same effort to coordinate with towns. There needed to be a coordinated effort at a state or regional level to brief all Federal Employees new to the state and to organize and coordinate their visits. In some cases these visits did not need to be conducted at all. In the local perception, if you are not here to provide me needed help, you are an un-needed problem. Additionally, there needs to be some coordination from the state level to the towns on what the benefit of having Federal partners visit their community during the recovery phase is and what the need for these visits is.

Recommendations	See Appendix A: Improvement Plan

Activity 10.2: *Provide Monetary Relief*

Observation	State Level AAR- The Vermont Agency of Transportation was particularly overwhelmed by the twin responsibilities of coordinating and administering the Public Assistance Program and responding to the damage to state highways and bridges.
☐ Noted Strength	**X** Area for Improvement
Capability Element	
☐ Equipment ☐ Organization **X** Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan (VEOP) 2. Agency of Transportation SOPs 3. FEMA Public Assistance Policies
Analysis	It was clear at the After Action Review and through previous communications that the Agency of Transportation does not have the staff or time to adequately perform Public Assistance (PA) tasks with FEMA. This is viewed as a particular hardship when a disaster affects state highways and personnel who would normally be responsible for Public Assistance tasks are also tasked with disaster response and recovery. Personnel in the agency are expected to perform the PA tasks in addition to their normal and disaster responsibilities. A disaster of the Tropical Storm Irene's proportions severely challenged this arrangement. The PA program can be a large portion of the information flow to and from the state and municipalities during the recovery phase of a disaster. Requirements of the PA program need to be factored into plans and procedures at all levels.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The support from FEMA was not as forthcoming for Public Assistance making the team feel as if they were reinventing programs.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment	☐ Planning

☐ Organization ☐ Personnel	☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan (VEOP) 2. Agency of Transportation SOPs 3. FEMA Public Assistance Policies
Analysis	During this type of incident, the Agency of Transportation was still working on making roads and bridges accessible and completing their non-disaster, day to day operations, as well as trying to coordinate the Public Assistance program with a very small staff. The Agency of Transportation brought up their reluctance at being the lead agency for Public Assistance, especially because in this case, they did not receive the standard assistance from federal agencies to initiate the Public Assistance program, so they were left to develop their own plan. Through this development process it was felt by the team working on Public Assistance that they were reinventing a process that is already out there. It came back from the federal partners the reason for the non-support from the federal agencies is that all regions perform differently making each plan developed specific to the state/region. It was also noted that most of the roads that were affected by this storm were Federal Aid Highways, making the funding support a bit different than is typically seen in Vermont. The Agency of Transportation has been working through the funding process so the state will receive the correct assistance from federal partners.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Use of contractors to assist local jurisdictions with Public Assistance was not fully successful.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan (VSEOP) 2. Agency of Transportation SOPs 3. FEMA Public Assistance Policies
Analysis	Contractors were hired by the state to ensure towns receive all the money they were eligible for through federal programs. Unfortunately, some towns feel that contractors were not adequately performing their jobs, and were acting as a hindrance to receiving Federal Funding. In

	some cases, Federal Emergency Management Agency Disaster Assistance staff and contractors did not have a good working relationship, which resulted in disagreements. Towns feel that they will receive less money as a result.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD D- The perception that FEMA changed their rules part way through the response and recovery effort has caused difficulties for town officials and the public in making decisions.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. N/A
Analysis	FEMA definitions and process rule changes might seem minor to FEMA officials but to a small town whose limited staff are already overwhelmed by a disaster and the response and recovery effort, they are significant. It may affect the way records were being kept or the way payments were being made, etc. Going back to rearrange records or reorganize the local effort can be daunting. It may affect the town's ability to present a good case for reimbursement.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The ability for the state to provide effective information to towns and impacted citizens has been adversely affected by the slow establishment and operation of Local Long Term Recovery Teams
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training

References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan (SEOP) 2. Long Term Recovery Team Procedures
Analysis	Some of the damage caused by Tropical Storm Irene was fixable in the weeks after the storm. Issues like damaged culverts and holes in roads could be addressed directly. There may be a need to revisit these roads in a few months to ensure that the repairs were complete but generally they are "fixed". Homes that were damaged and families displaced often take longer to "fix". There are often more agencies and organizations that each may have only part of the solution. Involved agencies and organizations could be Federal, State or local, governmental, private or private non–profit. To resolve these longer term issues Local Long Term Recovery Teams were established in affected areas. It has taken several weeks to get these teams established and actually functioning. At the time of the After Action Review, there were nine teams activated. While these teams exist, each team is in a different place in the process. There is no information system that members feel is appropriate to track cases between member agencies of each team. Confidentiality is one of many issues impeding the transfer of this standardized system. The use of the Community Assistance Network could be useful, but that has not been adopted yet. Some of the delay may have been an absence of guidance about formation of the teams and someone in charge to insist on their activation. Even once established, each team is struggling with coordination issues. There is no structured coordination of these Teams to a central point in the Recovery office. Each team is left to their own devices to muddle through their own process without direction or higher level support. To be effective recovery efforts need to start early after the initial effects of the disaster are over and information about team activation and function should be robust.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Some of the beginning steps for recovery were felt to be pushed too early.
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies,	1. State Recovery Plan

or Plans)	
Analysis	It was identified by Vermont State Police that FEMA staff was insisting Vermont State Police start taking FEMA assessment teams into affected areas only days after the storm. As these requests were coming in, Vermont State Police was still working on Life Safety response to the incident. Escorting the FEMA staff took limited personnel from Vermont State Police, which was an unexpected task for them. It was identified by task force members there needs to be long term leadership assigned to the process to keep continuity throughout the program.
Recommendations	See Appendix A: Improvement Plan

Activity 10.3: *Develop and Maintain Plans, Procedures, Programs, and Systems*

Observation	State Level AAR- There was a lack of understanding by many officials and the public, particularly at the local level, about Federal and State Mitigation Efforts which affected the information flow.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process **X** Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP) 2. The Vermont State Mitigation Plan
Analysis	Mitigation is one of the four phases of managing disasters. It is probably the least understood of the phases, particularly on the local level. The FEMA rules about Public Assistance, Individual Assistance and Mitigation are not easy to understand even for a professional working in the area full time. It is even murkier for town officials who are typically only infrequently concerned with it as a result of disaster damage. Mitigation grants are often competitive and difficult to complete successfully. As towns made repairs to roads and bridges decisions may have been made which could make mitigations grants more difficult to obtain. Getting mitigation information to town officials is made more difficult because mitigation issues and solutions do not fit neatly into sound bites. There are many exceptions to rules

	and seeming conflicts that are not easily resolved.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The state lacks an effective information protocol that serves both communities affected by the disaster and those who are not affected and wish to continue their lives and businesses as usual.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. The Vermont State Emergency Operations Plan (SEOP)
Analysis	Even in a disaster the scale of Tropical Storm Irene the some areas of the state were not directly or seriously impacted. With smaller disasters there are usually even more unaffected areas and people than affected ones. If the information sent to the media is not carefully crafted, the general public, particularly people outside Vermont who may be considering travel to the state or business within the state, believe that the entire state is damaged and that they should stay away. This should not be considered a conflict between the victims and the non-victims, which did occur in this instance. If the frequent and consistent message tells the public that there has been a disaster and victims need help but the rest of the state is open and safe for travel and business, everybody wins. The traditional response and recovery usually has had an impact not just on business but tax revenue. The state is impacted two ways. It must pay for a lot of the damage and also have reduced revenue with which to do it. With a properly crafted message business do more business, the State receives more taxes and people affected by the disaster are bothered less by visitors. In the past response agency officials have been opposed to being concerned with this and then outraged when political pressure forced certain things to happen or not happen mid disaster. It would be better for all if this was planned for in advance and done in a way that does compromise truth and response activities.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- The Individual Assistance Task Force was identified as a group that is moving forward with a positive plan of action.
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. State Recovery Plan
Analysis	The Agency of Human Services is the lead for individual assistance; they have developed a Task Force team and are working towards supporting the individual assistance program. This task force has been working to develop several casework management teams that will be in communities working with those affected by the flooding. They did identify needs they are working on: a need for trained people who can work with the low income population who will have need a need for extra support for a long time to come; identifying where those affected insurance policies fit into the support process; identifying other avenues of support for those affected since FEMA individual assistance will only go so far; Identify local individuals to be a part of the task force they have the knowledge of their community.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD C- The lack of written Memorandum Of Understanding (MOUs) prior to the disaster between towns makes collecting reimbursement from FEMA more difficult when neighboring towns help each other during response.
☐ Noted Strength	**X** Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	**X** Planning ☐ Process ☐ Training

References (Standards, Policies, or Plans)	1. Local Emergency Operations Plans 2. National Incident Management System (NIMS) 3. Vermont NIMS Implementation Plan
Analysis	FEMA reimbursement policies require a contract with contractors or a written Memorandum Of Understanding (MOU) with towns providing assistance to another town. It is also very useful to have these written MOUs in place prior to the disaster because they can be constructed in a thoughtful way. This should be part of a statewide effort to encourage and assist towns to have written agreements in place to both speed up response efforts and to ensure the maximum reimbursement should the disaster be covered by FEMA.
Recommendations	See Appendix A: Improvement Plan

Capability 11: Emergency Public Information and Warning

The Emergency Public Information and Warning capability includes public information, alert/warning and notification. It involves developing, coordinating, and disseminating information to the public, coordinating officials, and incident management and responders across all jurisdictions and disciplines effectively under all hazard conditions.

(a) The term "public information" refers to any text, voice, video, or other information provided by an authorized official and includes both general information and crisis and emergency risk communication (CERC) activities. CERC incorporates the urgency of disaster communication with risk communication to influence behavior and adherence to directives.

(b) The term "alert" refers to any text, voice, video, or other information provided by an authorized official to provide situational awareness to the public and/or private sector about a potential or ongoing emergency situation that may require actions to protect life, health, and property. An alert does not necessarily require immediate actions to protect life, health, and property and is typically issued in connection with immediate danger.

(c) The term "warning" refers to any text, voice, video, or other information provided by an authorized official to provide direction to the public and/or private sector about an ongoing emergency situation that requires immediate actions to protect life, health, and property. A warning requires immediate actions to protect life, health, and property and is typically issued when there is a confirmed threat posing an immediate danger to the public.

(d) The term "notification" refers to any process where Federal, State, local, tribal, and nongovernmental organization, department, and/or agency employees and/or associates are informed of an emergency situation that may require a response from those notified.

Activity 11.1: *Establish Joint Information Center*

Observation	PSD A/B & D- The Joint Information Center did not function properly during Tropical Storm Irene.
☐ Noted Strength	X Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training
References (Standards, Policies, or Plans)	1. Vermont State Emergency Operations Plan

Analysis	During Tropical Storm Irene, while the State Emergency Operations Center had a Joint Information Center, it simply acted as a continuously staffed Public Information Officer position; not a Joint Information Center where all information was filtered before release. Towns and agencies sent out their own information, without going through the Joint Information Center first; leading to rumors, incorrect information, and the State Emergency Operations Center not having the most up to date information. A lot of information on the radio and Facebook was incorrect, but as there was no Joint Information Center it was difficult to correct it. Some towns posted information on their website to act as rumor control, but it wasn't as effective as it could have been if they had sufficient staffing. The Joint Information Center would have been especially helpful in passing along information about how, where, and when individuals could volunteer. Without this information volunteers self-deployed, making it more difficult to get the appropriate people to the appropriate location. The Joint Information Center would also be helpful in coordinating shelter information and pet information. Pre-incident, public information should be released about where to evacuate to, and where to bring animals. In Barre, people showed up with their pets, and the pets were right next to cots; while it worked for a short amount of time during this incident, pets should be located in a separate area. When a human shelter is opened, you can't put animals in the same shelter; but people will not go to the shelter if their pets aren't taken care of.
Recommendations	See Appendix A: Improvement Plan

Activity 11.2: *Conduct Joint Information Center Operations*

Observation	State Level AAR- There wasn't a fully functioning Joint Information Center at the State Emergency Operations Center
☐ Noted Strength	X Area for Improvement
Capability Element	
☐ Equipment ☐ Organization ☐ Personnel	☐ Planning X Process ☐ Training

References (Standards, Policies, or Plans)	1. State Emergency Operations Plan
Analysis	There was a lack of coordination in Public Information messaging from the State Emergency Operations Center. Agencies put out their own press releases and answered press questions directly, rather than filtering everything through a Joint Information Center. This resulted in conflicting/inaccurate information, as well as no single entity having the most up to date public information. The Joint Information Center did not have enough staffing to act as a true Joint Information Center. There was a huge demand for public information, but there wasn't enough staff to get the information out quickly, so individuals circumvented the system. Rather than contacting the Joint Information Center for the latest information about particular towns, legislators and agency officials contacted various State Support Functions or towns for the information. The Vermont Department of Health supported the Joint Information Center with staff, but that eliminated their own Public Information Officers from their pool to get out health related messaging. More staff members need to be recruited for the Joint Information Center. Currently, the only Public Information Officers left are from the Department of Education, Department of Health, and Department of Public Safety. Some of these staff members, that are simply updating Facebook and other social media sites, do not even need to be Public Information Officers. During Tropical Storm Irene, local police were utilized to update the Vermont Emergency Management website Information did not flow through the Joint Information Center before it was released by the governor. In one case, a specific staff member's personal cell phone number was given out by the governor as the number to call if you wanted to volunteer. This caused the personal cell phone to be overloaded, and messages were deleted without being heard. There are Public Service Announcement templates that can be used to assist with Volunteer and Donations Management.
Recommendations	See Appendix A: Improvement Plan

Observation	State Level AAR- Communication between the Joint Information Center and Vermont 2-1-1 was effective.
X Noted Strength	☐ Area for Improvement

Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning X Process ☐ Training	
References (Standards, Policies, or Plans)	1. State Emergency Operations Plan
Analysis	The Public Information Officer kept lines of communication open throughout the event. Vermont 2-1-1 was called with all updates, and was informed when the State Emergency Operations Center was evacuating at 2300 on August 28th.
Recommendations	See Appendix A: Improvement Plan

Activity 11.3: *Issue Public Information, Alerts/Warnings, and Notifications*

Observation	PSD A/B- Post-storm public information was often inaccurate or conflicting.
☐ Noted Strength	XX Area for Improvement
Capability Element ☐ Equipment ☐ Organization ☐ Personnel ☐ Planning XX Process ☐ Training	
References (Standards, Policies, or Plans)	1. VT SEOP; SSF Annex 14 – Public Information 2. VT SEOP; TAB C – SSF Annex 14 – Public Information; Crisis Public Information 3. VT SEOP; TAB F –SSF Annex 14 –Public Information; Joint Information Center - DRAFT
Analysis	Participants characterized this as the ability to provide information for the public on "what to do next". The concept of the Joint Information Center (JIC) was designed to meet this need and to address the issues highlighted below. Participants did not believe that a JIC had been established by the SEOC and the commentary offered indicate that even if a JIC was established in some manner, it did not meets the challenges it was designed to manage.

	Participants highlighted the proliferation of confusing and conflicting information. Information on road closures and road conditions was considered poor and slow to update. Misinformation on road closures was common. Information intended to inform the public on recovery issues (FEMA public assistance/individual assistance/mitigation) was often contradictory depending on where the information was coming from. Subject matter experts were too far removed from information releases and this led to interpretations that were erroneous and required significant effort to correct. This was also a point of considerable frustration, as expressed by the public. Participants noted that the staffing of information officers was stretched thin by this event. Multiple agencies were providing information that may have been beyond their respective scope of knowledge all in the effort to be as prompt and forthcoming as possible with information to the public. Once information was provided by the respective federal and state agencies, individual communities varied in their ability to keep citizens informed or to provide assistance with information requests originating locally. Media outlets also contributed to the confusion by gathering information from a variety of news sources that were providing conflicting information. A recommendation was to develop a partnership with the media that would enable consistent messaging to the public. This is difficult to achieve with multiple media operations all living in a "deadline" environment. The suggestion of coordination of news information along with managed delivery times for that information was made by a number of participants. The consensus view was that PIO resources were stretched too thin and there were too many sources of information that were not effectively coordinated on message points or content.
Recommendations	See Appendix A: Improvement Plan

Observation	PSD A/B- Pre-incident information from VEM, as provided to communities and responders in preparation for TS Irene.
XX - Noted Strength	☐ Area for Improvement
Capability Element	

☐ Equipment ☐ Organization ☐ Personnel	XX - Planning ☐ Process ☐ Training
References (Standards, Policies, or Plans)	1. VT SEOP; SSF Annex 14 – Public Information 2. VT SEOP; TAB C – SSF Annex 14 – Public Information; Crisis Public Information 3. FEMA 517 – Basic Guidance for Public Information Officers (publication)
Analysis	Pre-incident information flow was considered more than adequate. VEM and National Weather Service provided a consistent flow of storm related information to allow for pre-incident preparation by responders and the public. Due to the uncertainty of the storm track, it was unclear if the event was going to be primarily a wind event, a, a rain event, or a combination of both. Consistent message on preparedness and pre-event planning positioned the towns and general public to respond to the incident as effectively as possible. Towns relied upon a combination of information sources leading up to the incident and during the initial response period. Television weather and news updates; commercial radio weather and news updates; conference calls by VEM & National Weather Service in the days leading up to the storm; the consensus of the participants was that the pre-incident information was thorough and became more refined as the storm track developed. Communities were more attuned to the advisory nature of the information because of the recent spring-time flooding experienced in the state; however, some believed that the impending storm would be less severe than the spring flooding and participants noted that many within their communities still maintained an "it won't happen here" attitude. Many communities and businesses took advantage of the advanced information to do necessary equipment checks and review continuity of operations plans to include a wide range of contingency plans and mutual aid plans. The consensus opinion was that the pre-incident information flow from the state was more than adequate; in fact, at times too much information was being received for some smaller localities. Information flow at the local level varied by community and was noted as an area for improvement on that level. The scope and severity of the event could not be fully appreciated prior to the arrival of the storm. It did surprise many; they knew a significant storm was on the way, they simply didn't believe it would be as powerful as it turned out. Most agreed that this underestimation was not a result of lack of information, rather it was simply human behavior in

	general. Use of social media tools was recognized as a new addition. Participants were aware of that, but the information sources used primarily in this event would be the more traditional communication systems (conference calls; emails; news releases) and social media was not discussed as a significant aspect other than to note it does have potential that should be explored.
Recommendations	See Appendix A: Improvement Plan

Capability 12: Emergency Public Safety and Security Response

Emergency Public Safety and Security Response is the capability to reduce the impact and consequences of an incident or major event by securing the affected area, including crime/incident scene preservation issues as appropriate, safely diverting the public from hazards, providing security support to other response operations and properties, and sustaining operations from response through recovery. Public Safety and Security Response requires coordination among officials from law enforcement, fire, and emergency medical services (EMS).

Activity 12.1: *Activate Public Safety and Security Response*

Observation	PSD C- Local Emergency Responders
X Noted Strength	☐ Area for Improvement
Capability Element ☐ Equipment X Organization X Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	
Analysis	At the onset of Tropical Storm Irene Public Safety District "C" Coordinator re-assigned Vermont Fish and Wildlife Wardens to assist with State Police with Response/Recovery assignments. Bennington and Rutland County Sheriffs manpower was redirected from ongoing contractual obligations to assist Vermont State Police and local police departments. The declaration and activation of Vermont Army/Air National Guardsmen by the Governor was an immense augmentation to response and recovery capabilities. All response personnel showed their highly trained abilities and professional conduct during this emergency. This was attributed in part to the VT HSU exercise program and the continued training many of the volunteer departments commit to.
Recommendations	See Appendix A: Improvement Plan

Capability 13: Mass Care (Sheltering, Feeding and Related Services)

Mass Care is the capability to provide immediate shelter, feeding centers, basic first aid, bulk distribution of needed items, and related services to persons affected by a large-scale incident. Mass Care is usually provided by nongovernmental organizations (NGOs), such as the American Red Cross, or by local government.

The capability also provides for companion animal care/handling through local government and appropriate animal-related organizations.

Functional and Medical Support Shelters (formerly known as Special Needs Shelters) are addressed as a separate capability. However, this capability does cover those individuals who have disabilities that can be accommodated in general population shelters. These individuals could include the following:

- A person requiring medication, Consumable Medical Supplies ([CMS], such as hearing aid batteries, incontinence supplies), or Durable Medical Equipment ([DME], such as wheelchairs, walkers, canes, etc.);
- A person with a stable medical or psychiatric condition;
- A person who requires a caregiver where the regular caregiver can stay with the person;
- A person requiring assistance with transferring from a wheelchair to a cot where the assistance does not require specialized training or lifting equipment;
- A person requiring oxygen who is mobile and does not require medical attention; or
- A person needing assistance with some activities of daily living such as cutting of food.

This list does not include all accommodations that can be made in a general population shelter, but each shelter will have different capabilities based on location and available facilities at the time of the disaster.

Activity 13.1: *Establish Shelter Operations*

Observation	PSD D- Training, personnel, and equipment for community shelters.
☐ Noted Strength	X Area for Improvement
Capability Element X Equipment ☐ Organization X Personnel	☐ Planning ☐ Process X Training
References (Standards, Policies, or Plans)	1. Local Shelter Plans 2. Vermont Department of Health Emergency Operations Plan
Analysis	Prior to this incident, communities were under the impression that the American Red Cross would be able to address all of the sheltering needs

	around the state during a major incident. Communities thought the American Red Cross would respond to a town, when requested and set up a shelter if it was necessary. During this incident, many roads and communities were not accessible, making it impossible for the American Red Cross to access and provide the support required to operate a shelter. Since sheltering was necessary due to damaged and flooded homes, communities were forced to open shelters on their own. When community shelters opened, they were not prepared with plans, equipment or staff to adequately operate the shelter; especially mental health and hygiene staff. Since training on sheltering had not been completed prior to the opening of many community shelters, local officials ran the shelters based on best practices gained from past experiences. In many cases, by the time the American Red Cross was able to access or support communities, the need for shelters was gone and the community supported shelter had been closed. Some of the Vermont Department of Health District Office staff were available during this incident, and may have been utilized to fill this role if plans were in place ahead of time.
Recommendations	See Appendix A: Improvement Plan

Conclusion

[This section is a conclusion for the entire document. It provides an overall summary to the report. It should include the demonstrated capabilities, lessons learned, major recommendations, and a summary of what steps should be taken to ensure that the concluding results will help to further refine plans, policies, procedures, and training for this type of incident.

Subheadings are not necessary and the level of detail in this section does not need to be as comprehensive as that in the Executive Summary.]

TO BE COMPLETED AFTER AAC.

Appendix A: Improvement Plan

Capability	Observation Title	Recommendation	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Community Preparedness and participation	1. Towns with EOPs and trained officials fared better than other towns. (State Level AAR)	Recruitment, training, and support of Emergency Management Directors (EMD) should be made a priority by towns, Local Emergency Planning Commissions (LEPC), Vermont Emergency Management (VEM), and the Vermont League of Cities and Towns (VLCT).	TOWNS & LEPCs			
		Emergency preparedness planning and training for EMDs, and all other elected and appointed positions should be offered.	VEM			
		Towns should continue to be encouraged to participate more fully in emergency preparedness exercises.	SERC			
		LEPC capabilities, staffing and grants, should be strengthened by the state to provide more outreach and training to towns.	SERC			
		Micro presentations should be created that can be expediently inserted into select board and school board agendas that would increase awareness and need for emergency management education and training.	VEM			
		LEPC discussion and operations-based exercises should focus equally on response and recovery, involving as many local, regional, and state partners as necessary to increase preparedness for TSI-scale disasters which will be in the future.	HSU/VEM			
	2. There was a lack of pre-event public information regarding disaster preparedness, response and recovery. (State Level AAR)	A working group of appropriate state agencies and business organizations should be formed. This group should establish suggested standards for preparedness for residents and business owners. This could include things like generators, generator safety, flood proofing a business or home, etc.				

		The working group should review previous public information efforts and campaigns and develop new and more effective ongoing campaigns. This could include having different focuses during the year. Declaring a particular week as a particular hazard week might also be useful.	VEM			
		There needs to be an effort to document the major capabilities and limitations of both the state government and the federal government to respond, recover and reimburse in public and individual assistance.	VEM			
		These capabilities and limitations need to be produced in various public information and public education efforts on an ongoing basis.	VEM			
		Municipal government officials need to receive targeted training on these capabilities and limitations periodically because there is a normal turnover of officials without a lot of passing on of knowledge by the outgoing officials.	VEM			
	3. The public had difficulty obtaining assistance. (State Level AAR)	A working group needs to be formed of representatives from various information services such as E-911, 511, 211, at least one RPC and at least one LEPC and the VEM PIO to review the experiences in recent disasters and develop a more coordinated effort.	VEM			
		The working group should consider having a special call center for special types of information or to triage non-emergency calls.	See 2.1			
		The working group should look into incentives that might be offered by insurance companies and other business groups for certain achievement of preparedness.				
		The working group should consider having members of the print and electronic media as advisors in this effort. Local radio and TV personalities can be very useful.				

		The working group should consider a public education program with many of the materials used provided to local EMD to be truly successful. The EMD should be provided a Train The Trainer (TTT) course and encouraged to discuss the benefits of family and individual preparedness.				
		EMDs should be kept in the loop with a newsletter (both paper and electronic) and be provided ways to provide VEM with feedback and suggestions.				
	4. Response was hindered by citizens refusing to evacuate and needing to be rescued later. (PSD D)	Distribute VEM Family Emergency Preparedness Workbooks to community members and instruct them about how to fill them out.				
		Consider legislation to eliminate the burden on First Responder agencies to evacuate citizens that have refused initial evacuation.				
	5. Local relationships aided in response.	Towns should ensure that they have adequate resources to function without state assistance for 72 hours. (PSD A/B)	TOWNS			
		Continue training with multiple local partners to forge relationships and build trust. (PSD A/B)				
		Ensure that emergency paperwork is located in centralized locations. (PSD A/B)				
		Ensure that Local Emergency Operations Center (EOC) plan is continuously updated. (PSD A/B)				
		Continue to build rapport with citizens and local officials. (PSD A/B)				
		Create formal written agreements for sharing resources; these agreements should include agreed on costs. This will aid in reimbursement. (PSD A/B & D)				
		Encourage policy makers to get involved with written agreements. (PSD A/B)				
		Continue early warning relationships between towns; expand these relationships when possible. (PSD A/B)				

	6. Responders did an excellent job. (PSD D)	Alert responders 48 hours in advance of the incident about the possible need for staffing.				
		Create plans to utilize mobile volunteers; ensure liability coverage and training are covered in these plans.				
		Consider changes in leadership for agencies that do not work well together. Schedule exercises and drills with the intent of ensuring that these agencies can perform their roles together.				
		Responders, especially volunteer responders, should be recognized publicly for their efforts.				
	7. Additional resources are needed for first responders to improve response efforts. (PSD D)	Find a way to compensate volunteers and Local EMDs for their efforts with Irene so they will be willing to work the next time they are needed.				
		Begin establishing pay scales now so future payments for disasters will be possible.				
		Establish a policy stating that if an event runs longer than 24 hours, volunteer first responders will be reimbursed.				
		Procure additional staff through Mutual Aid Agreements				
		Towns should utilize Mutual Aid Agreements to procure regional resources.				
		Regional resources should be pre-staged in different towns to assist in response efforts.				
		Towns should pool their resources to establish a regional EOC.				
		Towns should establish individual EOCs.				
		Town plans should be for the worst case scenario, but acknowledge their own limitations.				
		The banking commission should create a policy to extend lines of credit to towns during an emergency.				
		Procedures should be in place for alternatives to ambulance transport.				

	8. As Mutual Aid wasn't available, First Responders worked with resources available. (PSD D)	See Capability 1, Observation 5				
	9. Road Crews should be categorized as First Responders. (PSD D)	In plans, road crews should be noted as First Responder personnel.				
		Road crews should receive proper first responder training, specifically ICS and safety trainings.				
		Road crews should be provided with appropriate first responder equipment, such as radios, and be trained to use that equipment.				
	10. Many State and Regional agencies have developed local relationships. (PSD A/B)	State and Regional Agencies should continue to develop positive local relationships.				
		Vermont 2-1-1 should clarify expectations with local officials.				
		Vermont Department of Health personnel should work to create trust between the District Offices and State level office.				
		Local, regional, and state officials should make relationship building a priority.				
		Emergency Response officials should attend meetings of civic groups (Lions, Elks, Moose) and other local groups.				
	11. Local, Regional, and State Officials should be involved in LEPCs. (PSD A/B)	Provide training at LEPC meetings.				
		Make LEPC meetings relevant to local officials.				
		Consider paying for training for first responder agencies at LEPC meetings.				
		Host Mutual Aid Meetings after LEPC Meetings.				
		Perform outreach to increase attendance at LEPC Meetings.				
		Rotate location of LEPC meetings.				

		Host an exercise at each LEPC meeting.				
		Consider disbanding inactive LEPCs.				
		Create plans to get more community members involved in LEPCs, instead of relying on the same people to fill local roles.				
		Fix identified areas for improvement before exercising again.				
		LEPCs should work to get one individual per town to attend Commission meetings.				
		LEPC Chairs and officers should hold an annual meeting.				
		LEPCs should work together to create officer trainings. These trainings should include how to fill out role specific documentation.				
		LEPC officers should have job descriptions.				
	12. Emergency response staff should be prepared to work in an emergency response environment. (PSD A/B)	Emergency Response agencies should train staff to work in the same building for a week.				
		Emergency Response agencies should assist staff in creating go kits and family emergency plans.				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 2: Planning	1. Pre-Incident planning was effective until the State EOC was forced to relocate. (State Level AAR)	Continue pre-positioning staff at the State EOC before an incident/event.				
		Ensure that State EOC staff are trained and exercised in Continuity of Operations Plans (COOP).				
		Update the Department of Public Safety COOP to ensure fast and easy transition when forced to relocate.	DPS			

		Ensure that redundant telecommunications and information technology systems that support phones, email and the disaster management system are operational and tested periodically	DPS			
		Ensure that a mechanism exists to fully inform local jurisdictions and external agencies when a transfer to an alternate site occurs and advises them of new methods of communications.	VEM			
		Ensure maps of an alternate facility are available to displaced staff.	VEM			
		Ensure technology is pre-established as much as possible with adequate Communications/Information Technology staff at alternate site.	DPS/DII			
		Ensure that, regardless of the State EOC location, shift briefings are held.	VEM			
	2. The State Emergency Operations Plan (EOP) needs to be updated, trained, and exercised. (State Level AAR)	Ensure agency leadership and all individuals filling roles in the State EOC have read the State EOP and are trained in their roles and responsibilities.				
		Ensure that adequate staff members are available from all agencies to perform duties during an emergency.				
		Agency EOCs should only be established based on the needs of the incident, consistent with the state multi-agency coordination system.				
		A communication map should be written into the State EOP.	VEM			
		Ensure that all aspects of the EOP are exercised, including recovery, on a periodic basis.				
		Local exercises should incorporate one contact from the State EOC to improve realism.				
		The State should reach out to the business community and explore the possibility of partnering with businesses during emergency response.				

		Ensure that agency officials understand the importance of emergency planning and exercising.				
		Provide an annual orientation to senior leadership during the first quarter of the calendar year.				
	3. Emergency Statutory Authorities were not understood by all agencies. (State Level AAR)	All agencies should understand the Emergency Statutory Authorities available to them to ensure the most effective use of resources during an incident.				
		A table of agency statutory emergency authorities should be included in the State EOP.				
	4. Many towns do not understand the importance of the EMD position. (State Level AAR)	Every EMD should be trained in their emergency role, and understand what information to collect and who to send the information to.				
		VEM should continue to hold EMD trainings. The training should be revised based on lessons learned from 2011 incidents.				
		Towns should be informed of the importance of filling the EMD role with someone who is able to respond during an emergency.				
		LEPCs should host EMD trainings in conjunction with their Local Emergency Planning Committee meetings.				
		EMD trainings should occur while Tropical Storm Irene is still on everyone's mind.				
	5. COOPs may not be consistent with the Vermont State Employees collective bargaining agreement. (State Level AAR)	The "State Offices are Closed" statement should not be issued without first understanding what that statement could mean for COOP purposes.				
		Labor contracts should be examined for language that would conflict with continuity plans and where possible, modified to ensure that partnering agencies, the public, and clients are adversely impacted as minimally as possible.				
		Agencies should consider making the COOP alternate site the individual employee's home.				

		The Vermont State Employees contract should be re-written to address pay issues during an emergency closing.				
	6. COOPs for many agencies and departments were not effective.	All state agencies and departments should have in place specifically tailored emergency procedures that includes a continuity of operation module. (State Level)				
		An intensive review of the COOP should be ordered by the Governor to be completed no later than June 30th. This review should be at department, agency, and state levels to ensure coordination and the best use of resources.				
		All state agencies and departments should revise their plans to allow for more severe and prolonged disruptions in routine service and tasks, including complete relocation of offices and loss of IT functions.(State Level)				
		The Department of Buildings and General Services should be assigned to provide assistance and support to agencies in updating COOP Plans. (State Level)				
		Staff should be fully trained in COOP plans.(State Level)				
		The State Human Resources Department needs to prepare and plan for incidents that cause employees to suffer extremes of exhaustion and stress by maximizing available personnel not performing emergency response or recovery functions. (State Level)				
		Agencies should ensure that COOPs include contact information that would still work if the agency went to their alternate facility. (State Level)				
		Agencies should ensure that COOPs do not conflict with other emergency response agencies standard procedures or COOPs. (State Level)				

		COOPs should have alternate facilities that would not be affected by the same events as their primary site, and these sites may need to vary by season. (State Level)				
		Agencies should exercise their COOPs on a periodic basis with varying scenarios and participation by regional offices to ensure that the plans would work. (PSD A/B & State Level)				
		Department of Information and Innovation connections in Montpelier should be moved out of the basement and have a backup system. (PSD A/B)				
		Agency COOPs should be updated and scaled to an incident as large as Tropical Storm Irene.(PSD A/B)				
		The Vermont Department of Health should create back up email addresses that can be utilized when primary email systems fail.(PSD A/B)				
		The Vermont Department of Health should work with hospitals to ensure that the HC standard is up to date and utilized as efficiently as possible.(PSD A/B)				
		Dispatch needs to update COOPs to include alternate methods of communication when computers are out of service for extended periods of time.(PSD A/B)				
		All EOPs should include Email, DisasterLAN, cellular phone, landline phones and radios as redundant communication systems.(PSD A/B)				
		The State should ensure 100% cellular phone coverage in the state of Vermont.(PSD A/B)				
		Temporary cellular phone sites (COWS) should be ordered from carriers during emergencies.(PSD A/B)				
		Temporary cellular phone sites (COWS) should be stored in state to utilize in emergencies.(PSD A/B)				
		The State EOC should have a bank of cellular phones that are used during emergencies.(PSD A/B)				

		A list of State EOC phone numbers, including local Emergency Response numbers, should be made available to local officials.(PSD A/B)				
		The 800 number to reach the EOC should also have a backup 800 number.(PSD A/B)				
		Primary and alternate means of making support requests should be designated using all available means (phone, fax, DisasterLAN, email) and staffing should be identified in the SEOC to support that.(PSD A/B)				
	7. Lack of consistency with State agency district boundaries led to difficulties in information flow.	A working group should be created to align state agency and organization district boundaries to assist in response and recovery efforts. (PSD D & State Level)				
		A Disaster Overlay for response and recovery purposes should be created to align district responsibility during a disaster. (State Level)				
		This disaster alignment should be tested in periodic drills and exercises particularly on a regional basis. (State Level)				
		VEM should act as the facilitator and coordinator of this working group and provide documentation support as needed. (State Level)				
	8. As Mutual Aid wasn't available, First Responders worked with resources available. (PSD D)	Please see Capability 1, Observation 9				
	9. Pre-Incident planning enabled First Responders to respond more effectively. (PSD D)	Town EOPs should include checking culverts and clearing any drainage issues ahead of a storm.				
		Town EOPs should include identifying flood prone areas, as well as trigger points, evacuation routes, and contact information.				
		Consider a statutory requirement for local EOPs.				

	10. Situational awareness about water levels would have assisted First Responders. (PSD D)	Create a 'trained waterway spotters' program for citizens interested in learning how to safely monitor and report water levels.				
		Decide on an effective method for these trained spotters to communicate with first responders. Include backup methods.				
		Review the need for additional stream gages or repositioning of existing ones.				
	11. The Regional Planning Commission role during incidents is not clearly identified. (PSD D)	The role of Regional Planning Commissions (RPC) should be clearly identified in plans, including responsibilities.				
		Regional Coordination Centers should fill the 'county government' role during emergencies.				
		RPCs should fill the 'county government' role during emergencies because they already have a relationship with towns.				
		Legislators should continue working with the Federal government to ensure RPCs are able to receive direct funding as 'county government'.				
		RPCs should be renamed as "Regional Planning and Operational Commissions".				
		Regional EOCs should be staged for large incidents – with appropriate trained staff and equipment, such as radios.				
		Whatever agency fills the role of regional coordination body should have plans in place for funding and reimbursement.				
	12. RPCs did an excellent job acting as mappers during Tropical Storm Irene. (PSD D)	RPCs should continue to fill the role of mappers outside of incidents and during incidents.				
		Plans should be put in place for RPCs to work with the Agency of Transportation and other agencies to produce a coordinated Transportation map as well as other map products that provide better situational awareness.				

	13. A long term statewide river management plan with local and state input should be developed. (PSD C)	ANR and AOT should jointly conduct a river science education road show program for town road crew foremen, public works officials, and town officials including planning and zoning personnel. A targeted outreach program to attract local officials should be conducted.				
		The river science education road show program should be adapted to a video that can be being shown on both public and commercial TV and also placed on agency websites and other social media venues.				
		The current river management plan should be featured at a series of public meetings throughout the state and local education provided and input obtained.				
		This should be used as an opportunity to forge new or improved relationships with local road crew foremen and officials.				
	14. Vermont State Police would be unable to established a Regional Coordination Center in Troop C. (PSD C)	The Public Safety District offices should be looked at to determine if they have the capacity be activated as RCCs and fixes put in place.				
		If Public Safety District offices cannot be established as RCCs, different locations for the RCCs must be found.				
		The Rutland PSAP is also in a flood area and should have a high priority to be moved to a safe location as soon as possible.				
	15. The State of Vermont should plan for and implement Regional Coordination Centers before the next disaster. (PSD C)	A working group of key state agencies, RPCs, and the VLCT should develop an implementation plan for RCCs.				
		In the event that RCCs cannot be implemented, a coordination group should be activated in the State EOC that has trained people assigned municipalities to ensure coordination is being accomplished effectively.				
	16. Towns need to coordinate Animal	Towns need to coordinate plans for the receipt and redistribution of animal related donations.				

	Shelter Planning (PSD A/B)	Formal plans for evacuating pets when people are evacuated need to be created.				
		Memorandums of Understanding should be entered into with local kennels to shelter pets.				
		LEPCs should review Agency of Agricultures Disaster Animal Response Team (DART) information.				
		Liability issues of having animals in human shelters should be addressed prior to an incident.				
	17. Towns were able to established DARTs during this incident. (PSD A/B)	Continue efforts to establish DARTs throughout Vermont.				
		Continue efforts to establish facilities for evacuated Agricultural Animals.				
	18. Towns are now scheduling Community Emergency Response Team trainings to incorporate DARTs and Medical Reserve Corps. (PSD A/B)	See Capability 2, Observation 17				
	19. The Financial Management Annex of the State EOP need to be updated. (State Level AAR)	The Financial Management Branch should be staffed at the State EOC throughout every incident.				
		The Financial Management Branch should continue to review the Financial Management Annex and make updates as needed.				
		Staff working in the Financial Management Branch should be trained on the Financial Management Annex.				
		The Financial Management Branch should be given access to DisasterLAN.				
		All SEOC personnel should be trained in the Financial Management Annex.				

		Financial Management Branch staff should continue to meet in a working group to discuss Federal Emergency Management guidance.				
		Vermont should establish an emergency fund to be used for ordering and billing during emergencies.				
		Town Finance issues should be addressed in the State EOP and local EOPs. Best practices should be documented.				
		Financial Management staff should attend an Emergency Management institute course on Financial Management.				
		Financial Management staff should identify and utilize best practices from other states.				
	20. Some agencies use the Incident Command System on a daily basis, making it easier for staff to utilize during an incident. (State Level AAR)	When possible, agencies should model their daily organizational structure after the Incident Command System.				
		Agencies should contact the Fire Academy for Incident Command System trainings.				
		RPCs should schedule Incident Command System trainings for local officials.				
	21. Previous drills and exercises were helpful to those who had participated.	Continue to participate in drills and exercises. (State Level)				
		Continue more exercises similar to CATEX. (State Level & PSD C)				
		Provide training in water safety for all responders and work towards more swift water rescue teams. (PSD C)				
		Provide 1-2 hour exercises as part of LEPC agendas and move from town to town to get more towns excited in doing the larger exercises. (PSD C)				
		Provide the Agency of Transportation training in ICS with rescue agencies so they could work side by side for better understanding of what each agency does for response. (PSD C)				

	22. There needed to a more defined process for emergency closing of the state offices. (State Level AAR)	Identify where the COOP can be located for each agency and suggest it be reviewed by leadership.				
		Look at policies and procedures that identify which agencies can redirect their employees to work in the SEOC if offices have been closed.				
		Identify security agencies that could support the security needs when a large group of buildings needs to be closed down.				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 3: Restoration of Lifelines	1. There is a strong need for Memoranda of Understanding and/or Area Mutual Aid Agreements between towns concerning assistance with road repair.	Form a working group of appropriate organizations to review and recommend useful model documents for road repairs and methods of implementing them. (PSD D)				
		These model documents need to be written in compliance with the National Incident Management System and coordinated with FEMA to ensure their acceptability for reimbursement purposes. (PSD D)				
		A plan needs to be established for implementing and maintaining mutual road assistance MOUs statewide. Towns will need assistance in converting model documents into actual MOUs. (PSD C & D)				
	2. Towns communicated with each other to address known road issues. (PSD A/B)	Continue with the coordination of road issues between towns.				
		Continue to update plans relating to river gauge information and triggers.				
	3. Vermont National Guard engineer units were eager to help and communicated with	Officials from towns that received assistance from National Guard Engineer units during Tropical Storm Irene should attend an After Action Review (AAR) hosted by the Vermont National Guard.				

	town officials and road crews. (PSD D)	A guide for town officials should be developed by the National Guard on what to expect if assistance is provided. This guide should be provided to RPCs prior to the next disaster and to town officials when a Guard unit starts to provide assistance.				
		Vermont National Guard Engineer unit Standard Operating Procedures (SOPs) should be reviewed and revised to include best practices when working to support civil authorities.				
	4. VTrans was unable to directly assist towns or coordinate resources for towns. (PSD D)	Vermont towns need to have plans and procedures to enable them to respond to damage to their roads without state assistance. These plans and procedures may include bringing in outside contractors or assistance through mutual aid pacts with neighboring towns.				
		Colleges and universities with civil engineering programs should be approached to see how programs beneficial to their students and to Vermont towns could be created and maintained.				
		The VLCT, RPCs and similar organizations should be approached to catalog the types of training and education that are needed by town selectpersons and road crews.				
	5. State and town road crews were highly motivated and focused on repairing roads as quickly as possible. (PSD D)	See Capability 2, Observation 9				
		Best practices and lessons learned should be used by towns to review and revise their plans and procedures.				
	6. Further assessments need to be made of state and local roads that were temporarily repaired, as well as streams and rivers that were affected	A review of repaired roads and bridges should be conducted this winter before spring run-off occurs. (PSD D)				
		Establish a plan to make further repairs based on this list. (PSD D)				
		Technical Assistance should be provided to towns to conduct a review of road and river repairs. (PSD D)				

	in the process.	A statewide inventory of local roads, bridges and culverts should be created and maintained. This should include measurements, building materials, etc. (PSD C & D)				
		This should be used as an opportunity to forge new or improved relationships with local road crew foremen and officials.(PSD C & D)				
		Documented inventories with GIS maps should be the basis for making an annual road improvement plan.(PSD C & D)				
		One of the goals of the annual road improvement plan should be to get state and town roads up to an approved standard more capable of withstanding severe weather events over a period of a few years.(PSD C & D)				
		Review these standards with FEMA in advance to ensure the best reimbursement for the repairs made. (PSD D)				
		The town road inventory and revised standards should be used in future storm damage repair. (PSD D)				
	7. The cooperation and assistance provided to impacted towns by neighboring towns was exceptional. (PSD D)	Where they exist, MOUs, MAAs or other plans should be reviewed and revised using the experience gained in Tropical Storm Irene.				
		In those towns without MOUs, MAAs or other plans for mutual aid assistance, RPCs should be employed to assist towns to create them.				
	8. Some towns organized citizens who owned various types of useful equipment into effective teams to assist their town road crews. (PSD D)	Have knowledgeable parties review the feasibility of having citizens assist during a time of need. This should include a review of liability and reimbursement issues.				
		Based on this review, towns should create plans for obtaining the assistance of citizens and the use of their resources.				
		After review this may be included in a list of best practices provided to towns.				

	9. Both State and local road crews worked long hours and made difficult repairs to a variety of damaged roads, culverts, bridges, etc. (PSD C)	A team should travel to towns significantly affected by Tropical Storm Irene and meet with road crews to gather "Lessons Learned" and "Best Practices". The results of these interviews should be documented and distributed to all towns.				
	10. Cooperation between road crews of neighboring towns and cities was generally superb. (PSD C)	Please see Capability 3, Observation 9				
	12. A collaborative working relationship needs to be established between local road crews and local officials and the Agency of Natural Resources, the Department of Environmental Conservation and its River Management Program. (PSD C)	State agencies should review their policies and enabling legislation to determine what their role should be in assisting Vermont municipalities with issues in their streams and rivers. Vermont municipalities should be aware of what this role is to better understand their own responsibilities.				
		State Agencies should conduct training for their staffs concerning how communications with local officials should be conducted.				
		State Agencies should devise a plan to conduct meetings on the local level state-wide to seek input about problems with the rivers and streams in affected areas.				
	13. State and local road crews often do not identify and mark alternate routes to closed roads in disasters. (PSD C)	Road crew and law enforcement training should be conducted to include who has the authority and responsibility to close roads and establish detours and what local and state coordination or approval is needed.				
		See Capability 4, Observation 3				

		There should be a positive connection between road closure and the need for detours clearly identified in state and local road crew and police procedures and training. If there is a closure, there needs to be at least one detour properly posted that will minimize additional driving.				
	14. VTrans lack of communication with town officials regarding the repairs of state roads in affected towns caused concern among town officials and resulted in an uncoordinated effort. (PSD D)	AOT districts should conduct meetings with town road crew foremen and public works directors in that district to discuss and agree on better ways to communicate and coordinate work both in routine matters and in disasters.				
		AOT officials should meet with town officials, including elected officials, on a periodic basis to discuss common problems in a cooperative and collaborative way.				
		RPC personnel should be deployed to the RCCs, and work in the state EOC, to assist in coordination efforts between state and local officials.				
	15. Lack of understanding of the ICS structure and vertical information flow between state and local entities resulted in ANR representatives giving orders directly to town employees and contractors. (PSD D)	State employees who could possibly work in or with the ICS structure should take the appropriate levels of ICS training to understand the ICS organizational structure and the responsibilities associated with the various roles.				
		ANR should establish an on-going outreach program for local officials to discuss common river problems and solutions in a cooperative and collaborative way. This could be combined with a similar effort by AOT concerning roads.				
	16. Federal and state officials with authority over streams and rivers offered conflicting guidance to towns about best practices in correcting the damage	Federal and state agencies with interest in or authority over some aspect of streams in Vermont need to work out how they will operate in a unified manner in both routine and disaster situations.				
		Difficult to resolve issues need to be brought to the attention of the Governor and the Vermont Congressional delegation through agency management.				

	caused by the streams and rivers. (PSD D)	Federal agencies should be requested to send trained and knowledgeable personnel to assist the state during disasters.				
		Federal agency personnel should be involved in the creation and dissemination of river management education efforts to assist in having a unified effort during a disaster.				
	17. The regulatory and assistance role of state and federal agencies with authority over streams and rivers are not fully understood by the towns. (PSD D)	A robust education/training program on river management must be created and maintained as soon as possible.				
		Interested local officials in Vermont should be trained and educated in the science and best practices of river management.				
		This training/education program must be aggressively promoted and local officials recruited as students.				
		A public education effort should be created from the most applicable parts of the local official program and made available to the public in many different venues such as public television, websites, libraries, etc.				
		ANR river officials need to develop an assistance and permission protocol and disseminate it widely and again before likely storms or storm prone seasons.				
		In this protocol there should be strong guidance about how state and federal officials can provide real assistance during the disaster and when regulatory issues should be addressed.				
		Updated contact information for river management officials should be provided in DisasterLAN and in state and regional briefings.				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 4:	1. There was limited	Enhance coordination between towns.				

Intelligence and Information Sharing and Dissemination	discussion between towns during Tropical Storm Irene. (PSD A/B)	A standard set of information should be collected from each town and distributed to surrounding towns.				
	2. It was difficult to obtain information about road closures.	A more systematic, flexible, and timely system for monitoring and reporting on local, regional, and state road conditions should be established. (PSD C, D, & State Level)				
		Local road status information must be gathered and displayed on both a routine and a disaster basis on appropriate state web-based portals in a timely and accurate way.(PSD C & D)				
		The use of RPCs to gather local road status information and provide it to 511 in a disaster should be considered. (PSD D)				
		Communications to the public should be expanded to include not only public alerts and standard press released, but also better web-based mapping and real-time updates. Social medial (Facebook, Twitter, etc.) should be carefully, but purposefully, explored as additional resources. (State Level)				
		The new or improved 511 Road Status System must be both negative and positive in displaying both roads closed and routes open information. (PSD D)				
		A decision must be made about whether state and local officials will have exclusive use of expanded features of the system over the general public. (PSD C, D, & State Level)				
		The new or improved 511 system must include a “How to get there” section that provides recommended routes to get around or through areas with significant closures. (PSD C)				
		Town plans must designate a Point of Contact (POC) position responsible for providing information to the 511 system and to either the RCC or the SEOC and sufficient contact information to ensure appropriate redundancy. (PSD C)				

		The 511 system must be adequately staffed in "normal" times and increased significantly in disasters. (PSD C)				
		There must be an on-going education program for town road crews and city public works departments to be fully vested in the new or improved 511 system. (PSD C)				
		Transfer of information from 511 to commercial sites such as Google maps, Map Quest, Cities and Streets, etc. should be considered during disasters. (PSD C)				
		511 road closure information should be directly integrated/ streamed into the real time DisasterLan map system. (PSD C)				
		VT 211 should not be responsible for being an accurate source of road condition information. (State Level)				
		If communications are jammed or blocked, VT 211 could be used to relay information from towns to the SEOC. (State Level)				
	3. There was considerable confusion and disagreement among the state and towns over road status classifications and their definitions which deprived state and local officials of a clear picture of road status.	There need to be regional meetings between state and local road crew supervisors to establish standardized road closure classifications. (PSD C, D & State Level)				
		There must be a mechanism created to periodically reinforce these definitions in the minds of state and local road crews. (PSD C & D)				
		These definitions must be published and used routinely in both normal maintenance and disaster response and recovery to include the new 511 system. (PSD C & D)				
		All road closure or road issue information should be collected by State Support Function 1, Transportation, at the State EOC or, if applicable, Regional Coordination Centers. This information should be coordinated with the virtual transportation map. (PSD C)				
	4. Information requests from State to Local,	The RCC should be able to be activated at the Troop level after a conversation with the SEOC. (PSD C)				

	Community to Community, and Local up to State became overwhelming to the point many communities stopped giving the information as they were too busy.	State Support Functions (SSF) should be trained in what a spot report is, when it is expected to be posted for the SSFs to review, and if there are needs that should be included in the spot report. (PSD C)				
		Modify DisasterLAN to enhance its effectiveness in this type of response. Too much information was needed with each entry, and there was a lack of access for a high number of responders who may be able to input the data or read it. (PSD C)				
		Reevaluate how to respond to the local communities as a resource not a command. (PSD C)				
		The State EOC should act as an information clearinghouse to and from towns, ensuring that information is only requested once and that it is passed along to other agencies. The RPCs are important stakeholders in this process. (PSD A/B)				
		See Capability 11, Observation 1				

Capability	Observation Title	Recommendation	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 5: On-site Incident Management	1. Training and exercising is needed for responders and emergency personnel.	Additional trainings should be held to increase the number of swift water rescue teams throughout Vermont. (PSD A/B)				
		Additional trainings should be held to increase awareness around swift water rescue best practices.(PSD A/B)				
		Additional swift water rescue teams should be included under existing swift water teams.(PSD A/B)				
		Emergency personnel and responders should be trained to work in austere conditions. (PSD D & State Level)				
		Emergency personnel and responders should be encouraged to create personal and professional go kits, and receive training on how to create these go kits. (PSD D & State Level)				

	2. Coordination of road closures should occur between the State and towns.	Please see Capability 4, Observation 2				
	3. Vermont State Police and Colchester Police were excellent resources. (PSD D)	Ensure that Memorandums of Understanding are in place to utilize the Colchester Police when town resources are outstripped during emergency situations.				
	4. Many affected towns did not have adequate staffing, plans, training, or experience during this event, which limited information flow to and from the State.	A working group of appropriate state agencies should review existing training programs for town officials and develop a robust disaster training program to be provided to town officials. (State Level)				
		The town officials training program should use a variety of presentation modes (home study, internet study, classroom presentation, interactive TV, etc.) to accommodate schedules, availability and travel opportunities. (State level)				
		The town officials training program should be tested through exercises to determine its effectiveness. (State Level & PSD D)				
		VEM should gather town plans and contact information on a periodic basis and provide the contact information in useable form to state agency representatives at the State EOC and to towns. (State Level)				
		Incident Command System training should be provided to all town officials and emergency personnel. (PSD A/B & State Level)				
		Towns should create mutual aid agreements with other towns for Incident Command System trained staff to supplement local EOC staff. (PSD A/B)				
		Towns should create location specific training manuals to acclimate staff members to the local EOC. (PSD A/B)				

	5. Towns that did not conduct pre-disaster planning meetings did not include road crews in pre-disaster planning meetings, or that did not take preparedness efforts before Tropical Storm Irene experienced significant difficulties in their response and recovery efforts. (PSD D)	Town best practices should be captured and distributed to towns. This effort should be led by RPCs, LEPCs, and the Vermont League of Cities and Towns.				
		Trainings should be conducted around the State to expose municipal officials and road crews to best practices.				
		Websites and conferences should be utilized to expose municipal officials and road crews to best practices.				
	6. Towns that conducted pre-disaster planning meetings which included road crews and took preparedness steps before Tropical Storm Irene found that their response and recovery efforts were more effective than they would have been without these preparedness efforts. (PSD D)	Please see Capability 5, Observation 5				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 6: Critical Resource Logistics and	1. Resources weren't utilized to their full capacity. (PSD D)	Community Emergency Response Teams should be deployed in affected areas.				
		Agencies should create Memorandums of Understanding with possible partners.				

Distribution		Additional towns should consider utilizing Keene Mutual Aid to dispatch and communicate.				
	2. Resources should be regionally pre-positioned.	Resources, such as water test kits and Technical Rescue Teams, should be regionally or locally pre-positioned before events. (State Level & PSD D)				
		First Responders should receive swift water awareness training. (State Level)				
	3. Some potentially available resources weren't utilized to their full capacity. (PSD A/B)	Trainings should be held with all agencies responsible for emergency response. These trainings should include a section on cross training staff and assigning staff to alternate work sites.				
	4. Due to lack of/miscommunication, supplies were inappropriately delivered to towns.	Local officials and the State should ensure that redundant communications exist and are exercised regularly. (PSD D & A/B)				
		In the event that communication is not able to occur between the State and towns, plans should be in place for how supplies should be delivered, and what supplies and quantity specific towns would need. (PSD D & A/B)				
		Towns should consider utilizing a micro-Point of Distribution model to locally/regionally distribute supplies. (PSD D)				
		Towns should continue storing excess supplies for future use. (PSD D & A/B)				
		Towns that cannot store excess supplies due to storage space limitations may consider purchasing additional storage space or storing supplies regionally. (PSD D & A/B)				
		Towns that cannot store excess supplies due to storage space limitations may consider purchasing additional storage space or storing supplies regionally. (PSD D)				
	5. Tropical Storm Irene demonstrated that, during large scale	Pre-disaster, towns should establish lines of communication and plans with contractors and surrounding towns.				

	disasters, many state-wide or regional resources will not be available for individual town use. (PSD D)	The State EOP RCC section should be reviewed and updated.				
		AOT should be present at all RCCs to coordinate contractors and other organizations utilizing heaving equipment or infrastructure materials.				
		Additional training and exercises are required regarding the distribution and tracking of state resources, such as Swift Water Rescue Teams, Mobile Command Posts, and AOT supplies.				
		The State should consider investing in portable infrastructure, such as temporary bridges and storage buildings.				
		The State should work to manage the expectations of towns regarding resource quantity and timing during incidents.				
		See Capability 1, Observation 5				
		See Capability 6, Observation 2				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 7: EOC Management	1. Local officials had difficulty in submitting requests to the State EOC and often never heard back on the status of their requests. (PSD D)	Establish a working group to examine communication issues, and recommend primary and alternate redundant means for towns and cities to communicate with the State EOC. These recommendations should be documented in EOPs.				
		Review how requests enter the State EOC, how they are handled, and what systems or methods are available to ensure that every request received will be acknowledged promptly and processed in a timely manner. Recommendations should be documented in the SEOP.				
		General Staff in the State EOC need to look at the types of requests that might be received and identify multiple contacts for each type.				

		There needs to be a coordinated training effort for local and state officials, on a regional basis, to ensure that towns have the means and the knowledge to make requests of and to report information to the State EOC regardless of where it might be located.				
		Examine how the SRAAT Team could have been put into operation during Irene and how this concept may have positively impacted this finding.				
		See Capability 2, Observation 21				
	2. Local officials received information from multiple sources and had to give information to multiple sources – creating information fatigue. (PSD D)	Research the use of RPCs as information clearinghouses during incidents, with the responsibility of requesting information from towns, requesting information from the State, funneling information both ways, and sending information from the state to towns.				
		Whatever information dissemination method is used, it should be used consistently, regardless of the incident size.				
	3. The failure of the State EOC facility and supporting systems during the storm was a major blow to the response effort despite the prompt move to the Joint Field Office in Burlington. (PSD C)	The primary State EOC (SEOC) should not be located in a flood plain.				
		If an effective Alternate State EOC should be established, with consideration to areas that would not be affected by the same incident as the primary EOC.				
	4. Once the SEOC functions completed the move to the alternate SEOC they worked within their guidelines but had difficulty with administrative requirements and resource tracking. (State Level AAR)	Provide to each agency a quick reference chart of services that could be provided by each agency.				
		Develop a training program that would train staff to input resource and donation information into a format, preferably DisasterLAN, that can be reviewed and tracked throughout the event.				
		Develop a cadre of staff for data input and tracking support for those agencies that need to have up to date or up to the minute information.				

		Identify if there is a safety plan that could into effect during this type of evacuation from a facility.				
		Ensure that a safety officer is present during all incidents.				
		Provide a copy of the SEOC COOP for all section chiefs and the SSF's who provide support at the SEOC.				
		Develop an emergency evacuation checklist to be used by all staff affiliated with the SEOC. This would define who would be notified beyond those on duty when a move occurs.				
	5. The State Disaster Management Software (DisasterLAN) was not fully or effectively utilized during TS Irene. (State Level AAR)	Training of specialized staff that just focuses on input of data into DLan that is relevant to agencies that need this information. In ICS they are referred to as scribes and can be assigned to any unit or section.				
		Review how data is stored and how that can be upgraded so if the server is affected information on that can be found at another site.				
	6. The VEM Division and the State EOC staff made timely decisions and promptly evacuated to a new location in the midst of Tropical Storm Irene. (PSD C)	Continue training and exercising per the state yearly plan				
	7. Although completely coincidental, unplanned, and unforeseen, the close proximity of FEMA in the JFO led to a challenging working environment that impacted the effectiveness of the	Continue training & planning as much as possible with FEMA with CATEX-type exercises to increase effectiveness of partnerships.				
		The State EOC should not be co-located with the Federal Emergency Management Agency.				
		The State EOC planning section should be autonomous and retain its own planning cycle.				
		The State Situation Report and Federal Situation Report should be clearly labeled and accurately distributed.				

	SEOC/FEMA relationship. (State Level AAR)	Resources and their destinations should be clearly defined.				
		Common terminology should always be used.				
		The Federal Emergency Management Agency should never bypass the pre-established channels for communication with the State EOC.				
		Security levels should be consistent at the State EOC.				
		Resources should never be attained or deployed by the Federal Emergency Management Agency without first being requested by the State EOC.				
		Resources should always be requested in writing.				
		The Federal Emergency Management Agency should have decision makers on site.				
		The layout of the State EOC should remain consistent throughout the recovery period.				
		There should be a single Joint Field Office representative that the State EOC can talk to; but they should be located in a separate location.				
		Implement after-action recommendations as soon as possible to resolve & mediate any differences of incident command and management.				
		Work to achieve better understanding by state agencies of FEMA policies, resource allocation, and collaborative frameworks, based on Tropical Storm Irene experiences.				
	8. The lack of a viable and effective interface between the State and many local governments significantly impeded the flow of information	Ensure that alternate State EOC phone systems function properly and can handle the receipt of multiple simultaneous calls.				
		Create plans for back up email and phone systems other systems and processes other than digital and make this alternate contact information available to towns.				

	between them. (PSD D)	The State must continue to inform and train towns on the capabilities that the state and FEMA have that will allow towns to build appropriate planning expectations and assumptions so their town EOPs are relevant.				
		Towns must ensure that they have robust Emergency Operation Plans, participate in exercises, and have appropriate ICS and EMD Training to help manage expectations.				
	9. The State Disaster Management Software (DisasterLAN) was not fully or effectively utilized during TS Irene.	DisasterLAN, or a different virtual EOC, should allow tickets to be easily sorted during a catastrophic incident. (PSD D)				
		Continue offering DisasterLAN training. (PSD D & State Level)				
		Explore RPCs having an administrative role in DisasterLAN, allowing them to set passwords for town officials and input during the disaster. (PSD D)				
		Towns should utilize DisasterLAN as receivers only – they should use it to view the status board and receive information. (PSD D)				
		Plans should be created regarding what information should be entered into DisasterLAN, and when that information should be entered. (PSD D)				
		Plans should be created regarding how DisasterLAN should be used. (i.e. Is it an operational tool? A documentation tool?) (PSD D)				
		Identify what would be considered a high priority call and train call takers on this criteria. (State Level)				
		All high priority DisasterLAN calls should be directed to section chiefs. (State Level)				
		Recruit additional staff members in support of the SEOC during a disaster, specifically in support of inputting information into DisasterLAN. (State Level)				

		Identify alternate methods of managing a disaster if technology is not working. (State Level)				
		Train call takers on how to define, properly write up, and route calls. Although callers may be emotional, requests need to be properly routed. (State Level)				
		Develop just in time training for new call takers and DisasterLAN data entry staff.				
		In order to keep people current on the system, DisasterLAN should be used for more than just disasters. (State Level)				
		Continue offering training on ICS and exercises to all entities. (State Level)				
	10. From a local perspective many state officials at varying levels did not understand or chose not to implement Incident Command System (ICS) in the Tropical Storm Irene response and recovery efforts. (PSD D)	All Department Commissioners, Deputy Commissioners, Agency Secretaries and Deputy Secretaries and executive staff in the Governor's office should attend mandatory NIMS training to an appropriate level.				
		All state employees should receive at least basic NIMS (ICS) and those employees likely to be involved in agency response or recovery be trained to a higher level in NIMS, particularly those with likely supervisory or command level positions.				
		State workers, especially those displaced from their offices and remaining home, should be assigned to work assisting the response and recovery effort.				
		Explore legislative changes (law) necessary to ensure that the re-assignment of all state workers during an emergency does not conflict with any contractual language				
		Department and agency decision makers should participate at the State EOC in planning meetings, various work groups and periodic briefings with local officials.				

		A concentrated effort should be made in training and policy to get state officials to see local officials as both customers and partners in routine and disaster situations.				
		See Capability 7, Observation 11				
	11. There was a lack of effectiveness in the interface between the State and local government	Clarify the communication process to reduce the confusion on the part of the communities. (PSD A/B & D)				
		Review the role of RPCs as an intermediary in lieu of county government structure; update SEOP as necessary to reflect any role change. (PSD A/B)				
		Modify shift change process to maintain a sufficient level of situational awareness from shift to shift. (PSD A/B)				
		Develop a “just-in-time” training available for SEOC and SSF staff who may be fulfilling unfamiliar roles; a checklist format for each position that is in accordance with respective responsibilities. (PSD A/B)				
		Pre-event planning should include a complete review of resources and procedures by SEOC and SSF staff with a focus on the impending threat. (PSD A/B)				
		Whatever information dissemination method is used, it should be used consistently, regardless of the incident size. (PSD D)				
		A working group should be established to review the types of information required by the state and towns, and establish a protocol that includes information request formats that are explanative and user friendly. (State Level)				
		This protocol should be tested in a series of exercises to ensure that issues are resolved to the maximum extent possible. The scenarios should test likely issues and the likely participants. (State Level)				

		Regional centers to be established, staffed, trained, and equipped. (State Level)				
		Regional centers should be tested in periodic exercises with local town participation with varying scenarios. (State Level)				
		To the extent possible these regions should conform to state agency districts and RPC territories. (State Level)				
		The State EOP shall be revised to conform with and provide support to these regional coordination centers. (State Level)				
		Research the use of RPCs to act as information clearinghouses during incidents, with the responsibility of requested information from towns, requesting information from the State, and funneling information both ways. (PSD D)				
		Information should be disseminated to towns in multiple formats to include towns that don't use emails. (PSD D)				
		All towns should adopt a policy to utilize email.(PSD D & State Level)				
	12. Interagency Coordination in the SEOC could be improved. (State Level AAR)	All agencies should follow the State EOP.				
		The State EOC should develop a checklist of information (essential elements) that they collect from all towns on a regular basis.				
		The State EOC should have sufficient staff to perform their duties.				
		The State EOC should consider using the Emergency Management Assistance Compact for additional staffing or request same from FEMA.				
		All agencies should participate in a day-long full scale exercise at the State EOC.				
	13. Interagency Coordination worked well. (State Level AAR)	Continue Interagency Coordination practices.				
		Continue exercising and training together				

	14. Tropical Storm Irene improved relationships between agencies. (State Level AAR)	Continue to hold cross-trainings/exercises between agencies.				
		VEM should host a state roundtable to discuss what agencies do, and how agencies can assist each other.				
		Trainings and exercises should be held with Irene Recovery Offices.				
	15. The National Guard proved to be an invaluable emergency team member by providing and delivering resources effectively, and coordinating their services with and among state agencies. (State Level AAR)	Education and training involving the National Guard should continue, especially with emphasis on the services and resources that it can provide which may not be very well known.				
		Training and planning should take place that specifically improves upon the communications between towns, VEM, and the Guard to ensure that requests for services, materials, and supplies are accurately and expediently delivered.				
		See Capability 2, Observation 21				
	16. The Vermont National Guard should be an official State Support Function. (State Level AAR)	Research how effective it would be to change to organizational structure of the SSFs to include a Military Support SSF.				
	17. Generally State agencies and organizations did not cooperate and coordinate well with each other when sending representatives to impacted towns which caused difficulties with the flow of accurate information to and from the towns. (State Level AAR)	Examine why the SRAAT Teams were not utilized in this disaster.				
		A working group should be established to look at opportunities to have personnel from different state agencies and organizations to work together on common problems in special circumstances including disaster response and recovery.				
		When putting people from different organizations together to perform different functions to accomplish a particular group of tasks, they should be called a “Task Force” in accordance with ICS definitions.				
		Description of Task Force opportunities and how they could be implemented should be included in the SEOP.				

		Procedures should be developed for task forces to assist members in performing their function in a coordinated manner.				
		Task forces should be tested in periodic drills and exercises.				
		State agencies should be encouraged to establish multi-agency task forces in non-disaster times when appropriate.				
	18. Information coordination between the State and Federal Governments frequently did not occur or was not effective which caused problems for local government and the public in general.	A small working group should be formed with representatives from the state and FEMA to explore ways to improve coordination in the information flow to and from the public and the towns. (State Level)				
		Liaison Officers should be assigned to FEMA Centers on a disaster by disaster basis. These Liaison Officers would observe activities in these centers, accompany FEMA teams into the field, and report back to the SEOC at least daily. (PSD D & State Level)				
		State EOC workers need to have a better understanding of what FEMA does in a disaster and how their policies will affect the towns and individual citizens in the affected areas. FEMA should provide periodic classes to SEOC staff in non-disaster times. (State Level)				
	19. State level officials lack an understanding of managing disasters outside the State EOC which negatively impacts effective information flow. (State Level AAR)	The Governor should re-issue NIMS Executive Order 03-05 and enforce the implementation of the state NIMS Plan.				
		The Governor, or his designated and empowered representative, should actively participate in decision making at the State EOC on a regular basis during disasters.				
		The Governor should require state agency decision makers to participate in training, exercises and disaster activations at the EOC as well as working within ICS structures in the field.				

	20. The Planning Section at the State EOC which is a primary gatherer, analyzer and disseminator of information at the state level was not robust enough to be effective. (State Level AAR)	A working group should be formed of planning section experts to review the organization, procedures, tasks, equipment and staffing of the SEOC planning section.				
		Provisions for handling both a small incident and a large scale incident should be included.				
		Planning section procedures should provide for acquiring additional trained staff from outside sources early on in a large scale incident.				
		The planning section needs to be challenged to a greater extent in drills and exercises.				
	21. The people staffing the State EOC in various capacities did an exceptional job considering the scale of the disaster and the evacuation of their own facility in the midst of the disaster. (State Level AAR)	Provide some official recognition for those personnel consistent with that provided to others who performed exceptionally well during the response and recovery phases.				
	22. Staffing for sections and within SSF's was a concern for this large of an event. (State Level AAR)	State Support Functions should build their support personnel.				
		Identify staffing needs for all sections of the SEOC.				
		Work with the current volunteer agencies within the state as to how they would be activated during the initial response so a schedule could be set for the volunteers for training and work.				
		Examine agencies outside the state system for potential staffing of SEOC.				
		Provide training to supplemental agency personnel.				
		Pre-identify people in the state who could provide the staffing services. Provide pay for those living in the state as they would with an EMAC request.				

		See Capability 7, Observation 10				
	23. Internal communications went well especially with the move and all the changes that came from it however Finance and Admin (F&A) felt they had a difficult time with internal communication. (State Level AAR)	Review with the current Finance and Admin staff as to what their needs would be when they are called upon to participate in the SEOC.				
		Identify and complete ICS training per the Vermont NIMS Implementation Plan				
		F&A should meet with each SSF / Section lead that would be generating invoices during an event to identify F&A information needs. From this meeting identify the appropriate ICS form each SSF / Section would need to fill out and provide to F&A for process.				
		F&A meet with DLan staff to identify how this program could also support collecting of information for their needs.				
	24. There was some confusion identified with defining emergency vs. non-emergency purchasing and how much could really be purchased. (State Level AAR)	Develop a short clarifying statement on ordering resources during an emergency.				
		Define expenses and what would be considered a large expense and who the request would go to for the authorization.				
		Discuss and define where F&A would fit into the resource purchasing process. Develop data gathering guidelines that can be used by all agencies.				
		The Financial Annex for the SEOP should be reviewed and updated.				
	25. More community EOCs opened during Tropical Storm Irene than ever before. (PSD A/B)	Ensure that communities include lessons learned from Tropical Storm Irene in their EOPs.				
		Ensure that updated contact information is included in local EOPs annually.				
		Communities should participate in the ICP/EOC course offered by VEM.				
	26. Many people do not understand the role	Information flow should be established, trained on, and followed for every official, every time, and in every				

	of the State EOC. (State Level AAR)	incident.				
		Expectations need to be managed for public officials; exceptions should not be made, or else the process breaks down.				
		Ensure that the VEM half-day public officials training is held before spring.				
		Processes for sharing information between State Support Functions and Command staff should be established and used regularly.				
		Local Officials should be trained in the role of the State EOC, as well as the expectations for towns.				
		Table Top Exercises should be utilized for officials – allowing them to discuss perceptions while learning their plans.				
		Training should be held for all agencies demonstrating how State Support Functions operate within the State EOC.				
		Agencies should ensure that staff members are trained in the Incident Command System, in accordance with the Vermont NIMS Implementation Plan.				
		Agencies should ensure staff has read the State EOP and that staff understands their role within the State EOC.				
		See Capability 5, Observation 1				
		See Capability 2, Observation 2				
	27. The state lacked a robust, user friendly and widely accepted information system to support a two way flow of information between the State and the towns possibly with regional	An information working group consisting of both state and local members needs to review the needs of a state local information system and compare it to DisasterLAN capabilities.				
		The working group should establish a number of routine tasks that the information system can perform (whether DisasterLAN or a new system) so that both state and local users will be encouraged to use it often.				

	entities in between for use with routine business as well as preparedness, response, recovery and mitigation communications. (State Level AAR)	A case or issue management function should be added and personnel trained in its use.				
		The information system should be usable for recovery to include use by long term recovery teams.				
		Requirements for becoming a user on the information system should be made less restrictive.				
		Training for the Information system should use current technology to provide more opportunities for local or far away personnel with demanding schedules.				
		The system must be more user-friendly. For example, the system should be able to "Auto Fill" the county if the user enters a town.				
	28. Timeliness of information received from the state for responders, communities, and the public. (PSD A/B)	Review information management/communication sections in SEOP for updating as necessary to accommodate current communication formats				
		Refine the process of providing information to EMD, community leaders, and SSF partners by standardized use of conference calls, SitReps, and web-based applications				
		Coordinate information management and release to reduce the incidence of confusing/conflicting information.				
		Coordinate with state agencies to include linkage to each SSF site and encourage the use of the common crisis information site (noted in #4) as a central clearinghouse for access to pertinent event information.				
		See Capability 7, Observation 27				
	29. Vermont Department of Health District Offices did not receive the State	Plans should contain procedures for providing Vermont Department of Health District Offices with Situation Reports.				

	Situation Report. (PSD D)	Vermont Department of Health should create policies to utilize staff at alternate District Offices during region-based incidents.				
	30. The Vermont Department of Health did an excellent job sharing information between the state and local levels. (State Level AAR)	The Vermont Department of Health should continue to utilize communication pathways between the Health Operations Center and District Offices.				
		Agencies should ensure that lines of communication exist and are utilized between the state office and local offices.				
	31. Information was sent to the state, but it wasn't acknowledged or redistributed. (PSD D)	The State and towns should work together to develop plans for what should happen if spot reports are not received.				
		The State should redistribute town information to other agencies.				
		See Capability 7, Observation 1				
	32. RPCs did an excellent job during Tropical Storm Irene, and should be utilized for Emergency Response and Recovery in the future.	RPCs should be given additional training and resources to strengthen their capabilities to respond to regional and statewide disasters, especially staff, training, and communications equipment. (State Level & PSD D)				
		RPCs should be encouraged by the state to be more fully engaged with one-another for successful regional approaches to disaster response, if that is a role that will be promulgated. (State Level)				
		RPCs should act as a filter and information gatherer between towns and the state during incidents. (State Level & PSD D)				
		RPCs should continue to perform GIS work for the state and towns. (State Level & PSD D)				
		RPCs should be strengthened to effectively manage the 251 Vermont towns.(State Level)				

		Vermont should establish county government to manage the 251 Vermont towns. (State Level)				
		RPCs should be redistricted to match county lines. (State Level)				
		The role of the RPC in a regional or statewide disaster should be formally endorsed and formalized by the state so that towns can continue to feel trusting and confident with utilizing the RPC resources. (State level)				
		The plan for regional coordinating centers should be visited as soon as possible, with the RPCs now being considered as a viable replacement or partner with those centers. (State Level)				
		Town EMD and other elected/appointed officials need to be strongly encouraged to work more closely with the emergency management services of RCPs, beginning with LEPC participation in training and exercising. (State Level)				
		SEOC awareness of RPC capabilities should be strengthened through exercises that more fully involve RPCs, and education in the resources that they offer, such as GIS mapping. (State Level)				
	33. Conference calls before and during the response and recovery phases were very helpful to those who participated. (State Level AAR)	Individuals should be encouraged to participate in conference calls.				
	34. The state did not effectively use a disaster information protocol that listed the types of information needed by state	Each department and agency should provide lists of needed information in a disaster from either individuals or towns.				
		These lists should be made part of the supporting documents (annexes, appendices, tabs, etc. to the State EOP.				

	agencies and how to gather the information with a minimal impact upon affected communities. (State Level AAR)	These lists of information should be tested in periodic disaster exercises with scenarios that provide opportunities for representatives at the SEOC and in the field to demonstrate effective use.				
	35. The Agency of Agriculture, Food and Markets failed to have an effective and timely system of outreach contacting its client/constituents to gather information about the situation, analyze and display the information and then provide useful information to the client/constituents in a timely manner. (State Level AAR)	The Agency should create a working group to determine what is needed to develop an effective and user friendly data base system supported by a robust GIS capability.				
		The Agency should make significant efforts to obtain grants and request appropriate legislative appropriations in the 2013 session.				
	36. Many state personnel whose jobs do not directly involve emergency response or preparedness were not aware of the role and makeup of the SEOC, nor aware of the command structure	Improved emergency planning guidelines and preparedness should be mandated for every department with financial and logistical support of the SEOC functions.				
		Personnel not normally involved in response or recovery, such as financial and human resource personnel, should receive at the very least a basic orientation on the role and activities of the SEOC, as well as VEM's various programs.				

	(ICS) or their own EOPs governing how they would operate in a disaster. (State Level AAR)	Financial management personnel orientation and training should include familiarity with departmental EOPs and continuity of operation plans.				
	37. The public's need for information, combined with an unprecedented state-wide disaster and a new state administration led to a short-circuiting of some systems, plans, and operations that agencies had previously trained with and utilized. (State Level AAR)	The recommendations and action steps coming out of Tropical Storm Irene should be shared with all levels of government and assessed by each agency as thoroughly as possible.				
		In all exercising and training, a strong emphasis should be placed on the function and importance of the JIC.				
		Legislators and policy makers should receive a basic education during their initial orientations on the state's EOP, the SEOC, and any emergency management systems and models that will provide them with a working knowledge of how the state should respond in a disaster.				
	38. Training and exercising enabled agencies to more effectively surmount the extreme difficulties and challenges presented by the devastation of Tropical Storm Irene. (State Level AAR)	Continue exercising with both primary and secondary SEOC staffing to increase knowledge of SSFs with one-another and increase familiarity with the resources that each can bring to the table.				
		Continue training and exercising for stronger familiarity of state resources by district/regional/local levels of emergency management; utilize and increase support of LEPC resources for this.				
		To increase the awareness of higher level appointees who may not normally be familiar with the role and activities of the SEOC, provide them with a strongly endorsed (from top down) opportunity to shadow their representatives during an exercise; table-tops and other discussion-based exercises would be best for this.				

		Create discussion-based exercises through all the LEPCs that will increase awareness of the function and role of the SEOC and the roles of each SSF within the emergency management system.				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 8: Volunteer Management and Donations	1. A better tracking system for donations and volunteers need to be developed to support a response. (State Level AAR)	Review all the types of donations that have come in and look at the best way to track and acknowledge these donations.				
		Identify a process to identify and record time for spontaneous volunteers within communities and state wide.				
	2. Community involvement, with volunteers and donations, played a large role in Tropical Storm Irene Response and Recovery effort.	Towns should ensure that their EOPs include the role of Volunteer Coordinator, as a single individual or group. (PSD A/B)				
		Volunteer Coordinator training should be held for all staff expected to fill this role. (PSD A/B)				
		Volunteer organizations, such as the American Red Cross, should reach out to individuals that spontaneously volunteered during Tropical Storm Irene and request that they join their volunteer pool. (PSD A/B)				
		Communities should work to build up their general volunteer cache. These volunteers can then be utilized during incidents. (PSD A/B)				
		Volunteer efforts should be coordinated. (PSD A/B)				
		Towns should not play a role in volunteer or donation coordination; it should be left up to the citizens. (PSD A/B)				
		Issues surrounding liability with volunteers and donations should be resolved as soon as possible. (PSD A/B)				

		All town EOPs should include the establishment of a volunteer coordination center separate from the EOC. This center needs to be strongly linked to PIO, as well. (PSD D)				
		Training should be initiated and guidelines should be established for the volunteer center that provide for liability waivers, just-in-time training, cataloging of volunteer expertise and resources, and tracking of volunteer assignments, hours served, and other accountabilities. (PSD D)				
		A liability waiver template, and the volunteer coordinator position Job Action Sheets should be placed into the EOP template. (PSD D)				
		Towns should be encouraged to inventory skills and equipment resources among its residents if not already done. (PSD D)				
		Towns should be encouraged to create a system whereby residents check on one-another in a more formal way. (PSD D)				
		LEPC 6 should be supported by all its member towns in any work to move preparedness to natural disasters, not just Vermont Yankee. (PSD D)				
		Towns should be encouraged to take advantage of shelter training by the Red Cross; build a basic inventory of necessary materials such as blankets and cots; and work to install a generator where shelters would be located. (PSD D)				
		Communities should research and contact agencies that recruit volunteers and discuss with them how their volunteers would be able to support a response in their communities. (PSD C)				
		Identify just in time training opportunities that would support communities in their response needs. Working with the volunteer organizations to pre-train and identify possible needs. (PSD C)				

	3. There is a lack of planning, training, and understanding on Volunteer and Donation Management. (State Level AAR)	See Capability 2, Observation 2				
		Continue to build a robust Volunteer and Donations Management Annex. Ensure that annex addresses trainings, participants, roles, contacts, and specific plans for the management of volunteers and donations including communication and organization. This annex should be scalable, depending on the size of the event.				
		The Volunteer and Donations Management Annex should be a tool to assist towns, not to directly manage them.				
		The Volunteer and Donations Management Coordinators should work with local volunteer managers to get an idea of the overall volunteer work in the State.				
		Continue Volunteer and Donations Management training.				
		The State should work with the Federal Emergency Management Agency to develop systems and programs that ensure a network of long-term recovery committees are available to rapidly be stood up during another disaster.				
		Short and long-term recovery should be built into more local and statewide exercises.				
		Systems and models being put into place to deal with Irene long-term recovery, including volunteer and donations management, should be reviewed by appropriate public and private agencies before being adopted. The adopted plan should be exercised to ensure its effectiveness.				
		Trainings in disaster case management should be made available on a regular basis, in a variety of locations and times, to ensure recruitment and training of volunteers. Trainings could be offered in conjunction with town training on volunteer centers and management.				

		Agencies should work together to coordinate recruitment and training of volunteers for emergency response and recovery.				
	4. The Vermont Emergency Response Volunteer system was underutilized. (PSD A/B)	The Vermont Department of Health should ensure that, during an emergency, their Vermont Emergency Response Volunteers system is activated.				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 9: Communications	1. Communications – Hardware (PSD C)	Department of Public Safety communications mountaintop systems should ensure resilient and redundant communications capability.				
		Disaster response agreements should be established with wireless vendors to allow for greater public safety agency use during incidents				
		Establish replicated Vermont 911 system transfer ability for PSAP lines to identified evacuation facilities identified in Communication plans				
		Identify VCOMM resource funds for DPW/Highway Departments.				
		Continue VCOMM build out. Seek licensing for non PSAP communication centers.				
	2. Radios were not used to their full extent.	The State should utilize multiple redundant radio communications systems when standard communications systems fail including VCOMM, RACES and local radio systems. (PSD D & A/B)				
		The State should create a detailed plan for radio use, including channel specification and protocols for regional failure based on NIMS ICS - Communications Unit Leader (COML) training. (PSD D)				

		The State, regional and local communications systems should be tested on a frequent basis. (PSD D)				
		Create a protocol for using Vermont State Police radio channels. (PSD D)				
		The State should provide educational outreach to first responder agencies regarding the digital transitions. (PSD D)				
		Agencies and towns should be encouraged to use interoperable equipment. (PSD D)				
		The State should continue to develop amateur radio redundancy and complete public safety narrow banding (PSD A/B)				
	3. Cellular phones were used as an effective alternate form of communication during Tropical Storm Irene. (PSD D)	Continue to use cellular phones as an alternate means of communication; expand this use beyond the local level.				
		Ensure that jurisdictions are aware of the alternate cellular phone numbers that personnel, both at the local and state levels, will be utilizing.				
		Emergency Plans should note that, while personal cellular phones are acceptable, the primary backup communication system should be work issued cellular phones.				
		Pre-stage temporary cell phone towers in state for use during emergencies.				
		Ensure issues surrounding liability and the Fire Departments ability to power cellular towers are resolved.				
		Personnel should communicate through text message rather than through cellular phone conversations during emergencies.				
		Cellular phones should not be used during an incident; the State should utilize the State COMM Trailer.				

		The State should create a detailed plan for communications including cell phone and radio use detailing number and channel specifications and protocols for regional failure based on NIMS ICS - Communications Unit Leader (COML) training.				
	4. State infrastructure issues had some effect on town's ability to respond to Tropical Storm Irene. (PSD D)	Create plans for back up email and phone systems, and make this alternate contact information available to towns.				
		Any backup communication systems should follow the same legal and appropriate security requirements as the primary systems.				
		The Department of Information and Innovation should establish load balanced backup systems for state emails.				
		The State should continue to utilize the internet for information dissemination.				
	5. Vermont State IT Systems. (PSD C)	Locate redundant IT hardware in the Regional Coordination Centers				
		Investigate off the shelf / Web 2.0 video streaming capabilities from Smart-phones, Mobile Data Terminals (MDT), Cruiser cams. Card Readers for MDTs				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 10: Economic and Community Recovery	1. Coordinated federal visits to communities. (PSD D)	All federal workers, particularly FEMA workers, should receive state and local briefings during their in-processing and before they start operations.				
		All federal workers should be fully aware of the impact of their presence in a town and what the suggested protocols are to coordinate their visits and limit them to the essential tasks.				
		Feedback should be provided by local communities to better refine the data gathering process.				

		Guidance and training must be provided by the State and FEMA jointly.				
		There may be more effective ways for FEMA to gather some information than to tour Vermont communities badly damaged in the storms. Alternatives should be suggested by the Liaison Officer as appropriate.				
		Development of standard data to be gathered during all disasters by FEMA branches should be developed and shared with State officials prior to a disaster				
		State officials should partner with federal officials to train local communities on data that will be requested and gathered during the recovery process.				
		See Capability 7, Observation 18				
	2. The Vermont Agency of Transportation was particularly overwhelmed by the twin responsibilities of coordinating and administering the Public Assistance Program and responding to the damage to state highways and bridges. (State Level AAR)	The Governor should appoint a high level working group to review the amount of work involved in the Public Assistance Program after a disaster, the staffing required to do this properly, and in what state agency this staff should reside.				
		If appropriate, the agency tasked with the PA program should be allowed to hire sufficient staff to perform this task properly.				
		In between disasters if the work load declines, PA staff could perform additional duties as appropriate.				
	3. The support from FEMA was not as forthcoming for Public Assistance making the team feel as if they were reinventing programs. (State Level	A Public Assistance plan template should be developed from what was completed as a result of this incident.				
		Utilize above template for all state disasters involving Public Assistance Program.				
		Train local communities on the Public Assistance Program and what is expected from them prior to a disaster.				

	AAR)	See Capability 10, Observation 2				
	4. Use of contractors to determine eligibility for Public Assistance. (PSD A/B)	All contractors should go through a rigorous vetting process before they are hired.				
		Contractors that do not perform adequately should be replaced.				
		Towns should have the choice to change contractors if they do not believe their contractor is doing an adequate job.				
	5. The perception that FEMA changed their rules part way through the response and recovery effort has caused difficulties for town officials and the public in making decisions. (PSD D)	State and FEMA officials must work together to develop training materials and "GO Kits" for local officials concerning public assistance, individual assistance and flood insurance.				
		Any changes in FEMA rules or regulations must be publicized and passed on to state and local officials as soon as possible and preferably not in the middle of a disaster in writing.				
	6. The ability for the state to provide effective information to towns and impacted citizens has been adversely affected by the slow establishment and operation of Local Long Term Recovery Teams (State Level AAR)	A structured coordination hierarchy should be established and implemented immediately for the current active Local Long Term Recovery Teams.				
		State agencies should meet on a periodic basis to determine the status and progress of each team. Issues need to be resolved in a timely manner.				
		Plans and procedures that activate and operate Local Long Term Recovery Teams need to be reviewed by a small working group. The essential task of the group is to determine of plans and procedures are adequate and coordinated.				
		The revised plans and procedures for Local Long Term Recovery Teams should be exercised. The scenarios should both exercise all of the likely issues and the likely participants. These exercises may have to be regional to fully test their effectiveness.				

	7. Some of the beginning steps for recovery were felt to be pushed too early. (State Level AAR)	Reexamine the timelines and the staff needed to get assessment teams in to begin the assessment process.				
		Identify a long term recovery office with dedicated staff and identify a team that can consistently assist with the recovery programs and processes.				
	8. There was a lack of understanding by many officials and the public, particularly at the local level, about Federal and State Mitigation Efforts which affected the information flow. (State level AAR)	The State Hazard Mitigation Committee should develop a training program for local agencies that runs year round.				
	9. The state lacks an effective information protocol that serves both communities affected by the disaster and those who are not affected and wish to continue their lives and businesses as usual. (State Level AAR)	A Recovery Joint Information Center should be included in the State Recovery Plan. This Public Information repository should generate strategies to develop news releases to the public that are accurate but make clear what is open for business.				
		The State EOP should be reviewed and revised to include procedures for the Joint Information at the SEOC to have representatives from appropriate state agencies and trade associations assist in the SEOC in this effort in disasters.				
		The Joint Information Center at the SEOC should be included in periodic exercises and scenarios should exercise the ability to produce public information messages that accurately portrayed the disaster and also identified the remainder of the state still open for business during the recovery phase.				

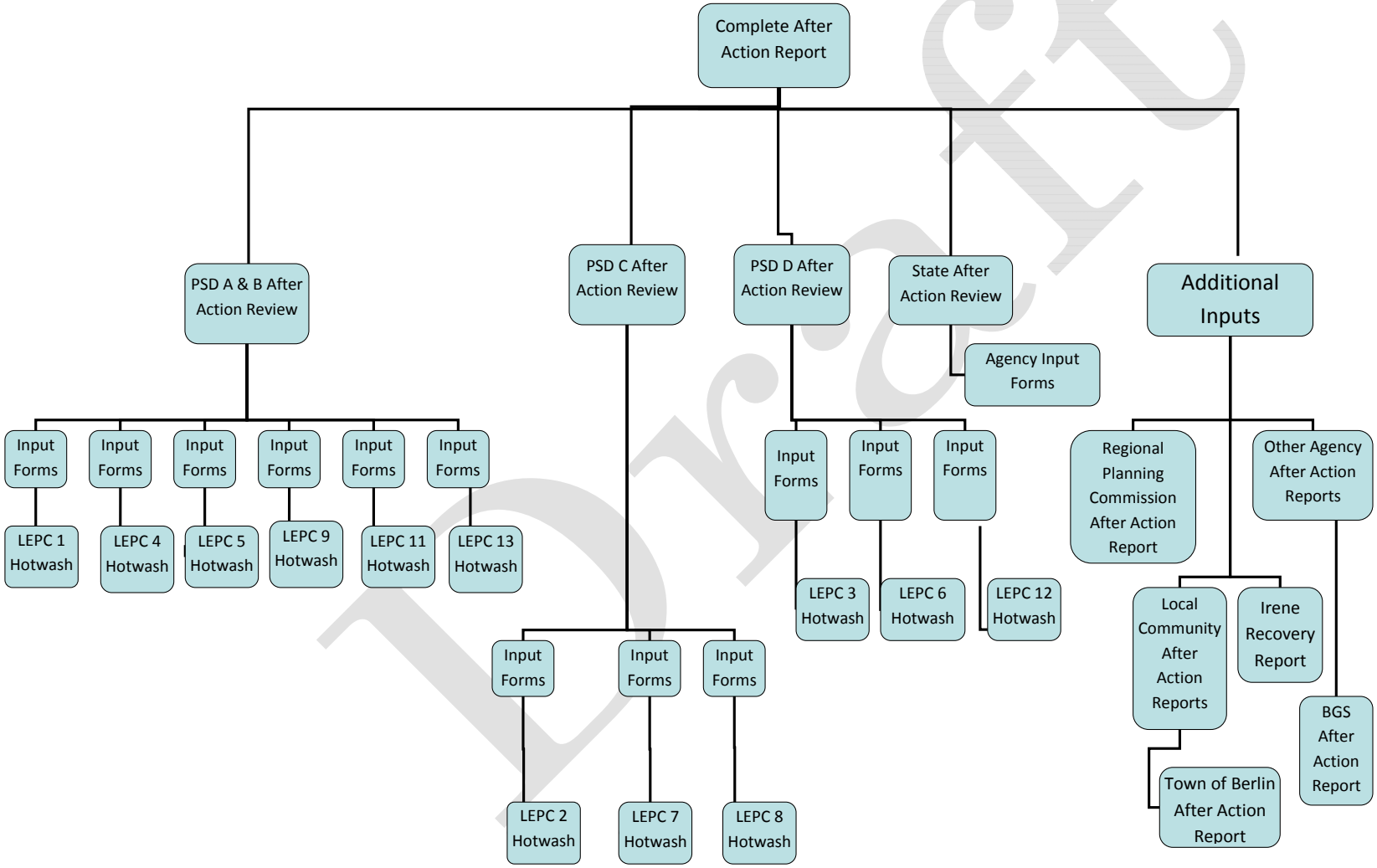
	10. The Individual Assistance Task Force was identified as a group that is moving forward with a positive plan of action. (State Level AAR)	Follow through with the needs that are in process of being resolved.				
	11. The lack of written Memorandum Of Understanding (MOUs) prior to the disaster between towns makes collecting reimbursement from FEMA more difficult when neighboring towns help each other during response. (PSD C)	See Capability 3, Observation 2				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 11: Emergency Public Information and Warning	1. The Joint Information Center did not function properly during Tropical Storm Irene.	The Joint Information Center should be established before the storm to present a unified message to media outlets. (PSD D)				
		Multiple agencies should contribute staff to the Joint Information Center. (State Level)				
		Additional Public Information Officers should be trained throughout the State, both on local and state levels, to provide sufficient staff to cover at least two 12-hour shifts for an extended period. (State Level)				
		Whenever the State EOC is established at a level 3 or higher, the Joint Information Center should be activated. (PSD C & State Level)				

		The Joint Information Center should receive training in how to act as a clearinghouse for all information before it is released. This training should be exercised. (PSD A/B & D)				
		Agencies should filter all information through the Joint Information Center to ensure that it is accurate and flows through the appropriate channels. (State Level)				
		Social media should be utilized during incidents, but it should also be constantly monitored. (PSD A/B & D)				
		Public Information Officers do not need to be used for simple social media updates; the Joint Information Center should utilize alternate employees to fill this role. (State Level)				
		Agencies should never release their own public information. (State Level)				
		Towns should continue to push information out to the public using their websites. (PSD A/B)				
		The Joint Information Center should be used to distribute volunteer information, such as how, where and when to volunteer. (PSD A/B)				
		The Joint Information Center should utilize Public Service Announcement templates. (PSD C & State Level)				
		The Joint Information Center should be used to coordinate shelter information for humans and pets; before the incident begins, as well as during an incident. (PSD A/B)				
		Plans should be created for local individuals to take pictures and post them on a social media website. (PSD D)				
		Towns should make sure to fill the role of Public Information Officer; that individual should work with the Joint Information Center to ensure that the best information is made available to the public. (PSD D)				

		All staff with roles curing an emergency should be trained in the Incident Command System. (State Level)				
	2. Communication between the Joint Information Center and Vermont 2-1-1 was effective. (State Level AAR)	Continue to keep lines of communication open between the Joint Information Center and Vermont 2-1-1 during an incident.				
	3. The State should have made greater use of a Joint Information Center (JIC) to coordinate information to the public. (State Level AAR)	The Governor should assign his (her) press secretary to the Joint Information Center to play an important role in the coordination of the messages and conduct of media briefings in both exercises and disasters.				
	4. Post-storm public information. (PSD A/B)	Employ provisions of the existing SEOP regarding Joint Information Center structure and conduct				
		Emphasize the importance of providing accurate information properly approved by subject matter experts				
		Develop working relationships with existing regional and statewide media to foster an understanding of the importance of reducing misinformation by utilizing a centralized information process				
	5. Pre-incident information from VEM, as provided to communities and responders in preparation for TS Irene. (PSD A/B)	Manage content and flow of information to avoid overloading recipients with redundant information.				
		Consider the use of scheduled information releases rather than what seemed to be a “steady flow” of updates.				
		Conduct survey of communities to determine efficacy of information posting methods; in particular, value of website postings and social media vs. traditional information sources.				

Capability	Observation Title	Recommendation	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 12: Emergency Public Safety and Security Response	1. Local Emergency Responders (PSD C)	Continue to build relationships between all local, state and federal first responders.				
		Continue and build on the Vermont Training & Exercise Program based on 2011 incidents and lessons learned.				
Capability	**Observation Title**	**Recommendation**	**Primary Responsible Agency**	**Agency POC**	**Start Date**	**Completion Date**
Capability 13: Mass Care	1. Training, personnel, and equipment for community shelters. (PSD D)	The American Red Cross should provide shelter training to all communities.				
		Shelter equipment should be pre-staged in communities.				
		Communities should develop local shelter plans that outline operations when the American Red Cross is not able to assist. Plans should be modeled after American Red Cross Shelter plans.				
		The Vermont Department of Health District Office should be consulted during the planning process to identify if having their staff assist in shelter operations might be possible. If so, this should be included in the community shelter plan.				

Appendix B: Irene After Action Review Process



Appendix C: Incident Review Form Summary

The following chart contains all the feedback received as a result of the initial LEPC hot washes conducted after the storm. As mentioned in the Executive summary, VEM and HSU facilitated hot washes in order to solicit feedback and formulate the basis of conversation at the Public Safety District After Action Reviews.

To be published in the final After Action Report/Improvement Plan

Appendix D: State Level Incident Review Forms

To be published in the final After Action Report/Improvement Plan

Appendix E: Acronyms

Table F.1: *Acronyms*

Acronym	Meaning
AAR	After Action Report
AKA	Also Known As
ANR	Vermont Agency of Natural Resources
AOT	Vermont Agency of Transportation
ATV	All Terrain Vehicle
BGS	Vermont Department of Buildings and General Services
BISHCA	Department of Banking, Insurance, Securities & Health Care Administration
CATEX	Catastrophic Exercise
CERT	Community Emergency Response Team
CMS	Consumable Medical Supplies
COG	Continuity of Government
COML	Communications Unit Leader
COMM	Communications
COOP	Continuity of Operations Plan
COWS	Cellular On Wheels
DC	District of Columbia
DEC	Vermont Department of Environmental Conservation
DII	Vermont Department of Information and Innovation
DisasterLAN	Disaster Local Area Network
DLAN	Disaster Local Area Network
DME	Durable Medical Equipment
DPS	Department of Public Safety
DPW	Department of Public Works
EDT	Eastern Daylight Time
EMAC	Emergency Management Assistance Compact
EMD	Emergency Management Director
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
F & A	Finance and Administration
FEMA	Federal Emergency Management Agency
FOUO	For Official Use Only
GIS	Geographic Information System
Gmail	Google Mail
Gmaps	Google Maps

HAZMAT	**Hazardous Materials**
HC	**Health Care**
HSEEP	**Homeland Security Exercise and Evaluation Program**
HSU	**Vermont Homeland Security Unit**
ICP	**Incident Command Post**
ICS	**Incident Command System**
ICT	**Incident Coordination Team**
IOF	**Initial Operating Facility**
IP	**Improvement Plan**
IT	**Information Technology**
JFO	**Joint Field Office**
JIC	**Joint Information Center**
JOC	**Joint Operations Center**
KCFS	**thousand Cubic Feet per Second**
LEPC	**Local Emergency Planning Commission**
MA	**Massachusetts**
MAC	**Multi-Agency Coordination**
MACC	**Multi-Agency Coordination Center**
MDT	**Mobile Data Terminal**
MMA	**Mutual Aid Agreements**
MOU	**Memoranda of Understanding**
MPH	**Miles Per Hour**
N/A	**Not Applicable**
NC	**North Carolina**
NGO	**Non-Governmental Organization**
NIMS	**National Incident Management System**
NJ	**New Jersey**
NOAA	**National Oceanic and Atmospheric Administration**
NOC	**National Operating Center**
NRCC	**National Response Coordination Center**
NY	**New York**
PA	**Public Assistance**
PIO	**Public Information Officer**
POC	**Point Of Contact**
PSA	**Public Service Announcement**
PSAP	**Public Safety Answering Point**
PSD	**Public Safety District**
RACES	**Radio Amateur Civil Emergency Service**
RCC	**Regional Coordination Center**
RPC	**Regional Planning Commission**
RRCC	**Regional Response Coordination Centers**

RSVP	**Retired Senior Volunteer Program**
SEOC	**State Emergency Operations Center**
SOP	**Standard Operating Procedure**
SRAAT	**State Rapid Assessment and Assistance Team**
SSF	**State Support Function**
TS	**Tropical Storm**
TSI	**Tropical Storm Irene**
TTT	**Train the Trainer**
UCALL	**UHF Call Channel**
US	**United States**
USAR	**Urban Search and Rescue**
USGS	**United States Geologic Survey**
UTAC	**UHF Tactical Channel**
UTC	**Coordinated Universal Time**
UVM	**University of Vermont**
VCALL	**VHF Call Channel**
VCOMM	**Vermont Communications Board**
VEM	**Vermont Emergency Management**
VERV	**Vermont Emergency Response Volunteers**
VLCT	**Vermont League of Cities and Towns**
VOAD	**Volunteer Organizations Active in Disasters**
VSP	**Vermont State Police**
VT	**Vermont**
VTAC	**VHF Tactical Channel**
VTrans	**Vermont Agency of Transportation**
VY	**Vermont Yankee**