

**Department of Homeland Security**  
**Science and Technology Directorate**  
Washington, DC

---



October 2012

**Northeast Regional Information-Sharing Pilot**  
**After-Action Report**

by

First Responders Group  
Department of Homeland Security, Science and Technology Directorate  
Washington, DC

and

Teracore  
2325 Dulles Corner Blvd., Suite 500  
Herndon, VA 20171

DISTRIBUTION NOTICE: Further dissemination only as directed by DHS S&T.

DESTRUCTION NOTICE: Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Northeast Regional Information-Sharing Pilot, After-Action Review

<b>Document History</b>			
<b>Version</b>	<b>Primary Author(s)</b>	<b>Description of Version</b>	<b>Date Completed</b>
1.0	Teracore	Submitted in DHS Report format	10/10/2012

<b>1. PURPOSE</b>	<b>4</b>
<b>2. NORTHEAST REGIONAL INFORMATION-SHARING PILOT OVERVIEW</b>	<b>4</b>
2.1 PILOT GOALS AND OBJECTIVES	4
2.2 PILOT PARTICIPANTS	4
2.3 PILOT APPROACH	4
2.4 DHS PILOT SUPPORT	6
<b>3. AFTER-ACTION REVIEW (BY PILOT PARTICIPANT)</b>	<b>8</b>
3.1 CONNECTICUT	8
3.1.1 <i>Barriers and Solutions/Next Steps</i>	9
3.1.2 <i>Best Practices and Next Steps</i>	9
3.1.3 <i>Recommendations</i>	10
3.1.4 <i>Summary of Additional Achievements</i>	11
3.2 NEW YORK	12
3.3 NEW JERSEY	14
3.4 MAINE	14
3.5 VERMONT	15
3.6 NEW HAMPSHIRE	16
3.7 RHODE ISLAND	18
3.8 MASSACHUSETTS	19
3.9 FEMA REGION I	20
3.10 FEMA REGION II	21
<b>4. PILOT CAPSTONE DEMONSTRATION: OPERATION IRENE II</b>	<b>22</b>
4.1 BACKGROUND ON CAPSTONE	22
4.2 CAPSTONE SUCCESSES	22
<b>5. PILOT SUMMARY AND NEXT STEPS</b>	<b>23</b>
5.1 NEXT STEPS	23
<b>APPENDIX</b>	<b>25</b>
A1 COMMON OPERATIONAL DATA LAYER SUMMARY CRITERIA (RED/YELLOW/GREEN)	25
A2 OPERATIONAL DATA LAYERS SHARED DURING OPERATION IRENE II	25
A3 OPERATION IRENE II CAPSTONE DEMONSTRATION SCRIPT	25
A4 DATA FEEDS SHARED BY PILOT PARTICIPANTS THROUGH THE VIRTUAL USA LIBRARY	37

## 1. Purpose

The purpose of this After-Action Review (AAR) is to provide a detailed synopsis of the Northeast Regional Information-Sharing Pilot (henceforth, “the pilot”), discussing it in coherent sections that enable thorough review and analysis.

## 2. Northeast Regional Information-Sharing Pilot Overview

### 2.1 Pilot Goals and Objectives

The pilot aimed to create a Northeast regional information-sharing capability to improve situational awareness and coordination efforts necessary for responding to everyday and large-scale incidents. The pilot was spanned 8 months, starting in January 2012 and ending in August.

The pilot had nine information-sharing objectives:

- Facilitate **local-to-state** information sharing
- Facilitate **intrastate agency-to-agency** information sharing
- Facilitate **state-to-state** information sharing
- Facilitate **state-to-federal** information sharing
- Facilitate **cross-border (Canada-to-U.S.)** information sharing
- Facilitate **civilian-to-military** information sharing
- Facilitate **field-to-headquarters** information sharing
- Facilitate **regional National Guard** information sharing
- Facilitate information sharing through the **use of social media**

All nine of these objectives were aimed at building resilience within the Northeast so that each pilot participant would have more capacity and situational awareness to better respond to catastrophic disasters.

### 2.2 Pilot Participants

DHS’ Science and Technology Directorate, First Responders Group (henceforth, “S&T”) launched a regional information-sharing pilot in partnership with eight states (Connecticut, Massachusetts, Maine, New Hampshire, New Jersey, New York, Rhode Island, and Vermont), associated localities, emergency management agencies, the National Guard (both Air and Army), federal agencies (FEMA Regions I and II), and the American Red Cross (ARC) in the Northeastern United States.

### 2.3 Pilot Approach

The pilot was designed by building on best practices and lessons learned from previous S&T pilots (Southeast Regional Operations Platform Pilots I and II, Pacific Northwest Pilot, and Central U.S. Earthquake Consortium (CUSEC) Pilot) while leveraging existing technical systems and tools used at the local, state, and federal levels. The pilot also included the technical

## Northeast Regional Information-Sharing Pilot, After-Action Review

components of Virtual USA® (vUSA), an online portal designed by S&T to enable the sharing and discovery of information.

In January 2012, pilot participants met in Framingham, MA at the Massachusetts Emergency Management Agency (MA EMA) Emergency Operations Center (EOC) to kick off the pilot. During this meeting, an operations and a technical working group were formed. The operations working group identified seven operational data layers it wanted pilot participants to share regionally during the pilot:

- Transportation
- Public health
- Power
- Communications
- Key-typed assets
- Incident-specific information
- Resource status

These data layers were intended to be dynamic (showing real-time status) and to help participants with their primary task of finding and leveraging systems of record that are managed by state agencies (for example, a 511 traffic site managed by the Department of Transportation). If no such system existed, the pilot team worked with each participant to create a dynamic data layer to share regionally. To facilitate quick decision making when looking at these layers, the operations working group adopted a red/yellow/green color scheme: red signified no capability, yellow signified degraded capabilities, and green indicated a generally functional situation (see Appendix A1). The primary tool identified to support cross-jurisdictional data sharing during the pilot was the vUSA virtual library, located at <https://vusa.us>.

Capabilities assessments were distributed to representatives from each participating agency; these assessments helped to provide S&T with information-sharing requirements for each agency and organization. S&T facilitated onsite technical assistance meetings to create individual, tailored work plans for each state. All capabilities assessments and state work plans were posted on the Northeast Information-Sharing Community of Practice on the First Responder Communities of Practice (FRCoP) website at <https://communities.firstresponder.gov>.

The operations working group identified Tropical Storm/Hurricane Irene (“Irene”) as the organizing topic for the August capstone demonstration because of the damage Irene caused throughout the Northeast. The demonstration was named Operation Irene II, and it was intentionally designed as a “show-and-tell” demonstration rather than a formal, graded exercise. The structure of Operation Irene II allowed each participant to demonstrate past, current, and desired future capabilities. These capabilities included the aforementioned seven operational data layers and covered the pilot’s nine information-sharing objectives.

October 10, 2012

## 2.4 DHS Pilot Support

Throughout the pilot, S&T worked with federal, state, and local agencies to build capacity by:

- Providing training to pilot participants on consolidating systems of record (e.g., transportation 511 feeds, friendly-force tracking, National Weather Service, utility, etc.) into a situational awareness map view for decision support. Specific participants included the Connecticut Department of Emergency Services and Public Protection (DESPP), and the Rhode Island, New Hampshire, and Connecticut National Guard;
- Deploying operational solutions on the existing/native server/network infrastructure to include:
  - Operational Data Layer Tool (for participants that did not have operational data systems of record); and
  - the vUSA Library widget;
- Facilitating the sharing of over 20 data services through the vUSA Library;
- Enabling FEMA Regions I and II to share and discover data through the vUSA Library;
- Improving local-to-state information sharing in Connecticut by enabling localities and the state to share both dynamic and static data through the vUSA Library;
- Facilitating the setup of 72 vUSA accounts for representatives in 7 states and 29 agencies so that any one of these individuals or agencies could share operational data with any other member of the vUSA community;
- Proving the ability to share across .gov and .mil domains, enabling the National Guard and emergency management agencies to share operational data—such as sandbag mission assignments, road status, or information about power outages—back and forth before, during, and after a disaster; and
- Conducting, recording, and sharing 11 training sessions that were open to all pilot participants, covering technical and operations areas such as web-enabling SQL databases and leveraging satellite and aerial mapping tools. This training series was designed to build capacity at the agency level so that personnel could better understand and manage disaster preparedness and response operations.

In addition, S&T responded to priority state and local requirements and helped deploy operations-ready information management tools in the following ways:

- GeoChat SMS Text-to-Map capability (for dumb phones and smart phones) was deployed for use by multiple disciplines (Emergency Management Agency/National Guard) at the local, state and federal levels.
- Social media were integrated into emergency management in the following ways: a map service of 563 official Twitter accounts is published in vUSA; a Twitter search widget is deployed in three states.
- Canada/U.S. interoperability was achieved through the integration of Multi-Agency Situational Awareness System (MASAS) widgets (for Flex users) and MASAS map services (for Google/Silverlight users). This effort supports the President/Prime Minister's "Beyond the Borders" initiative and marks the first time cross-border situational awareness capabilities have been integrated into operations (note: previous cross border efforts were focused on the Emergency Alert System and alerts and warnings only).

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

- DHS supported the development of shared situational awareness viewers in three National Guard states, giving them direct peer-to-peer access. A shared, dynamic mission-tracking service also was developed.
- Supported access to and sharing of the American Red Cross National Shelter System XML Schema and RESTful map service (REST service) with all seven pilot states.

As a result of these technical assistance efforts, along with the intangible peer-to-peer connections made during the course of the pilot, the region is better prepared to share and discover information required to collaborate during day-to-day and emergency operations. It should be noted also that none of the capabilities above had ever been achieved in previous S&T pilots.

### 3. After-Action Review (by Pilot Participant)

The following subsections are structured to discuss pilot participants—with the exception of Connecticut—by listing the primary agency participants and additional actors involved with the pilot. The subsections contain an overview of each participant’s work during the pilot and how S&T was able to support that participant.

The section on Connecticut is different from other pilot participants because from the beginning of the pilot, S&T and Connecticut worked with clear requirements that had been defined in a report released on January 25, 2012, titled “Connecticut Geospatial Information Systems Council Storm Response and Recovery Assessment Group.” This report covered response operations for Irene and an October Nor’easter, which both caused large-scale damage throughout Connecticut. The report details barriers to response, best practices, and recommendations at five levels: municipal, regional (within CT), state, utility, and other Northeast states. Because of this report, the after-action review of Connecticut relates directly to the lessons learned from Irene and goes into much more detail than does the pilot review provided for other participating agencies.

#### 3.1 Connecticut

S&T focused technical assistance (TA) efforts within Connecticut at the state level, working with the state Geographic Information Systems (GIS) administrator and the Statewide Interoperability Coordinator (SWIC) to focus on specific issues that could filter down to localities. There are 169 towns in Connecticut and no counties: because of this dynamic, S&T partnered with the DESPP and the Army National Guard to work at the state level to create a strong information-sharing environment with localities.

The technical assistance provided by S&T focused on training CT staff on how to develop a situational awareness viewer and then how to web-enable and publish dynamic web services of operational data feeds. Significant progress was made because of buy-in from the director of DESPP and dedicated CT staff time to improve statewide GIS capabilities. During the pilot, three localities joined vUSA, and one county ended up sharing parcel data with the state through the vUSA Library.

Commented [BG1]: I thought there were no counties

Connecticut emerged as the operational champion of the pilot due to strong agency leadership, dedicated staff time, and clear working requirements gained from previous incidents. As mentioned in the introduction, S&T was able to efficiently provide technical implementation and assistance because of the statewide Connecticut Geospatial Information Systems Council Storm Response and Recovery Assessment Group’s GIS report that detailed barriers, best practices, and recommendations following Irene and the October Nor’easter.

A summary of statewide and municipal barriers, best practices, and recommendations is outlined below. Please note that the following summary is not available for other states, and that the barriers, best practices, and recommendations are pulled directly from the GIS report.

October 10, 2012

### 3.1.1 Barriers and Solutions/Next Steps

	Barriers	Solutions/Next Steps
State	The department did not know which data would be most useful during and after an event. There was a lack of communication and understanding of the data needs between planners and GIS staff.	S&T worked with DESPP and other emergency management agencies in the region to decide on a list of seven operational data layers that could provide a basic set of operational data to share to the region. CT DESPP was able to leverage many systems of record to marry with the data layer attributes the region decided to use. DESPP is working to web-enable additional systems of record, such as WebEOC, to share with the region and with municipalities.
	Key employees were not able to get to work or were unable to access computers, internet, or phone due to power outages, road blockages, and/or closure of state buildings. These problems limited the use of GIS and maps soon after the event.	DESPP is working to make elements of its situational awareness viewer accessible to key staff when working remotely.
	The agency GIS manager was not aware of any other available GIS shapefiles or live GIS feeds for CT road closures or utility outages.	Connecticut's road closures and utility outages are now shared with all vUSA participants in the vUSA Library.
	Personnel had to manually update outage information and shelter datasets for maps because GIS and tabular data were not integrated.	Field personnel can now change information for operational datasets on the fly with mobile devices (Note: This capability is in the early stages, but DESPP is already on track to fully leveraging it).
Municipal	Several municipalities were not allowed to create a GIS web service of closed roads and downed wires to serve out data immediately to private/internal sites.	DESPP is working to develop a method to allow municipal authorities to report closed roads and downed wires in real time using smart mobile devices, leveraging operational data layers and attributes, and creating a state-hosted web service.
	Municipal liaisons did not have the resources to identify which electric grid serviced which streets.	By web-enabling power outage and critical infrastructure data, DESPPP is improving its ability to accurately manage and process this type of information.

### 3.1.2 Best Practices and Next Steps

	Best Practice	Next Steps
St	Coordination between the National Guard and the state EOC prevented	S&T was able to provide technical assistance to members of DESPP and the planning section of

Northeast Regional Information-Sharing Pilot, After-Action Review

	unnecessary map making.	the National Guard to help them leverage the same situational awareness viewer to allow for more seamless information sharing.
Municipal	Rapid delivery of critical information including the locations of sheltering operations or travel hazards to emergency personnel for response and the citizens for safety.	DESPP and S&T focused on further improving this best practice by creating a statewide view of these operational data layers, including shelters and road status.
	Having up-to-date available data and useful metadata.	DESPP and S&T are improving implementation of this best practice at the state level.

3.1.3 Recommendations

	Recommendations	Solutions/Next Steps
State	State agencies' GIS representatives should have access to the secured site and map services. The GIS representatives should also be able to develop custom views that show only the layers most relevant to their own business while being able to see others available layers, if needed.	Through the DESPP situational awareness viewer, staff can turn data layers on or off as they choose, allowing staff to generate custom views, PDFs, and screenshots.
	A Flex Viewer should show open shelters by town to make it easier to keep the general EOC staff up to date.	S&T worked to connect DESPP with the American Red Cross managers of the National Shelter System. Shelters are now integrated into the situational awareness viewer. DESPP is working at creating town-level rollups of shelters to better inform the EOC staff.
	Be able to monitor utility status in real time.	This ability is now integrated into the DESPP situational awareness viewer and shared to all vUSA users through the vUSA Library.
	Be able to monitor wireless telecommunication site status in real time.	This capability is now integrated into the DESPP situational awareness viewer and shared to all vUSA users through the vUSA Library.
	Create two statewide web applications (one secure, one public) using ArcGIS to show disaster data, road obstructions, detailed power outages, and status/estimated time for repair.	This plan is currently in progress due to the development of a base situational awareness viewer. Road obstructions and power outages are already included in this viewer, and "time for repair" will follow shortly.
Municipal	Tap into citizen-contributed information for real-time situation updates.	S&T worked with the pilot working groups to identify social media best practices and worked to test direct social media (Twitter) integration with the DESPP situational awareness viewer.

October 10, 2012

Recommendations	Solutions/Next Steps
Improve communication with utility companies.	DESPP has worked to integrate geospatial data feeds of large utility companies into its situational awareness viewer.
Develop and leverage a statewide GIS system.	DESPP has developed a situational awareness viewer that leverages many state GIS systems of record. It is working to provide municipalities with access to the viewer.

### 3.1.4 Summary of Additional Achievements

The achievements listed here were not listed as requirements within the GIS report, but these requirements surfaced from CT during the course of the pilot.

Pilot Engagement	Description of Effort
State-to-state collaboration	As Connecticut was working to web-enable its traffic camera feeds, it encountered issues with converting feeds to GeoRSS. S&T facilitated engagement between Connecticut and personnel from the Tennessee Emergency Management Agency (TEMA) and enabled the two states to address the technical issues on their own. Along with development support and training on the situational awareness viewer, CT staff mentioned this effort as providing the most value to them during the course of the pilot.
Statewide information data layers	Throughout the course of the pilot, CT was able to web-enable, display, and share numerous operational data feeds. These dynamic data layers include roadway incidents, electric outage data, critical facilities and resources, locally reported incidents, and storm surge and flood areas.
Connecticut National Guard (CTNG) situational awareness viewer	S&T was connected to a GIS contract analyst for the Planning Section of the CTNG, who was tasked with developing the geospatial capabilities of the CTNG. Training sessions were scheduled but delayed multiple times due to the CTNG firewall's screen share limitations. As soon as a solution (Homeland Security Information Network Connect- HSIN Connect) was discovered, training commenced. During Operation Irene II, the Guard could obtain data through the vUSA Library widget and have access to U.S. Northern Command (U.S. NORTHCOM) Situational Awareness Geospatial Enterprise (SAGE) information and live weather data. Moreover, CTNG would be able to access and edit Northeast National Guard mission assignments.

### 3.2 New York

#### Participants

- New York: New York State Division of Homeland Security and Emergency Services (NYS DHSES) - Office of Cyber Security and Office of Emergency Management (NYSOEM).

#### Additional Agencies Involved

- New York: New York State Department of Transportation (NY DOT)
- Long Island GIS Association (LIGIS)

#### Overview of S&T Support to New York

During the course of the pilot, several information-sharing areas were identified in the state-specific work plan: sharing NY Alerts, web-enabling DisasterLAN tickets to share with the vUSA community, and building a vUSA Library widget that was compatible with the Silverlight application known as DisasterLAN. NYS DHSES was most interested in sharing information with NY localities. S&T worked with NYS DHSES to build capacity within the state by enhancing information-sharing efforts with localities. These efforts realized a measure of success during the pilot and following the capstone demonstration. NYS localities are now sharing information within vUSA. The following table summarizes activities relating to the NYS DHSES:

Pilot Engagement	Description of Effort
NY Alerts	<p>NY Alerts is a publicly available alerting system that includes every county in the state. The entire system is public, and GeoRSS feeds exist for every county as well as for a full statewide rollup of county alerts. NYS DHSES agreed to share the NY Alerts dynamic data feed in the vUSA Library.</p> <p>The integration of NY-Alert statewide GeoRSS feed to vUSA was successful as a proof of concept. vUSA’s configuration enables limited display of GeoRSS and does not currently accommodate display of multiple alerts associated with an individual county, as is provided by NY-Alert’s Notification Map: <a href="http://www.nyalert.gov/Public/News/NotificationMap.aspx">http://www.nyalert.gov/Public/News/NotificationMap.aspx</a>. This inability to display such is a significant limitation, as multiple alerts are frequently issued for an individual county, especially during major emergency events.</p>
vUSA Widget for DisasterLAN	<p>NYS DHSES expressed that it did not want to be involved in the development of a vUSA Library widget for DisasterLAN. S&amp;T responded to NYS DHSES that S&amp;T would discuss developing the widget without the involvement of NY.</p>

Northeast Regional Information-Sharing Pilot, After-Action Review

<p>DisasterLAN Tickets</p>	<p>NYS DHSES stated that it would be valuable to web-enable DisasterLAN tickets to share them through the vUSA Library. S&amp;T agreed to explore this possibility. NYS DHSES did not want to engage in any technical development or system changes to DisasterLAN in order to explore this possibility. As a result, S&amp;T agreed to create an email account where DisasterLAN tickets (and their associated XML schema) could be sent.</p> <p>The idea explored was to turn the email inbox into a “web service” that could be shared through the vUSA Library, thereby allowing DisasterLAN tickets to be shared through the vUSA Library. S&amp;T explored this option and was not able to achieve this integration by Operation Irene II. The sharing of DLAN tickets should provide value for geo-enabled information sharing, but as of S&amp;T’s current research, the process for sharing will be a manual upload of DLAN tickets rather than a dynamic feed. S&amp;T recommends that Buffalo Computer Graphics (BCG) consider producing a dynamic web service directly from DLAN XML schemas that are produced.</p>
<p>NY DOT</p>	<p>NY DOT introduced S&amp;T to its new Road Status Damage Assessment (RSDA) tool, a mobile-based system where authorized personnel such as state police or highway workers can update roadway status with color-coded lines. The RSDA tool is especially effective because it allows personnel to report on conditions of local roads and not just state roads. DOT employees expressed concern whether this tool would provide clear messages to the general public. For example, if a road is marked green, it is open and good to drive on; if a road is marked red, it is not open or safe to drive on. But what if a road has no color markings? The DOT worries that citizens may wrongly assume the road is open and cleared, which is not necessarily the case. If a road is not marked, it simply means that it has not been assessed; this situation illustrates the need for clear messaging. Through the course of the pilot, S&amp;T worked with DOT to communicate this message—that with a clear map legend or posted message along with the data, many of the potential miscommunications and misunderstandings could be avoided.</p>
<p>LIGIS</p>	<p>S&amp;T was connected to the president of LIGIS. Conversations were initiated to explore LIGIS’ participation in the pilot, but nothing tangible came from the conversations in terms of information sharing. Nonetheless, the president of LIGIS now has an account on vUSA; this would be a valuable local partnership to cultivate in the future.</p>
<p>Critical Infrastructure</p>	<p>CIRIS is a robust, Adobe Flex-based viewer that NYS DHSES uses to</p>

October 10, 2012

Response Information System (CIRIS)	monitor and manage critical infrastructure throughout the state. NYS DHSES demonstrated the capabilities of CIRIS during the Northeast pilot capstone demonstration, Operation Irene II. Several pilot participants were impressed with CIRIS capabilities and followed up with NYS DHSES staff directly after Operation Irene II to learn more about the CIRIS capabilities.
-------------------------------------	---

### 3.3 New Jersey

New Jersey indicated from the beginning of the pilot that it would participate only as an observer. The only agency engaged was the New Jersey Office of Homeland Security and Preparedness.

### 3.4 Maine

#### Participants

- Maine Emergency Management Agency (ME EMA)
- Maine National Guard (MENG)

#### Overview of S&T support to Maine

Maine was in a unique position for the pilot because it was the only state to leverage Google Earth Enterprise as the backbone for its situational awareness viewer. Maine’s primary goal for the pilot was to share and discover information through the Virtual USA Library. Maine also desired to gain access to Canadian emergency alerts, known as the Multi-Agency Situational Awareness System (MASAS). Maine’s primary goal in the pilot was to gain better regional situational awareness, and its primary tactical objective was to gain access to vUSA and then to integrate vUSA Library feeds directly into Virtual Maine. S&T worked with Google and a Google contractor to develop a Google widget for vUSA. This widget was not completed in time for Operation Irene II, but Maine did have access to all the true URLs for the shared regional data feeds, which it could integrate directly into Virtual Maine.

Pilot Engagement	Description of Effort
vUSA Library Widget for Google Earth	S&T initiated a public-private partnership to build a vUSA Library widget for Google Earth. This partnership involved: Maine as a subject-matter expert; a company named NT Concepts, which was responsible for developing the widget; Google as the Google Earth expert; and S&T as facilitator. Due to delays in development, the widget was not completed in time for the capstone demonstration. Once completed, this widget is intended to allow Maine to publish data feeds directly to the vUSA Library from Virtual Maine and allow Maine to download information from the Library directly into Virtual Maine.
MASAS	S&T was able to connect Maine with Public Safety Canada and the

	technical developers of the MASAS system. Maine staff members were authorized to access operational MASAS alerts (as opposed to the “sandbox” test alerts). Maine technical staff members are still working on how to integrate those alerts into Virtual Maine.
Data Feeds	Maine works predominantly with Dynamic Keyhole Markup Language (KML) feeds. The S&T team worked closely with Maine technical staff to ensure that Maine’s dynamic KML feeds could be shared into the vUSA Library and used by regional partners. This integration was successful by the capstone demonstration, but Maine technical staff were not able to integrate any dynamic data feeds into Virtual Maine that were shared through the vUSA Library. S&T does not know if there were any technical issues in trying to display data feeds or if Maine simply did not have enough time prior to the capstone to test this feature.
MENG	The MENG was active in pilot discussions and in gathering requirements and make it clear that field-to-headquarters communication was a top priority for it. As a result, S&T explored communication tools that could be leveraged to address this need. S&T settled on a tool called GeoChat to prototype for pilot activities. For the capstone demonstration, GeoChat allowed MENG personnel to report their location along with their status via text message from a “dumb” phone. This information could then be displayed on a situational awareness viewer while being shared via a GeoRSS feed through the vUSA Library.

### 3.5 Vermont

#### Participants

- Vermont Emergency Management (VEM)
- Vermont National Guard (VTNG)
- VT Center for Geographic Information (VCGI)

#### Overview of S&T Support to Vermont

Vermont engaged a large contingent of pilot participants (all within the Emergency Management realm) at the outset of the pilot. During the course of the pilot, several information-sharing areas were discussed: sharing VT Alerts, sharing VT road information, sharing utility and power outage information, and working to develop a vUSA Library widget for Disaster LAN (DLAN). Vermont Emergency Management uses DLAN as its primary disaster management system).

<b>Pilot Engagement</b>	<b>Description of Effort</b>
VT Alerts	Vermont is in the process of acquiring a notification and alerting capability based on New York Alert. As of the capstone demonstration, Vermont Alert was not yet publicly available. It is intended that the vUSA platform will obtain information about Vermont from VT Alerts just as NY provides access to data pulled from its NY Alerts instance of the same software.
VT Road Information	VEM staff indicated a willingness to share road information with other states in the region but told S&T that this was not something it would be able to work on before the capstone demonstration. Currently, VT 511 is proprietary software that does not allow for external use of its data feeds. VTRANS is working on a replacement, but the details are unknown.
vUSA Widget for DisasterLAN	<p>After a series of internal VT meetings, VEM stated that it did not want to pay for the development of a widget to be built with Vermont's DLAN system. BCG agreed to develop a widget on its own that would integrate with the vUSA application programming interface (API).</p> <p>S&amp;T contacted VEM regarding the development of a Silverlight Viewer vUSA widget. VEM was asked to assist with the evaluation and testing of the widget in its DisasterLAN viewer, "Vermont Live." Buffalo Computer Graphics is working with S&amp;T on this process.</p>
VT NG	<p>The VTNG expressed a strong desire to develop a situational awareness viewer and set aside personnel to lead the development effort. However, after thorough technical conversations with the S&amp;T team it was learned that the VTNG lacked the server infrastructure to build, deploy, and leverage a robust situational awareness viewer. After this discovery, the VTNG began a series of meetings between its GIS, operations, and IT staff to better understand how to move forward. No direct technical assistance was conducted with the VTNG during the course of the pilot.</p>

### 3.6 New Hampshire

#### Participants

- New Hampshire National Guard (NHNG)

#### Additional Agencies Involved

October 10, 2012

- New Hampshire Department of Safety, Division of Homeland Security and Emergency Management (NH DOS)

**Overview of S&T support to New Hampshire**

The New Hampshire DOS took time to evaluate its level of participation in the pilot. After several months of review, NH DOS decided that it would officially be an observer in the pilot. The NHNG had been engaged with S&T prior to the official pilot kickoff; S&T worked with the NHNG to train Guard staff in developing a model situational awareness viewer for the NHNG. Throughout the course of the pilot, the NHNG led regional National Guard discussions on the development of a regionally accepted User-Defined Operating Picture (UDOP).

Pilot Engagement	Description of Effort
Situational Awareness Viewer	The NHNG expressed a desire to develop a situational awareness viewer that could be used in the Joint Operations Center (JOC) during normal and emergency operations. The NHNG’s priorities were to gain access to the US NORTHCOM SAGE Friendly Force Tracker (FFT) information in its situational awareness viewer, to deploy a mission-tracking tool that could be scaled throughout the region, and to gain a better geospatial understanding of its facilities and resources so that it could share that understanding with partners in the region. By the capstone demonstration, the NHNG had accomplished these objectives, although issues some still needed to be resolved to allow the NHNG to share the mission tracking tool with other Guard states in the Northeast.
GeoChat	The NHNG made it clear that field-to-headquarters communication was one of its top priorities. As a result, S&T explored communication tools that could be leveraged to address this need. S&T settled on a tool called GeoChat to test as a prototype for pilot activities. For the capstone demonstration, GeoChat allowed NHNG personnel to report their location along with their status via text message from a “dumb” phone. This information could then be displayed on a situational awareness viewer while being shared via a GeoRSS feed through the vUSA Library.
Mission Tracker	Leveraging ESRI tools available through ArcGIS online, the NHNG worked to develop a mission-tracking tool that could be edited by field personnel using mobile devices. This tool is similar to the operational data layers tool that was deployed in Connecticut. Guard personnel can alter their status dynamically, edit information, and then have that information along with their manually entered location display on a situational awareness viewer. The NHNG is working to share this information with other Guard units throughout the Northeast, with the goal of having each Guard unit enter mission-tracking information

	through this tool to allow for regional shared situational awareness.
NH DOS	After much internal discussion, NHDOS stated it would just observe pilot activities. Just prior to the capstone demonstration, the NH DOS administration shared a REST service of the road closures resulting from Irene.

### 3.7 Rhode Island

#### Participants

- Rhode Island Emergency Management Agency (RIEMA)
- Rhode Island Army National Guard (RIARNG)

#### Overview of S&T support to Rhode Island

Both RIEMA and RIARNG were involved in initial onsite meetings with S&T in Providence, RI. Although much was discussed with RIEMA, for much of the pilot RIEMA was transitioning statewide servers to manage its geospatial data. As of the capstone demonstration, no work had taken place with RIEMA. RIARNG, through its planning staff, worked to move forward to deploy a situational awareness viewer. The primary goal of the RIARNG staff was to deploy its viewer within the JOC. RIARNG operations personnel within the JOC are concerned with viewing the NORTHCOM SAGE information and being able to submit information from mobile devices and having that information display geospatially within the JOC. S&T focused on these two tasks.

Pilot Engagement	Description of Effort
GeoChat	RIARNG expressed a desire to investigate field-to-headquarters communication. As a result, S&T explored communication tools that could be leveraged to address this need. S&T settled on a tool called GeoChat as a prototype for pilot activities. For the capstone demonstration, GeoChat allowed RIARNG personnel to report their location along with their status via text message from a “dumb” phone. This information could then be displayed on a situational awareness viewer while being shared via a GeoRSS feed through the vUSA Library.
Situational Awareness Viewer	RIARNG expressed a desire to develop a situational awareness viewer that could be used in the JOC during normal and emergency operations. The priorities for the RIARNG were to gain access to the US NORTHCOM SAGE Friendly Force Tracker (FFT) information in its situational awareness viewer, to deploy a mission-tracking tool that could be scaled throughout the region, and to gain a better geospatial understanding of its facilities and resources so that it could share them

October 10, 2012

	with partners in the region. As of the capstone demonstration, the RIARNG could view SAGE feeds directly in its viewer, dynamically mark up maps with the operational data layer edit tool, and use civilian information from the vUSA Library widget in its viewer.
--	--

### 3.8 Massachusetts

#### Participants

- Massachusetts Emergency Management Agency (MA EMA)
- Massachusetts National Guard (MANG)

#### Additional Agencies/Personnel Involved

- Massachusetts Department of Fire Safety (DFS)
- Massachusetts Department of Transportation (MassDOT)
- Boston Athletic Association (BAA)
- Natick police department

#### Overview of S&T support to Massachusetts

At the direction of MA EMA, the Next-Generation Incident Command System (NICS) was the platform chosen for Massachusetts to use in the Northeast Pilot, and a study was conducted to determine requirements to aid both inter- and intrastate sharing of information. Information sharing within the state was enabled by leveraging the collaborative tools provided in the NICS viewer, which allows information sharing between MA and regional partners via the vUSA widget. MA EMA also tested NICS during the 2012 Boston Marathon; a trip report detailing technical capabilities and limitations was generated following the Boston Marathon and submitted to S&T.

Pilot Engagement	Description of Effort
Operational Data Tool	MA EMA expressed a desire to have personnel with first-hand knowledge of events (i.e., individual townships or agencies) be able to dynamically update the geo-located status of key assets and infrastructure. To that end, the NICS operational data layer tool was developed, enabling status and metadata to be updated by anyone with appropriate credentials. The operational data layer tool also allows individual operational data layers to be shared through vUSA. Prior to the capstone demonstration, the public health operational data layer was shared through the vUSA Library. However, this layer contained only locations of hospitals but no metadata (information about the hospital).
MassGIS	The Office of Geographic Information (MassGIS) has made available a comprehensive, statewide database of spatial information for mapping and analysis that supports emergency response, environmental planning and management, transportation planning, economic development, and

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

	transparency in state government operations. Key layers from MassGIS have been identified and brought into NICS, but they were not shared in the vUSA Library during Operation Irene II.
Vehicle Tracking	The Boston Marathon was leveraged as a demonstration point for the pilot team in Massachusetts. For the marathon, GPS tracking devices were carried aboard the lead and sweep vehicles, and the locations of each were tracked in real time in NICS.
vUSA Widget	A vUSA widget was added to the NICS platform in order to aid both the use and sharing of data. Static layers as well as dynamic collaborative layers can be shared. However, the NICS vUSA widget does not support every data type that is supported in the vUSA Library.
Road Status Application	An application was developed to allow designated representatives from individual communities to indicate the status of roads within their communities. This application is particularly useful during events such as the Boston Marathon, where coordination among communities and with state agencies is essential.
Integration of Census Data	An application was added to link NICS to a US Census database through EJView. This addition allows a user to obtain census information for an area of interest.
Operational Evaluations	NICS was tested operationally and evaluated during three events in addition to the Operation Irene II capstone event. An early version of NICS was used to support emergency operations during the Boston Marathon. MANG used NICS in a limited capacity during 4 <sup>th</sup> of July activities in Boston. NICS also was used in an unplanned real-world chemical fire in New York that affected parts of Massachusetts. In each operational instance, MA EMA staff noted both positive and negative attributes of NICS.
Leave-behind Capability	Steps have been taken to transition NICS to Massachusetts as an operational leave-behind capability. Transition is expected to be completed by March 2013. As of October 2012, there is no firm transition date.

### 3.9 FEMA Region I

Pilot Engagement	Description of Effort
General Information Sharing	FEMA Region I was a critical partner in helping to establish the pilot and in coordinating pilot participation. Region I is working to institutionalize best practices to leverage GIS tools and technologies moving forward. S&T was working with FEMA Region I to provide the vUSA Library widget in a demonstration viewer, but this goal was not possible during the course of the pilot because the widget was not available in the required version. Deployment of the widget at a later date, when it is compatible with FEMA regional viewers, is something

October 10, 2012

	FEMA Region I would like to explore. During the capstone demonstration, FEMA Region I was able to share a demonstration web service of its resources that were on the ground during Irene.
--	--

**3.10 FEMA Region II**

<b>Pilot Engagement</b>	<b>Description of Effort</b>
General Information Sharing	<p>FEMA Region II was brought into the pilot part way through the effort. Region II is currently developing a regional situational awareness and a common operating picture platform. Region II is also developing a GIS program and is implementing and leveraging several GIS tools and technologies, including vUSA. During the course of the pilot, FEMA Region II and S&amp;T had many conversations covering GIS best practices throughout the region and across the country. S&amp;T was working with FEMA Region II to provide the vUSA Library widget in a demonstration viewer in coordination with FEMA Region IV. However, this goal was not possible during the course of the pilot due to unavailability of a vUSA Library Widget in the required version. FEMA Region II would like to explore deploying the widget at a later date, when it is compatible with FEMA regional viewers. During the capstone demonstration, FEMA Region II was able to share National Hurricane Evacuation Routes.</p>

## 4. Pilot Capstone Demonstration: Operation Irene II

### 4.1 Background on Capstone

As discussed previously, the operations and technical working groups decided that Irene was the most recent regional event to use as an organizing principle. The operations working group also decided that a capstone event was necessary to help organize the testing and evaluation series at the end the pilot. Because of the TA efforts undertaken during the pilot and because of the large number of formal exercises that the pilot participants were preparing for during the summer of 2012, the operations working group decided to make the capstone event a “show-and-tell” demonstration to present the progress made over the previous eight months. The objectives of the capstone were identical to the nine information-sharing objectives of the pilot (e.g., local-to-state, civilian-to-military, and field-to-headquarters). Each participant was not expected to demonstrate all nine objectives; rather, the goal of Operation Irene II was to demonstrate these nine information-sharing objectives across the region while showcasing best practices to each of the regional partners. Each participant was expected to share at least one data feed with the vUSA Library and then use the regionally shared information from other pilot participants. Operation Irene II was a 2-hour demonstration that covered the pre-landfall, landfall, and post-landfall operational windows. Operation Irene II was recorded live and can be viewed at <http://tinyurl.com/ct4ut9o>.

### 4.2 Capstone Successes

- During Operation Irene II, pilot participants were able to share **7 operational data layers**: transportation, public health, power, communications, key typed assets, incident-specific information, and resources.
- Pilot participants demonstrated significant capabilities around **9 information-sharing goals**: local-to-state, intrastate agency-to-agency, state-to-state, state-to-federal, US-to-Canada, social media, regional National Guard capability, civil-to-military, and field-to-headquarters.
- During the demonstration the following states **demonstrated internal capacity while sharing geospatial operational data with the region**: Connecticut, New York, Maine Vermont, New Hampshire, Rhode Island, and Massachusetts. The Connecticut, New Hampshire, and Rhode Island National Guards also focused their demonstrations on civil-to-military sharing by way of the vUSA Library.
- The **Connecticut Department of Emergency Services and Public Protection (CT DESPP)** and the **Massachusetts Emergency Management Agency (MA EMA)** have been the regional pilot champions, making tremendous progress during the course of the pilot. Localities and multiple state public safety agencies are sharing information to the state through vUSA, and both Connecticut and Massachusetts have geospatially enabled multiple statewide systems which are all being shared through vUSA. Massachusetts and Connecticut are leveraging all seven operational data layers, which are updated dynamically and shared regionally through vUSA. These layers can also be updated in real-time from mobile devices in the field. This progress is sustainable in that it will continue and thrive after S&T technical assistance ceases.
- **NICS had a significant real-world impact on the response on August 2<sup>nd</sup> to a chemical fire in New York State** near the border with Massachusetts. The plume from the fire at the

October 10, 2012

Ghent recycling plant was expected to affect western MA. The MA Hazardous Material teams used NICS to coordinate with MA EMA and the MA National Guard Civil Support Team (CST). NICS was used extensively in facilitating communications and situational awareness. Plume models were produced and displayed on NICS. The CST used the system in real time to report readings from its chemical monitors at eight separate sampling locations. As each area was cleared, that information was entered into NICS. The MA National Guard has reported that the real-time collaborative awareness enabled the CST personnel to complete their mission much sooner than expected and that the ability to view the areas the teams were clearing in real time facilitated the coordination required to accomplish the mission.

## 5. Pilot Summary and Next Steps

The pilot concluded on Aug 16, 2012, but information-sharing efforts in the region have continued to advance without S&T support. As of August 16, 2012, seven states were able to significantly improve their interstate and intrastate information-sharing capabilities. Five major agencies (Connecticut DESPP, MEMA, NHNG, RING, and CTNG) that didn't have situational awareness viewers can now share situational awareness data. Some 30 of 49 operational data layers (there were seven key operational data layers and seven states sharing information, for a total of 49 possible layers) were shared regionally using the vUSA Library; additional layers require technical development from within each agency that is underway. A total of 11 regional training sessions were conducted. States have leveraged these trainings for internal capacity-building purposes. S&T has connected many pilot participants with previous pilot participants and other partners throughout the nation in order to share best practices, share code, and develop capabilities in concert with one another.

### 5.1 Next Steps

- In order to continue to participate in the vUSA community, each pilot participant is required to sign the National Memorandum of Agreement (MOA). As of August 16, no agency had signed the MOA. S&T is working with each participant to ensure that the MOA is signed.
- Participants are encouraged to join (some already have joined) the recently created National Information Sharing Consortium (NISC). The NISC serves as a place to share best practices, code and technology, and lessons learned to further information sharing. More information can be obtained by contacting the NISC at [info@nisconsortium.org](mailto:info@nisconsortium.org).
- National Guard units in the Northeast are jointly working to create a regional, shared situational awareness (SSA) capability. Rather than focusing on one specific system, the Guard is working to create and share operational data layers that can work across platforms.
- Building on the progress made in the area of U.S. to Canada information sharing during the Northeast pilot, S&T is working with Public Safety Canada to test, demonstrate, and operationalize more robust cross-border information-sharing practices. This Canada and

Northeast Regional Information-Sharing Pilot, After-Action Review

U.S. (CANUS) pilot will leverage MASAS, FEMA's Integrated Public Alert and Warning System (iPAWS), and vUSA. This pilot will directly engage localities along the border in both the U.S. and Canada, focusing on Maine and New Brunswick.

- S&T now has functional Google and Silverlight widgets for vUSA. S&T is working with partners around the country (including Northeast pilot participants) to test the functionality of these widgets to ensure operational utility.

## Appendix

### A1 Common Operational Data Layer Summary Criteria (Red/Yellow/Green)

Operational Data Layers	STATUS LEVEL*	STATUS LEVEL*	STATUS LEVEL*	Inactive Status	Unknown
<b>Transportation</b>	<i>Major delays</i>	<i>Minor delays</i>	<i>Normal speed</i>	N/A	<i>Unknown</i>
<b>Public Health</b>	<i>No capacity/ resources</i>	<i>Limited capacity/ resources</i>	<i>Normal operations</i>	<i>Closed</i>	<i>Unknown</i>
<b>Power</b>	<i>Major outages</i>	<i>Minor outages</i>	<i>Normal service</i>	N/A	<i>Unknown</i>
<b>Communications</b>	<i>Networks overloaded</i>	<i>Networks stressed</i>	<i>Normal service</i>	N/A	<i>Unknown</i>
<b>Key Typed Assets</b>	<i>Infrastructure inoperable</i>	<i>Infrastructure compromised</i>	<i>Normal Operation</i>	<i>Inactive</i>	<i>Unknown</i>
<b>Incident-Specific Information</b>	<i>Response Underway</i>	<i>Response concluded in the last 24 hours</i>	<i>Normal operations</i>	N/A	<i>Unknown</i>
<b>Resources</b>	<i>Resource unavailable</i>	<i>Resource limited or requested</i>	<i>Resource Available</i>	<i>Inactive</i>	<i>Unknown</i>

### A2 Operational Data Layers Shared During Operation Irene II

	CT EM	CT NG	NY EM	RI EM	RI NG	ME NG	ME EM	MA NG	MA EM	VT EM	FEMA I	FEMA II	NH EM	NH NG
Transportation														
Incident-Specific														
Resources														
Power														
Communications														
Public Health														
Key-Typed Assets														

	= Shared Regionally
	= Available Internally

### A3 Operation Irene II Capstone Demonstration Script

Operation Irene II was a three part demonstration, focusing on the preparedness, response, and recovery efforts surrounding Irene. What follows is the script from the Operation Irene II demonstration. Each phase is divided into two columns: the first column describes the topic of conversation/speaker; the second describes the actual script used during the demonstration.

## Phase I- Preparedness

Topic/Speaker	Script
Luke Intro	<p>“The first phase of our demonstration will focus on preparedness. The goal of this phase is to demonstrate a sampling of the data, which focuses on preparedness, which has been created, accessed and linked to geospatial operations environments in each of the states during the course of the pilot. This demonstration will include a look at several states’ user defined operating pictures where they will show what data they are publishing and the data they are being provided by other states at present as it relates to the scenario. This phase will conclude with a deep dive into the situational awareness viewer that is being leveraged by the Massachusetts Emergency Management Agency as well as the situational awareness viewer for New York- CIRIS- the Critical Infrastructure Response Information System.”</p>
Weather (Tyler Kleykamp, CT DESPP)- Luke gives WebEx to Tyler Kleykamp	<p>Luke: “As Irene approaches, a Hurricane Watch is in place for CT, Winds speeds of 80 mph have been reported, maximum rainfall has reached over 12 inches, and significant flooding is possible.” “Tyler, how does CT learn of these conditions, and how do you track storms?”</p> <p>Tyler: “In 2011, we had _____. As of today, we are able to ____ [Tyler shows CT dynamic weather feed, flood gauges above action stage, and storm spotter reports]. DHS S&amp;T helped us in these ways _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____.”</p>
Data Sharing with Locals (Tyler Kleykamp)	<p>Luke: "CT has an interesting state structure. There are no counties- just towns. This makes local-to-state coordination that much more difficult, but also that much more necessary. Tyler, can you show us how you are approaching the local-to-state information-sharing issue?"</p> <p>Tyler: “In 2011, we _____. As of today, we are able to ____ [Tyler shows local data shared in Virtual USA and explains which localities. He then goes to the CT viewer and shows the local data displayed natively in his viewer]. Virtual USA allows us to _____. Operationally, this data is valuable to us because _____. In the future, we hope to _____.”</p>
Base Imagery (Dejung Gewissler, VCGIS and Jason Gosselin, VT EMA)- Luke	<p>Luke: "As the storm approaches, and expecting severe flooding based on predictions and the current storm track, Vermont starts to assemble base imagery in their state in order to look at flood plains and track changes over time due to rainfall. There is also a good chance that external assets will be required in Vermont after the storm. Dejung, how does Vermont work with imagery, and how do you share that with</p>

Northeast Regional Information-Sharing Pilot, After-Action Review

<p>gives WebEx to Dejung</p>	<p>partners across the region?"</p> <p>Dejung: "In 2011, we had _____. As of today, we are able to _____. [Dejung shows (6) imagery layers that are shared within Virtual USA]. DHS S&amp;T helped us in these ways _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
<p>Transportation (Jose DosSantos, FEMA II)- Luke gives WebEx to Jose DosSantos</p>	<p>Luke: "Given the severity of Irene, evacuation procedures are being considered and enacted in many coastal areas as well as along major rivers. Jose, how does FEMA help to assist with this process?"</p> <p>Jose: "In 2011, FEMA supported states by _____. As of today, FEMA is supporting by _____. [Jose shows the evacuation feed- FEMA Hurricane Evacuation Routes TEST- shared regionally with the community through the Virtual USA library, shifts to the Northeast Pilot viewer, opens the Virtual USA widget, logs in, and displays the Hurricane Evacuation Routes on the map]. Operationally, this data is valuable to us because _____. In the future, FEMA hopes to be able to _____."</p>
<p>Transportation (Christopher Kroot with Bruce Fitzgerald, ME EMA)- Luke gives WebEx to Christopher</p>	<p>Luke: "In anticipation of Irene making landfall in Maine, the Maine EMA is working to identify which evacuation routes are usable given current road conditions and construction. Manned traffic control points are being setup at critical intersections along Route 1 and 1-295. All state highways are on limited use status and are reserved for emergency personnel assisting in evacuations. Bruce, how would Maine manage this information in preparation of the storm?"</p> <p>Bruce: "In 2011, we had _____. As of today, we are able to _____. [Christopher shows Virtual Maine and displays the 511 traffic feed - Maine SWIMS- and describes the information it contains. Christopher explains that the Dynamic KML of this feed is shared with the community through the Virtual USA library]. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
<p>Incident-Specific Information (Dan O'Brien, NY DHSES)- Luke gives WebEx to Dan</p>	<p>Luke: "As Irene approaches, one of the best ways for a state to prepare is to empower its citizens. Sandbags are being distributed throughout New York, citizens are being evacuated from low-lying areas of Manhattan and other flood zones throughout the state, and the Red Cross is pre-positioning emergency response vehicles near shelters. Counties and the state are reporting out conditions and alerts in real-time. Dan, can you tell us about this system?"</p> <p>"In 2011, we had _____. As of today, we are able to _____. [Dan goes to</p>

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

	<p>vusa.us, logs in, pulls up the Flex widget, logs in, and then displays the NY Transportation Status Rest service]. NY Alerts is a public feed but we have shared it in vUSA for easy geospatial consumption regionally. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____.”</p>
<p>Resources (Jaci Hamel, MA EMA)- Luke gives WebEx to Jaci Hamel</p>	<p>Luke: “In coastal areas, flooding is imminent. Sandbags are critical to flood prevention and mitigation. Massachusetts has the ability to manage their resource inventory and sandbag number. Jaci, how does Massachusetts coordinate resource information- specifically with respect to sandbags?”</p> <p>Jaci: “In 2011, we had _____. As of today, we are able to ____ [Jaci shows her resource management system, shows the sandbags data- MEMA sandbags- , and then shows the sandbags being shared in Virtual USA library]. DHS S&amp;T helped us in these ways _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____.”</p>
<p>Public Health (Rob Sousa, MA EMA)- Luke gives WebEx to Rob</p>	<p>Luke: “Massachusetts has an extensive healthcare network, and it shares borders with everyone in the region. We know that Massachusetts may have to absorb patients and expand capacity based regional conditions. Rob, how does MEMA manage this information in preparedness of a major storm?”</p> <p>Rob: “In 2011, we worked with ESF-8 (DPH), and surveyed hospitals in terms of available beds, resources, and staffing, and we mapped and tracked these resources in the SEOC using a combination of ArcMap and Google Earth in conjunction with DPH’s patient tracking system. These tracking maps were displayed at our SEOC and distributed through WebEOC’s File Library, so anyone with an account in our state’s WebEOC could then download and view the maps. In the very near future, we hope to use the NICS viewer to share this information at the local level. We should also be able to share this information seamlessly with our neighboring states through vUSA. That’s our goal....So let me quickly show you the early phases of our dynamic hospital layer and how it’s displayed in NICS ...”</p> <p>[Robs brings up the Public Health OPS KPI layer, adds a point, enters metadata, and clicks done.]</p> <p>“Operationally, this data is valuable to us because personnel at the SEOC need to have a clear picture of where resources are available and where key resources are lacking/needed and should be distributed. In the future, we are hoping to have this all available in NICS/vUSA, making it available to the responding field units, our local EM groups,</p>

Northeast Regional Information-Sharing Pilot, After-Action Review

	<p>as well as our neighboring states through vUSA and we hope to be able to track these resources real-time and display that tracking information in both NICS and vUSA seamlessly.”</p>
<p>NICS Demo (Rob Sousa)-</p>	<p>Luke: “Although we are working through a demonstration today with a show-and-tell of capabilities, many of these capabilities, tools, and processes are being used in daily operations. Rob, I know that you all in Massachusetts have deployed NICS in at least one operational instance. On August 2, there was an industrial fire in Ghent, NY. Plume models showed the smoke flowing into Massachusetts. Can you tell us how MEMA maintained situational awareness during this event? Can you also show us why Ghent is such a critical example to regional information sharing because of the shared borders in the immediate vicinity?”</p> <p>Rob: “We are currently testing, and in some limited cases actually using NICS for situational awareness here at MEMA. We have used it during weather-related incidents, the Boston Marathon, and, more recently, in the NY Industrial Park fire in Ghent, NY, on August 2 ... NICS worked well with the Ghent, NY, incident because we were able to exchange geospatial data, including plume plots, Civil Support Teams (CSTs) sampling sites, and shelter-in-place communities, in real-time between our SEOC and our boots-on-the-ground in Western MA. [Rob shows Ghent Incident within NICS and describes the layers used for incident management. Rob also describes how Ghent is important because of the NY, MA, and CT shared borders in the immediate vicinity.]”</p> <p>Rob: “Additionally, we are in the early stages of being able to consume data from Virtual USA into NICS. One example of this, as something that could provide value in these incidents is statewide alerts. NY Alerts is a powerful alerting capability for residents. This feed, although publically available, is shared in Virtual USA. We are able to consume that feed into NICS which can let us know what action New York State is taking with its citizens.</p> <p>[Bring up New York Alerts feed (NY-Alert Statewide Alerts) in NICS ]</p> <p>Luke: “Through the course of this pilot, many of the Northeastern states have been working to build capacity, web-enable information, and then share that information. Moving forward, it is important to highlight that in cross-border events like this, information can be shared between states through Virtual USA to help facilitate a more effective response.”</p> <p>Rob: "Before we hand WebEx control back to Luke, are there any</p>

October 10, 2012

	questions you have for us in MA?"
NY DHSES CIRIS Demo (Bill Johnson NY DHSES)- Luke gives WebEx to Bill Johnson	<p>Luke: "New York state is taking significant steps in preparing for Irene. Hurricane Watch in effect for much of the state. CBS News reported Irene made landfall at Little Egg inlet in New Jersey and is expected to make landfall on Long Island, New York around midday. In New York City, Mayor Bloomberg ordered a mandatory evacuation by 1700 EDT Saturday (27 August) for low-lying areas that house about 270,000 people. The areas include the Battery Park City complex, Coney Island, the beachfront community of the Rockaways and other neighborhoods around the city. In addition mandatory evacuations are in place for Stony Point, NY and CSX has shut down several rail lines in the state. It is looking like critical infrastructure may be heavily impacted during the storm. How does New York manage and monitor this kind of critical infrastructure information?"</p> <p>Bill: "In 2011 we _____. Today, we have _ [briefing of CIRIS] _____. Operationally, CIRIS is very useful to us because _____. In the future, we are hoping to _____."</p>
Luke Recap	"Let's recap; in January the states identified the need to obtain dynamic weather data, resources, transportation data, incident information, and public health data (5 of the KPIs). In addition, we highlighted strategic capability enhancement in these areas: State-to-state, federal-to-state, and local-to-state. We can see the type of progress that has been made/is taking place throughout the region. The next phase of the scenario will focus on Response."

## Phase II- Response

Topic/Speaker	Script
Luke Intro	"The second phase of our demonstration will focus on response. The goal of this phase is to demonstrate a sampling of the data, which focuses on response, which has been created, accessed and linked to geospatial operations environments in each of the states during the course of the pilot. This demonstration will include a look at several states' user defined operating pictures where they will show what data they are publishing and the data they are being provided by other states at present as it relates to the scenario. This phase will conclude with a deep dive into Virtual Maine, the situational awareness viewer that is being leveraged by the Maine Emergency Management Agency. In this phase, we will also explore the issue of civil-to-military coordination by taking a dive into the situational awareness viewers and data-sharing capabilities of the National Guard in New Hampshire, Rhode Island, and Connecticut."

Northeast Regional Information-Sharing Pilot, After-Action Review

<p>Transportation (Tyler Kleykamp, CT DESPP)- Luke gives WebEx to Tyler</p>	<p>Luke gives WebEx to Tyler Kleykamp</p> <p>Luke: “Many roads are closed down in CT due to debris, washouts, downed power lines, and more. In Plainfield, I-395 Northbound and Southbound is closed between exits 89 and 90. In Portland, Route 17A is closed at the fairgrounds. In Bristol, Route 72 is closed at Old Waterbury Rd. Road closures are affecting both state roads and local roads. Tyler, how does CT go about maintaining situational awareness at the state and local level? How can road crews prioritize clearance and repair efforts? Do you have real-time visibility into conditions on the roads?”</p> <p>Tyler: “In 2011, we had _____. As of today, we are able to ____ [Tyler shows the CT 511 feed, the traffic cameras, and the KPI tool. Tyler mentions that some are not shared in vUSA but shows the layers that are shared in vUSA Library]. DHS S&amp;T helped us in these ways _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____.”</p>
<p>Public Health (Tyler Kleykamp CT DESPP)-</p>	<p>Luke: “Irene has severely degraded power in Connecticut and in neighboring states. As a result, many medical facilities are having to transfer patients or simply evacuate immediately. Johnson Memorial Hospital has a capacity of 92 beds. There are currently 30 beds available which indicates an ability to accept overflow from other hospitals. Tyler, how does CT track and manage public health assets?”</p> <p>Tyler: “In 2011, we _____. As of today, we are able to ____ [Tyler shows the hospital layer and describes how it is shared in vUSA]. DHS S&amp;T helped us with this effort by _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____.”</p>
<p>Resources (Lauren McLean FEMA I)- Luke gives WebEx to Lauren</p>	<p>Luke: "As Hurricane Irene moves up the East Coast, it seems clear that many states are becoming overwhelmed with response needs and are requesting Federal help. FEMA has significant assets throughout Region I that can support response efforts. Lauren, can you tell us how FEMA supports response efforts within the region and how you all manage response resources?"</p> <p>Lauren: "In an incident such as this, FEMA Region I has extensive response resources such as teams and commodities pre-positioned and available in New England and throughout the country to support States. In 2011, we had the capability to share information about these resources internally, including with our Incident Management Assistance Teams (IMATs) positioned and partnered with each of the States. As of today, we are able to share this information outside of</p>

Northeast Regional Information-Sharing Pilot, After-Action Review

	<p>FEMA more easily. [Lauren logs in to vusa.us, opens up the Flex widget, logs in to the widget, and turns on the FEMA Region I Resources, Tropical Storm Irene layer and details that it is shared to everyone in the region]. DHS S&amp;T helped us by providing another data sharing tool and opportunity. Operationally, this data is valuable to us and to the states because it provides a common understanding of what resources are pre-positioned. In the future, we are hoping to leverage tools including Virtual USA to share data services with both internal and external partners."</p>
<p>Weather (Christopher Kroot and Bruce Fitzgerald, ME EMA)- Luke gives WebEx to Bruce Fitzgerald/Alana Buck/Christopher Kroot</p>	<p>Luke: "Irene has clearly dumped a lot of water over the region. There are four rivers that remain at or above flood stage in Maine. All but one are receding. The Kennebec River is at flood stage in Skowhegan. Many businesses along Water Street are reporting several feet of standing water on the ground. Bruce, how does Maine maintain situational awareness of this real-time, dynamic weather information?"</p> <p>Bruce: "In 2011, we _____. As of today, we are able to ____ [Bruce shows ME dynamic weather feed, flood gauges, and storm spotter reports in Virtual Maine]. In the future, we are hoping to have_____."</p>
<p>Power (Bruce Fitzgerald, ME EMA)</p>	<p>Luke: "Following the storm there are 182,000 Maine residents without power. Utility crews have been dispatched to Maine from around the country as well as Canada. Bruce/Alana, how does Maine manage these outages and then work to restore power as rapidly as possible?"</p> <p>Bruce: "In 2011, we had _____. As of today, we are able to ____ [Christopher pulls up the power outages in SWIMS through Virtual Maine]. Operationally, this data is valuable to us because _____. In the future, we are hoping to be able to_____."</p>
<p>Virtual Maine demonstration (Bruce Fitzgerald, ME EMA)</p>	<p>Luke: "Virtual Maine is a powerful system. You have a large amount of useful, operationally-valuable data. One of Maine's goals in this pilot was to consume data from regional partners. The Virtual USA library Widget is not yet completed for use in a Google Earth environment, which is what Maine uses as the backbone of Virtual Maine, but it should be deployed in production soon. In the meantime, the Virtual USA library serves as a place where users can access data, and if the data publisher chooses, users can grab the actual link and pull that into their situational awareness viewer. Bruce, can you give us a short demonstration of Virtual Maine and talk about where you are looking to take it in the future?"</p> <p>Bruce: [Bruce describes Virtual Maine]</p>

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

<p>Incident-Specific Information (CMSSG Bill Frament NHNG)- Luke gives WebEx to Bill</p>	<p>Luke: "The New Hampshire National Guard has been requested to support response operations in Vermont but due to road conditions, the Guard must first pass through Massachusetts before reaching the area of operations in Vermont. The Guard is also working on evacuation missions in Hanover. How does the New Hampshire National Guard monitor these missions while prioritizing resources and managing assets?"</p> <p>Bill: "In 2011, we had _____. As of today, we are able to ____ [Bill shows the mission-tracking tool, shows that it is shared in vUSA and also shows the NORTHCOM SAGE data and describes how that code has been distributed to other state Guard units]. DHS S&amp;T helped us in these ways _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
<p>Communications ( Lt Col. Mike Domingue and CMSSG Bill Frament New Hampshire National Guard)</p>	<p>Luke: "The New Hampshire National Guard needs the ability to receive reports from personnel out in the field. Teams don't always have radios, and even then in the fog of a crisis, radios may not be available. In a degraded communications environment, what capabilities is the NHNG exploring for field-based geospatial communications?"</p> <p>Bill: [Describe GeoChat and pull up the GeoChat widget on the NHNG viewer. Say that this feed is shared with the Northeast Community in Virtual USA.]</p>
<p>New Hampshire National Guard, CTNG, and Rhode Island demonstration (CMSSG Bill Frament, Beth Stewart-Kelly and Mike Bradley)</p>	<p>Luke: "National Guard units were heavily deployed in response to Irene. A large convoy from the Maine National Guard passed through New Hampshire and Massachusetts to get to Vermont. New Hampshire National Guard units are deployed within the state as well as in Vermont and Massachusetts). The Guard in Rhode Island and New Hampshire are working on conducting route clearance and debris removal missions. Bill, can you show me how the Guard manages these types of operations and maintains situational awareness? Also, what kind of information sharing are you capable of behind the .mil firewall from one Guard unit to another? My last question- what kind of data is available to emergency management agencies that do not operate in a military environment?"</p> <p>Bill: [demo the NHNG viewer- Quickly display mission tracker, facility layer, and NORTHCOM SAGE feeds. Discuss what is available to all guard units in the Northeast. Also, show the Virtual USA widget consuming Maine's 511 information. Highlight that the Maine 511 feed contains NH 511 traffic information].</p> <p>Luke gives WebEx to Beth.</p>

	<p>[CTNG Demo]</p> <p>Luke gives WebEx to Mike Bradley.</p> <p>Luke: "Mike, can you tell us what your capabilities are in Rhode Island? How can RIVER be used during response operations by the National Guard and the personnel in the Joint Operations Center?"</p> <p>Mike: "In 2011, we _____. As of today, we are able to ____ [Mike shows the components of RIVER and how he is able to consume NHNG mission tracker. Mike also pulls up the NHNG GeoChat feed that is shared in Virtual USA by opening up the vUSA Widget in RIVER. Mike describes that this level of situational awareness changes how response operations can be conducted. Mike then displays his GeoChat feed, says that it is shared in vUSA, and then shows his mission tracking tool]. DHS S&amp;T helped us with this effort by _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
<p>Luke Recap</p>	<p>"Let's recap, in January the states identified the need to obtain dynamic weather, transportation, incident-specific, resources, public health, communications, and power data (7 of the KPIs). In addition, we highlighted strategic capability enhancement in these areas: State-to-state, state-to-federal, field-to-headquarters, civil-to-military, regional National Guard capabilities (focusing on NH, CT, and RI), and local-to-state. We can see the type of progress that has been made/is taking place throughout the region. The next phase of the scenario will focus on Recovery."</p>

### Phase III- Recovery

Topic/Speaker	Script
<p>Luke Intro</p>	<p>"The third phase of our demonstration will focus on recovery. The goal of this phase is to demonstrate a sampling of the data, which focuses on recovery, which has been created, accessed and linked to geospatial operations environments in each of the states during the course of the pilot. This demonstration will include a look at several states' user defined operating pictures where they will show what data they are publishing and the data they are being provided by other states at present as it relates to the scenario. This phase will conclude with a deep dive into Connecticut's situational awareness viewer."</p>
<p>Weather- (Mike Bradley, Rhode Island)- Luke</p>	<p>Luke: "In the wake of Irene, the water level of the Sakonnet River is returning to normal. There are three small rivers that remain at flood stage. Mike, as the RI EMA and NG initiate recovery efforts, how</p>

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

<p>gives WebEx to Mike</p>	<p>might they have situational awareness around this data?"</p> <p>Mike: "As of today, we are able to ____ [Mike shows the weather layers available in RIVER]. DHS S&amp;T helped us with this effort by training us how to build a situational awareness viewer. Operationally, this data is valuable to us because we are able to see all weather watches and warnings. _____. In the future, we are hoping to have_____."</p>
<p>Transportation (Frank Winters, NY DHSES)- Luke gives WebEx to Frank Winters</p>	<p>Luke: "Prattsville, NY remains cutoff in all directions due to major road and bridge damage. Many businesses and homes have been washed away and Main Street is estimated to be 90% destroyed by local media reports. The National Guard reports that 3 miles of the 87 Thruway is unsafe for passenger transit due to support collapses. Additionally, the bridge on I-90 that connects to I-87 south of Albany has support damage and must remain closed until a thorough inspection can occur. Frank, how would NY DHSES manage this local transportation data?"</p> <p>Frank: "In 2011, we _____. As of today, we are able to ____ [Frank logs in to vusa.us, opens up the vUSA flex viewer, opens the widget, logs in, and then displays the NY Transportation Status rest service layer. Mention that this is demo data but that this system does exist and NY is working to share the operational data with emergency management partners]. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
<p>Incident-Specific Information (Bruce Fitzgerald ME EMA)- Luke gives WebEx to Bruce</p>	<p>Luke: "After Irene passed through the Northeast, it traveled up into Canada. There are over 54,000 residents in New Brunswick without power. There are Canadian utility crews working around the clock in Maine working to restore power. Bruce, two questions for you: How does Maine track critical incidents within the state and how does Maine track critical incidents within in Canada?"</p> <p>Bruce: "In 2011, we _____. As of today, we are able to ____ [Bruce discusses Canadian MASAS alerts as well as the Maine secure 511 feed and how that contains incident logs from WebEOC. Bruce also discusses who can access that information]. DHS S&amp;T helped us with this effort by _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
<p>Incident-Specific Information (Col Jerry Dunlap, ME NG)- Luke shows GeoChat feed in vUSA and in NE</p>	<p>Luke: During the recovery efforts, there is still a strong need to maintain field-based situational awareness. The Maine National Guard, deployed in New Hampshire, is coordinating route status updates with the Vermont National Guard and local Pittsfield, VT authorities.</p> <p>Luke takes control of WebEx back and shows NE viewer.</p>

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

viewer	<p>Col Dunlap: Using GeoChat we can maintain situational awareness of field teams that are reporting on conditions in real-time, in a degraded communications environment [start GeoChat demo]. GeoChat published a standard GeoRSS feed that is shared in Virtual USA so anyone in the region, any locality, and/or any Federal agency can see these reports come in in real time.</p>
Resources (Tyler Kleykamp, Connecticut)- Luke gives WebEx to Tyler	<p>Luke: "Irene has hit Connecticut hard, with many in need of additional resources. An American Red Cross personnel care site is fully functional in East Haddam, CT providing electricity, water, and food to affected residents. Tyler, how could you all manage and track resources in Connecticut?"</p> <p>Tyler: "In 2011, we _____. As of today, we are able to ____ [Tyler shows the resources KPI and talks about its operational potential but that CT is looking to leverage WebEOC and web-enable WebEOC to display resources, but that something like a KPI tool can enable them to mark up the map dynamically, from the field. Tyler will also show how the layer is shared in vUSA]. DHS S&amp;T helped us with this effort by _____. Operationally, this data is valuable to us because _____. In the future, we are hoping to have_____."</p>
Power (Tyler Kleykamp, CT)	<p>Luke: "Power outages are rampant throughout the region. 300,000 Connecticut residents are still without power. Tyler, how does Connecticut maintain situational awareness on these outages while managing recovery operations?"</p> <p>Tyler: ""In 2011, we had _____. As of today, we are able to ____ [Tyler pulls up the utility layer while describing the level of detail he can see]. Operationally, this data is valuable to us because _____. In the future, we are hoping to be able to_____."</p> <p>Luke: "Tyler, you all in Connecticut have been hard at work building out an operational situational awareness viewer for the state. You recently had the opportunity to brief the Governor and Lt. Governor on progress that has been made since January. Can you brief us on some of the most powerful capabilities that have been realized within the state? Can you also show us some of the feeds of recovery operations that have been shared to you by your regional partners?"</p> <p>Tyler: [Tyler shows CT viewer capabilities and displays NY transportation layer (NY Transportation Status rest service), NY alerts layer (NY Transportation Status Rest service), Maine 511 feed (ME SWIMS), and Maine GeoChat (ME National Guard and EMA GeoChat) feed].</p>

October 10, 2012

<p>Luke Recap and Close</p>	<p>“Let’s recap, in the recovery phase, we have seen weather, resources, transportation, incident-specific, and power data (5 of the KPIs). In addition, we highlighted strategic capability enhancement in these areas: State-to-state, state-to-federal, local-to-state, intrastate agency-to-agency, US-to-Canada, social media, and field-to-headquarters. We can see the type of progress that has been made/is taking place throughout the region. This concludes the demonstration portion of Operation Irene II. Thank you all for your participation and we hope you learned as much as we did. We would now like to transition to the after-action debrief.”</p>

#### A4 Data Feeds Shared by Pilot Participants through the Virtual USA Library

Note- the URL of a feed is mentioned where it is available. If the URL is not made available then it is listed as “URL is masked.”

##### Connecticut

- CT Roadway Incidents (<http://www.dotdata.ct.gov/iti/Data/CurrentActiveEvents.xml>) [GeoRSS]
- CT Electric Outage Data (URL is masked) [REST]
- Connecticut KPI’s ([http://stag.gismaps.ct.gov/ArcGIS/rest/services/demhs\\_KPI/MapServer](http://stag.gismaps.ct.gov/ArcGIS/rest/services/demhs_KPI/MapServer)) [REST]
- Connecticut Critical Facilities and Resources ([http://www.gismaps.ct.gov/CTGIS/rest/services/DEMHS\\_CI/MapServer](http://www.gismaps.ct.gov/CTGIS/rest/services/DEMHS_CI/MapServer)) [REST]
- Locally Reported Incidents ([http://www.gismaps.ct.gov/CTGIS/rest/services/demhs\\_incidents/MapServer](http://www.gismaps.ct.gov/CTGIS/rest/services/demhs_incidents/MapServer)) [REST]
- Storm Surge and Flood Areas ([http://www.gismaps.ct.gov/CTGIS/rest/services/DEMHS\\_flood/MapServer](http://www.gismaps.ct.gov/CTGIS/rest/services/DEMHS_flood/MapServer)) [REST]

##### New York:

- NY Transportation Status (<http://gis.dot.ny.gov/ArcGIS/rest/services/RSDA/MapServer?>) [REST and WMS]
- NY-Alert Statewide Alert (<http://rss.nyalert.gov/GeoAtom/feeds/ NewYorkStateGEOATOM.xml>) [GeoRSS]

##### Maine

- ME National Guard and EMA GeoChat (<http://geochat.instedd.org/api/groups/riarng/messages.rss>) [REST]

October 10, 2012

Northeast Regional Information-Sharing Pilot, After-Action Review

- ME SWIMS- Statewide Incident Management System ([https://portal.maine.gov/swims/virtual\\_maine.kml](https://portal.maine.gov/swims/virtual_maine.kml)) [KML]
- ME SWIMS- need access permission from Maine Emergency Management Agency ([https://portal.maine.gov/swims\\_sec/virtual\\_maine.kml](https://portal.maine.gov/swims_sec/virtual_maine.kml)) [KML]

Vermont

- VCGI Color Imagery in Web Mercator- cached ([http://web.vcgi.org/ArcGIS/rest/services/basemap\\_services/VIL\\_CACHE\\_COLOR\\_WM/MapServer](http://web.vcgi.org/ArcGIS/rest/services/basemap_services/VIL_CACHE_COLOR_WM/MapServer)) [REST]
- VCGI B&W Imagery in Web Mercator- cached ([http://web.vcgi.org/ArcGIS/rest/services/basemap\\_services/VIL\\_CACHE\\_PAN\\_WM/MapServer](http://web.vcgi.org/ArcGIS/rest/services/basemap_services/VIL_CACHE_PAN_WM/MapServer)) [REST]
- VCGI Basemap in Web Mercator ([http://web.vcgi.org/ArcGIS/rest/services/basemap\\_services/VGIS\\_BASEMAP\\_OS\\_WM/MapServer](http://web.vcgi.org/ArcGIS/rest/services/basemap_services/VGIS_BASEMAP_OS_WM/MapServer)) [REST]
- VCGI E911 Geocoding Service ([http://web.vcgi.org/ArcGIS/rest/services/EGIS\\_geocoding\\_services/GEOCODE\\_COMP\\_OSITE\\_WM/GeocodeServer](http://web.vcgi.org/ArcGIS/rest/services/EGIS_geocoding_services/GEOCODE_COMP_OSITE_WM/GeocodeServer)) [REST]
- VT Yankee and EPZ ([http://webdev.vcgi.org/ArcGIS/rest/services/vvt/VT\\_Yankee/MapServer](http://webdev.vcgi.org/ArcGIS/rest/services/vvt/VT_Yankee/MapServer)) [REST]
- EM Districts (<http://webdev.vcgi.org/ArcGIS/rest/services/vvt/Districts/MapServer>) [REST]

New Hampshire:

- NH Irene Road Closures (URL is masked) [REST]

Rhode Island

- RIARNG GeoChat (<http://geochat.instedd.org/api/groups/riarng/messages.rss>) [GeoRSS]

Massachusetts

- MEMA Sandbags (URL is masked) [KML]
- MA EXEVAL Incident (URL is Masked) [KML]

FEMA I

- FEMA Region I Resources, Tropical Storm Irene ([http://arcgis-femaocd-494925365.us-east-1.elb.amazonaws.com/arcgis/rest/services/R1/TS\\_Irene\\_Federal\\_Resources/MapServer](http://arcgis-femaocd-494925365.us-east-1.elb.amazonaws.com/arcgis/rest/services/R1/TS_Irene_Federal_Resources/MapServer)) [REST]