FEMA

U.S. Department of Homeland Security
Federal Emergency Management Agency
2008
Emergency Communications Plan

State of Connecticut Annex

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Executive Summary

The Federal Emergency Management Agency (FEMA) disaster emergency communications planning team was charged with developing comprehensive and integrated federal, state, and local communications plans for high-risk communities, in preparation for the 2008 hurricane season. The team was led by FEMA and included representatives of the following agencies:

- Department of Emergency Management and Homeland Security (DEMHS)
- Department of Information Technology (DoIT)
- Connecticut State Police (CSP)
- Connecticut Department of Transportation (CDOT)
- Connecticut Department of Environmental Protection (CDEP)
- Connecticut Department of Public Health (CT-DPH)
- Connecticut Regions I through V; ESF II representatives and Coordinated Medical Emergency Dispatch (CMED) Centers
- Connecticut Air National Guard (CANG)
- Connecticut National Guard (CTNG)
- Amateur Radio Emergency Service of Connecticut (ARES)
- American Red Cross of Connecticut (ARC)

The team met with state and local representatives to identify communications requirements and discuss potential solutions. The team reviewed state and local communications plans and capabilities, and evaluated the impact that a disruption in communications services would have in areas affected by a hurricane.

The team focused on five strategic areas in the development of this document: risk assessment and mitigation planning, operability and interoperability, communications availability, integration and coordination of Federal resources, and pre-positioning of communications resources. There were seven mission operations focus areas for this document: command and control (C2), evacuation, sheltering, search and rescue (SAR), commodities, medical, and debris removal.

The most significant findings are the following:

- The State of Connecticut has identified interoperable communications as a priority in its emergency response and disaster recovery planning efforts. The Connecticut Public Safety State Executive Interoperability Committee (CPSSEIC) is comprised of emergency management and communications experts from throughout the state. CPSSEIC meets regularly to determine communication equipment requirements, provide grants guidance, and develop training and exercise requirements. The Connecticut Department of Public Safety (DPS) operates an 800 megahertz (MHz) digital trunked radio network that provides the backbone for a statewide radio system and currently supports CSP operations and I-CALL / I-TAC frequencies in the state. All state agencies will have access to the DPS network during disasters, and deployable communications assets are available to enable interoperability between state and local emergency responders.

- State and local agency radio communications systems vary widely from conventional (e.g., very high frequency [VHF] low-band) to more sophisticated trunked digital systems, reflecting terrain, building density, and financial considerations. Local communications networks and equipment are vulnerable to damage from a Category 3 hurricane. Federal assistance will be required to supply temporary VHF and ultra high frequency (UHF) networks, including radio base stations and associated repeaters, radio towers, and antennas to temporarily restore local radio systems.

- Several radio towers in the state have been identified as being vulnerable to storm damage. If these towers are damaged during a hurricane or strong storm, radio communications among emergency responders inside the incident area will be compromised. At present, the state has no spare mobile radio towers to temporarily restore service at these vulnerable locations. FEMA should be prepared to temporarily restore communications capabilities at up to 18 vulnerable radio tower locations in Connecticut.

- Currently, no facilities have been designated for use as a back-up State Emergency Operations Center (SEOC) or Emergency Communications Center (ECC) for DoIT. Both facilities are in at-risk locations that are vulnerable to flooding. DEMHS is now designating a regional facility for use as a secondary SEOC location and acquiring a mobile command post that could serve as an alternate SEOC, however these efforts will not be complete before the 2008 hurricane season. DoIT's plans for a back-up ECC are in an early stage of development and are not yet funded. FEMA must be prepared to provide communications resources for a temporary back-up SEOC for up to 20 people and a mobile back-up facility for the DoIT ECC in the event either or both primary facilities become untenable.

- Local government agencies manage the sheltering of evacuees and displaced persons, which will be a major task if a hurricane or strong storm affects Connecticut. The American Red Cross will provide staffing and operational support at designated shelter locations. Wired and cellular public switched telephone networks (PSTN) are the primary means of voice and data communications for sheltering operations and may be affected as a result of storm damage, particularly in areas subject to flooding. Local ARES personnel provide back-up communications support, but these personnel are few in number. FEMA should be prepared to provide communications capabilities for shelter staff and shelter coordination personnel if a failure of commercial wired and wireless networks occurs.

- Communications technicians are also in short supply. If a local or the statewide radio system becomes impaired, supplemental telecommunications technicians will be needed to repair and restore damaged equipment, program additional radios to enable effective communications among emergency responders from out of the area, provide system interoperability, act as radio operators, and relieve local communications personnel. FEMA should be prepared to provide trained telecommunications technicians to not only assist in the repair and recovery of local and state communications systems but also ensure the timely restoration of vital communication links.

1. Introduction

1.1 Purpose

The purpose of this Connecticut Emergency Communications Annex is to provide an integrated local, state, and federal approach to ensuring effective communications coordination prior to and immediately following an incident (including hurricanes) affecting the State of Connecticut. This Annex:

- Supplements existing state and local communications plans and details federal mitigation strategies in response to known vulnerabilities in state and local communications networks

- Ensures there is an accessible framework for communications coordination, including solutions to support state and local requests for communications assistance

- Provides the coordination and delivery of solutions for unknown or ad hoc communications requirements that may arise

1.2 Scope and Applicability

This Communications Annex was developed by examining local, state, and federal communications resources in the State of Connecticut. This Annex identifies and addresses specific vulnerabilities in the communications networks and facilities used by the following agencies:

- Department of Emergency Management and Homeland Security (DEMHS)
- Connecticut State Police (CSP)
- Department of Information Technology (DoIT)
- Connecticut Department of Transportation (CDOT)
- Connecticut Department of Environmental Protection (CDEP)
- Connecticut Department of Public Health (CT-DPH)
- Connecticut Regions I through V Emergency Support Function (ESF) II and Coordinated Medical Emergency Dispatch (CMED) Centers
- Connecticut Air National Guard (CANG)
- Connecticut National Guard (CTNG)
- American Red Cross of Connecticut (ARC)
- US Coast Guard (USCG)

This Annex is applicable to all Federal Government entities responsible for supporting federal, state, and local requests for communications support. These support entities include, but are not limited to, Department of Homeland Security (DHS) Components and ESF-2 supporting agencies and industry.

1.3 Planning Assumptions

This Communications Annex is based on the following assumptions:

- This Annex supplements existing state and local communications resources.
- During an incident, a significant loss of fixed commercial and public safety communications infrastructure is anticipated.
- The existing state and local communications infrastructure will be leveraged to the greatest extent possible.
- There will be surge funds available to support the pre-deployment of federal resources prior to an incident.
- The Stafford Act will be invoked upon a Presidential Declaration of Disaster, and there will be sufficient funds available for extending communications services and deployments.

1.4 References

The following resources were used in the development of this document:

- State of Connecticut Natural Disaster Plan (2006) http://www.ct.gov/demhs/cwp/view.asp?A=1928&Q=302400
- Connecticut Statewide Communications Interoperability Plan (SCIP)
- Connecticut Providence Urban Area Security Initiative (UASI) Tactical Interoperable Communications Plan (TICP)

2. Key Requirements

Table 1 summarizes the most important communication requirements and mitigation strategies identified by state, local and federal members of the Federal Emergency Management Agency (FEMA) disaster emergency communications planning team. The mitigation strategies describe actions to be taken prior to, during, and after an incident to restore, supplement, or provide emergency communications resources to meet critical mission requirements. Additional information, including the lead organization(s) responsible for coordinating these actions, can be found in sections of the Annex that cover the seven mission operations areas (e.g., the communications requirements that were identified for command and control [C2] and their corresponding mitigation strategies can be found in Section 4). An Action Plan that identifies tasks to be accomplished prior to the start of the 2008 hurricane season is provided in Table 2.

Table 1: Key Requirements

Requirement	Mitigation Strategy
VHF and UHF networks including radio base stations and associated repeaters, radio towers, and antennas to temporarily restore local radio systems.	1. Determine requirements and specifications for communications network equipment based on affected region(s) / area(s). 2. Deploy available state resources. 3. Deploy federal resources when requested by the state.
Mobile backup facility for the DoIT Emergency Communications Center.	1. Purchase and deploy a mobile facility equipped with climate control and necessary electrical power that is pre-wired and capable of housing computer and communications equipment to support DoIT operations.
Back-up SEOC for up to 20 personnel.	1. Deploy local and regional mobile command vehicle(s). 2. Deploy state-owned mobile command vehicle(s). 3. Deploy federal resources when requested by the state.
Satellite telephones: • 12 units with external antennas to provide back-up communications equipment for sheltering C2 and use at designated shelter sites. • Up to 20 units for use by key state and local government staff to support C2 missions. • 35 mobile satellite ventures (MSV) push-to-talk (PTT) units for use at alternate care facilities and special needs shelters.	1. Deploy state supplied satellite telephone resources. 2. Deploy federal supplied satellite telephones when requested by the state.
Additional trained technical staff for - • Radio programming • Radio operators • Radio repair technicians	1. Deploy commercial vendors. 2. Deploy state based technical resources. 3. Deploy federal technical resources when requested by the state.
Temporary mobile radio tower resources: • To restore communications capabilities at up to 8 vulnerable CDOT radio tower locations. • To restore communications capabilities and support C2 functionality at up to 10 tower locations used by municipal public safety agencies.	1. Deploy state resources. 2. Deploy federal resources when requested by the state.
Replace unserviceable FEMA National Radio System (FNARS) equipment at the SEOC.	1. Deploy federal resources to restore / replace FNARS radio equipment.

Requirement	Mitigation Strategy
Back-up electrical power at - • 5 emergency alert system (EAS) primary entry points. • Up to 350 mission critical facilities and remote radio tower locations.	1. Deploy federally supplied generators, including installation team(s) and fuel, to temporarily restore electrical power to the affected sites when requested by the state.
Cache of 100 Watt, 450 MHz replacement radio base stations with 6 db gain antennas for backup communications capabilities at regional CMED facilities (15 units).	1. Deploy state resources. 2. Deploy federal resources when requested by the state.
Cache of 800 MHz Motorola digital portable radios for the CSP to support interoperable communications with mutual aid agencies supporting disaster response operations (500 handsets).	1. Deploy State resources. 2. Deploy federal Resources when requested by the state.

3. Action Plan

Table 2 provides a list of activities that must be completed prior to the beginning of the 2008 hurricane season. The table also designates the entities responsible for accomplishing the listed actions and provides a projected completion date for each action. Additional information regarding these actions can be found in sections of this Annex that deal with the seven mission operations areas (e.g., the communications requirements that were identified for C2 and corresponding mitigation strategies can be found in Section 4).

Table 2: Connecticut Emergency Communications Plan Actions and Milestones

Action	Lead Responsible Party	Completion Date
1. Develop contract specifications and determine potential vendors / suppliers for a mobile Emergency Communications Center for DoIT.	DoIT / FEMA Region I	May 31, 2008
2. Identify a fixed location and communications requirements for a back-up SEOC facility.	DEMHS	1 June, 2008
3. Request funding for and purchase satellite telephones to support backup communications for the following missions:		
• 20 units for use by key state and local government C2 staff.	FEMA Region I	May 31, 2008
• 12 units with external antennas for use by sheltering staff and C2 activities.	FEMA Region I	May 31, 2008
• 35 MSV PTT units for use at alternate care facilities and special needs shelters.	FEMA Region I	May 31, 2008
4. Determine the type and number of Telecommunications Technicians (additional staffing) required to support the following operations: • Radio programming in support of disaster response. • Radio repair technicians. • Radio operators	Local agencies	TBD
5. Review contracts with commercial vendors for radio system repair and restoration.	Local agencies	TBD
6. Negotiate priority radio system service restoration contracts / agreements with commercial vendors.	Local agencies	TBD
7. Consider establishing a statewide radio equipment maintenance contract to enhance radio system repair and restoration.	DEMHS / DoIT	TBD
8. Identify federal technical staffing (e.g. radio programmers, radio repair technicians, radio operators) resources in FEMA Region I.	FEMA Region I	May 31, 2008
9. Clarify specifications for temporary radio tower resources to restore communications capabilities at damaged tower facilities in Connecticut (CDOT and local municipalities).	DEMHS / CDOT	June 30, 2008
10. Request funding for, purchase, and install new FNARS radio equipment at the SEOC.	FEMA Region I	May 31, 2008

Action	Lead Responsible Party	Completion Date
11. Determine the type and quantity of electrical generators for back-up electrical power at - • 5 EAS primary entry points. • Up to 350 mission-critical facilities and remote radio tower locations.	DEMHS	TBD
12. Identify radio system requirements for interim back-up communications resources for CMEDs.	CMEDs / FEMA Region I	May 31, 2008
13. Identify telephone and data circuits at CMEDs and key local facilities that require Telecommunications Service Priority (TSP).	CMEDs / local agencies / DoIT / DEMHS	TBD
14. Educate personnel in the state (CMEDs and local agencies) on the purpose and cost of TSP.	DoIT / NCS	TBD
15. Request TSP for identified circuits at CMEDs and key local facilities.	DoIT / CMEDs / local agencies	TBD
16. Continue the on-going effort to enable ARC personnel to access and use the statewide I-CALL / I-TAC radio system.	ARC / Connecticut Public Safety State Executive Interoperability Committee (CPSSEIC)	On-going effort
17. Develop PSMAs or commercial contracts for:		
• Telecommunications specialists and technicians to supplement state resources.	FEMA Region I	May 31, 2008
• Provide temporary communications capabilities at a facility designated as a backup SEOC.	FEMA Region I	May 31, 2008
• VHF and UHF radio network equipment to temporarily restore damaged or disabled local radio networks.	FEMA Region I	May 31, 2008
• Radio tower resources to temporarily restore damaged or disabled radio tower equipment.	FEMA Region I	May 31, 2008
• Radios and associated communications equipment identified as interim backup communications capabilities at CMEDs in the state.	FEMA Region I	May 31, 2008
• 800 MHz digital portable radios (500 handsets) for the CSP to provide interoperability for mutual aid agencies.	FEMA Region I	May 31, 2008

4. Command and Control Communications

This section summarizes the current communications situation for supporting command and control (C2), reviews how C2 is administered, and identifies the major C2 communications nodes in the State of Connecticut that will be active during an incident response. In addition, this section identifies the major local and state C2 communications networks that will be relied upon in managing an incident. The Federal Government will, when requested by the state, aid local and state authorities in supporting effective and interoperable C2 communications for emergency response operations.

4.1 Command and Control Overview

The State of Connecticut is vulnerable to extreme weather (e.g., extra tropical storms, hurricanes, storm surges, coastal flooding, torrential rains, tornados, winter storms, and blizzards). Since 1954, FEMA has made 13 major disaster declarations for the State of Connecticut.

Under most circumstances, response to emergencies shall be initiated at the local level with local resources being the first to be committed. The use and coordination of resources and the management of the situation shall be a local public safety responsibility. Each of the State's 169 political subdivisions have an emergency management director appointed by the local chief executive of the town. Most local emergency management directors are part-time positions with no support staff, and most are volunteers.

All towns and cities have a facility designated as a local EOC (usually located in the town hall, police station, or fire station), which serves as the local chief executive's direction and control center. During emergencies local officials maintain communications with the DEMHS Regional Office serving their area.

DEMHS has primary responsibility for developing and implementing the State's emergency management program. Connecticut is divided into five emergency management regions. DEMHS regional offices are responsible for providing administrative support and planning assistance to local governments in their jurisdictions. During emergencies regional offices serve as mutual aid coordination and communications links between towns and the SEOC. Figure 1 illustrates the five designated DEMHS regions.

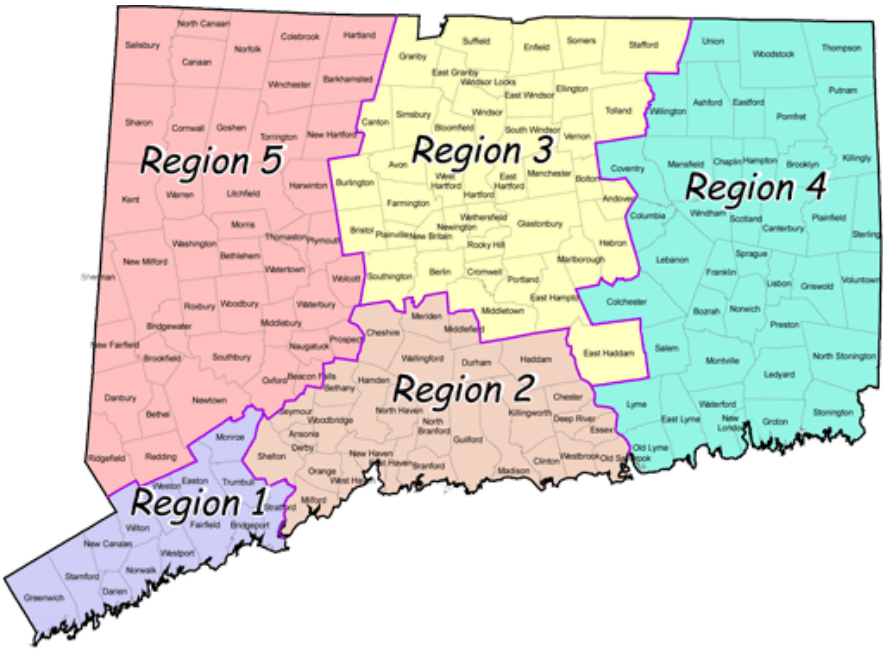

Figure 1: DEMHS Regions

The SEOC, located in Hartford, CT, serves as the Governor's direction and control center. When activated during emergencies, the center is staffed with representatives from key state and private agencies. The SEOC maintains communications with state departmental EOCs, federal agencies and facilities, private agency EOCs, and towns and cities of the state through the DEMHS regional offices. A media center in the SEOC is used as a Joint Information Center (JIC) by federal, state, and private agencies involved in the response to a disaster. The SEOC is equipped with a wide array of communications systems that enable an effective response to a disaster and the coordination of services statewide. These communication capabilities include VHF high-band, VHF low-band, the CSP's 800 MHz digital trunked system, satellite telephones, and the FNARS. Data service and Internet access for the SEOC is provided through looped fiber rings that are maintained by DoIT. DoIT coordinates and supports telephone and data services for all state agencies and also serves as the state's data center. The SEOC and the DoIT Emergency Communications Center (ECC) are equipped with generators to provide backup electrical power during a primary system failure.

Telephones are designated as the primary means of communication between various levels of local and state government, and the SEOC. Local governments direct their communications with the state, including requests for assistance, through the appropriate DEMHS regional office, which will then relay the information to the SEOC. If the primary telephone system fails or becomes overloaded, the DEMHS Area VHF high-band radio system is designed to serve as the primary means of backup communication between the towns and the state. Amateur radio may be used as a secondary backup alternative, if those resources have not already been committed.

Existing radio communications systems throughout the state vary widely from conventional (e.g., VHF low-band) to more sophisticated trunked digital systems, as a result of financial reasons and

the state's terrain. Two (2) statewide radio systems are in place in Connecticut. The Department of Public Safety (DPS) supports and maintains the CSP Public Safety 800 MHz radio system, which is a digital 800 MHz trunked system used by the CSP and supports the statewide I-CALL/ I-TAC frequencies. The DPS also supports the Connecticut State-Police Emergency Radio Network (CS-PERN), which is a conventional 800 MHz repeated channel and is available for use by all law enforcement agencies in the state.

Figure 2 represents radio tower locations for the statewide 800 MHz radio system.

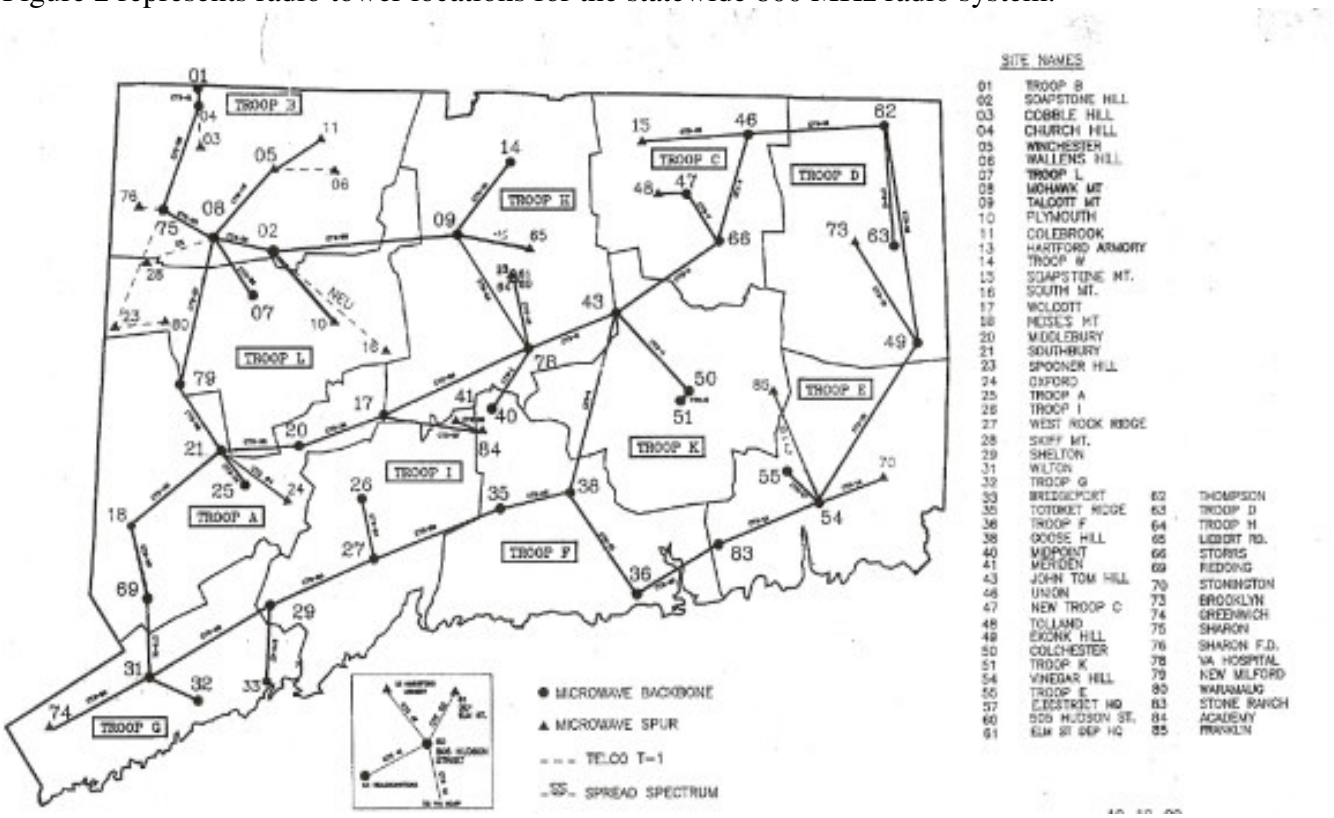

Figure 2: LMR Infrastructure Diagram

If a natural disaster results in situations requiring state and local emergency responders with incompatible radio systems to communicate in the field, the 800 MHz I-TAC channels shall be used. All local emergency responder agencies and the CSP are able to communicate on the I-TAC channels. I-TAC channels should be activated and utilized at the command and control level, as prescribed by DPS Standard Operating Guidelines (SOGs).

The State Tactical On-Scene Channel System (STOCS) is another radio system that has been designed to provide an interoperability solution by enabling responders to communicate while working at the scene of an incident, using portable radios with a maximum output power of 3 watts. The STOCS consists of 34 STOCS trailers, each equipped with six portable radios and the necessary equipment for enabling responders to use three VHF frequencies, three UHF

frequencies, and five 800 MHz frequencies to provide interoperable communications at an incident.

Table 3 lists information for the major state agencies involved with direction and control: the agency's name, location, and point of contact (POC); the role the agency plays in direction and control (i.e., C2); and the agency's communications capabilities. Table 4 lists deployable communications assets.

Table 3: Major Command and Control Agency Information

Agency	Role	Communications Systems/Assets	Agency Location/POC
CT Department of Emergency Management and Homeland Security (DEMHS)	Lead state agency for coordination of resources and personnel in Connecticut for mitigation, preparedness, response, and recovery.	• 800 megahertz (MHz) statewide land mobile radio (LMR) (CSP system) • Ultra high frequency (UHF) LMR with cross-band repeater • High frequency (HF) radio • Very high frequency (VHF) high-band (70 portable radios) • VHF low-band • 5 Channel VHF high-band console system • Satellite telephones • Cellular telephones • Public switched telephone network (PSTN) – 132 analog lines • Web access • WebEOC • Amateur radio • FEMA National Radio System (FNARS) • Regional Emergency Management Network (single VHF channel, base station at each regional office) • Emergency Alert System (EAS) • National Warning System (NWS) • Connecticut State - Police Emergency Radio Network (CS-PERN) • 34 Mass Decontamination Trailers each equipped with mobile radios that use I-CALL/I-TAC and the State Tactical On-Scene Channel System (STOCS)	360 Broad Street Hartford, CT 06105 William J. Hackett Director 860-566-3180 William.j.hackett@po.state.ct.us

Agency	Role	Communications Systems/Assets	Agency Location/POC

Connecticut State Police (CSP)	Support agency for C2. Lead state agency for law enforcement, investigations, and highway safety.	• Statewide (44 site) Digital Trunked 800 MHz Motorola Type II SmartZone Omnilink
		• 12 regionalized troop dispatch centers and headquarters (HQ) dispatch
		• 6000 subscriber units - 50% mobile/50% portable
		• Three ring "hot standby" microwave backhaul network with 4 reserved T1 restoration circuits
		• Ballistic concrete communication shelters, 90 mph, ½" ice rated tower infrastructure
		• 3-day generator backup at each tower, buried propane tanks
		• 6 site, single channel VHF system (backup state system) also used as interoperability for state and local VHF users
		• 3 Micom HF base stations (one connected to statewide console system
		• 7 Micom HF/ALE mobile radios
		• 11 G2 mobile satellite units
		• 1 G2 base satellite unit (connected to statewide console system and emergency telephone system
		• 1 G2 transportable satellite unit
		• Hughes/Mobile Satellite Ventures satellite phone system
		• Interoperable communications (console patching)
		  ○ I-TAC/I-CALL
		  ○ CS-PERN
		  ○ Interagency low-band VHF hotline
		  ○ All CT Local Police Departments
		  ○ Federal Bureau of Investigation (FBI), Secret Service, USCG Long Island, Transportation Security Administration (TSA)
		• Low-band VHF for interagency "hotline" (4 systems covering New Haven, New London, Hartford, Fairfield counties, and adjacent jurisdictions)
		• Mobile computers available in all cruisers - on AT&T broadband (when available)
		• Air-to-ground VHF radios (patched)
		• Marine channels for search and rescue SAR
		• PSTN
		• FAX
		• Cellular telephones (officers and staff each issued a department account)
			1111 County Club Road
			P.O. Box 2794
			Middletown, CT 06457
			
			Michael A. Stemmler
			Public Safety Director of Telecommunications
			Office: 860-685-8280
			Fax: 860-685-8345
			Mike.stemmler@po.state.ct.us

Agency	Role	Communications Systems/Assets	Agency Location/POC
CSP (continued)		• Marine channels for search and rescue SAR • PSTN • FAX • Cellular telephones (officers and staff each issued a department account) • Amateur radio • 6.1m redundant Ku band Earth Station	
Department of Information Technology (DoIT)	Support agency for C2. Lead state agency responsible for all telephone and data systems and assets. Central data hub for all state agencies.	• N/A	101 East River Drive East Hartford, CT 06108 Michael Varney Information Technology Manager 860-622-2462 Michael.varney@ct.gov

Connecticut Department of Transportation (CDOT)	Manages and coordinates CT highway traffic and maintenance, railways (tenant of Amtrak commuter rail), aviation, ports, and transit buses.	• Low-band 47 MHz radio system
		  ○ 1200 mobiles / portables
		  ○ 7 state owned towers, 6 owned by DOT
		  ○ Many garages have a mobile radio with a small tower
		• 2 Traffic Operations Centers (Newington and Bridgeport)
		• DOT garages equipped with short range radio (local talk around only)
		• State Fiber Optic Network Connection - Middletown to HQ (Planned)
		• Management and Supervisors - Nextel cellular telephone handsets
		• Highway Message Boards (VMS)
		• 300 – 400 highway cameras via CDOT fiber optics – closed-circuit television.
		• CSP / DOT “Bat Phone” ring-down telephone system.
		• Transit (buses) UHF system (not owned by transit)
		• WebEOC
			2800 Berlin Turnpike
			Newington, CT 06111
			
			James Mona
			Director
			860-594-2630
			james.mona@po.state.ct.us

Agency	Role	Communications Systems/Assets	Agency Location/POC
Connecticut Department of Environmental Protection (CDEP)	Coordinates the state's environmental plans, functions, and educational programs and will function in a C2 capability for oil or chemical spills, dam flooding, HAZMAT, and radiation incidents. Lead state agency for on-water law enforcement, emergency response, and navigation safety through the Division of Environmental Conservation Police.	• 4 channels supported on the State Police microwave backbone (44 MHz frequency) • CSP provided control circuits on CSP microwave backbone • 40 base radio locations • 350 mobile subscriber units • 6 Marine frequencies • Radio link to Millstone and Connecticut Yankee Nuclear Power Plants • 19 mobile data terminals (MDTs) in Environmental Conservation (EnCon) Police Vehicles on Verizon Broadband • 3 mobile computers in Radiation Division manager and supervisor vehicles on Verizon Broadband • 1 MDT on 42-foot patrol vessel on LIS on Verizon broadband • All EnCon Police, HAZMAT, and radiation vehicles have 44 MHz mobile radios with repeaters • All EnCon Police, HAZMAT, and 3 radiation vehicles have 800 MHz mobile radios with CSP frequencies • All EnCon Police managers (5) have 800 MHz portable radios with CSP frequencies • All EnCon Police vessels 19 foot or larger have 44MHz radios • All EnCon Police vessels 19 foot or larger have VHF marine radios • 2- Mobile Command Posts • 53 DSL/RLAN Locations • 10 T1 locations • 24 X 365 Statewide Dispatch Center • Back-up Dispatch Center at State Armory • 50 Verizon air cards • 50 BlackBerry devices • 4 Palm Treos • 500 cellular telephones (various service providers)	79 Elm Street Hartford, CT 06106 Edward L. Wilds, Jr. Director; Radiation Division 860-424-3029 Edward.wilds@ct.gov

Agency	Role	Communications Systems/Assets	Agency Location/POC
Connecticut Air National Guard (CANG)	Support agency for C2. Supports civil authorities in ensuring continuity of vital services and protecting infrastructure.	• SINCGARS • Joint Incident Site Communications Capability (JISCC) Module • PSTN • TSC 100ASATCOM • TSC 94ASATCOM • TRC-170-V3 microwave radio • TRC 170-V2 microwave radio • TSSR microwave radio • SB 3865 telephone switch • HF radio • TACSAT UHF radio • VHF radios • TA-1042 telephones • Cellular telephones (Nextel)	100 Nicholson Road East Granby, CT 06206 Major John M. Warren 860-292-2464 john.warren@ctbrad.ang.af.mil
Connecticut National Guard (CTNG)	Support agency for C2. Supports civil authorities in ensuring continuity of vital services, protecting infrastructure, and/or maintaining law and order.	• SINCGARS • PSTN • VoIP telephones • Cellular telephones (Nextel)	360 Broad Street Hartford, CT 06105 Lt. Colonel Chris Ward CTNG-J5 860-524-4951 Christopher.r.ward@us.army.mil Lt. Colonel Rob Ware CANG 860-524-4824 robert.v.ware@us.army.mil
United States Coast Guard (USCG)	Responsible for major port and coastal activities in CT (Bridgeport, New London, and New Haven)	• VHF Marine Channels (high sites) • Interoperability with State Police using 800 MHz trunked system at Long Island Station • HF radio • PSTN • Cellular telephones • USCG interoperable channels using a 800 MHz digital base station radio at the Long Island Station	USCG Sector Long Island Sound 120 Woodward Avenue New Haven, CT 06512 203-468-4401 USCG District 1 408 Atlantic Avenue Boston, MA 02110 617-223-8555

Table 4: Deployable Communications Assets

Agency	Deployable Assets

DEMHS	• 34 STOCS/DECON trailers that have the following capabilities to provide interoperability:
	  o I-CALL channel access
	  o 4 I-TAC channel access
	  o 6 portable radios each
	• 12 vehicles outfitted with satellite telephones, VHF high-band, VHF low-band, 800 MHz, and 450 MHz radios
	• CSP mobile radios are interoperable with CAP, DOT, DEP, State Fire, and USCG
	• Cache of 70 UHF portables and 40 - 800 MHz radios
	• 2 vehicles with STOCS
	• Mobile EOC (in progress)
	  o Dynamic mesh network
	  o Satellite Internet access
	  o Telephone system (Cisco IP telephones)
	  o 20 laptop computers
	  o Radio system
	  o Nextel PTT telephone system

DoIT	• Satellite downlink with 20 Voice over Internet Protocol (VoIP) telephone handsets
CDOT	• 20 low-band spare mobile radios • 3 pickup trucks equipped with mobile CDOT radios

Connecticut Department of Public Health (CT-DPH)	• 28' Medical Command Trailer
	  o VHF low-band
	  o VHF high-band
	  o UHF
	  o 800 MHz (CSP)
	  o MEDSAT (MSV satellite telephone)
	  o MEDNET (155.340 MHz)
	  o STOCS
	  o CS-PERN
	  o UHF MED
	  o Wireless data service
	  o 7.5 KW generator w/ 25 gallon fuel tank

CDEP	• Mobile command post (20 feet) with gasoline generator and 44 MHz radio • Mobile command post (12 feet) with gasoline generator and 44 MHz radio
CANG	• Joint Incident Site Communications Capability (JISCC) Module

CSP	• 6 Rapid Deployment Vehicles (Engineer's Ford Expedition)
	  o VHF mobile digital/analog, trunked/conventional
	  o UHF mobile digital/analog, trunked/conventional
	  o Two 700/800 mobiles digital/analog, trunked/conventional
	  o 8 port audio bridge controller
	  o Laptop with radio programming software and other engineering functions
	  o Motorola Portable 800 MHz repeater
	  o Motorola Micom 3T automatic link establishment (ALE)
	  o MSV satellite telephone
	  o Motorola R2670 digital service monitor
	• Primary Mobile Command Posts
	  o 20 kW diesel generator
	  o Motorola Centracom Gold Elite Central Electronics Bank (CEB) with 2 operator positions and 2 cellular GSM telephone/fax interfaces
	  o 18 mobile consolette radios from 29.7 to 869 MHz with encryption
	  o 128 port private branch exchange (PBX)
	  o 2.4 GHz spread spectrum point-to-point microwave

Agency	Deployable Assets
CSP (continued)	○ 2.4 GHz analog video downlink ○ 42' locking telescopic mast ○ 2 GSM cellular telephone interfaces ○ CT SP CAD ○ Satellite telephone ○ 10 CSP 800 MHz portables ○ 5 I-CAL / I-TAC portables • Secondary Mobile Command Post ○ Generator ○ 14 mobile consolettes from 29.7 – 869 MHz with encryption capable ○ 1 JPS ACU-1000 ○ CT SP CAD via MDT ○ Satellite telephone ○ 10 CSP 800 MHz portables ○ 5 ICALL/ITAC portables ○ 1 cellular GSM phone/fax interface • 2 emergency restoration vehicles each equipped with: ○ 20 kW diesel generator ○ Redundant Ku band satellite up/down link (4 T1 capable) ○ 128 port PBX ○ GSM cellular interface (phone/fax) ○ Micom 3T HF/ALE base station ○ Yaesu amateur HF/VHF/UHF (ARES) ○ ACU1000 audio switch ○ G2 satellite telephone ○ 5 channel Motorola remote trunked site ○ 5 channel Motorola intellirepeater site ○ 16 port transmitter combiner ○ 16 port receive multicoupler ○ 3 800, 3 x 450, and 3 x 150 MHz analog/digital conventional repeaters ○ 6 low-band radios ○ 2 dual mode 800 MHz control stations (DES/AES) ○ 2 T1 Terrestrial spread spectrum microwave radios ○ 42' pneumatic mast ○ 2 automatic HF antenna tuners (NVIS capable) • 2 x 50kW emergency power generators • 3 x Motorola MIP5000 IP laptop based consoles • 6 x transportable base control station transit case ○ VHF consolette ○ UHF consolette ○ 800 consolette ○ Internet Protocol (IP) interface ○ IP to 4W EIA interface ○ Triband coupler/combiner ○ Triband antenna

4.2 Major Command and Control Centers

A detailed assessment of major C2 nodes in Connecticut was performed and can be found in Appendix C. Table 5 summarizes the communications capabilities of the major C2 nodes in Connecticut.

Table 5: Major Command and Control Nodes and Communications Capabilities for Connecticut

TYPE	CAPABILITIES	DEMHS - SEOC	DoIT ECC	CSP EOC	CDOT; Newington TOC	CDOT; Bridgeport TOC	CDEP HQ	CTNG JOC	ARC DOC
NON-SECURE CAPABILITIES									
RADIO	VHF Marine Band	●		●			●		
RADIO	UHF LMR			●				●	●
RADIO	800 Megahertz LMR	●	●	●			●	●	
RADIO	High Frequency	●		●				●	●
RADIO	VHF High-Band LMR	●	●	●			●	●	
RADIO	VHF Low-Band LMR	●		●	●	●		●	
GATEWAY	Audio Switch	●		●					
SAT PHONE	Satellite Communications	●	●	●	●	●	●	●	●
TELEPHONE	Cellular Telephone	●	●	●	●	●	●	●	●
TELEPHONE	Landline Telephone (VoIP)		●	●				●	
TELEPHONE	Analog Telephone	●	●	●	●	●	●	●	●
VTC	Video Teleconference (VTC)	●						●	
Video link	Receive only video link with aviation assets	●		●					
WARNING	Emergency Alert System	●		●					
Warning	National Warning System	●		●					
FAX	Non-Secure FAX	●	●	●	●	●	●	●	●
Application	Web Connectivity	●	●	●	●	●	●	●	●
Application	WebEOC	●	●	●				●	
SECURE CAPABILITIES									
APPLICATION	Secure Internet	●						●	
FAX	Secret/Secure FAX	●						●	
RADIO	HF Radio – Voice							●	
RADIO	HF Radio – Data							●	
RADIO	VHF LMR	○						●	
RADIO	UHF LMR							●	
RADIO	800 MHz LMR	○		●					
TELEPHONE	Secure Landline Telephone (Analog)	●							
VTC	VTC	●						●	

○ Agency does not have, but needs this capability to meet its communications requirements
● Agency has this capability

4.3 Command and Control Requirements and Mitigation Strategies

Table 6: Command and Control Requirements and Mitigations Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
Additional trained staffing to be used for: • Radio Reprogramming • Radio Operators • Radio Repair Technicians	**Pre-Incident** 1. Determine the type and number of personnel required. 2. Review contracts with commercial vendors. 3. Negotiate priority service restoration with commercial vendors. 4. Consider establishing a statewide equipment maintenance contract. 5. Identify federal resources in FEMA Region I. 6. Develop PSMA for telecommunications specialists and technicians to supplement state resources. **Incident** 1. Deploy commercial vendors. 2. Deploy state resources, including CTNG. 3. Deploy federal resources when requested by the state.	**Pre-Incident** 1. Local agencies 2. Local agencies 3. Local agencies 4. DEMHS/DoIT 5. FEMA Region I 6. FEMA Region I **Incident** 1. Local agencies 2. DEMHS 3. FEMA Region I
Replacement equipment for antiquated FNARS radio equipment at the SEOC.	**Pre-Incident** 1. Request funding for, purchase, and install new FNARS radio equipment. **Incident** 1. Deploy federal resources to restore and replace FNARS radio equipment.	**Pre-Incident** 1. FEMA Region I **Incident** 1. FEMA Region I
Backup SEOC for up to 20 personnel for use in the event the primary SEOC is untenable.	**Pre-Incident** 1. Identify location and communication requirements for backup SEOC. 2. Develop PSMA to provide interim communications resources for a backup SEOC. **Incident** 1. Deploy local and regional mobile command vehicles. 2. Deploy state mobile command vehicles. 3. Deploy federal resources when requested by the state.	**Pre-Incident** 1. DEMHS 2. FEMA Region I **Incident** 1. Local and regional agencies 2. DEMHS/CSP 3. FEMA Region I
Back-up electrical power at the 5 EAS sites (commercial radio stations).	**Pre-Incident** 1. Determine the type and quantity of generators required at each EAS site. 2. Request funding for and purchase backup electric generators. **Incident** 1. Deploy federally supplied generators with installation team and fuel to temporarily restore electrical power when requested by the state.	**Pre-Incident** 1. DEMHS 2. DEMHS **Incident** 1. FEMA Region I

Requirement	Mitigation Strategy	Responsible Party/POC
Temporary electrical power at up to 350 mission-critical facilities and remote tower locations.	**Pre-Incident** 1. Determine the type and quantity of generators required at each facility and remote tower locations. **Incident** 1. Deploy federally supplied generators with installation team and fuel to temporarily restore electrical power when requested by the state.	**Pre-Incident** 1. DEMHS **Incident** 1. FEMA Region I
Priority restoration (Telecommunications Service Priority [TSP]) of leased commercial telephone and data services at key C2 and communication facilities.	**Pre-Incident** 1. Identify circuits at mission-critical local facilities that require TSP. 2. Educate local agencies on the purpose and cost of TSP. 3. Request TSP for identified circuits.	**Pre-Incident** 1. DoIT/DEMHS/Local agencies 2. DoIT/NCS 3. DoIT/Local agencies
Up to 20 satellite telephones for back-up communication capability for state and local government staff for C2 missions.	**Pre-Incident** 1. Clarify requirements for satellite telephones (number and type). 2. Request funding for and purchase cache of up to 20 satellite telephones. **Incident** 1. Deploy state resources. 2. Deploy federal resources when requested by the state.	**Pre-Incident** 1. DEMHS 2. FEMA Region I **Incident** 1. DEMHS 2. FEMA Region I
VHF and UHF networks including radio base stations and associated repeaters, towers, and antennas to temporarily restore local radio systems.	**Pre-Incident** 1. Develop PSMA or commercial contract for VHF and UHF network equipment to temporarily restore communications capabilities. **Incident** 1. Determine requirements and specifications for communications equipment. 2. Deploy state resources. 3. Deploy federal resources when requested by the state.	**Pre-Incident** 1. FEMA Region I **Incident** 1. DEMHS 2. DEMHS 3. FEMA Region I
Temporary or mobile radio tower resources for use at: • Up to 8 vulnerable CDOT radio tower locations (100-foot monopole, 47 MHz base stations) • Up to 10 towers for municipal public safety use to support C2 missions (100-foot monopole).	**Pre-Incident** 1. Clarify specifications for tower site equipment. 2. Develop PSMA for temporary tower site equipment. **Incident** 1. Deploy state resources. 2. Deploy federal resources when requested by the state.	**Pre-Incident** 1. DEMHS/CDOT 2. FEMA Region I **Incident** 1. DEMHS/CDOT 2. FEMA Region I
Mobile facility with climate control, power, and pre-wired capable of housing computer and communications equipment to support DoIT operations.	**Pre-Incident** 1. Develop contract specifications and determine potential suppliers for mobile facility. **Incident** 1. Purchase and deploy mobile facility when requested by the state.	**Pre-Incident** 1. DoIT/FEMA Region I **Incident** 1. FEMA Region I

Requirement	Mitigation Strategy	Responsible Party/POC
Additional cache of five hundred 800 MHz Motorola digital portable radios needed for the CSP to support interoperable communications with mutual aid agencies.	**Pre-Incident** 1. Develop PSMA for five hundred 800 MHz digital portable radios. **Incident** 1. Deploy state resources. 2. Deploy federal resources when requested by the state.	**Pre-Incident** 1. FEMA Region I **Incident** 1. DEMHS/CSP 2. FEMA Region I

5. Evacuation Operations Communications

This section discusses how evacuations are administered, the current status of communications support for evacuation operations, and the roles of the various local, state, and federal agencies tasked with executing evacuation operations in the State of Connecticut. The Federal Government will, when requested by the State, aid local and state authorities in supporting effective and interoperable communications for evacuation operations.

5.1 Evacuation Operations Overview

Connecticut's vulnerability to disasters such as hurricanes is a constant reminder of the importance of planning for the safety of residents. A large number of the state's residents live in coastal and island locations that are fully exposed to hurricanes, which will complicate mass evacuations of those residents out of those areas. These geographic peculiarities heighten the need for early warning, prompt decision-making, and rapid response.

A United State Army Corps of Engineers (USACE) study determined that in Connecticut it takes an estimated 7 hours to complete a coastal evacuation from the time residents receive official notification to evacuate. This 7 hours, referred to as "clearance time", does not represent driving time, rather it represents the total time required for all residents in the threatened area to assemble at home, secure their residences, pack some basic necessities, determine their evacuation destination and arrive at that destination. An additional 2 hours for notification dissemination must be added to the 7-hour clearance time. Dissemination time represents the amount of time required to notify the public to evacuate, measured from the time of an official decision to recommend, or order a coastal evacuation. Public notification measures include live press conferences and other notification to the electronic media, as well as door-to-door notification by local emergency services personnel.

Coastal evacuations should be completed before the arrival of dangerous "pre-landfall hazards" (e.g., gale force winds and flooding of low-lying evacuation routes). This means that evacuation decisions should be made before the leading edge of the storm system (measured as the radius of gale force winds from the eye of the hurricane) is within 9 hours of landfall on the Connecticut coastline. Situations in which gale force winds are predicted to arrive during hours of darkness pose particularly difficult evacuation decision-making problems. In such situations, it may be necessary to make evacuation decisions when the leading edge of the storm system is 12 or more hours away. This amount of time will allow the greater part of the evacuation to occur during daylight hours.

DEMHS maintains a coastal evacuation plan that is documented in the State of Connecticut Natural Disaster Plan-2006. DEMHS will maintain close telephone coordination with the National Hurricane Center (NHC) and with local National Weather Service (NWS) offices. Based on NHC-provided strike probability information, DEMHS (following consultation with the Governor's Office) will notify local officials in coastal communities of the possibility of the State issuing an evacuation recommendation. The State will make no public announcements

regarding the proposed evacuation of specific localities, but the State will advise local officials at that time to begin readying public shelters.

Based upon additional information that the NHC and local NWS offices provide, and following consultation with the Governor's office, DEMHS may issue a general public evacuation recommendation for coastal communities. An evacuation recommendation may be made by the Governor or by the DEMHS Commissioner and does not require declaration of a state of civil preparedness emergency by the Governor, although such a declaration by the Governor would be highly probable. No evacuation recommendations will be made unless the NHC has issued a hurricane warning that includes the Connecticut coastline.

DEMHS will provide local officials in coastal communities with advance warning of the State recommendation before notification is made to the media. Local public shelters should be activated at this time and be prepared to receive evacuees. If practical, notification of the media will be done by means of a press briefing at the SEOC Media Center in Hartford.

In the case of a particularly intense hurricane, the Governor may declare a state of civil preparedness emergency and issue an evacuation order in lieu of a recommendation, pursuant to emergency powers granted under Section 28-9, C.G.S.

Following an evacuation recommendation or order issued by state authorities, local authorities are requested to immediately begin conducting evacuation operations as recommended, or as ordered by the State.

The State of Connecticut will not issue area-specific coastal evacuation recommendations for extra-tropical storm systems. Local officials, based on information provided by the NWS, will make evacuation decisions for these events.

Connecticut will implement regional evacuation procedures in concert with local emergency management, local law enforcement, sheltering organizations, public information offices, and adjacent states. The procedures shall integrate the operations of all the participant organizations into one plan that manages the decision-making for and implementation of evacuation operations for all the state's regions. A map of designated evacuation routes for the State of Connecticut can be found at:

http://www.ct.gov/demhs/lib/demhs/evacuation_map_11_2_05.pdf

Based on the large number of agencies that will participate in evacuation missions in Connecticut, a wide variety of communications resources will be used to direct and coordinate evacuation operations. Interoperable communications will play an important role in evacuation scenarios for Connecticut, however most interagency communications shall be performed hierarchically through the SEOC. Most problems in establishing interoperable communications in the field are currently solved by organizations trading portable radios or using the I-CALL / I-TAC frequencies.

Table 7 provides information on agencies involved in evacuations: the agency's role in evacuation operations, its location and POC, and its communications assets available for use during such operations.

Table 7: Connecticut Evacuation Agency/Location

Agency	Role	Communications Systems/Assets	Agency Location/POC
DEMHS	Coordinates and supports evacuation missions. Notifies local communities of evacuation recommendations and/or orders.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 William J. Hackett Director 860-566-3180 William.j.hackett@po.state.ct.us
CDOT	Support agency for evacuation missions. Operates and maintains state-owned roadways and equipment.	• Refer to Table 3	2800 Berlin Turnpike Newington, CT 06111 James Mona Director 860-594-2630 james.mona@po.state.ct.us
CSP	Support agency for evacuation missions. Responsible for traffic control and law enforcement.	• Refer to Table 3	1111 County Club Road P.O. Box 2794 Middletown, CT 06457 Michael A. Stemmler Public Safety Director of Telecommunications Office: 860-685-8280 Fax: 860-685-8345 Mike.stemmler@po.state.ct.us
CDEP	Supports the evacuation of all CDEP-owned land as necessary.	• Refer to Table 3	79 Elm Street Hartford, CT 06106 Edward L. Wilds, Jr. Director; Radiation Division 860-424-3029 Edward.wilds@ct.gov
CTNG	Support agency for evacuation missions by providing general evacuation assistance, traffic control, transportation assets, etc.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 Lt. Colonel Robert Ware 860-524-4824 Robert.v.ware@us.army.mil
USCG	Has authority to close and reopen ports and waterways before, during, and/or after the occurrence of major natural disasters.	• Refer to Table 3	USCG Sector Long Island Sound 120 Woodward Avenue New Haven, CT 06512 203-468-4401

5.2 Evacuation Operations Requirements and Mitigation Strategies

Table 8: Evacuation Operations Requirements and Mitigation Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
None Identified		

6. Sheltering Communications

This section discusses communications resources available to shelters that house evacuees, describes the current status of communications support for shelters, and outlines the roles of various local, state, and federal agencies tasked with sheltering operations in the State of Connecticut. The Federal Government will, when requested by the State, aid local and state authorities in supporting effective and interoperable communications for sheltering operations.

6.1 Sheltering Communications Overview

Local officials, working in conjunction with their local ARC chapters, are primarily responsible for the identification, activation, and operation of public shelters in response to a disaster or emergency. The ARC will manage the sheltering for the state under the direction of ESF-6.

It is anticipated that in natural disaster situations involving evacuations from a threatened area (e.g., coastal flood zone or river flood zone) before disaster impact, only a small percentage of those evacuated will require sheltering; the majority will find accommodations with family or friends. It has been the ARC's experience that no more than 25percent of evacuees require public shelter, and in most cases the percentage is much smaller.

It is estimated that a Category 1 or 2 hurricane will require sheltering of approximately 30,000 people from coastal communities and that a Category 3 or 4 hurricane will require sheltering of approximately 50,000 shoreline residents. Local officials, working in conjunction with the ARC, are responsible for identifying suitable shelter facilities. The ARC manages all ARC shelters and collects information from non-ARC shelters, but the ARC does not usually manage those facilities. The ARC may assist with management duties, if necessary, including coordinating staffing requirements.

To meet all shelter demands, officials in coastal communities may need to use facilities that do not meet ARC criteria in terms of, for example, sleeping space, eating facilities, emergency power generation, cooking facilities, or handicapped access. These shelter facilities, if needed, will not be operated by ARC personnel. Such facilities are intended to be used as short-term "storm shelters", solely for the purpose of providing a short-term safe-haven for evacuees from threatened areas. In addition these "storm shelters" may not be equipped with adequate communications resources to facilitate effective communications with local authorities. These facilities should not be utilized for long-term shelter operations. Such "storm shelters" are expected to meet the wind load criteria and structural design criteria and will be located outside areas vulnerable to flooding.

The primary method of communications for sheltering operations will be wired PSTN lines and cellular telephones will be used as a secondary form of communications. The ARC also maintains a small cache of UHF and VHF portable, mobile, and base radios, as well as two (2) satellite telephones to maintain communications with state and local C2 entities. The ARC has an agreement with Amateur Radio Emergency Service of Connecticut (ARES-CT) to assist in establishing and maintaining emergency communications within shelters and also participates in

such nationwide amateur radio emergency communications groups as the American Radio Relay League (ARRL) and Radio Amateur Civil Emergency Service (RACES).

The ARC will coordinate with state and local agencies to staff shelters, to procure resources for shelter occupants and personnel, and to obtain transportation for evacuees. An ARC representative will be present at the SEOC and at local EOCs, as needed during emergency response and recovery operations. If additional sheltering resources (e.g., transportation, additional staffing, or security / law enforcement) are required, an ARC representative will coordinate with DEMHS to request assistance from other mutual aid agencies.

Table 9 provides information on agencies involved in sheltering operations: the agency's role in sheltering, its location and POC, and its communications assets available for use during such operations.

Table 9: Sheltering Agencies

Agency	Role	Communications Systems/Assets	Agency Location/POC
DEMHS	Coordinates and supports sheltering missions.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 William J. Hackett Director 860-566-3180 William.j.hackett@po.state.ct.us

American Red Cross (ARC)	Support agency for sheltering and feeding of individuals displaced by a disaster. Management function over ARC-owned shelters, support function for state-owned shelters	• PSTN
		• UHF radios for key staff
		  ○ 20 portable radios
		  ○ 3 mobile radios
		  ○ 2 base stations
		• 2 portable satellite telephones / radios
		• ARES
		• Cellular telephones (Nextel & Sprint)
		• BlackBerry devices for key staff
		• Emergency Communications Response Vehicle (ECRV)
			Charter Oak Chapter
			209 Farmington Avenue
			Farmington, CT 06032
			
			Mario J. Bruno
			Senior Director, Preparedness and Response & Information Technology
			860-678-2830
			BrunoMa@usa.redcross.org

CTNG	Support agency for sheltering missions by providing staffing and tents or permanent structures, when available, for use as shelters.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 Lt. Colonel Robert Ware 860-524-4824 Robert.v.ware@us.army.mil
CANG	Support agency for sheltering missions by providing shelter staffing and mass feeding services, when available.	• Refer to Table 3	100 Nicholson Road East Granby, CT 06206 Major John M. Warren 860-292-2464 john.warren@ctbrad.ang.af.mil

6.2 Sheltering Requirements and Mitigation Strategies

Table 10: Sheltering Requirements and Mitigation Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
Back-up communications equipment for use at sheltering C2 facilities and at shelter sites.	**Pre-Incident** 1. Develop PSMA or commercial contract for 12 satellite telephones with external antennas. **Incident** 1. Deploy state resources. 2. Deploy federal resources when requested by the state.	**Pre-Incident** 1. FEMA Region I **Incident** 1. DEMHS 2. FEMA Region I
Access to the statewide 800 MHz I-CALL / I-TAC radio frequencies for the ARC to provide secondary communications capability for shelter staff and to support sheltering operations.	**Pre-Incident** 1. Continue effort for inclusion in the statewide system.	**Pre-Incident** 1. ARC/CPSSEIC

7. Search and Rescue Communications

This section discusses the administration of search and rescue (SAR) operations, the current status of communications support for SAR operations, and the roles of various local, State, and Federal agencies tasked with executing SAR missions in the State of Connecticut. The Federal Government, when requested by the State, will aid local and state authorities in supporting effective and interoperable communications for SAR operations following an incident.

7.1 Search and Rescue Communications Overview

To limit the number of casualties, it is essential to conduct an organized SAR effort in the aftermath of an incident. During SAR missions, personnel may need to deal with extensive damage to buildings, roadways, bridges, public works, and other utility structures. In addition, SAR operations may be complicated by fires, explosions, flooding, and hazardous materials (HAZMAT) spills, which threaten the lives of the survivors being rescued and the responding SAR personnel. To overcome these obstacles and dangers, it is essential that SAR personnel be able to communicate effectively to facilitate safe and effective SAR operations.

SAR operations will primarily be the responsibility of local emergency services personnel. If additional SAR resources are needed, local emergency services shall first invoke any mutual aid agreements in effect with neighboring emergency service agencies. If mutual aid resources are insufficient, unavailable, or inappropriate given the particular circumstances at hand, local authorities may request assistance through the SEOC.

State agencies including DEMHS, CSP, CDEP, CDOT, and the CTNG have personnel and equipment capable of supporting local search and rescue operations. In addition, the Connecticut Task Force 1 (CT-TF-1) has been established within DEMHS as the State's Urban Search and Rescue (US&R) Team. CT-TF-1 is comprised of volunteer members whose mission is to provide a coordinated effort of personnel and resources to locate, extricate, and provide immediate medical treatment to victims trapped within collapsed structures. CT-TF-1 is based out of Brainerd Airport in Hartford.

If additional SAR resources are required, DEMHS will request assistance from other states through the Emergency Management Assistance Compact (EMAC) and from the Federal Government through FEMA.

The U.S. Coast Guard is well suited and available to assist with search and rescue operations. In a major disaster, the USCG will be responsible for SAR operations in and along U.S. coastal waters. The USCG operates two small boat stations in Connecticut, in New London and New Haven. These stations conduct search and rescue missions on Long Island Sound and any adjacent navigable waters.

Communications in support of SAR operations will be coordinated at the local level and SAR teams will primarily utilize local communication assets. Interoperable communications will play an important role in effective SAR operations with the majority of interagency communications

taking place through agency representatives assigned to the Incident Commander or the local EOC. If needed, the SAR team lead of each agency will be issued a portable radio that is compatible with the local LMR system to provide effective interoperable communications. If and when these communication resources have been depleted or prove ineffective, state assistance shall be requested through the SEOC. Figure 3 illustrates C2 communications for SAR operations.

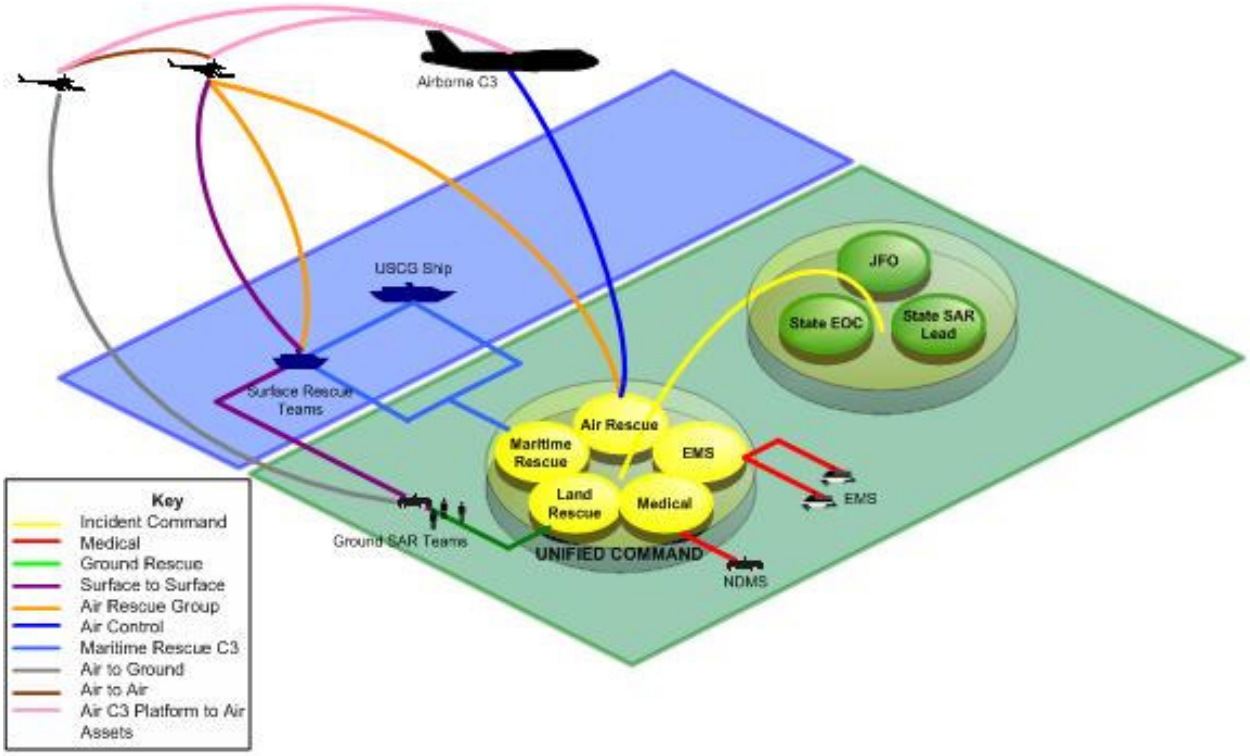

Figure 3: C2 Communications for SAR Operations

Table 11 lists each agency's role in SAR operations, the agency's communications systems and assets used during those operations, and the agency's location and POC.

Table 11: Search and Rescue Agencies

Agency	Role	Communications Systems/Assets	Agency Location/POC
DEMHS	Coordinates and supports SAR missions.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 William J. Hackett Director 860-566-3180 William.j.hackett@po.state.ct.us
CSP	Support agency for the SAR mission by providing scene security and traffic control. The CSP Dive Rescue Team is also available to assist in SAR missions.	• Refer to Table 3	1111 County Club Road P.O. Box 2794 Middletown, CT 06457 Michael A. Stemmler Public Safety Director of Telecommunications Office: 860-685-8280 Fax: 860-685-8345 Mike.stemmler@po.state.ct.us
CDEP	Support agency for SAR operations. CDEP Personnel can provide land and inland waterway SAR assistance, SAR operations on CDEP-owned land, and provisioning of rescue boats.	• Refer to Table 3	79 Elm Street Hartford, CT 06106 Edward L. Wilds, Jr. Director; Radiation Division 860-424-3029 Edward.wilds@ct.gov
CTNG	Support agency for SAR missions by providing military personnel and equipment support for SAR operations.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 Lt. Colonel Robert Ware 860-524-4824 Robert.v.ware@us.army.mil
USCG	Lead agency for SAR on navigable waterways and can provide aerial assets as needed.	• Refer to Table 3	USCG Sector Long Island Sound 120 Woodward Avenue New Haven, CT 06512 203-468-4401

7.2 Search and Rescue Requirements and Mitigation Strategies

Table 12: Search and Rescue Requirements and Mitigation Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
None Identified		

8. Commodities Communications

This section discusses the current status of communications support for the commodities mission operation area, reviews the communications considerations with operations involving commodities, and describes the communications vulnerabilities with, and strategies for mitigating those vulnerabilities to, commodities operations.

8.1 Commodities Communications Overview

Under the provisions of ESF-7; Resource Support, DEMHS is designated as the lead state agency for planning, coordinating, and managing the procurement and distribution of resources such as supplies, office space and equipment, staging areas, fuel, heavy equipment, power generators, transportation, and personnel before, during, and following a major disaster. Upon the activation of the SEOC, the Logistics Section Chief will be responsible for planning, coordinating, and managing all ESF-7 activities.

All requests for equipment, supplies, and personnel will be initially made through the State Agency Support List and coordinated at the SEOC. If resources are exhausted or not supported by the organizations included on the State Agency Support List, DEMHS will obtain additional resources from commercial vendors.

CDOT, CTNG, and CSP are the primary support agencies for ESF-7. CDOT will provide resources such as vehicles (including trucks) and heavy equipment as well as personnel (e.g., drivers and equipment operators) in support of commodities operations and the CTNG can provide personnel and facilities for warehousing and distribution tasks. The CSP will be responsible for providing security for commodities operations utilizing law enforcement personnel.

DEMHS is designated as the lead state agency for all ESF-11 (Food and Water) activities. ESF-11 responsibilities include the acquisition of food, water, and ice and providing for the security and transport of these commodities in support of mass care operations in areas affected by a disaster or other major incident. Food, water, and supplies are often obtained though contracted commercial entities. These commercial entities warehouse large amounts of Meals Ready to Eat (MRE), water, and supplies and are usually identified before an emergency. The Logistics Section Chief will coordinate all response and recovery activities for ESF-11 at the SEOC.

Table 13 lists each agency's role in commodities operations, the communications systems and assets the agency uses, and the agency's location and POC.

Table 13: Commodities Agencies

Agency	Role	Communications Systems/Assets	Agency Location/POC
DEMHS	Coordinate and support Commodities missions.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 William J. Hackett Director 860-566-3180 William.j.hackett@po.state.ct.us
CDOT	Support agency providing equipment and personnel for the distribution of commodities.	• Refer to Table 3	2800 Berlin Turnpike Newington, CT 06111 James Mona Director 860-594-2630 james.mona@po.state.ct.us
CTNG	Support agency providing equipment and personnel for the warehousing and distribution of commodities.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 Lt. Colonel Robert Ware 860-524-4824 Robert.v.ware@us.army.mil

8.2 Commodities Requirements and Mitigation Strategies

Table 14: Commodities Requirements and Mitigation Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
None Identified		

9. Medical Communications

This section discusses the current status of communications capabilities in support of medical response, reviews the communications considerations with medical response operations, and describes how federal communications resources will be engaged in support of medical response operations within Connecticut.

9.1 Medical Overview

Hurricanes and extra-tropical storms have the potential to cause mass casualties, possibly requiring augmented emergency medical operations and can pose serious public health problems as a result of floodwater contamination, lack of refrigeration, lack of sanitation and potable water, disruption of pharmaceutical operations, and vector (disease producing organism) proliferation.

The CT-DPH is the lead state agency (ESF-8) for providing and coordinating public health services in Connecticut. ESF-8 supports a wide range of medical and public health services that include, but are not limited to:

- Assessment of health and medical needs
- Disease control
- Public health information
- Medical equipment and supplies
- Coordination of care facilities (e.g. hospitals and nursing homes)
- Emergency responder health and safety
- Emergency Medical Services (EMS)

The CT-DPH is responsible for providing technical advice and assistance to local health officials regarding public health threats and issues. CT-DPH is also responsible for providing information for the public regarding measures and precautions to minimize threats to their health.

Local EMS is responsible for responding to requests for emergency medical assistance and Mass Casualty Incidents (MCI) in accordance with established local protocols. Mass casualty operations shall be conducted in accordance with the State's MCI Guidelines. Personnel from the CT-DPH / Office of Emergency Medical Services (OEMS) may respond in support of local EMS operations as deemed necessary. OEMS support personnel shall report to the EMS Control Officer on site. OEMS personnel will monitor EMS operations and assist the EMS Control Officer, as requested, with medical communications coordination, technical advisement on medical operations, and on obtaining state resources necessary to cope with the situation at hand.

Primary EMS communications between EMS patient transport agencies and hospitals are managed through 13 CMED centers in the state. CMEDs have varying medical communications responsibilities such as the dispatching of EMS ambulance resources including fire departments, communications coordination between EMS providers and a receiving hospital, incident time tracking and audio transmission recording, and EMS mutual aid coordination.

The CMED radio system consists of ten 450 MHz channels managed through an architecture of base stations located throughout the state. Frequencies are generally segregated per region, however each CMED base station is programmed with all 10 EMS frequencies to provide redundancy in the event of a base station failure. Over 500 field level EMS providers in the state use these ten UHF frequencies to communicate with their base hospitals to provide positive medical control.

All 13 CMEDs are equipped with and maintain the following wireless communications resources in addition to the CMED radio system to provide redundancy and back-up communications capability.

- MEDSAT – This system represents one (1) MSV satellite PTT telephone at each CMED center, each local hospital, the CT-DPH, and DEMHS. The CT-DPH also maintains five MSV units in reserve as deployable resources.
- I-CALL/I-TAC frequencies.
- MEDNET – This is a statewide point-to-point VHF system that is utilized for communications among the 13 CMED Centers and includes the CT-DPH, the SEOC, and the Life Star (critical care Helicopter air-ambulance service) dispatch center.

Table 15 lists each agency's role in medical response operations, the communications systems and assets the agency uses, and the agency's location and POC.

Table 15: Medical Agencies

Agency	Role	Communications System/Assets	Agency Location/POC
Coordinated Medical Emergency Dispatch (CMED) 13 Statewide	Varying responsibilities by region, including dispatch for multiple fire and EMS agencies, computer assisted dispatching (CAD), call and unit time tracking, audio recording, EMS to hospital radio patching, and mutual aid coordination.	• CMED – EMS Communications System (statewide 10 UHF channels (13 regional systems) • MEDNET – Statewide VHF system for communications among 13 CMED Centers • I-CALL/I-TAC • CS-PERN • Leased line backhaul • PSTN • Cellular telephones	South West CMED (Region I) 267 Grant Street Bridgeport, CT Jeff Merwin Director 203-338-0767 swrccmer@aol.com CMED New Haven (Region II) 200 Orange Street New Haven, CT 06502 John Gustafson 203-946-7038 Cmed.nh@snet.net

Agency	Role	Communications System/Assets	Agency Location/POC

CT-DPH	Responsible for the public health by providing oversight and assistance to local health departments, EMS agencies, and local hospitals.	• CT-DPH VHF high-band LMR network
		  ○ 40 portable subscriber
		  ○ units
		  ○ 20 mobile subscriber units
		• PSTN
		• 300 Nextel PTT cellular telephones with WPS
		• 70 MSV PTT radio telephones (MEDSAT); 1 unit at each CMED, 1 unit at each hospital, and 5 spare portable units
		• MEDNET radio
		• Health alert network (HAN)
		• Wide area telephone notification system (wide area network [WAN])
		• Wireless ring-down telephone to the SEOC
		• 28' medical command trailer
			410 Capitol Avenue
			MS # 12EMS
			P.O. Box 340308
			Hartford, CT 06134-0308
			
			Gordon K. Shand
			Office of Emergency Medical Services
			860-509-7981
			gordon.shand@ct.gov

9.2 Medical Requirements and Mitigation Strategies

Table 16: Medical Requirements and Mitigation Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
Priority restoration (TSP) of leased telephone and data lines at CMED facilities and tower sites.	**Pre-Incident** 1. Identify circuits at CMED facilities and tower sites that require TSP. 2. Educate local agencies on the purpose and cost of TSP. 3. Request TSP for identified circuits.	**Pre-Incident** 1. DoIT/DEMHS/CMEDs 2. DoIT/NCS 3. DoIT/CMEDs
Cache of fifteen - 100 Watt, 450 MHz replacement radio base stations and fifteen – 6 dB gain antennas for backup capability at CMED facilities.	**Pre-Incident** 1. Identify radio equipment requirements. 2. Develop a PSMA or purchase contract for identified radio and communications equipment. **Incident** 1. Deploy state resources. 2. Deploy federal resources or execute contracts when requested by the state.	**Pre-Incident** 1. CMEDs and FEMA Region I 2. FEMA Region I **Incident** 1. DEHMS/DOIT 2. FEMA Region I
35 MSV PTT satellite telephones for use at alternate care facilities and special needs shelters to allow interoperability with current MEDSAT equipment.	**Pre-Incident** 1. Request funding for and purchase cache of up to 35 MSV PTT satellite telephones. **Incident** 1. Deploy state resources (5 MSV PTT units available). 2. Deploy MSV PTT satellite telephones when requested by the state.	**Pre-Incident** 1. FEMA Region I **Incident** 1. CT-DPH 2. FEMA Region I

10. Debris Removal Communications

Debris removal is critical to rapid post-incident response in the mission operation areas of medical response, SAR, and commodities. The early targeting of debris for removal is necessary to clear highways and roads and make them safe for travel. Debris is also a public health and safety hazard. The types of debris generated by the passage of a hurricane can include vegetative debris, municipal solid waste, construction and demolition materials, vehicles, food waste, household appliances and electronics, and household hazardous waste. Much of this waste may be contaminated with toxic or hazardous substances. Therefore, debris removal is necessary to both facilitate recovery in the disaster area and maintain the public health of the residents in such areas.

10.1 Debris Removal Overview

Debris removal operations include the separation, reduction, and removal of debris following a major incident such as a hurricane. The goals of debris removal operations are as follows:

- Open highways and roads to the unobstructed movement of supplies and SAR and medical relief teams
- Remove debris that constitutes a health or public safety risk
- Restore communications infrastructure and public utilities

Local governments are responsible for not only removing debris from municipally owned lands and waters but also for developing debris management plans, including identifying debris staging areas and potential open-burning sites within their respective communities. Debris staging areas are locations in which any type of debris can be deposited temporarily until final disposition sites such as specially created landfills, old landfills, or burn pits are prepared for operations by the state or federal government. Wetlands (tidal and inland), beaches, dunes, and other natural coastal resources cannot be used as debris staging areas.

The CDOT is responsible for clearing and removing wreckage and debris from state-owned or maintained transportation facilities and is also the lead state agency for support of local debris management operations.

The CDEP is responsible for removing debris from all CDEP-owned lands and state waterways, advising state and local officials on proper disposal of debris, making determinations regarding open-burning waivers to allow for expeditious disposal of burnable debris, identifying suitable sites for large-scale open-burning operations, and decisions regarding the disposition of non-burnable, unsalvageable disaster debris. The CDEP is a support agency for local debris management operations and debris management operations of the DOT. Enlistment of CDEP personnel and equipment to assist local debris removal operations shall be coordinated through DEMHS.

The CTNG is a support agency for debris management and will assist CDOT and other state or local debris management forces as necessary. The CTNG does not maintain a fleet of heavy equipment or vehicles so other state or federal entities may be called on to fulfill the heavy equipment debris

removal role. Enlistment of National Guard forces to assist with debris management operations will be coordinated through the SEOC.

Table 17 lists each agency's role in debris removal, its communications systems and assets, and the agency's location and POC.

Table 17: Debris Removal Agencies

Agency	Role	Communications Systems/Assets	Agency Location/POC
CDOT	Lead state agency for debris removal from state roadways and state-owned property.	• Refer to Table 3	2800 Berlin Turnpike Newington, CT 06111 James Mona Director 860-594-2630 james.mona@po.state.ct.us
CDEP	Support agency for debris removal missions by assisting state and local authorities with management of disaster debris.	• Refer to Table 3	79 Elm Street Hartford, CT 06106 Edward L. Wilds, Jr. Director; Radiation Division 860-424-3029 Edward.wilds@ct.gov
CTNG	Support agency for debris removal by providing bridge repair, aerial damage assessment, and debris clearing assistance, when requested.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 Lt. Colonel Robert Ware 860-524-4824 Robert.v.ware@us.army.mil
DEMHS	Support agency for debris removal missions by providing coordination of resource requests and allocation.	• Refer to Table 3	360 Broad Street Hartford, CT 06105 William J. Hackett Director 860-566-3180 William.j.hackett@po.state.ct.us

10.2 Debris Removal Requirements and Mitigation Strategies

Table 18: Debris Removal Requirements and Mitigation Strategies

Requirement	Mitigation Strategy	Responsible Party/POC
None Identified		

Appendices

Appendix A. State Planning Team Members
Appendix B. Acronym List
Appendix C. Major Command and Control Centers in Connecticut
Appendix D. Points of Contact in Connecticut
Appendix E. Risks in Connecticut
Appendix F. Primary Public Safety Frequencies in Connecticut
Appendix G. National Interoperability Field Operations Guide
Appendix H. Shared Communications Resources by Agency

Appendix A – State Planning Team Members

Team Members

Frank Lalley (Team Leader) U. S. Department of Homeland Security Federal Emergency Management Agency Disaster Operations Directorate	Michael Varney CT Department of Information Technology Information Technology Manager
Timothy McCoy U.S. Department of Homeland Security Federal Emergency Management Agency Region I EM Program Specialist	Robert DiBella CT Department of Emergency Management and Homeland Security Telecom Engineer
James Mona CT Department of Transportation Director	Thomas Walsh CT Department of Emergency Management and Homeland Security Telecom Engineer
George Carbonell CT Department of Transportation Transportation Radio Supervisor	Jerry Zarwanski CT Department of Public Safety Telecom Engineer
Major John M. Warren Connecticut Air National Guard	Jeff Merwin Southwest CMED (Region I) Director
Colonel Roy Walton Connecticut National Guard	Joseph L. Gaudett. Jr. Bridgeport, CT Police Department Deputy Chief Region I – ESF II
John Gustafson CMED New Haven (Region II) Executive Director Region II – ESF II	Keith Victor West Hartford, CT Police Department Communications System Manger Region III – ESF II
Jeffrey Otto Quinebaug Valley Emergency Communications Region IV – ESF II	Steven Savage NW CT Public Safety Communications Center Communications Manager Region V – ESF II
Lt. Colonel Robert V. Ware CT Air National Guard (assigned to CT National Guard)	James Farkas Litchfield County Dispatch President

Team Advisors

Nathan Greene U. S. Department of Homeland Security Federal Emergency Management Agency Region I IT Branch Chief	William J. Hackett CT Department of Emergency Management and Homeland Security Director
Mike Mattern Federal Communications Commission Electrical Engineer	

Appendix B – Acronym List

ALE	Automatic Link Establishment
AM	Amplitude Modulation
ARC	American Red Cross
ARES	Amateur Radio Emergency Service
ARRL	American Radio Relay League
C2	Command and Control
CAD	Computer Assisted Dispatch
CANG	Connecticut Air National Guard
CDEP	Connecticut Department of Environmental Protection
CDOT	Connecticut Department of Transportation
CEB	Central Electronics Bank
CMED	Coordinated Medical Emergency Dispatch
CPSSEIC	Connecticut Public Safety State Executive Interoperability Committee
CT-DPH	Connecticut Department of Public Health
CT-TF-1	Connecticut Task Force 1
CTNG	Connecticut National Guard
CSP	Connecticut State Police
CS-PERN	Connecticut State-Police Emergency Radio Network
DEMHS	Department of Emergency Management and Homeland Security
DHS	Department of Homeland Security
DoIT	Department of Information Technology
DoAG	Department of Agriculture
DOC	Disaster Operations Center
DPS	Department of Public Safety
EAS	Emergency Alert System
ECC	Emergency Communications Center
ECRV	Emergency Communications Response Vehicle
EMA	Emergency Management Agency (generic)
EMAC	Emergency Management Assistance Compact
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
ESF	Emergency Support Function
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FD	Fire Department
FEMA	Federal Emergency Management Agency
FM	Frequency Modulation
FNARS	FEMA National Radio System
GETS	Government Emergency Telecommunications Service
GHz	Gigahertz
HAN	Health Alert Network
HAZMAT	Hazardous Material

HEAR	Hospital Emergency Administrative Radio
HEICS	Hospital Emergency Incident Command System
HES	Hurricane Evacuation Shelter
HF	High Frequency
HHS	United States Department of Health and Human Services
HQ	Headquarters
ICS	Incident Command System
IMT	Incident Management Team
JIC	Joint Information Center
JISCC	Joint Incident Site Communications Capability
JOC	Joint Operations Center
LMR	Land Mobile Radio
MCC	Mobile Command Center
MHz	Megahertz
MOU	Memorandum of Understanding
MRE	Meals Ready to Eat
NHC	National Hurricane Center
NWS	National Warning System
NIFOG	National Interoperability Field Operations Guide
NIMS	National Incident Management System
NIPRNet	Unclassified but Sensitive Internet Protocol Router Network
NRF	National Response Framework
OEMS	Office of Emergency Medical Services
PA	Public Address
PBX	Private Branch Exchange
PD	Police Department
POC	Point of Contact
PSAP	Public Safety Answering Point
PSMA	Pre-Scripted Mission Assignment
PSTN	Public Switched Telephone Network
PTT	Push-to-Talk
RACES	Radio Amateur Civil Emergency Service
SAR	Search and Rescue
SCIP	Statewide Communications Interoperability Plan
SEOC	State Emergency Operations Center
SINCGARS	Single-Channel Ground-Air Radio System
SIPRNet	Secure Internet Protocol Router Network
STE	Secure Terminal Equipment
STU	Secure Telephone Unit
T1	Digital Signal 1(DS1), also known as T1
T3	Digital Signal 3(DS3), also known as T3
TICP	Tactical Interoperable Communications Plan
TOC	Traffic Operations Center
TSA	Transportation Security Administration
TSP	Telecommunications Service Priority

UASI	Urban Area Security Initiative
UHF	Ultra High Frequency
UPS	Uninterruptible Power Supply
US&R	Urban Search and Rescue (team)
USACE	United States Army Corp of Engineers
USCG	United States Coast Guard
USDA	United States Department of Agriculture
VHF	Very High Frequency
VMS	Variable Message Sign
VoIP	Voice over Internet Protocol
VTC	Video Teleconferencing
WAN	Wide Area Network

Appendix C – Major Command and Control Centers in Connecticut

Command & Control Facility	Role	Communications Capabilities
DEMHS State EOC 360 Broad Street Hartford, CT 06105 860-566-3180	Coordinates and supports the four phases of emergency management: mitigation, preparedness, response, and recovery.	• VHF Marine Band • 800 MHz LMR • HF radio • VHF high-band LMR • VHF low-band LMR • Audio switch • Satellite telephones • Cellular telephones • VoIP telephones • Analog telephones • VTC and secure VTC • EAS • NWS • Secure and non-secure FAX • Web connectivity • WebEOC • Secure Internet • Secure analog telephone
DoIT Emergency Communications Center (ECC) 101 East River Drive Hartford, CT 06108 860-622-2300 860-622-2561	Responsible for all state agency telephone and data services. Central data hub for all state activities.	• 800 MHz LMR • VHF high-band LMR • Satellite telephones • Cellular telephones • VoIP telephones • Analog telephones • Non-secure FAX • Web connectivity • WebEOC
CSP EOC 1111 Country Club Road Middletown, CT 06457 860-685-8190	Lead agency for C2 of all State Police operations.	• VHF Marine Band • UHF LMR • 800 MHz LMR • HF radio • VHF high-band LMR • VHF low-band LMR • Audio Switch • Satellite telephones • Cellular telephones • VoIP telephones • Analog telephones • EAS • NWS • Secure and non-secure FAX • Web connectivity • WebEOC • Secure 800 MHz radio
CDOT – Traffic Operations Center (TOC) 2800 Berlin Turnpike Newington, CT 06111 860-594-3447	Serves as the operations center for state roadway operations, infrastructure, and maintenance.	• VHF low-band LMR • Satellite telephones • Analog telephones • Non-secure FAX • Web connectivity

Command & Control Facility	Role	Communications Capabilities
CDOT – TOC 149 Prospect Street Bridgeport, CT 06604 203-696-2690	Serves as the operations center for state roadway operations, infrastructure, and maintenance.	• VHF low-band LMR • Satellite telephones • Analog telephones • Non-secure FAX • Web connectivity
CDEP – HQ 79 Elm Street Hartford, CT 06106 860-424-3333	Coordinates the state's environmental plans, functions and educational programs and will function in a C2 capability for oil or chemical spills, dam flooding, hazmat, and radiation incidents. Lead state agency for on water law enforcement, emergency response and navigation safety through the Division of Environmental Conservation Police.	• VHF Marine Band • 800 MHz LMR • VHF high-band LMR • Satellite telephones • Cellular telephones • Analog telephones • Non-secure FAX • Web connectivity
CTNG – Joint Operations Center (JOC) 360 Broad Street Hartford, CT 06105 860-524-4951	Serves as the operations center for C2 of CT Air National Guard and Army National Guard resources.	• UHF LMR • 800 MHz LMR • HF radio • VHF high-band LMR • VHF low-band LMR • Satellite telephones • Cellular telephones • VoIP telephones • Analog telephones • VTC and secure VTC • Secure and non-secure FAX • Web connectivity • WebEOC • Secure Internet • Secure HF radio – voice • Secure HF radio – data • Secure UHF LMR
CT-ARC Disaster Operations Center (DOC) 209 Farmington Avenue Farmington, CT 06032 860-678-2830	Serves as the Operations Center for ARC operations and coordination in the state.	• UHF LMR • HF radio • Satellite telephones • Cellular telephones • Analog telephones • Non-secure FAX • Web connectivity

Appendix D – Points of Contact in Connecticut

Name	Agency	Contact Information
Command and Control		
William J. Hackett Director	DEMHS	360 Broad Street Hartford, CT 06105 860-566-3180 William.j.hackett@po.state.ct.us
Michael Varney Information Technology Manager	DoIT	101 East River Drive East Hartford, CT 06108 860-622-2462 Michael.varney@ct.gov
Michael A. Stemmler DPS; Director of Telecommunications	CSP	1111 County Club Road P.O. Box 2794 Middletown, CT 06457 Office: 860-685-8280 Fax: 860-685-8345 Mike.stemmler@po.state.ct.us
James Mona Director	CDOT	2800 Berlin Turnpike Newington, CT 06111 860-594-2630 James.mona@po.state.ct.us
Edward L. Wilds Director; Radiation Division	CDEP	79 Elm Street Hartford, CT 06106 860-424-3029 Edward.wilds@ct.gov
Major John M. Warren	CANG	100 Nicholson Road East Granby, CT 06206 860-292-2321 john.warren@ctbrad.ang.af.mil
Lt. Colonel Robert Ware	CTNG	360 Broad Street Hartford, CT 06105 860-524-4824 Robert.v.ware@us.army.mil
Duty Officer	USCG	USCG Sector Long Island Sound 120 Woodward Avenue New Haven, CT 06512 203-468-4401
Evacuation		
William J. Hackett Director	DEMHS	360 Broad Street Hartford, CT 06105 860-566-3180 William.j.hackett@po.state.ct.us
James Mona Director	CDOT	2800 Berlin Turnpike Newington, CT 06111 860-594-2630 James.mona@po.state.ct.us

Name	Agency	Contact Information
Michael A. Stemmler DPS; Director of Telecommunications	CSP	1111 County Club Road P.O. Box 2794 Middletown, CT 06457 Office: 860-685-8280 Fax: 860-685-8345 Mike.stemmler@po.state.ct.us
Edward L. Wilds Director; Radiation Division	CDEP	79 Elm Street Hartford, CT 06106 860-424-3029 Edward.wilds@ct.gov
Lt. Colonel Robert Ware	CTNG	360 Broad Street Hartford, CT 06105 860-524-4824 Robert.v.ware@us.army.mil
Sheltering		
William J. Hackett Director	DEMHS	360 Broad Street Hartford, CT 06105 860-566-3180 William.j.hackett@po.state.ct.us
Mario J. Bruno Senior Director, Preparedness and Response and Information Technology	ARC	Charter Oak Chapter 209 Farmington Avenue Farmington, CT 06032 860-678-2830 BrunoMa@usa.redcross.org
Lt. Colonel Robert Ware	CTNG	360 Broad Street Hartford, CT 06105 860-524-4824 Robert.v.ware@us.army.mil
Major John M. Warren	CANG	100 Nicholson Road East Granby, CT 06206 860-292-2321 john.warren@ctbrad.ang.af.mil
Search and Rescue		
William J. Hackett Director	DEMHS	360 Broad Street Hartford, CT 06105 860-566-3180 William.j.hackett@po.state.ct.us
Michael A. Stemmler DPS; Director of Telecommunications	CSP	1111 County Club Road P.O. Box 2794 Middletown, CT 06457 Office: 860-685-8280 Fax: 860-685-8345 Mike.stemmler@po.state.ct.us
Edward L. Wilds Director; Radiation Division	CDEP	79 Elm Street Hartford, CT 06106 860-424-3029 Edward.wilds@ct.gov

Name	Agency	Contact Information
Lt. Colonel Robert Ware	CTNG	360 Broad Street Hartford, CT 06105 860-524-4824 Robert.v.ware@us.army.mil
Duty Officer	USCG	USCG Sector Long Island Sound 120 Woodward Avenue New Haven, CT 06512 203-468-4401
Commodities		
William J. Hackett Director	DEMHS	360 Broad Street Hartford, CT 06105 860-566-3180 William.j.hackett@po.state.ct.us
James Mona Director	CDOT	2800 Berlin Turnpike Newington, CT 06111 860-594-2630 James.mona@po.state.ct.us
Lt. Colonel Robert Ware	CTNG	360 Broad Street Hartford, CT 06105 860-524-4824 Robert.v.ware@us.army.mil
Medical		
Jeff Merwin Director	South West CMED – Region I	267 Grant Street Bridgeport, CT 203-338-0767 swrccmer@aol.com
John Gustafson Executive Director	CMED New Haven – Region II South Central CT Regional Emergency Communications System	CMED New Haven (Region II) 200 Orange Street New Haven, CT 06502 203-946-7038 Cmed.nh@snet.net
Gordon K. Shand EMS Planning Specialist	CT-DPH	410 Capitol Avenue MS # 12EMS P.O. Box 340308 Hartford, CT 06134-0308 860-509-7981 gordon.shand@ct.gov
Debris Removal		
James Mona Director	CDOT	2800 Berlin Turnpike Newington, CT 06111 860-594-2630 James.mona@po.state.ct.us
Edward L. Wilds Director; Radiation Division	CDEP	79 Elm Street Hartford, CT 06106 860-424-3029 Edward.wilds@ct.gov

Name	Agency	Contact Information
Lt. Colonel Robert Ware	CTNG	360 Broad Street Hartford, CT 06105 860-524-4824 Robert.v.ware@us.army.mil
William J. Hackett Director	DEMHS	360 Broad Street Hartford, CT 06105 860-566-3180 William.j.hackett@po.state.ct.us

Appendix E – Risks in Connecticut

Priority	Risk	Operational Impact	Agency/Location Affected
1	Incoming leased circuits at CMED centers represent a single point of failure.	Lack of redundancy. Loss of leased circuits would eliminate wide area network connectivity until service is restored.	CMEDs / Hospitals
1	CSP does not maintain a cache of 800 MHz portable radios for external agencies participating in a mutual aid incident.	Non-CSP agencies assisting in a major emergency may be unable to communicate effectively with CT agencies.	Mutual aid agencies supporting operations in CT
1	Repair parts are unavailable for aging FNARS radio equipment at the SEOC.	Parts for the FNARS are difficult to acquire, if not impossible. Loss of FNARS will cause the loss of HF connectivity with the federal government.	All state agencies
1	Lack of a designated in-state back-up ECC (DoIT data facility).	Delay in data service restoration or total loss of data capability should the ECC become untenable.	All state agencies
1	Lack of a designated back-up SEOC.	Delay in coordination and support of resources to state, local, and private entities should the SEOC become untenable.	All state agencies
2	Radio tower infrastructure (CDOT and local public safety agencies) is vulnerable to storm damage.	Loss of radio towers due to storm damage will degrade CDOT's and municipal public safety agencies' ability to communicate during response and recovery operations.	CDOT / Local public safety agencies
2	CMED centers do not maintain a cache of extra communications equipment (e.g. radio base stations and antennas).	Any delay in repair to a CMED radio system will adversely impact emergency medical service delivery.	CMEDs / Hospitals
2	Local responders have limited radio back-up communications capability.	Loss of primary and secondary communications capabilities at the local level (Regional ESF-II) will adversely impact the delivery of emergency services.	Local first responder agencies
2	Limited number of staff to accomplish technical missions during a disaster.	Delay in accomplishing specific telecommunications support missions that will affect state agencies abilities to respond to a disaster.	All state agencies
2	Satellite telephone resources are limited among state and local government agencies.	C2 communications between the state and local governments will be impaired in the event of a primary communications system failure.	CDOT / Local governments
2	Limited backup communications capabilities available for use at shelter sites and alternate care facilities in CT.	Back-up communications with local and state government will be limited in the event of a primary communications system (PSTN) failure. Loss of connectivity with remote shelter sites will impair effective sheltering and human support activities.	ARC / DEMHS
2	Single points of failure for telephone and data service at key C2 and operations centers.	Loss of PSTN capabilities and Internet access will adversely impact emergency operations throughout the affected region(s).	CMEDs / Local emergency response agencies

Priority	Risk	Operational Impact	Agency/Location Affected
2	Limited reserve electrical generator resources in the state.	Loss of primary electrical power at up to 350 mission-critical facilities and remote tower locations.	All state agencies
3	ARC personnel do not have access to the statewide 800 MHz I-CALL / I-TAC radio system.	Backup communications with local and state government will be limited In the event of a primary communications system (PSTN) failure.	ARC / DEMHS
3	Lack of back-up power supply at EAS primary access sites.	Delayed notification to the public regarding potential dangers, evacuation routes, etc.	DEMHS

Key: Priority 1 – Federal resources are most likely required.
Priority 2 – State resources may be capable/federal resources might be required.
Priority 3 – State resources should be capable.
Priority 4 – Local and/or county resources are capable.

Appendix F – Primary Public Safety Frequencies in Connecticut

Agency System	Channel Name	Mobile TX	Mobile RX	Tone
CSP	Hotline New Haven	45.860	45.860	110.9
CSP	Hotline New London	45.860	45.860	123.0
CSP	Hotline New Hartford	45.860	45.860	136.5
CSP	Hotline Fairfield	39.460	39.460	110.9
CSP	53 CS-PERN	813.2625	858.2625	156.7
CSP	62 RAFS1	813.4125	857.4125	118.8
CSP	63 RAFS2	809.9125	854.9125	118.8
CSP	65 I-CALL R	821.0125	866.0125	156.7
CSP	66 I-CALL S	866.0125	866.0125	156.7
CSP	67 I-TAC1 R	821.5125	866.5125	156.7
CSP	68 I-TAC1 S	866.5125	866.5125	156.7
CSP	69 I-TAC2 R	822.0125	867.0125	156.7
CSP	70 I-TAC2 S	867.0125	867.0125	156.7
CSP	71 I-TAC3 R	822.5125	867.5125	156.7
CSP	72 I-TAC3 S	867.5125	867.5125	156.7
CSP	73 I-TAC4 R	823.0125	868.0125	156.7
CSP	74 I-TAC4 S	868.0125	868.0125	156.7
CSP	81 LP/A1R	823.9875	868.9875	156.7
CSP	82 LP/A1S	868.9875	868.9875	156.7
CSP	83 LP/A2R	823.9625	868.9625	156.7
CSP	84 LP/A2S	868.9625	868.9625	156.7
CSP	85 LP/A3R	823.9750	868.9750	156.7
CSP	86 LP/A3S	868.9750	868.9750	156.7
CSP	87 LP/A4R	823.9500	868.9500	156.7
CSP	88 LP/A4S	868.9500	868.9500	156.7
CSP	89 LP/A5R	823.9375	868.9375	156.7
CSP	90 LP/A5S	868.9375	868.9375	156.7
CSP	97 LP/D1R	823.9875	868.9875	DIGITAL
CSP	98 LP/D1S	868.9875	868.9875	DIGITAL
CSP	99 LP/D2R	823.9625	868.9625	DIGITAL
CSP	100 LP/D2S	868.9625	868.9625	DIGITAL
CSP	101 LP/D3R	823.9750	868.9750	DIGITAL
CSP	102 LP/D3S	868.9750	868.9750	DIGITAL
CSP	103 LP/D4R	823.9500	868.9500	DIGITAL
CSP	104 LP/D4S	868.9500	868.9500	DIGITAL
CSP	105 LP/D5R	823.9375	868.9375	DIGITAL
CSP	106 LP/D5S	868.9375	868.9375	DIGITAL
Intercity Fire	Region 3/4/5 VHF	159.795	154.265	107.2
Intercity Fire	Region 3/4/5 UHF	457.1375	452.1375	167.9
Intercity Fire	Region 3/4/5 800 MHz	814.3875	859.3875	167.9
Fire	Statewide Fire Mutual Aid	33.78000	33.78000	179.9
Fire	Statewide Fire Mutual Aid	46.16000	46.16000	141.3
Fire	Intercity Fire - South Central	154.29500	154.29500	107.2
CMED	CMED Statewide Med Net	155.34000	155.34000	203.5

Agency System	Channel Name	Mobile TX	Mobile RX	Tone
CMED	South West, Medical Control, MED 1	468.00000	463.000	123.0
CMED	South West, Medical Control, MED 2	468.0250	463.025	123.0
CMED	South West, Medical Control, MED 3	468.050	463.050	123.0
CMED	South West, Medical Control, MED 4	468.075	463.075	123.0
CMED	South West, Medical Control, MED 5	468.100	463.100	123.0
CMED	South West, Medical Control, MED 6	468.125	463.125	123.0
CMED	South West, Medical Control, MED 7	468.150	463.150	123.0
CMED	South West, Medical Control, MED 8	468.175	463.175	123.0
CMED	South West, Dispatch/Coordination, MED 9	467.950	462.950	123.0
CMED	South West, Dispatch/Coordination, MED 10	467.975	462.975	123.0
CMED	South West, Tactical, MED 11	458.025	453.025	123.0
CMED	South West, Tactical, MED 12	458.075	453.075	123.0
CMED	South West, Tactical, MED 13	458.125	453.125	123.0
CMED	South West, Tactical, MED 14	458.175	453.175	123.0
CMED	South Central, Medical Control, MED 1	468.000	463.000	167.9/131.8
CMED	South Central, Medical Control, MED 2	468.025	463.025	167.9/131.8
CMED	South Central, Medical Control, MED 3	468.050	463.050	167.9/131/8
CMED	South Central, Medical Control, MED 4	468.075	463.075	167.9/131/8
CMED	South Central, Medical Control, MED 5	468.100	463.100	167.9/131.8
CMED	South Central, Medical Control, MED 6	468.125	463.125	167.9/131.8
CMED	South Central, Medical Control, MED 7	468.150	463.150	167.9/131.8
CMED	South Central, Medical Control, MED 8	468.175	463.175	167.9/131.8
CMED	South Central, Dispatch/Coordination, MED 9	467/950	462.950	167.9/131.8
CMED	South Central, Dispatch/Coordination, MED 10	467.975	462.975	167.9/131.8
CMED	South Central, Interop/Tactical, MED 11	458.025	453.025	167.9
CMED	South Central, Interop/Tactical, MED 12	458.075	453.075	167.9
CMED	South Central, Interop/Tactical, MED 13	458.125	453.125	167.9
CMED	South Central, Interop/Tactical, MED 14	458.175	453.175	167.9
CMED	North Central, Medical Control, MED 1	468.000	463.000	118.8/131.8
CMED	North Central, Medical Control, MED 2	468.025	463.025	118.8/131.8
CMED	North Central, Medical Control, MED 3	468.050	463.050	118.8/131.8
CMED	North Central, Medical Control, MED 4	468.075	463.075	118.8/131.8
CMED	North Central, Medical Control, MED 5	468.100	463.100	118.8/131.8
CMED	North Central, Medical Control, MED 6	468.125	463.125	118.8/131.8
CMED	North Central, Medical Control, MED 7	468.150	463.150	118.8/131.8
CMED	North Central, Medical Control, MED 8	468.175	463.175	118.8/131.8
CMED	North Central, Dispatch/Coordination, MED 9	467/950	462.950	118.8/131.8
CMED	North Central, Dispatch/Coordination, MED 10	467.975	462.975	118.8
CMED	North Central, Tactical, MED 11	458.025	453.025	118.8
CMED	North Central, Tactical, MED 12	458.075	453.075	118.8
CMED	North Central, Tactical, MED 13	458.125	453.125	118.8
CMED	North Central, Tactical, MED 14	458.175	453.175	118.8
CMED	North West, Medical Control, MED 1	468.000	463.000	192.8
CMED	North West, Medical Control, MED 2	468.025	463.025	192.8
CMED	North West, Medical Control, MED 3	468.050	463.050	192.8
CMED	North West, Medical Control, MED 4	468.075	463.075	192.8

Agency System	Channel Name	Mobile TX	Mobile RX	Tone
CMED	North West, Medical Control, MED 5	468.100	463.100	192.8
CMED	North West, Medical Control, MED 6	468.125	463.125	192.8
CMED	North West, Medical Control, MED 7	468.150	463.150	192.8
CMED	North West, Medical Control, MED 8	468.175	463.175	192.8
CMED	North West, Dispatch/Coordination, MED 9	467/950	462.950	192.8
CMED	North West, Dispatch/Coordination, MED 10	467.975	462.975	192.8
CMED	Eastern, Medical Control, MED 1	468.000	463.000	131.8
CMED	Eastern, Medical Control, MED 2	468.025	463.025	131.8
CMED	Eastern, Medical Control, MED 3	468.050	463.050	131.8
CMED	Eastern, Medical Control, MED 4	468.075	463.075	131.8
CMED	Eastern, Medical Control, MED 5	468.100	463.100	131.8
CMED	Eastern, Medical Control, MED 6	468.125	463.125	131.8
CMED	Eastern, Medical Control, MED 7	468.150	463.150	131.8
CMED	Eastern, Medical Control, MED 8	468.175	463.175	131.8
CMED	Eastern, Dispatch/Coordination, MED 9	467/950	462.950	131.8
CMED	Eastern, Dispatch/Coordination, MED 10	467.975	462.975	131.8
DPH	Office of Emergency Medical Services – Admin	153.815	153.815	203.5
STOCS	STOCS-1	855.98750	855.98750	156.7
STOCS	STOCS-2	855.71250	855.71250	156.7
STOCS	STOCS-3	858.46250	858.46250	156.7
STOCS	STOCS-4	860.23750	860.23750	156.7
STOCS	STOCS-5	856.26250	856.26250	156.7
STOCS	STOCS-1	458.46250	458.46250	156.7
STOCS	STOCS-2 & 4	458.71250	458.71250	156.7
STOCS	STOCS-3 & 5	458.86250	458.86250	156.7
STOCS	STOCS-1	154.45250	154.45250	156.7
STOCS	STOCS-2 & 4	158.73750	158.73750	156.7
STOCS	STOCS-3 & 5	159.47250	159.47250	156.7
DEMHS	EM (Statewide)	45.52000	45.52000	114.8
DEMHS	EM (Statewide)	45.60000	45.60000	114.8
DEMHS	Region 1	153.75500	153.75500	162.2
DEMHS	Region 2	153.800	153.800	162.2
DEMHS	Region 3	153.935	153.935	162.2
DEMHS	Region 4	153.965	153.965	162.2
DEMHS	Region 5	153.74000	153.74000	162.2
DOT	Supervisors	47.08000	47.08000	146.2
DOT	New Milford	47.10000	47.10000	146.2
DOT	New Haven	47.12000	47.12000	146.2
DOT	Norwich	47.30000	47.30000	146.2
DOT	Miscellaneous Use	47.32000	47.32000	146.2
DOT	Rocky Hill	47.38000	47.38000	146.2
DOT	Bases	151.02500	151.02500	146.2
DOT	Bases	151.11500	151.11500	146.2
DOT	Mobile Repeater	453.91250	453.91250	146.2

Appendix G –National Interoperability Field Operations Guide (NIFOG)

The National Interoperability Field Operations Guide (NIFOG) contains LMR frequencies that are often used in disasters or other incidents where radio interoperability is required. Emergency responders are encouraged to program as many of these interoperability channels as possible into their radios. Even if geographic restrictions for some channels preclude its use in certain areas, emergency responders may be granted the opportunity to provide support from a remote location where restrictions do not apply. The most current edition of the NIFOG can be found at:

http://www.npstc.org/documents/NIFOG_Final.pdf

Appendix H – Shared Communications Resources by Agency

The following table lists shared communications resources and networks in the State of Connecticut and state agencies that currently support the systems.

Agency	Shared System Information	Coverage Area	Operating Agencies
DEMHS	DEMHS Area VHF high-band radio.	Statewide	DEMHS
DPS	CSP statewide trunked 800 MHz radio system. Supports the statewide I-CALL and I-TAC channels.	Statewide	CSP, DEMHS, all CT law enforcement agencies
DEMHS	State Tactical On-Scene Channel System (STOCS) • 3 - VHF frequencies • 3 - UHF frequencies • 5 - 800 MHz frequencies combined into 5 interoperable channel groups.	Statewide	DEMHS, state and local emergency responders
CMED	Ten 450 MHz UHF frequencies for EMS operations.	Statewide	CMEDs, all EMS agencies and hospitals in CT
CMED	MEDNET - 155.340 Provides communications between the 13 CMED centers in CT.		CMEDs
DPS	Connecticut State - Police Emergency Radio Network (CS-PERN). Conventional 800 MHz repeated system.	Statewide	All CT law enforcement agencies
CT Fire Chief's Association	Connecticut State Fire Chief's System. Conventional 46.16 MHz statewide channel.	Statewide	CT regional fire communications centers
CT Fire Chief's Association	Connecticut State County Fire Systems. Conventional 33 MHz channels.	Statewide	CT regional fire communications centers, local fire services