TECHNICAL AND OPERATIONAL STANDARDS FOR ENHANCED 9-1-1

Section 1. Mission Statement.

The Vermont Enhanced 9-1-1 Board was created in 1994 by Act 197 (30 V.S.A.). The Board is responsible for the design and implementation of a reliable and efficient statewide enhanced 9-1-1 emergency calling service, which automatically routes the call to the appropriate answering location and which subsequently provides a display of a caller's telephone number and location. The 1994 Legislature determined that enhanced 9-1-1 would further the safety, health, and welfare of the state's citizens.

Section 2. Scope and Purpose.

This document contains technical and operational standards prepared by the Enhanced 9-1-1 Board as required under 30 V.S.A.. These standards are firmly based on national enhanced 9-1-1 standards and are designed to assist in the development and operation of a reliable, uniform statewide enhanced 9-1-1 system. The Board may modify and update these standards as needed to take advantage of changes in technology during planning and later as identified during the operation of the system. Any changes and modifications of standards shall supersede those previously promulgated.

INTRODUCTION

Section 3. The 9-1-1 Concept.

The concept of a nationwide emergency telephone number was first adopted in Great Britain in 1937. Since then, other countries in Europe and elsewhere have employed a three-digit uniform emergency number. In the United States, President Johnson's Commission on Law Enforcement and Administration of Criminal Justice recommended a nationally uniform three-digit number in 1967 and a year later, AT&T announced it had reserved the numbers 9-1-1 for emergency use nationwide.

In 1992, the Vermont Department of Public Service (DPS), in response to concerns raised by consumers, emergency service providers, and Legislators, initiated a study of 9-1-1. In 1993, the Vermont Legislature passed Act 83, which provided funding and direction to the DPS for further analysis and study. In 1994, S.311, a law enabling implementation of statewide enhanced 9-1-1, was passed by the Vermont Legislature and signed by the Governor (Act 197, or 30 V.S.A.).

The Legislature determined that a single, statewide emergency number providing access to Public Safety Answering Points (PSAPs), and capable of mobilizing a broad range of lifesaving services, would result in faster, more coordinated and efficient emergency response.

Section 4. Implementing the Concept.

Key to implementing effective enhanced 9-1-1 service is ensuring direct access from the caller to the authority having responsibility for mobilizing the broadest possible range of emergency interventions.

In Vermont, the responsibility and authority for delivering emergency medical services, fire protection, and law enforcement generally rests with municipalities. This is true even when supplemental services are performed by others, such as private ambulance companies or independent public authorities and non-profit organizations with limited internal fire protection and security forces.

Section 5. The Importance of a Statewide Standard.

Vermont's citizens and visitors deserve the highest uniform standard of public safety available. The existence of a statewide standard takes advantage of the economies of scale inherent in consolidating and coordinating government response to emergencies and helps maximize the use of public resources while setting the stage for better service. This

standard embodies the best nationally-accepted philosophies, concepts and operating practices and is the result of the experience and latest thinking of many who have traveled this route before us.

Section 6. Definitions.

Abandoned Call , a call placed to 9-1-1 in which the caller disconnects before the call can be answered by the PSAP call taker.

ADA , Americans with Disabilities Act of 1990

Agency , the municipality, county, state government, or private entity that operates a Public Service Answering Point.

Alternate Routing , the capability of automatically rerouting 9-1-1 calls to a designated alternate location(s) (called an alternate PSAP) if all 9-1-1 trunks from a central office or to a PSAP are busy or out of service. May also be activated upon request, or automatically if detectable, when 9-1-1 equipment fails or the PSAP itself is disabled.

American Sign Language (ASL) , a visual language based on hand shape, position, movement, and orientation of the hands in relation to each other and the body.

Answering Position , an appropriately equipped location within a PSAP that is used to receive incoming 9-1-1 calls.

Approved by the Board , a simple majority vote by members of the Statewide Enhanced 9-1-1 Board taken at a public meeting of the Board at which a quorum of the Board is present.

ASCII , an acronym for American Standard Code for Information Inter-exchange which employs an eight bit code for the purpose of transmitting data.

Audible Signal , a sound which indicates an incoming 9-1-1 call.

Auto-Dial , a PSAP function which allows an attendant to dial an outgoing programmable telephone number with a single button.

Automatic Call Distributor (ACD) , equipment that distributes incoming calls to available PSAP attendants in the order the calls are received, or holds calls until an attendant becomes available.

Automatic Location Identification or "ALI" , the system capability to identify automatically the geographical location of the telephone being used by the caller and to provide a display of that location information at any public safety answering point.

ALI data base , a derivative, verified set of records which contain, at a minimum, a telephone number and location identification for each unique building or publicly-used facility within a defined geographic area in Vermont.

Automatic Number Identification or "ANI" , the system capability to identify automatically the calling telephone number and to provide a display of that number at any public safety answering point.

Average Busiest Hour , the one hour period during the week statistically shown over time-to be the hour in which the, most emergency telephone calls are received.

Barge-In Capability , the capability for multiple PSAP operators to establish simultaneous access to any emergency line or trunk in prior use for the purpose of assisting fellow personnel with difficult calls.

Baudot, a seven bit code , only five of which are information bits. Baudot is used by text telephones to communicate with each other.

Board , the Vermont Enhanced 9-1-1 Board.

CAD Interface , the means of automatically introducing the ALI data into a computer aided dispatch (CAD) system, rather than by manually entering the information.

Call Relay , disposition of a 9-1-1 call by the notation of pertinent information by the PSAP attendant who forwards the information to the appropriate agency.

Call Referral , disposition of a 9-1-1 call by advice to the caller of the appropriate numbers to call other than 9-1-1.

Call Sequencer , equipment that distributes incoming calls to available PSAP positions in sequence.

Call Transfer , the extending of a 9-1-1 call by a PSAP attendant to connect the caller with the appropriate agency.

Central Office , a telephone company facility that houses the switching and trunking equipment serving telephones in a defined area.

Central Office Modification , hardware and/or software changes to a telephone company central office to specifically accommodate Enhanced 9-1-1 service.

Central Office Upgrade , scheduled hardware and/or software changes to a telephone company central office to improve the overall telephone service from that site.

Computer Aided Dispatch (CAD) , a computer-based system intended to increase the efficiency and accuracy of public safety call handling and dispatching.

Continuous Logging Recorder , a device which records date, time, voice and TTY communications, and other transactions involved in the processing of calls to the PSAP.

Dedicated Trunk , a telephone circuit used for one purpose only; i.e. transmission of 9-1-1 calls.

Dedicated Network , a point to point or multi point network where resources (switching or transmission facility) are reserved for a particular customer or type of traffic.

Default Routing , the capability to route a 9-1-1 call to a designated (default) answering point (called a default PSAP) when the incoming 9-1-1 call cannot be selectively routed due to an ANI failure, garbled digits, or other cause.

Department of Public Safety , The Vermont governmental entity responsible for all matters of public safety, including emergency management.

Department of Public Service (DPS) , The Vermont governmental entity responsible for representing the interests of the public in regulated utility matters.

Director , the Executive Director of the Vermont Enhanced 9-1-1 Board.

Duplicate Street Name , a street name in which the name and any associated designator is exactly the same (example: Pine St. and Pine St.; NOT Pine St. and Pine RD.)

Diverse Routing , the practice of routing calls through different circuit paths in order to prevent total loss of the 9-1-1 system in the event an individual circuit is disabled.

DMS, Data Management System , a system of manual procedures and computer programs used to create, store and update the data required for selective routing and ALI information in support of enhanced 9-1-1.

Emergency Service Providers , police (law enforcement), fire and ambulance services.

Emergency Service Zone (ESZ) , a defined geographical territory consisting of a specific combination of law enforcement, fire, and emergency medical service coverage areas.

EMS , Emergency Medical Services. Municipal based, private under municipal contract, private, or volunteer rescue squads or hospital based Advanced Life Support agency/providers whose sole purpose is to provide EMS to a municipality or group of municipalities.

BLS, Basic Life Support . An EMS agency providing a level of basic life support service to a community.

ALS, Advanced Life Support . Advanced EMS provided by Paramedics or EMTs with advanced training and who may not necessarily be part of a community's BLS service.

Enhanced 9-1-1 System and enhanced 9-1-1 services , a system consisting of selective routing with the capability of delivering automatic number and location identification to a public safety answering point, network circuits, data bases and answering equipment, the combination of which enables a user to request emergency services by dialing the digits 9-1-1.

Enhanced 9-1-1 Equipment , equipment located at the PSAP or controller type equipment located at the Service Provider's location that provides or supports enhanced 9-1-1 capability.

Fixed Transfer , the capability of a PSAP attendant to transfer a 9-1-1 call using a single button.

Foreign Exchange (FX) , a service connecting a telephone to a remote exchange providing the equivalent of local service from the distant exchange.

Host-Remote , the relationship between conventional central office switching equipment and a Remote Switching Unit (RSU) in another facility which usually has limited capability and may not be able to function independently if connecting links from the host office are interrupted.

Identical Street Name , (see Duplicate Street Name)

Instant Playback Recorder, a device that allows for the instant playback of the audio portion of the last 9-1-1 call.

Integrated Services Digital Network (ISDN) Basic Service , provides an integrated digital access to voice, switched data and packet switched data transport services using ISDN network technology. ISDN Basic Service provides two bearer (B) channels which are capable of transmitting voice, circuit switched data and packet switched data at speeds of up to 64 kilobits per second (Kbps) and one signaling (D) channel used for call control and transmission of packet switched data at rates up to 9.6 Kbps.

Local Enhanced 9-1-1 System , an independent local system that is not funded by the State Enhanced 9-1-1 Fund, and which consists of selective routing with the capability of delivering automatic number and location identification to a public safety answering point, network circuits, data bases and answering equipment, the combination of which enables a user to request emergency services by dialing the digits 9-1-1.

Local Exchange Company (LEC) , includes all persons, firms, corporations, associations and joint stock associations or companies, as defined in 30 VSA § 201, furnishing or rendering local telephone exchange service.

May , indicates the possibility of taking action. (See also shall, should)

MCO , Maintenance Control Office.

Municipality , any city, town, incorporated village, other governmental unit, unorganized town, gore, grant or other political subdivision of the State of Vermont.

MSAG , Master Street Address Guide

Network Provider, any communications company providing a network and access to it.

PBX , Private Branch Exchange, a private telephone system allowing communications within a business and between a business and the outside world.

Private Telephone System , privately owned and operated telephone systems that include PBX, Centrex, and key systems.

Public Service Board (PSB) , the quasi-judicial governmental entity that regulates utilities.

Public Safety Answering Point (PSAP) , a facility assigned the responsibility of receiving 9-1-1 calls and, as appropriate, directly dispatching emergency response services or transferring or relaying 9-1-1 calls to other public or private safety agencies.

A Primary PSAP is equipped with automatic number identification and automatic location identification displays, and is the first point of reception of a 9-1-1 call. It may serve a municipality or a region, and other cities and towns as may be determined by the Board.

A Primary PSAP may be located in a centralized, consolidated radio dispatch facility that serves all public safety agencies in a region or municipality. A Primary PSAP may also be engaged in, pursuant to inter-municipal agreements in force, the dispatching, or control of public safety resources serving several jurisdictions. A Primary PSAP shall be a facility that serves at least two of the emergency services and that operates on a 24 hour, seven days a week, 365 days a year basis.

A Secondary PSAP is equipped with automatic number identification, automatic location identification displays and all other features common to Primary PSAPs. It receives 9-1-1 calls only when they are transferred from the Primary PSAP or on an alternate routing basis when calls cannot be completed to the Primary PSAP.

A Limited Secondary Public Safety Answering Point, a facility equipped, at a minimum, with ALI/ANI display/printout capability. It receives 9-1-1 calls only when they are transferred from the Primary PSAP. Data sent to a Limited Secondary PSAP cannot be re-routed to another location and may not necessarily be transmitted simultaneously with the voice call.

A Ringing Public Safety Answering Point, a facility equipped for the receipt of voice communications only, which may not necessarily operate twenty four hours each day. It receives 9-1-1 calls that are transferred from the Primary PSAP.

Public Switched Network , a multi point network which provides the capability to establish connections to essentially all customers regardless of location.

Redundancy , having one or more "backup" systems available in case of failure of the main system.

Selective Routing , a telecommunications switching system that enables all 9-1-1 calls originating from within a defined geographical region to be answered at a pre-designated PSAP.

Service Provider , any entity that provides a portion of the state-wide enhanced 9-1-1 system to the system provider.

Shall , indicates a mandatory obligation to act. (See may, should)

Should , indicates a recommendation or that which is advised but not required. (See may, shall)

Silent Call , a 9-1-1 call received at a PSAP and no audible voice or tone is received.

Supervisory Call Monitoring , the capability for supervisory personnel to listen to calls in progress for purposes of quality assurance and training.

System Provider , any entity that provides the entire state-wide enhanced 9-1-1 system (general contractor) and is the single point of contact on an ongoing basis for any matters relating to the system.

Tandem , a switching system in the enhanced 9-1-1 telephone network that establishes 9-1-1 call routing.

TTY , a telecommunications device consisting of modems that permit typed telephone conversations with or between deaf, hard of hearing or speech impaired people.

TTY Call Diverter , a device that monitors and detects Baudot tones and ASCII and then automatically routes the TTY call to a specified position.

TTY Detector , a device that monitors a trunk for Baudot tones and ASCII and upon recognition, indicates the receipt of that type of call with a response sequence.

Text Telephone (TT) , a machine that employs graphic communication in the transmission of coded signals through a wire or radio communication system. It is interchangeable with the term "TTY" or "telecommunications device for the deaf."

Trunk , incoming 9-1-1 circuit.

Trunk Seizure , the point at which a call is assigned to a trunk and acknowledgment is provided by the 9-1-1 call processing equipment.

TT , Text Telephone

Uninterruptible Power Supply (UPS) , a system designed to provide power indefinitely, without delay or transients, during a period when the normal power supply is incapable of performing acceptably.

Section 7. 9-1-1 System Design - Technical Standards.

(1) Network - Central Office

(a) Modification of Central Offices

The telephone companies shall identify all costs associated with modifying, upgrading and programming central offices that have been allocated to the 9-1-1 funding structure. The telephone companies shall explain the method and reason for any and all such allocations. Enhanced 9-1-1 modifications in central offices should be coordinated with general central office upgrades where practical and where such coordination does not significantly delay implementation.

(b) Central Office Upgrade

The telephone companies shall also provide to the Board, on an annual basis, the current schedules for upgrading central offices.

In scheduling central office equipment upgrades and dial with dial replacements, telephone companies shall:

1. consider the goal of public safety as a criterion of utmost importance,
2. take enhanced 9-1-1 growth in Vermont into consideration, and
3. make every effort to reduce the total costs that are allocated to telephone companies' ratepayers either through the enhanced 9-1-1 program funding structure or through the telephone companies' general recovery of their costs for central office upgrades.

(c) Host-Remote Central Offices

The current Remote-Host umbilical network in Vermont may introduce a single point of failure in the proposed enhanced 9-1-1 network. Loss of umbilical connectivity to a host switch will isolate subscribers in the remote exchange from the enhanced 9-1-1 network and normal calling would be restricted to the exchange boundaries. Additionally, a PSAP served by a Remote Switch that experiences loss of communications its HOST switch will encounter isolation from the enhanced 9-1-1 network.

The telephone companies shall work with the Board and system provider to identify vulnerabilities, determine restorative alternatives and provide to the Board a disaster recovery contingency plan which includes strategies and

procedures designed to mitigate the isolation of remote switch exchanges. In host-remote telephone central office arrangements, the telephone company shall, where feasible, provide emergency re-route solutions for any potential central office failure utilizing land line and wireless technologies.

(d) 9-1-1 Digit Recognition

Provisions in the network shall ensure that only calls in which all three digits (9-1-1) are dialed, shall enter the 9-1-1 system. The network shall also prevent larger dialing sequences which contain the digits 9-1-1, from entering the 9-1-1 system.

(e) Foreign Exchange And WATS Service

The telephone company shall allow for access to 9-1-1 from intrastate foreign exchanges and contiguous inter-state foreign exchanges in states providing enhanced 9-1-1. The telephone company shall also allow for access to 9-1-1 from intrastate out WATS telephone service providers. Calls placed to 9-1-1 should be routed to the PSAP serving the area in which the facility (i.e., business) is located.

(f) Forced Disconnect

The 9-1-1 system shall be engineered to allow for forced disconnect of 9-1-1 calls placed to all levels of PSAPs. This will prevent blockage of 9-1-1 lines.

(g) Coin Free Dialing

Each telephone company and Customer Owned Coin Operated Telephone (COCOT) system provider in the state shall convert each public or private coin or coinless telephone to dial tone first capability to allow 9-1-1 calls to be made without first inserting a coin or paying any other charge. Each provider of public or private coin or coinless telephones shall provide access to the enhanced 9-1-1 PSAP serving the geographic location of the coin phone, and prominently display instructions on how to use the service. Conversion of said telephone shall be made prior to cut over in the community where the instrument is located.

(2) Network - Trunking

End Office Trunks

(a) Grade of Service

Trunk groups dedicated to enhanced 9-1-1 traffic are required from all Local Exchange and Competitive Access Providers' host or stand alone switches to designated enhanced 9-1-1 tandem switch(es). Trunk quantities shall be based on a P.01 grade of service with a minimum of two trunks from each switch. (P.01 grade of service stipulates not more than one 9-1-1 call in 100 calls will experience a busy signal during the Average Busy Season and Time Consistent Busy Hour). Initial end office trunking quantities shall reflect 1 Call Hundred Seconds (CHS) per 1000 main stations served as specified in documentation entitled Network Trunk Forecasting and Serving Guidelines for Enhanced 9-1-1 Service issued by ATT. Translations in each end office shall be programmed that all enhanced 9-1-1 traffic be routed to a designated primary enhanced 9-1-1 tandem switch. In the event 9-1-1 calls could not be completed to this switch, the end office would seamlessly advance 9-1-1 traffic to a designated secondary enhanced 9-1-1 tandem switch or other trunk group or number for call completion.

The system provider shall submit network performance reports to the Board monthly. These reports shall include the percentage of calls blocked for each four week period, during the average busiest hour for each tandem area, and shall specify the percentage of calls blocked from the end office to the tandem and the tandem to the PSAP.

(b) Minimum Trunking Requirements--PSAP

Traditional PSAP equipment technology consists of an ANI/ALI retrieval system and analog attendant answering position key and trunk equipment. ANI information is routed to the appropriate PSAP over dedicated analog multifrequency trunk groups from the enhanced 9-1-1 tandem switch via the PSAP's serving central office.

The system provider in cooperation with the PSAPs and Secondary PSAPs shall conduct a telephone traffic study of all existing basic 9-1-1 and seven-digit emergency numbers to assist in determining the proper amount of enhanced 9-1-1 trunks. The system provider shall also be responsible for designing the network of the 9-1-1 systems to ensure that the systems are adequately trunked in order to achieve a minimum P.01 grade of service on an incoming and transfer basis.

There shall be a minimum of 1.5 dedicated trunks provisioned for each attendant position at the PSAP location.

Each PSAP shall also have at least two outdial non-published telephone lines to allow for administrative purposes associated with the 9-1-1 system.

(c) ISDN Line Requirements--PSAP

Advances in digital technology, coupled with the deployment of ISDN central office elements have allowed the evolution of traditional analog PSAP customer premise equipment to an ISDN platform. While ubiquitous ISDN deployment has yet to be achieved, certain Central Office switches possess the capability of furnishing ISDN connectivity to a PSAP. Call set-up and completion time utilizing ISDN technology is substantially less than an analog system.

There shall be a minimum of one Basic Rate Interface (BRI) line provided for each answering position at a PSAP when served by ISDN technology.

(d) Call and Data Routing Diversification

The system provider shall ensure that the routing of 9-1-1 calls through the network and ALI information through the data link network shall be diversified as much as possible.

(e) Default and Alternate Routing

The system provider in cooperation with the PSAPs shall also design the 9-1-1 network to allow for default and alternate routing capabilities.

(f) Network Requirements for Call Transfer

The transfer of 9-1-1 calls from a Primary PSAP to any Secondary PSAP or Ringing PSAP shall be accomplished through a dedicated or switched network.

The system provider shall provide data links to allow for the transfer of ANI and ALI data from the Primary PSAP to Secondary and Limited Secondary PSAPs. All data communication lines to and from a Primary PSAP shall operate at the highest speed possible to ensure timely delivery of this critical information.

The system provider shall also design the network and install customer premises equipment that will allow the PSAP to transfer a 9-1-1 Call and disengage from the conversation without disconnecting the 9-1-1 Caller.

(g)
7- or 10-Digit numbers

Each emergency service provider shall maintain at least one published 7-digit or 10-digit emergency number.

(3) Network - System Repair/Diagnostics
(a) The system provider shall establish and maintain emergency maintenance coverage on a 24 hours, 7 days a week, 365 days a year basis. Access to this service shall be provided via a uniform

statewide toll free number with sufficient lines and operator staffing to provide adequate service response.

To provide emergency maintenance coverage outside of normal business hours, the service provider may forward the statewide system toll free access number to a centralized location staffed with personnel trained to provide the same level of maintenance detailed in these Standards.

(b) The concept is to provide a single point of contact for all participating PSAPs in the state through a dedicated service team. This team will be responsible for the management of service and maintenance requests for the entire 9-1-1 system.
(c) The system provider shall develop a procedure for PSAPs to report enhanced 9-1-1 equipment failures. All reported 9-1-1 system troubles or failures shall be received and prioritized to provide the highest level of repair or restoration available. Upon notification to the system provider of any equipment failure, the service provider shall initiate repair service within four hours. In emergencies, where the equipment failure interferes with the receipt and processing of 9-1-1 calls, repair service shall commence within two hours. If adequate equipment spares exist at the PSAP that when used will remedy the problem, these time periods may be extended but shall not exceed 24 hours. (Paper and ribbon changes of the printer shall be the responsibility of the PSAP.)
(d) The system provider shall maintain an escalation list available to all PSAPs with names of the current management assigned for the purpose of resolving or escalating any outstanding maintenance issues.
(e) The system provider shall have the authority necessary to direct, prioritize and escalate for the purpose of resolving any reported 9-1-1 system failures or troubles. The system provider shall also develop automatic escalation procedures for use by its personnel to ensure service response times that meet or exceed those defined in these Standards.
(f) In addition, the system provider shall provide the following capabilities:
1. Specially trained staff to pro-actively identify problem areas impacting the quality of service and to serve as the technical liaison between the system provider, the PSAPs, the telephone companies and the Enhanced 9-1-1 Board.
2. Specially trained staff to write detailed 9-1-1 system installation, modification and circuit orders and provide assistance in the resolution of all 9-1-1 billing issues.
3. Specially trained staff to build trouble reports and determine correct routing and handling.
4. Specially trained staff to provide immediate network testing and initiate dispatch of field repair technicians as needed.
(g) The system provider shall maintain an up to date, detailed profile of every PSAP in the state. This profile shall include as a minimum:
1. Exact location and level of PSAP
2. Number and type of positions
3. Number and type of equipment
4. Number and type of dedicated/switched voice/data circuits
5. Maintenance control office
6. Tandem Central Office and PSAP end office
7. PSAP coordinator and alternate contact
(h) The system provider shall be responsible for coordinating the Emergency Service Listing on the inside front page(s) of all telephone directories, and both the 7-digit and 9-1-1 emergency number listings under individual municipalities.
(i) The system provider shall produce quarterly reports for the Board to document the efficacy and timeliness of system maintenance, monitoring activities, and repair call responses provided to the system.
(j) The system provider shall ensure that all personnel including repair service assistants who have the responsibility for the resolution of any 9-1-1 system trouble/problem shall have adequate knowledge and training to meet the 9-1-1 system service objectives.
(k) System provider supervisors will ensure that all company employees whose normal duties may include contact with 9-1-1 facilities are familiar with procedures designed to safeguard those facilities.
(4) Ensuring System Reliability
(a) Network Protection Plan

To prevent the widespread loss of enhanced 9-1-1 service, the system provider shall work toward eliminating any single point of failure that could compromise the reliability of the network. The system provider shall endeavor to maintain enhanced 9-1-1 network integrity, minimize the probability of system degradation and failure, and minimize the negative effects of degradation or failure should it occur. The system provider shall be attentive to costs in fulfilling these goals and shall provide cost data to the Board where there are alternative means for accomplishing these goals.

Network design concerns include, but are not limited to:

1. Single site enhanced 9-1-1 Database Management System (DMS) center
2. Enhanced 9-1-1 tandem switch facility vulnerability
3. Dedicated network facilities
4. Switched network facilities
5. Host--Remote Umbilical Network
6. PSAP--Serving Central Office Facilities

One year from Board approval of the Standards, the system provider shall submit a plan to the Board to eliminate the potential for single point of failure design within the entire enhanced 9-1-1 network. This plan is not intended to provide a duplicate network for each PSAP but rather to address eliminating any single point of failure which could result in a widespread loss of enhanced 9-1-1 service. In its plan, the system provider shall, to the greatest extent possible, review and reference the most technologically advanced practices of all the other network providers which have addressed or are addressing similar network protection concerns which improve the safety of the customers they serve.

The Board will submit the plan to the Public Service Department and Public Service Board (PSB) for review. Subsequent to the determination that the expenditures associated with implementing the plan are prudently incurred expenses, the system provider shall immediately begin to implement and complete the entire plan within two years.

The goal of the plan is to provide the greatest reliability for delivery of voice, data and TTY to all PSAPs throughout the State of Vermont.

(b) Contingency Re-route Plans

1. System Provider

The system provider shall develop or review and present to the Board by January 1st of each year, a contingency plan or changes to the plan which shall ensure network integrity to minimize the probability of system failure and provide continued emergency telecommunications service in the event of 9-1-1 service interruption. The plan shall include alternatives for the 9-1-1 service in areas such as central office, database center and tandem failures, overall redundancy of the 9-1-1 system, re-route plans and disaster recovery plans.

2. Public Safety Answering Points

The PSAP shall devise a contingency plan to provide continued emergency service when the PSAP is out of service. The plan shall be submitted to the Board for approval and shall designate a potential alternate PSAP location. The plan shall include the PSAP's role as an alternate answering point, if applicable, and ensure that such answering points are accessible to TTY users.

A typical PSAP Disaster Recovery Contingency Plan (DRCP) shall consist of various sections which will be used by the local disaster recovery coordinators during local plan implementation, on-going upkeep, and activation. Components of the DRCP shall include but are not limited to the following:

a. Risk Assessment
b. Equipment/Facility Inventories
c. Hardware/Software Configurations
d. Off-site Storage Backup Procedures
e. Material Acquisition Plans
f. Recovery Teams
g. Notification Procedures
h. Evacuation Procedures

i. Equipment Restoration Priority
j. Recovery Procedures
k. Testing the Plan

Municipalities shall identify for its use, one of the board-approved default answering points which will receive 9-1-1 calls that are affected by ANI or Selective Routing failures.

3. Telephone Companies

Regulated Telecommunications Companies shall provide a list of contacts to the system provider and Board including employee coverage listings, supervisor listings and appropriate emergency personnel lists and contact numbers.

Regulated Telecommunications Companies shall report any network failures to the system provider and Board within two hours of each occurrence or sooner.

Regulated Telecommunications Companies shall provide ANI, Customer Name, ALI, Class of Service, (including Business, Coin, (identifying call-back capability), Residence, Foreign Exchange, Private Branch Exchange, Cellular, TTY), and any other information required by the Enhanced 9-1-1 Board, including updates at a frequency agreed upon in writing.

Regulated Telecommunications Companies shall comply with the requirements of 30 V.S.A. and these standards.

Section 8. 9-1-1 Data Base Requirements.
(1) Database
(a) Database Development

All municipalities that elect to participate in the enhanced 9-1-1 system shall work with the system provider to verify street names, number ranges, and emergency service zones (ESZ). A designated Municipal Contact and the system provider shall ensure that changes, deletions and additions to the Master Street Address Guide (MSAG) database should be made on an as occurred basis. Each city or town must review the MSAG yearly to ensure accuracy of the data and the emergency service zones.

Participating municipalities are encouraged to begin the development of the MSAG 12 to 18 months prior to the cut over of the 9-1-1 system. Municipalities and the system provider shall attempt to achieve at least a 98% accuracy rate with the 9-1-1 database.

(b) Selective Routing and ALI Database Update Requirements and Reports

After establishment of service, it is the municipalities' responsibility to continue to verify the accuracy of the routing information contained in the MSAG and to advise the system provider of any changes in the street names, establishment of new streets, changes in address numbers used on existing streets, closing and abandonment of streets, changes in police, fire, EMS or other appropriate agencies, jurisdiction over any address, annexations and other changes in municipal and county boundaries, incorporation of new communities or any other matter that will affect the routing of enhanced 9-1-1 calls to the proper PSAP.

The system provider shall make every reasonable effort to update Selective Routing and ALI data on a daily basis so that the number of records "not found" shall not exceed one percent of the total number of database lookups per quarter. Any records not updated within the 24 hour period shall be updated within three business days of receipt with the exception of records containing "special" fields which may require verification.

When updates to the ALI database are made, updates to the selective router shall be made at the same time.

The system provider shall submit reports of database performance to the Board on a quarterly basis. These reports shall include the total records updated for the Selective Routing and ALI databases during the quarter and provide a breakdown by the number of days required to complete each update. These reports shall also include detailed information on records "not found."

(c) Data Transfer

Data transfer between the system provider and all other data providers shall follow the NENA 2 standards to the extent agreed upon in writing by all parties.

(d) Reverse ALI Look-up

Reverse ALI look-up shall be unavailable except for the purpose of database testing, system maintenance and quality control under the direction of the Director in accordance with 30 V.S.A. § 7059 and these rules.

(e) Reporting of Database Errors

The system provider shall develop a format for PSAPs to report inaccuracies of ALI information and the misrouting of 9-1-1 calls. The format shall allow for a description of the problem, appropriate corrective action or information and proper verification by a municipal liaison.

Each call taker shall fill out a trouble report when a call is found to have erroneous database information. The information shall be forwarded to the system provider in a format established by the system provider.

(f) Confidentiality of Information

All provisions of enhanced 9-1-1 legislation in Chapter 87 of 30 V.S.A. are incorporated by reference.

All information aggregated for the purpose of building the ALI database is confidential and is exempt from disclosure under subchapter 3, chapter 5 of Title 1. These data shall not be used or released for any reason inconsistent with the intent of enhanced 9-1-1 law.

ANI and ALI information received at a PSAP as the result of a 9-1-1 call may be used in an incident report, and is subject to the exceptions and restrictions of Title 1, Chapter 5, Subchapter 3.

Once ANI and ALI information is released from the database as a result of a 9-1-1 call, it becomes part of the historical record of an incident and is no longer subject to the exclusive purview of the Enhanced 9-1-1 Board, rather it is subject to the exceptions and restrictions of existing regulations governing emergency service provider records (Title 1, Chapter 5, Subchapter 3).

The Board is not responsible nor liable for the use of data, collected by municipalities in the process of building the ALI database, by said municipalities.

(g) Computer Aided Dispatch (CAD) Interface

ANI and ALI information received at a PSAP as the result of a 9-1-1 call may be imported into a CAD system via CAD interface in accordance with record-keeping procedures already in place.

At that point the information becomes part of the historical record of an incident and is no longer subject to the exclusive purview of the Enhanced 9-1-1 Board. Rather it is subject to the exceptions and restrictions of existing regulations governing emergency service provider records (Title 1, Chapter 5, Subchapter 3).

The Enhanced 9-1-1 Fund will provide a serial port or other appropriate means of transport at the PSAP equipment for interconnection to the CAD element while the call is processed. One-time and recurring costs associated with CAD interface are the responsibility of the public safety agency. CAD interface shall be specifically requested by the public safety agency, and the proposed interface product shall be subject to the review and approval of the Board before interconnection can occur.

(2) Automatic Location Identification (ALI)

The ALI shall be displayed immediately for all classes of service at the time the 9-1-1 call is presented to a position. The ALI shall include the following data:

(a) Customer Name
(b) Repeat of Automatic Number Identification
(c) Automatic Location Identification
(d) Class of Service to Include:

BUSINESS/COIN (identifying call-back capability)

RESIDENCE/FX/PBX/CELLULAR/TTY

NO RECORD FOUND

(e) Responding Public Safety Agencies
(f) Time and date
(g) Warning messages to verify location when class of service is FX, PBX or Cellular. If space limitations of the "comment" field make messages impossible, a different and distinct field (ex. flashing, color, audible) may be permissible.
(h) x,y coordinate
(i) PSAP id number/operator number

ALI information shall use conventional English or logical abbreviations where necessary and shall not use single letter or digit codes.

(3) Other Classes of Service
(a) Identification Codes for Persons with Disabilities

Notations on disabled persons who are permanent or long term residents at an address, and persons with permanent disabilities who may be temporarily living at a particular address may be retained on a locally maintained temporary advisory listing or local computer aided dispatch system (CAD) at the PSAP or other appropriate public safety facilities.

(b) PBX Telephone Systems

The Board and the system provider shall have a common goal to achieve and implement where feasible, a technological solution to allow for ANI and ALI data on 9-1-1 calls placed through a PBX telephone system.

(c) Cellular Service

Cellular carriers shall comply fully with the requirements of 30 V.S.A..

Section 9. Customer Premises Equipment.

The system provider, with the approval of the Board, shall select customer premises equipment (CPE) that integrates all technical and operational requirements as identified in the Standards.

(1) 9-1-1 Answering Positions and Equipment
(a) Enhanced 9-1-1 Answering Positions

Answering positions are equipment positions only and exist independent of staffing considerations. Staffing of call takers shall be at the discretion of the PSAP facility manager at whatever level is required to meet the Board's standards for call answering threshold, (see (b) of this section).

1. There shall be, at a minimum, two enhanced 9-1-1 equipped answering positions established at each Primary PSAP. Each answering position shall be similarly equipped with access to all incoming 9-1-1 lines, outgoing dedicated/switched lines, tie-lines, and dial out lines. If a PSAP also direct dispatches, each position shall have access to radio dispatch equipment.
2. When six or more answering positions are required at any Primary PSAP, additional answering positions shall be provided to monitor calls [supervisory positions] or to handle overflow.
3. PSAPs serving up to 25,000 population shall receive two answering positions; PSAPs serving 25,001 to 50,000 may receive up to three answering positions; PSAPs serving 50,001 to 100,000 may receive up to four answering positions; and PSAPs serving 100,001 or more population shall be evaluated individually. Actual answering position levels shall be based on busy hour call volume and/or a formula based upon service population, including seasonal and daily population fluctuations. These are general guidelines and may not necessarily dictate the number of actual positions approved by the Board.
4. It shall be assumed that:
a. There will be 2.5 9-1-1 calls per day, per 1,000 access lines. The busy-hour calculation will be expressed as 115% of the average-hour call traffic.
b. 90% of all 9-1-1 calls shall be answered within ten seconds and the average holding time (call duration) for each call shall be 90 seconds.
(b) Call Answer Threshold

Each PSAP shall have sufficient 9-1-1 equipped answering positions and staff to ensure that 90 percent of all 9-1-1 calls are answered in no more than ten seconds during normal peak operating periods.

Ninety percent of all transfers from Primary PSAPs to appropriate Secondary, Limited Secondary, and Ringing PSAPs shall be initiated within 15 seconds from receipt of call.

(c) Rapid Access to Public Safety Support Services

Each PSAP shall be capable of quickly routing calls via auto-dial or fixed transfer button to public safety support services, when requests for same is included in the municipal plan and has been approved by the Board. When calls are extended to public safety support services, the PSAP shall provide to the Board on an annual basis, or as requested, data related to call volume to each support service.

(2) 9-1-1 Equipment
(a) Barge-In Capability

Customer premises equipment for all call takers, dispatchers and supervisory personnel shall provide barge-in capability. This capability shall be under the control of other PSAP operators offering assistance and shall not require the original call taker to add on the other personnel.

(b) Supervisory Call Monitoring

For purposes of quality assurance and training, customer premises equipment for supervisors shall be capable of monitoring incoming emergency calls.

(c) Public Safety Answering Points
1. Primary Public Safety Answering Points

The Enhanced 9-1-1 Fund shall ensure that a Primary public safety answering point is equipped with or benefits from the following features at a minimum:

a. automatic number identification (ANI)
b. automatic location identification display (ALI)
c. call detail information
d. redundant methods of recording call detail information
e. selective routing
f. ability to transfer voice or TTY and data

g. selective transfer
h. uninterruptable power supply for critical 9-1-1 equipment
i. TTY communications capability
j. Emergency Generator

2. Secondary Public Safety Answering Points

A municipality or region may operate, at its own expense, a Secondary public safety answering point. Secondary public safety answering points shall be operated on a 24-hour basis, shall be an alternate for other PSAPs, and shall meet all standards for Primary PSAPs.

The Board shall ensure that all Secondary PSAPs meet the standards.

3. Limited Secondary Public Safety Answering Points

Limited PSAPs may be equipped with at least one dedicated/switched data link to receive "printout only" ANI/ALI information. Data sent to a Limited Secondary PSAP cannot be re-routed to another location and may not necessarily be transmitted simultaneously with the voice or TTY call.

All equipment at a Limited Secondary PSAP that is attached to the 9-1-1 network must be approved by the Board. The Board shall approve or disapprove the establishment of all Limited Secondary PSAPs.

There must be at least one telephone line to provide voice or TTY communications for the transferring or relaying of calls from the transferring PSAP to the Limited PSAP. Limited Secondary PSAP operators shall be responsible for provision and maintenance of voice telephone line(s).

4. Ringing Public Safety Answering Points

A Ringing PSAP is equipped for the receipt of voice communications only and may not necessarily operate 24 hours each day. It receives 9-1-1 calls from a Primary or Secondary PSAP.

(d) Interfacing with Pre-existing Telephone Equipment

All lines necessary for proper enhanced 9-1-1 call management shall terminate in a single telephone set at each position.

Enhanced 9-1-1 shall not terminate into existing telephone equipment. In addition, no non-emergency seven-digit lines should be terminated in enhanced 9-1-1 PSAP equipment, except as approved by the Board in accordance with its standards on interface.

(e) Combined Telephone Answering Equipment

Where practicable, combined telephone handsets and/or headsets should be utilized by PSAP personnel required to answer both 9-1-1 calls and non-emergency calls. Equipment should be equipped with volume control devices for receiving and transmitting and shall also have the capability to use either handset or headset interchangeable with handset priority without modification. PSAP operator's receive audio shall not exceed a level of I 10 db Sound Pressure Level (SPL). The handset or headset microphones shall only be live when set is "off hook".

(f) Call Status Indicator

Each 9-1-1 trunk will indicate incoming emergency calls by both audible and visual indicators. Each outgoing trunk shall have a visual display of its status.

(g) Call Detail Information

The Enhanced 9-1-1 Fund shall provide a redundant method of recording call detail information at Primary PSAPs. The program shall provide this capability at Secondary PSAPs, but will not provide printer equipment at Secondary PSAPs.

9-1-1 call detail information shall use conventional English or logical abbreviations where necessary and shall not use single letter or digit codes. Call detail information to be retained and printed shall include at a minimum the following information related to each call:

1. Automatic number identification
2. Automatic location identification
3. Time of 9-1-1 trunk seizure
4. Time the call was answered
5. Time the call was transferred, terminated or abandoned
6. Trunk number
7. Answering position number
8. Date
9. Responding Agency(ies)

9-1-1 call detail information shall also be retained on unanswered calls and shall be printed and identified as unanswered.

(h) Automatic Call Distributors, Call Sequencers and Call Management Systems

The ACD is designed to answer, distribute and sequence calls in a high volume environment. PSAPs with three or more staffed answering positions are eligible to be provided with call sequencers, with approval by the Board. The number of answering positions used to determine whether a PSAP qualifies for ACD or sequencer functionality shall not count designated monitor/overflow positions in the total.

Functions of a call distributor or sequencer shall include providing to the PSAP administration comprehensive call management data that will assist in managing and staffing the PSAP on a day to day basis.

(i) Equipment Safeguards

1. Wherever practicable, service entrances for commercial power and telephone service shall be underground, at least to the respective utility's serving distribution facility. All commercial power and telephone lines entering PSAPs shall be encased in protective sheathing.
2. Wherever practicable, conductors shall extend as directly as possible to the PSAP equipment in conduits, shafts, raceways or overhead racks and troughs of a type of construction affording protection against fire and mechanical injury. Where cables or wiring are exposed to unusual fire hazards, they shall be properly protected.
3. All facilities and equipment associated with 9-1-1 service shall be provided with protective measures to prevent accidental worker contact. Each protected termination shall be clearly identified.
4. Protected 9-1-1 lines shall not be opened, grounded, short-circuited or manipulated in any way unless the appropriate PSAP has released the line.
5. Any individual working on 9-1-1 lines at the system provider's or the PSAP's location shall provide proper identification to the PSAP supervisor or system provider official.

Any such individual shall be logged in and give a brief description of all activities or functions to be performed. All 9-1-1 lines shall be terminated on a separate and distinct termination block equipped with the latest technology to protect by visual warning, against tampering or any accidental interruption of service.

6. Modifications, changes, additions or any other attempt to alter system provider provided equipment is strictly forbidden, with the exception of those authorized in writing by the system provider. Paper and ribbon changes of the printer shall be the responsibility of the PSAP.
7. The system provider shall ensure that the PSAP facility possesses adequate surge protection, grounding, and lightning suppression devices to protect the 9-1-1 equipment from unnecessary interruption.
8. All wiring shall comply with the National Electrical Code, (NEC) and Vermont electrical codes.
9. All facilities housing PSAP equipment and elements utilized for the delivery of enhanced 9-1-1 voice and data shall be required to meet the equipment manufactures' minimum environmental and grounding specifications. Typical requirements include:

* Ground point of 25 ohms or less

* Temperature range of 40-120 degrees Fahrenheit

* Humidity range of 35-65 percent relative humidity

(j) Replacement and Upgrade of Equipment

The system provider shall have the responsibility for maintaining the network. The system provider must also maintain and replace, if necessary and reasonable due to normal wear and tear, the 9-1-1 customer premises equipment on a routine basis. The decision as to what maintenance and/or replacement if necessary and/or reasonable shall be subject to the review and approval or disapproval of the Board.

The system provider shall, upon recommendation and approval by Board, upgrade/change the enhanced 9-1-1 system on an as-needed basis.

(3) Ancillary Equipment

(a) Tele-Typewriter (TTY)

The Enhanced 9-1-1 Fund shall supply each Primary PSAP with TTY equipment that automatically detects TTY calls and meets the requirements of the Americans With Disabilities Act of 1990.

The Enhanced 9-1-1 Fund shall supply each Primary PSAP with a printer capable of recording an entire TTY conversation.

PSAP equipment shall be able to recognize both ASCII and Baudot protocols.

(b) Continuous Logging Equipment

All 9-1-1 calls shall be recorded.

Each Primary PSAP may opt to receive a continuous logging recorder to be provided by the Enhanced 9-1-1 Fund. This logging recorder shall be of adequate capacity to record both sides of a conversation on each incoming 9-1-1 call; shall have the ability to continuously document the year, date and time of each recorded event and the capability to record both voice and TTY.

The logging recorder shall have the capability of retrieving TTY tones without jeopardizing the integrity of the call in progress with audible or inaudible tones that cause disruption in the TTY tone translation. Each logging recorder shall feature complete full function integrated standby capability.

All Primary PSAPs that accept a Fund supplied logging recorder are required to operate the same or similar featured equipment as long as they participate in the enhanced 9-1-1 system.

The Enhanced 9-1-1 Fund shall provide normal business day maintenance for only those units supplied by the Fund. Repair or replacement will not be provided for equipment that fails as a result of avoidable physical damage or abuse. The Fund supplied logging recorder shall include an initial 31-day supply of recording media. Agencies will be responsible to maintain the 31-day minimum quantity of recording media and subsequent unit replacement beyond any program supplied recorder, when necessary.

Primary PSAPs are entitled to a recorder of not less than 10-channels to meet the requirements of the 9-1-1 program. An agency opting for a more inclusive recorder (radio and 7-digit phone lines) may receive a credit toward the purchase of a unit that meets their needs.

Existing logging recorders shall be replaced when necessary. Proof of necessity shall be based on but not limited to demonstration of need to the Board, including a review of all maintenance records from the most recent 12-month period and any other supporting evidence submitted to the Board by the PSAP.

(c) Instant Playback Recorders

To maintain system-wide reliability, each Primary and full Secondary PSAP shall be equipped with instant playback voice recorders capable of recording both voice and TTY for each answering position.

Instant playback recorders shall be independent from master logging recorder equipment and of solid state design with no moving parts.

They should have electronic voice storage, simultaneous record and playback capabilities, and be equipped with either reduced playback speed or message mark capabilities. The intent of this equipment shall be to record 9-1-1 and seven-digit emergency lines only.

Instant playback recorders will be supplied to the Primary PSAP at cutover unless an existing operational unit is less than three years old. Units more than three years old from date of purchase will be reviewed by the Board for replacement and will be replaced as necessary to maintain minimum standards of operation and reliability. The Board will continue to review unit replacement at Primary PSAPs on an ongoing basis.

The program shall provide maintenance for those units supplied by the Enhanced 9-1-1 Fund, however repair or replacement will not be provided for equipment that fails as a result of avoidable physical damage or abuse.

(d) Computer Aided Dispatch

At a minimum, computer aided dispatch interface capability shall be available at the PSAP for ANI and ALI interface.

(e) Auto-dialers

Regional PSAPs or municipalities equipped with six or more answering positions shall be provided with double the number of single key auto-dial buttons provided in a standard configuration.

(4) Equipment Support
(a) Emergency Power Provision

Each Primary and Secondary PSAP shall be equipped with an emergency power generator and automatic transfer panel capable of providing for the essential power requirements of the facility, including the UPS, to ensure continuous operation during commercial power outages. The emergency power system should be designed for and capable of continuous operation for a minimum of 48 hours operation at full load.

The Fund shall provide each Primary PSAP with an adequate generator, and an adequate Uninterruptible Power Supply (UPS), with power conditioning capability to power or protect all equipment necessary to meet the requirements of the enhanced 9-1-1 program. UPS equipment will ensure that emergency calls in progress and subsequent calls will not be interrupted during commercial power fluctuations and outages. It shall supply constant power for a minimum of one hour to allow for manual or automatic transfer from the public service AC power to localized auxiliary AC power. Additionally, it shall signal PSAP personnel that the system is operating on emergency power.

An agency opting for a more inclusive generator with the capacity to provide power for all its equipment and/or facility, may receive a credit toward the purchase of a unit that meets their needs.

(b) Back-up communications

Back-up communications shall be established and funded by each PSAP and submitted to the Board for approval. Alternatives shall include, but not be limited to, radio, cellular phone, and the H.A.M. operator network.

(c) Equipment Room Modifications

Any cost associated with remodeling or build-out of facilities will be the responsibility of the PSAP. The PSAP structure will be expected to possess minimum floor loading capability of 125 pounds per square foot. Interior walls must have a minimum fire resistance rating of two hours.

(d) Site selection considerations

Selection of PSAP sites shall consider, at a minimum, the following to eliminate risks and potential vulnerabilities. Due to cost and reliability concerns, the Board will give preference to consolidated facilities serving two or more emergency services on a 24 hour, 7 days a week basis, and which meet the following criteria.

-- Adequacy of existing building security systems against physical threats from persons inside and outside of the facility

-- Proximity to a flood plain

-- Not in a commercial multi-tenant facility

-- Compliance with local, state, and federal structure codes

-- Ergonomic and environmental requirements for the protection of the 9-1-1 telecommunications equipment and the comfort of personnel

-- Reliability of utility services

-- Not on the same power substation or transformer as its Default or Alternate PSAP

-- Not serviced by the same Central Office as its Default or Alternate PSAP

-- Proximity to potential hazards (dam, hazardous materials, nuclear facility)

-- Not in the same potential disaster area (e.g., flood plain, dam, hazardous material sites, nuclear facility disaster, terrorist intervention) as its Default or Alternate PSAP

-- Proximity to major transportation networks

-- Whether the structure could withstand an earthquake

-- Accessibility of facility to employees in an emergency or in times of bad weather

Section 10. Operational Standards.

(1) Public Safety Answering Point Administration

(a) Municipal Contacts

Every municipality participating in the enhanced 9-1-1 system shall designate a local contact person to serve as the liaison to the Board and the system provider on all issues regarding 9-1-1 service. The municipality may choose to identify a different individual to work directly with the system provider on the MSAG. Any changes in the Municipal Contact shall be reported by the municipality in writing to the Board and the system provider within 10 working days.

(b) Statewide 9-1-1 Plan

Each participating municipality shall develop in cooperation with the Board and the system provider a 9-1-1 plan in accordance with 30 V.S.A., and the standards and guidelines established by the Board.

(c) 9-1-1 System Cost

The system provider shall provide to the Board on an annual basis, all the actual costs related to the implementation of enhanced 9-1-1 in Vermont.

(d) Call Handling Coordination/Negotiations

Municipalities participating in the implementation of 9-1-1 shall be responsible for coordinating with all emergency service providers served by the PSAP. Primary and Secondary PSAPs shall be required to negotiate call handling procedures with all emergency service agencies to ensure proper handling of emergency calls. The PSAP and public safety providers served by the PSAP shall review these procedures every six months for the first two years and then annually thereafter and make changes as needed.

All levels of Secondary PSAPs not operating on a 24-hour basis shall negotiate prior to cutover and in writing, call handling procedures with the designated Primary PSAP. Procedures shall be reviewed annually or on an as needed basis.

(e) Hours of Operation for Primary and Secondary Public Safety Answering Points

Each participating municipality shall establish, staff and operate on its own or with one or more municipalities, enhanced 9-1-1 Primary and/or Secondary PSAPs on a twenty-four hours a day, seven day a week, 365 days a year basis.

(f) Out-of-State Agencies Providing Emergency Service to Vermont

Many municipalities in Vermont contract for dispatching service with out-of-state agencies. These dispatch arrangements may continue. However, out-of-state dispatch centers do not qualify for funding from the Enhanced 9-1-1 Fund. They will function as dispatch points receiving 9-1-1 calls from a Primary or Secondary PSAP within Vermont by relay or transfer.

(g) Seven-digit Telephone Numbers

Each PSAP shall maintain at least one seven-digit emergency number to be published in the white pages of the telephone book as a back up to 9-1-1. This number shall also be used for receipt of incoming emergency calls transferred to the PSAP by other PSAPs for certain alternate and default routing arrangements.

(h) Use of 9-1-1 Trunk or ISDN Lines

9-1-1 trunks or digital lines shall be used solely for the receipt of emergency 9-1-1 calls at Primary PSAPs and the transfer of 9-1-1 calls to Secondary PSAPs, Limited Secondary PSAPs, and Ringing PSAPs.

(i) PSAP Security

Each Primary or Secondary PSAP shall establish personnel security clearance standards that are acceptable to all emergency service agencies served by the facility. Minimum PSAP site security shall consist of:

-- The PSAP shall designate a person as security officer.

-- Escorts shall be required to accompany visitors to the PSAP

-- Log-in procedures shall be required for entry during working hours

-- Doors to critical areas shall be kept locked even during working hours

-- The PSAP shall develop a formal disaster recovery plan that is tested and annually revisited

-- Battery powered emergency lights shall be provided throughout the PSAP facility

-- All access to the PSAPs should be secured to restrict entry by unauthorized personnel.

(j) Security and Confidentiality of Data

Security and confidentiality of data shall be as provided for in 30 V.S.A., § 7059.

All classes of PSAPs shall comply with the requirements of 30 V.S.A., these standards, and any other enhanced 9-1-1 statutes for the protection and confidentiality of ANI and ALI information.

(k) CAD Security

PSAPs with CAD system interface shall ensure that the confidentiality and security of ANI and ALI information is protected as mandated by 30 V.S.A., these standards, and any other enhanced 9-1-1 statutes when said information is transferred to a CAD system.

(l) Reporting of Equipment Failure

Each PSAP shall post and maintain the telephone number and written procedures for reporting equipment failure in system provider supplied call handling equipment.

(m) Records Retention

All voice and TTY recording of incoming 9-1-1 calls shall be retained for a minimum of 31 days. A paper printout of the entire TTY conversation shall be retained for a period to be established by the Board. Records of 9-1-1 call information, shall be retained for a period to be established by the Board.

(n) Automatic Alarms or Alerting Devices

No individual or company shall be allowed to send an automatic alarm or other alerting device that causes the digits "9-1-1" to be automatically dialed and transmits a prerecorded signal or message to the PSAP. Disabled persons who utilize special devices to request emergency assistance from agencies other than PSAPs may continue to do so.

(o) Fixed Transfer and Auto-dial Options

Primary PSAPs shall give priority to the initial programming of fixed transfer and auto-dial transfer options for the transfer of 9-1-1 calls to Secondary PSAPs, Limited Secondary PSAPs, and Ringing PSAPs, as required for the dispatch of public safety services within the jurisdiction of the Primary PSAP.

Any fixed transfer and auto-dial transfer options available after initial programming shall be programmed to provide for call transfer capability to other Primary PSAPs in proximity to that PSAPs' jurisdiction. This capability shall allow the PSAP to utilize the dedicated/switched 9-1-1 network to transfer 9-1-1 calls pertaining to emergencies outside its jurisdiction, to the appropriate Primary PSAP.

Fixed transfer buttons shall only be programmable by the system provider. Primary PSAPs and the Relay Service, which links the deaf community with the hearing community for non-emergency service, shall be provided with a current list of seven-digit telephone numbers for every Primary PSAP in the state.

The list shall be used for the transfer of 9-1-1 calls or the relay of information regarding emergencies outside the Jurisdiction of the PSAP, when fixed transfer or auto-dial transfer options are not available.

The list shall be compiled by the Board with the assistance of the system provider and emergency service organizations. It shall be updated as changes occur and distributed by the Board as necessary. Emergency Service Agencies changing, adding, or deleting a seven-digit telephone number being used by a 9-1-1 system for emergency call information, shall submit this change in writing to the Board.

(p) Public Safely Answering Point Inspections

The Board or its designee may inspect each PSAP that utilizes enhanced 9-1-1 network features to determine if it meets the requirements of said PSAP standards and all other technical and operational standards required by law.

If an inspection reveals that the PSAP is not in compliance with the technical and operational standards, the Board will take appropriate action to cause the PSAP to come into compliance. Appropriate action may include routing the agency's 9-1-1 calls to an Alternate or Default PSAP until such time as the PSAP has remedied its failure to comply and demonstrated that henceforth it will comply with the Board's standards.

(q) Reports

The system provider, in consultation with the Board, shall develop a uniform report to be submitted annually by each PSAP to the system provider and the Board. The report shall include, but not be limited to, the total number of calls and a numeric and statistical breakdown on the basis of call type, e.g., administrative, false, 9-1-1, emergency calls to 7-digit numbers, etc. It shall report the duration of each call. It shall report visitors to the PSAP site, and any other statistical information necessary to evaluate the performance of the PSAP and its personnel.

(2) Training

Communication personnel shall be trained and have the highest level of experience within available resources. Training should include, but is not limited to, the 9-1-1 Call Handling Procedures set forth in the Public Safety Answering Point Administration and Training Sections of the Vermont 9-1-1 Standards. Training materials shall be approved by the Board.

(a) Pre-Cutover

1. The system provider shall provide upon approval of the board, initial on site training prior to cutover on all enhanced 9-1-1 equipment and systems installed by the company for all levels of PSAP personnel directly involved in the operation of enhanced 9-1-1 equipment and functions. Every effort will be made to accommodate all personnel on all shifts.

2. Areas of training shall include as a minimum:

a. Enhanced 9-1-1 System and its Functions
b. Basic Call Handling Procedures
c. Consistent Call Answering Procedures
d. Role of Off-Premises Equipment
e. Operation of Enhanced 9-1-1 Equipment
f. Basic Equipment Malfunctions and Failures
g. Emergency Trouble Reporting and Service Call Procedures
h. System Features of Certain PSAPs
i. Operation of TTY Equipment, Call Detectors and Call Diverters
j. Operation and Data Related to Automatic Call Distributors; and/or Call Sequencers and Call Management Systems, where appropriate
k. Alternate and Default Routing,
l. Emergency Contingency Plans
m. Confidentiality of ANI/ALI data pursuant to 30 V.S.A., and any other enhanced 9-1-1 statute, and these Standards
n. Communicating effectively with speech and hearing impaired persons

(b) Post-Cutover

The system provider shall train a trainer of PSAP personnel. Regional training sessions shall be held on an on-going basis as determined by the Board. The purpose of this program will be to ensure that municipalities continue training after cutover on all components of the enhanced 9-1-1 system as outlined above in the Pre-Cutover section. The Board shall provide a lesson plan, and education and reference materials. The PSAP shall certify that each call-taker/dispatcher has received the training.

(3) Call Handling Procedures

(a) General Information

1. When answering a 9-1-1 call at a Primary PSAP, the call taker shall not identify the PSAP as a particular agency, i.e., police department or fire department, etc., but must identify the name of the community or regional center followed by a generic announcement such as "9-1-1, What is Your Emergency?" or "9-1-1 Emergency, Do You Need Police, Fire, or Medical?"

2. Each Primary PSAP shall have the ability to transfer or relay 9-1-1 calls to a Secondary PSAP, Limited Secondary PSAP, or Ringing PSAP; to relay information to other public safety agencies, e.g., poison center, Vermont National Guard; or, as appropriate, to dispatch emergency response providers.
3. Public Safety Communications Personnel must always verify with the 9-1-1 caller, the ALI data and determine the exact location at which the caller needs emergency personnel dispatched. The need for assistance may not necessarily be at the location of the 9-1-1 caller.
4. No caller shall be procedurally required to speak with more than two call takers -the Primary PSAP call taker and the remote agency call taker. Local procedures shall be developed to advise a calling party that the call is about to be transferred and to remain on the line.
5. Should a 9-1-1 call be inadvertently transferred from a Primary PSAP to the wrong agency, that agency will gather the necessary information and relay the information to the proper agency.
6. A public safety agency or private agency that receives a request for emergency service outside of its jurisdiction shall promptly forward the request to the public safety answering point or public safety agency responsible for that geographical area.
7. Any municipality served by enhanced 9-1-1 shall ensure that adequate municipal support and mutual-aid agreements exist authorizing municipally controlled emergency units to respond as such.
8. Agencies shall develop call handling procedures for emergency situations that require more than one type of responder (e.g., fire and ambulance) to be sent at once.
9. When dispatch for a municipality changes facilities at night, agencies shall develop procedures to verify that a switch has taken place, and is functioning.

(4) Special Circumstances

(a) TTY Call Handling

Each PSAP and Secondary PSAP shall establish procedures to handle calls from speech and hearing impaired individuals via TTY including the use of TTY call detectors and diverters where installed. Primary PSAPs and Secondary PSAPs shall test TTY equipment regularly and in compliance with the ADA.

(b) Unanswered Or Silent 9-1-1 Calls

All levels of PSAPs shall call back any unanswered or silent 9-1-1 call by obtaining the telephone number from the ANI display or printer. Agencies are required to develop call handling procedures and urged to dispatch a public safety response unit(s) if the PSAP receives no response to the call back.

(c) Operator Assisted Emergency Calls

All telephone company operators shall transfer Operator dialed emergency calls to the 9-1-1 trunks in the correct Primary PSAP territory. The ANI shall display a code identifying an operator assisted call to the PSAP. The telephone operator shall also announce to the PSAP an operator assisted call and provide the ANI.

Section 11. Local Enhanced 9-1-1 Systems.

(1) Scope of Board Authority

Local enhanced 9-1-1 services are outside the scope of the Board's authority except when interconnection between a local enhanced 9-1-1 system and the state enhanced 9-1-1 system becomes necessary. In the case of interconnection the local enhanced 9-1-1 system will be held to the same standards as the state system.

(2) Opting for Inclusion In the State Enhanced 9-1-1 System

Local enhanced 9-1-1 services that opt to be included in the state system to any extent are required to meet the technical and operational standards of the Board for enhanced 9-1-1 systems, and the requirements of 30 V.S.A.

Section 12. Public Education.

(1) Public Education Program

Municipalities participating in the enhanced 9-1-1 system shall develop a public education program aimed at the emergency service needs of the community. The program should include a time line which provides educational materials

prior to and on a continuing basis after out over of the 9-1-1 system. Materials for public education will be developed and distributed by the Board and system provider.

Based on the non-English speaking population of a community, the Municipal Contact shall determine if 9-1-1 public education materials need to be developed in bilingual/secondary languages.

(a) "9-1-1" The Designated Emergency Number

The digits "9-1-1" shall be the emergency number published inside the front cover of a phone book for municipalities participating in the enhanced 9-1-1 system. The advertisement of any emergency telephone number other than "9-1-1" is prohibited. "9-1-1" shall be the only published or advertised emergency number for those using TTY. The designation "9-1-1" shall only be used for emergency calls routed directly to a Primary PSAP.

Notwithstanding the above, municipalities are required to maintain one 7-digit emergency number for back-up purposes. That number may only be published inside the phone book with other municipal numbers.

Advertised use in Vermont of the designation "9-1-1" in connection with any commercial product or service could lead to public confusion and is strictly prohibited.

(b) Display of "9-1-1" on Emergency Vehicles and Signs

The digits "9-1-1" when displayed on emergency vehicles, signs, or other forms of advertisement shall be printed in plain block type numerals with a "dash" (-) appearing between each number. This will minimize any potential misinterpretation of the digits. The digits "9-1-1" shall be the only emergency number displayed on vehicles, signs or other legitimate forms of advertisement.

(2) Public Education Materials

The system provider shall assist municipalities with the enhanced 9-1-1 public education program through the distribution of materials in the form of brochures, telephone stickers, and children's educational materials. 9-1-1 PSAPs shall be responsible for working with the system provider to ensure that an adequate campaign is maintained on a routine basis.

(3) Telephone Book Listing

Publishers of telephone directories which contain emergency numbers shall annually publish the digits 9-1-1 as the official emergency number on the inside cover of the telephone book(s) for the municipalities participating in the Vermont enhanced 9-1-1 System.

Section 13. Incorporation by Reference.

Material to be incorporated by reference:

30 V.S.A. § 7055 Telecommunications Company Coordination; § 7056 Municipal Cooperation: Enhanced ANI/ALI Capability; § 7057 Privately Owened Telephone Systems; § 7058 Pay Telephones; § 7059 Confidentiality of System Information.

How the material to be incorporated by reference can be obtained by the public and at what cost:

A copy may be obtained from the Legislative council or the Vermont Enhanced 9-1-1 Board at no cost.

The sections of the statute listed above have been adopted in their entirety.

Statutory Authority

STATUTORY AUTHORITY:

30 V.S.A. § 7053, 7055-7057, 7959

History

EFFECTIVE DATE:

September 8, 1995 Secretary of State Rule Log # 95-55

AMENDED:

March 2011 [Renumbered from 30 020 002]