**65 PUBLIC UTILITIES COMMISSION**

**625 EMERGENCY SERVICES COMMUNICATIONS BUREAU**

**Chapter 2: REQUIREMENTS FOR THE ENHANCED 9-1-1 SYSTEM SERVICE PROVIDER AND LOCAL EXCHANGE CARRIERS**

**SUMMARY**: This Chapter establishes requirements for the Enhanced 9-1-1 System Service Provider and Local Exchange Carriers pursuant to 25 M.R.S. §2933. The Chapter includes requirements for network design, connectivity, database provisioning, outage notification procedures and financial reimbursements for LECs.

**TABLE OF CONTENTS**

§ 1 GENERAL PROVISIONS AND DEFINITIONS 3

A. Purpose 3

B. Definitions 3

§ 2 GENERAL REQUIREMENTS FOR LECS 5

A. Provisioning of Enhanced 9-1-1 5

B. Reporting Requirements 6

C. Required Information for E9-1-1 Database 6

§ 3 CENTRAL OFFICE REQUIREMENTS 6

A. General Central Office Requirements for LECs 6

B. Central Office Upgrades by LECs 6

§ 4 NETWORK TRUNKING AND CONNECTIVITY REQUIREMENTS 7

A. General Network Requirements for LECs 7

B. Requirements of LECs 7

§ 5 ENSURING SYSTEM RELIABILITY 8

A. Requirements of LECs 8

§ 6 ALI DATABASE REQUIREMENTS 8

A. Requirements of the Database Management System Provider (DMSP) 8

B. General Requirements of Data Providers 9

C. Service Order Error Correction Requirements 9

D. No Record Found Conditions 10

E. ALI Discrepancy Standards 10

F. Database Reconciliation Standards 11

G. Master Street Address Guide (MSAG) 11

§ 7 LEC DATABASE PROVIDER REIMBURSEMENT 12

A. Reimbursement of Local Exchange Carriers 12

B. Petition for Different Reimbursement 12

§ 8 WAIVER OR EXEMPTION 12

**§ 1 GENERAL PROVISIONS AND DEFINITIONS**

A. **Purpose**

This Chapter contains the requirements for the Enhanced 9-1-1 System Service Provider and Local Exchange Carriers associated with the operation of the statewide E9-1-1 system.

B. **Definitions**

1. **Addressing Officer**. “Addressing Officer” means the designated individual appointed by the municipality or county for all issues involving the development and maintenance of address information for the E9-1-1 addressing and routing databases.

2. **Automatic Location Identification (ALI)**. “Automatic Location Identification (ALI)” means the automatic display at the Public Safety Answering Point (PSAP) of the caller’s telephone number, the address/location of the telephone and supplementary emergency services information.

3. **ALI Discrepancy**. “ALI Discrepancy” means a record retrieved from the ALI Database during an actual E9-1-1 call with an incorrect address.

4. **Automatic Number Identification (ANI)**. “Automatic Number Identification” means the telephone number associated with the access line from which a call originates.

5. **Alternate Routing**. “Alternate Routing” means the capability of routing 9-1-1 calls to a designated alternate location if all 9-1-1 trunks are busy or out of service. The capability may be activated upon request or automatically, if detectable, when 9-1-1 equipment fails or the PSAP itself is disabled.

6. **Central Office (CO)**. “Central Office” means the LEC facility where access lines are connected to switching equipment for connection to the Public Switched Telephone Network (PSN).

7. **Company Identifier**. “Company Identifier” means a 3 to 5 character identifier that distinguishes the entity providing voice service to the end user. The company identifier registry is maintained by the National Emergency Number Association (NENA) in a nationally accessible database.

8. **Data Provider**. “Data Provider” means an entity that provides customer service records to the ALI Database. This entity may be the Local Exchange Carrier or another entity acting on the carrier’s behalf.

9. **Database Management System Provider (DMSP)**. “Database Management System Provider (DMSP)” means the entity providing Selective Routing and/or Automatic Location Identification (ALI) services. This may be the same entity as the System Service Provider or another entity depending on contractual situations.

10. **Default Routing**. “Default Routing” means the capability to route a E9-1-1 call to a designated (default) PSAP when an incoming E9-1-1 call cannot be routed due to an ANI failure or other cause.

11. **Diverse Routing**. “Diverse Routing” means the practice of routing circuits along different physical paths, sheath/technology diversity over the same route, and system diversity such as separate DS1s on the same T-carrier or fiber cable, in order to prevent total loss of 9-1-1 service in the event of a facility failure.

12. **Emergency Services Communication Bureau (Bureau)**. “Emergency Services Communications Bureau (Bureau)” is the bureau within the Public Utilities Commission authorized to develop, establish, and manage the statewide Enhanced 9-1-1 system in Maine, pursuant to 25 M.R.S.A. § 2926.

13. **Enhanced 9-1-1 Network**. “E9-1-1 Network” means any E9-1-1 circuit or facility including but not limited to Central Office to E9-1-1 tandem trunks, ALI links between E9-1-1 tandem and ALI Database, ALI links between PSAP and ALI Database, E9-1-1 tandem to PSAP Trunks.

14. **Enhanced 9-1-1 System**. “Enhanced 9-1-1 System” means the network, database and customer premise equipment required to provide Enhanced 9-1-1 service.

15. **Enhanced 9-1-1 Service (E9-1-1)**. “Enhanced 9-1-1 service” is an emergency telecommunications service that automatically displays a caller’s location and telephone number on a screen at a PSAP. This service uses the caller’s location, not telephone exchange, to route a call to the appropriate call answering center known as a Public Safety Answering Point.

16. **Enhanced 9-1-1 System Service Provider (SP)**. The “E9-1-1 System Service Provider” is the vendor or vendors that provide the network, routing capabilities, databases, and equipment necessary to operate a statewide E9-1-1 system.

17. **Foreign Exchange**. “Foreign Exchange” is a service that provides local phone service from a central office that is outside the customer’s local calling area.

18. **Host-Remote**. “Host-Remote” is the relationship between conventional central office switching equipment and a Remote Switching Unit 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.

19. **Local Exchange Carrier (LEC)**. “Local Exchange Carrier (LEC)” is a telephone utility, as defined by 35-A M.R.S.A. § 102(19), that provides telephone exchange service or interexchange access service within a telephone exchange pursuant to authority granted by the Maine Legislature or the Public Utilities Commission. LECs include incumbent local exchange carriers (ILECS) and competitive local exchange carriers (CLECs).

20. **Master Street Address Guide (MSAG)**. “Master Street Address Guide (MSAG)” means a database of street names and house number ranges with their associated communities defining Emergency Service Zones (A defined geographical territory consisting of a specific combination of law enforcement, fire, and emergency medical service coverage areas.) and their associated Emergency Service Numbers ( a 3 or 4 digit number used to uniquely identify an Emergency Service Zone) to enable proper routing of E9-1-1 calls.

21. **No Record Found**. “No Record Found” means a condition where no ALI information is available for display at the PSAP.

22. **P.01 Grade of Service**. “P.01 Grade of Service” means the grade of service reflecting the probability that one call out of 100 during the average busy hour will be blocked. P.01 is the minimum recommended Grade of Service for E9-1-1 trunk groups.

23. **Public Safety Answering Point (PSAP)**. “Public Safety Answering Point (PSAP)” means a facility equipped to receive ANI/ALI and assigned the responsibility of initially receiving 9-1-1 calls and, as appropriate, directly dispatching emergency response services or transferring the calls to other public or private safety agencies for dispatch.

24. **Public Switched Telephone Network (PSTN)**. “Public Switched Telephone Network (PSTN)” means the network of equipment, lines, and controls assembled to establish communication paths between calling and called parties in North America.

25. **Selective Router**. “Selective Router” means the Central Office that provides the tandem switching of E9-1-1 calls. It controls delivery of the voice call with ANI to the PSAP and provides Selective Routing, Speed Dialing, Selective Transfer, Fixed Transfer and certain maintenance functions for each PSAP. This term is also known as the Enhanced 9-1-1 Control Office or Tandem.

26. **Signaling System 7 (SS7)**. “Signaling System 7” means an out-of-band signaling system used to provide basic routing information, call set-up and other call termination functions. Signaling is removed from the voice channel itself and put on a separate data network.

**§ 2 GENERAL REQUIREMENTS FOR LECs**

A. **Provisioning of Enhanced 9-1-1**

1. Each LEC offering service over the PSTN in the State of Maine shall provide 9-1-1 toll-free for any individual to call within the State.

2. Each LEC shall make all necessary arrangements for the provisioning, testing, operation, and maintenance of E9-1-1 service directly with the Bureau. Such provider shall receive approval from the Bureau prior to activation of E9-1-1 service.

B. **Reporting Requirements**

1. Each LEC shall submit to the Bureau the *State of Maine Local Exchange Carrier Questionnaire* provided by the Bureau.

a. The questionnaire shall be updated by April 1st of each year to include any changes to a previously submitted questionnaire, or to confirm the absence of any changes.

b. The questionnaire shall be updated and submitted to the Bureau within 5 business days upon the following instances:

(i) Change in ownership of the LEC;

(ii) Any changes in the LEC’s topology that affects the routing of E9-1-1 calls from the central office to the E9-1-1 tandems or;

(iii) Change in any of the LEC’s contact(s) for E9-1-1 service.

C. **Required Information for E9-1-1 Database**

1. Each LEC shall supply to the Bureau or its designee any information necessary to establish and maintain the E9-1-1 Databases in accordance with the rules established by this Chapter.

**§ 3 CENTRAL OFFICE REQUIREMENTS**

A. **General Central Office Requirements for LECs**

1. Host-remote central office technology shall not degrade E9-1-1 service.

2. In host‑remote central office arrangements, LECs shall useemergency stand-alone technology, where technically feasible, and where the Bureau has provided an alternate routing number for the host-remote central office in question. When connectivity to the E9-1-1 network has been lost, LECs shall re-route 9-1-1 calls to the alternate number provided by the Bureau. The Bureau shall provide LECs with updated alternate routing numbers on an annual basis or as otherwise required.

B. **Central Office Upgrades by LECs**

1. All LECs shall provide notice to the Bureau of scheduled central office upgrades which may require any part of the 9-1-1 network to be out of service during the upgrade process, at least 10 days prior to the scheduled upgrade. Status of the upgrade shall be provided within one (1) hour of its completion.

2. E9-1-1 modifications in central offices shall be coordinated with general central office upgrades when practical, and where such coordination does not negatively affect E9-1-1 system implementation or operation.

3. When designing and scheduling central office upgrades, LECs shall take into consideration the following:

a. the critical nature of the performance and reliability of the statewide E9-1-1 system;

b. the need for any additional E9-1-1 capability and growth; and

c. the provision of voice and data switching and transmission services to the statewide E9-1-1 system.

**§ 4 NETWORK TRUNKING AND CONNECTIVITY REQUIREMENTS**

A. **General Network Requirements for the SP and LECs**

1. The 9-1-1 trunks on the E9-1-1 network shall be dedicated facilities that are not shared with any other telecommunications traffic, i.e., trunks carrying 9-1-1 traffic between the Central Office and the E9-1-1 tandems.

2. All telephone circuits or equipment used exclusively for 9-1-1, or essential to the operation of the E9-1-1 system, shall be clearly identified (beginning with the trunks from the Central Office to the Selective Router) to insure proper handling. This requirement applies to equipment accessible as of the effective date of the rule and any equipment installed or repaired after the effective date of the rule.

3. Any entity connecting to the Maine E9-1-1 network shall ensure that the 9-1-1 trunks will have interoffice, loop and carrier system diversity when such diversity can be achieved using existing facilities. Trunks shall be divided as equally as possible across available carrier systems.

B. **Requirements of LECs**

1. **Connecting to the E9-1-1 Network**

a. **Trunks**. Each LEC shall provide a minimum of two redundant trunks using SS7 to each of the two selective routers (tandems). The number of incoming E9-1-1 trunk lines to each selective router shall be based upon a grade of service of P.01. Diverse routes should be used when possible within the existing network.

b. **Certification and Compliance**. Each LEC shall certify annually to the Bureau that it meets the P.01 grade of service. If P.01 grade of service is not being met, the Bureau may request the LEC to conduct a traffic study. The Bureau, in cooperation with the SP and LEC, will determine the required trunking increases to meet the P.01 grade of service. The LEC shall implement any trunking increases within 60 days.

**§ 5 ENSURING SYSTEM RELIABILITY**

A. **Requirements of LECs**

1. **Testing and Monitoring of 9-1-1 Circuits**

At least once every 24 hours, each LEC owning, operating, or maintaining any portion of any dedicated 9-1-1 circuit shall manually test, for continuity, the portion of the 9-1-1 circuit that it owns, operates, or maintains. This section does not apply to any dedicated 9-1-1 circuit satisfying any of the following conditions:

a. the circuit is carried by a transmission system that is equipped with one or more alarms to detect loss of signal continuity;

b. the circuit itself is equipped with one or more alarms to detect loss of signal continuity; or

c. the circuit is automatically tested for signal continuity at least once every 24 hours.

2. **Outage Notification**

a. A LEC shall notify the Bureau, or the SP if so designated by the Bureau, of any unplanned E9-1-1 network service outage that affects E9-1-1 service no later than 30 minutes after such occurrence. Repairs shall be undertaken promptly. Updates on restoration efforts shall be provided at the Bureau’s request. The LEC shall notify the Bureau or its designee within one hour of resolution of the outage or condition confirmed by testing.

b. Any dedicated 9-1-1 circuit found to be defective must be reported to the Bureau, or the SP if so designated by the Bureau, and any affected PSAP within 30 minutes of discovery. Repairs shall be undertaken promptly. The LEC shall notify the Bureau and affected PSAPs within one hour of resolution.

**§ 6 ALI DATABASE REQUIREMENTS**

A. **General Requirements of the Database Management System Provider (DMSP)**

1. The DMSP shall construct the database to be redundant and fault tolerant and shall include safeguards to ensure the security of the data.

2. The DMSP shall prevent unauthorized access to, or alteration of, any data or databases used in conjunction with E9-1-1 service.

3. The data format used by the DMSP shall follow National Emergency Number Association (NENA 2) or standards as otherwise approved by the Bureau.

4. Data transfers between the DMSP and all other data providers shall follow the NENA 2 or higher standards or standards as otherwise approved by the Bureau.

5. The DMSP shall process order updates received from data providers within one business day of receipt by electronic file transfer.

6. The DMSP shall maintain an audit trial of all database changes and provide source documentation to identify the time, date, and origin of any database change to the Bureau upon request.

B. **General Requirements of Data Providers**

1. Each data provider shall use a unique NENA Company Identifier for each operating company for which it provides ALI records.

2. The data format used by data providers shall follow NENA 2 or standards as otherwise approved by the Bureau.

3. Data transfers between the DMSP and all other data providers shall follow the NENA 2 or standards as otherwise approved by the Bureau.

4. Each data provider shall work directly with Addressing Officers for database error resolution and verifying problematic addresses at the time of service order provisioning.

5. Each data provider shall use error correction codes provided by the Bureau when reporting resolution of data base errors.

6. Each data provider shall Master Street Address Guide (MSAG) validate its own customer 9-1-1 service addresses before transmitting them to the DMSP.

7. Each data provider shall deliver E9-1-1 service order updates to the DMSP within one business day of the close of service order activity.

C. **Service Order Error Correction Requirements**

1. **Requirements of DMSP**

The DMSP shall distribute errors from E9-1-1 updates to the appropriate data provider within one business day of detection.

2. **Requirements of Data Providers**

a. Each data provider shall retrieve E9-1-1 error files each business day as distributed by the DMSP from E9-1-1 update processing.

b. Each data provider shall correct all E9-1-1database processing errors within three business days of retrieval of the error file by the data provider.

c. After making three unsuccessful attempts to reach either the customer or the Addressing Officer of the affected town to correct E9-1-1 database processing errors, each data provider shall refer such errors to the Bureau for assistance with resolution.

3. **Service Quality Requirement for Data Providers**

Service Order (SO) accuracy for data providers on a monthly basis should be 97 percent or higher as measured by the following formula (this does not include informational errors, only hard errors ):

**Data Provider Total SO Records Processed - Company’s Total SO Errors =** % SO Accuracy

Company’s Total SO processed

D. **No Record Found Conditions**

1. **Requirements of DMSP**

The DMSP shall identify No Record Found conditions through the ALI audit trail. Such conditions shall be distributed to the appropriate data provider within one business day of identification.

2. **Requirements of Data Providers**

a. Each data provider shall resolve each No Record Found condition within three business days of notification to the data provider by the DMSP.

b. Each No Record Found condition shall be considered resolved when the corrected record via the service order process successfully updates the ALI Database.

c. Each data provider shall refer unresolved No Record Found database errors and inquiries to the Bureau if not resolved within three working days of receipt.

3. **No Record Found Quality Standard for Data Providers**

A data provider’s percentage of all No Record Founds in a month shall not exceed its percentage of records in the ALI database. If a data provider’s six‑month average exceeds such percentage, it shall submit a corrective action plan to the Bureau.

E. **ALI Discrepancy Standards**

1. **Requirements of DMSP**

a. The DMSP shall use an electronic form developed by the Bureau for reporting inaccuracies of ALI information and the misrouting of 9-1-1 calls, and for distribution of the ALI discrepancy to the appropriate database provider for resolution. The form shall include, but not be limited to, a description of the problem, appropriate corrective action or information.

b. The DMSP shall inform a data provider of any resulting form problems with a data provider’s records within one business day of receipt.

2. **Requirements of Data Providers**

a. A data provider shall resolve each ALI discrepancy within three business days of receipt. Such discrepancies will be considered to be resolved either when the appropriate Addressing Officer denies a suggested change or when the correction successfully updates the ALI Database.

b. A data provider shall refer unresolved ALI discrepancies to the Bureau if not resolved within three working days of receipt.

F. **Database Reconciliation Standards**

1. **Requirement of DMSP**

The DMSP shall provide, on an annual basis, to each data provider a copy such data provider’s data that resides on the ALI system such that the data provider is able to validate the accuracy of the data.

2. **Requirement of Data Providers**

Each data provider shall schedule a date for its annual data validation by June 30th of each year. Each data provider shall have completed its annual data validation by December 31st of each year.

G. **Master Street Address Guide (MSAG)**

1. **Requirement of DMSP**

a. The DMSP shall provide to each data provider a copy of the MSAG at least quarterly.

b. The DMSP shall provide Data Providers access to electronic MSAG delta files each business day and a fill MSAG extract on a weekly basis.

2. **Requirements of Data Providers**

a. Each data provider shall reload its internal MSAG at least quarterly.

b. Each data provider shall establish a documented process to receive and use weekly MSAG updates provider by the DMSP.

**§ 7 LEC DATABASE PROVIDER REIMBURSEMENT**

A. **Reimbursement of Local Exchange Carriers**

1. **Rate**

The Bureau will reimburse LECs for activities as a Data Provider at a rate of $0.057 per access line in the E9-1-1 database per month if the LEC has fulfilled the requirements of Section 7 of this Chapter and if sufficient funds are available pursuant to 25 M.R.S. §2927(3).

2. **Invoices**

LECs shall submit invoices to the Bureau for maintenance costs on a quarterly basis, within 30 days of each quarter ending on the last day of March, June, September, and December.

3. **Notice**

If the Bureau determines the LEC has not met the requirements of Section 7 of this Chapter, it shall notify the LEC and the Commission within 30 days of receipt of the invoice. The notice shall include reasons for denial of payment.

B. **Petition for Different Reimbursement**

A LEC may petition the Commission to revise the payment level if it can demonstrate that the $0.057 is insufficient to cover its expenses in preparing, correcting and verifying or updating subscriber information. The LEC and the Bureau shall attempt to agree on a revised payment level. Should agreement not be reached, the Commission shall determine whether a revised payment level should be implemented and the appropriate level.

**§ 8 WAIVER OR EXEMPTION**

Upon the request of any person subject to the provisions of this Chapter or upon its own motion, the Commission may, for good cause, waive any requirement of this Chapter that is not required by statute. The waiver may not be inconsistent with the purposes of this Chapter or any statute. The Commission, the Presiding Officer assigned to a proceeding regarding this Chapter, or the Director of the Bureau may grant the waiver.

STATUTORY AUTHORITY: 25 M.R.S. §§ 2926, 2927, 2933; 35-A M.R.S. §§ 103(2)(D), 111

EFFECTIVE DATE: The rule was approved as to form and legality by the Attorney General on September 6, 2007. It was filed with the Secretary of State on September 10, 2007 (filing 2007-389) and became effective on September 15, 2007.

EFFECTIVE DATE: This rule was approved as to the form and legality by the Attorney General on August 7, 2017. It was filed with the Secretary of State on August 8, 2017 (filing 2017-122) and became effective on August 13, 2017.