
Uniform Emergency Telephone System

E- 911

Performance Audit

June 2001

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State of Rhode Island and Providence Plantations
General Assembly
Office of the Auditor General



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SPEAKER John B. Harwood

Senator William V. Irons
Senator Dennis L. Algieri
Representative Gerard M. Martineau
Representative Robert A. Watson

We have completed a performance audit of the Uniform Emergency Telephone System (E-911). Our report is included herein as outlined in the Table of Contents.

Sincerely,

Ernest A. Almonte, CPA, CFE
Auditor General

UNIFORM EMERGENCY TELEPHONE SYSTEM - E-911

PERFORMANCE AUDIT

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EXECUTIVE SUMMARY

Performance Audit – Uniform Emergency Telephone System – E-911

Surcharge revenues collected from telephone subscribers in the State total over \$5 million annually, but no audits are conducted to verify the amounts of surcharge revenue collected by each service provider. Recently adopted rules and regulations of the E-911 system allow for independent audits of surcharge revenue. Given the amount of revenue collected and the likelihood that these revenues will continue to increase as a result of the growth in wireless telephones, the E-911 system should provide for annual independent audits of surcharge revenues.

Wireless telephone carriers are under a mandate from the Federal Communications Commission to upgrade the enhanced service in two phases. With the exception of one telephone carrier, Phase I has been accomplished in Rhode Island. The E-911 agency is now seeking funding to implement Phase II. This will permit the system to identify the location of wireless callers by using geographical information system coordinates and other data. The estimated cost to implement Phase II for E-911 is approximately \$4 million. This could be met by appropriating additional amounts on a short-term basis from the excess funds generated by the monthly surcharge.

The E-911 system's primary public safety answering point is located in North Providence. Alternate sites have been established at State Police headquarters in Scituate and at the primary service provider in Providence. Neither of these sites offers the level of service available at the primary location. E-911 is studying the need for a redundant site which would function as an alternate answering point; if a new site is located with sufficient room for expansion, the current site (which is now using all its available space) could become an alternate location.

The E-911 system operates three shifts daily, utilizing 35 telecommunicators and 7 supervisors. Staff assignments do not correlate to call volume: the first shift uses 29% of the available staff, but receives only 16% of the call volume. Conversely, the second and third shifts use 71% of the staff but receive 84% of the call volume. Management informed us that the type of calls received on each shift also influences scheduling. We believe management should utilize available data to ensure that shift scheduling is at optimal levels.

E-911 personnel have access to confidential and personal information regarding caller's name and addresses and individual situations. Although employees agree to criminal background checks as a condition of employment, we found that only 45% of the personnel files contained a record of a criminal background check.

Other recommendations in our report address documentation of consultant expenses, performance evaluations, and payroll documentation.

II. INTRODUCTION

OBJECTIVES, SCOPE AND METHODOLOGY

We conducted a performance audit of the Uniform Emergency Telephone System within the Department of Administration, in accordance with *Government Auditing Standards*. We examined the policies and procedures utilized to administer the program with the objective of determining whether the program is being administered efficiently and effectively and in compliance with applicable laws and regulations.

We interviewed responsible personnel, reviewed significant program records and documents, and conducted appropriate testing. The period of our audit was the fiscal year ended June 30, 2000, and fiscal 2001 through April 30, 2001.

BACKGROUND

The Uniform Emergency Telephone System was created by legislation enacted in 1984. The system became fully operational in 1988 as the first statewide-enhanced (E-911) system in the United States. An enhanced system is one that uses a computer database to deliver the address from which a wireline emergency call is made. The system employs certain technologies such as selective routing, which directs all emergency calls regardless of origin to the E-911 operations center, known as the public safety answering point.

Agency operations were originally supported by a monthly surcharge on each telephone subscriber's wireline(s). In 1997 the surcharge was extended to wireless carriers. The surcharge (currently \$.47) is collected by service providers and remitted to the State. The funds were originally deposited into a restricted receipt account, and used to support E-911 operations. In 1999, both wireline and wireless surcharge revenue became general revenues of the State and were no longer restricted for the support of the E-911 system. Agency operations are supported by an annual appropriation from the General Fund.

The E-911 system provides twenty-four hour statewide emergency public safety communication services from one answering point through the universal emergency telephone number 9-1-1. E-911 telecommunicators process police, fire and rescue calls originating within the State. The system automatically pinpoints the exact location of the caller when the call originates from a wireline telephone. This makes it unnecessary for a caller to verbally communicate an address or public safety jurisdiction. The Federal Communications Commission is now requiring this same capability to be extended to callers from wireless telephones through the use of geographic information system (GIS) address mapping.

In calendar 2000, the E-911 system processed a total of 472,779 calls (an increase of 19% from calendar 1999). Of these, 315,623 (66.8%) were emergencies requiring immediate local and state public safety agency response. The growth in number of calls is attributable to the increasing use of wireless telephones. Total wireline calls in 2000 were almost exactly the same

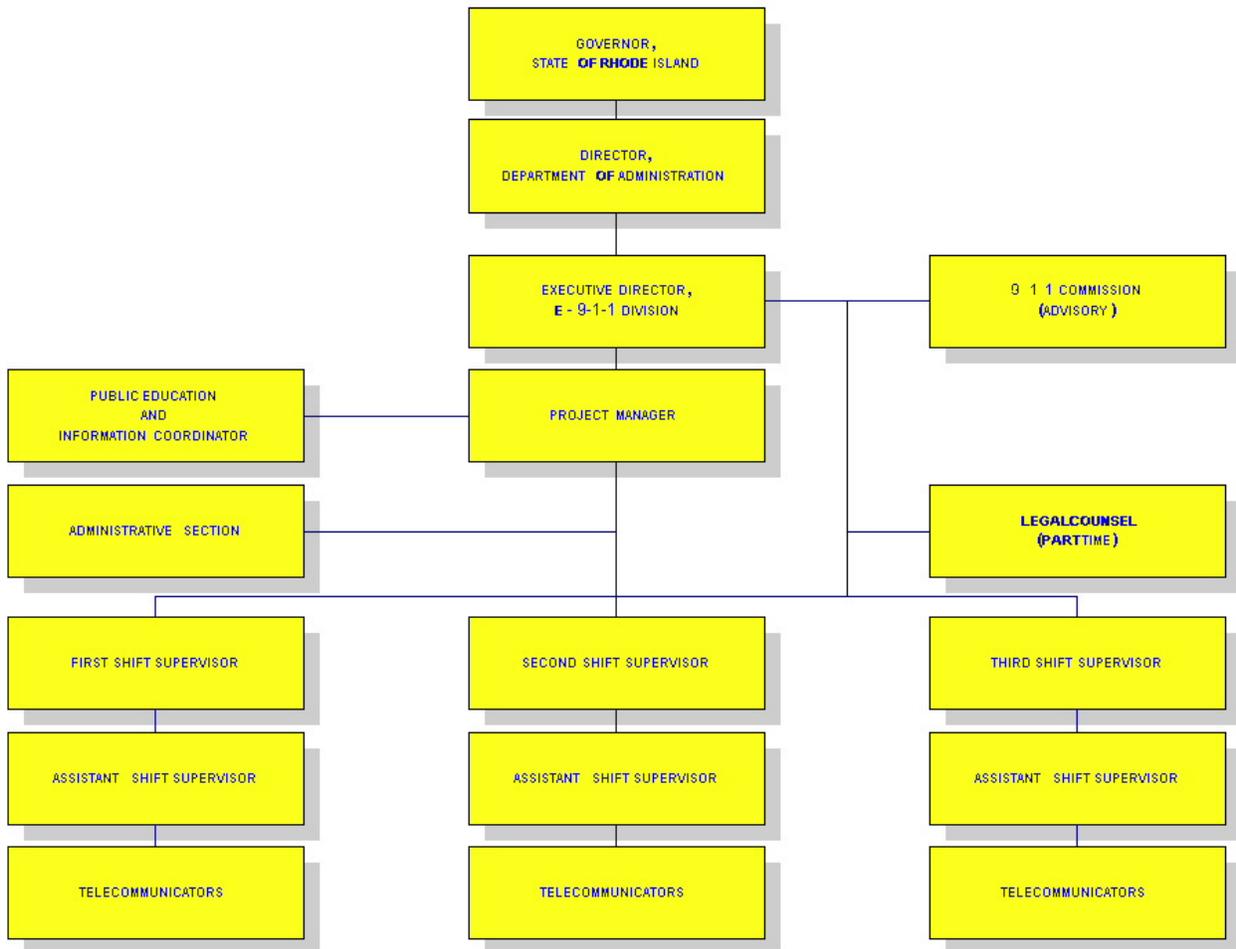
as in 1995; wireless calls have increased from about 47,000 in 1995 to nearly 185,000 in 2000. Six wireless service providers currently serve the Rhode Island area.

The E-911 program currently has 47 employees, including 35 telecommunicators and 7 supervisors at the public safety answering point in North Providence. Organizationally, it is part of the Department of Administration within the executive branch of State government. An advisory commission with 14 members was created in 1989. The agency is accredited by the Commission on Accreditation for Law Enforcement Agencies. An organization chart is included on the following page. A summary of fiscal operations is shown below.

	<u>Fiscal 2000</u>	<u>July 1, 2000 to April 30, 2001</u>
Appropriations (1)	\$3,618,362	\$3,170,405
Expenditures		
Personnel	2,442,816	2,019,932
Operating	<u>822,263</u>	<u>542,447</u>
Total Expenditures	<u>\$3,265,079</u>	<u>\$2,562,379</u>
Excess of Appropriations over Expenditures	<u>\$ 353,283</u>	<u>\$608,026</u>

(1) Fiscal 2001 amounts reflect revised appropriations for the fiscal year ending June 30, 2001 as enacted by the General Assembly in May 2001.

Department of Administration
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II. FINDINGS AND RECOMMENDATIONS

VERIFICATION OF SURCHARGE REVENUE

Each telephone common carrier and telecommunication service provider collects a monthly surcharge from each subscriber and remits the revenue to the State. Total revenue from this surcharge will approximate \$5.1 million in fiscal 2001. State law requires the collection agent to place these surcharge revenues into a special account and remit the total funds collected on a periodic basis to the State. The collection agent does not provide documentation with its remittance to support the amount remitted.

Recently adopted rules and regulations of the E-911 program allow the system to “audit the number of subscribers of each telephone common carrier and telecommunication services provider and their respective reseller(s) and the amount of surcharge revenue attributable to each subscriber base of such entities.” The cost of such audits shall be reimbursed by the carrier or service provider audited, unless exempted by the executive director of E-911.

Given the amount of revenue currently collected and the significant growth in the use of wireless telephones, we believe this to be an appropriate time for the E-911 system to require periodic audits of telephone common carriers and telecommunication service providers conducted by independent outside auditors.

RECOMMENDATION

1. Require audits of telephone common carriers and telecommunication service providers as a means of verifying surcharge revenue.

Auditee Views

E-911 management concurs with this recommendation.

GEOGRAPHICAL INFORMATION SYSTEM

The Federal Communications Commission has established certain time frames within which wireless carriers must upgrade their systems in two phases to provide enhanced 911 service. Phase I requires wireless carriers to have the capability to identify each caller’s mobile identification number and to identify the location of the tower sector which received the cellular transmission. These features are currently provided to wireless subscribers in Rhode Island by 5 of 6 carriers.

Phase II requires the wireless carriers to provide the *location* of the caller to the 911 agency within certain distance and accuracy parameters using Geographical Information System (GIS) layered upon base maps. The GIS data to be developed consists of building locations by address, locations of all public gathering points, master street address and road names updating, and the capture of building access points, fire hydrants, and digital images of buildings.

The estimated cost to implement Phase II in Rhode Island is approximately \$4 million. The agency plans to request State appropriations of \$1.6 million in fiscal 2002, \$1.8 million in fiscal 2003 and \$600,000 in fiscal 2004 to complete the required Phase II implementation. The E-911 system has retained a contractor to capture and integrate data to support and maintain the GIS for use by E-911, at a cost of \$3,995,820. Completion of the contract is subject to the appropriation of sufficient funds by the State.

The significant growth in wireless communications and the requirements of the FCC dictate that E-911 implement Phase II as scheduled. The current surcharge of \$.47 generates revenues of approximately \$5.1 million. These funds are deposited into the State's general fund. Operations of the E-911 system are funded by an annual appropriation; in fiscal 2001, that appropriation was approximately \$3.2 million. We believe that the E-911 system should seek additional appropriations from the excess funds generated by the monthly surcharge on a short-term basis to complete the required Phase II implementation.

RECOMMENDATION

2. Seek additional appropriations on a short-term basis from the excess funds generated by the monthly surcharge to complete the required Phase II implementation.

Auditee Views

E-911 management concurs with this recommendation.

ALTERNATE PUBLIC SAFETY ANSWERING POINT

The E-911 system's primary public safety answering point (PSAP) is located in North Providence. In the event of a forced evacuation of this primary PSAP, alternate answering points have been established at State Police headquarters and at the primary service carrier in Providence. During the course of our audit, we visited both of these locations. We found that the equipment located at State Police headquarters is antiquated and not compatible with the equipment now in use at E-911's primary site. Therefore, the location in Providence is the only alternate site that could be used in the event of a forced evacuation of the primary site. However, since this alternate location does not have the attributes of the primary PSAP, such as automatic number identification and automatic location identification, E-911 is studying the need for a redundant site, which would function as an alternate PSAP.

The E-911 system believes the ideal site would have 24-hour accessibility. Locations under consideration include the Public Utilities Commission in Warwick, the Emergency Management Agency in Cranston, the Transportation Operations Center in Providence, and the State's Data Center in Johnston. Ideally, the alternate site would have sufficient space for 10 stations and would be manned constantly by at least 2 telecommunicators. In addition, the alternate site would have sufficient space to include space for training and conferences.

The current site is utilizing all its available space. If a new site was located with sufficient room for expansion, the current site could eventually become an alternate PSAP. However, the E-911 system will have to determine the costs of extending telephone lines to an alternate site, and the costs of additional equipment and personnel.

RECOMMENDATION

3. Continue to pursue the need for an alternate public safety answering point. Develop an estimate of likely costs to be incurred in developing and operating an alternate site. Consider designating the current location as the alternate site if a new location could be developed as the primary PSAP.

Auditee Views

E-911 management concurs with this recommendation.

SHIFT SCHEDULING

The E-911 system operates three shifts daily. The first shift operates from 12 midnight to 8 a.m., the second shift from 8 a.m. to 4 p.m., and the third shift from 4 p.m. to 12 midnight. A total of 35 telecommunicators and seven supervisors are assigned among these three shifts.

We reviewed shift assignments and compared them to call volume per shift for fiscal 2000, and fiscal 2001 through May 19. We found that staff assignments do not correlate to call volume:

Shift	Call Volume	Staffing	Difference
1	16%	29%	-13%
2	37%	31%	6%
3	47%	40%	7%

E-911 management informed us that the type of calls received on each shift also influences shift scheduling. The first shift receives less non-emergency calls than the other two shifts. However, the total volume of calls is significantly greater on the second and third shifts than on the first. We believe that management should continue to track the relationship of call volume to staff assigned to ensure that the scheduling of telecommunicators is at optimal levels.

RECOMMENDATION

4. Continue to track the relationship of call volume to staff assigned to ensure that the scheduling of telecommunicators is at optimal levels.

Auditee Views

E-911 management believes the current shift scheduling is satisfactory.

EXPENSE DOCUMENTATION

The E-911 program has retained an outside consultant to perform technical, advisory, and support services concerning network configuration, standards for compliance by telecommunication service providers, hardware and software analysis and review, and other services. As part of the contract, the agency agreed to reimburse the consultant for all reasonable expenses incurred in providing the agreed services.

We reviewed the requests for reimbursement submitted by the consultant. While these expenses seemed reasonable, we noted that no receipts were submitted with the requests for reimbursement to verify the expenditures. We believe that the consultant should submit copies of receipts for review to ensure these costs are reasonable and necessary in accordance with the contract.

RECOMMENDATION

5. Require the consultant to submit copies of receipts for reimbursed expenses to ensure these costs are reasonable and necessary in accordance with the contract.

Auditee Views

E-911 management has implemented this recommendation.

CRIMINAL BACKGROUND CHECKS

E-911 personnel have access to confidential and personal information regarding caller's names and addresses and individual situations. Employees agree to submit to criminal background checks when first hired by the agency.

We reviewed the telecommunicators personnel files to determine whether these background checks are being performed. We found that only 45% of the personnel files contained evidence of a criminal background check. Management informed us that some background checks may have been omitted when the agency was formed in 1988 because of the time constraints in getting the program underway.

RECOMMENDATION

6. Require criminal background checks on all applicants for employment. Submit the names of all current employees whose personnel files do not indicate a background check was performed previously.

Auditee Views

E-911 management concurs with this recommendation.

PERFORMANCE EVALUATIONS

E-911 conducts performance evaluations on employees before their six-month probationary period ends. However, no performance evaluations are conducted following this initial probationary period.

We believe performance evaluations should be performed annually to ensure employees are following established procedures, to recognize instances when performance has exceeded expectations, and to advise employees of performance areas requiring improvement.

RECOMMENDATION

7. Conduct performance evaluations annually for all employees.

Auditee Views

E-911 management concurs with this recommendation.

PAYROLL DOCUMENTS

We reviewed personnel files maintained at the Division of Personnel for E-911 employees to ensure that each contained an accurate personnel action (CS-3) form. This form includes information regarding the employee's job position and earnings.

We found three instances in which the CS-3 form was not current. In each instance, the employee's earnings per the payroll were greater than the amount shown on the CS-3. We verified the payroll earnings to the personnel system; no exceptions were noted. A new CS-3 form should be generated for each of these employees and placed in their personnel file.

These forms are not maintained at E-911 headquarters, although other personnel information is kept on file. We believe a copy of the most current CS-3 should be placed in the appropriate personnel files at E-911 headquarters and compared to payroll forms to ensure accuracy and resolve any differences.

RECOMMENDATION

8. Maintain current personnel action forms at E-911 headquarters.

Auditee Views

E-911 management concurs with this recommendation.