

April 16, 2001

The Honorable Bill Purcell, Mayor  
Metropolitan Government of Nashville and  
Davidson County  
Members of the Emergency Communications District  
Board of Directors  
Metropolitan Courthouse  
Nashville, TN 37201

### Report of Internal Audit Section

Dear Mayor Purcell and Emergency Communications District Board Members:

We have recently completed a performance audit of the Metropolitan Government of Nashville and Davidson County E911 System. According to the *Government Auditing Standards* issued by the Comptroller General of the United States, “a performance audit is an objective and systematic examination of evidence for the purpose of providing an independent assessment of the performance of a government organization, program, activity, or function in order to provide information to improve public accountability and facilitate decision-making by parties with responsibility to oversee or initiate corrective action.” A performance audit is different than financial statement audits, which are limited to auditing financial statements and controls, without reviewing operations and performance. In performing this audit, we retained Gartner Consulting to work under our direction. Their final report dated April 2001, *E911 System Assessment Report*, is included with this report.

Internal Audit typically addresses audit reports to and obtains responses from the department head and the board or commission overseeing the department audited or, for departments without a board or commission, the department head and the Mayor. As more fully explained in the accompanying *E911 System Assessment Report*, the E911 system is managed jointly by the Police and Fire Departments, both of which fall under the responsibility of the Mayor. As a result, this report is being addressed to the Mayor, who has the ultimate overall managerial responsibility for the E911 system, and to the Emergency Communications District Board, which has significant funding responsibilities for the E911 system.

## Objectives, Scope, and Methodology

This audit represents the first comprehensive performance audit of the E911 system, which is the system that receives and dispatches citizen emergency 911 calls for police, fire and ambulance services. The E911 system operates under the Emergency Communications District Law (Tennessee Code Annotated Title 7, Chapter 86), which authorized municipalities and counties to create Emergency Communications Districts, governed by a Board of Directors. The roles and responsibilities of the nine member E911 Board include: 1) electing the method of responding to 911 calls, 2) subscribing to telephone services, 3) levying telephone service charges to fund 911 telephone service, and 4) funding E911 facilities, equipment and services. Total Emergency Communications District operating revenues and expenses for the June 30, 2000 fiscal year were \$5,156,641 and \$1,977,113, respectively. Additionally, the District transferred \$4,200,000 to the Metropolitan Government to fund a portion of the 800 MHz radio system, which is being funded over a ten year period.

The E911 system is operated by 132 Police and Fire Department operators, dispatchers and other staff members from an emergency communication center that also houses the telecommunication and computer equipment that support the system. The combined Police and Fire Department operating budgets dedicated to the E911 system total \$8,114,741 for fiscal year 2001. E911 calls during calendar year 1999 totaled 364,731, non-emergency calls totaled 751,539 and dispatches to police, fire and emergency medical personnel totaled 316,096.

The overall objectives of this performance audit were as follows:

- Review all major aspects of E911 operations, including mission and goals, telecommunications and computer configuration, organizational structure, staffing patterns and compensation, operator and dispatcher training, operational and back-up facilities, and performance measurement.
- Conduct a peer group benchmarking assessment.
- Assess the current systems, operations and technical infrastructure supporting the E911 system.
- Develop findings and recommendations for any areas where performance could be improved.

The scope of the work included all aspects of operations related to the E911 system, and the audit focused on calendar year 1999 performance results, which was the most recent full calendar year available when the work began. Certain analyses required the consideration of financial results, performance and operations outside of that time period.

The methodology employed throughout this audit was one of objectively reviewing various forms of documentation, including written policies and procedures, financial information, Board minutes and various other forms of data, reports and information maintained by the Police and Fire Departments and others. Board members, management

and administrative personnel at the E911 communication center, personnel from other Metro departments, and other stakeholders were interviewed, and various aspects of E911 operations were directly observed. Data obtained from the E911 system was analyzed, and various aspects of E911 system data and practices were compared to those of selected peers and to best practices.

We performed the audit procedures in accordance with generally accepted government auditing standards.

## Findings and Recommendations

Gartner's *E911 System Assessment Report* addresses the current E911 service delivery system and the findings and recommendations in detail. Following is an overview of the findings and recommendations included in Gartner's report.

1. The E911 system should be reorganized so that there is one point of responsibility for the entire system. Currently the management of the E911 system is shared between the Police and Fire Departments, and there is no one point of overall responsibility for the E911 service delivery system. In addition to creating a potential for blame shifting in the event of a serious problem, the current organization structure is hindering the resolution of call transfer delays and is preventing a more efficient and effective use of the telecommunication and computer systems. In the current system, there is also a lower pay and benefit structure for certain Police personnel than for Fire personnel, which is lower than national industry averages and which negatively impacts recruiting and retention. Since the Police and Fire Departments both fall under the Mayor, a Director of Emergency Communications position reporting to the Mayor's Office should be created to be responsible for the entire E911 system. Additionally, all call takers should be trained to handle all types of calls in order to eliminate the need for internal transfers of fire and emergency medical calls and in order to rectify the disparity in compensation. The total financial impact of hiring a Director of Emergency Communications, getting salaries in line with industry standards, and staffing positions that have been vacant is estimated at \$638,000 annually.
2. Service delivery standards should be developed and measured. There are no written performance standards, and the computer system is not being used to measure performance to the fullest extent available. This has resulted in unclear performance expectations and in an inability to measure and monitor performance. Performance standards and standard operating procedures should be developed, and the systems should be programmed to measure performance in accordance with those standards to identify opportunities for improvement. Contracting services to develop these reports would have a one-time cost estimated at \$125,000.
3. E911 calls from Goodlettsville should be routed to Goodlettsville. E911 calls originating from the Davidson County part of the City of Goodlettsville are currently

routed to Metro's E911 system. Since these calls are ultimately transferred to Goodlettsville's E911 center to dispatch police, fire, or emergency medical services from Goodlettsville – often without Metro services being dispatched - the current arrangement sometimes results in unnecessary response time delays. All E911 calls originating from Goodlettsville should go to Goodlettsville's E911 center for immediate dispatch from Goodlettsville's police, fire, or emergency medical services, with Metro being notified in those instances where dispatch from Metro is also needed.

4. Consideration should be given to obtaining a new primary E911 facility. The current facility used for E911 operations is not adequately serving the E911 system needs. Additionally, the existing back-up facility is not adequate. Consideration should be given to building or acquiring a properly configured E911 facility and using the existing facility as a back-up facility for training and to continue to house the Mayor's Office of Emergency Management. Facility needs should be further evaluated by the Office of Facilities Planning and Construction Management and should be coordinated with the Emergency Communications District Board of Directors. The cost of a new facility, including related equipment, is estimated at \$8 to \$10 million.
5. Security at the E911 facility should be strengthened. Two situations that could compromise the security of the E911 communication center were noted. Work release inmates were used to clean parts of the facility, and occasionally the gates to the parking lot surrounding the facility were left open to accommodate large meetings. Janitorial services should be performed by Metro or contract personnel who have undergone background checks, and additional security staff should be on hand to allow cars entry to large meetings. Contracting janitorial services, instead of using inmate labor, would cost approximately \$20,000 per year.
6. Response times should be further studied. Both Police and Fire dispatchers indicated that it was not uncommon to have no units available to dispatch. This issue was beyond the scope of this audit, and Gartner did not investigate this perception. Because this perception appeared to be common and because of the significance of this issue, additional study on response times is recommended. Such a study is estimated at \$225,000.

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The Mayor's response to the audit recommendations follow this report.

We greatly appreciate the cooperation and help provided by the Police Department, the Fire Department and the Mayor's Office of Emergency Management, and by the Emergency Communications District Board of Directors.

This report is intended for the information of the management of the Metropolitan Government of Nashville and Davidson County. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

Internal Audit Section

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Internal Audit Manager

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