

PERFORMANCE AUDIT
OF THE

COMMUNICATIONS DIVISION

MICHIGAN DEPARTMENT OF STATE POLICE

September 2001

EXECUTIVE DIGEST

COMMUNICATIONS DIVISION

INTRODUCTION	This report, issued in September 2001, contains the results of our performance audit* of the Communications Division, Michigan Department of State Police (MSP).
AUDIT PURPOSE	This performance audit was conducted as part of the constitutional responsibility of the Office of the Auditor General. Performance audits are conducted on a priority basis related to the potential for improving effectiveness* and efficiency*.
BACKGROUND	The Communications Division is responsible for all of MSP's radio and telecommunication services. The Division provides communication services to both enlisted and civilian employees through the administration and servicing of its Statewide line telephone communication system, voicemail, pagers, cellular phones, and wireless communications (mobile and portable radios). The Division's responsibilities also include the implementation and administration of Michigan's Public Safety Communications System (MPSCS). MPSCS is an 800 megahertz (MHz) microwave connected digital communications system (see Figure 1) being built by a contractor, Motorola Communications and

* See glossary at end of report for definition.

Electronics, Inc. It will feature 181 remote communication sites consisting of 176 towers and 5 antennas supported by existing buildings strategically placed in the State. The construction of the system is being completed in four phases (see Figure 2). As of March 2001, MSP declared phases I through III complete and operational. Construction is in progress for phase IV.

The Division is made up of six sections: Executive, Field Maintenance, Planning and Engineering, Support Services, 800 MHz Training/9-1-1, and Network and Micro Systems Service. The Network and Micro Systems Service Section was transferred into the Division during our fieldwork and was not included within the scope of our review. Division staff are headquartered in Lansing, with field offices located in Lansing, Northville, Bridgeport, Paw Paw, Rockford, Cadillac, Gaylord, Negaunee, and Newberry.

AUDIT OBJECTIVES,
CONCLUSIONS, AND
NOTEWORTHY
ACCOMPLISHMENTS

Audit Objective: To assess the effectiveness of the Division in developing, awarding, and administering the MPSCS contract.

Conclusion: We concluded that the Division was moderately effective in developing, awarding, and administering the MPSCS contract. Our assessment disclosed reportable conditions* related to MPSCS project and contract financial administration, MPSCS revenue, and contractor compliance documentation (Findings 1 through 3).

Noteworthy Accomplishments: The Division has installed an enterprise asset management software application (MP2) that controls maintenance operations.

* See glossary at end of report for definition.

This system is used to develop a preventative maintenance schedule, create and prioritize work orders, create inventory records, track parts usage, and identify all maintenance costs associated with the MPSCS infrastructure. The advantages of tracking associated costs as well as monitoring equipment and inventory levels will help the Division mold its budgetary needs for the future. The software also enables the maintenance supervisor to analyze employee efficiency, project staffing time lines, and identify potential training needs.

The Division has used emerging web technology to create and maintain both intranet and Internet web sites to inform both internal and external customers about pertinent MPSCS information. This easily accessible technology allows the Division to disseminate new information regarding the MPSCS implementation to a broad group of users in a timely manner.

In addition, the Division piloted the use of the MPSCS Telecommunications Backbone Network (TBN) to supply a high-speed communication connection at five separate MSP offices and installations in the greater Gaylord area. The pilot program tested the cost effectiveness of the communication connection (investment payback, including the elimination of recurring third-party provider fees), its ability to provide increased bandwidth (speed) over the TBN, the potential scalability of future TBN communication connections for other State offices and MSP installations (particularly those in remote areas), and the general reliability of TBN to handle communication (data) transmissions besides those of MPSCS.

The Division determined that the implementation of the link (T1 line) at Gaylord resulted in an 18-month payback on its investment of \$21,000. The recurring annual savings to MSP is \$15,400, plus modem line costs for the Motor

Carrier Division's Gaylord office of approximately \$100 to \$500 per month. The T1 line significantly increased line speed and provided a fully redundant, reliable, and secure communication connection for the Gaylord MSP offices. The results of the pilot are being used as the basis for providing additional critical communication links for other MSP installations and other State departments.

Audit Objective: To assess the effectiveness of the Division in providing MPSCS training to personnel from MSP, State agencies, and local law enforcement and emergency services agencies.

Conclusion: We concluded that the Division was effective in providing MPSCS training to personnel from MSP, State agencies, and local law enforcement and emergency services agencies.

Audit Objective: To assess the effectiveness of the Division in marketing MPSCS to local law enforcement and emergency services agencies.

Conclusion: We concluded that the Division was generally effective in marketing MPSCS to local law enforcement and emergency services agencies. However, we noted a reportable condition related to the lack of a comprehensive marketing strategy (Finding 4).

**AUDIT SCOPE AND
METHODOLOGY**

Our audit scope was to examine the program and other records of the Communications Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Our methodology included the testing of records primarily covering the period October 1, 1997 through May 31, 2001. We conducted a preliminary review of the Division's operations to gain an understanding of the activities and to form a basis for selecting certain operations for audit. This included discussions with staff regarding their functions and responsibilities and review of program and financial records.

AGENCY RESPONSES

Our audit report contains 4 findings and 4 corresponding recommendations. The agency preliminary response indicates that MSP agrees with 3 recommendations and partially agrees with 1 recommendation.

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September 28, 2001

Colonel Michael D. Robinson, Director
Michigan Department of State Police
714 South Harrison Road
East Lansing, Michigan

Dear Colonel Robinson:

This is our report on the performance audit of the Communications Division, Michigan Department of State Police.

This report contains our executive digest; description of agency; audit objectives, scope, and methodology and agency responses; background; comments, findings, recommendations, and agency preliminary responses; a description of surveys and summaries of survey responses, presented as supplemental information; and a glossary of acronyms and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

AUDITOR GENERAL

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Description of Agency

The Communications Division is responsible for all of the Michigan Department of State Police's (MSP's) radio and telecommunication services. The Division provides communication services to both enlisted and civilian employees through the administration and servicing of its Statewide line telephone communication system, voicemail, pagers, cellular phones, and wireless communications (mobile and portable radios). The Division's responsibilities also include the implementation and administration of Michigan's Public Safety Communications System (MPSCS).

The Division is made up of six sections: Executive, Field Maintenance, Planning and Engineering, Support Services, 800 MHz Training/9-1-1, and Network and Micro Systems Service. The Network and Micro Systems Service Section was transferred into the Division during our fieldwork and was not included within the scope of our review. Division staff are headquartered in Lansing, with field offices located in Lansing, Northville, Bridgeport, Paw Paw, Rockford, Cadillac, Gaylord, Negaunee, and Newberry.

Audit Objectives, Scope, and Methodology and Agency Responses

Audit Objectives

Our performance audit of the Communications Division, Michigan Department of State Police (MSP), had the following objectives:

1. To assess the effectiveness of the Division in developing, awarding, and administering Michigan's Public Safety Communications System (MPSCS) contract.
2. To assess the effectiveness of the Division in providing MPSCS training to personnel from MSP, State agencies, and local law enforcement and emergency services agencies.
3. To assess the effectiveness of the Division in marketing MPSCS to local law enforcement and emergency services agencies.

Audit Scope

Our audit scope was to examine the program and other records of the Communications Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

Our audit procedures, conducted from June 2000 through May 2001, included the testing of records primarily covering the period October 1, 1997 through May 31, 2001. We conducted a preliminary review of the Division's operations to gain an understanding of the activities and to form a basis for selecting certain operations for audit. This included discussions with staff regarding their functions and responsibilities and review of program and financial records.

We reviewed the request for proposal, bidding submissions, and bid appeal process and evaluated the extent of bids received, the bid evaluation criteria used, and methodology applied. We identified significant contract compliance items and performed tests of the Division's contract monitoring procedures. Additionally, we

examined the contract billing process, the user fee calculation, and user fee accounting. We interviewed MSP staff to determine training activities and obtained listings of training performed, copies of training manuals, and other pertinent information. We obtained listings of all potential users of the system, potential users contacted by MSP, and current users; analyzed the population; and examined MSP's methodology for prioritizing and contacting potential users.

In addition, we conducted two surveys (see supplemental information). The first survey requested feedback from various individuals and agencies on the effectiveness and quality of the MPSCS training received from the Division. The second survey requested feedback from public safety service agencies on the Division's efforts to market MPSCS.

Agency Responses

Our audit report contains 4 findings and 4 corresponding recommendations. The agency preliminary response indicates that MSP agrees with 3 recommendations and partially agrees with 1 recommendation.

The agency preliminary response that follows each recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and Department of Management and Budget Administrative Guide procedure 1280.02 require MSP to develop a formal response to our audit findings and recommendations within 60 days after release of the audit report.

Background

In the 1980s, concern was expressed about the age, condition, and quality of the Michigan Department of State Police (MSP) radio system. The system, which was designed and installed in the 1940s, was aging and no longer able to meet communication needs. Only 3 of the 81 towers met Michigan Occupational Safety and Health Agency standards, and several could not be climbed for safety reasons. The radio equipment itself was often 20 years old or more. The system was experiencing many "dead spots" (areas where no signal could be received) because of demographic changes and increased electrical noise that is common from 1940s 42 megahertz (MHz) electronic systems. System limitations included having only five frequencies available and no interoperability between patrol units, criminal investigation units, MSP headquarters, and local law enforcement. In 1984, representatives of MSP and the Department of Management and Budget formed a needs assessment review task force, after which a private consultant was hired to do an in-depth communication needs evaluation and assessment. Following a final report by the private consultant and a review by the University of Michigan Engineering Department, the need to purchase a new Statewide radio system was determined, and in October 1992, a request for proposal was distributed to potential vendors.

In 1993, the State contracted with a communications engineering firm to assist the State with the project, including later testing of vendor compliance with contract specifications.

In December 1994, the State awarded Michigan's Public Safety Communications System (MPSCS) contract to Motorola Communications and Electronics, Inc., for \$187.3 million. Act 128, P.A. 1995, authorized MPSCS as the public safety communications system and authorized expenditures totaling \$187.3 million (State Building Authority funds totaling \$184.4 million and General Fund/general purpose funds totaling \$2.9 million) for implementation of the system. The Legislature subsequently passed Act 265, P.A. 1999, authorizing additional expenditures of \$18.6 million (General Fund/general purpose) for system modifications and tax issues and Act 291, P.A. 2000, authorizing additional expenditures of \$28.3 million (General Fund/general purpose) for integrated voice and data upgrades, bringing the total authorization for expenditures up to \$234.2 million.

The system being built by Motorola is an 800 MHz microwave connected digital communications system (see Figure 1). It will feature 181 remote communication sites

consisting of 176 towers and 5 antennas supported by existing buildings strategically placed in the State. The construction of the system is being completed in four phases (see Figure 2). As of March 2001, MSP declared phases I through III complete and operational. Construction is in progress for phase IV. As of August 2001, 48 of the 61 phase IV towers and buildings had been constructed and the Division anticipates that the remaining 13 will be constructed by the end of October 2001. None of the Telecommunications Backbone Network, microwave, or computer equipment has been installed at any of the locations. Further progress in phase IV is pending the outcome of the State's consideration of implementing integrated voice and data technology.

Within each phase of the project, MSP and Motorola determine necessary tower site locations and then MSP takes steps to acquire the land on which the towers and accompanying equipment shed will be built. Towers can be up to 480 feet in height and can be either self-supporting towers* or guyed towers* (see Figures 3 and 4).

As part of the construction in each phase, MSP and Motorola perform a number of acceptance tests using detailed test scripts. MSP and Motorola perform extensive factory acceptance tests of all electronic equipment with the equipment staged as a complete system before the equipment is shipped from the manufacturer. Sites and towers have various stages of acceptance. After the equipment is installed, MSP and Motorola perform a specification test on all of the equipment to verify that the equipment meets all technical specifications. MSP and Motorola then perform coverage testing on the system. The coverage testing consists of dividing the State into 2 mile by 2 mile grids. Marked patrol units driven by uniformed officers along with a State technician test the entire area. The first test uses Motorola's Factware. Upon completion of this test, the officer makes a voice test from the mobile with dispatch location to determine the circuit merit* level of signal received. A minimum of 97% of the grids must pass with no contiguous grid failures. MSP and Motorola then perform functional testing to verify that the system has all of the functionality specified.

The system is managed by the Network Control Center (NCC), which is housed within the Communications Division. NCC staff monitor all alarming and system information from this one central location. Infrastructure maintenance staff consists of about 50 State employees located throughout the State. MSP staff program radios and perform training.

* See glossary at end of report for definition.

The new system involves "trunking," the sharing of a limited number of communications paths to accommodate a large number of users. By trunking conversations on the system, many users can communicate with each other at the same time on the same system. A computer within each radio decodes the necessary digital transmission to deliver the right message to users. This allows the programming of special talkgroups* under the system, with each radio having the capability of being programmed to receive and communicate with any number of talkgroups that may be appropriate to their mission. An example of sharing a radio system would be police and fire departments. Because they do not regularly communicate, each department would be on a separate talkgroup but could have a mutual talkgroup in place for emergencies in which they need to communicate with each other.

MSP asserts that the new system provides substantial improvements in Statewide coverage and signal quality, system flexibility, and interoperability with other State and local government agencies. MSP cites the capability of other State departments and local public safety agencies to join the system as a major system benefit. MSP originally established a one-time start up fee of \$250 per radio as well as a \$300 per radio annual fee for programming and other maintenance costs borne by MSP to operate the system. MSP recently reduced these fees to \$25 and \$200, respectively. Additionally, users can purchase radios from Motorola with the new technology of the system at a cost of approximately \$3,000 each. Local public safety agencies can join the system and benefit from the technology without having to incur the infrastructure and administrative costs of building their own system.

(Background information was extracted from a Senate Fiscal Agency publication entitled "Construction of New Public Safety Communications System" and from the MSP web site.)

* See glossary at end of report for definition.



Figure 1
Close-up view of an 800 MHz microwave connected digital communications system guyed tower.

Photo courtesy of: Theron Shnew, MSP Communications Division

MPSCS CONSTRUCTION BY PHASE

Figure 2

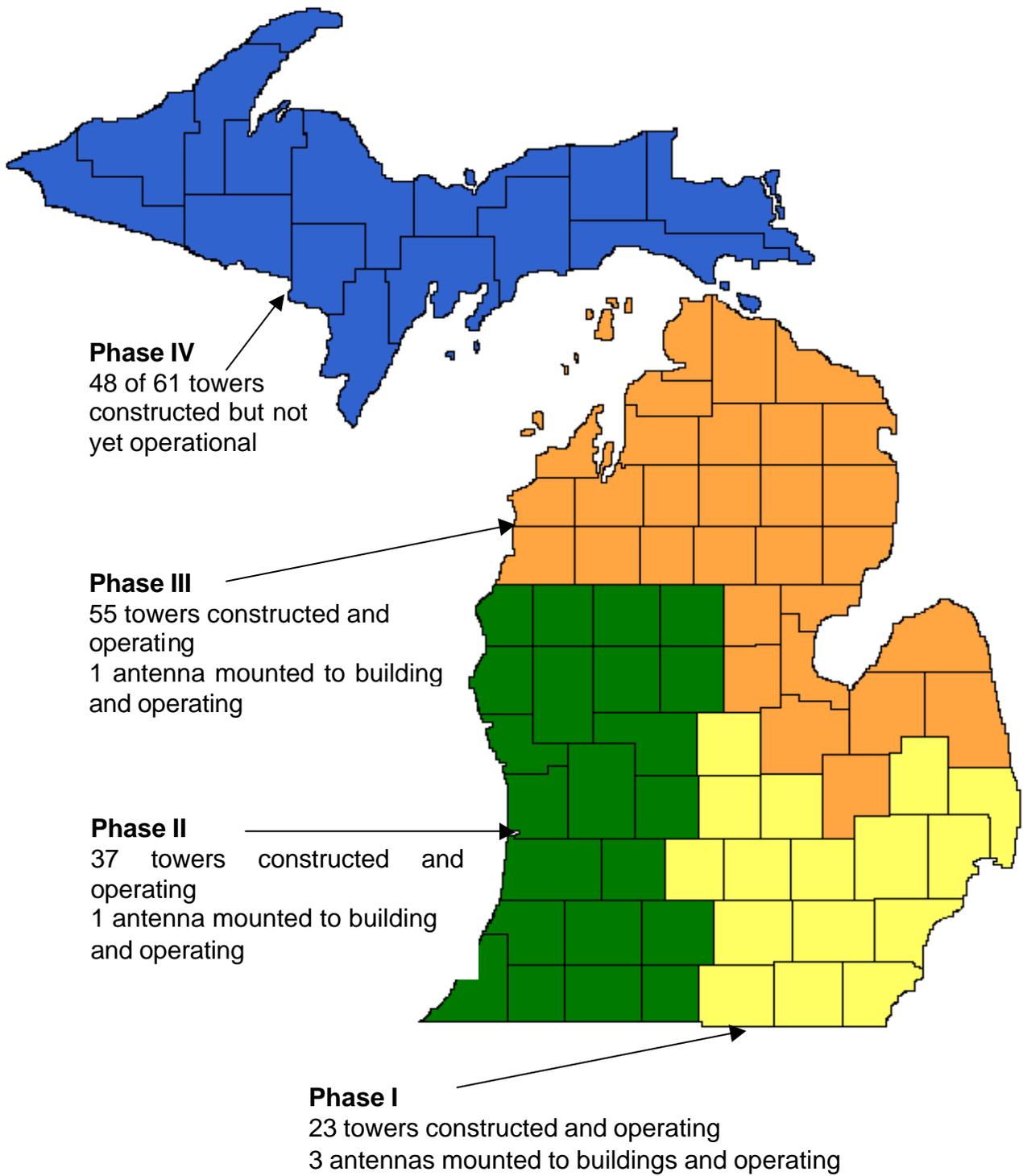




Figure 3
One of 44 self-supporting towers currently constructed and operating as part of the 800 MHz microwave connected digital communications system.

Photo courtesy of: Theron Shinew, MSP Communications Division

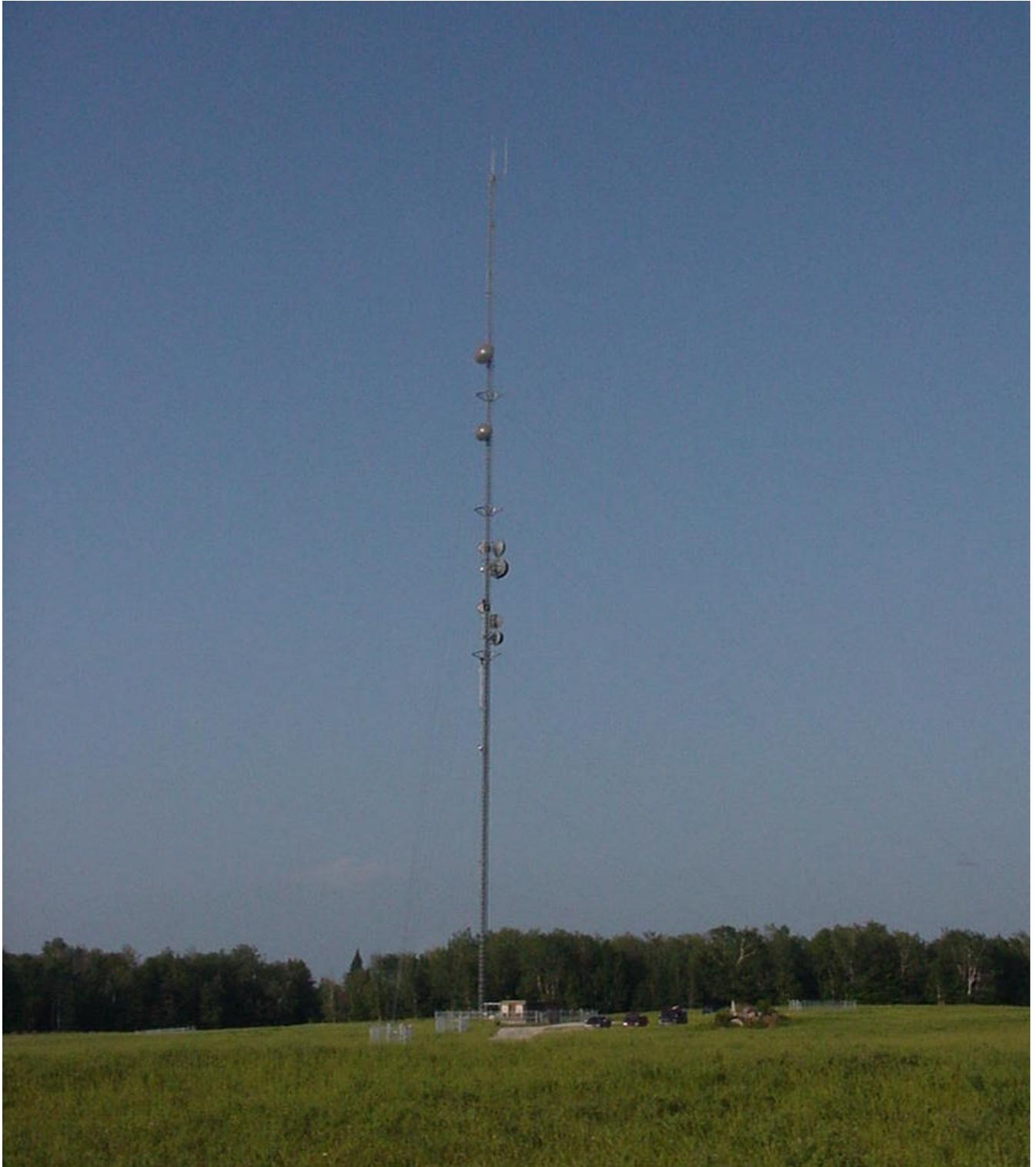


Figure 4

One of 71 guyed towers (guy wires not visible) currently constructed and operating as part of the 800 MHz microwave connected digital communications system.

Photo courtesy of: Theron Shinew, MSP Communications Division.

COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

EFFECTIVENESS IN DEVELOPING, AWARDING, AND ADMINISTERING THE MPSCS CONTRACT

COMMENT

Audit Objective: To assess the effectiveness of the Communications Division in developing, awarding, and administering Michigan's Public Safety Communications System (MPSCS) contract.

Conclusion: We concluded that the Division was moderately effective in developing, awarding, and administering the MPSCS contract. Our assessment disclosed reportable conditions related to MPSCS project and contract financial administration, MPSCS revenue, and contractor compliance documentation.

Noteworthy Accomplishments: The Division has installed an enterprise asset management software application (MP2) that controls maintenance operations. This system is used to develop a preventative maintenance schedule, create and prioritize work orders, create inventory records, track parts usage, and identify all maintenance costs associated with the MPSCS infrastructure. The advantages of tracking associated costs as well as monitoring equipment and inventory levels will help the Division mold its budgetary needs for the future. The software also enables the maintenance supervisor to analyze employee efficiency, project staffing time lines, and identify potential training needs.

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Michigan Department of State Police (MSP) offices and installations in the greater Gaylord area. The pilot program tested the cost effectiveness of the communication connection (investment payback, including the elimination of recurring third-party provider fees), its ability to provide increased bandwidth (speed) over the TBN, the potential scalability of future TBN communication connections for other State offices and MSP installations (particularly those in remote areas), and the general reliability of TBN to handle communication (data) transmissions besides those of MPSCS.

The Division determined that the implementation of the link (T1 line) at Gaylord resulted in an 18-month payback on its investment of \$21,000. The recurring annual savings to MSP is \$15,400, plus modem line costs for the Motor Carrier Division's Gaylord office of approximately \$100 to \$500 per month. The T1 line significantly increased line speed and provided a fully redundant, reliable, and secure communication connection for the Gaylord MSP offices. The results of the pilot are being used as the basis for providing additional critical communication links for other MSP installations and other State departments.

FINDING

1. MPSCS Project and Contract Financial Administration

The Division did not effectively administer the financial aspects of the MPSCS project and contract.

The Division and the Department of Management and Budget share responsibility for the financial administration of the project. The Division has the majority of the oversight responsibility and maintains the supporting financial records for the contract.

Our review of the financial records disclosed:

- a. The Division did not process contract change orders for additions of approximately \$15.2 million for system modifications and reductions of approximately \$2.7 million for scope adjustments.
- b. The Division paid the contractor approximately \$7.8 million more than the corresponding contract amount at the completion of phase III. Although the overpayment amounts were identified at the completion of each project phase, the Division and the contractor agreed to allow the contractor to retain the

overpayments until phase IV. The contractor has started to reflect the overpayments as credits in the phase IV billings. We estimate that the State lost approximately \$578,000 in interest income as of May 31, 2001 as a result of the Division not pursuing the credits owed to it by the contractor at the conclusion of each of phases I through III.

- c. Costs savings of \$52,000 from phase II B was listed in supporting detailed documentation but had been removed from the contract status summary document. The contract status summary document is used to track the financial status of the contract and is prepared by Motorola Communications and Electronics, Inc., and reviewed by the Division. Neither the Division nor Motorola could explain why \$52,000 in cost savings had been removed from the contract status summary document.
- d. The Division had not periodically reconciled all payments to the contract. As a result of our audit, the Division performed a reconciliation of payments made against contractual requirements. During this reconciliation, the Division determined that it had paid the contractor approximately \$577,000 more than the billed amounts. The first of the overpayments occurred in January 2000. The Division informed us that it will recover all overpayments during phase IV. At the time of the reconciliation, the Division also informed us that it had not received a contractor billing for \$120,000 dated July 22, 1999. The Division informed us that it will request a new bill from the contractor during phase IV.

Additionally, we prepared an analysis of the legislative authorizations through appropriations, financial obligations through the contract and land acquisitions, and vendor payments as of the completion of phase III. We concluded that the Division obligated the State to costs of approximately \$5 million over the amounts appropriated for the project. The Legislature has appropriated \$234.2 million to construct MPSCS. At the time of our analysis, the Division had committed the State to costs of approximately \$239.1 million. The resulting overage is related primarily to land costs and system modifications.

A contract of this financial magnitude requires extensive oversight to ensure that contract requirements are met, that payments are appropriate, and that the project expenditures do not exceed the legislatively authorized appropriations.

RECOMMENDATION

We recommend that the Division effectively administer the financial aspects of the MPSCS project and contract.

AGENCY PRELIMINARY RESPONSE

The Division partially agrees with the recommendation. The Division informed us that a change order for \$14.1 million has now been submitted to the Department of Management and Budget. Procedures have been developed to more effectively administer the financial aspects of the contract. The Division also agrees that there will not be enough money appropriated to finish the project. As additional financial information has been compiled, the State will be obligated for approximately \$3.4 million more than the appropriated amount. The Division disagrees with the characterization that payments to the contractor through phase III are overpayments. The contractor never received either cash advances or payments for goods and services not delivered to MSP under the terms and conditions of the contract. Additionally, the contract does not contemplate or state that reconciliation shall occur on a phased basis. The contract does contemplate that there will be a final reconciliation to ensure that the State receives a system for no more than the contracted amount of \$187,275,915, plus any approved change orders. As phase IV is neither completed nor accepted, this final reconciliation has not occurred.

FINDING

2. MPSCS Revenue

The Division did not properly classify revenue received for MPSCS services.

Section 1800.115 of the *Codification of Governmental Accounting and Financial Reporting Standards*, published by the Governmental Accounting Standards Board, states that the primary classification of governmental fund revenues is by fund and source. The State of Michigan's accounting structure has the following 7 primary revenue classifications, each relating to the source of the revenue: taxes, federal agencies, local agencies, services, licenses and permits, special Medicaid reimbursements, and miscellaneous. The miscellaneous revenue category is used only when a State agency is unable to determine the source of the revenue or when the source of the revenue does not fall into any of the other 6 primary categories.

The Division billed MPSCS member organizations for user fees and system initialization fees. The Division collected \$192,000, \$176,000, and \$169,000 of MPSCS revenue in fiscal years 1999-2000, 1998-99, and 1997-98, respectively.

All of this revenue was recorded as miscellaneous revenue even though the revenue was from MPSCS services provided to federal and local units of government. The Division should have recorded the revenue as service revenue in the State's financial records. Division staff have informed us that they anticipate that the revenue amount will continue to increase substantially as more local units join the system. Therefore, proper classification will have an increasingly significant impact on MSP's financial schedules.

RECOMMENDATION

We recommend that the Division properly classify revenue received for MPSCS services.

AGENCY PRELIMINARY RESPONSE

The Division agrees with the recommendation and will comply. The Management Services Division accounting staff will research the use of the proper fund and change the classification of current and future MPSCS revenue to satisfy the audit recommendation.

FINDING

3. Contractor Compliance Documentation

The Division did not obtain and retain documentation to demonstrate contractor compliance with technical contract provisions.

Our review of a sample of 5 of the 26 phase I tower/antenna sites and 8 of the 38 phase II tower/antenna sites for the Telecommunications Backbone Network (TBN) and 800 megahertz (MHz) specification and functionality testing performed by MSP and Motorola disclosed the following:

- a. The Division could not locate the TBN specification testing checklists for any of the 5 phase I sites. Additionally, the Division could not locate the 800 MHz functionality and specification testing checklists for 4 of the 5 phase I sites.

The contract requires that Motorola complete testing checklists during testing with each test receiving a pass or fail mark as determined by the State. It also requires that Motorola assemble the checklists into a binder and provide the binder to the State as a site test log for future reference. Division staff informed us that Motorola had completed the testing but that Division staff were not able to locate the testing checklists.

- b. The Division accepted phase II as complete without resolving all outstanding punchlist items. Our August 2000 review of 8 phase II sites disclosed that MSP had not required Motorola to resolve a systemwide alarm system failure. The alarm system's purpose is to continuously monitor 56 features at each tower site. These features include the TBN equipment, power supply, door security, and temperature levels.

The contract states that the project punchlist shall be a record of all items that did not meet the terms and conditions of the contract and requires corrective action or resolution. The contract also requires that all punchlist items be addressed until each item has been resolved.

Additionally, the contract states that district and phase acceptance of the system will occur upon successful completion of 800 MHz testing and acceptance, TBN testing and acceptance, network management testing and acceptance, and site testing and associated inspections. The Division and Motorola sign an acceptance certificate to signify district and phase acceptance of the system. The Division accepted phase II as complete on September 10, 1999.

Without the testing documentation, the Division is unable to document that the contractor complied with the contract terms and conditions related to equipment and system functionality. Punchlist items represent items that were not in place or did not operate in accordance with contract specifications. The Division should require that Motorola resolve all punchlist items to ensure that the system will be fully functional.

RECOMMENDATION

We recommend that the Division obtain and retain documentation to demonstrate contractor compliance with technical contract provisions.

AGENCY PRELIMINARY RESPONSE

The Division agrees with the recommendation and will comply. The Division informed us that the State's quality assurance contractor located the documentation subsequent to the completion of our fieldwork.

EFFECTIVENESS IN PROVIDING TRAINING

COMMENT

Audit Objective: To assess the effectiveness of the Division in providing MPSCS training to personnel from MSP, State agencies, and local law enforcement and emergency services agencies.

Conclusion: We concluded that the Division was effective in providing MPSCS training to personnel from MSP, State agencies, and local law enforcement and emergency services agencies.

EFFECTIVENESS IN MARKETING MPSCS

COMMENT

Audit Objective: To assess the effectiveness of the Division in marketing MPSCS to local law enforcement and emergency services agencies.

Conclusion: We concluded that the Division was generally effective in marketing MPSCS to local law enforcement and emergency services agencies. However, we noted a reportable condition related to the lack of a comprehensive marketing strategy.

FINDING

4. Comprehensive Marketing Strategy

The Division had not implemented a comprehensive strategy to market MPSCS to potential user organizations.

As part of MSP's strategic planning process, the Division established a goal to market MPSCS to local user organizations. The Division indicated in its MPSCS fact sheet that one of the primary benefits of MPSCS is the system's ability to allow local users, such as local police departments, sheriffs departments, and fire and

ambulance services, to talk directly with each other and MSP on the same radio system. For organizations not on the system, in many circumstances, such communication must be conducted through a series of telephone calls and/or calls from different radio systems coordinated by a dispatcher. Additionally, MPSCS membership would eliminate the need for many local users to build their own systems and incur the associated bidding, construction, operation, and maintenance costs.

The Division's marketing efforts consisted of sending a broadcast message on the Law Enforcement Information Network (LEIN) and relying on the 64 MSP post commanders to disseminate information to the approximately 1,850 potential local users. Also, the Division made presentations and/or provided information packets to potential user organizations upon request. The Division had not identified key potential user organizations and initiated contact with them.

To determine the effectiveness of these marketing methods, we surveyed a sample of 509 of the approximately 1,850 potential user organizations during August 2000. We received responses from 185 organizations. One of the survey questions asked the organizations to indicate all (allowing multiple answers) sources from which they received information on the MPSCS. We compared the results to the Division's marketing efforts and noted that only 19 of the 127 respondents with access to LEIN indicated that they had received the LEIN message and 51 respondents indicated that they received verbal information from MSP post commanders. Additionally, 55 respondents indicated that they had not received any information about MPSCS and 38 respondents indicated that they had received verbal information from a source other than MSP. These results indicate that the Division's primary marketing efforts did not reach many potential users. Additionally, the narrative survey comments showed a pattern of misconceptions about MPSCS, especially relating to funding of MPSCS's construction and the State's use of the annual user fees. As of August 2000, only 31 of the approximately 1,850 potential user organizations had become system members.

A comprehensive marketing strategy that targets key potential user organizations, disseminates written information to all potential user organizations, and provides opportunities for personal presentations could maximize local user participation and help ensure that all potential user organizations receive accurate and timely information. Disseminating written information packets to all potential user

organizations could also clear up the misconceptions circulating among some of the organizations.

Subsequent to our August 2000 review of the Division's marketing efforts, the Division developed a marketing plan and hired an intern to facilitate the marketing efforts. The Division's marketing plan was published during spring 2001.

RECOMMENDATION

We recommend that the Division implement a comprehensive strategy to market MPSCS to potential user organizations.

AGENCY PRELIMINARY RESPONSE

The Division agrees with the recommendation and will comply. Subsequent to the auditors' review, the Division informed us that it has developed a comprehensive marketing/business plan for MPSCS. Strategies identified and developed within this marketing/business plan have already begun to positively direct and influence the State's degree of success in the continuous promotion of MPSCS.

SUPPLEMENTAL INFORMATION

Description of Surveys

We developed two surveys to assist in our audit of the Communications Division:

1. MPSCS Training (Exhibit A)

This survey requested feedback from various individuals on the effectiveness and quality of Michigan's Public Safety Communications System (MPSCS) training they received from the Communications Division. We mailed 400 surveys to individuals who received training on the use of two-way radios with MPSCS. We received a total of 115 responses to our survey, which are summarized in Exhibit A. The responses indicated that most of the trainees were satisfied with the quality of training they received and that they had received needed assistance from the Communications Division after the training sessions had been completed.

2. MPSCS Marketing (Exhibit B)

This survey requested feedback from public safety service agencies (police, fire, emergency medical service, and State and federal government agencies) on the Communications Division's efforts to market MPSCS. We mailed surveys to 509 agencies that could be possible users of MPSCS. The agencies are broken down as follows: 300 law enforcement agencies, 166 fire departments, 28 emergency medical service agencies, and 15 State and federal government agencies. We received a total of 185 responses to our survey, which are summarized in Exhibit B. Fifty-nine agencies responded that they had not received any information on MPSCS, but they would like to. Those agencies that had received information on MPSCS and elected not to join it identified the annual membership fee (68), the activation fee (64), the equipment cost (62), and the lack of local control (46) as the most common reasons for not becoming a member of MPSCS. Those agencies that had joined MPSCS indicated they were generally satisfied with it.

COMMUNICATIONS DIVISION
 Michigan Department of State Police
 Michigan's Public Safety Communications System (MPSCS) Training
Summary of Survey Results

Surveys distributed 400
 Number of responses 115
 Response rate 29%

The total number of responses for each item may not agree with the number of responses noted above because some respondents provided more than one response to an item and other respondents did not answer all items.

1. What type(s) of MPSCS training have you received (please check all that apply)?

24 Instructor ("Train the Trainer")
21 Dispatcher
21 Criminal Investigation Division (CID)
59 Emergency Public Safety
16 Non-Emergency Public Safety

2. Did you receive MPSCS training before the MPSCS equipment was installed and put into service?

85 Yes 31 No

3. How satisfied were you with the following training related items?

Training Related Items	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	No Opinion
Usefulness of information	64 (56.6%)	42 (37.2%)	4 (3.5%)	2 (1.8%)	1 (.9%)
Amount of material covered	60 (53.1%)	41 (36.2%)	9 (8.0%)	1 (.9%)	2 (1.8%)
Written materials	57 (51.8%)	43 (39.1%)	5 (4.6%)	3 (2.7%)	2 (1.8%)
Length of time between training and installation of equipment	48 (44.4%)	30 (27.8%)	12 (11.1%)	12 (11.1%)	6 (5.6%)
Convenience of location	70 (62.5%)	34 (30.4%)	5 (4.5%)	2 (1.8%)	1 (.9%)
Length of session	60 (54.1%)	42 (37.8%)	5 (4.5%)	3 (2.7%)	1 (.9%)
Presenter's level of knowledge	85 (75.2%)	22 (19.5%)	3 (2.7%)	2 (1.8%)	1 (.9%)

4. As a result of training, how confident were you in using the equipment and system?

<u>41</u>	(35.7%)	Very confident
<u>62</u>	(53.9%)	Somewhat confident
<u>11</u>	(9.5%)	Not confident
<u>1</u>	(.9%)	No opinion

5. Are there any aspects of the training course that you would like changed to make it more useful?

34 Yes 70 No

If you responded "Yes," please indicate what you would like changed.

Responses to this question varied. The most common responses were spending less time on background information, spending more time on radio use and "hands on" practice, and conducting training closer to the equipment installation date.

6. Have you received any formal refresher training?

34 (29.8%) Yes 80 (70.2%) No

If you responded "No," do you feel refresher training would be useful?

53 (68.8%) Yes 24 (31.2%) No

7. Have you contacted MSP with questions related to the equipment or system operations since your training?

51 (44.3%) Yes 64 (55.7%) No

If you responded "Yes," did MSP provide you with the assistance you needed?

42 (87.5%) Yes 6 (12.5%) No

COMMUNICATIONS DIVISION
Michigan Department of State Police
Michigan's Public Safety Communications System (MPSCS) Marketing
Summary of Survey Results

Surveys distributed	509
Number of responses	185
Response rate	36%

The total number of responses for each item may not agree with the number of responses noted above because some respondents provided more than one response to an item and other respondents did not answer all items.

SECTION A

1. From what source did you receive either verbal or written information (e.g., description of the project, benefits, and costs) regarding MPSCS (please check all that apply)?

<u>19</u>	LEIN broadcast message
<u>64</u>	Written information from MSP Communications Division
<u>87</u>	Presentation by MSP Communications Division
<u>24</u>	Written information from a professional organization (e.g., Michigan Sheriffs Association)
<u>51</u>	Verbal information from MSP Post Commander
<u>38</u>	Verbal information from other police/fire/emergency services organizations
<u>28</u>	Newspaper articles
<u>55</u>	No information has been received (if selected, please complete question 2)
<u>9</u>	Other

2. If you have not received information regarding MPSCS, would you like to?

<u>59</u>	Yes	<u>27</u>	No
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3. Which of the following were presented to your organization as benefits of MPSCS by MSP (please check all that apply)?

<u>101</u>	Instant access to regional or Statewide communications
<u>98</u>	Interoperability (communication between different agencies)
<u>42</u>	Cost savings as a result of a fixed annual membership fee and no administrative costs
<u>64</u>	No additional infrastructure needed
<u>60</u>	Continuous system support through the Network Control Center (NCC)
<u>75</u>	Emergency activation of special event communications
<u>56</u>	Free training
<u>71</u>	97% all-weather mobile coverage
<u>43</u>	Ability to test system before incurring expense
<u>51</u>	Direct access to LEIN and automated driver license data (after implementation of data functionality)
<u>23</u>	Fire paging
<u>4</u>	Other

If your agency is a user/member of MPSCS, please complete only Section B. If your agency has not become a user/member of MPSCS, please complete only Section C.

SECTION B

4. Please indicate the level of importance to your agency and your level of satisfaction regarding the following MPSCS benefits and features:

MPSCS Benefits and Features	Level of Importance			Level of Satisfaction				
	High	Moderate	Low	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Not Applicable
Instant access to regional or Statewide communications	12	6	4	8	6	2	0	1
Interoperability	16	4	2	6	5	1	2	3
Equipment costs	17	5	0	1	7	4	4	0
Fixed annual membership fee	10	6	4	2	8	2	3	0
No additional infrastructure needed	17	1	4	8	5	0	4	1
No administrative costs	16	4	2	7	8	0	2	0
Continuous system support through NCC	13	4	3	7	5	2	0	1
Emergency activation of special event communications	15	6	0	5	4	1	2	4
Free training	11	8	2	9	4	0	0	1
97% all-weather mobile coverage	21	1	0	5	4	2	6	0
Clearness of voice transmissions	21	1	0	4	8	0	5	0
Ability to test system before incurring expense	15	2	4	2	5	0	3	3
Other (please identify)	0	0	0	0	0	0	0	0

5. How much of an improvement is MPSCS over your previous communications system?

- a. 12 (57.1%) Significant improvement
- b. 1 (4.8%) Some improvement
- c. 4 (19.0%) Minor improvement
- d. 3 (14.3%) No improvement
- e. 1 (4.8%) No opinion

6. What specific changes, if any, would your agency like to see made to MPSCS?

Responses to this question varied. The most common responses were lower the costs, provide grant assistance, and increase portable coverage.

SECTION C

7. Which of the following issues contributed to your agency electing to not become a member of MPSCS?

- 22 MPSCS did not provide adequate coverage in your area.
- 10 Interoperability was not a useful function.
- 46 Local agencies have no control over system.
- 35 Local agencies had limited input into system design and functionality.
- 62 The equipment cost was too expensive (if selected, please complete question 8).
- 68 The annual membership fee of \$300 per radio was too expensive (if selected, please complete question 8).
- 64 The activation fee of \$250 per radio was too expensive (if selected, please complete question 8).
- 22 The potential benefits were not fully explained to your organization.
- 19 Your organization had concerns based on how cooperative MSP has been in the past.

8. Please estimate at what cost, per radio, your organization would be able to afford to join MPSCS.

	<u>Response range</u>	<u>Median response</u>
Activation fee (31 responses)	Free to \$ 300	\$ 50
Annual membership fee (29 responses)	Free to \$ 500	\$ 100
Equipment cost (25 responses)	Free to \$ 5,000	\$ 1,000

Glossary of Acronyms and Terms

circuit merit	A level of measurement for the audio and signal quality in a configuration of electrically or electromagnetically connected components or devices.
effectiveness	Program success in achieving mission and goals.
efficiency	Achieving the most outputs and outcomes practical for the amount of resources applied or minimizing the amount of resources required to attain a certain level of outputs or outcomes.
guyed tower	A slender tower structure that is secured by guy wires.
LEIN	Law Enforcement Information Network.
MHz	megahertz.
MPSCS	Michigan's Public Safety Communications System.
MSP	Michigan Department of State Police.
performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
reportable condition	A matter coming to the auditor's attention that, in the auditor's judgment, should be communicated because it represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.

self-supporting tower	A tower with a wide base that becomes more narrow toward the top and does not require guy wires for support.
talkgroup	A group of system users with a need to communicate with each other within the trunked radio system. Each talkgroup can be partitioned within the system in such a way that it does not interfere with the other groups in the system, even though the groups are sharing the exact same frequencies.
TBN	Telecommunications Backbone Network.