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# Typical Costs for Effective and Efficient 9-1-1 Dispatching

## APPENDIX C

As part of this review, we gathered information on current costs of various equipment, training, and other features related to the seven recommended actions for effective and efficient public safety answering points (PSAPs). All of the items listed below have an impact on the quality of service that dispatchers provide and on the operations of PSAPs. To collect this information, we contacted vendors of public safety telecommunications equipment and 9-1-1 related services, as well as professional organizations that offer services to dispatchers and PSAPs. We also contacted several PSAPs to gather information on recent purchase costs of equipment and services.

Our list of equipment and features and related costs is not exhaustive. The information reflects ranges of minimum costs based on our contacts with

multiple vendors and PSAPs; PSAPs may incur actual costs that are higher or lower. The list is a starting point and the figures do not include vendor fees related to installation and ongoing maintenance. Purchase, installation, and maintenance costs may vary greatly depending on the location and needs of the PSAP. In light of the evolving technology in the area of public safety communications and dispatching, the costs for these items, as well as desired options and features, are subject to change over time.

We organized the lists below according to the actions recommended in Chapter 2. Additional cost information for certain items is included in the Chapter 2 examples of best practices used by specific Minnesota PSAPs.

### Develop and Use Standard Operating Procedures

#### **Emergency Medical Dispatch Priority Response System**

Emergency medical dispatch manager training	\$99 to \$295 per course
Emergency medical dispatcher training	\$179 to \$250 per course; \$50 per hour for instructor on-site at PSAP
Medical protocol prompts on flip cards	\$445 to \$465 per set
Medical protocol prompts on computer software	\$1,400 to \$2,250 per answering position; \$2,500 per site license

## Support a Trained and Qualified Work Force

### **Selection and Hiring**

#### Testing

\$175 and more, depending on number tested; includes testing knowledge, multi-tasking ability, personality, etc.

### **Training**

#### Basic telecommunicator course

\$179 per individual

#### Communications center supervisor course

\$279 to \$1,495 per individual

#### Human resources management course

\$279 per individual

#### Americans with Disabilities Act training

\$99 per individual

#### Stress management training

\$99 per individual

#### National Emergency Number Association (NENA) Certified Emergency Number Professional

NENA member: \$485; nonmember: \$625 (includes books)

#### Bureau of Criminal Apprehension Criminal Justice Information Systems Certification

No course costs

#### Bureau of Criminal Apprehension Police Management/Supervision Certificate

\$520 to \$820

#### Minneapolis Community Technical College Diploma/Associates of Arts Degree

\$2,000 to \$4,500

## Educate the Public on the 9-1-1 System and Services

### **Public Service Announcement (PSA)**

#### Produce and broadcast PSA video or text

No direct costs to PSAP if contracted through its local government access cable television network. Local government pays network franchise fees for cable television services.

#### Broadcast PSA video or text

No cost if aired by public access cable television organization or other network stations.

#### Produce PSA video or text

\$5,000 to \$50,000 through private company

### **Literature and Other Materials**

#### National Crime Prevention Council 9-1-1 brochure

\$150 for 1,000 brochures

#### National Crime Prevention Council coloring book for children

\$460 for 1,000 books

#### APCO 9-1-1 education kit for children

\$35 each (includes instructional video, presenter's guide, and materials for 35 children)

## Maintain Adequate Communications and Network Equipment

### **Phone Equipment Features**

Automatic call distribution (ACD) software	\$1,130 (basic software) to \$10,870 (ACD and customized records management software)
Three-way telephone conferencing, speed dial, last number redial	No additional cost; included within 9-1-1 system
Selective routing	\$7 and more per 100 population
Telephone trunks for alternate routing	\$40 per trunk plus 10¢ and more per routing mile
AT&T language line (interpreter services)	No costs to PSAPs for 9-1-1 or emergency calls; all other phone calls: \$3 per minute

### **Telecommunications Devices for the Deaf (TDD) Equipment**

TDD	\$450 to \$550 (retrieves ASCII)
TDD detector	\$399 (includes 2 1/4" printer)
TDD system	\$1,195 (for TDD, detector, printer, headset)

### **Other Communications Equipment**

Mobile cellular phone	\$150 to \$200; or \$650 (for two-way radio, pager, and cell phone)
Portable radio	\$1,000 to \$2,000 (VHF); \$2,500 to \$4,000 (800 MHz)
Radio frequency pager for fire emergencies	\$200
Phone pager	\$100
Mobile radio base station repeater	\$10,000 to \$20,000

### **Trunked Radio Systems**

Mobile radio (digital)	\$2,000 to \$3,500
Portable radio (digital)	\$2,500 to \$4,000
Repeater (digital)	\$17,500
Mobile data systems computer	\$7,200
Mobile data repeater	\$45,000
Message switch	\$500,000
Network controller	\$120,000

### **Voice Protection/Scramblers**

Two-way radio scrambler	\$125 to \$700 per radio (plus \$120 installation)
Cellular phone and scrambler	\$700 to \$2,900
Land line scrambler	\$1,000 to \$2,100 per line
Mobile data computer (MDC) scrambler software	\$1,000 per server; \$1,500 per squad car computer

**Continued ...****Uninterruptible Power Supply**

Primary back-up system	\$10,000 to \$30,000
Generator	\$2,000 to \$15,000
Batteries	\$500 to \$600 per generator

**Other Equipment**

Computer-aided dispatch (CAD) server software	\$35,000 to \$100,000 (may include various management information software); \$14,000 and more for redundancy software
CAD answering position software	\$16,500 per answering position; up to \$100,000 per site license
CAD and MDC interface software	\$3,000 to \$75,000
CAD server (hardware)	\$50,000 to \$75,000; \$75,000 for redundancy
MDC (hardware and software)	\$10,000 per squad car
Complete CAD system	CAD system costs vary widely, from \$500,000 to several million dollars. For example, one \$2,300,000 system includes application software licenses, system software and hardware, miscellaneous hardware, installation, integration and interfaces with entire PSAP network information systems, and warranty and maintenance costs for: 12 dispatch/calltaker workstations, 1 training workstation, 1 supervisor workstation, and 3 administrative workstations; hardware also includes 2 CAD servers, 1 communications server, and 2 records management servers
Height-adjustable console at answering position	\$6,500 to \$9,000 per position
Self-adjustable chair	\$625 to \$1,080

**Keep Records and Measure Performance**

Personnel scheduling software	\$1,995 to \$4,995
Records management software	\$3,300 per answering position; up to \$60,000 per site license
Telephone line logger	\$4,000 (handles up to 20 lines)
Digital recorder (voice recorder)	\$38,000 to \$45,300
Voice logging and call logging software	\$12,000 and more (handles up to eight lines); \$2,300 for additional increments of eight lines (includes redundancy and remote maintenance)
Master clock	\$2,495 to \$4,455