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# Background and Contemporary Issues

## CHAPTER 1

**P**eople who need emergency services may dial 9-1-1 anywhere in Minnesota and receive immediate access to assistance for fires, injuries, crimes, road accidents, and other public safety incidents. This chapter describes the system in which public safety employees take these calls, determine their nature, and dispatch the appropriate emergency response. Although these employees' job titles vary according to their duties, in this report we refer to all of them as "dispatchers."

In addition to 9-1-1 calls, dispatchers receive many calls from people dialing the seven-digit number of their local law enforcement or fire agency. Some of these calls are requests for emergency assistance; others are not. Dispatchers often receive nonurgent calls from people, some of whom require public safety assistance, others of whom simply need information or a referral to another public agency. Although not every 9-1-1 call is an emergency, dispatchers can distinguish 9-1-1 calls from others because they come in on dedicated telephone lines and are typically assigned distinct audible tones and visual signals. Dispatchers generally follow specific procedures set up in their public safety answering points (PSAPs) to identify and give priority to calls that are truly emergencies.

Dispatchers also serve as a vital communication link with the police, fire, sheriff, ambulance, and other public safety units in the field.

*The functions performed by dispatchers and the level of 9-1-1 service vary among public safety answering points.*

Besides providing information about the circumstances of callers in need of assistance, dispatchers often offer pertinent information, such as on drivers license checks or outstanding arrest warrants, to help officers do their job. Dispatchers also relay critical information to public safety personnel at the scene of an incident, such as the location of explosive materials in a warehouse near a fire or the history of domestic violence calls at a given address.

Some PSAPs train dispatchers to also provide emergency medical dispatching, which is a specially designed program of offering medical instructions over the telephone in advance of the arrival of an ambulance. Further, in many counties around the state, dispatchers perform additional functions, for example those of jailers, on top of their dispatching and communication duties.

This chapter presents background information on the responsibility, financing, and arrangements for providing 9-1-1 public safety dispatching, as well as on the functions and training of dispatchers. In the chapter we ask the following questions:

- **Who has responsibility for 9-1-1 dispatching in Minnesota? What services do PSAPs provide and how does this vary?**

- **How are 9-1-1 services financed?**
- **What variations are there in the structure of the governmental responsibility for providing 9-1-1 service?**
- **What functions do dispatchers perform and how does this differ around the state? What training exists for dispatchers?**
- **What outstanding issues in today's public safety environment have the potential to affect PSAPs and their operations?**

As we learned about arrangements for handling 9-1-1 calls, we observed several unresolved issues related to public safety dispatching in Minnesota. These issues are: responsibility for wireless 9-1-1 calls, the appropriate governmental structure for delivering 9-1-1 services, and the right to strike for employees in dispatcher positions. This chapter also provides background information and our observations on these issues.

To answer our research questions, we relied in part on information we gathered by surveying all public safety answering points in Minnesota.<sup>1</sup> We also collected information by interviewing members of the public safety community and local elected officials. In addition, we depended heavily on literature written by organizations involved with the development and ongoing operations of 9-1-1 systems. Of particular value was information from two national professional groups involved with the 9-1-1 community and public safety dispatching: the National Emergency Number Association (NENA) and the Association of Public Safety Communications Officials International, Inc. (APCO).

## **9-1-1 SERVICE: LOCAL RESPONSIBILITY UNDER A STATE MANDATE**

Under a state mandate, Minnesota's local units of government operate public safety answering points that process 9-1-1 and seven-digit telephone calls for public safety and other assistance. Currently, counties and cities operate 112 PSAPs statewide. In addition, the Minnesota Department of Public Safety's State Patrol operates 10 communications centers to answer 9-1-1 calls made by cellular and other wireless telephone users, as well as calls made to seven-digit numbers and by radio.

Although some localities had by the mid-1970s already developed systems of uniform emergency telephone numbers, in 1977 the state required all counties to establish 9-1-1 emergency telephone systems.<sup>2</sup> The systems were to be established by the end of 1982 in the Twin Cities seven-county metropolitan area and the end of 1986 elsewhere. Through a combination of state and local initiatives and funding, dialing 9-1-1 now links callers from anywhere in Minnesota with emergency response agencies. Minnesota is one of about 14 states where all residents have access to 9-1-1.<sup>3</sup>

### **Local and State Government Roles**

Local governments have played a large role in the development of Minnesota's 9-1-1 system, including planning, designing, implementing, and operating public safety answering points. Local governments and the state have shared in financing the 9-1-1 system, as will be described in more detail later in this chapter.

In addition to financing, the state's role has been one of coordination and technical assistance to local governments. Within the Department of Administration's InterTechnologies Group, the Telecommunications Division established a 9-1-1 Program to set 9-1-1 operating standards, oversee the collection of fees and distribution of revenues

<sup>1</sup> We surveyed 112 PSAPs and 10 State Patrol communications centers and received responses from 108 of them for a response rate of 89 percent.

<sup>2</sup> *Minn. Stat.* §403.01, subd. 1.

<sup>3</sup> Department of Administration, Telecommunications Division *Minnesota 9-1-1 Program*, January 5, 1998, WWW document, URL <http://www.state.mn.us/ebranch/admin/intertech/services/svnc91.html>, (January 19, 1998).

for 9-1-1, contract with telephone companies to provide the equipment and service that transmit 9-1-1 calls, and assist local governments with developing and improving their 9-1-1 systems. In addition, the Public Utilities Commission is involved by virtue of its oversight responsibilities for telephone companies that establish rates for providing 9-1-1 services.

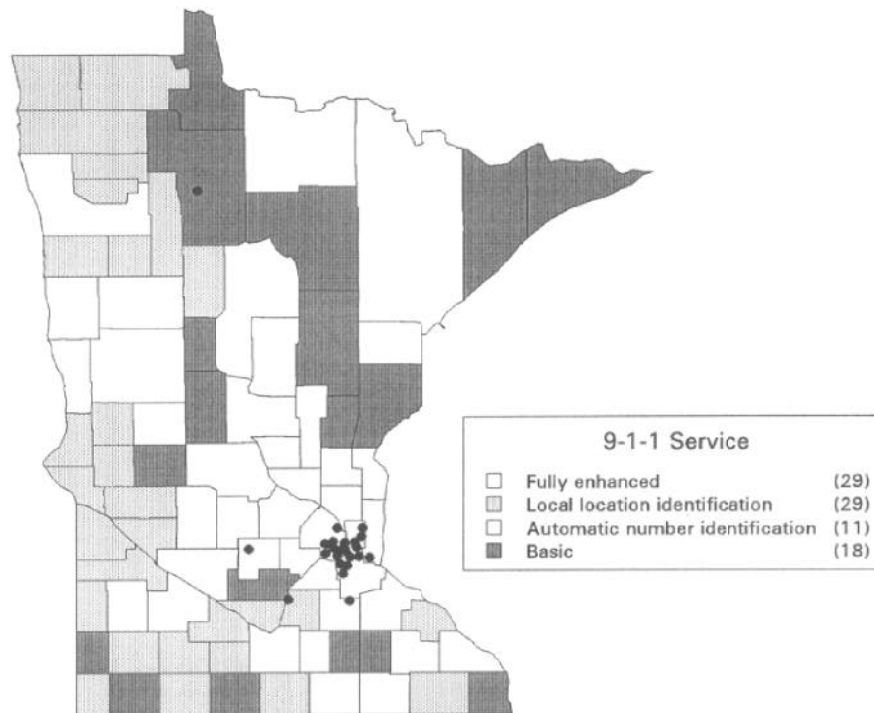
**Enhanced versus Basic 9-1-1**

Despite statewide coverage of 9-1-1 telephone services, the level of 9-1-1 service varies among PSAPs. At the end of 1997, 29 counties, with about three-quarters of the state’s population, had what is known as “fully enhanced” 9-1-1 service, which displays a caller’s phone number (via automatic

number identification or ANI) and location (via automatic location identification or ALI) to the dispatcher. (Figure 1.1 shows the location of PSAPs in the state; Figures 1.2 and 1.3 show the level of 9-1-1 service available.)

In an area with fully enhanced 9-1-1 service, the telephone company’s computer matches the telephone number with the subscriber’s name and location and forwards that information electronically to the PSAP within seconds of the placement of a 9-1-1 call. With that information displayed, the dispatcher can send help even when callers are disoriented, panicked, or otherwise unable to describe their location and situation. If a caller hangs up or is disconnected, the dispatcher can retrieve the caller’s telephone number and call

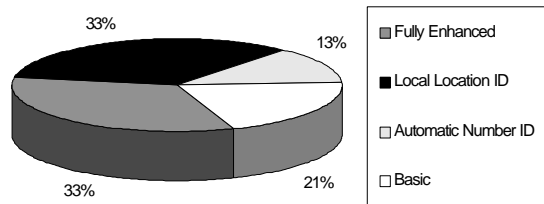
**Figure 1.1: Level of 9-1-1 Service in Minnesota Counties, 1997**



NOTES: Dots represent PSAPs operated independently of the county. In addition to the PSAPs pictured, the State Patrol has communications centers in 10 locations: Brainerd, Detroit Lakes, Duluth, Mankato, Marshall, Rochester, Roseville, St. Cloud, Thief River Falls, and Virginia.

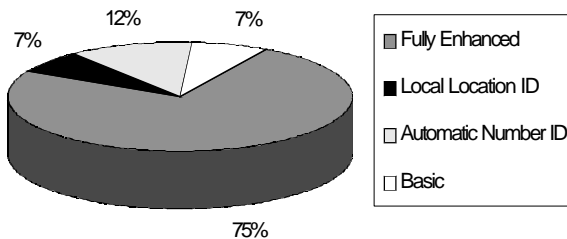
SOURCE: Department of Administration, *Minnesota 911 Program*, January 5, 1998, WWW document, URL <http://www.state.mn.us/ebranch/admin/intertech/services/svnc91.html>, (January 19, 1998).

**Figure 1.2: Counties by Level of 9-1-1 Service, 1997**



SOURCE: Department of Administration, *Minnesota 911 Program*, January 5, 1998.

**Figure 1.3: State Population by Level of 9-1-1 Service, 1997**



SOURCES: Department of Administration, *Minnesota 911 Program*, January 5, 1998; Minnesota Planning, *1996 Population and Household Estimates*.

back to determine whether emergency help is needed. Enhanced 9-1-1 also selectively routes calls to designated PSAPs based on the caller's location. None of this is available yet for 9-1-1 calls made by cellular telephone users.

Enhanced 9-1-1 also exists with alternate features that provide less information to dispatchers.

Twenty-nine other counties had equipment with ANI to display the telephone number of the caller and supplemented that with information from their own database to attain the address or location of the telephone's subscriber.<sup>4</sup> Another 11 counties had the ANI feature only, with no additional equipment to provide information on the address or location of the caller. Thus, a total of 69 out of Minnesota's 87 counties, representing about 93 percent of the state's population, had some form of enhanced 9-1-1 service at the end of 1997.

The remaining 18 counties had basic 9-1-1 service in 1997.<sup>5</sup> Basic 9-1-1 connects the caller to a PSAP over dedicated telephone trunks or lines, but it does not provide information on the caller's telephone number or location.

Many counties with basic 9-1-1 are in the process of upgrading their systems. As described later in this chapter, a special state-imposed telephone user fee now in place provides money to PSAPs for implementing and maintaining enhanced 9-1-1. Local governments will become ineligible for these revenues if they have not implemented enhanced service before December 31, 1998.<sup>6</sup>

Jurisdictions have different levels of 9-1-1 service because of the local political and financial decisions made about the service. Because the extent of some local governments' tax bases was greater than others, and because local governments had to pay the costs of installing the 9-1-1 system circuits and telephone features as well as of purchasing the PSAP equipment, PSAPs bought what they determined they could afford. In addition, differences in the expected volume of calls from one area to another affected purchasing decisions.

## Differences in Calls and Service

Besides differences in the enhanced and basic features of 9-1-1 service, other differences exist in public safety dispatching around the state. Over 5.5 million 9-1-1 and other calls came in to PSAPs in

<sup>4</sup> The feature on systems that use local (not telephone company) databases to identify the location of the subscriber's phone is referred to as Local Location Identification or LLI.

<sup>5</sup> In a few counties, part of the area had basic 9-1-1 service and other parts had enhanced 9-1-1 at the end of 1997. For instance, basic 9-1-1 was available for about four-fifths of Lake of the Woods County's population, and local location identification was available in the remaining one-fifth.

<sup>6</sup> *Minn. Stat.* §403.113, subd. 2 (c).

1996, according to our survey data.<sup>7</sup> Some PSAPs received many more 9-1-1 and other calls than other PSAPs. In 1996 the number of calls of all types ranged from slightly more than 4 per 100 residents to 992 per 100 residents among the 33 PSAPs that record all calls. The number of calls also varied regionally with PSAPs in the Twin Cities area receiving a median 125 calls per 100 residents in 1996 and PSAPs elsewhere receiving a median 83 calls per 100 residents. PSAPs record their calls differently; some do not track all calls, but instead track only those for which an initial complaint report is filed. Differences occur even among agencies that record only calls related to initial complaint reports; a report of a dog on the loose, for instance, may be cause for an initial complaint report in some communities but not in others. Some PSAPs record only those calls for which a field unit is actually dispatched. (Table 1.1 shows the range in number of calls by these differences in record keeping.)

Not all of the calls recorded by PSAPs are classified as emergencies. Our survey showed that calls requiring immediate action (our definition of “emergency”) typically represented about one-quarter of the calls received by most PSAPs. Calls that were specifically medical in nature represented no more than 8 percent of the calls to most PSAPs in 1996.

To be effective, dispatchers have to work quickly. They need to respond to calls immediately because in certain situations a small amount of time can mean the difference between life and death. Around the state, the median time to answer a typical incoming call, measured from the time of the first audible ring, was five seconds, according to our survey. PSAPs estimated that the average time to answer calls varied from one to 18 seconds.

Most PSAPs dispatch and communicate with law enforcement, fire departments, and ambulance services, but the number of these agencies and the response units they operate vary and can affect dispatchers’ workload. In the Twin Cities seven-county metropolitan area, PSAPs typically dealt with a smaller total number of these agencies than PSAPs elsewhere in the state, due in part to the larger number of fire departments typically found in the service areas of PSAPs outside the Twin Cities. (See Figure 1.4.) But when looking at the median number of emergency response units available at these agencies, the Twin Cities area PSAPs had a somewhat larger number of units available for dispatching during the PSAPs’ busiest shifts than PSAPs elsewhere. (See Figure 1.5.)

Combined with a larger median number of calls in the Twin Cities area PSAPs, the data indicate that metropolitan area dispatchers typically dispatched

**Table 1.1: Annual Number of 9-1-1 and Other Calls Received per 100 Residents, 1996**

	PSAPs Recording All Calls (N=33)		PSAPs Recording Calls that Generate Initial Complaint Reports* (N=45)		PSAPs Recording Calls Resulting in Units Dispatched (N=5)		PSAPs Using Other Counts of Calls (N=4)	
	Twin Cities	Other	Twin Cities	Other	Twin Cities	Other	Twin Cities	Other
	Minimum	35.5	4.4	35.7	3.8	79.8	29.5	8.2
Median	125.8	83.8	56.6	40.6	--	67.0	--	--
Maximum	437.1	992.0	236.3	130.4	113.7	120.6	45.4	465.5

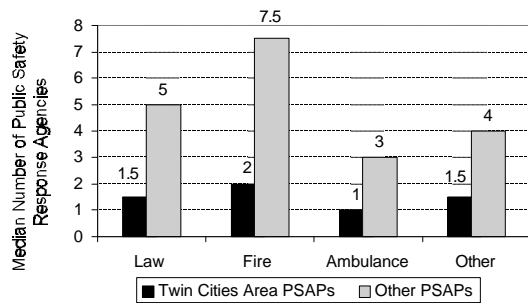
\*Incidents that are cause for an initial complaint report (ICR) in some PSAPs may not generate an ICR in others.

NOTE: Median figures are not available when the number of respondents is very small (two or fewer).

SOURCE: Legislative Auditor’s Office Survey of Public Safety Answering Points, 1997.

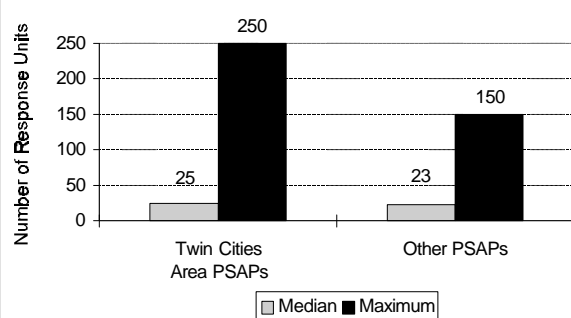
7 The actual number of calls is somewhat higher because some public safety answering points record only certain calls, not every call. In addition, 14 PSAPs did not respond to our survey and 11 PSAPs who responded did not report the number of calls received.

**Figure 1.4: Median Public Safety Agencies in PSAP Service Area, 1996**



SOURCE: Legislative Auditor's Office Survey of Public Safety Answering Points, 1997.

**Figure 1.5: Response Units Available for Dispatching During Busy Shift, 1996**



SOURCE: Legislative Auditor's Office Survey of Public Safety Answering Points, 1997.

more public safety units and more frequently than dispatchers elsewhere in 1996. Conversely, PSAPs outside the Twin Cities were more likely to assign dispatchers duties beyond processing calls and communicating with field units.

Most dispatchers search for and provide information at the request of the field unit personnel on items such as drivers' license checks, warrants, and criminal histories. In some jurisdictions, however, the availability of mobile data computer terminals in squad cars can significantly reduce the time dispatchers spend collecting these data. Mobile data computers allow officers in the squad to search electronic databases and retrieve relevant information. Instead of waiting for the dispatcher

to enter an inquiry into a computer, obtain a response, and relay the response back to the squad, the officers themselves make the query directly. Some mobile data computers also interact with a computer-aided dispatch system at the PSAP, providing to the officers a visual display of the same information on callers and their locations that the dispatcher entered or verified.

Mobile data computers are typically expensive, however, and only about 20 percent of PSAPs have them, according to our survey. Those with mobile data computers tended to have higher than median call volumes. They also were located primarily in the metropolitan area; those few outside the metropolitan area with mobile data computers served large populations.

Differences in the availability of emergency medical dispatching were also evident. Dispatchers that provide emergency medical dispatching typically have completed additional training and have knowledge of emergency medical procedures to appropriately (1) determine the nature of medical calls, (2) mobilize the emergency response units and relay to them necessary information about the incidents, and (3) assist victims in need of medical attention before medically trained personnel arrive.

PSAPs' decisions about whether to offer medical instructions over the telephone have been a subject of controversy. Proponents point out that such instructions can be very valuable to individuals in medical emergencies and can even save lives. Others caution that unless the emergency medical dispatching follows a rigorous course of specialized training and quality control, the PSAP increases its liability to tort actions in situations when the medical instructions were not helpful. Table 1.2 shows that in 1996:

- **A somewhat larger share of the PSAPs outside the Twin Cities region than those within it either offered "prearrival instructions" to callers with medical emergencies or transferred such calls to other agencies with these services.**

Offering prearrival instructions means dispatchers provide instructions via telephone to people at the scene of incidents to assist injured individuals prior

**Table 1.2: Availability of Prearrival Instructions for Medical Calls, 1996**

	Twin Cities Area PSAPs (N=23)	Other PSAPs (N=70)
PSAPs offered prearrival instructions	26.1%	44.3%
Medical calls were referred to other agency for prearrival instructions	<u>17.4</u>	<u>8.6</u>
Total	43.5	52.9

SOURCE: Legislative Auditor's Office Survey of Public Safety Answering Points, 1997.

to the arrival of ambulances or first responders trained in first aid. Especially in some rural parts of the state, where the distance between emergency medical personnel and accident victims can be great, prearrival instructions can be of great value.

In some areas, private sector medical transportation businesses make their services available to PSAPs. Their employees, trained as emergency medical dispatchers, take medical calls transferred by the PSAPs and talk directly with the 9-1-1 caller as the ambulance is dispatched.

**Some PSAPs transfer medical calls to private ambulance services or secondary PSAPs.**

This arrangement allows PSAP dispatchers to return to communicating with other field units while emergency medical dispatchers provide medical instructions.

In a few areas, PSAPs have designated certain entities as "secondary" PSAPs and transfer medical emergency calls there.<sup>8</sup> For instance, the PSAPs at St. Paul,

Minneapolis, and Rochester/Olmsted County transfer their medical calls to the St. Paul Fire Department Emergency Communications Center, Hennepin County Medical Center, and

St. Mary's Hospital, respectively. Several other city-operated PSAPs in suburban Hennepin County that use ambulances dispatched from Hennepin County Medical Center have arranged in the past year to transfer their medical calls to the Medical Center. Emergency medical dispatchers at the secondary PSAPs process these calls and offer prearrival instructions while dispatching the appropriate medical help. The St. Paul Fire Department has also contracted with Roseville and Falcon Heights to dispatch emergency medical help and offer prearrival instructions.

**Wireless 9-1-1 Calls**

Emergency calls made via cellular telephones and personal communications services (PCS) are presently handled differently than traditional land-line telephone calls. Cellular telephones establish radio communication with radio towers; because the towers are placed in a variety of locations, users may carry the telephones to different locales and the phones will operate off the nearest towers. Personal communications services are a similar but more recent concept that provides wireless digital service operating off less powerful towers located much closer together. Users do not have to be connected to a telephone stationed in a building or vehicle to communicate.

This convenience to telephone users creates a new layer of complexity from a public safety standpoint. Unlike hardwire phones, the wireless telephones have historically not generated the ANI or ALI needed to forward the caller's phone number and location to a public safety answering point. Consequently, dispatchers may not be able to call back wireless callers or collect essential information when these callers are disoriented, injured, or in areas unfamiliar to them. Even information about the location of the "cell," or territory served by each radio tower, may not be useful as the caller may be moving among cells and the dispatcher may not have precise enough information to pinpoint actual incidents. In addition, some wireless 9-1-1 calls may be blocked and never answered if the subscriber is in an area that is beyond the range of the provider's coverage.

8 Secondary PSAPs do not initially answer 9-1-1 and other public safety calls but receive calls transferred from primary PSAPs.

Another key difference with wireless emergency calls is the usually high volume of calls per incident. One collision on the highway during rush hours may generate scores of wireless calls from passersby, all reporting the same accident, as may be true with particularly high-visibility incidents reported via land lines. In these situations, PSAPs need to take special steps to determine whether the calls are duplicative while making sure that their lines are not tied up preventing reports from coming through on simultaneous incidents occurring elsewhere.

### *FCC Rules on Wireless Calls and Minnesota's Response*

To address some of the public safety concerns common to wireless calls around the country, the Federal Communications Commission (FCC) issued a report and order in 1996 that established two key mandates, among other things.<sup>9</sup> The first, referred to as “phase 1,” required wireless service providers to forward 9-1-1 calls without interruption to designated PSAPs by October 1, 1997.<sup>10</sup> Further, it required these providers by April 1, 1998 to forward to designated PSAPs the ANI of the 9-1-1 caller, as well as the location of the cell site or base station receiving the 9-1-1 call. Wireless service providers need to supply the telephone number and location of the caller only if the designated PSAPs request such information, the PSAPs have the equipment and know-how to use the information, and a plan is in place to recover the costs of providing the service.

The second key mandate, referred to as “phase 2,” requires wireless service providers by October 1, 2001 to provide the location of a 9-1-1 call by longitude and latitude within a radius of 125 meters

in 2/3 of all cases. Again, this is required only if the designated PSAPs have requested the information, have the capabilities to utilize it, and cost-recovery mechanisms are in place.

In response to these mandates, the 1997 Legislature adopted provisions to implement the FCC requirements in Minnesota.<sup>11</sup> The law directed the Department of Administration to plan for the integration of wireless 9-1-1 calls in cooperation with the wireless service providers and PSAPs. Subsequently, the department produced plans for regions inside and outside the Twin Cities area; it will contract with wireless service providers and 9-1-1 telephone service providers with an expectation of beginning the new service April 1, 1998. State-collected fees will pay the costs of wireless providers for installation and recurring costs.<sup>12</sup>

### *At Issue: Responsibility for Wireless 9-1-1 Calls*

In Minnesota, all wireless 9-1-1 calls are currently received by one of 10 State Patrol communications centers operating around the state.<sup>13</sup> Upon the advent of cellular technology, most cellular telephones were connected to vehicles. Thus, it was common around the country to route cellular 9-1-1 calls to the state patrols—those agencies that typically dealt with road emergencies. With the increasing use and reduced consumer costs of cellular communication, however, more and more cellular calls pertain to incidents other than those associated with vehicles and road accidents.

The volume of wireless 9-1-1 calls has grown tremendously. In the Twin Cities area alone, the number has jumped from an average 100 calls per

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<sup>9</sup> 47 CFR sec. 20.18 (October 1, 1996).

<sup>10</sup> This date was subsequently postponed to November 30, 1997 to resolve issues over processing wireless 9-1-1 calls from uninitialized, or deactivated, cellular phones.

<sup>11</sup> Minn. Stat. §403.08, subd. 7.

<sup>12</sup> Minn. Stat. §403.11, subd. 2 (b).

<sup>13</sup> The 10 centers are located in: Brainerd, Detroit Lakes, Duluth, Mankato, Marshall, Rochester, Roseville, St. Cloud, Thief River Falls, and Virginia.

month to the metropolitan district of the State Patrol in 1985 to over 20,000 per month, and up to 30,000 in busy months, in 1997.<sup>14</sup> According to our survey, the State Patrol received more than 804,000 wireless 9-1-1 calls statewide in 1996.<sup>15</sup>

Not all of the wireless 9-1-1 calls received by the State Patrol require a response by state troopers; some are for incidents over which local governments have jurisdiction. Depending on the month, the percent of wireless 9-1-1 calls coming into the metro communications center that required a response by the State Patrol varied between 55 and 65 percent; around the rest of the state, the percentage averaged closer to 70 percent.<sup>16</sup> State Patrol dispatchers transfer the remaining calls to local PSAPs, as warranted.

In recent years, some PSAPs have stated their desire to receive wireless 9-1-1 calls directly, instead of via transfers from the State Patrol communications centers. When the Legislature passed laws in 1997 to implement the FCC wireless requirements, it also established a process for allocating the responsibility to receive wireless 9-1-1 calls.<sup>17</sup> The law requires members from each county's 9-1-1 planning committee to deliberate with representatives from their respective State Patrol district to determine the appropriate answering point for wireless calls. These discussions have been stalled in some instances because certain wireless carriers have not made available the data on cell site locations and coverage needed to make the determination.

If the parties cannot reach agreement by April 1, 1998 in the Twin Cities area, and by June 1, 1998 elsewhere, the matter is to be resolved by outside committees whose members are determined by statute. Decisions made by these committees are due by December 31, 1998 and will be considered final.<sup>18</sup>

Discussions over the responsibility for wireless 9-1-1 calls have sparked controversies. Because the volume of wireless calls and share transferred vary considerably, the conviction to convey responsibility for these calls from the State Patrol to local PSAPs also varies. Ideally, agencies with public safety jurisdiction over the areas in which wireless calls originate would receive those particular 9-1-1 calls. That would prevent the need to transfer an inordinate number of 9-1-1 calls to other agencies for dispatching, thereby avoiding the possibility of lost or misdirected calls and saving valuable time that can be crucial to injured victims or in the apprehension of criminals.

While we did not conduct research to determine which entity should be responsible for wireless 9-1-1 calls for each area of the state, it is possible that the appropriate agency for these calls will vary from area to area. Depending on the circumstances of the calls, it may be appropriate either that the State Patrol continue to receive wireless calls in areas where the majority of calls require a State Patrol response or that local PSAPs receive these calls if the calls predominantly concern units dispatched by that PSAP. For instance, on roads where the State Patrol is beginning to coordinate with the Minnesota Department of Transportation's Traffic Management Services for better overall control of traffic flow and accident responses, the State Patrol may be the more appropriate recipient of wireless

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**PSAPs are negotiating with State Patrol districts over responsibility for wireless 9-1-1 calls.**

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<sup>14</sup> Richardson, Richter & Associates, Inc., for Minnesota Department of Transportation, *Shared Traffic Management and Dispatch Environment Initial System Concept and System Requirements* (St. Paul, July 1997), 3; and "CAD 911: First Call for Help," *Orion Oracle*, no. 2 (Summer 1997): 3.

<sup>15</sup> The actual number is somewhat higher because some of the districts reported only those calls for which an ICR was generated.

<sup>16</sup> Richardson, et al., *Shared Traffic Management and Dispatch Environment*, 3-4.

<sup>17</sup> *Minn. Stat.* §403.13, subd. 1.

<sup>18</sup> *Ibid.*

9-1-1 calls.<sup>19</sup> Conversely, in areas where most of the incoming calls are already being transferred to local PSAPs, the local jurisdiction may be the appropriate recipient.

In practice, it is difficult to collect the information necessary to make this determination. The selective routing capabilities, by which a wireless telephone company's equipment automatically sends 9-1-1 calls to the most appropriate PSAPs, are not in place statewide.<sup>20</sup> Only after selective routing technology is in place will PSAPs have the information that describes the number of wireless 9-1-1 calls originating in specific cells, what percent have to be transferred, and to where.

Even with selective routing information, the jurisdictions of many public safety agencies overlap or are immediately adjacent to others, creating conflicts over which agency is the appropriate one to receive the call. As is true for emergency calls via land lines, for some incidents reported by wireless telephones, agencies from multiple jurisdictions may need to be involved, requiring the active participation of more than one communications center. Other complications occur in situations where the cell sector is changing because the caller is traveling from one tower's cell site to another, and the PSAP initially receiving the call may not be the appropriate dispatching center.

The fluid nature of the wireless industry adds another layer of complexity. Wireless companies may change their antennae or add additional antennae and towers that could change cell sectors and affect where a 9-1-1 call is received. As a result, the pattern of call origin locations is a dynamic one that is subject to change quickly.

In addition to the unresolved questions over jurisdiction, decisions to process wireless 9-1-1 calls through local PSAPs may alter these PSAPs' operations or affect their costs. To adequately prepare for wireless 9-1-1 calls, local PSAPs will have to plan how the influx of wireless calls will affect their number of 9-1-1 trunks, standard

operating procedures, protocols, and even staffing levels (if the volume of wireless calls is large). PSAPs also have to consider the training needed to educate dispatchers about processing wireless 9-1-1 calls.

Despite the data limitations discussed above, in our view some of the key factors for determining the responsibility for wireless 9-1-1 calls appear to be: (1) the share of calls that originate in areas where the State Patrol has jurisdiction versus areas where local PSAPs have primary jurisdiction (including where "first responder" responsibility lies), (2) the extent to which current 9-1-1 wireless calls are being transferred to local PSAPs, and (3) the operational and financial capabilities of the local PSAP to handle wireless calls. If the wireless 9-1-1 responsibility shifts, the Legislature may wish to consider reevaluating the financing of these calls.

## FINANCING 9-1-1 SERVICE

Financing 9-1-1 emergency communications in Minnesota has been a shared responsibility between the state and local governments. Historically, local governments have been responsible for the substantial costs of installing 9-1-1, purchasing or leasing new or replacement 9-1-1 equipment, developing local databases, maintaining the public safety communications centers, and paying the salaries of employees who work there.

By contrast, the state has paid for modifying the switching equipment needed to recognize the digits "9-1-1" as the emergency number and for the recurring charges incurred by telephone companies for their 9-1-1 services and databases of subscribers' names,

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**Minnesota  
collects  
telephone user  
fees to finance  
part of 9-1-1  
costs.**

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<sup>19</sup> Efforts to better coordinate traffic management have occurred primarily for certain Twin Cities area roads but are expected to expand to improve traffic management on roads in the Duluth, Mankato, and Rochester areas.

<sup>20</sup> Jim Beutelspacher, Department of Administration, *Plan for Integrating Cellular 9-1-1 Service Into the Enhanced 9-1-1 Networks in Greater Minnesota* (St. Paul, December 1, 1997), 7-8, 21; and Jim Beutelspacher, Department of Administration, *Plan for Integrating Cellular 9-1-1 Service Into the Enhanced 9-1-1 Network in the Metropolitan Area* (St. Paul, October 1, 1997), 5, 13.

telephone numbers, and addresses. Until 1987, the state's share came from biennial legislative appropriations out of the state's General Fund. More recently, Minnesota has expanded its role in financing 9-1-1, with telephone user fees.

Most other states use telephone user fees assessed by either local or state governments to finance 9-1-1 services. In 26 states, local governments have authority to set fees on telephone subscribers; the states do not assess a statewide user fee.<sup>21</sup> Another 10 states, including Minnesota, collect telephone user fees statewide. In these states, local governments are expected to finance some of the 9-1-1 expenses but they do not have authority to impose telephone user fees to do so. Six states have a combination of state and local telephone user fees. The remaining 8 states use a variety of mechanisms, including taxes and telephone company subsidies, to finance 9-1-1 services.

In the 16 states with a state-collected telephone user fee, there is considerable variation in the type of fee, the share of 9-1-1 system expenses paid by the state, and the types of equipment, services, and personnel paid for with state funds. For example, some states assess the fee only on intrastate long distance telephone use. Some reimburse telephone companies for administrative expenses incurred for collecting the user fee. Those with predetermined user surcharges range from fees of 1 cent to \$1.50 per telephone line. States pay for different functions; for instance, some states pay for equipment used in the local communications centers, others (like Minnesota) pay for only some of that equipment, and still other states pay for none.

Twenty states, including Minnesota, have implemented methods to finance wireless 9-1-1 services.<sup>22</sup> Most of these impose a monthly fee on customers of wireless services.

## Original 9-1-1 User Fee in Minnesota

Prompted by local concerns about the reliability of General Fund appropriations to finance the state share of 9-1-1 costs over time, the Minnesota Legislature approved in the mid-1980s a uniform telephone user fee to finance the state's share of 9-1-1 costs.<sup>23</sup> The fee was set in law at a minimum of 8 cents and maximum of 30 cents per month for each telephone line; it now stands at 12 cents.<sup>24</sup> Telephone companies typically itemize the fee on their customers' monthly bills, collect the revenues, and forward them to the state.

Revenues from the emergency telephone fee have been used primarily to pay recurring 9-1-1 system costs and the Department of Administration's administrative and staff costs for managing the 9-1-1 program. A 1994 law change allowed the department to use excess revenues to offer improvement grants to counties in need of either (1) providing 9-1-1 access to the remaining residents without the service or (2) upgrading to enhanced 9-1-1.<sup>25</sup> Beginning in 1995, up to four cents of the emergency telephone fee can be used for qualifying costs incurred by the Metropolitan Radio Board.<sup>26</sup> (Figure 1.6 illustrates expenditures from the emergency telephone user fee.)

Until 1995, cellular telephone customers did not pay the emergency telephone user fee. A 1994 law, however, extended the fee to include any user of communications carriers from whose service a 9-1-1 call could originate; this included cellular

21 Department of Administration, Telecommunications Division, *Minnesota 9-1-1 Program*, January 5, 1998, WWW document, URL <http://www.state.mn.us/ebranch/admin/intertech/services/svnc91.html>, (January 19, 1998).

22 "Ten States Pass Legislation to Pay for Wireless Enhanced 9-1-1," *NENANews* 15, no. 4 (December 1997): 14-16.

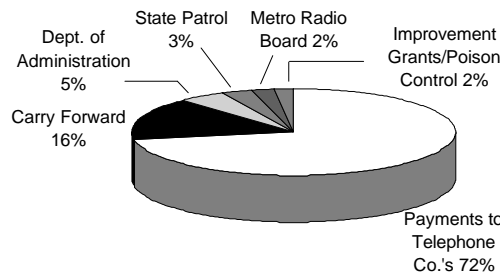
23 *Minn. Laws* (1Sp1985), ch. 13, sec. 330; *Minn. Laws* (1987), ch. 404, sec. 174.

24 Initially, the fee was 18 cents; the state lowered it to 14 cents in 1993, and 12 cents in 1995 due to 1) increases in the number of telephone customers, 2) the 1995 addition of cellular phone users to the user-fee base, and 3) an earlier accounting change in the calculation of the U.S. West telephone company's tariff for 9-1-1 services.

25 *Minn. Laws* (1994), ch. 634, sec. 22.

26 The Metropolitan Radio Board was created in 1995, with local elected officials as members, to oversee the development of a metropolitan public safety radio communications system. See *Minn. Laws* (1995), ch. 195, art. 1, sec. 3-4, 11.

**Figure 1.6: Expenditures from 12-Cent Telephone User Fee, FY1997**



SOURCE: Department of Administration, *911 Emergency Summary of Receipts and Expenditures, FY1997*.

telephone users.<sup>27</sup> A year later, the state slightly changed how revenues from these fees would be used. To defray part of the State Patrol's cost for processing wireless 9-1-1 calls, the 1995 Legislature reserved for the Department of Public Safety two cents per month of the user fee paid by wireless telephone subscribers.<sup>28</sup>

### Enhanced 9-1-1 Fee

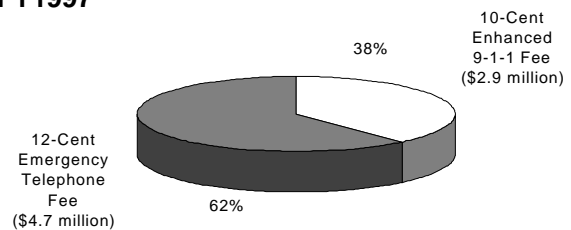
Action by the 1994 Legislature not only extended the original emergency telephone fee to users of wireless communications, but also established an additional 10-cent fee per telephone line exclusively for the purpose of financing enhanced 9-1-1 service at local PSAPs.<sup>29</sup> Although cellular customers were originally excluded from this new fee, a 1997 law removed this exclusion.<sup>30</sup> Wireless customers now pay the same emergency telephone fees that other telephone users pay: 22 cents per month, 12 cents

of which is the original emergency telephone user fee and 10 cents of which is the enhanced 9-1-1 fee. (Figure 1.7 shows revenues collected from the two 9-1-1 user fees.)

This newer 10-cent fee represents a substantial state incentive to help local governments implement enhanced 9-1-1 services statewide. PSAPs have received nearly \$9 million in enhanced 9-1-1 revenue between 1995 and 1997.<sup>31</sup>

Local PSAPs may use the enhanced 9-1-1 revenues to implement and maintain their enhanced 9-1-1 services—something not typically possible with revenues from the original 9-1-1 user fee. Statutes allow local governments to use these revenues for, among other things, purchasing or leasing telephone equipment; radio equipment; computers and

**Figure 1.7: Telephone User Fee Receipts, FY1997**



NOTE: Wireless customers began paying the 10-cent enhanced fee in 1997 and now pay the same fees as other telephone users.

SOURCE: Department of Administration, *Enhanced 911 Emergency and 911 Emergency Summary of Receipts and Expenditures, FY1997*.

27 *Minn. Laws* (1994), ch. 616, sec. 7.

28 *Minn. Laws* (1995), ch. 265, art. 2, sec. 29.

29 *Minn. Laws* (1994), ch. 616, sec. 7, 9-10.

30 *Minn. Laws* (1997), ch. 202, sec. 22.

31 Minnesota 9-1-1 Program, Department of Administration, *E-911 Payments Made in Calendar Year-Report as of December 97* (St. Paul, 1998). The enhanced 9-1-1 revenues are distributed in the following manner: One-half goes in equal amounts to all counties, the 10 State Patrol districts, and three PSAPs that serve, respectively, the Minneapolis/St. Paul International Airport, the University of Minnesota Police Department, and the Red Lake Indian Reservation in Beltrami County. The second half is distributed to counties and cities with PSAPs on a per capita basis based on their share of the total population served.

software for databases, automatic location identification, or local location identification; and dispatcher training.<sup>32</sup> Local governments that have not implemented enhanced 9-1-1 by the end of 1998 will become ineligible for these revenues, as mentioned earlier in this chapter.

### LOCAL GOVERNMENT STRUCTURE FOR PROVIDING 9-1-1 SERVICE

The provision of 9-1-1 public safety dispatching occurs primarily, although not exclusively, at the county level of government. Currently, 78 out of 87 counties operate a single PSAP that receives 9-1-1 and other public safety calls. One county, St. Louis, operates two communications centers in different parts of the county.

In the remaining 8 counties, the county operates 1 public safety answering point and at least 1 other unit of local government operates a separate PSAP, for a total of 112 PSAPs statewide. Four counties with multiple PSAPs are within the Twin Cities area and four are outside. (Figure 1.8 lists the counties containing multiple PSAPs.)

#### Metropolitan 9-1-1 Board

The structure of 9-1-1 services in the Twin Cities area includes the Metropolitan 9-1-1 Board, a joint powers board approved by all seven counties. The Metropolitan 9-1-1 Board's purpose has been to plan and implement a 9-1-1 system that would transcend the numerous different service area boundaries between telephone exchanges and units of government in the region. On behalf of the seven counties, the Metropolitan 9-1-1 Board performs many functions including:

- monitoring the operation of the 9-1-1 system,
- identifying malfunctions in the system and having them corrected,

**Figure 1.8: Counties with Multiple PSAPs, 1997**

County	Additional PSAPs
Beltrami	Red Lake Indian Reservation
Dakota	Apple Valley, Burnsville, Eagan, Lakeville, and West St. Paul
Hennepin	Bloomington, Brooklyn Center, Eden Prairie, Edina, Hopkins, Minneapolis, Minneapolis-St. Paul International Airport, Minnetonka, Richfield, St. Louis Park, and University of Minnesota Police Department
Le Sueur	Le Sueur
McLeod	Hutchinson
Ramsey	Maplewood, St. Paul, and White Bear Lake
Rice	Northfield
Washington	Cottage Grove

- seeking technological advances to improve 9-1-1 reliability and efficiency,
- acting as a liaison between the counties and telephone companies regarding matters of 9-1-1 system design, tariffs, and databases,
- contracting with U. S. West and the state of Minnesota for developing and paying for the 9-1-1 system installation and recurring costs,
- managing 9-1-1 public education efforts,
- developing standards for 9-1-1 services, and
- coordinating programs and addressing concerns related to 9-1-1 systems and emergency medical services.<sup>33</sup>

<sup>32</sup> *Minn. Stat.* §403.113, subd. 1, 3. The statute also specifically prohibits spending enhanced 9-1-1 revenues on certain items, such as remodeling a communications center, purchasing emergency vehicles, or installing addressing signs.

<sup>33</sup> Metropolitan 9-1-1 Board, *Joint Powers Agreement for Metropolitan 9-1-1 Board*, 1996-97 (St. Paul), 2, 4-7; and "Board Policies," Memorandum to Metropolitan 9-1-1 Board Executive Committee (St. Paul, January 7, 1998), 1-2.

The joint powers board concept allows one authority to represent the common interests of the members in implementing a regional 9-1-1 system while it retains the ability of individual counties to plan for their public safety and 9-1-1 services as best meets their own needs.

## PSAP Support Functions

The Metropolitan 9-1-1 Board also reduces redundancy in the critical support functions among the PSAPs. These functions include conducting transactions with telephone companies concerning trunks, routers, and other technical elements of 9-1-1 service, and constructing and maintaining a master street address guide that defines the geographic service area and lists ranges of address numbers for all streets in each community. Without the board, each of the 27 PSAPs in the region would have to provide these functions individually. Outside of the Twin Cities area, where similar joint powers boards do not exist, each of the counties and individual PSAPs must deal with these same concerns on its own.

## Changes in the Number of Public Safety Answering Points

Over time the number of PSAPs in Minnesota has decreased as local governments have consolidated their public safety communications centers. Many county sheriffs' offices, for instance, have combined their dispatching operations over the years with those of a local police department in the county. The Law Enforcement Center in Olmsted County, where the Rochester Police Department manages dispatching for the sheriff, police, and Rochester Fire Department, is an example.

In addition, several cities that in the past operated their own PSAP have since changed to using other nearby PSAPs. For instance, in 1994 South St. Paul began contracting for dispatching services with its western neighbor West St. Paul. West St. Paul now processes all 9-1-1 calls for both cities (as well as for Mendota Heights) and also receives public

safety calls coming in on seven-digit lines after regular business hours.<sup>34</sup>

At least three other consolidations now in various stages of planning will likely further lower the number of PSAPs in Minnesota. By the end of 1998, the counties of Steele and Rice, along with the cities of Northfield, Faribault, and Owatonna, are scheduled to begin operating a joint dispatch center. Instead of three PSAPs (in Steele County, Rice County, and Northfield), one center will dispatch for all areas within the two counties, making this the first multiple-county dispatching operation in Minnesota.<sup>35</sup> In nearby Le Sueur County, the city of Le Sueur, which currently operates its own dispatch center, will cease operations and merge with the county PSAP located in Le Center. Hutchinson is currently studying the feasibility of merging PSAPs with McLeod County.

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**Three  
additional  
PSAP  
consolidations  
are in progress  
or under study.**

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Should all these mergers occur, the number of counties where 9-1-1 dispatching is done in a decentralized fashion instead of in a single countywide PSAP will be reduced to five: Beltrami, Dakota, Hennepin, Ramsey, and Washington.

### *At Issue: Cost and Service Quality in Counties with Multiple PSAPs*

In Minnesota, overall costs for 9-1-1 service in counties with multiple PSAPs will be higher than other counties simply because of duplication in dispatching equipment, facilities, administrative costs, and personnel. At the same time, residents who pay more may be getting more for their money.

We compared the effectiveness and efficiency of cities operating their own public safety answering

<sup>34</sup> Other recent changes include Golden Valley and New Hope contracting for 9-1-1 services with St. Louis Park, and the cities of Crystal, Chatfield, Robbinsdale, and Zumbrota receiving services through their respective counties.

<sup>35</sup> Discussions on the feasibility of a multiple-county public safety answering point have been underway in South Central Economic Development Region 9, containing the counties of Blue Earth, Faribault, Le Sueur, Martin, Sibley, Waseca, and Watonwan. No agreement on plans for such a merger, however, has been reached.

points with that of their counties' PSAPs. We looked at several dozen measures of quality service, such as average time to answer a call, completeness of telephone equipment, availability of a backup facility, and access to quality emergency medical dispatching. (Appendix B lists the measures of effectiveness and efficiency that we used in this review.) We found that:

- **In some cases, the city-operated PSAP offered higher quality or more services in 1996 than the PSAP run by the county in which the city was located. In other cases, however, the effectiveness and efficiency of the county PSAP was equivalent to or better than that of the city-operated PSAPs located in the county.**

In cases where the city-operated PSAP offered higher quality, the elected officials may have decided that the value of the additional service warrants the expense. In essence, they have decided to have residents pay more because the service is better than what they would otherwise have received.

On the other hand, in the counties where a city-operated PSAP did not measure up to the level of service provided by the county, there may be incentives for discontinuing separate operations. Although consolidation may not be presumed to automatically improve service and lower costs in every case, it may be in the cities' best interests to assess whether continuing to operate their own PSAPs provides the best service to their residents for the dollars spent. The effectiveness and efficiency of service may be better through a different PSAP operated by another city or the county.

## Factors Affecting the Future Structure of Public Safety Answering Points

Improved service, upgraded technology and equipment, reductions in redundant functions, and cost savings are often the key motivations behind merging PSAPs. In some areas, improving the level

of service (for instance, adding a records management system) or purchasing advanced equipment (such as computer-aided dispatching hardware and software) would not be financially feasible without several units of government agreeing to share the costs.

Evolving telecommunications technology will also continue to affect the structure and operations of PSAPs. As the use of wireless telephones continues to expand in popularity and scope, the public safety community is adapting by changing the equipment used to route 9-1-1 calls and altering the structure of who is responsible for answering those calls. Another force likely to drive changes in the operation and structure of PSAPs is the proposed 800 megahertz (MHz) digital, trunked radio system, for which a contract to build is currently under negotiation in the Twin Cities area.

### *At Issue: Effect of the Regionwide Digital Trunked Radio System*

State and local agencies are in the planning stages of building a digital, trunked public safety radio system, initially in the Twin Cities area, and potentially in other areas of the state.<sup>36</sup> The purpose is to ultimately serve all the public sector radio communications needs in the region. This includes public safety and public works agencies, among others. The intent of the system is to create sufficient capacity to relieve the congested radio channels that can at times prevent effective communication within and between agencies. It is also proposed to allow interagency radio communications and take advantage of the FCC-influenced move toward equipment that operates on the more efficient narrowband radio waves. To accomplish this, the system would integrate radio communications into a single network, replacing numerous stand-alone radio systems that local, regional, and state agencies currently operate. According to our survey,

- **35 percent of the PSAPs in the Twin Cities area had insufficient radio frequencies to meet their communications needs.**

<sup>36</sup> A trunked radio system uses computers to efficiently assign and reassign open radio channels to various "talk groups" as users begin and end communications, with the effect of greatly expanding the capacity of the system through better utilization of available radio frequencies.

Participation in the digital, regionwide trunked radio system, however, is not required. Local governments have the option to continue with their existing radio system, upgrade their own system, or join the regionwide system.<sup>37</sup> Counties (and the cities of Minneapolis and St. Paul) have been directed by law to prepare plans for their radio needs, including the needs of cities and townships, and submit these plans to the Metropolitan Radio Board, created in 1995 to oversee the design of the regionwide system.<sup>38</sup>

Hennepin County, Carver County, and Minneapolis have opted to continue participating in the planning for the regionwide radio network. Anoka County plans to migrate to the regionwide system some time after 2002, when most radios now in use would reach the end of their useful life. Dakota County has delayed its decision to participate in the regionwide system to take advantage of the expected life cycles of its existing equipment and the possibility of lower equipment costs in the future as technology improves and competition lowers costs. Ramsey County decided against joining the regionwide system for the time being but wants to reserve that option for the future; St. Paul is expected to concur. Washington County has also opted to delay participating in the regionwide system. Further, in the absence of state financial assistance to encourage local participation in the regionwide system, Washington County wants to pursue a preliminary design of its own trunked radio network and seek licensing for additional radio capacity within the county.<sup>39</sup>

While we make no judgment on the proposed digital, trunked regionwide radio system itself because it is beyond the scope of this report, we recognize that it will affect PSAPs and could change their structure. As counties and municipalities consider their alternatives to the trunked regionwide network, they may realize increased efficiencies from working together on consolidating dispatching operations and radio

channel allocations. Other possible options are joint equipment purchasing or cooperative planning with nearby jurisdictions in designing replacement communications systems.

A bill pending before the 1998 Legislature would allocate state matching grants to help local governments join the regionwide system. The grants would be distributed in part on the extent to which recipients share equipment or personnel for dispatching.<sup>40</sup>

Costs of joining the trunked regional radio network may drive local governments in the Twin Cities area to instead compare the effectiveness and efficiency of their current communications arrangements with the option of consolidating some or all of the existing PSAPs. If consolidation is feasible, it may occur in lieu of joining the proposed regionwide trunked radio system, or to reduce and share the costs of participating in the system. Opting out of the regionwide system means agencies would need some other process for interagency communications.

Some of the questions that counties and PSAPs should ask when considering their options include: (1) As the existing radio equipment and dispatch consoles reach the end of their expected life cycles, what are the costs and benefits of replacing equipment in all of the centers versus in some of them? (2) What is the feasibility of continuing to operate separate PSAPs but jointly purchasing radio infrastructure to create talk groups among adjacent PSAPs? (3) Would a merger of PSAPs sufficiently reduce the need for separate radio channels so that

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***A pending Twin Cities area public safety digital radio system could affect PSAPs' structure.***

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37 *Minn. Stat.* §473.905, subd. 1.

38 *Minn. Laws* (1995), sec. 4, subd. 1-7, 13. The Board was also given control over applications to the FCC for 800 MHz radio channels. It is currently negotiating with a vendor on the specific details of the first phase of the system, estimated to cost \$28 million for the regional "backbone" of the system, and another \$17 million for subsystems planned by Hennepin County, Minneapolis, and Metro Transit. See *Evaluation of Proposal for an 800 MHz Region-Wide Public Safety Trunked Communications System*, by Donald Wicklund, Chairman, Core Evaluation Team, Metropolitan Radio Board (St. Paul, October 29, 1997) 4-8.

39 Scott County has not yet submitted its plans to the Radio Board.

40 *Minn. House* 1998, H.F. no. 3083.

radio channels “turned back” by users of the digital 800 MHz regionwide network provide adequate capacity? If so, could needs for interagency and intercounty communications be met feasibly outside the regionwide radio system? (4) Would consolidating PSAPs make participation in the digital 800 MHz regionwide network more financially feasible?

### VARIATIONS IN DISPATCHERS' FUNCTIONS AND TRAINING

Although all dispatchers share some common public safety functions, their duties differ from PSAP to PSAP. In addition to fielding calls and communicating with emergency response agencies, dispatchers may have record keeping, clerical, receptionist, and jailer duties. For instance, we found that:

- **In about 41 percent of PSAPs, dispatchers performed jailer functions, such as booking and fingerprinting.**

Most of these PSAPs were outside the Twin Cities area. (See Figure 1.9.) Around the state, most dispatchers performed reporting and record keeping duties and many also had clerical and receptionist tasks. These other duties were also more common in PSAPs outside the Twin Cities area.

Another difference is reflected in how the dispatchers' duties are divided. Most Minnesota PSAPs operate with what is called “one-stage” dispatching. Under one-stage dispatching, one individual receives the incoming call, queries the caller, determines what units should be dispatched, and communicates with the dispatched field units. About 93 percent of PSAPs in the state used one-stage dispatching in 1996, according to our survey.

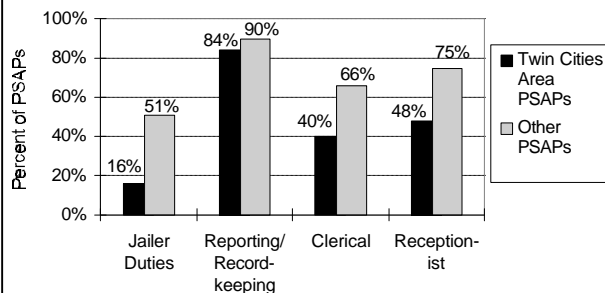
The remaining 7 percent used “two-stage” dispatching. In this arrangement, the person taking the call queries the caller and collects the necessary information, but another individual dispatches the appropriate response units. One arrangement is not inherently better than another. In certain circumstances, PSAPs have found two-stage dispatching to work more efficiently for them. For instance, all PSAPs with two-stage dispatching in 1996 had a relatively large volume of calls per dispatcher. All had computer-aided dispatch that electronically provides ALI and ANI for the caller on the screens of both the call taker and the dispatcher. None had a dispatcher workload that included official jailer duties. PSAPs using two-stage dispatching were nearly equally divided between the Twin Cities region and elsewhere.

### Training for Dispatchers

Persons employed in emergency communications require special skills and knowledge. They have to deal with life and death issues on a regular basis. They must make split-second decisions based on their knowledge of multiple emergency response agencies and their different service area boundaries, emergency medical procedures, and the topographical features in their geographic area. They also need to communicate quickly yet effectively via radio and telephone equipment, stay calm in pressure situations, and be able to perform multiple tasks simultaneously.

Because of the vital nature of dispatchers' jobs, and the communication links they provide with the emergency response agencies, dispatchers are as much a part of effective public safety as law enforcement officers on the street. As a result, it is important that PSAPs hire individuals that can perform the job well and provide training that keeps dispatchers on top of their job.

**Figure 1.9: Other Duties Performed by PSAP Dispatchers, 1996**



SOURCE: Legislative Auditor's Office Survey of Public Safety Answering Points, 1997.

*Dispatcher Training in Minnesota*

The demands placed on dispatchers today require employees who have successfully completed extensive training in a number of subject areas. Although we heard from long-time dispatchers who said they had started working years ago after only one or two days of training, all of them said this would be impossible in today's work environment.

Most of the training dispatchers receive is training at the job site, although some off-site classes and curricula are available. Because each PSAP works with different emergency response agencies, has different radio systems, dispatching consoles, and telephone equipment, and has developed its own protocols and procedures for dealing with given incidents, the bulk of the training has to be customized to the individual PSAP.

A certain set of skills and knowledge is necessary for all effective dispatchers. Training is not always easily accomplished in this profession, however, because of scheduling difficulties inherent to covering all shifts 24-hours a day, year round. In addition, the opportunities for dispatcher training are limited in some of the rural areas of the state.

Minnesota does not require minimum skill or training levels for dispatchers. Nonetheless, many national organizations associated with public safety and telecommunications have recognized the value of and need for

**Minnesota has not set minimum training levels for dispatchers.**

dispatcher training. In 1996 the Association of Public Safety Communications Officials International, Inc. (APCO), an organization representing the interests of public safety communications, developed a minimum training standard that describes a base amount

and content of dispatcher training.<sup>41</sup> As a minimum, APCO recommends eight training "modules" that cover subjects such as: the dispatchers' role on the public safety team; effective

listening techniques; radio, telephone, and electronic communication technologies; how to classify the nature and seriousness of calls; and stress management techniques. In addition, APCO recommends that all dispatchers receive this training within the first 12 months of employment.

We found that:

- **Minnesota PSAPs generally have a strong emphasis on dispatcher training.**

As Table 1.3 illustrates, at least two-thirds of PSAPs in 1996 met or exceeded the APCO

**Table 1.3: PSAPs' Training that Met APCO Guidelines, 1996**

	PSAPs Statewide	Twin Cities Area PSAPs	Other PSAPs
Technology use (hard wire v. wireless phones, basic v. enhanced 911, recorders, CAD, radios, etc.)	84.1% (N=88)	87.5% (N=24)	82.8% (N=64)
Roles and responsibilities of the PSAPs and dispatchers	81.6 (N=87)	79.2 (N=24)	82.5 (N=63)
Telephone techniques/call processing	73.9 (N=88)	79.2 (N=24)	71.9 (N=64)
Radio communication protocols, rules, and responder safety	72.7 (N=88)	83.3 (N=24)	68.8 (N=64)
Legal aspects of law enforcement, fire, and EMS agencies	69.0 (N=87)	58.3 (N=24)	73.0 (N=63)
Interpersonal communications including listening skills, processing information, and cultural diversity issues	66.7 (N=87)	70.8 (N=24)	65.1 (N=63)
Call classification by type of call and priority	65.5 (N=87)	79.2 (N=24)	60.3 (N=63)
Stress management	33.7 (N=86)	29.2 (N=24)	35.5 (N=62)

SOURCE: Legislative Auditor's Office Survey of Public Safety Answering Points, 1997.

41 Association of Public Safety Communications Officials International, Inc., *National Public Safety Telecommunicator Training Standard* (South Daytona: APCO, 1996), 4-8.

recommended number of training hours for seven out of the eight subject areas. A 1997 survey of local APCO members conducted by the Minnesota APCO chapter revealed similar trends.<sup>42</sup>

Only about 19 percent of PSAPs, however, met the recommended number of hours for initial training in all eight subject areas. Part of the reason may be that dispatcher training in Minnesota is generally paid for by local governments with limited tax bases. Since 1995, however, local governments have been able to spend revenues from the enhanced 9-1-1 fee on enhanced 9-1-1 training.

### *Dispatcher Skills Advisory Task Force*

In 1990 the Legislature created a task force to investigate the issue of statewide standards for appropriate dispatcher skill levels and training needs.<sup>43</sup> Task force participants agreed that dispatchers throughout the state need a minimum amount of knowledge, skill, and ability.<sup>44</sup> They also listed 11 subject areas in which all dispatchers should have at least minimum abilities.

But the task force recommended against mandated dispatcher skill levels unless state funding for training was available. Instead, the task force called for the Legislature to create a “Dispatching Skills Board” to provide state accreditation of training courses and recommended that PSAPs hire only dispatchers who completed an accredited course. It

also recommended that the state offer grants to match local government funds spent on improving dispatching skills. These recommendations were not enacted.

### *Statewide Standards Elsewhere*

In contrast to Minnesota, 26 out of the 50 states have developed either mandates or guidelines for minimum dispatcher training, according to our review of state statutes, case law, and conversations with other states’ representatives. Nineteen of these states set standards and require dispatchers to receive the training; the remaining seven have developed standards but local government compliance is optional.<sup>45</sup>

We looked at nine states similar to or nearby Minnesota for a comparison of dispatcher training requirements.<sup>46</sup> Four of these nine states, Iowa, Massachusetts, North Dakota, and Oregon, have mandatory training requirements.<sup>47</sup> Washington has voluntary guidelines; local governments choose whether to comply. Michigan has a process underway to establish standards although the proposed legislation does not require specific training hours. The other three states have not established statewide training standards or guidelines.

Of the five states with training requirements or guidelines, the number of minimum training hours ranged from 16 in Massachusetts to 117 in Oregon,

42 Minnesota APCO Standards Committee, *Survey on Dispatcher Training Programs Results* (St. Louis Park, April 8, 1997), 2.

43 *Minn. Laws* (1990), ch. 490.

44 Minnesota Dispatching Skills Task Force, *Final Report and Recommendations of the Minnesota Dispatching Skills Task Force* (St. Paul, November 14, 1990), 19-20.

45 National Emergency Number Association, *Telecommunicator Standards and Training, National Survey 1996* (Coshocton, Ohio: NENA, June 1996); and Gene Shepard, Iowa Law Enforcement Academy, Telephone interview by author, St. Paul, January 5, 1998; Steve Davidson, Lenexa, Kansas Police Department, Telephone interview by author, St. Paul, January 6, 1998; Peter Ostrowski, State Emergency Telecommunications Board E911 of Massachusetts, Telephone interview by author, St. Paul, January 5, 1998; Nate McClure, Michigan Chapter NENA, Telephone interview by author, St. Paul, January 5, 1998; Peter Peterson, Keith County, Nebraska Emergency Management, Telephone interview by author, St. Paul, January 12, 1998; Richard Robinson, North Dakota State Radio Communications, Telephone interview by author, St. Paul, January 2, 1998; Erik Gabliks, Oregon Public Safety Service Academy, Telephone interview by author, St. Paul, January 7, 1998; and Chris Fischer, Valley, Washington Communications Center, Telephone interview by author, St. Paul, January 5, 1998.

46 The nine states we compared to Minnesota are: Iowa, Kansas, Massachusetts, Michigan, Nebraska, North Dakota, Oregon, Washington, and Wisconsin.

47 Iowa’s training mandates have not been implemented because the state did not finance them. Legislation to provide a state funding source is expected to be introduced in 1998. Source: Gene Shepard, Iowa Law Enforcement Academy, Telephone interview by author, St. Paul, January 5, 1998.

with a median of 50 (as compared to the APCO recommended minimum of 40 training hours). The content of the required training varies but both North Dakota and Oregon require subject matter similar to APCO requirements. In three of the five states, Massachusetts, Oregon, and Washington, the state provides revenues to defray or cover the costs of training. In North Dakota local governments pay for their dispatchers' training, and in Iowa the source of financing remains to be settled.

### *Linking Training to Quality Service Delivery*

Among Minnesota public safety answering points, we compared those that met all APCO recommended training standards with those that did not and measured them against several indicators of high quality communications centers. The indicators included items such as whether the PSAPs used standard operating procedures, offered stress management methods, had an efficient ratio of expenditures per call, and customized training to best meet individual needs. We found that:

- **PSAPs that met or exceeded all APCO training standards were more likely than others to have numerous other characteristics of effective and efficient dispatching operations.**

This relationship between training and other indicators of quality dispatching reinforces the need for PSAPs to focus on comprehensive and ongoing training for dispatchers as an important component of effective service.

### *At Issue: Prohibiting Dispatchers from Initiating Work Stoppages*

In past years, some representatives of the public safety community in the state have argued that because dispatchers need to be highly trained professionals and deal with increasingly sophisticated technological communications systems, state law should proscribe dispatcher strikes. Under the state's Public Employment Labor Relations Act, employees such as police and fire

fighters are designated as "essential employees," meaning they may not legally strike or conduct other work stoppages.<sup>48</sup>

State statutes require essential employees to submit matters to binding arbitration when they reach an impasse in resolving differences with management over employment terms or conditions.<sup>49</sup> A measure to designate dispatchers as essential employees was debated during the 1997 Legislature; although the Senate passed the bill, the House of Representatives sent it back to committee. The 1998 Legislature is reconsidering the same bill.

Proponents believe that designating dispatchers as "essential employees" would recognize the true value of dispatchers' role in maintaining public safety, and ensure dispatch communications centers are staffed at all times with qualified personnel regardless of the status of labor negotiations. They are concerned that a strike by dispatchers could endanger public safety. Personnel who would not necessarily have the proper training would likely have to operate the communications center and try to assume all the duties of dispatchers during a strike. Further, strikes could last for a protracted amount of time and PSAPs may find it difficult to cover all shifts with an adequate number of replacements.

On the other hand, opponents are concerned with the impact that higher compensation would impose on local government budgets should the designation result in raising lower dispatcher salaries to the level of higher-paid dispatchers. They argue against the use of binding arbitration because of its expense and its use of third party arbitrators unfamiliar with either dispatching or local government administration; the inflexibility of arbitration prevents arbitrators from offering compromise solutions to the parties' final offers. Some oppose the concept of designating employees

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***Comprehensive training for dispatchers is an important component of effective PSAP service.***

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<sup>48</sup> Minn. Stat. §179A.18, subd. 1.

<sup>49</sup> Minn. Stat. §179A.16, subd. 2.

as essential because of their support for employees' right to strike. Opponents have also said that local governments' strike preparation plans help prepare a PSAP by determining in advance which personnel would cover for dispatchers in the event of a strike.

For this review, we were interested in knowing whether the designation of dispatchers as essential employees is linked to quality dispatching. Because data that measure the quality of other states' PSAPs are not available, we could not directly compare dispatching effectiveness in states that allow dispatchers to strike with states that do not. Instead, we looked at the same nine states we reviewed for minimum training standards to see whether there was a connection between dispatcher training, as a proxy for quality dispatching service, and employees' opportunity to strike. Comparing these states we found mixed results.

- **Among the nine states we reviewed, we did not find a clear association between prohibiting dispatchers from striking and either (1) setting mandatory training standards or (2) requiring a high number of training hours.**

Three of the states with mandatory dispatcher training standards, and two without required standards, prohibit dispatchers from striking. One state with mandatory training standards, and three without, allow dispatchers to strike. The state with the highest number of required training hours prohibits dispatchers from striking, but so do states with no required training hours.

We would have preferred to analyze directly whether measurable indicators of quality dispatching can be associated with a proscription against dispatcher strikes. Because of the lack of data, this was not possible. We were limited to using training standards as a proxy for quality dispatching. Further, our study analyzed a limited number of states. Acknowledging these caveats, our research did not reveal a link between designating dispatchers as essential and quality dispatching service as measured by required training.

Throughout our study, though, we uncovered strong support for high levels of dispatcher training from

the public safety community and from our own analysis. We conclude that:

- **Regardless of whether Minnesota dispatchers become essential employees, high quality dispatching requires ongoing and comprehensive training.**

Adequate training is paramount to successful dispatching. Employees inadequately prepared for the job will be of little benefit to the PSAP whether or not dispatchers retain the right to strike.

## SUMMARY

This chapter describes 9-1-1 public safety dispatching in Minnesota. State statutes require counties to operate public safety answering points year-round to receive 9-1-1 and other calls and mobilize emergency response agencies, as needed. Minnesota is one of a handful of states with 9-1-1 service available statewide.

Because counties had to construct their 9-1-1 systems with local funds, the type of equipment available for 9-1-1 dispatching varies around the state. About a third of counties have fully enhanced 9-1-1 service, a third have local location identification features, 13 percent have automatic number identification features, and 21 percent have basic 9-1-1 service.

Services provided by PSAPs vary among counties. Some handle many more public safety calls than others. Some offer emergency medical dispatching and others do not.

Calls to 9-1-1 on wireless telephones currently go to the 10 State Patrol communications centers located around Minnesota. Responsibility for wireless 9-1-1 calls, however, is under review as some local PSAPs would prefer to receive these calls. A reasonable guideline for determining responsibility for wireless 9-1-1 calls may depend on where the calls originate, what percentages of calls are being transferred to local PSAPs, and what local governments can afford.

Both the state and local governments share in financing 9-1-1 services. The state collects

telephone user fees to pay (1) administrative costs for overseeing 9-1-1 development, (2) recurring charges to telephone companies for 9-1-1 service, and (3) development of enhanced 9-1-1 around the state.

Local governments have paid for installing 9-1-1 equipment, developing databases of telephone users and their locations, and operating and maintaining PSAPs. Recently, local governments have begun receiving state money for enhanced 9-1-1 service, including dispatcher training.

Minnesota has 112 PSAPs: one operated by each of 86 counties or joint law enforcement centers, two operated by St. Louis County, and 24 operated by cities or other local government units. The number of PSAPs has decreased as some public safety answering points have merged. Certain factors, such as the desire to take advantage of evolving communications technology and the expense of those technologies, have spurred mergers and are likely to continue to do so.

Around Minnesota, dispatchers have somewhat different functions. Some counties employ dispatchers to also perform jailer duties, for example. Although Minnesota PSAPs generally have a strong emphasis on training, not all have the same training requirements and dispatchers are trained at different levels.

Comprehensive and ongoing training for dispatchers is recognized as critical for effective dispatching. Although the lack of data prevented us from directly analyzing possible connections between quality dispatching and dispatchers' option to strike, we found no apparent link in a limited number of other states between high levels of training, as a proxy for effective dispatching, and prohibiting dispatchers from striking.