



SWMN 6 County Regional 9-1-1 Dispatch, Study, and Recommendations

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Public Safety Consulting, GIS, and Software
www.geo-comm.com

Main: 320.240.0040 Fax: 320.240.2389 Toll-free: 888.436.2666
601 West St. Germain Street St. Cloud, MN 56301

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In October 2009, a consortium of six Minnesota counties (Lyon, Murray, Nobles, Pipestone, Redwood, and Rock, (hereinafter referred to as the “SWMN 6”) solicited proposals from consulting firms for the execution of a “Regional 9-1-1, Dispatch, Radio Study, and Recommendations”. Following a review of the several proposals that were submitted, the Steering Committee of SWMN 6 for this effort selected GeoComm to conduct the study.

The GeoComm consulting team consisting of Paul Linnee, Project Lead, and Rey Freeman, Radio Engineering Consultant visited SWMN 6 and conducted the project kickoff meeting as well as in-depth site visits and interviews at the six county 9-1-1 Public Safety Answering Points (PSAPs).

Following these three days of activity, the GeoComm team finalized two data collection forms for distribution to the several 9-1-1 and dispatch centers. Copies of these data collection forms are attached to this report as Appendix 3. They were returned by late December 2009, and the process of analyzing the data began.

By mid January, preliminary analysis of the collected data was completed and a meeting was held in Slayton with the SWMN 6 Project Steering Committee to review this data, clarify some of the data requirements, and begin the process of “visioning” what a different configuration and organization for 9-1-1 service delivery for the SWMN 6 might look like.

The issue of analyzing the operating practices and costs of an existing array of 9-1-1 PSAPs/dispatch centers in a given single county can be fraught with complexity. Not the least of the problems that one can expect to encounter is a wide variety of ways in which costs are tracked (or not tracked, as the case may be). Add to this the added layer of complexity involved in researching multiple counties and clarity can be even more elusive. In addition, one often encounters situations where each agency has a different process or equipment for tracking activities conducted and their respective time requirements. All of this makes it significantly difficult to come up with unassailable “apples to apples” comparisons between today’s operating agencies and their workloads and costs.

Furthermore, if one desires to have a solid foundation of today’s workload and cost data to use as a building block for determining the degree to which future service configurations and organizations may be more or less efficient, more or less expensive, or more or less effective, one can easily be thwarted in making unassailable comparisons between what exists today and what could exist in the future.



In this effort, GeoComm's consultants have attempted to build as solid a foundation as possible reflecting today's data. Our efforts on this project benefit from the fact that the GeoComm consultants dealing with operational cost and workload issues have between them over 100 years of experience in building, staffing, and managing multi-agency dispatch operations. They also have managed several dozen similar study projects for agencies covering the full array of type and size of dispatch agency from agencies as large as the Cities of Long Beach, California or Atlanta, Georgia, down to numerous one-dispatcher on duty police and fire dispatch centers from all over the United States.

This foundation of professional experience means that despite the lack of some of the solid data that might have been desirable, a number of rational estimates, observations, conclusions, and recommendations can be offered with a high degree of confidence. Simply put, GeoComm's consultants have a well rounded understanding of what emergency service dispatchers and 9-1-1 call takers do, how much time it takes to do it, about how much of it there is to do in a given size jurisdiction, and the general cost elements that go into establishing the overall costs of any operation, be it today's several dispatch operations or tomorrow's potentially fewer dispatch operations.

An important starting point for determining "How Can the SWMN 6 Do 9-1-1 Better?" is an understanding of "How 9-1-1 is Done" today in the SWMN 6. After the Executive Summary for this report, we begin with this historical and current service perspective, to help the reader develop a context for understanding how and why things are done the way they are today.

From that foundation, we then take a look at each of the SWMN 6's PSAPs where just under 30,000 wired and wireless 9-1-1 calls and just over 200,000 seven-digit telephone calls are answered each year. We then proceed to present several alternatives for how 9-1-1 service delivery could be arranged, the relative pros and cons of each and their relative costs. We conclude by identifying the configuration and governance model which we have determined to be most appropriate for the SWMN 6, and provide detailed cost projections, technology choices, and implementation strategies.

The process of local governments studying and debating how to re-organize their "9-1-1 service delivery systems" is an activity occupying literally hundreds of cities, counties and even a few states in the United States right now. It is often a process fraught with debate, acrimony, accusations of power grabs and related unpleasantness between local agencies, but it has been our experience that much of this flows from a fundamental lack of understanding as to:

- How and why 9-1-1 related tasks are done the way they are done now.
- How much doing them that way costs in terms of both dollars and service quality.
- How they could be done differently, how much that would cost, and what service quality benefits or losses might be obtained.



- How to get from here to there with the assist of technology and with well intentioned participants.

We hope to facilitate such a process for the SWMN 6 residents and their local leaders and as a backdrop for the report that follows, we are reproducing here the Scope of Services from the Request for Proposals (RFP) issues by the six counties in 2009:

As one of the possibilities for cost saving consideration, these six Counties have formed the Study Group to study the possibility of combining services in the dispatch and records management area of emergency services. The Study Group is seeking proposals for a consultant to provide a three section report consist with the following description:

I. ASSESSMENT:

The report compiled needs to provide detailed assessments of the following matters:

1. Radio Equipment
2. Operating Procedures
3. Costs/Budgets
4. Staffing
5. Records storage
6. Records access
7. Call Volumes
8. Equipment capabilities
9. System and Procedure compatibility with the Counties

These items need to be evaluated as to what the existing status of each is, as well as what would be required to combine some or all of the functions of dispatch for the six Counties.

II. RECOMMENDATIONS:

The report should include recommendations based on the information gained from the assessment in Section I and covering at least the following factors:

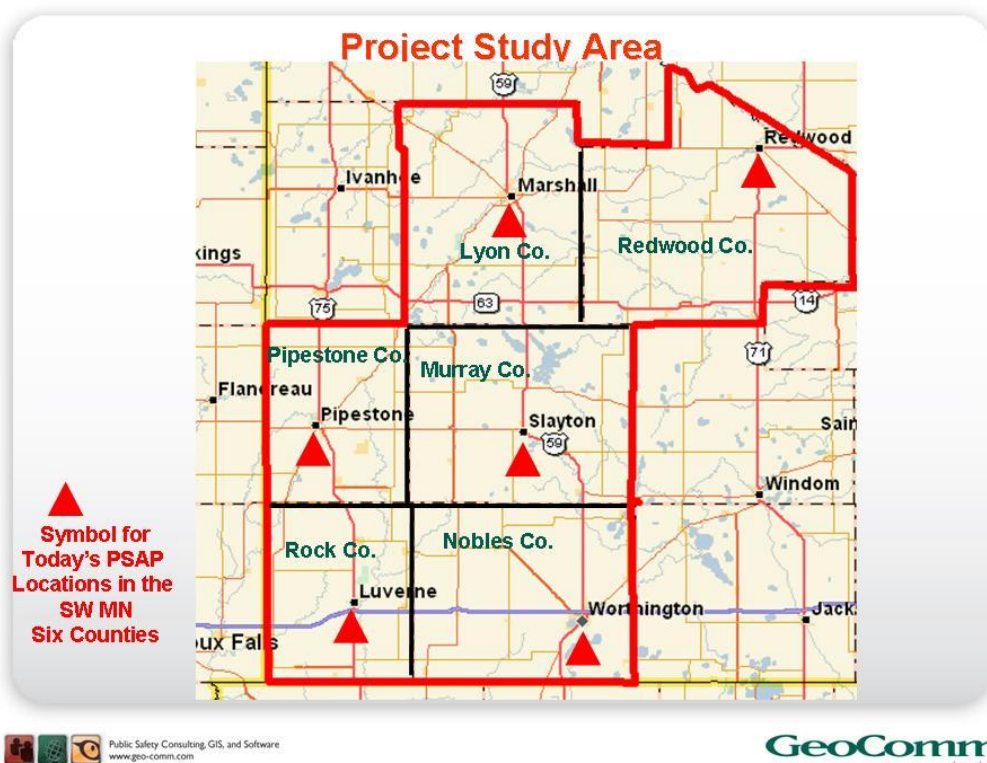
1. Dispatch Services
2. Dispatch Locations
3. Records Storage
4. Records Access
5. Service Levels
6. Staffing
7. Procedures
8. Radio, Dispatch and Records hardware & software requirements
9. Costs and cost sharing
10. Expandability for inclusion of other counties
11. Governance and structural
12. Political Considerations
13. Ensure multi jurisdictional interoperability

III. IMPLEMENTATION OPTIONS:

The report should provide multiple options for how to proceed with the recommendation in Section II. Timing and possible phasing of the implementation shall be considered in this Section of the report, along with an analysis of the pros and cons of each optional implementation plan.



This study deals with the complex questions of how “emergency communications services” are provided in the SWMN 6 today, and how and whether they could be provided in a better, more effective and more cost efficient manner in the future.



We define the term “emergency communications services” as the following:

- Answering calls dialed to 9-1-1 from wireline telephones.
- Answering calls dialed to 9-1-1 from wireless (cell) phones.
- Answering calls dialed to 9-1-1 from computer based VoIP (**V**oice **o**ver **I**nternet **P**rotocol such as Vonage, “Magic Jack” and others) telephones.
- Answering calls dialed to seven-digit numbers where the caller requires a response from law enforcement, fire or emergency medical services (EMS), regardless of whether it is an emergency or not.
- Providing radio communications systems and equipment to facilitate voice and data communications and paging for public safety agencies.
- Radio dispatching responders to public safety incidents.

- Tracking such responses and providing supporting information and data services to those responders.
- Training staff for all of the above and monitoring their performance.
- Maintaining the all important data elements that are the underpinning of an Enhanced 9-1-1 system such as proper rural and urban area addressing, GIS map data and the 9-1-1 “Master Street Address Guide” (MSAG).

Our research for this project has revealed that the SWMN 6 is served by an industry standard 9-1-1 call processing and answering environment. The region has benefited from rural addressing and generally state-of-the-art Enhanced 9-1-1 (E9-1-1) systems and equipment for about a decade. This is a result of a decision back in the early 1990s by both the State of Minnesota and almost all of its 87 counties to migrate to “network based” E9-1-1 systems, a move that was essential in enabling those counties to deal with the onslaught of cell phone wireless 9-1-1 calls, which now make up over 50 percent of all calls dialed to 9-1-1.

We determined that the SWMN 6 radio dispatching centers operate on similar radio systems and channels and their ability to inter-operate is adequate, with the exception of dealing with South Dakota agencies. We also learned that the SWMN 6 County Boards have all acted to solidify their commitment to migrate all of their county’s public safety radio systems over to the local-state shared/cooperatively managed ARMER 800 MHz digital trunked radio system.

However, day-to-day coordination and effective inter-agency operations means more than radios that talk to each other. The lack of coordination inherent in having dispatching done from six places on six different radio systems under six different procedures and computer systems, with six different sets of employees is something that could benefit from improvement.

We have also learned that about \$1.8 million in local tax dollars is spent today to operate these six 9-1-1 PSAPs, employing the equivalent of 36.5 full-time employees. These six PSAPs answer nearly a quarter million telephone calls per year, and dispatch law enforcement, fire, and EMS responders to nearly 65,000 incidents per year.

After establishing the “how is it done today and at what cost” base lines, we then move towards defining and recommending a new organizational and operational model for both a consolidated, single point of contact 9-1-1 Public Safety Answering Point (PSAP) and Dispatch Center for the SWMN 6 Counties, as well as exploring models involving fewer counties. Our recommended model envisions a single PSAP owned, operated, and managed by a “Joint Powers Agency” (JPA), independent of any one of today’s PSAP agencies, with all members of the JPA sharing in the control and funding of the operation.



In developing our recommendations, we relied heavily on our decades of experience in managing 9-1-1 dispatch centers, our experience in dozens of similar studies, as well as several similar implementations with which we have been involved. But the main inspiration for our model was the way city and county agencies in three Michigan Counties (Emett, Cheboygan, and Charlevoix) implemented a consolidated dispatch center (called CCE 9-1-1) serving their three counties of a population total quite similar to SWMN 6 Counties (91,500 in the SW MN 6 vs. 83,875 in the CCE 9-1-1 counties). We visited the CCE 9-1-1 PSAP when it first started in the mid 1990s and we arranged for a video conference with folks from the SWMN 6 and the CCE 9-1-1 PSAP. We have also attached an Appendix 2 to this report, which provides some valuable data and templates from CCE 9-1-1's start-up experience.

Our recommended "one PSAP" configuration for the six counties is projected to have an approximate annual operating cost of \$1,319,930 and a potential one-time start-up cost as high as \$2.258 million to build and equip this newly configured six county PSAP with the appropriate E9-1-1 equipment, CAD system and ARMER radio system control consoles and recording device¹. This proposed configuration is projected to require four PSAP workstations with the possibility of having a fifth.

We project that this \$1.3 million annual operating cost for this six county PSAP would be 24.5 percent less than what is being spent by the six counties separately today, but we also recognize that some of these potential cost savings could be reduced for a given county should said county choose to spend money to replace some of the staff time available when there were 9-1-1 dispatchers in their Sheriff's Office to replicate some of the functions that 9-1-1 dispatchers performed when they were there.

Our recommended staffing configuration for a six county consolidated PSAP is as follows: (FTE = Full-Time Equivalent employees)

Dispatchers	12.43 FTE
Lead Dispatchers	5.00 FTE
9-1-1 Coordinator/Admin Aide	1.00 FTE
Executive Director	<u>1.00 FTE</u>
TOTAL FTE	19.43 FTE

¹ The \$2.258 million figure presumes all new equipment and an all new building, but we do explore a model that would not require any new construction and more limited new equipment, thereby providing large savings.



The potential one-time start-up cost of \$2.258 million to equip this newly configured six county PSAP with the appropriate E9-1-1 equipment, CAD system and ARMER radio system control consoles and recording device is well below the estimated \$2.8 million in equivalent expenditures that would be encountered individually by the separate counties were they to purchase new Next Generation (NG9-1-1) and ARMER control consoles and recording devices for each of today's six PSAPs. (This \$2.8 million figure does not include implementing CAD in the four agencies, which do not have it today.)

Based on the potential model of housing said PSAP in an existing PSAP facility in one of the six counties (Nobles), we are not projecting any specific expenditure for a new or retro-fitted building to serve this specialized purpose, although we recognize that from a technology perspective (with today's networked technologies) the specific location of said PSAP is not particularly important.

We further recognize that a wide array of factors would eventually impact on the decision of where said PSAP should be located, with those factors ranging from cost (one-time or recurring) for space; cost for land; the convenience of the location for staff, user agencies and board members; on to the attractiveness of the location to potential future county member agencies and still more political (with a small 'p') factors. We set forth a recommended process via which the proposed PSAP board could attempt to make this decision on as rational a basis as possible.

Finally, we recommend the establishment of a formal Joint Powers Agreement to implement something we call the Minnesota Southwest Emergency Communications District (MINSWEC)². We recommend that this be a nine person board representing the following constituencies (assuming six member counties) with all terms staggered, but rotating every two years after the Board's initial inception:

- 2: Seats for County Commissioners as chosen by the member county boards
- 4: Seats for Sheriffs as chosen by the user Sheriff's Departments
- 1: Seat for a fire department Chief as selected by the user fire departments
- 1: Seat for municipal police ranking officer selected by the user local Police Departments
- 1: Seat for a person deemed to represent the Emergency Medical Service Agencies served by the PSAP

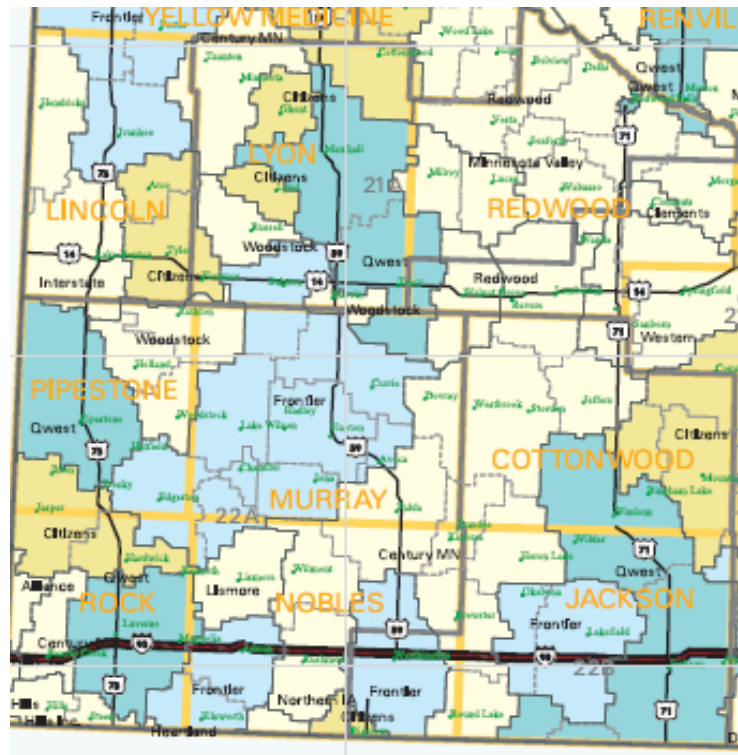
GeoComm stands ready to assist the SWMN 6 and other entities as they continue to pursue these potential changes and commend them on their work to date.

² Another possible name could be the Buffalo Ridge Regional Emergency Dispatch (BRRED)



9-1-1 technology was first implemented 42 years ago in February 1968 in rural Alabama. This initial version of 9-1-1 was called “Basic 9-1-1”, and it meant that all telephones that were connected to a given telephone company switching office (also known as a Central Office or CO) were enabled to dial 9-1-1, and when they dialed 9-1-1 their call would be switched to one 9-1-1 call answering point for the specific geographic area served by that CO.

The issue of the geographic area served by a given CO was a major limitation of Basic 9-1-1. Simply put, CO service area boundaries rarely coincide exactly with political subdivision boundaries. They often cross city limits and county boundaries, and sometimes even state lines (Example: Nobles County shares the Bigelow exchange with Iowa residents across the state line). Depicted below is a portion of a map from the MN Telecom Association which shows the exchange area boundaries (gray lines) for all of the counties in Southwestern Minnesota, including the member counties in the SWMN 6 group. Note that the county boundaries rarely are the same as the CO service boundaries. This boundary non-concurrence issue meant that if a county had its own Sheriff, police or fire dispatch center (as most did), but the county was in a larger CO area that encompassed other counties or parts of the county (usually cities) which also had their own law enforcement or fire dispatch centers, the issue became “who is going to answer 9-1-1 calls” from within that given CO service area? If it was decided to be the city(ies), then the county might not be happy. If it was decided to be the county, then the city(ies) might not be happy.



Historically, all of the counties in Minnesota were required by Minnesota Statutes Chapter 403 to implement, at least, Basic 9-1-1 by not later than 1987, and with the exception of St. Louis County, they did¹.

As implied, all of the SWMN 6 Counties implemented Basic 9-1-1 in this time frame, with the six dispatch centers being operated in the Sheriff's Offices, with the exception of Nobles County, where a larger agreement involving a shared law enforcement center and records system with the Worthington Police Department meant that the Worthington Police Department operates the Nobles countywide 9-1-1 dispatch center, and still does, while the Sheriff's Department operates other shared services for both agencies. Nobles County and the City of Worthington share the cost of dispatch 50 – 50.

In 1976, in order to overcome the Basic 9-1-1 limitations of CO boundary non-concurrence (also described as inability to “selectively route” 9-1-1 calls), lack of caller location information and lack of calling party telephone number (ANI) the former Bell Labs (part of the old AT&T) introduced something called Enhanced 9-1-1 (E9-1-1) to replace Basic 9-1-1. E9-1-1 offered three especially attractive new features:

Automatic Number Identification (ANI): This was kind of like today's Caller ID, a feature that provided the answering 9-1-1 operator with an LED display of the telephone number of the calling party. This meant that if the 9-1-1 call was cut off or otherwise interrupted, the 9-1-1 operator could easily call the party back. It also cut down on anonymous calls for things like bomb threats.

Automatic Location Information (ALI): This was a small computer screen on which the address of the calling telephone, the name of the telephone service subscriber at that address, the community name, the ID of the appropriate law enforcement, fire and emergency medical services (EMS) responders for that address as well as the identity of the proper 9-1-1 PSAP for the initial answering of that 9-1-1 call would appear for the 9-1-1 operator.

Selective Routing: This is a process via which the 9-1-1 network knows, in advance of a 9-1-1 call, to which PSAP said 9-1-1 call should be initially routed, based on its specific (wired calls) or general (wireless calls) location, thereby solving the main problem with Basic 9-1-1.

¹ Due to its size, St. Louis County was a few months late in implementing 9-1-1.



Because of these features, E9-1-1 has swept the United States and many states have now mandated statewide E9-1-1.

In Minnesota, the seven large Twin City Metro counties (as well as Stearns, Clay, Olmsted, Mower, Freeborn, Polk, and St. Louis) went to Enhanced 9-1-1 right off the bat in late 1982, skipping over the thorny issues related to Basic 9-1-1.

In 1994, the Minnesota Legislature took steps to mandate or incent (depending on one's perspective) the migration of Basic 9-1-1 counties up to the Enhanced 9-1-1 level by 1998. This migration meant implementing "city-style" rural addressing, obtaining all new 9-1-1 dispatch center telephone equipment and major reconfigurations to the network of dedicated 9-1-1 circuits and lines. It also meant making decisions on the selective routing of 9-1-1 calls from those exchange areas which existed in multiple counties. Further, unknown at the time of this legislation, but something which proved to be a major issue in the next few years was the implementation of a technology kind of like Enhanced 9-1-1 for cell phones around the turn of the century.

As it turned out, if any 9-1-1 PSAPs wanted to be able to be the initial answering point for any cellular 9-1-1 calls from within its service area, that PSAP had to be part of the E9-1-1 network and support the added data retrieval and display features of E9-1-1 (over B9-1-1). If they did not, that meant that the Minnesota State Patrol would become the default 9-1-1 PSAP for cell calls from that area. With this as an incentive, along with some state action to re-distribute modest portions of the state-collected wireless 9-1-1 surcharge (tax) to the 87 counties to implement these changes, each of the SWMN 6 Counties migrated to what is called "Network Based Enhanced 9-1-1" by the early 2000s. All six counties chose as their E9-1-1 service, equipment, and data provider the firm called "IES" (Independent Emergency Services) out of Hutchinson, Minnesota.

It is important to point out here that virtually every state in the United States has chosen to "do 9-1-1" a little bit different than every other state. In general, there are three "types of 9-1-1 states," as follows:

- States where the state assumes a major role in design, implementation, and funding of 9-1-1 systems.
 - Within this group, one always finds a uniform, statewide 9-1-1 surcharge with the proceeds all going directly to the state and then the state using those proceeds to pay the overall initial and recurring 9-1-1 network and database costs for the 9-1-1 network in that state. In some states, the state also pays for the 9-1-1 dispatch center equipment in the dozens to hundreds of dispatch centers in that state. In these states, one never sees a 9-1-1 surcharge of greater than \$1.00 per device per month, as the "economies of scale" of the state paying for all recurring costs keeps this surcharge lower.
 - ◆ Minnesota is in this group, with its 75 cents monthly 9-1-1 surcharge, a small portion of which is also being used to fund certain costs for the ARMER radio system.



- ◆ In Minnesota, the local entity implementing a 9-1-1 dispatch center (usually the county) is required to purchase and maintain its own 9-1-1 PSAP equipment at its own expense, and in the beginning, there was no state financial support for this expense. By 1994, however, the monthly “rebate” from the state of a small portion of the wireless 9-1-1 surcharge funds could be used to defray these costs.
- States where the state assumes a regulatory/authorization role but has no role in funding 9-1-1.
 - Within this group, one sees 9-1-1 surcharges being permitted by the state, but imposed by the local 9-1-1 entities. Usually these entities are county based (as in Iowa, under their County 9-1-1 Joint Services Boards) and the surcharges are sometimes limited to a maximum level by state law.
 - In these cases, the county is permitted to decide to have 9-1-1 or not, what kind of 9-1-1 to have (subject to state approval of their planned technical design), and then seek voter approval (usually, but not always) for the levying of a 9-1-1 surcharge of the \$X per month their county 9-1-1 group decided it would cost to implement and maintain their 9-1-1 systems. It is not at all uncommon to see 9-1-1 surcharges in the mid \$2.00 per month range per landline telephone in such counties.
- States where the major telephone company(ies) had an over-sized role in developing the initial legislation, thereby impacting on funding and surcharge flow issues as well as the number of PSAPs.
 - Some of the best (or worst) examples here are states that were in the area served by the old Bell operating companies that made up Ameritech. (Wisconsin, Michigan, Indiana, and Ohio). In at least two of those states, the 9-1-1 surcharge was uniformly imposed by law, but the direct recipient of all of the 9-1-1 surcharge proceeds was the telephone company and neither the state, the county or any cities that operated 9-1-1 dispatch centers ever saw (or see, to this date) any of the surcharge proceeds.
 - Even though Illinois was also in this area, they resisted this move and implemented a very complex 9-1-1 funding law which permitted the creation of 195 separate and independent 9-1-1 Boards (78 in Cook County alone,) in a state with 102 counties, each with its own 9-1-1 “system” with one or as many as several dozen PSAPs as a part of that system, and each with its own 9-1-1 surcharge. Illinois holds the record for the nation’s highest known 9-1-1 surcharge of \$3.90 per month per wired line for the Putnam County 9-1-1 Board. (A largely rural county with 6,250 residents).

In most of the states, which have a statewide landline 9-1-1 surcharge, the use of the surcharge funds does not include routine PSAP operating expenses such as staff costs, and that is the case in Minnesota as well.

In most states which have a statewide uniform 9-1-1 landline surcharge, there is also an equivalent statewide 9-1-1 wireless device surcharge as well, and this is the case in Minnesota as well.



Finally, there are new types of “telephone-like” devices, which can be used to access 9-1-1 as well. Among these, the leading such device is a Voice over Internet Protocol (VoIP) system, which (at its minimum) is some PC software and a very little bit of equipment, into which one plugs a \$10 Wal-Mart cheap telephone and can get telephone service over the Internet for as little as FREE. Some examples are Skype™, or Magic Jack™ and others. In most states where there is a uniform statewide 9-1-1 surcharge, generally successful attempts have been made to also obtain the same 9-1-1 surcharge fee in that state as for the other access devices. This is also the case in Minnesota.

It is our view that while the Minnesota 9-1-1 law may not be perfect, it is about as good as any in the United States and has been good at keeping pace with the needs and technical evolution that has occurred in telecommunications.

The Minnesota 9-1-1 law is a state mandate on the state’s 87 counties. Via this law, the state told the 87 counties that they must implement 9-1-1. First, Basic 9-1-1 and then Enhanced 9-1-1. The law also mandated that each of the 87 counties had to have a 9-1-1 Planning Committee representative of the broad spectrum of public safety response agencies in their county. Additionally, the 9-1-1 Planning Committee had to come up with a plan and submit it to their County Board for its consideration. Once the County Board approved the plan, it was submitted to the state 9-1-1 Program Office where it was reviewed for technical compliance and compliance with the mandated planning process. If it was compliant, it was approved, and then the state executed “three party contracts” between the county, the state, and the chosen 9-1-1 service provider telephone company for that county (IES in the case of the SWMN 6 Counties). This contract bound these three entities together to do what the said they would do in the plan. The county said there would be X number of PSAPs in the county and local resources would be used to initially purchase the equipment necessary to terminate 9-1-1 calls there; the 9-1-1 service provider would install X 9-1-1 trunks and E9-1-1 ALI circuits to each of the PSAPs in that county, and charge \$Y one time and \$X per month for these items, and the state would pay the recurring costs for these telecommunications services. Nowhere does the Minnesota 9-1-1 law mandate that each county operate any or any set number of PSAPs. What it does mandate is that the County Board must set forth a plan for having 9-1-1 calls dialed from within their county answered someplace, and for the appropriate emergency response agencies to then be dispatched. And, while it is true that at the outset, each of the 87 counties chose to have at least one 9-1-1 dispatch center, that is no longer the case, since at least Big Stone County no longer operates its own PSAP and has contracted with Kandiyohi County to answer their 9-1-1 calls and radio dispatch for them. At the other extreme, on the first day of 9-1-1 services in Hennepin County, there were 11 PSAPs, but that number has now dropped to ten.



However, the Minnesota law gives the state no authority to dictate the number of PSAPs that should exist. In fact, M.S.S. 403.025 states:

Subd 2. Multijurisdictional system. The 9-1-1 system may be multijurisdictional and regional in character provided that design and implementation are preceded by cooperative planning on a county-by-county basis with local public safety agencies.

Consequently, each of the SWMN 6 Counties that are a part of this study did (at least at one time) have active and compliant 9-1-1 Planning Committees, and those committees developed that county's 9-1-1 plan and submitted said plan to that county's board, who then approved it and sent it on to the state for approval, where they were all approved.

It is our reading of M.S.S. 403 that any changes to that plan would require re-convening of the 9-1-1 Planning Committee at the (each) county level, and any changes (such as the location of and number of PSAPs) be submitted to their respective County Boards as a proposal, and for the respective County Boards to approve said plan change and then forward it to the state 9-1-1 office for their approval.

The Sheriff as the Default 9-1-1 PSAP of Today

In the vast majority of United States counties, the Sheriff's Department had operated an emergency dispatch center for many years prior to the arrival of 9-1-1. So when 9-1-1 was implemented, in most places it became an obvious or at least a default decision to have the Sheriff's Department initially answer 9-1-1 calls from the part of the county for which the Sheriff already provided seven-digit accessed emergency dispatch services.

While it may be surprising to some, it is fairly well understood in public safety circles that the issue of who controls dispatch, who controls those who answer the telephone and who decides which agencies will respond to what event under which priority can be the source of hard fought battles between state police agencies, County Sheriffs, police, fire, and EMS services. In many places in the United States this issue was resolved by the decision that the Sheriff would do it all, at least for the agencies in the county that chose to not operate their own dispatch centers. In addition, while this has not always insured that everyone is a happy customer of the Sheriff, it is the dominant form of 9-1-1 service delivery across the 3,066 counties in the United States. And, whether this 9-1-1 and dispatching service is totally paid for by the county government for the Sheriff's Department and all the local police and fire departments, or local police fire and EMS agencies served by the Sheriff's dispatch are charged fees by the county government varies widely. In the SWMN 6 County area, only Pipestone County today charges fees and receives payment for their services to non-county entities.



In a few counties it was decided that the Sheriff should not be the agency to answer all the 9-1-1 calls that were not going to be answered initially in and for the cities, and a “neutral 9-1-1 PSAP” was established. This was the model initially adopted in St. Louis County, Minnesota and Anoka County where the County Boards set up independent 9-1-1 dispatch departments not operated by the Sheriff’s Department to answer 9-1-1 calls and dispatch county and municipal emergency services. In some counties, neutral PSAPs were established because for any given address, it was not possible or easy to determine which law enforcement, fire, or EMS PSAP should be the initial recipient of a 9-1-1 call from that address.

A huge issue facing 9-1-1 operating entities in the United States in general is the move to implement wireless Enhanced 9-1-1 services and systems. It is a fortunate fact that Minnesota was and is on the leading edge of states to have effectively implemented statewide wireless Enhanced 9-1-1 services, once the FCC mandated that the wireless carriers would have to work with the 9-1-1 authorities.

**WIRELESS 9-1-1 HAS FORCED MORE CHANGES ON 9-1-1
PSAP OPERATIONS THAN ANY OTHER TECHNOLOGY, TO DATE.**

Specifically, calls from cell phones have been dialed to 9-1-1 and answered by somebody in most places in the United States since about 1984. In Minnesota, that “somebody” was determined somewhat by default. In the beginning, since early cell phone service was only in the Twin Cities Metro area, that ‘someplace’ was either the Minneapolis 9-1-1 center or the Bloomington Police Department. This was simply due to the fact that there were only two cell phone service providers and one had its main electronic switch at an address in Minneapolis (and 9-1-1 calls over their system went to Minneapolis 9-1-1) and the other had its main switch at an address in Bloomington. In essence, then, all cell 9-1-1 calls back then were routed for answering as if they had been dialed from wireline telephones installed at those two Minneapolis and Bloomington cell switching center addresses.

By late 1985, this was proving to be unworkable. The two wireless carriers were installing towers far out from the Twin Cities core and Minneapolis and Bloomington 9-1-1 operators and dispatchers were not well prepared to handle 9-1-1 calls for car fires, etc. from 200 miles away from Minneapolis. Therefore, Minneapolis and Bloomington 9-1-1 officials approached the State Patrol and got them to agree to become the initial answering point all 9-1-1 cell phone calls. This seemed logical (at the time), since their local experience had been that all of these calls were being made from vehicles on the road (there were no handheld, pocket size cell phones back then), and most of them had dealt with freeway traffic incidents. Therefore, the change went into effect and stayed in place as cell phone carriers expanded their systems and service to cover most of the State of Minnesota. Whenever a new cell tower went up in greater Minnesota, the cell phone carrier would reach out to the State Patrol and ask them not which of the local city and county 9-1-1 PSAPs these calls should be routed to, but which of the ten State Patrol dispatch centers (Marshall, St. Cloud, Rochester, etc.) they should be routed to.



By the mid 1990s, this State Patrol arrangement became problematic. With the dramatic increase in cell phones, and most of them becoming hand held and truly portable, many, many wireless 9-1-1 calls were being made to report things that were not occurring on highways. In fact, a trend began of people deciding to abandon their household wireline telephones and replacing them with cell phones.

This trend has continued and now some data indicates that as many as 30 – 40 percent of all households now have no wireline telephones at all. Because of these factors, it is now not at all uncommon to see the percentage of all 9-1-1 calls from wireless telephones at a given PSAP approach and even exceed 50 percent².

This situation led to a rather contentious debate between the county and city PSAPs in Minnesota and the Minnesota State Patrol over who would answer these calls.

Going back to our earlier statement about the perceived importance of “who controls dispatch”, and the fact that “he who answers the 9-1-1 call has significant control over what happens – or does not happen” (as the case may be), an elaborate “arbitration process” was set up by the Minnesota Department of Public Safety to arrive at a decision as to which PSAP the 9-1-1 calls processed through any given cell tower should be routed. This process ran for a few months until the then Commissioner of Public Safety decided the process was too complex and contentious and he directed the State Patrol to allow most cell towers to be routed to local PSAPs, unless there was a strong reason to keep a given tower (such as one serving almost exclusively a stretch of a freeway) routed to the State Patrol.

In 1996, the Federal Communications Commission (The only entity that can effectively regulate wireless carriers - the states, through bodies like the MN PUC have no real authority over them) had promulgated a set of regulations to the wireless carriers which required them to create the capability to (a very important distinction) receive and transmit wireless E9-1-1 calls in a fashion more appropriate for the Enhanced 9-1-1 networks and PSAPs of the United States. These regulations had a “Phase 1” and a “Phase 2” set of requirements.

² For example, in 2008, fully 58 percent of all 9-1-1 calls answered in Rock County came from cell phones. In 2006, we did work in Oakland County, Michigan (suburban Detroit) where cell 9-1-1 calls made up 78 percent of their call total.



Wireless “Phase 1” Versus Wireless “Phase 2”

Under Phase 1, the carriers are required to send to the E9-1-1 data network only the location of the cell tower through which that call is being processed and the call back telephone number of the cell phone placing the call. The “receiving tower” location is used as the selective routing determinant for this call. The distance between the receiving tower, and the actual caller may be several to well over a dozen miles, so the location is often not very specific, and of marginal value in locating the caller.

Under Phase 2, the carriers are required to add to the Phase 1 data by including the actual latitude and longitude of the caller’s location at the moment they pressed “SEND” on their telephone. With this lat/long data, the answering E9-1-1 PSAP can implement add-on systems that take that data from the ALI data stream and automatically insert it into an interfaced Geographic Information System (GIS) computer mapping system, and an icon on a computer map in front of the E9-1-1 call taker can display the caller’s location to within a about 100 yards, on average.

Below is a picture taken at the Lyon County Sheriff’s 9-1-1 center showing the E9-1-1 the GIS map onto which a wireless 9-1-1 caller’s “Phase 2” location has been displayed. (The small red cell phone icon near the intersection of 6th and 7th Streets). This is a tremendous improvement in wireless E9-1-1 services for all callers and all E9-1-1 equipped PSAPs, which have implemented the necessary upgrades to take advantage of it.



Many city and county 9-1-1 PSAPs in the USA have been hard at work devising their methods and procedures for receiving these calls and (at least) Phase 1 wireless E9-1-1 calls are now being effectively received at the vast, vast majority of city and county PSAPs throughout the United States, and many counties (many hundreds, actually) are doing Phase 2 calls as well. All Minnesota PSAPs and carriers have migrated to the Phase 2 technology and systems. However, quite frankly, the training provided to the 9-1-1 operators on the nuanced differences between a Phase 1 and Phase 2 call and their need (and ability to) perform an “ALI Re-bid” to obtain a valid Phase 2 location has been disappointing. On our site visits to the six SWMN PSAPs we did not observe anything near 100 percent awareness of these issues and techniques on the part of the on-duty staff.

Perhaps the most challenging aspect of wireless 9-1-1 calls relates to the number and irregularity of the volume and peaks of wireless 9-1-1 calls, as well as the added time necessary to process a 9-1-1 call that does not contain a good street address from E9-1-1 Automatic Location Information (ALI) data (and none of them do or ever will).

In and of itself, this could be problematic. However it only scratches the surface of the potential problem. More specifically, not only do and will more people have these telephones, and will these more people place more 9-1-1 calls, but because of more people having these telephones and these people being “out and about” in a position to observe more “9-1-1 reportable incidents”, there will be a significant increase in the number of 9-1-1 calls being placed to report any single visible incident.

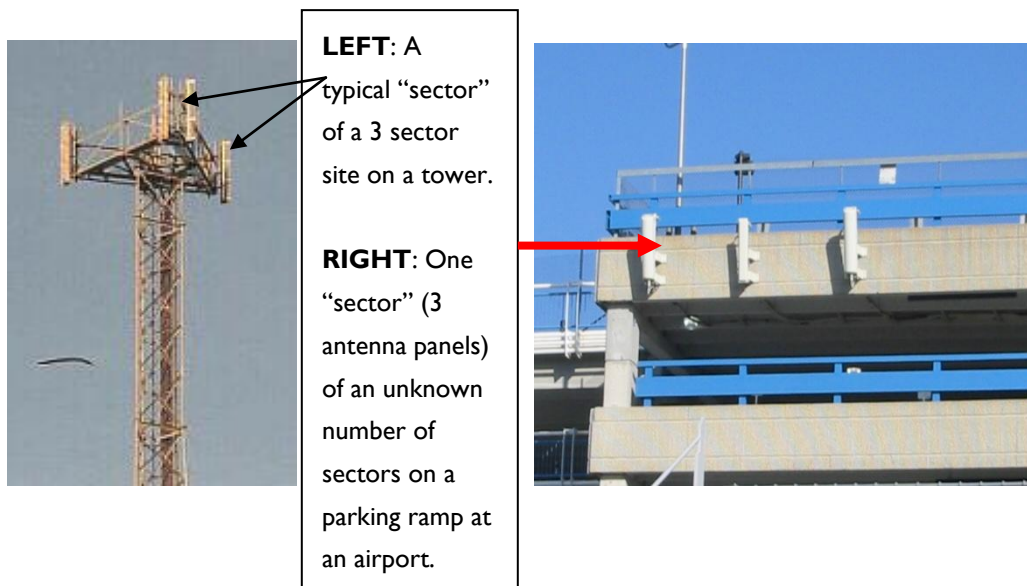
For example, 25 years ago (before any cellular 9-1-1), if there was a car-truck accident on U.S. 59 at its intersection with MN Highway 30, it would be likely that the Murray County Sheriff’s dispatch center might receive just one or two 9-1-1 calls from folks who took the time, had the interest, had the correct change (since they may not have known a 9-1-1 call from a pay telephone is free) and found a pay telephone to dial “0” (or even 9-1-1) to report said accident. Today, it is a reasonable assumption that within the first five minutes of such accident, not less than ten calls would be dialed to 9-1-1 from wireless telephones in the cars of passers-by or those involved in the accident. Imagine what it could be for a major collision or other incident (such as a fire) on I-90.

Not only is this more calls than are “needed” for the PSAP to know that there has been an incident at that location and to start the appropriate responders to the scene, but it is more calls than any PSAP staffed with only one operator can possibly hope to answer, while ***at the same time those operators are trying to dispatch the responders to this emergency and handle other normal traffic.***

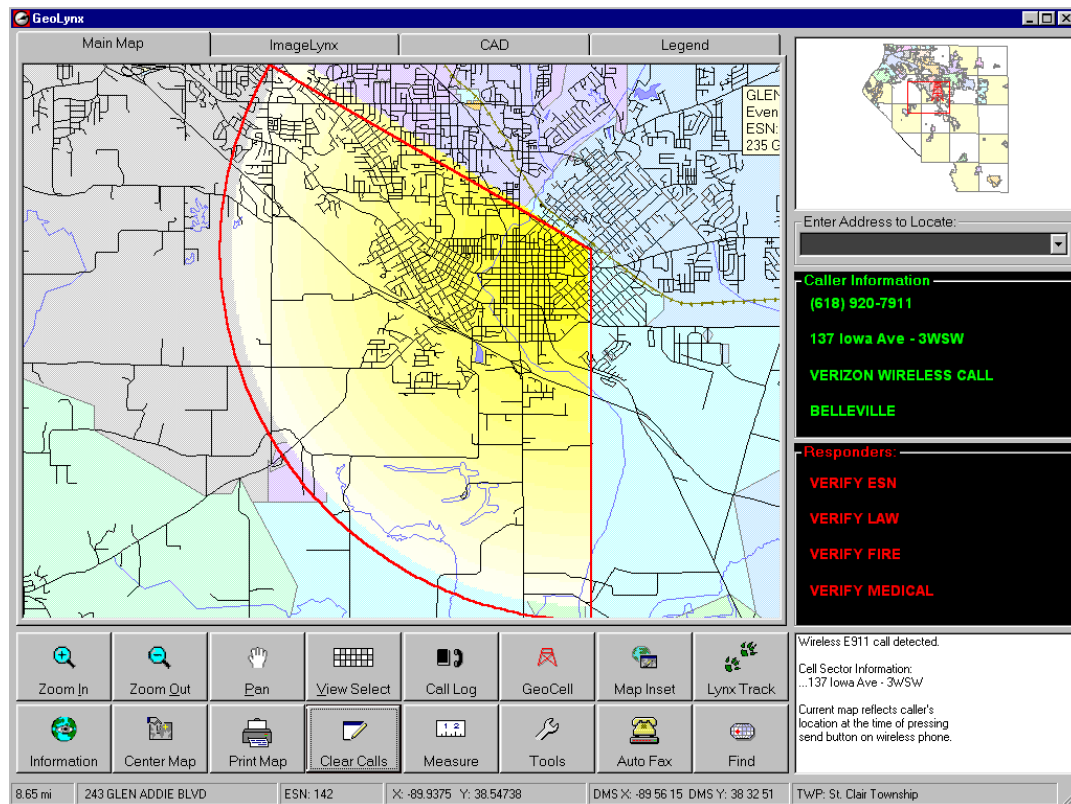


There is a corollary issue as well relating to E9-1-1 selective routing and how wireless 9-1-1 calls work with selective routing. Specifically, Phase I wireless 9-1-1 calls are routed today (and will be for the foreseeable future) based on the cell tower or panel of antennas at a tower that create a “sector” of coverage from that tower. Typically, (but not always, as is obvious from the right side picture below) these sectors are approximately 120° “pie slices” of a 360° circle of coverage from that tower.

The 9-1-1 call routing pre-determination for a given sector of a given tower is (or should have been) based on an analysis of the radio signal coverage “footprint” provided by that tower or sector’s antennas. In many cases, the coverage size of one of these footprints can be several dozen miles across. As such, within that several dozen mile distance, there might be three or more 9-1-1 PSAP jurisdiction boundaries. If all three PSAPs lay claim to some of the land within that “footprint” (and the wireless 9-1-1 call can only be initially routed to one of these PSAPs) then it is reasonable to assume that some portion of the time the wireless 9-1-1 calls will end up at the “wrong PSAP.” This may mean that a fairly small PSAP might end up getting more calls than it wants (or needs) due to the vagaries of the coverage of a given cell tower or sector, or the behavior of radio signals, or the fact that the caller may have been in the SWMN 6 9-1-1 area by the time they found their cell phone in their purse and then pressed [SEND], but they are reporting an incident that clearly occurred in some county (or state) outside the SWMN 6 County 9-1-1 responsibility area, or vice-versa.



The following illustration depicts how Phase I cell sector coverage can be depicted upon call answering.



This scenario points to a theme that will be throughout this report. Specifically, that the paradigm for the staffing of a 9-1-1 PSAP has changed radically.

As it relates to which PSAP should be the initial answering point for a wireless 9-1-1 call, the decision matrix goes like this:

- For wireless 9-1-1 calls processed through “Coverage Sector I” on Tower I from Carrier I, which PSAP should they be initially routed to?
 - This involves more than looking at a map and seeing which 9-1-1 jurisdiction “owns the most land” in the cellular radio signal coverage sector of a given tower. It also requires that persons aware of what the land use is in that coverage area make decisions that may reflect that particular land use, while 80 percent of the land covered by a given sector is in County A, the 20 percent that is in County B contains a major shopping center, a high generator of wireless call activity, thereby leading to the conclusion that calls through this sector should “defy geographic logic” and be routed to PSAP B and not PSAP A.
 - Clearly, before these decisions can be made it needs to be known where the PSAPs will be, how many there will be, and what their capability to handle the unique data display and mapping requirements for Phase 2 calls will be.



- And, this then is repeated time and time again for every tower, every set of antennas, and every carrier.
- It can change over time as antenna orientations are shifted, power levels for transmitters and raised or lowered and carriers merge, go out of business or buy each other out.

The most important “takeaway” from this discussion about wireless 9-1-1, is two fold:

1. Answering wireless 9-1-1 calls at a PSAP that serves a larger geographic area makes more sense than selectively routing them to PSAPs serving smaller areas, since many wireless 9-1-1 calls will not permit very precise routing anyway.
 - This is even more of a problem in flat, sparsely populated rural areas such as the geography in the SWMN 6 County area. This is because the carriers usually use 250’ to 400’ cell towers which can have a coverage radius of up to 25 miles, meaning that several counties could easily fall within that tower’s coverage footprint for any given cell sector.
 - ◆ To make things worse, in such areas some of the carriers are still deploying “omnidirectional” cell towers which have no “sectorized” panel antennas to refine the 9-1-1 call routing, meaning that a literally several hundred square mile area is within the somewhat circular radio signal coverage footprint of that tower, and it is not hard to imagine that such a tower in the far SW corner of Rock County (for example) could easily cover parts or much of several counties in three states.
2. Transferring wireless 9-1-1 calls to dispatch centers that are not served by the MN IES 9-1-1 network, and/or not equipped with E9-1-1 equipment is a bad idea, because those non-9-1-1 dispatch centers lack the ability to “re-bid” the ALI data and obtain and/or refine Phase 2 cellular 9-1-1 locations.

Why Transferring 9-1-1 Calls is a Bad Thing

In our decades of experience, both as 9-1-1 center managers and as consultants, as well as service as an ‘expert witnesses’ on both sides of lawsuits where 9-1-1 call handling was the main issue, it is our opinion that the more times an agency transfers 9-1-1 calls, the greater the chances are for mishandling incidents.

Mishandling such incidents can have three negative outcomes:

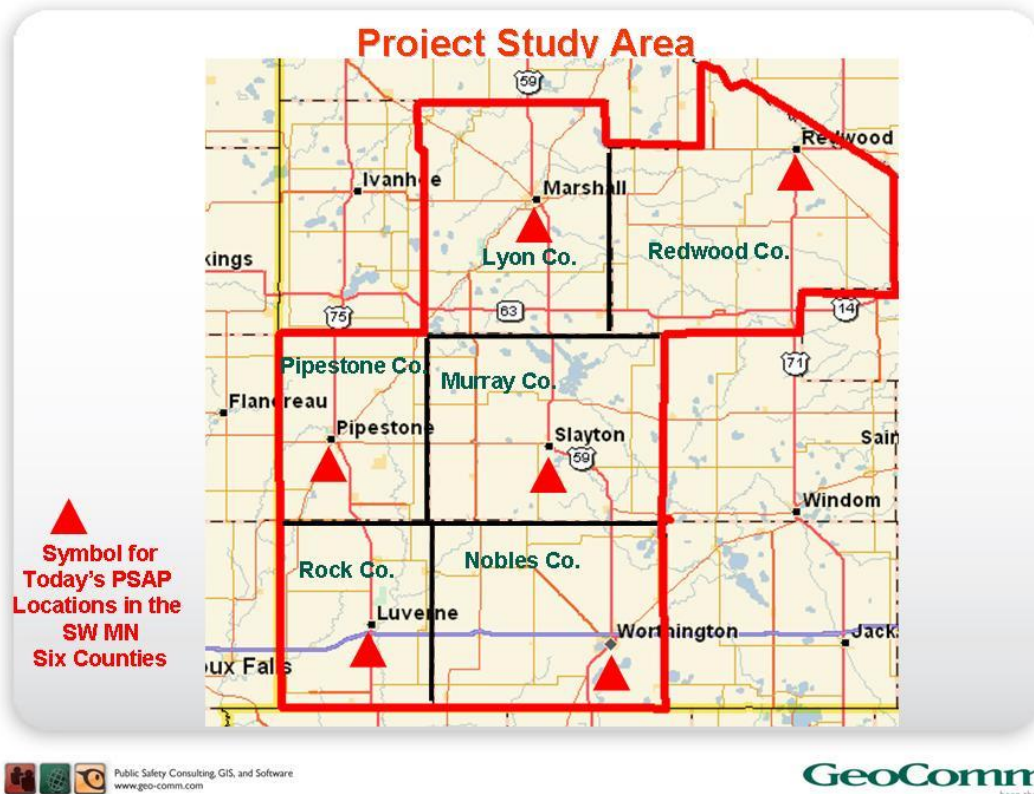
- The caller’s emergency service need is not properly or fully met, and the outcome is less beneficial than it could have been, up to and including deaths that might not otherwise have occurred.
- The public’s confidence in the effectiveness of the area’s “9-1-1 dispatch system” and the agencies which operate it can be badly damaged, with significant political fallout and increased operational problems.
 - Example: The more the public perceives that “9-1-1 does not work like it should”, the more likely they are to develop habits (or be encouraged by local police and fire) like **“do not call 9-1-1 when you need the XXXX Police or the ZZZZ Fire Department, call their regular seven-digit ‘direct line’ instead”**.
- The liability exposure to the agencies involved can increase dramatically.



9-1-1 Operations and Funding

As earlier established, there are six county based initial 9-1-1 PSAPs in the SWMN 6 area, as follows:

- Lyon County Sheriff's PSAP in Marshall
- Murray County Sheriff's Office in Slayton
- Nobles County, operated by Worthington Police Department in Worthington
- Pipestone County Sheriff's Office in Pipestone
- Redwood County Sheriff's Office in Redwood Falls
- Rock County Sheriff's Office in Luverne



There is also a 9-1-1 PSAP at the regional State Patrol dispatch center located in Marshall, to which E9-1-1 calls can be transferred to and from, but the State of Minnesota recently announced its intent to consolidate the number of State Patrol 9-1-1 dispatch centers it operates down from today's ten, and they do not intend to keep the Marshall dispatch center open.

As earlier referenced, GeoComm distributed data collection surveys to all county based emergency dispatching entities in the SWMN 6 area, and all of them responded.

The general tabulation of that portion of the collected data dealing with workload factors (telephone calls answered, dispatches made, etc.) and costs is attached, as provided by the agencies. Some of the numbers are admittedly estimates and may not reflect actual workloads or expenditures, and later on we will address some of the cost data as we try to better define how much money is currently being spent to provide these services at all of these agencies.

On the following pages, we will detail the facilities, operations, and expenses of each of these six PSAPs.



PSAP Operating Agency: Lyon County Sheriff**PSAP Location: Sheriff's Office; Marshall, Minnesota**

- Population served: **25,000** Total 9-1-1 calls in 2008: **9,960** Total dispatches: **22,000**
- Averages: 27.3 calls to 9-1-1 per day and 60 dispatched incidents per day
- Total 2008 PSAP operating costs: **\$356,151**
- Cost per year of 9-1-1 related dispatching services on a per resident basis: **\$14.25**
- Square miles served: **714**
- Does PSAP serve as overall Sheriff's Department 24/7/365 telephone operator as well?: **YES**
- Does PSAP serve as agency's 24/7/365 "front counter receptionist"? **NO**
- Agency has clerical staff serve this function from 8 - 4 Monday – Friday
- Number of full-time dispatch employees authorized for '09: **8**
- Number of part-time dispatch staff authorized for '09: **2 (.25 FTE)**
- Number of FT PSAP supervisors or managers: **0**
- Total full-time equivalency positions involved with 9-1-1: **8.25**
- Are employees covered by PERA? **YES**
- Are employees represented by a union: **YES** (Law Enforcement Labor Services/LELS)
- Does PSAP operate a CAD system? **YES** (CIS is the vendor/maintainer)
- Does the agency have E9-1-1 PSAP telephone equipment? **YES** (CML brand from IES)
- Equipment is owned and there are 2 operator work stations with four trunks
- Does PSAP have E9-1-1 integrated Phase 2 call mapping? **YES** (GeoComm)
- Does PSAP/Agency have a computerized Records Management System (RMS)? **YES** (CIS)
- Do dispatched units have Mobile Data Computers (MDC)? **YES** off State Patrol net
- Total of 7 (3 in Sheriff cars and 4 in Marshall PD cars)
- Are there AVL units in any response units? **YES**
- 21 total, made up of 13 in Sheriff cars, 1 in each of 7 local FDs, 1 in North EMS rig.
- Are 9-1-1 dispatchers ever *exclusively responsible* for jailed prisoners? **No**
- Do dispatchers ever have to serve as jail matrons, for searches, etc? **Yes, occasionally**
- Number, brand, and type of radio control consoles: **3 Motorola Gold Elite CRT type.**



LYON COUNTY PSAP PHOTOS

Note: Some construction is underway and visible in the background... to enlarge the surrounding jail.

Above: Two 9-1-1 dispatcher workstations.

Right: “After hours” service counter/secure window handled by dispatch staff.

Below: Shows closed circuit TV monitors positioned between the two 9-1-1 operator positions, which are the responsibility of the dispatchers.

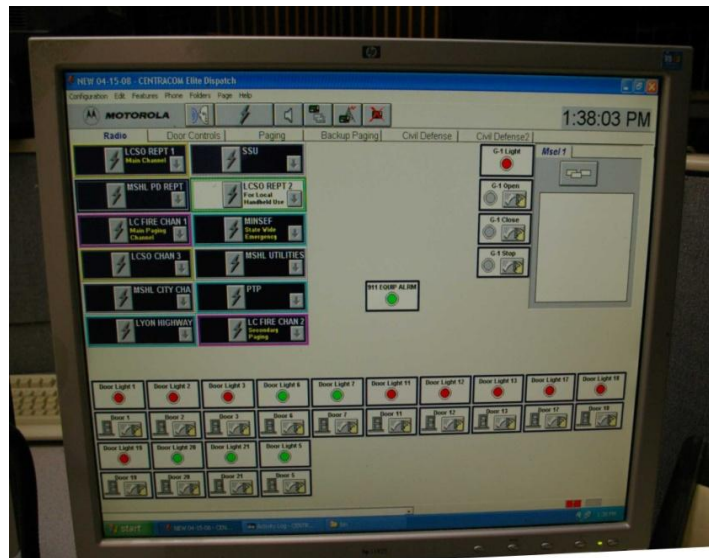


Radio System Configuration and Issues in the Current Environment

While it is understood that each of the County Boards in the SWMN 6 Counties has resolved to migrate all public safety agencies to the ARMER system, there will still be the need to maintain some of the existing radio infrastructure for such activities as fire paging and other activities. Therefore, we present this detail on the existing radio systems and their operation:

I. PSAP Radio Equipment

The Lyon County PSAP is equipped with a 3-position Motorola PC-based Gold Elite radio control system. This radio console system is several years old, but is reported to be in good operating condition. The dispatch office is equipped with modular dispatch furniture, although it is showing signs of wear from 24 x 7 usage. Two photos of the Gold Elite console screens (radio control and paging) are shown below:



2. Radio System Configuration and FCC Data

The Lyon County public safety radio system consists of separate law enforcement and fire/EMS radio system channels for these operational disciplines.

The law enforcement radio system operates on wideband analog radio frequencies, with a main repeater located at the following tower sites:

- Alpha Wireless, 420 foot guyed, located two miles south, ¼ mile west of junction County Road 7 and County Road 20; the repeater antenna is at 320 feet on the tower. The repeater is controlled from the dispatch center via a one channel VHF control station. Local base stations at the PSAP also provide operation on the MNSEF and point-to-point radio channels.

The fire/EMS radio system operates on VHF wideband¹ analog frequencies, and utilizes two different tower sites for improved paging and portable radio coverage:

- Alpha Wireless tower (noted above)
- PSAP tower in Marshall

The station located at the Alpha Wireless tower is controlled from the dispatch center via a UHF link station (450 MHz).

In addition to the Lyon County primary public safety radio channels, the PSAP also has the capability of accessing or monitoring the following radio channels:

- Marshall Police Department Repeater
- City of Marshall Public Works/Utilities
- Lyon County Highway Department
- State of Minnesota Highway Patrol (monitor only)

The radio console electronics and base station equipment at the PSAP is located in the basement of the building, in the HVAC equipment area. A new jail area is being built at the PSAP facility, and when completed, a new radio equipment room will be available on the main level for this equipment. Due to the construction of the new jail area, the radio equipment has been exposed to a significant amount of dust, and will need cleaning and maintenance in the near future. The PSAP is equipped with a 150 foot self-supporting tower structure, located adjacent to the Sheriff's Office in Redwood Falls. This tower is an older structure, but in good condition; a photo of the tower is provided on the following page.

¹ There will be several references to "wideband" in these radio commentary sections. This relates to a radio's inability to accommodate the FCC mandated "narrow band" channels, which must be adopted by 2013, and if the radio cannot be modified, and it is still to be in use as of 2013, it will need to be replaced by one that is narrowband compliant.





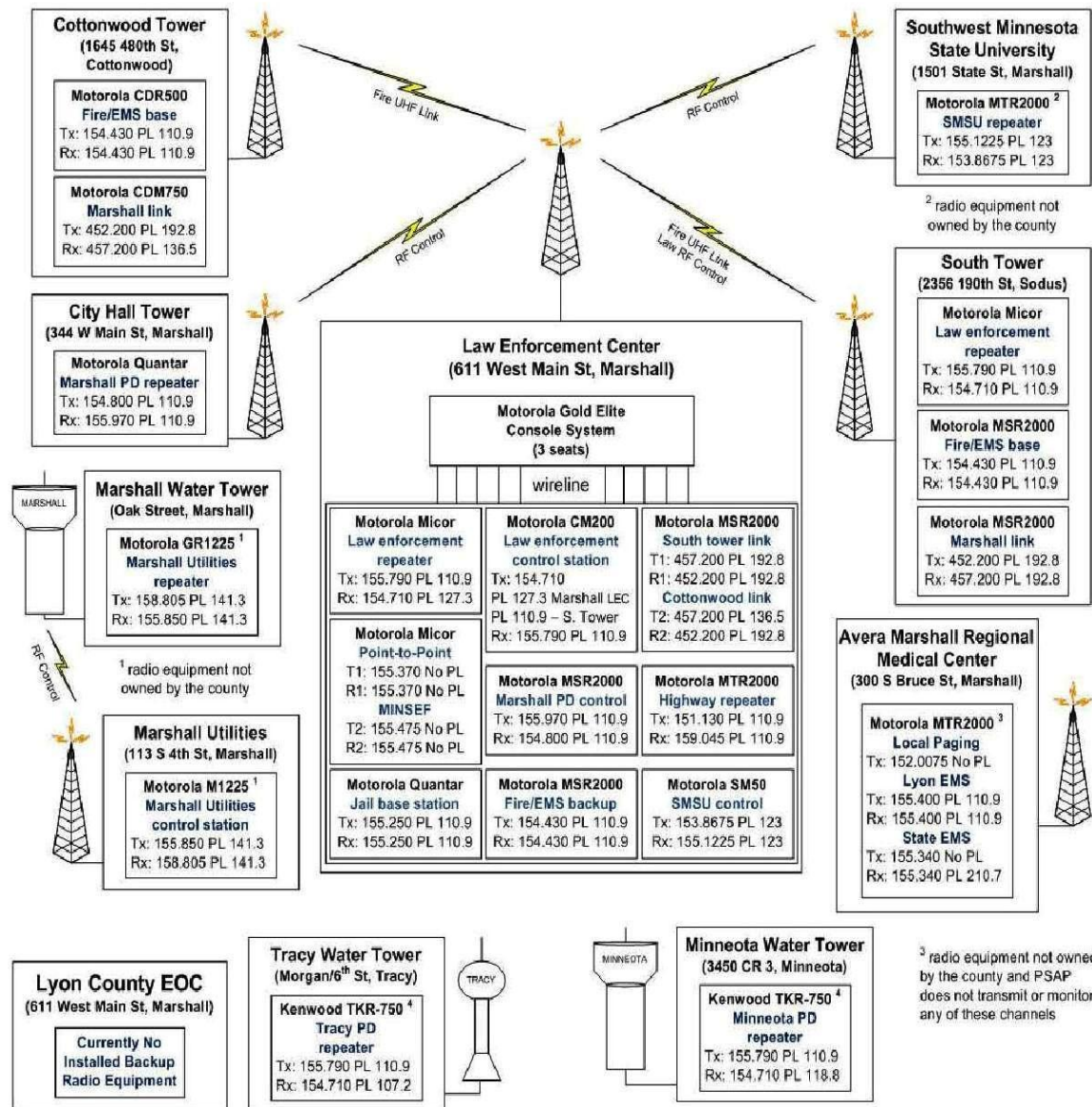
3. FCC Frequency and Channel Data

Call Sign	Exp Date	Frequency	Function
KAO776	7/13/2014	155.790 MHz	Law Repeater Output
		154.710 MHz	Law Repeater Input
		155.250 MHz	Law Base
		155.475 MHz	MNSEF
		155.370 MHz	Point-to-Point
WNDH674	9/21/2013	154.430 MHz	Fire/EMS Ops
		154.295 MHz	Fire Mutual Aid
		457.200 MHz	UHF Link
		452.200 MHz	UHF Link

All FCC licenses appear to be current and valid.



LYON COUNTY COMMUNICATIONS SYSTEM



PSAP Operating Agency: Murray County Sheriff**PSAP Location: Sheriff's Office; Slayton, Minnesota**

- Population served: **9,165** Total 9-1-1 calls in 2008: **2,190** Total dispatches: **3,013**
- Averages: 6 calls to 9-1-1 per day and 8.25 dispatched incidents per day
- Total 2008 PSAP operating costs: **\$242,929**
- Cost per year of 9-1-1 related dispatching services on a per resident basis: **\$26.51**
- Square miles served: **704**
- Does PSAP serve as overall Sheriff's Department 24/7/365 telephone operator as well?: **YES**
- Does PSAP serve as agency's 24/7/365 "front counter receptionist"? **YES**
- Number of full-time dispatch employees authorized for '09: **3**
- Number of part-time dispatch staff authorized for '09: **Several** (account for 1.22 FTE)
- Number of FT PSAP supervisors or managers: **0**
- Total full-time equivalency positions involved with 9-1-1: **4.22**
- Are employees covered by PERA? **YES**
- Are employees represented by a union: **YES** (A.F.S.C.M.E.)
- Does PSAP operate a CAD system? **YES** (SMART S*CAD)
- Does the agency have E9-1-1 PSAP telephone equipment? **YES** (CML brand from IES)
- Equipment is owned and there are 2 operator work stations with four trunks
- Does PSAP have E9-1-1 integrated Phase 2 call mapping? **YES** (Bulberry)
- Does PSAP/Agency have a computerized Records Management System? **YES** (SMART)
- Do dispatched units have Mobile Data Computers (MDC)? **NO**
- Are there AVL units in any response units? **NO**
- Are 9-1-1 dispatchers ever *exclusively responsible* for jailed prisoners? **No**
- Do dispatchers ever have to serve as jail matrons, for searches, etc? **Yes, occasionally**
- Number, brand, and type of radio control consoles: **2 Motorola Gold Elite CRT type.**



Murray County PSAP

(jail is no longer in active
use)

Above: Two 9-1-1 operator positions looking towards the “public service” window and counter in lobby.

Right: The above referenced public service window, from the lobby side

Below: Close-up of the “secure” transaction drawer in the above window.

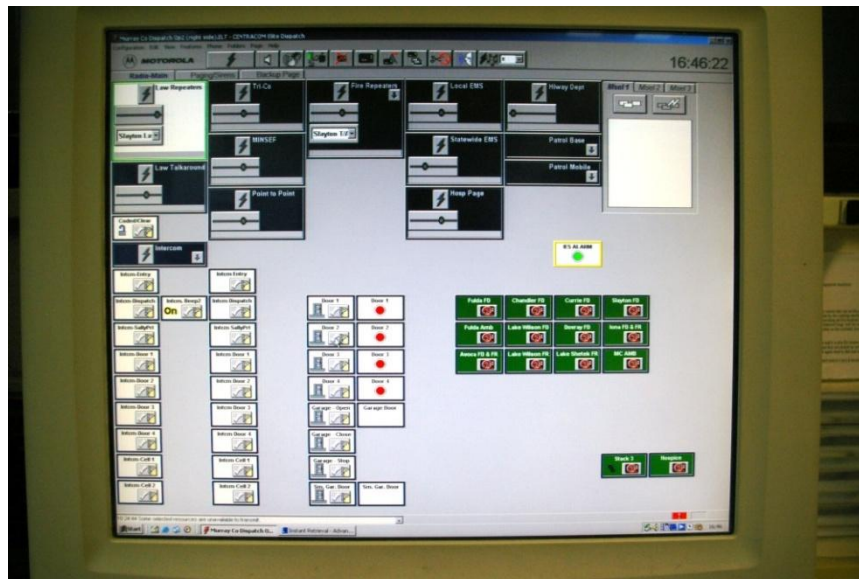


Radio System Configuration and Issues in the Current Environment

While it is understood that each of the County Boards in the SWMN 6 Counties has resolved to migrate all public safety agencies to the ARMER system, there will still be the need to maintain some of the existing radio infrastructure for such activities as fire paging and other activities. Therefore, we present this detail on the existing radio systems and their operation:

1. PSAP Radio Equipment

The Murray County PSAP is equipped with a 2-position Motorola Centracom Gold Elite PC-based radio control system, which is an older unit, but in good operating condition. A photo of the Motorola radio console screen is shown below:



2. Radio System Configuration and FCC Data

The Murray County public safety radio system consists of separate Law Enforcement and Fire/EMS radio system channels for these operational disciplines.

The law enforcement radio system operates on wideband analog radio frequencies, with three repeater stations located at the following tower sites:

- Fulda tower; 295 foot height, owned by Interstate Power, FCC ASR 10243111; repeater antenna height of 300 feet.
- Chandler tower; repeater antenna height of 199 feet.
- Tracy tower; 330 foot height, owned by State of Minnesota; FCC ASR 1244137; repeater antenna height of 330 feet.

The repeaters are controlled from the dispatch center via on-channel VHF control stations. Local base stations at the PSAP also provide operation on the MNSEF and point-to-point radio channels.

The fire/EMS radio system operates on VHF wideband analog frequencies, and utilizes three different tower sites for mobile, paging, and portable radio coverage:

- Fulda tower (same as law enforcement); repeater antenna height of 150 feet
- Chandler water tower (City of Chandler); repeater antenna height of 135 feet
- Tracy tower (same as law enforcement); repeater antenna height of 330 feet

The fire/EMS repeater stations are controlled from the dispatch center via VHF RF control stations.

In addition to the Murray County primary public safety radio channels, the PSAP also has the capability of controlling or monitoring the following radio channels:

- Local and statewide VHF EMS
- Tri-county VHF
- Murray County Highway repeater
- Local hospital paging
- State of Minnesota Highway Patrol (monitor only)

The radio console electronics and base station equipment at the PSAP is located in a communications equipment room shared with the building's generator, down the hall from the PSAP room.

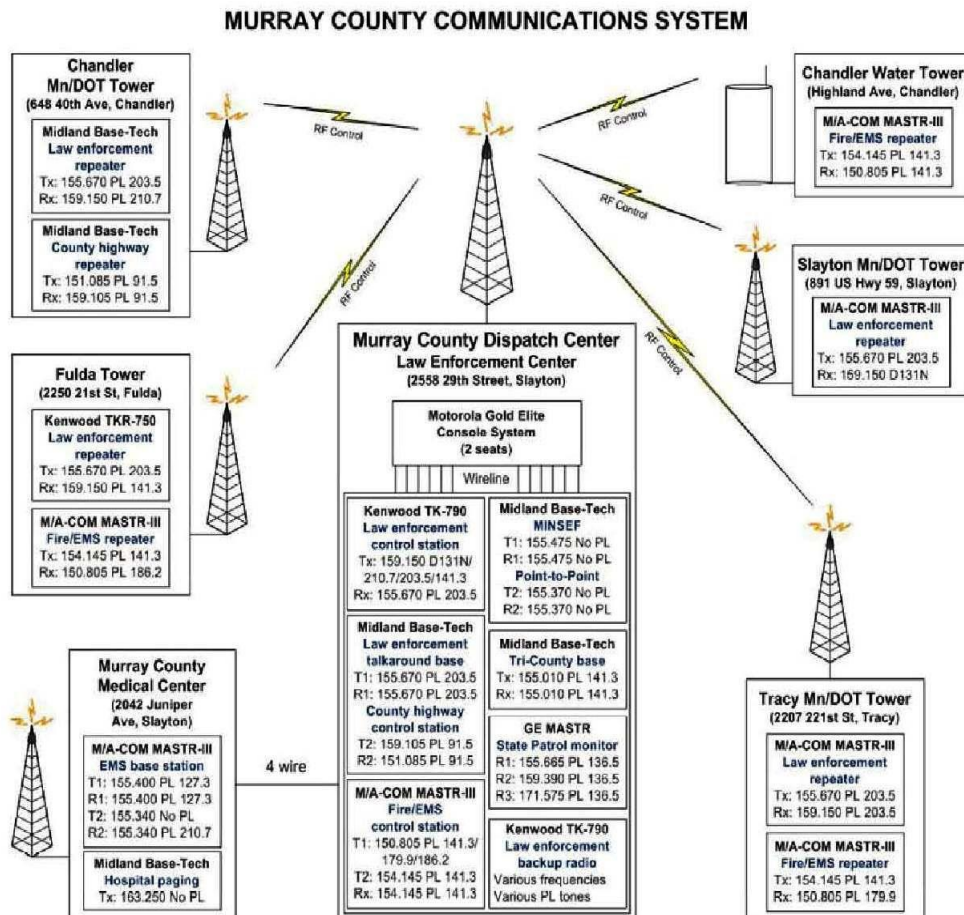
The PSAP is equipped with a 120 foot self-supporting tower structure, located adjacent to the PSAP building. This tower is an older structure, but appears to be in good condition. A photo of the tower is provided below:



3. FCC Frequency and Channel Data

Call Sign	Exp Date	Frequency	Function
KAN306	6/28/2014	155.670 MHz	Law Rptr Output
		159.150 MHz	Law Rptr Input
		155.010 MHz	Law Base
		155.475 MHz	MNSEF
		155.370 MHz	Point-to-Point
WNVN273	2-21-2011	154.145 MHz	Fire/EMS Rptr Output
		150.805 MHz	Fire/EMS Rptr Input
		154.295 MHz	Statewide Fire

All FCC licenses appear to be current and valid.



PSAP Operating Agency: Worthington PD for Nobles County**PSAP Location: Prairie Justice Center, Worthington**

- Population served: **20,823** Total 9-1-1 calls in 2008: **7,358** Total dispatches: **11,475**
- Averages: 20.2 calls to 9-1-1 per day and 31.4 dispatched incidents per day
- Total 2008 PSAP operating costs: **\$346,570** Cost shared 50 – 50 between County and W.P.D.
- Cost per year of 9-1-1 related dispatching services on a per resident basis: **\$16.65**
- Square miles served: **716**
- Does PSAP serve as overall S.O./P.D. 24/7/365 telephone operator as well? **YES**
- Does PSAP serve as agency's 24/7/365 "front counter receptionist"? **NO**
- Agency has clerical staff serve this function from 8 – 4:30 Monday – Friday
- Number of full-time dispatch employees authorized for '09: **5**
- Number of part-time dispatch staff authorized for '09: **1** (.5 FTE)
- Number of FT PSAP supervisors or managers: **0**
- Total full-time equivalency positions involved with 9-1-1: **5.5**
- Are employees covered by PERA? **YES**
- Are employed represented by a union: **YES** (Law Enforcement Labor Services/LELS)
- Does PSAP operate a CAD system? **NO** (But one is being implemented in 2010)
- Does the agency have E9-1-1 PSAP telephone equipment? **YES** (CML brand from IES)
- Equipment is owned and there are 2 operator work stations with four trunks
- Does PSAP have E9-1-1 integrated Phase 2 call mapping? **YES** (GeoComm)
- Does PSAP/Agency have a computerized Records Management System? **YES** (Zuercher)
- Do dispatched units have Mobile Data Computers (MDC)? **NO**
- Agency implementing CAD, new RMS and MDCs in 2010
- Are there AVL units in any response units? **NO**
- Are 9-1-1 dispatchers ever *exclusively responsible* for jailed prisoners? **No**
- Do dispatchers ever have to serve as jail matrons, for searches, etc? **No**
- Number, brand, and type of radio control consoles: **2 Zetron 4000 CRT based.**



Worthington/ Nobles County PSAP

Above: One of two PSAP operator workstations.

Right: The above workstation is the one partially visible on the left, the second workstation is the one where the police officer is standing and facing.

Below: The ample expansion space to the rear of the police officer standing above. There is a rest room and more space around the far corner to the right as well.



This PSAP is physically located within the Prairie Justice Center and is not positioned to provide any public access. It is also located within the secure jail area and performs a “door open and door close” function for the jail, but dispatch staff does not run the jail or deal with prisoners.

Radio System Configuration and Issues in the Current Environment

While it is understood that each of the County Boards in the SWMN 6 Counties has resolved to migrate all public safety agencies to the ARMER system, there will still be the need to maintain some of the existing radio infrastructure for such activities as fire paging and other activities. Therefore, we present this detail on the existing radio systems and their operation:

1. PSAP Radio Equipment

The Nobles County PSAP (Prairie Justice Center) is equipped with a two-position Orbacom PC-based TDM-150 radio control system, which was installed at the time the facility was developed for public safety operations, and is in excellent operating condition. The dispatch office is equipped with dispatch-specific furniture, featuring adjustable height working surfaces, which provides a good working environment for the dispatch staff. A photo of the Orbacom radio console screen is shown below:



2. Radio System Configuration and FCC Data

The Nobles County public safety radio system consists of separate Law Enforcement and Fire/EMS radio system channels for these operational disciplines.

The law enforcement radio system operates on wideband analog radio frequencies, with two primary repeaters located at the following tower sites:

- Worthington tower (located 5.5 miles southwest of PSAP); 460 foot height, owned by SBA Communications, FCC ASR 1031905; repeater antenna height of 300 feet.
- Wilmont water tower (City of Wilmont); 100 foot height; repeater antenna height 120 foot.



The repeater is controlled from the dispatch center via UHF link stations as well as on-channel VHF RF control stations. The UHF link stations are located at both the PSAP and the City of Worthington water tower sites.

The law enforcement system is also equipped with voting receivers to provide enhanced portable radio talk-in coverage, with receivers at the following sites:

- PSAP (Prairie Justice Center)
- Worthington Public Works facility tower
- Round Lake tower (City of Round Lake); 120 foot height

These receivers are linked back to the main sites via UHF radio link or leased telephone circuits. Local base stations at the PSAP also provide operation on the MNSEF, point-to-point, and tri-county radio channels.

The fire/EMS radio system operates on VHF wideband analog frequencies, and utilizes eight different tower sites for improved paging and portable radio coverage:

- Worthington tower site (same as Law Enforcement); repeater antenna height of 300 feet.
- Adrian water tower (City of Adrian); repeater antenna height not available.
- Brewster grain elevator; repeater antenna height of 150 feet.
- Ellsworth water tower (City of Ellsworth); repeater antenna height of 140 feet.
- Leota grain elevator (City of Leota); repeater antenna height of 120 feet.
- Round Lake tower site (same as Law Enforcement); repeater antenna height of 120 feet.
- Wilmont water tower (same as Law Enforcement); repeater antenna height of 120 feet.
- Worthington Public Works tower (same as Law Enforcement); voting receiver only for local fire/EMS repeater at Worthington tower site).

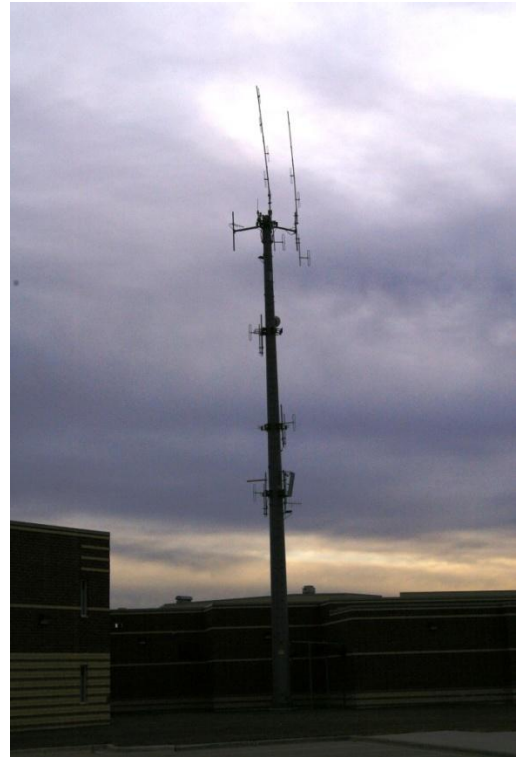


The fire/EMS repeater stations are controlled from the dispatch center via VHF RF control stations.

In addition to the Nobles County primary public safety radio channels, the PSAP also has the capability of controlling or monitoring the following radio channels:

- Ambulance VHF EMS base channels
- City of Worthington VHF Public Works
- Nobles County Highway repeater
- State Fire Mutual Aid
- Jackson County Sheriff (transmit and receive)
- Murray County Sheriff (transmit and receive)
- Rock County Sheriff (transmit and receive)
- State of Minnesota Highway Patrol (monitor only)

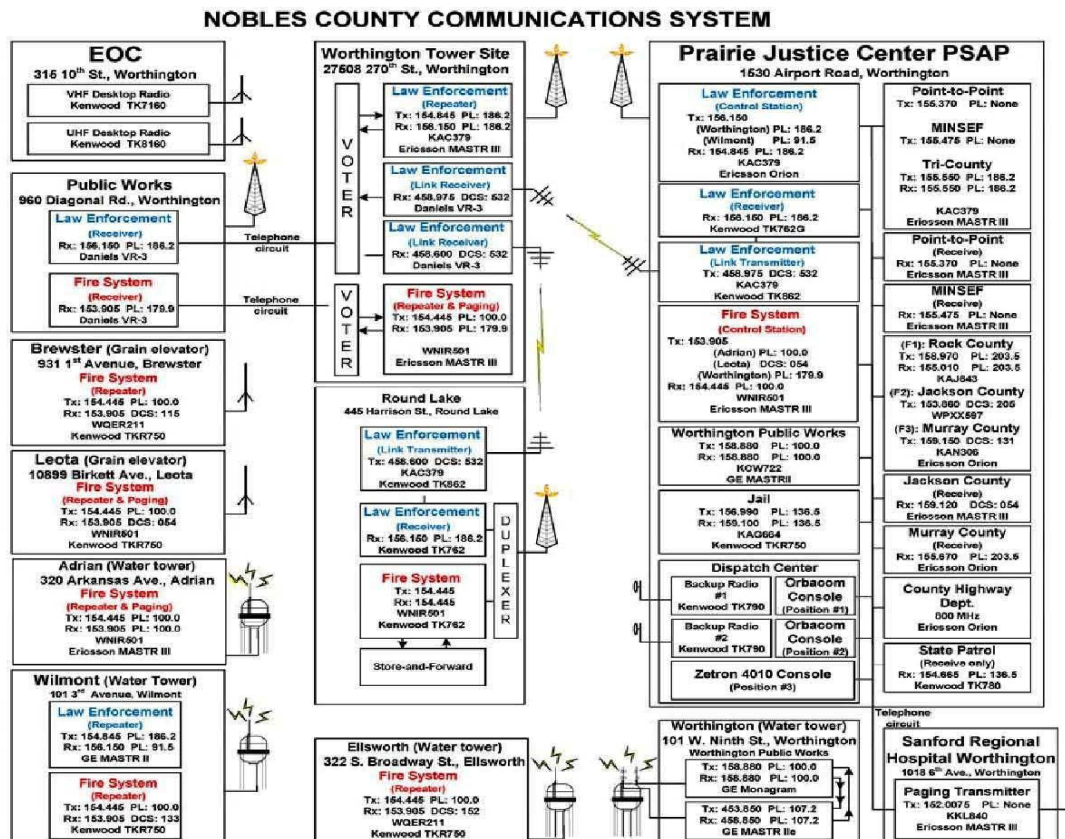
The radio console electronics and base station equipment at the PSAP is located in a dedicated communications equipment room, remotely from the PSAP room. This room is equipped with air conditioning, and the equipment is in very good condition. The PSAP is equipped with an 80 foot monopole tower structure, located adjacent to the PSAP building. This tower is relatively new, and in excellent condition. A photo of the tower is provided at the right.



3. FCC Frequency and Channel Data

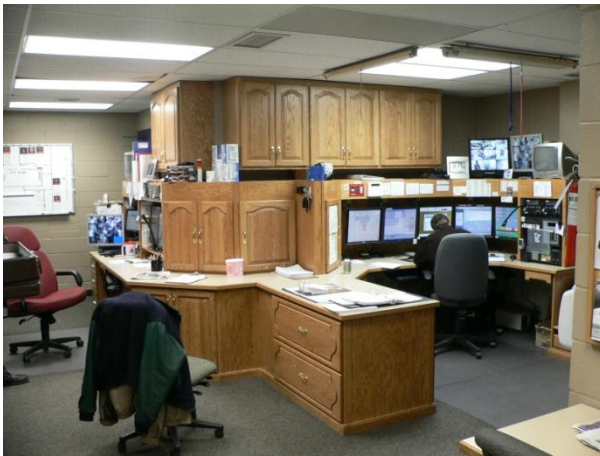
Call Sign	Exp Date	Frequency	Function
KAC379	9/10/2104	154.845 MHz	Law Rptr Output
		156.150 MHz	Law Rptr Input
		155.475 MHz	MNSEF
		155.370 MHz	Point-to-Point
		155.550 MHz	Tri-County
		453.400 MHz	UHF Link
WNIR501	6/20/2015	458.600 MHz	UHL Link
		154.445 MHz	Fire/EMS Rptr Output
		153.905 MHz	Fire/EMS Rptr Input
		154.295 MHz	Statewide Fire
WQER211	3/29/2016	153.830 MHz	Fire
		154.445 MHz	Fire/EMS Rptr Output
		153.905 MHz	Fire/EMS Rptr Input

All FCC licenses appear to be current and valid.



PSAP Operating Agency: Pipestone County Sheriff**PSAP Location: Sheriff's Office; Pipestone, Minnesota**

- Population served: **9,895** Total 9-1-1 calls in 2008: **2,373** Total dispatches: **10,816**
- Averages: 6.5 calls to 9-1-1 per day and 29.6 dispatched incidents per day
- Total 2008 PSAP operating costs: **\$201,135*** (See explanatory note on the overall table)
- Cost per year of 9-1-1 related dispatching services on a per resident basis: **\$20.33**
- Square miles served: **466**
- Does PSAP serve as overall Sheriff's Department 24/7/365 telephone operator as well? **YES**
- Does PSAP serve as agency's 24/7/365 "front counter receptionist"? **YES**
- Agency has 2nd person (jailer) on duty in PSAP area 24/7 available to assist.
- Number of full-time dispatch employees authorized for '09: **4**
- Number of part-time dispatch staff authorized for '09: **1** (.5 FTE)
- Number of FT PSAP supervisors or managers: **0**
- Total full-time equivalency positions involved with 9-1-1: **4.5**
- This # does NOT include FT jailer staff
- Are employees covered by PERA? **YES**
- Are employees represented by a union: **YES** (Law Enforcement Labor Services/LELS)
- Does PSAP operate a CAD system? **NO**
- Does the agency have E9-1-1 PSAP telephone equipment? **YES** (CML brand from IES)
- Equipment is owned and there are 2 operator work stations with four trunks
- Does PSAP have E9-1-1 integrated Phase 2 call mapping? **YES** (Bulberry)
- Does PSAP/Agency have a computerized Records Management System? **YES** (CrimeStar)
- Do dispatched units have Mobile Data Computers (MDC)? **NO**
- Are there AVL units in any response units? **NO**
- Are 9-1-1 dispatchers ever *exclusively responsible* for jailed prisoners? **Yes**
- Apparently when dedicated jail staff are on other duties, this need arises
- Do dispatchers ever have to serve as jail matrons, for searches, etc? **Yes, occasionally**
- Number, brand, and type of radio control consoles: **2 Zerton Integrator RD20**



Pipestone County PSAP

ABOVE: Overall view of two-position PSAP. Right position is the “9-1-1 dispatch” position. Left (far chair on the left) is jailer workstation, which also has 9-1-1 telephone and radio capabilities.

RIGHT: The primary 9-1-1 dispatch position. Note the glass public service window to the right.

BELOW: Close up of public service window, note stairway down to bldg. entrance.

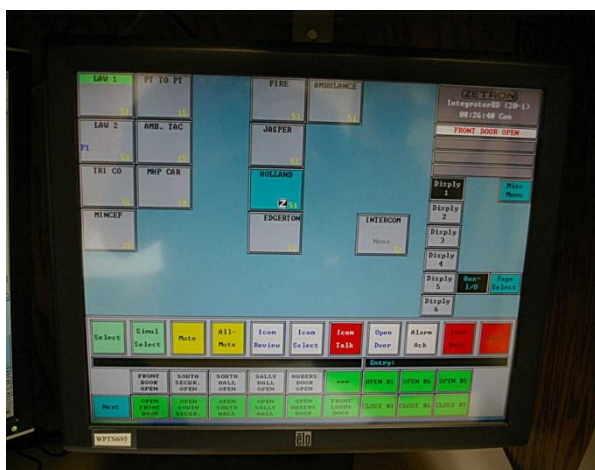


Radio System Configuration and Issues in the Current Environment

While it is understood that each of the County Boards in the SWMN 6 Counties has resolved to migrate all public safety agencies to the ARMER system, there will still be the need to maintain some of the existing radio infrastructure for such activities as fire paging and other activities. Therefore, we present this detail on the existing radio systems and their operation:

I. PSAP Radio Equipment

The Pipestone County PSAP is equipped with a two-position Zetron PC-based 4217 radio control system, which is estimated to be ten years old, but is reported to be in good operating condition. The dispatch office is equipped with custom-made wood furniture, which appears to be in nearly new condition. Photos of the Zetron radio console screen, as well as voice logging equipment and standby radios, are shown below:



2. Radio System Configuration and FCC Data

The Pipestone County public safety radio system consists of separate Law Enforcement and Fire/EMS radio system channels for these operational disciplines.

The Law Enforcement radio system operates on wideband analog radio frequencies, with two main repeaters located at the following tower sites:

- Hatfield tower (located 5.7 miles southeast of the City of Pipestone); tower is owned by Pipestone County, 270 foot height, FCC ASR 1222183.
- Holland tower (located 3.5 miles northeast of the City of Holland); 120 foot tower height.



The repeater is controlled from the dispatch center via on-channel VHF control station. Local base stations at the PSAP also provide operation on the MNSEF and point-to-point radio channels.

The fire/EMS radio system operates on VHF wideband analog frequencies, and utilizes four different tower sites for improved paging and portable radio coverage:

- Nokomis Apartment building (downtown Pipestone); 140 foot height
- Hatfield tower (same location as noted for Law Enforcement repeater)
- Holland tower (same location as noted for Law Enforcement repeater)
- Jasper water tower (City of Jasper); 125 foot height
- Edgerton water tower (City of Edgerton); 125 foot height

These repeater stations are controlled from the dispatch center via VHF RF control stations.

In addition to the Pipestone County primary public safety radio channels, the PSAP also has the capability of accessing or monitoring the following radio channels:

- Tri-County Control Base
- Ambulance VHF Base and TAC channels
- State of Minnesota Highway Patrol (monitor only)

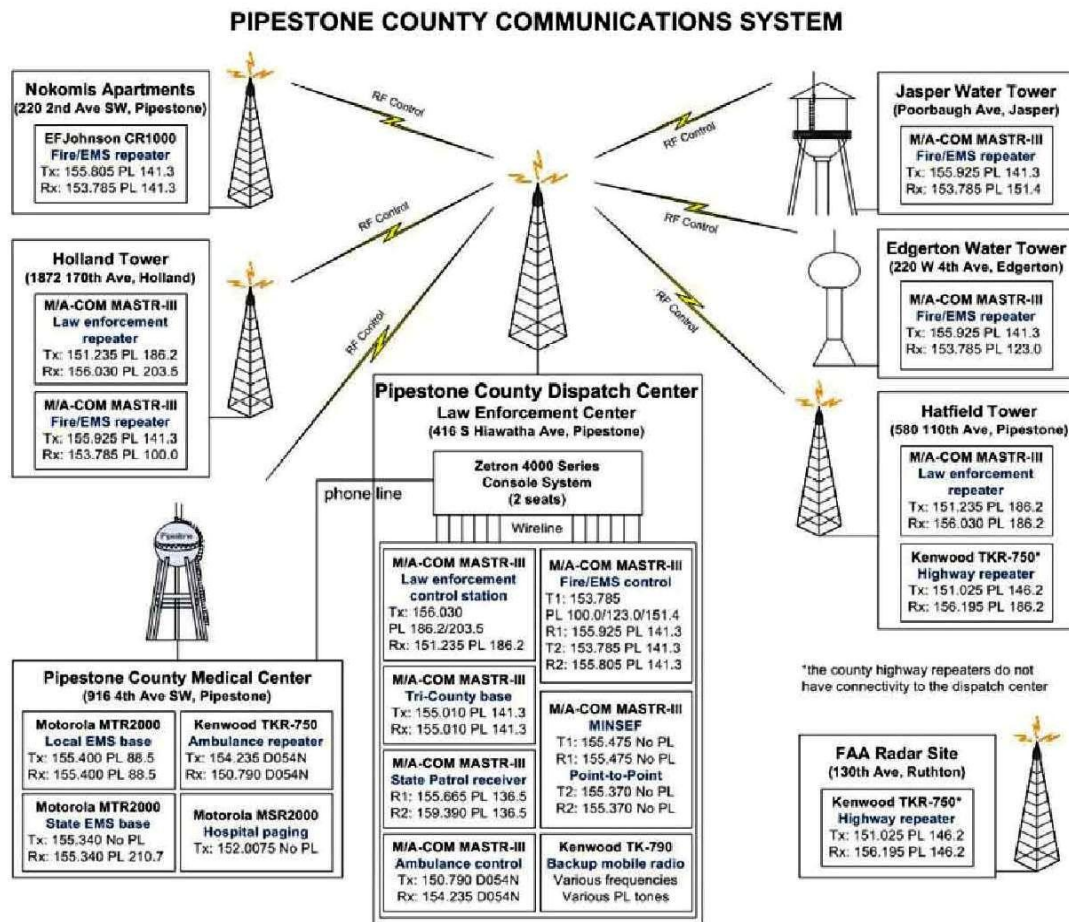
The radio console electronics and base station equipment at the PSAP is located in the basement of the building, in a dedicated communications equipment room. This room is equipped with air conditioning, and the equipment is in very good condition. The PSAP is equipped with a 100 foot guyed tower structure, located on the roof of the Sheriff's Office in Pipestone. The age of the tower is unknown, but appears to be in good condition. Photos of the PSAP tower and Nokomis apartment building in Pipestone are provided below:



3. FCC Frequency and Channel Data

Call Sign	Exp Date	Frequency	Function
KAA826	8/3/2015	155.010 MHz	Tri-County Channel
		155.475 MHz	MNSEF
		155.370 MHz	Point-to-Point
WNXD771	8/26/2011	154.235 MHz	Ambulance Rptr
		150.790 MHz	Ambulance Rptr Input
		155.280 MHz	EMS Base
WPFY642	10/31/2014	155.925 MHz	Fire/EMS Rptr Output
		153.785 MHz	Fire/EMS Rptr Input
WPTN695	11/09/2011	151.235 MHz	Law Rptr Output
		156.030 MHz	Law Rptr Input

All FCC licenses appear to be current and valid.



PSAP Operating Agency: Redwood County Sheriff**PSAP Location: L.E.C.; Redwood Falls**

- Population served: **16,815** Total 9-1-1 calls in 2008: **3,765** Total dispatches: **14,782**
- Averages: 10.3 calls to 9-1-1 per day and 40.5 dispatched incidents per day
- Total 2008 PSAP operating costs: **\$251,833**
- Cost per year of 9-1-1 related dispatching services on a per resident basis: **\$14.98**
- Square miles served: **880**
- Does PSAP serve as overall Sheriff's Department 24/7/365 telephone operator as well? **YES**
- Does PSAP serve as agency's 24/7/365 "front counter receptionist"? **NO**
- Agency has clerical staff serve this function from 8 – 4:30 Monday – Friday
- Number of full-time dispatch employees authorized for '09: **5**
- Number of part-time dispatch staff authorized for '09: **3** (1.5 FTE)
- Number of FT PSAP supervisors or managers: **0**
- Total full-time equivalency positions involved with 9-1-1: **6.5**
- Are employees covered by PERA? **YES**
- Are employed represented by a union: **YES** (Law Enforcement Labor Services/LELS)
- Does PSAP operate a CAD system? **NO**
- Does the agency have E9-1-1 PSAP telephone equipment? **YES** (CML brand from IES)
- Equipment is owned and there are 2 operator work stations with four trunks
- Does PSAP have E9-1-1 integrated Phase 2 call mapping? **YES** (GeoComm)
- Does PSAP/Agency have a computerized Records Management System? **YES** (MaSys)
- Do dispatched units have Mobile Data Computers (MDC)? **NO**
- Are there AVL units in any response units? **YES**
- 30 total, made up of 8 in Sheriff cars, 22 in local FDs & ambulances.
- Are 9-1-1 dispatchers ever *exclusively responsible* for jailed prisoners? **No**
- Do dispatchers ever have to serve as jail matrons, for searches, etc? **Yes, occasionally**
- Number, brand, and type of radio control consoles: **2 Motorola Gold Elite CRT type**





Redwood County PSAP

Above: Two- position 9-1-1 PSAP, with main position occupied. Note many CCTV images on monitor to the left of the dispatcher.

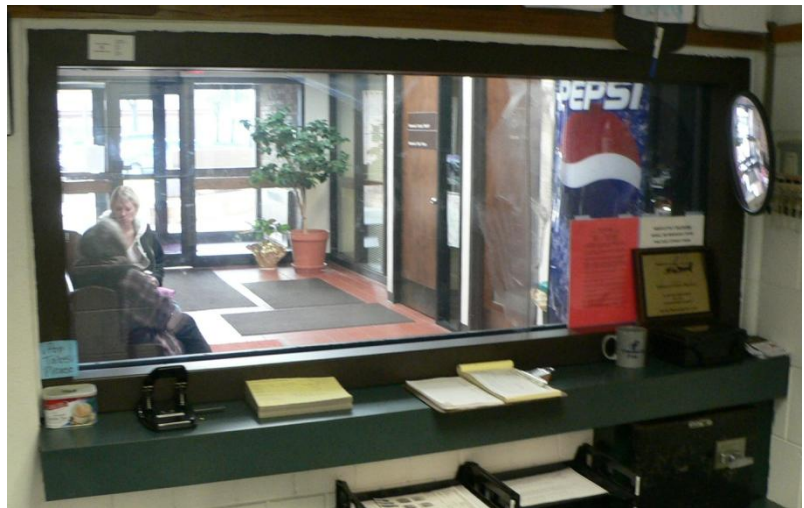
Right: The secure public service window is visible to the above dispatcher's upper right front.

Below:

(L) LEC main entrance

(C) Just inside this entrance is the lobby. Note the public service window at the end, along with the telephone.

[R] Close up of telephone

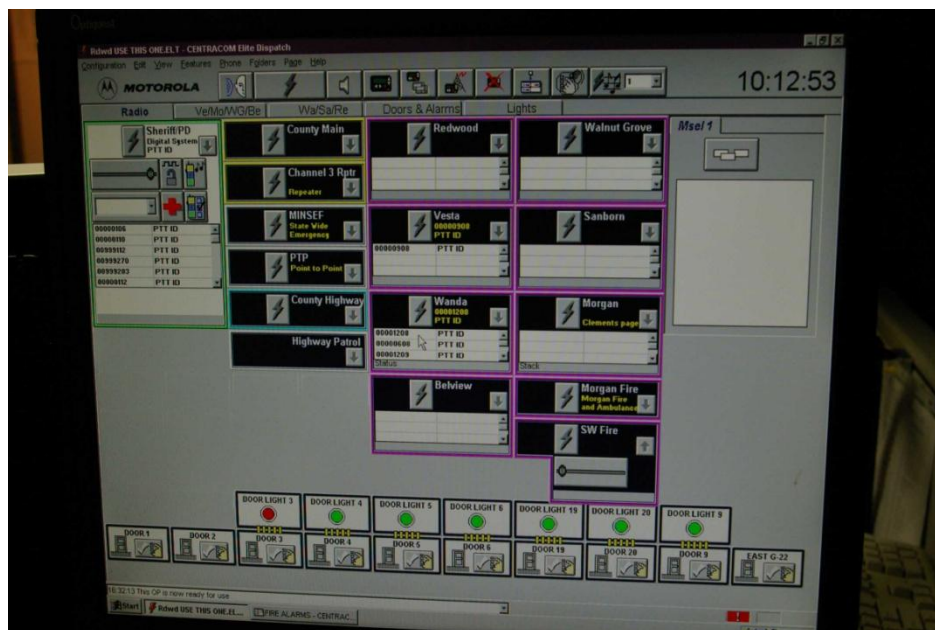


Radio System Configuration and Issues in the Current Environment

While it is understood that each of the County Boards in the SWMN 6 Counties has resolved to migrate all public safety agencies to the ARMER system, there will still be the need to maintain some of the existing radio infrastructure for such activities as fire paging and other activities. Therefore, we present this detail on the existing radio systems and their operation:

I. PSAP Radio Equipment

The Redwood County PSAP is equipped with a two-position Motorola PC-based Gold Elite radio control system. This radio console system is several years old, but is reported to be in good operating condition. The dispatch office is equipped with modular dispatch furniture, although it is showing signs of wear from 24 x 7 usage. A photo of the Gold Elite console screen is shown below:



2. Radio System Configuration and FCC Data

The Redwood County public safety radio system consists of separate Law Enforcement and Fire/EMS radio system channels for these operational disciplines.



The Law Enforcement radio system operates on both narrowband P25 digital and wideband analog radio frequencies, with repeaters located at two tower sites:

- Redwood Falls
- Wabasso

These repeaters are controlled from the dispatch center via on-channel VHF control stations

Local based stations also provide operation on the MNSEF and point-to-point radio channels.

The fire/EMS radio system operates on VHF wideband analog frequencies, and utilizes six different tower sites for improved paging and portable radio coverage:

- Redwood Falls (Belview)
- Morgan
- Wanda
- Sanborn
- Walnut Grove
- Vesta

These stations are controlled from the dispatch center via one channel VHF or UHF link stations.

In addition to the Redwood County primary public safety radio channels, the PSAP also has the capability of accessing or monitoring the following radio channels:

- Redwood County Highway Department
- State of Minnesota Highway Patrol (monitor only)

The PSAP is equipped with a 175 foot self-supporting tower structure, located adjacent to the Sheriff's Office in Redwood Falls. This tower is an older structure, but in good condition, with an FCC ASR of 1210565. A photo of the tower is provided on the following page:





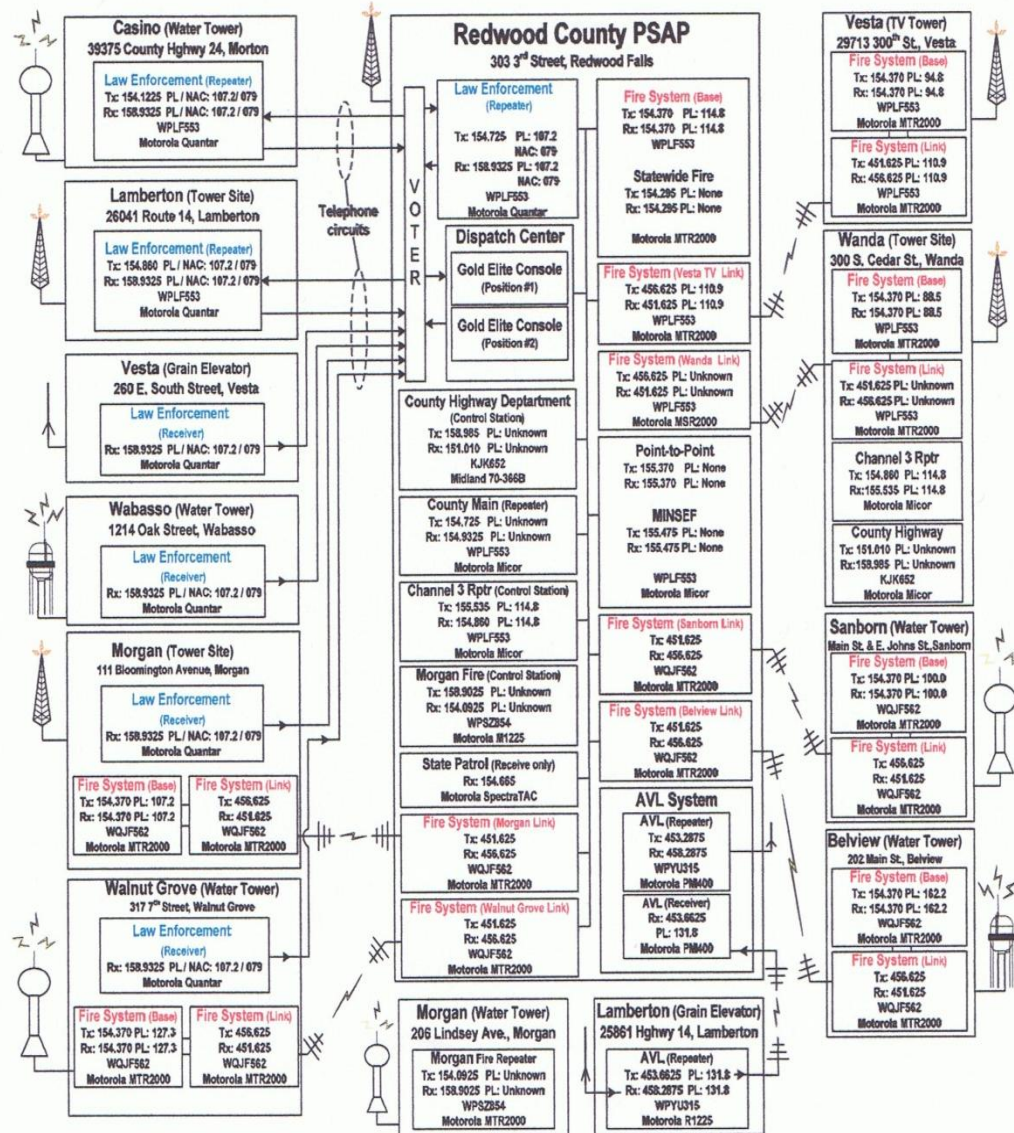
Redwood County PSAP Radio Tower (above)

3. FCC Frequency and Channel Data

Call Sign	Exp Date	Frequency	Function
WPTK863 (Wabasso)	10/23/2011	154.1225 MHz	Law Repeater Output
		158.9325 MHz	Law Repeater Input
WPLF553	6/20/2015	154.860 MHz	Law Repeater Output
		154.725 MHz	Law Repeater Output
		155.535 MHz	Law Repeater Input
		158.820 MHz	Law Base
		154.370 MHz	Fire/EMS
		154.965 MHz	Law Base
		155.475 MHz	MNSEF
		155.370 MHz	Point-to-Point
		154.295 MHz	Fire Mutual Aid
		451.625 MHz	UHF Link
		456.625 MHz	UHF Link
WQJF562	8/20/2018	154.370 MHz	Fire/EMS
WPYU315	10/28/2013	453.2875 MHz	UHF Link
		458.2875 MHz	UHF Link

All FCC licenses appear to be current and valid.





PSAP Operating Agency: Rock County Sheriff**PSAP Location: Sheriff's Office; Luverne, Minnesota**

- Population served: **9,721** Total 9-1-1 calls in 2008: **1,997** Total dispatches: **5,341**
- Averages: 5.5 calls to 9-1-1 per day and 15 dispatched incidents per day
- Total 2008 PSAP operating costs: **\$350,287**
- Cost per year of 9-1-1 related dispatching services on a per resident basis: **\$36.03**
- Square miles served: **483**
- Does PSAP serve as overall Sheriff's Department 24/7/365 phone operator as well? **YES**
- Does PSAP serve as agency's 24/7/365 "front counter receptionist"? **YES**
- But if Admin Ass't/Dispatch Supervisor is on duty (8 – 4 M-F) she handles walk-ins
- Number of full time dispatch employees authorized for '09: **4**
- Number of part-time dispatch staff authorized for '09: **5** (2.5 FTE)
- Number of FT PSAP supervisors or managers: **1**
- Total full time equivalency positions involved with 9-1-1: **7.5**
- Are employees covered by PERA? **YES**
- Are employees represented by a union: **YES** (AFSCME local)
- Does PSAP operate a CAD system? **NO**
- Does the agency have E9-1-1 PSAP phone equipment? **YES** (CML brand from IES)
- Equipment is owned and there are 2 operator work stations with four trunks
- Does PSAP have E9-1-1 integrated Phase 2 call mapping? **YES** (Bulberry)
- Does PSAP/Agency have a computerized Records Management System? **YES** (Bulberry)
- Do dispatched units have Mobile Data Computers (MDC)? **NO**
- Are there AVL units in any response units? **NO**
- Are 9-1-1 dispatchers ever exclusively responsible for jailed prisoners? **No** (no jail)
- Do dispatchers ever have to serve as jail matrons, for searches, etc? **No** (no jail, per se)
- Number, brand, and type of radio control consoles: **2 Zetron 4217 B consoles**

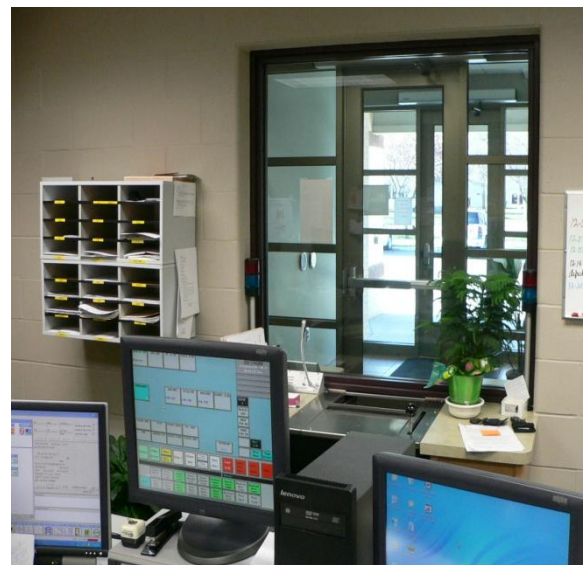


Rock County PSAP

Above: Main dispatch position (foreground) with 2nd position (usually staffed by Admin. Ass't. during daytime) in background. Note the public service window in the right center of picture.

Right: View of public service window from 2nd dispatch position. Note doors to the outside.

Below: Close up of security pass through drawer beneath public service window.



Radio System Configuration and Issues in the Current Environment

While it is understood that each of the County Boards in the SW MN 6 Counties has resolved to migrate all public safety agencies to the ARMER system, there will still be the need to maintain some of the existing radio infrastructure for such activities as fire paging and other activities. Therefore, we present this detail on the existing radio systems and their operation:

1. PSAP Radio Equipment

The Rock County PSAP is equipped with a 2-position Zetron PC-based 4217 radio control system, which is estimated to be 4 or 5 years old, and is in excellent operating condition. The dispatch office is equipped with custom-made furniture, which provides a good working environment for the dispatch staff. A photo of the Zetron radio console screen is shown below:



2. Radio System Configuration and FCC Data

The Rock County public safety radio system consists of separate Law Enforcement and Fire/EMS radio system channels for these operational disciplines.

The Law Enforcement radio system operates on wideband analog radio frequencies, with a primary repeater located at the following tower site:

- Blue Mounds tower (located 4 miles northwest of Luverne); 295 foot height, owned by AAT Communications, FCC ASR 1024931; repeater antenna height of 288 feet.

The repeater is controlled from the dispatch center via on-channel VHF control station. Local base stations at the PSAP also provide operation on the MNSEF and point-to-point radio channels.



The fire/EMS radio system operates on VHF wideband analog frequencies, and utilizes three different tower sites for improved paging and portable radio coverage:

- City of Luverne water tower; 130 foot height
- Beaver Creek water tower (city of Beaver Creek); 140 foot height
- Hardwick tower; located near the city of Hardwick; 195 foot height

The fire/EMS repeater stations are controlled from the dispatch center via VHF RF control stations. In addition to the Rock County primary public safety radio channels, the PSAP also has the capability of controlling or monitoring the following radio channels:

- Ambulance VHF repeater and EMS base channels
- Old Law VHF base
- City of Luverne VHF
- Rock County Highway repeater
- State Fire Mutual Aid
- Nobles County Sheriff (monitor only)
- State of Minnesota Highway Patrol (monitor only)

The radio console electronics and base station equipment at the PSAP is located in a dedicated communications equipment room, adjacent to the PSAP room. This room is equipped with air conditioning, and the equipment is in very good condition.

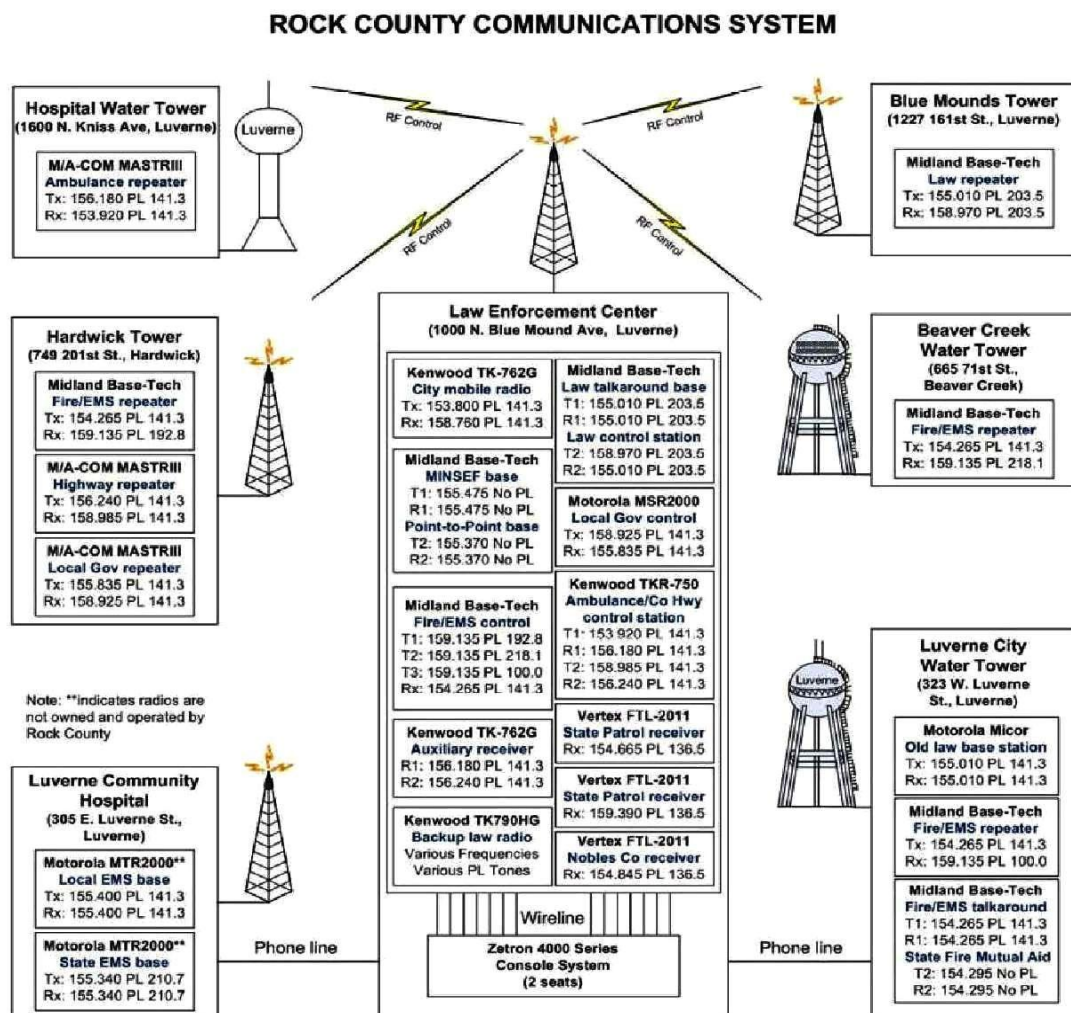
The PSAP is equipped with a 100 foot self-supporting tower structure, located adjacent to the PSAP building. This tower is relatively new, and in excellent condition. A photo of the tower is provided below:



3. FCC Frequency and Channel Data

Call Sign	Exp Date	Frequency	Function
KAJ643	3/18/2014	155.010 MHz	Law Rptr Output
		158.970 MHz	Law Rptr Input
		155.475 MHz	MNSEF
		155.370 MHz	Point-to-Point
WQBD644	9/23/2014	154.265 MHz	Fire/EMS Rptr Output
		159.135 MHz	Fire/EMS Rptr Input
		154.295 MHz	Statewide Fire

All FCC licenses appear to be current and valid.



Southwest Minnesota Six County 9-1-1 PSAP Consolidation Study Project **PSAP by PSAP Workload and Cost Data for CY 2008**

County & PSAP Operator	Population Served (Percent of total)	Total '08 PSAP staff Costs	Total '08 PSAP "Other" Costs	Total '08 PSAP Operating Costs	Cost/Yr for Dispatch/Resident	Total FTE Staff	Seven-Digit Calls in '08	9-1-1 Calls in '08	'08 MNJIS Queries by Dispatchers	'08 MNJIS Entries by Dispatchers	Events Dispatched and ICRs Generated	"Other" Measured Activities	Total of "Activity Index" (% of Total)
Lyon: Sheriff	25,000 (27.7%)	\$321,151	\$35,000 (10.9%)	\$356,151 20.36%	\$14.25	8.25	68,640*	9,960*	19,855	9-1-12	22,000 ICRs	4,380*	133,787* (30.04%) (using ICR#)
Murray: Sheriff	9,165 (9.98%)	\$230,286	\$12,643**	\$242,929** 13.89%	\$26.51	4.22	10,921*	2,190	12,775	1,825	2,063* (Other) 3,013 (ICRs)	2,263*	32,987* (7.41%) (using ICR#)
Nobles: -Worthington PD	20,832 (22.7%)	\$337,870 ⁶	\$8,700 (2.6%)	\$346,570 19.82%	\$16.55	5.5	33,328	7,358	21,535*	317	11,475 ICRs	2,516*	76,529* (17.19%) (using ICR#)
Pipestone: Sheriff	9,895 (10.77%)	\$194,833 ⁶	\$6,302 (3.2%)	\$201,135 11.5%	\$20.33	4.5	28,470	2,373	19,084	188	10,816 7,990 (ICRs)	6,422*	64,527* (14.49%) (using ICR#)
Redwood: Sheriff	16,815 (18.31%)	\$239,283	\$12,550 (5.25%) ⁷	\$251,833 14.4%	\$14.98	6.5	36,000*	3,765	33,069*	225	14,782* 9,202 (Survey)	8,395*	96,236* (21.61%) (Using RSCO#)
Rock: Sheriff	9,721 (10.58%)	\$332,057	\$18,230**	\$350,287** 20.02%	\$36.03	7.5	24,534	1,997	12,890*** ⁸	1,390 ***	37,180 5,341 ICRs	5,418*	41,204* (9.25%) (using ICR#)
TOTALS	91,428	\$1,655,480	\$93,425 ⁹	\$1,748,905 Percent of Total Spent Now	\$19.13 (Avg.)	36.47	201,893	27,643	119,208	13,057	64,601 ICRs	35,800*	445,270*

(*) As estimated by the responding agency (**) As estimated by GeoComm (***) As estimated by GeoComm

⁶ Pipestone County bills the City of Pipestone a negotiated fee for dispatch services in the city. In 2009, Pipestone paid the County \$109,371 of the total, making the County governments net outlay = \$91,264.00. Also, Worthington & Nobles Co. share PSAP expense on a 50 – 50 basis.

⁷ We did not include Redwood County's reported \$199K expense in '09 for an upgrade to the fire radio system, as it was a one time expense

⁸ *** Rock did not provide a number for MINJIS queries or entries. Therefore, we calculated the per resident average for the other 5 counties (1.326 per resident for queries and 0.143 for entries) and applied it to Rock's 9,721 population for these two totals.

⁹ Here, to those with asterisks (**) above, we applied the average that "other costs" from PSAPs that actually reported them happened to be, which was 5.49% to arrive at estimated "other costs" for those non-reporting PSAPs.



Summary of Functional Data for the SWMN 6 PSAPs

PSAP → Item ↓	Lyon	Murray	Nobles- WPD	Pipestone	Redwood	Rock
CAD used and vendor	Yes C.I.S.	Yes S*CAD	No	No	No	No
9-1-1 CPE # and vendor	Yes – 2 CML	Yes – 2 CML	Yes – 2 CML	Yes – 2 CML	Yes – 2 CML	Yes – 2 CML
Radio console # and vendor	Yes – 2 Motorola Gold Elite	Yes – 2 Motorola Gold Elite	Yes – 2 Orbacom	Yes – 2 Zetron	Yes – 2 Motorola Gold Elite	Yes – 2 Zetron
GIS map and vendor	Yes GeoComm	Yes Bulberry	Yes GeoComm	Yes Bulberry	Yes GeoComm	Yes Bulberry
AVL? # and vendor	Yes # 21 LocTech	No	No	No	Yes # 30 LocTech	No
RMS and vendor	Yes C.I.S.	Yes SMART	Yes Positron?	Yes Crimestar	Yes MaSys	Yes Bulberry
MDCs #	7	No	No	No	No	No
Disp. in union? Which one?	Yes LELS	Yes AFSCME	Yes LELS	Yes LELS	Yes LELS	Yes AFSCME



Numbers and Costs for Today's Dispatch Staffing Configurations

In terms of staff employed to provide emergency dispatch services, today's six PSAP agencies report employing 36.47 full-time equivalent (FTE) staff in 9-1-1 dispatching roles. This number does not generally reflect specialized staff who serves as jailers. For example, in the Pipestone County PSAP room, there are usually two persons on duty, one whose primary task is 9-1-1 and dispatching and the other whose primary task is jail activities, and filling these two-on-duty-at-a-time staffing requires about nine FTE, and Pipestone is showing only 4.5 for the dispatching task, which is appropriate for this counting process. Similarly in Rock County, they have no jail, but are showing 7.5 FTE, all of which would be involved with dispatch activity.

These 36.47 FTE are providing emergency communications and dispatch services to a 2008 reported population of about 91,428. This equates to a "dispatch staff per population ratio" of 1 for every 2,507 residents.

Based on work we have done for other clients and contacts we have made with other 9-1-1 entities we have developed a sampler of the staffing levels of a number of other medium sized urban jurisdictions in the United States and have developed the following comparisons.

PSAP	# of FTE	Service Pop.	Ratio: Staff to Pop.
San Diego, CA PD	140	1,230,000	1: 8,785
Sedgwick County, KS ECC (Wichita)	65	450,000	1: 6,923
Oakland County, MI Sheriff	41	275,000	1: 6,707
Columbus, OH PD	118	632,910	1: 5,364
Detroit, MI PD	190	995,000	1: 5,236
Portland, OR ECC	127	670,000	1: 5,276
Fresno, CA PD	83	427,652	1: 5,152
Kansas City, MO PD	91	428,000	1: 4,703
Pittsburgh, PA ECC (pre merger)*	72	334,563	1: 4,647
Oakland, CA PD	89	400,000	1: 4,494
Minneapolis, MN ECC	85	382,000	1: 4,494
Sarasota County, FL ECC	110	465,000	1: 4,227
Long Beach, CA PD and FD	93	461,000	1: 4,057
Mesa, AZ PD (Metro Phoenix)	125	475,000	1: 3,800
Proposed Fulton-Atlanta PSAP	175	655,019	1: 3,742
Metro Nashville ECC	183	600,000	1: 3,279
Atlanta PD (Current)	152	423,019	1: 2,783
Fulton County, GA ECC (Current)	86	232,000	1: 2,698
SWMN 6 Counties	36.47	91,428	1: 2,507
Atlanta PD and FD (Post city merge)	180	423,019	1: 2,350

* The Pittsburgh ECC is now out of existence as they have fully merged with and been integrated into the Alleghany County ECC.



The largest driver of PSAP costs is, of course, paying to have adequate staff on duty, 24 hours a day, 7 days per week. An important corollary to understand with dispatch center staffing is that if one wants to fill one chair, prepared to perform a task for every minute of the year, it will require having enough bodies to actually be there, sitting in that one chair for the 8,768 hours of in a year.

However, it is nowhere near that simple. Most full-time employees in public agencies are paid for working 2,080 hours per year, based on 40 hour weeks x 52 weeks per year. But that does not mean they are actually at their workplace or workstation for those 2,080 hours per year. From 2,080, one needs to subtract a number of hours for the following typical activities:

Vacation: Assume average of 3 weeks per year	120
Sick leave taken: Assume average ¹⁰ of 6 days per year	48
Time for in-service and/or refresher training at 1 week per year	40
Time for meal breaks away from workstation at 1 hour per shift x 240 work shifts per year	240
Conservative estimate of “productive, in-chair work time” available per year	1,632 hours

Therefore, if one has a specific workstation that requires staffing for every minute of the 8,768 hours in a year, by dividing 8,768 by the above 1,632 we can see that it would take 5.37 persons on the payroll to fill this workstation, and still allow for the time away from the workstation outlined above.

In many small dispatch centers, nowhere near 240 hours per year is allowed for meal breaks away from the workstation. In fact, it is very common that dispatchers have to eat their meals at their workstation. According to the Employer’s Association, they list Minnesota regulations relating to meal breaks and rest breaks as follows:

Q1: What are the Minnesota laws on meal and rest breaks?

A1: Meal Breaks: Minnesota statute states that employers must provide each employee who works eight or more consecutive hours with a meal break. The length of the meal break is not defined in the statute which just states the length as “sufficient time to eat a meal”. According to the Employers Association Minnesota Policies and Benefits Survey, the majority of employers allow at least 30 minutes for meal breaks. The meal break may be unpaid if it is more than 20 minutes long.

Rest Breaks: Under Minnesota statutes, an employer must allow each employee adequate time to use the nearest restroom once during each four consecutive hours of work. Although it is more generous than required by law, the most common practice is for employers to allow two breaks of 10 to 15 minutes per day according to the EA survey on policies.



At the Labor Law Center Web site (www.laborlawcenter.com), they state (highlighting is ours):

Minnesota state law stipulates that “sufficient time” to eat a meal must be provided to all employees who work for eight hours or more consecutively. This meal break may generally be unpaid if it is at least 30 minutes long, but only if the employee is completely relieved of his or her duties. If the worker must do any job duties during the meal break, it would not qualify as an unpaid meal break.

The Minnesota Department of Labor and Industry states the following:

Doesn't my employer have to give me a break?

The state law requires employers to provide restroom time and sufficient time to eat a meal. If the break is less than 20 minutes in duration, it must be counted as hours worked. Time to use the nearest restroom must be provided within each four consecutive hours of work. Meal time applies to employees who work eight or more consecutive hours (see Minnesota Statutes 177.253 and 177.254).

Furthermore, ergonomics experts and wellness considerations strongly advise and encourage that each person involved in a highly repetitive job involving small muscle work (like typing on a computer keyboard or answering telephones) be granted several breaks away from their workstation for every 8 hours worked.

For purposes of estimating staffing requirements going forward, we have arbitrarily decided to use a factor of five FTE required to fill one work station for each minute in the 8,768 hours in a year.

Back to the reported 36.47 FTEs employed as 9-1-1 dispatchers today in the SWMN 6: If we were to assume that something less than the above 5 FTE figure is in place (perhaps due to not providing as much training time, not providing break time on all shifts on all days, etc.) it would seem reasonable to expect a current number closer to 4.75 being in effect. That would imply that each of today's 36.47 FTEs would now physically be at their workstations about 1,846 hours per year, resulting in 67,324 hours on post per year. Dividing this number by the 8,768 hours in a year, we arrive at 7.68. This means that today's reported 36.47 FTE should result in a total average of about 7.68 persons being on-duty during the average hour at the average day at the current six 9-1-1 PSAP dispatch centers in the SWMN 6 area.

¹⁰ Some would say this is a LOW figure, as many 9-1-1 dispatch centers actually experience rates of sick leave usage closer to 12 days per person per year. But we are using an optimistic average here, assuming that not everyone will take all 12 days, and that there are some incentives in place to encourage attendance. Further, to balance this out, we did use a fairly high 3 week per year figure for vacation.



The Costs of Today's Dispatch Staffing

As reported in the above table, the agencies have said (or it has been estimated) that they spend \$1,748,905 on all costs related to owning, operating, and staffing their dispatch centers.

Of this figure, the agency's report that about 95 percent was spent on personnel costs, which our experience tell us seems to be an appropriate ratio of personnel to other costs incurred in operating a dispatch center. The hourly rates of pay for all of the staff that make up 36.47 FTE is as follows:

County	Start pay/hour	Top pay/hour	Midpoint
Lyon County S.O.	\$13.81	\$19.32	\$16.57
Murray County S.O.	\$14.41	\$18.01	\$16.21
Worthington PD	\$17.99*	\$21.17*	\$19.58*
Pipestone County S.O.	\$13.81	\$18.04	\$15.93
Redwood County S.O.	\$13.59	\$19.68	\$16.64
Rock County S.O.	\$13.13	\$19.21	\$16.17
Averages	\$14.46/hour	\$19.24/hour	\$16.58/hour

(*) Top rates

Bottom Lines

We are comfortable with using the \$1,655,480 personnel costs portion of the overall \$1.8 million reported costs in today's six PSAPs as a foundation point against which we will compare protected costs of other configuration models. The fundamental questions going forward will then become:

Can emergency communications dispatch services be delivered in the SWMN 6 area under some other configuration that would:

- **Not diminish the current service levels, striving to improve them?**
- **Do it at a lower annual cost?**
- **Do it with fewer employees?**

"Apples to apples" comparisons between the CURRENT and some NEW models.

It is always tricky to makes statements like:

"Today, the SWMN 6 taxpayers spend \$XXX on all 9-1-1 call taking and dispatching services per year, and under the proposed model they would spend \$YYY for these services."



The main reasons this can be tricky are as follows:

- It assumes that the same services will be provided under the same supervision, with the same training, with same call handling capacity and the same equipment.
- The problem with this is that if a county were to establish a new operational configuration, one of the objectives ought to be to IMPROVE service levels and provide MORE and BETTER service, training, supervision and so forth.
 - ◆ An excellent example is the provision of what is called “Emergency Medical Dispatch” or EMD. EMD is a fairly new practice of providing both proven and carefully scripted **“Pre-arrival instructions”** to callers on how to perform certain life-saving tasks at the scene, such as stopping bleeding, opening airways, doing CPR and rescue breathing, etc. pending the arrival of trained EMS personnel. It also involves “telephone triage” of the incident so as to better match the response being sent with the need at the scene. It is a result of the “pre-arrival instructions” part of EMD that the reader has probably seen news reports like “9-1-1 helps get baby breathing” or “9-1-1 helps unexpected baby delivery.”
 - ◆ Today, EMD is not offered or provided to 9-1-1 callers at any of the SWMN 6 PSAPs.
 - ◆ Since none of the SWMN 6 PSAPs offer (and have to pay for the training, etc, required) EMD, but in any new operational model, one would probably want EMD universally available, comparing today’s base cost of no EMD availability with tomorrow’s cost with full EMD availability is not a fair “apples to apples” comparison.
 - ◆ Another excellent example of the pitfalls of trying to compare the costs of the current service delivery configuration with any proposed new configuration can be found in the area of “active supervision.” In most of today’s SWMN six PSAPs there are not professional, dedicated Emergency Communications supervisors on duty 24 x 7. However, in a new configuration, that would certainly be a desirable staffing goal. Therefore, if in one model there are few to no on-duty, dedicated and fully available supervisors at today’s PSAPs, but in a new model there would be, comparing the costs of the two can be misleading.

Funding for Today’s Operating Costs

In general, and with the exception of the monthly revenue streams received by the counties under the 9-1-1 “grant” program funded by a portion of the statewide 9-1-1 surcharge (see below), and the revenues received by Pipestone County from their billing to served agencies in their county, the costs of operating the six PSAPs in the region are all borne by the five County Boards from their general funds, except where the Worthington City Council and Nobles County share PSAP expenses on a 50 – 50 basis. If there were to be a merger of any of the PSAPs in the six county region, it is our reading of M.S.S. 403.113 that the 9-1-1 grant revenues would not be reduced from today’s level. The 2009 proceeds from this Minnesota 9-1-1 surcharge “grant” back to the counties was as follows on the next page:



Lyon \$8,635.78/month	\$103,629.36
Murray \$6,754.00/month	\$81,048.00
Nobles \$8,104.23/month	\$97,250.76
Pipestone \$6,838.49/month	\$82,061.88
Redwood \$7,639.34/month	\$91,672.08
Rock \$6,818.35/month	\$81,820.20
Annual Total	\$537,482.28

As implied above, this \$537,482 dollars, unless otherwise contractually obligated by any of the six counties (for something like a multi-year lease purchase of some qualified 9-1-1 equipment) should be available to the six County Boards to go towards any funding requirements for a merged 9-1-1 PSAP, within the limitations set forth in M.S.S. 403.113, Subdivision 3, as follows:

Subd. 3. Local expenditures

(a) Money distributed under subdivision 2 for enhanced 9-1-1 service may be spent on enhanced 9-1-1 system costs for the purposes stated in subdivision 1. In addition, money may be spent to lease, purchase, lease-purchase, or maintain enhanced 9-1-1 equipment, including telephone equipment; recording equipment; computer hardware; computer software for database provisioning, addressing, mapping, and any other software necessary for automatic location identification or local location identification; trunk lines; selective routing equipment; the master street address guide; dispatcher public safety answering point equipment proficiency and operational skills; pay for long-distance charges incurred due to transferring 9-1-1 calls to other jurisdictions; and the equipment necessary within the public safety answering point for community alert systems and to notify and communicate with the emergency services requested by the 9-1-1 caller.

(b) Money distributed for enhanced 9-1-1 service may not be spent on:

- (1) Purchasing or leasing of real estate or cosmetic additions to or remodeling of communications centers;
- (2) Mobile communications vehicles, fire engines, ambulances, law enforcement vehicles, or other emergency vehicles;
- (3) Signs, posts, or other markers related to addressing or any costs associated with the installation or maintenance of signs, posts, or markers.

Given that the above statute language is (at best) somewhat confusing, the Minnesota Department of Public Safety has issued guidelines along with their annual 9-1-1 fund audit forms that try to specify (to the extent possible) what items and elements at the local level are allowable expenditures. That complete form is attached to this report as Appendix 4 for reference purposes, but suffice it to say that it is not currently allowed to pay the routine annual staff costs for a dispatch center's employees with these funds.



Thus far in this report, we have dealt most significantly with personnel, workload and operational cost and funding issues and not with technology to a great degree. Clearly, a major element in the provision of these services is the technological platforms and systems that one uses to receive calls, allocate and manage the workload and communicate with the field responders. At a high level, these technologies are as follows:

E9-1-1 Telephone Network and Database Components

Generally, the current E9-1-1 network (the part in the community and the property of IES) and supporting data systems present in the SWMN 6 region are state-of-the art for the mid 1990s.

The State of Minnesota, Department of Public Safety/Emergency Communication Networks Division has initiated a three step process that will implement a statewide 9-1-1 replacement network called **NEXT GENERATION 9-1-1** or NG/9-1-1 or “NextGen.”

- In its simplest sense, the 1st phase of this project (due Q1, 2010) will use internet protocol (IP) circuitry (but not the actual public Internet) to interconnect all the 100+ PSAPs in Minnesota and their two separate 9-1-1 service provider companies (Qwest and IES).
- The 2nd and 3rd phases of NG9-1-1 will actually connect each of the PSAPs to this IP backbone network and the need will no longer exist for individual leased line 9-1-1 trunks and data circuits to and from all of the PSAPs.
- These upgrades will facilitate a much more robust and flexible E9-1-1 network, as well as one equipped to accept access and information from systems such as Automatic Crash Notification (ACN), which are kind of like GM’s “OnStar” system, and could enable a vehicle in a crash to actually “call 9-1-1” and report data indicating the exact location of the crash, its severity, the number of occupants, their likelihood of injury and its severity, etc. Similarly, NG9-1-1 will enable PSAPs to receive photos and video from cell phones along with a 9-1-1 voice call.

E9-1-1 Customer Premise Equipment (CPE) used to Terminate and Manage Received 9-1-1 Calls

This is equipment from vendors such as Plant/CML, Positron, and others which is used as the complex “telephone instrument” via which the 9-1-1 calls are answered. In all six counties, this equipment is owned by the local unit of government and was obtained from IES. The main component parts are the ANI/ALI Controllers (back room equipment) and the individual 9-1-1 operator workstations, which are dedicated PCs connected to the “9-1-1 back-room equipment” and configured to provide “Computer Telephony Interface” or CTI.

In most cases, the current CPE at the six PSAPs is not fully NG9-1-1 compliant and would need to be replaced, but not until full NG9-1-1 is achieved in Minnesota.



However, it is likely that the CML E9-1-1 CPE in place at the six PSAPs today could be ‘consolidated’ and re-used at the outset of merged PSAP operations, resulting in the assembly of one set of such CPE capable of supporting four or five PSAP workstations and capable of accepting as many as six in-bound 9-1-1 trunks. We have been provided a one-time cost estimate for this work from IES of \$44,000.

If this approach were taken, however, the E9-1-1 CPE in use would NOT be NG9-1-1 compliant and would likely need to be replaced in a year or two down the road.

There are two other potential opportunities for equipping a new consolidated PSAP with E9-1-1 or NG9-1-1 CPE capabilities.

- One is that IES is about to announce the availability of what could be called **“hosted NG9-1-1 call processing capabilities.”** Essentially, this means that there would be minimal E9-1-1 CPE at the PSAP itself.....not much beyond the device over which one answers the telephone and views the E9-1-1 ALI data. Instead, a larger suite of more sophisticated E9-1-1 CPE would be located off site at the IES HQ in Hutchinson, then connected to the PSAP via an IP circuit. Consequently, instead of paying several hundred thousand dollars for all new, NG9-1-1 capable CPE to be installed at the PSAP, one would spend a relatively small amount, up front, for the minimal equipment needed, and then “subscribe” at a monthly cost for shared usage of that equipment over the next several years. IES has provided an estimate of \$238,000, one-time, up-front for the NG9-1-1 CPE for a six county merged PSAP, and \$2,700 per month recurring costs, which we think would be the PSAPs responsibility, but that has yet to be confirmed by the state 9-1-1 program office. In addition, this choice would already be fully NG9-1-1 compliant.
- Interestingly, if each of today’s six PSAPs were to make this choice and chose to continue to have their own PSAPs, IES estimates the one-time, up-front **per PSAP** cost for this hardware at \$125,900 (x 6 would equal \$755,400) and \$885 per month each (x 6 would equal \$5,130 per month)
- However, under this type of equipment configuration it would be possible for any or all of the six PSAPs to choose to be “part-time PSAPs”, meaning that they could operate as their own PSAP say from 8 – 5 p.m. Monday through Friday, and then via a couple of keystrokes on the terminal, “sign off” at which time their 9-1-1 calls would automatically be diverted to another similarly equipped PSAP, with whom they had an agreement for “after hours 9-1-1 dispatch”.
- Another also involves accessing all new NG9-1-1 capable PSAP CPE, but rather than accessing it remotely for a subscription fee, one would purchase and own it and house it locally. Obviously, in this model one would have greater control, in that one would not be sharing its use with any other entities, but one would also have nobody to share costs with, and one would assume the higher burden for operating, managing and maintaining their own equipment located at their own facility. IES estimates the approximate costs for this alternative at \$337,000, one-time, up-front.

Conventional Telephone Systems

This is the owned equipment in the dispatch center for the purposes of answering, tracking, and managing the seven-digit call activity. In many cases today, the seven-digit telephone system is fully integrated into the CML E9-1-1 CPE system for seamless operation and data collection.

This arrangement could carry forward under the above scenarios involving using the existing (expanded) or purchasing the used CML RescuStar equipment.

If a 'stand-alone' consolidated PSAP is created out of this process and that PSAP is not responsible for answering any 'administrative' calls for the member agencies, then the need for a large administrative telephone system is eliminated.

On this topic, it would be our suggestion that a fundamental issue be addressed:

- What will happen to the many seven-digit calls that are now answered by 9-1-1 dispatchers at the six PSAPs?

There are two potential answers here:

- By policy, the consolidated PSAP could assume the all-hours or after-hours task of answering approximately 200,000 seven-digit calls per year. In this scenario, the PSAP would answer in-bound seven-digit calls for all the agencies at times when the agencies did not have someone assigned this task back at their headquarters. Then, the 9-1-1 staff would need to either provide the desired information to the caller (which means that they would have to have that information available to them such as work schedules, city ordinances, jail registers, etc.), transfer the callers (may be long distance – but that could be eliminated by using VoIP at the 9-1-1 HQ) to their desired party, or give the caller yet another seven-digit number to call for their desired party or office.
- The alternative approach would be that a policy is adopted by the merged PSAP Board that only calls related to a response by public safety units or dealing with matters related to field units being dispatched by the PSAP are to be dialed to the PSAP, be they 9-1-1 calls or seven-digit calls. Then if anyone calls that merged PSAPs seven-digit number, (we are not advocating a recording on the 9-1-1 lines) they could be initially answered by a recording that said something like, *"You have reached the 9-1-1 dispatch center. If you need to speak with someone at the 9-1-1 dispatch center about a public safety response, stay on the line. If your call is not about 9-1-1 or a public safety response, please stay on the line and you will hear the administrative numbers you should use to reach our member agencies"*.

Computer Aided Dispatch (CAD)

The main function of CAD is to serve as the system into which "incidents requiring a response" are entered by the dispatcher, and which then assesses the available response resources for the specific address/location of the incident, recommends which resources to send, and then tracks the activities of all dispatched responders to a given incident (who arrived, when, from what agencies, etc.).



CAD is not a requirement, per se, in a small one person PSAP, but is virtually standard in larger, multi position PSAPs today. Today only Murray and Lyon Counties report having actual CAD systems in operation, although Worthington Police Department (for Nobles County) has just ordered a new CAD system for 2010 installation.

GIS Mapping System(s) and AVL

These are relatively new additions to the dispatch center and have become important as the system onto which the location of wireless 9-1-1 callers (especially Phase 2) is plotted, and onto which the location of wired 9-1-1 callers can be plotted. It is also very beneficial to be able to automatically plot incidents entered into CAD as well, along with the locations and movements of response units equipped with GPS based Automatic Vehicle Location (AVL) capabilities. All six PSAPs have GIS mapping systems interfaced with their E9-1-1 ALI equipment, but only two of them (Redwood and Lyon) report AVL devices in any response units today.

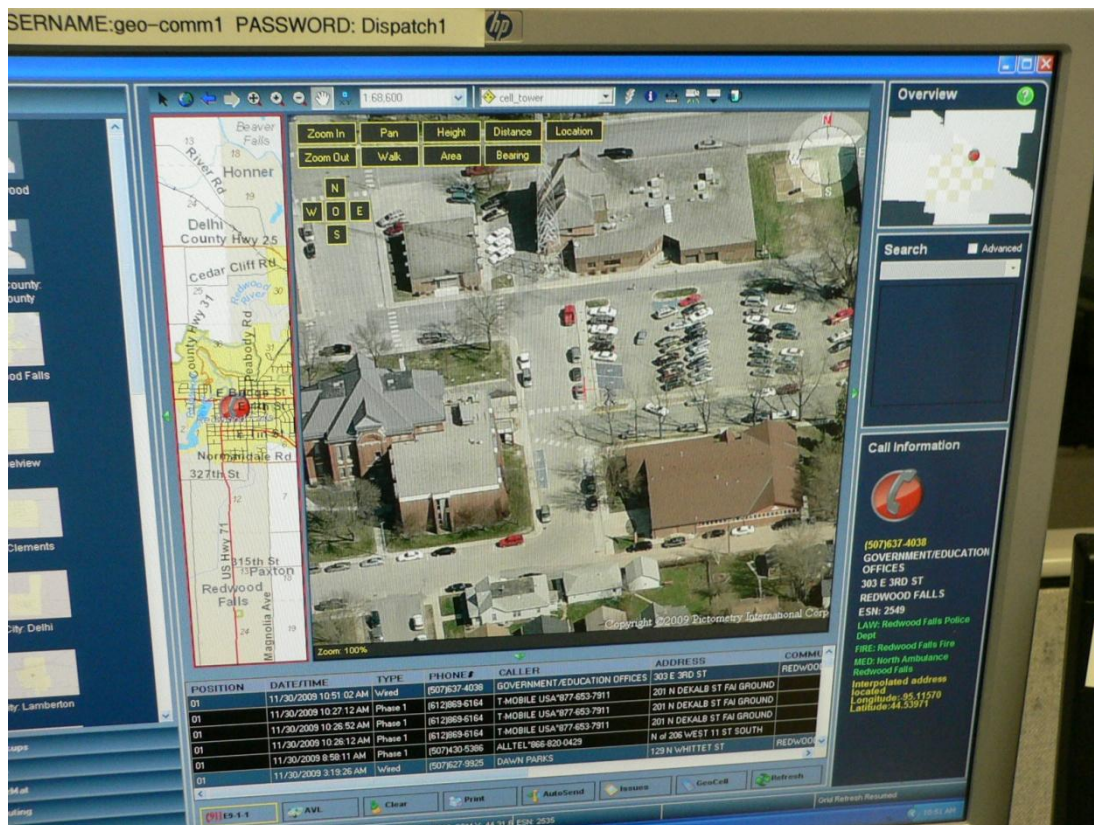
- This is a significant issue for a consolidated PSAP serving a large geographic area, about which some of the staff members may have limited geographic and local awareness.
- With a properly implemented GIS map interfaced with CAD and E9-1-1 ALI, along with either standard aerial photography or aerial photography such as “Pictometry™” a dispatcher can literally see what a response location looks like, what color the house across the road is, where the barn is and where all of this in relationship to the real-time location of the responding law enforcement fire or EMS vehicles. The photo on the next page comes from the GeoComm GeoLynx™ GIS map currently in the Redwood County PSAP. It is the image with the Pictometry photo that was automatically displayed when a 9-1-1 call was dialed from the Sheriff’s Office.
- ◆ For a demonstration of this capability from a commercial, public access provider (Google Maps) use this link to see the photo available on Google Maps of the Lyon County government building in Marshall. Note also that you can pan up, down, left and right as well. In fact, you can swivel yourself around 360°, and if you do, you will see the Sheriff’s Office and their radio tower behind you. Remember, these are not pictures GeoComm took for this report. They are publicly available images linked to specific address via Google Maps, and while they do not cover all addresses, more and more are added every day. The reason we point this out is not that we think a PSAP should rely exclusively on Google Maps to assist responders to the scene, but to demonstrate the technology that is generally available. Here is the link: (Or you can go to it directly by going to www.google.com/maps and looking for “610 County Road 67, Marshall, Minnesota”
- ◆ http://maps.google.com/maps?layer=c&cbll=44.450595,-95.793931&cbp=12,213.54,,0.5&ved=0CBgQ2wU&ei=cehpS6r8NJ2uMrmJnc0L&ie=UTF8&hq=&hnear=5800+Park+Ave+S,+Minneapolis,+Hennepin,+Minnesota+55417&ll=44.898369,-93.264939&spn=0,359.98071&t=h&z=16&panoid=FfDkTOh_oocIs_sdzle4Lw
- ◆ A related application of AVL technology can be its usage within a CAD system. Most of today’s CAD systems do their calculations on which response unit should be assigned to a



given incident based on what is called “tabular data.” This means that a ‘table’ exists within the CAD database that takes all known addresses and locations and relates them to specific response units for law, fire, or EMS. These unit recommendations can be changed based on which “response map” has been invoked for that shift, but as long as a response map is in effect (and one must always be in effect) the CAD unit recommendations are not based on the real-time locations of the several units, but on the static information within the response tables.

By taking real-time AVL positional information and providing it to CAD, when a given response incident is entered into CAD, CAD can determine which of the proper type of units (law, fire, or EMS) is actually closest (travel time-wise) to the incident location and recommend that unit. This could mean (for example) that a Lyon County Sheriff’s car could be recommended to the dispatcher for assignment to an event on the North side of Murray County, assuming it is actually closer to the incident than a Murray County Sheriff’s unit. These responses would be the initial emergency response, and the responsible jurisdiction would be responsible for the investigation, etc.

Shown below is an actual “screen capture” from the 9-1-1 GIS map in use at the Redwood County PSAP, provided by GeoComm.



Key to the Illustration on the Previous Page

- Lower right: (“Caller Information”): This is a restatement of the E9-1-1 ALI information that accompanied the 9-1-1 call. This is a 9-1-1 call from 507.637.4038 at the Sheriff’s Office.
- Upper right: The red dot here on the small county map shows the general location in the county at large of where this call is coming from.
- Center: (Photo) shows the location from which the call is coming. The courthouse on the lower left side. The Law Enforcement Center is at top center. Note the clarity of the photo, yet it is still possible to zoom in further. The photo can also be tilted, panned to the left and right, up and down. (This is NOT a real-time photo. That would require a photo satellite being right over Redwood County at this instant. The relative accuracy and currency of the photo is a function of how recently it was taken).
- Had one of the Redwood County AVL equipped units been active and in the scope of this photo, their real-time location (and their movement) would have been displayed superimposed on this photo.

State and Federal Criminal Justice Information Systems (MN/JIS and NCIC)

These are either stand-alone computer terminals or systems, which are accessed through interfaces built into the agency’s CAD system and via which one performs queries into local, regional, state, and national law enforcement databases such as the Minnesota MN/JIS system and the National Crime Information Center (NCIC). It is via these systems that one queries vehicle license plates, person driving records, wanted person files, stolen property files, criminal history files, etc. Typically, there needs to be one such terminal at the workstation of each person doing dispatch work.

Mobile Data Computer or Terminal Systems (MDC or MDT)

These systems have been around (in big cities) since the late 1970s but with the advent of broadband wireless services from commercial providers like Sprint, Verizon, and others, many smaller agencies are now also accessing these systems. Essentially, they involve a laptop PC in a vehicle with broadband access performing many of the data queries that dispatchers used to have to perform based on two-way radio requests. In addition, they can also be networked with the dispatch center’s CAD system so that once assigned to a given incident, that incident can be electronically transmitted to the responding units, who can then see all the detail that the dispatcher has on the incident (including mapping data, directions to the scene from one’s current location, photos, the current AVL locations of other response units, and (if permitted) actually make entries into the event such as “ARRIVED”, “CLEARED” and provide added remarks and incident disposition information.

If any agency does not provide broadband access for these devices via some fee-for-service commercial network, then the agency needs to own and operate (or subscribe to a joint agency type of system) its own dedicated radio channel(s) for these MDCs.



In a PSAP where there are numerous law enforcement units on the street at any given time, the demand for “voice data checks” to be run by dispatchers can be significant. The ability and responsiveness of dispatchers being able to perform and report back these data queries in a timely manner can have an impact on the degree to which users request them. Sometimes this can mean that checks are not run that should be run – just because the dispatcher was too busy or responses were too slow in coming.

This has caused some PSAP agencies to staff a dedicated “voice information channel” and workstation either some hours of the day or 24 x 7. If the level of such checks becomes a burden to the PSAP, having MDCs in the field law enforcement units can off-load most of this workload from the PSAP.

Records Management Systems (RMS)

These are the computer system via which public safety agencies keep track of all of the things that matter to them. Some of the software modules can be:

- Calls for service
- Crime/fire analysis
- Crime/fire reports and follow-up investigative reports
- Property and evidence tracking
- Vehicle service records
- Personnel files
- Personnel training records
- Jail management
- Master name index systems
- Business files
- Others

In smaller agencies, RMS systems are often operated concurrently with CAD systems over the same PC and server network serving that agency. This means that when a CAD response incident record is created by the 9-1-1 dispatcher (something like ‘check out the suspicious car at the corner of 1st and Main Street’) and the officers determine that the car is being driven by a drunk driver, a new crime record for RMS is created under the ‘offense classification’ of DWI, and then all the paperwork that is associated with and flows from that DWI arrest are appended to that crime file which flowed from the initial CAD incident.

As such, having access to the RMS system can also give one access to the CAD system, and vice-versa. In many agencies where they have implemented MDCs in field vehicles, those MDCs have been able to gain field access to CAD and RMS as well as through CAD to the State and Federal crime information databases.



In many consolidated PSAP operations, it is deemed desirable to have remote access to CAD and RMS from some or all of the member agencies offices. We have seen many situations where ten police and fire agencies are dispatched out of one central PSAP, but in all of the vehicles for those ten agencies MDCs have been installed, and in the offices of those ten agencies either hardwired, desktop computers have been installed and provided with “intra-net” access to the PSAP’s CAD and RMS systems or they have used laptop PC with wireless “air cards” to access the PSAP’s CAD/RMS systems from their remote HQ just like they would access it from a field vehicle.

With such an arrangement, a records clerk at the Anytown P.D. who takes a seven-digit telephone call about a barking dog complaint can turn to this remote access CAD/RMS terminal on her desk and actually enter a CAD response incident event. Once entered, said event would then pop up on the screen of the 9-1-1 dispatcher miles (or blocks) away who is responsible for the area where that incident’s address is located, and can then dispatch the appropriate responder to the incident.

Voice Two-Way Radio Systems

These are the super-critical radio systems over which 9-1-1 dispatchers talk to responders, and vice-versa, and which the responders use to talk to each other.

They generally fall into one of two types:

- Single agency, conventional channel radio systems where a given agency (County Sheriff, for example) has its own two-way radio channel assigned by the FCC and it uses that channel like a “party line” where anyone and everyone involved with the Sheriff can talk to anyone else.
 - This represents the current type of radio system in place for all agencies in the SWMN 6 County region.
- “Trunked” radio systems where several radio channels are managed by a computer, and via which up to dozens of “channel-like” talk-groups can be created, thereby permitting the functionality of a “private radio channel” for any defined group of users on that system.
 - The ARMER radio system, to which all six County Boards have recorded their intent to migrate is such a trunked radio system, operating in the 800 MHz band.
- Conventional radio systems in public safety generally operate in the VHF (155 MHz) and UHF (460 MHz) part of the radio spectrum, and all the dispatch radio systems in the SWMN 6 are on such VHF systems today. In most cases, these systems are designed to provide radio signal coverage only to those areas the served agencies operate in.
 - The FCC would not have been inclined to permit, for example, the Rock County Sheriff to operate a VHF radio system that also covered way up into Redwood County, because if the FCC were to permit that, the radio frequency in use by Rock County could not be reused over and over again across the Midwest (and the entire United States) as it is.
- Trunked radio systems in public safety generally operate in the 800 MHz part of the radio spectrum, soon to be expanded to also include 700 MHz channels.



When one is considering modifications to the emergency communications and 9-1-1 service delivery environments in a region like the SWMN 6 County area, one must be mindful of all of the above technologies and assess the impacts that each has on the options for future configurations, as well as the potentially high costs.

The question of what radio system(s) emergency communications dispatching should be conducted on is not directly related, on a technical basis, to the question of what sort of configuration ought to exist for dispatch centers, their number, location and management.

Put another way, even if all public safety communications in the region were to migrate over to the ARMER 800 MHz trunked radio system, there could still be 1, 3, or 6 dispatch centers, but each of these separate dispatch centers would have to be configured to provide the dispatcher with reliable, simultaneous multi-talk-group access (like when doing fire dispatching) to the 800 MHz trunked radio system, and that access and control capability costs money.

We have an excellent case in point on this very question in **Dakota County, Minnesota**.

Specifically, prior to 12/27/2007 there were five public safety dispatch centers in Dakota County (Population about 390,000). Each of them had their own two-way radio systems consisting of (mostly) VHF radio channels for police, fire, and EMS agencies. Over the previous several years, there had been a planned migration of all state, regional and local safety agencies in the Minneapolis – St. Paul Metro area (Dakota County is due south of that metro area and serves as its southern suburbs) to the ARMER 800 MHz trunked radio system. When the Dakota County public safety agencies (county and city based) began to consider how they would participate in this migration, their initial concept was to equip all five local dispatch centers (four cities and one Sheriff) with new radio control console equipment necessary to access the regional radio system. They had their consultant figure out how much separate access equipment for all five agencies would cost, as opposed to merging their dispatch centers into one regional PSAP and connecting that PSAP's radio consoles to the regional radio system. In the end, the savings were significant enough to encourage the managers at the five local entities to look at other potential merger savings, and on 12/27/2007 they opened the **DAKOTA COMMUNICATIONS CENTER¹ or DCC**, under a shared control Board, in a brand new facility, now providing seamless 9-1-1 call taking and dispatching services for the entire county.

¹ **NOTE the conspicuous absence of the word COUNTY in the name of the DCC.** This is very purposeful, and every attempt is made to be clear that this is not a function of COUNTY GOVERNMENT, but, rather, a project undertaken by many units of government, of which the county government is but one participant among many.



Radio Control Consoles

When dispatchers sit at their workstations, they spend much of their time talking on the radio. They do this by selecting the desired radio channel (soon to be talk-group) from a computer screen in front of them and then pressing a “push to talk” icon or button. When they do this, they are not actually touching the radio transmitter(s), per se. Rather, they are issuing control commands through a computer terminal.

Those commands are received at a control box in the “back room,” where they end up being turned into varying voltage instructions that go out over lines (usually leased telephone lines) to and from radio towers throughout the county to carry the dispatcher’s voice outbound and the voices from field radios in-bound to the dispatcher.

This computer terminal at which the dispatcher sits is called a “radio control console.” In days past, these consoles were large furniture like structures loaded with individual push-buttons and lights, but they were still not the actual radios themselves --- even back then the radios were outside of the dispatch room or even out in a field somewhere in the county.

Today, each of the six PSAPs has generally similar radio control consoles made by Motorola, Orbacom, or Zetron. The fact a console is made by Motorola (actually it is a generic PC carrying Motorola software and communicating with Motorola electronics in the back room) does not mean that the actual radios being used to talk and listen are made by Motorola. They could just as well be from any of the six or so vendors of such radios. Any of these consoles can be used to control any variety of today’s **conventional** two-way radios. The term “conventional” here is used to refer to radios that are not trunked and are not a part of the ARMER radio system.

If a PSAP intends to provide radio dispatch service to multiple counties as a part of the ARMER system, that PSAP will need to be equipped with a highly specialized set of console control component parts, which interface directly to the Internet protocol (IP) based ARMER network through the ARMER microwave backbone.

This set of radio control console equipment goes under the nomenclature Motorola MCC 7500 (and it must be Motorola since the ARMER system backbone components are all Motorola) and it is expensive.

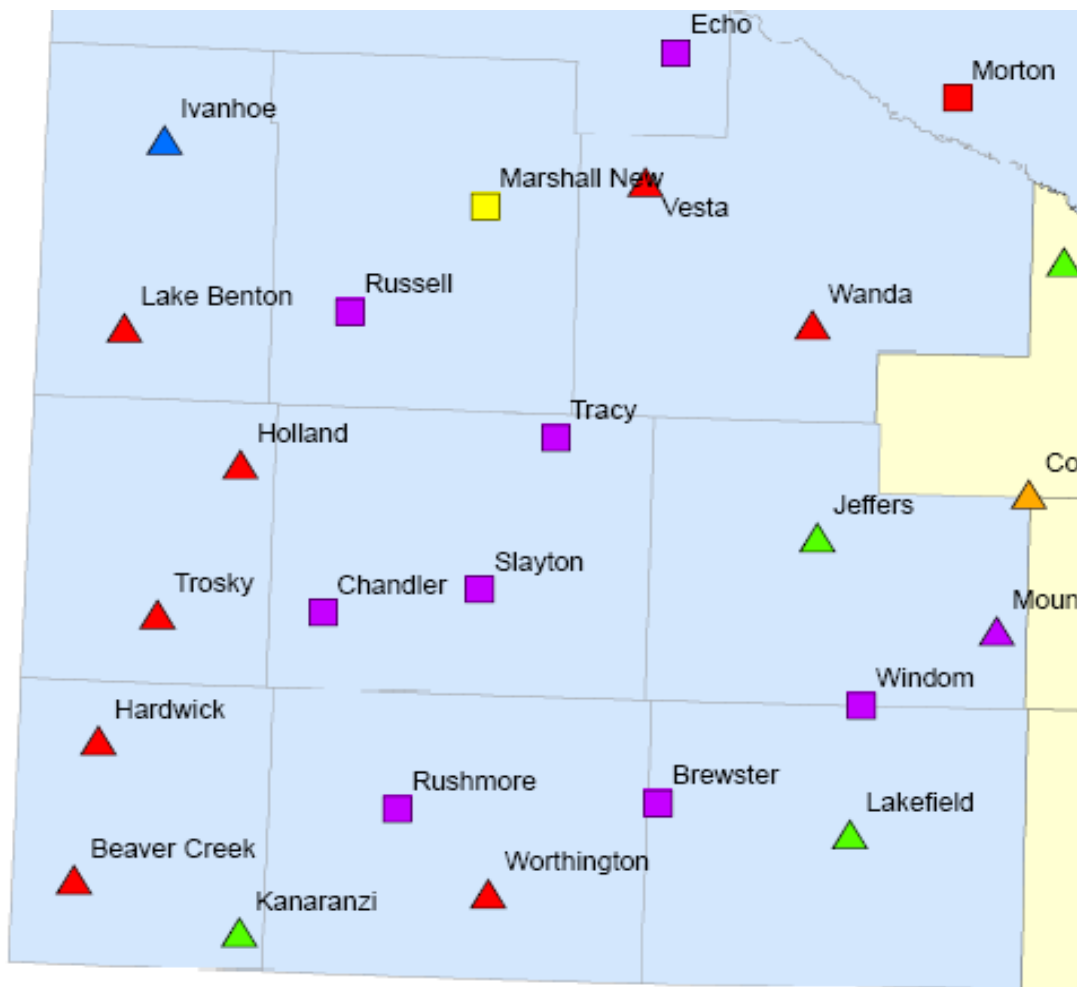
We have a good cost estimate for equipping a consolidated PSAP in SWMN 6 with four dispatcher workstations, a new logging recorder made especially for trunked radio systems and connectivity to the ARMER microwave backbone of \$700,000.

On the other hand, we have recent cost experience for similarly equipping (except for just two operator workstations) single, stand-alone PSAPs of \$200,000 and \$276,000 each.



That means if we average those two costs out at \$238,000 and then multiply that cost times the current six PSAPs that would need such configurations we see a total cost of about \$1,428,000, or about twice as much as configuring one consolidated PSAP with four radio control console workstations. Even if the consolidated PSAP were to require five such workstations, we would expect the \$700,000 cost to not go up much more than \$100,000.

For purposes of understanding the configuration of the ARMER radio network, the map below shows the planned locations for all of the ARMER tower sites in the entire Southwest corner of Minnesota. Any PSAP wishing to connect to ARMER in a fully interactive way (the recommended way and, likely the only way the ARMER Board would agree to for a PSAP serving multiple counties) will need to have a link (likely microwave, unless it is very close to the PSAP) to an ARMER tower site.



Based on our study of the costs, funding, staffing, technologies, workloads, and operational issues present in today's the SWMN 6 "emergency communications service delivery system", GeoComm encourages the SWMN 6 group and related public safety service providers in the SWMN 6 to envision a new way to deliver these services.

Such a "visioning" process involves several elements:

- How would such a service/entity be governed and managed?
- How would such an operation handle:
 - 9-1-1 call answering
 - Seven-digit call answering
 - Incident dispatching
- How would such a service/entity be staffed?
 - Where would its employees come from?
 - Who would they be employed by?
 - How many employees in what job classes?
- How much would such a service cost?
 - Up front, one-time costs?
 - Annual recurring costs?
- How would such a service/entity be funded?
 - How would costs be shared?
- What technologies should be used for:
 - Radio?
 - CAD?
 - E9-1-1 CPE?
 - Mapping?
 - Other?
- Where should such a service/entity be housed?

In this section we will begin to identify the several alternatives which appear available to the six counties. They, and their thumbnail sketches and some upsides and downsides are as follows:

Keep PSAP Operations as They are Today

- There is no requirement from the state or anybody else to reduce the number of PSAPs. Certainly, some counties in Minnesota who have looked at these issues and will look in the future will make the decision that doing nothing (except, perhaps, migrating to ARMER) is their best alternative.
 - UPSIDE: No change. No disruption to people's lives. Service levels stay at what they are today. Avoids the political problems of cutting jobs and trying to figure out where a merged PSAP would be located.
 - DOWNSIDE: Probably costs considerably more money over the next ten years, especially if the county desires to implement NG9-1-1, console access to ARMER. CAD, MDCs, more dispatcher training, better dispatcher supervision.

Implement Something Called “Virtual PSAP Consolidation”

- This is a concept that relies heavily on high speed data connectivity between all participating PSAPs, but at its heart is the operation of centralized:
 - NG9-1-1 CPE equipment at the “head PSAP”
 - CAD, AVL and GIS mapping equipment and software at the “head PSAP”
- Under it, each of the six PSAPs could operate physically independently, as they do today, but they would all be using shared E9-1-1 call taking equipment, shared radio console equipment, shared CAD, MDC and mapping equipment such that they would work just like they are all in the same room.
- Operationally, all 9-1-1 calls would initially ring (for the first couple of rings) in their “home PSAP” where the call would hopefully be answered. However, if the call could not be answered (because the dispatcher is doing EMD or is on some other task) it would automatically ring at a predetermined alternate PSAP. Since all PSAPs are sharing the same CAD and AVL data, then the dispatcher at that alternate PSAP could do with that 9-1-1 call whatever the dispatcher at the home PSAP might have done. In other words, all the dispatchers in the six separate PSAPs would be working kind of like they were in one PSAP.
 - UPSIDE: Everybody gets to stay where they are now and continue to provide the local services they do today. In addition, some increased capability to handle call spikes and provide coordinated response via shared CAD would be present. Avoids some of the political problems of cutting jobs and trying to figure out where a merged PSAP would be located.
 - DOWNSIDE: No cost savings in local personnel costs. Not as effective in doing “team dispatching” as everyone in the same room would be. Extreme reliance on data networking (which might require microwave hops from PSAP to PSAP). Would still have to purchase relatively expensive single PSAP upgraded equipment



Merge One, Two, or Three Agencies into One PSAP

- While this action would obtain some of the advantages set forth in a six (or greater) county merged PSAP, the member base over which the costs could be spread would be smaller. As such, it may be more difficult to justify such attributes as dedicated supervision and always having at least three dispatch capable staff on duty at a time to deal with flurries of activity.
- UPSIDE: Achieves some of the desirable outcomes of a PSAP merger. Could serve as a catalyst or “demonstration project” about how a PSAP merger would work.
- DOWNSIDE: May not be enough cost savings to offset the trials and tribulations of going through the process.

One of More PSAPs Decides to Shut Down their PSAP Operation and “Purchase Dispatching Services “from another PSAP Agency

- This would be like what Big Stone County has done with respect to Kandiyohi County.
- UPSIDE: It is probably not irrevocable and (with some considerable hassle) one could break off and re-establish their own PSAP again. It would probably cost less than what is being spent on the purchasing agency’s independent PSAP operation. Depending on what sort of contract the purchasing agency agreed to with the service providing agency, it would be possible to ensure some level of input into the service quantity and quality and some of the operations of the service providing PSAP agency.
- DOWNSIDE: No direct control of operations and related decisions, and only that level of control that one could contractually obtain and enforce from the seller. Presumably, the purchaser would have to pay all costs related to extending the seller’s technology to their county, such as CAD, MDC access, etc.

Merge all Six Agencies into One Jointly Owned and Managed PSAP

- GeoComm recommends that the SWMN 6 take the requisite steps to implement such a single, six county Emergency Communications Center.
- The remainder of this report will flesh out this recommendation and examine its many aspects.

Our primary reasons for this recommendation are two-fold:

- I. The level of professional dispatching services that could be provided by a staff that was dedicated exclusively to this function, under active supervision, with regular and quality training provided and with stringent quality assurance and control mechanisms in place and under professional executive leadership would far exceed that which any of the individual agencies can provide today. Some examples:
 - a. It is recommended that the PSAP implement full Emergency Medical Dispatch (EMD) services, with the requisite quality assurance monitoring regimen.
 - b. It is recommended that the PSAP explore implementing similar standards-based dispatching protocols for law enforcement and fire dispatching.



- c. It is recommended that a formal basic training program and personnel evaluation system be implemented for all staff, complete with quarterly performance reviews using actual work product exemplars for the employee (recorded calls and CAD and E9-1-1 printouts) so as to strive for continuous progress monitoring and quality control.
 - d. It is recommended that an in-house and regularized in-service training program be developed and implemented for all staff beyond probationary new hires.
 - e. It is recommended that regular tours of duty (three or four times per year, per dispatcher) for PSAP staff be arranged as law enforcement “ride-alongs” in all the served agencies, geared towards developing geographic and procedural familiarity, as well as bettering working relationships between the “two sides of the microphone”.
 - f. It is recommended that dispatch staff regularly attend fire department and other first responder scheduled drills and meetings for similar purposes.
2. Such a consolidated PSAP can provide this array of better emergency communications services with higher level equipment, more competently implemented and used, with significantly greater ability to handle spikes in work load at a lower cost than what is being spent for these core services today, and a dramatically lower cost than if these enhanced services and capabilities were to be provided in each of today’s six independent PSAPs.

Simply put, all 9-1-1 calls should be answered at one place, and at that one place, the persons answering the 9-1-1 calls should be able to take all information from the caller and provide all necessary information and services to the caller. With that as our fundamental recommendation, we will now provide our recommendations as to each of the earlier established criteria.

How Would Such a Service/Entity be Governed and Managed?

We strongly recommend that a model like the Joint Powers Agreement used in Dakota County, Minnesota or the one used to create the “CCE 9-1-1” three county dispatch center in Michigan be adopted. Simply put, this should be a **shared effort, shared management, and shared responsibility** endeavor, and not a function of any one single unit of government selling these essential public services to other units of government. All the counties/entities that are involved with 9-1-1 today should share in the management and responsibility.

The question of how large such a Board should be and who should be on it can often be contentious. The approach we have taken is to recommend a nine member Board with membership consisting of some elected County Commissioners (to represent those who will be paying for the PSAP), some elected Sheriffs (to represent those who manage most of today’s PSAPs and who have a legal role under Minnesota Law in this regard), a city police chief to represent those users, a fire chief to represent those users and a person representative of the EMS responders in the region.

Clearly, these choices can be debated and modified, but suffice it to say that we rarely see such Boards where the members are exclusively the Sheriffs.



The reason for this seems to be that if there were to be a Board made up exclusively of some or all of the Sheriff's, that Board would still not have any direct input into the role of taxing and generating the funds necessary to operate the PSAP.

Simply put, at some point in time, each of the six County Boards are going to have to get involved in paying for this PSAP, and it seems as if in most places they recognize this eventuality and put members of the ultimate governing boards and city councils where the taxes are actually raised on the PSAP Board. In fact, in looking at the Boards for both the Dakota Communications Center as well as the CCE9-1-1 Board in Michigan we see far more (up to exclusive) Board membership made up of Board/City Council level elected officials with taxing powers.

This Board should hire, supervise, fire, and be the exclusive boss of the Director of Emergency Communications, who should be an at-will employee who serves at the pleasure of this Board. This Director should then be authorized to hire, supervise, and fire any such subordinate employees as the Board may authorize.

In addition to this Board, we also recommend the creation of an active Operations Committee. On this committee we would like to see a ranking operations officer from each of the six Sheriff's Department, as well as similar type members from the larger municipal police departments (something like three FT officers or larger), as well as a chief officer from three or four of the larger fire departments and two of the smaller fire departments. This Committee should be involved in developing and approving the shared operational procedures for the PSAP, with the objective of having as few "agency specific" procedures as follows. The fewer such agency specific procedures are needed, the less the chance for failure to implement such a rarely used procedure.

How Would Such a Six County PSAP Operate?

9-1-1 Call Answering

In order to gain the greatest staffing flexibility and efficiencies, we recommend staffing this single PSAP with "generic dispatchers" who are all cross-trained in the several basic tasks involved. These are:

- 9-1-1 call answering and CAD incident entry.
- Provision of Emergency Medical Dispatch (EMD)
- Law enforcement radio dispatching
 - To include MN/JIS and NCIC 'hot files' certification and work
- Fire/rescue radio dispatching.
- EMS radio dispatching



There are two basic configurations in which these staff could be deployed.

- ONE STAGE
- TWO STAGE

ONE STAGE

Under ONE STAGE, the same person that answers the telephone call also enters the event into CAD, regardless of which agency(ies) the caller requires. This is often viewed as the “cleanest” and “most pure” form of CAD event entry, in that there are no call transfers, and the call taker is often (but not always) the same person who radio dispatches the responders. Generally, only smaller PSAP agencies can operate in a pure ONE STAGE configuration, and the SWMN 6 would be a good size for a ONE STAGE configuration. However, we will be recommending a slight variation on ONE STAGE, which we think, will provide most of the benefits.

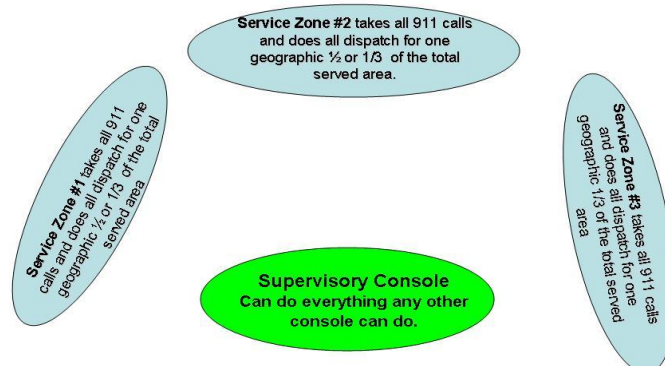
TWO STAGE

Under TWO STAGE deployment, the role of “call taker” is separated from the role of “dispatcher”, and the call taker takes the telephone call and enters the response incident into CAD, but is never the one who radio dispatches that event. This configuration is prevalent in virtually the entire nation’s largest 9-1-1 PSAPs, and is often a “necessary evil” that comes with very large PSAP operations.

Once one makes the ONE STAGE versus TWO STAGE decision, and then the next choice is whether or not one will have dedicated dispatch workstations on each shift, based on geography and/or type of agency being dispatched. If one chooses TWO STAGE, then this question is more relevant.

The configuration model we are recommending does not yet have an industry accepted name, but we refer to it as the “SERVICE ZONE” model.

Simply put, imagine a room containing three or four high-tech workstations. We see this room usually staffed for two or three “GEOGRAPHIC ZONES” and one “SUPERVISORY” workstation and one or two overflow workstations, which could be configured and staffed as required by the activity level. They would look like this:



Each of the three geographic “service pods” would be staffed by one dispatcher. Within each pod, they would:

- Answer all 9-1-1 calls from the geography for which they are providing law enforcement dispatch. These calls could either be selectively routed to their pod, where they would ring only on the 9-1-1 telephone at that pod. However, all 9-1-1 trunks from all three pods would appear on the 9-1-1 telephones at each pod, so that if a given pod is getting swamped with 9-1-1 calls, dispatchers in the other pods could “overhear” their rings (but from a distance) and help out by answering calls.
- (OPTIONAL) Answer seven-digit calls for seven-digit numbers associated with the law enforcement agencies within the geographic area served by that pod.
 - The degree to which there would be such “geographic based” seven-digit calls would largely be a function of the “seven-digit call taking role” that was determined for the new PSAP. If it were to be decided that many of the seven-digit call answering tasks/roles currently being performed by dispatchers at today’s six discrete dispatch centers were to be retained at those local facilities (and handled by others), then there would not be nearly as many seven-digit calls to be answered at the new central PSAP. In addition, to the extent that any or many seven-digit calls are to be answered within a given geographic pod, today’s existing agency seven-digit numbers could be routed to the appropriate pod.
- Provide Emergency Medical Dispatch (EMD) as appropriate.
- Enter CAD events for all law, fire and EMS calls received.
- Radio dispatch and manage ongoing response and activities occurring within that geographic area for which they are taking calls and dispatching.
 - However, each dispatcher would also have access to the radio channels, CAD events, AVL locations, etc. for the other dispatcher(s) so they could handle or help with tasks for them, as the need might arise.
- Simply put, during a relatively slow time, with no competing events occurring, and assuming there are two dispatchers on duty and one supervisor, the six counties could be divided in half, with one dispatcher handling (for example) Pipestone, Rock, and Nobles Counties. These three counties account for a population of about 40,448, and an annual 9-1-1 call volume of about 11,728, or an average of 32 per day, or 1.34 per hour. This is a work load roughly equivalent to or just higher than what is being handled by one dispatcher on most shifts in most 35 – 50,000 population PSAPs. **But, (and this is critical) unlike most “one dispatcher on duty” PSAPs, this PSAP has one other dispatcher (at least) and one supervisor usually in the room fully trained and usually available to help out this one area’s dispatcher during a flurry of activity.**
 - Of, course, this presumes that the same flurry of activity that is impacting dispatcher 1 at this instant is not also impacting dispatchers 2 and/or 3 and the Supervisor at the same instant, and given the geographic separation of the six counties, that seems to be a good presumption. Even in the event of something like a tornado, it is highly unlikely that it would be striking all six counties at the same time.



- The other one of these two dispatchers would be handling the other three counties (Redwood, Lyon, and Murray, in this theoretical example)¹ which have a total service population of 50,980 in much the same way as above. This geographic arrangement would have an annual 9-1-1 call volume of 15,915 (43.6 per day or 1.82 per hour), still (remembering that there are at least two other dispatchers nearby to help during peaks) within the high range of what a single dispatcher can handle.
- It is also possible (and done quite often in larger PSAPs) to have the number of geographic dispatch zones in operation change throughout the day. It would not be at all difficult to staff two dispatch zones from something like 2 a.m. (when activity drops off) to 2 p.m., (when activity picks up) and then go to three zones from 2 p.m. to 8 p.m. and, if it is a special activity night like July 4th or New Year's Eve open a 4 zone with a 4th dispatcher from 8 p.m. to 2 a.m. During this expansion and contraction of the number of dispatch zones, the radio system talk-group that the units in a given zone (usually a county or two or three) would use to deal with their dispatcher would change.
 - Assume there are 4 “dispatch talk-groups” available. If we are operating in a two zone mode, Zone 1 would use talk-group 1 and be controlled by the dispatcher at the Zone 1 console. At the same time, units in Zone 2 would use talk-group 2 and be controlled by the dispatcher at the Zone 2 console. During this time, the system would operate under a “2 zone map,” which would place Counties A, B and C in Zone 1 and D, E and F in Zone 2.
 - When one moves to a “three zone map” (at 2 p.m. in our example) the counties are now grouped A & B, C & D, and E & F, with A & B on talk-group 1 handled by the Zone 1 console, C & D on talk-group 2 handled at the Zone 2 Console and E & F on talk-group 3 handled at the Zone 3 console.
 - ◆ Importantly, field ARMER radios have scan in them which would permit officers working on talk-group 1 to also be scanning (on a secondary basis, of course) talk-group 2, 3 and so forth.
- If and when it becomes necessary to adopt a “4 zone map” the geographic configuration could be based on which of the counties has the extra high activity load necessitating a 4th zone. Assume, for example, there was a big event taking place in Marshall, the largest single city in the six counties. The City of Marshall could become Zone 4 unto itself, have its own dispatcher and its own talk-group for as long as was necessary. The same could be said for the City of Worthington, or a given single county, all based on where the workload is coming from. One could even take a sub-area such as “Interstate 90” as it traverses Rock and Nobles Counties and make it a “dispatch zone” unto itself so as to concentrate all dispatch activity for the two Sheriff's Departments, the relevant police and fire departments and any State Patrol and/or DOT units working some major incident on the Interstate onto one talk-group served by one dedicated dispatcher at the Zone 4 console.

¹ There are other certainly ways the six counties could be paired up to arrive at a closer match of service populations and/or workloads. The above arrangement is done strictly on the basis of geographic proximity. One of the clear advantages of the new ARMER radio system (which is presumed to be implemented for this merged PSAP) is that there are nearly infinite ways to arrange one's field radios into geographic based talk-groups without having to consider such issues as which talk-groups have better coverage in which areas.

How Would Such a Service/Entity be Funded?

There are two basic ways of funding such an operation:

1. Adoption by the merged PSAP of a cost sharing formula via which the served agencies pay their share of the costs of the operation, with the served agencies getting the funds for their share from their traditional fund sources in city or county government.
2. Receipt of funds from external sources such as wireless 9-1-1 surcharge proceeds, grants, and service fees for the provision of other services.

How Should Costs be Shared?

How to share costs is always a very complicated question, and it gets even more complicated when one has member agencies that have non-concurrent jurisdictional areas, as is often the case with city police departments and fire departments, where the fire department provides services outside the city limits, but police do not. In the Dakota Communications Center model in the Appendix, their task was relatively simple, in that the member agencies are the eleven cities and the one county, and all the response agencies (law, fire, and EMS) are functions of those eleven cities and one county. For example, activities conducted by the Farmington Fire Department, added to activities conducted by the Farmington Police Department add up to 4.83 percent of the total workload of the PSAP, so the City of Farmington will be billed for 4.83 percent of the agreed upon annual budget of the DCC.

However, this issue comes short of the real question. Specifically, via what mechanism should the costs be shared? Should it be:

- On the basis of the population of six counties?
- On the basis of how much of the work at the merged PSAP a given county accounts for?
- On the basis of the number of 9-1-1 calls placed from each county?
- On the basis of a county's ability to pay? (Perhaps based on assessed valuation)
- Or a combination of the above?

Let us examine how a couple of these would work:

The population breakout for the six counties is as follows:

Lyon County	27.7%
Murray County	9.98%
Nobles County	22.7%
Pipestone County	10.77%
Redwood County	18.31%
Rock County	10.58%



The breakout of the number of 9-1-1 calls received in 2008 is as follows:

Lyon County	36.03%
Murray County	7.92%
Nobles County	26.62%
Pipestone County	8.58%
Redwood County	13.62%
Rock County	7.22%

The breakout based on each county's 2009 Taxable Market Value is as follows (rounded to the nearest million):

Lyon County	\$2.820 billion (22.99%)
Murray County	\$1.838 billion (14.99%)
Nobles County	\$2.113 billion (17.24%)
Pipestone County	\$1.214 billion (9.90%)
Redwood County	\$2.626 billion (21.42%)
Rock County	\$1.650 billion (13.46%)
Total	\$12.261 billion (100.0%)

Clearly, based on the above three proportional breakdowns the mechanism that is chosen to determine how to allocate shared costs will have a significant impact on the amount of money each entity would have to pay. For example, if a merged PSAP had an annual budget of \$1,000,000, Lyon County would have to pay each year \$270,700 based on a population split, or \$360,300 if based on 9-1-1 calls, a swing of \$82,600 per year. Further, if the split were just based on Taxable Market Value, Lyon County's share would be 22.99 percent or \$229,000 of the theoretical \$1 million annual PSAP budget.

It has been our experience that basing cost sharing strictly on some sort of workload measure (counting some type of 'widgets' handled each year for each agency) can be very problematic. The first issue is coming up with a consistent and trusted way of counting those widgets. After all, each widget counted or not counted means an agency will have to pay more or less next year. One can imagine that if the 'widget' being counted were 9-1-1 calls, an agency wanting to reduce their exposure to cost sharing might encourage their citizens to call the seven-digit number at the PSAP to get a response. On the other hand, if 'dispatched incidents' were being counted, and a traffic stop called in on the radio was such an incident, one can imagine an agency discouraging officers from calling in such traffic stops. That might not mean the traffic stop is not performed, just that the safety measure of calling it in on the radio would not be done.



We are favorably inclined towards a “blended approach” that works as follows:

- The total annual budget of the merged PSAP is determined.
- Any “carve outs” to this budget are agreed to.
 - Example, the merged PSAP is located in a member agency’s facility, meaning that member agency gains certain advantages by having the PSAP in their facility that the other agencies could not benefit from. For example, handling walk-in traffic for that agency, or handling jail door control for that agency’s jail.
 - This negotiated “carve out” would be paid for directly by the benefiting agency, and not subject to sharing.
- Alternately, if there are any negotiated add-on charges that an agency providing space or services to the merged PSAP needs to recover, those add-ons are added to the annual operating budget.
- The resulting “costs to be shared” budget is finalized.
- This figure is split into two equal halves.
 - The first half is shared based on a population split.
 - The second half is shared based on an assessed valuation split.
- Each year, new assessed valuation figures are available and would be used. This element essentially reflects a county’s “ability to pay.”
- Trusted annual population estimates could be used for annual re-calculations, or one could wait and rely on the decennial census figures and adjust every decade.

Under this concept, if we use again our clearly theoretical \$1,000,000 annual PSAP budget, the process would look like this:

	Total budget = \$1,000,000	
50% split to be based on pop. = \$500,000		50% split to be based on assessed valuation= \$500,000
Each county’s share of this 500K ↓		Each county’s share of this 500K ↓
	Each county’s total ↓	
Lyon at 27.7% = \$138,725	\$253,675 (25.68% blended)	Lyon at 22.99% = \$114,950
Murray at 9.98% = \$49,800	\$124,750 (12.48% blended)	Murray at 14.99% = \$74,950
Nobles at 22.7% = \$113,400	\$199,600 (19.96% blended)	Nobles at 17.24% = \$86,200
Pipestone at 10.77% = \$53,725	\$103,225 (10.33% blended)	Pipestone at 9.9% = \$49,500
Redwood at 18.31% = \$91,550	\$198,650 (19.87% blended)	Redwood at 21.42% = \$107,100
Rock at 10.58% = \$52,800	\$120,100 (12.01% blended)	Rock at 13.46% = \$67,300
Total: \$500,000	\$1,000,000	Total: \$500,000



How Would Such a Service/Entity be Staffed?

Our workload analysis, when applied to the “Geographic Service Zone” model discussed earlier, indicates that the following staffing ranges would be appropriate for the workload in a single SWMN 6 County 9-1-1 PSAP:²

- Lowest activity period (10 hours per day): two dispatchers on duty.
- Mid-range activity period (14 hours per day): three dispatchers on duty.
- Peak activity periods (16 hrs/week, could be split up): four dispatchers on duty.

Total dispatcher hours (sitting at a console) to be filled per average day: 62.85. Total staff hours **in the chair** required per year (62.85×365) **22,941** hours. Dividing these 22,941 required dispatch staff hours by the previously estimated 1,846 “in the chair” hours per FTE dispatcher per year, **the result is 12.43 FTE dispatchers** required.

We would also recommend a cadre of five **LEAD DISPATCHERS** working 9,230 actual hours per year. This would mean one Lead Dispatcher (acting as the Shift Supervisor) would be on duty for every one of the 8,768 hours per year, plus with about 462 hours left over for service as a classroom trainer, community outreach, agency coordination and other activities.

In addition, we would recommend that two “extra duty assignments” for the Lead Dispatchers be developed, with one being additionally assigned as the **TRAINING/HUMAN RESOURCES MANAGER**, and the other being assigned as the **TECHNOLOGY MANAGER**. We see these as being “discretionary assignments” by the Director, under which the Director would pick two of the total of five Lead Dispatchers at any time to serve in these slots for career development, rotation, etc.

We also recommend the creation of a support position that we would call “**9-1-1 COORDINATOR**” to manage all 9-1-1 addressing, mapping, MSAG data, and routing issues. This individual would also handle the organization’s clerical and administrative and records functions.

Finally, we recommend that a Director of Emergency Communications position be created which is appointed by the PSAPs governing board and serves at said Board’s pleasure.

² **IMPORTANTLY**, the workload to be handled at such a PSAP cannot be precisely defined at this time, and until certain decisions are made as to what tasks this central PSAP would perform. Chief among these factors is the question of “**What to do with the non-dispatch related seven-digit calls?**” To the extent that these calls are to be answered at this central PSAP, it might mean more workload and require more people.



In summary then, the FTE we are recommending would be as follows:

Dispatcher	12.43 FTE
Lead Dispatchers	5.00 FTE
9-1-1 Coordinator	1.00 FTE
Executive Director	1.00 FTE
Total FTE	19.43 FTE

We would recommend serious consideration be given to permitting permanent, professional part-time employees in the rank of dispatcher and possibly in the rank of Lead Dispatcher as well. We would propose that these part-time staff be paid and benefited on a strictly pro-rata basis. This would mean that full and part-time would earn the same hourly rate of pay appropriate to their seniority, and that part-time (if they worked at least a minimum of, say, 50 percent of FT) would receive fringe benefits on a basis proportional to the percentage of full-time hours they work. Using part-time effectively provides a huge increase in staffing flexibility in that one can schedule less than eight hour shifts to match the spikes in workload so common in PSAPs, but nonetheless largely predictable. It also means that if it is a slow shift, one can let part-timers go home early, thereby saving payroll costs. Furthermore, it means that if there is a shift shortage, one can fill vacancies by bringing in part-timers on a straight pay basis, rather than having to pay overtime to full-time employees.

It has been our experience that the opportunity for employees to migrate from FT to PT and maybe back to FT (or any other order) can be an attractive way to retain staff, as the job can be more tailored to their personal needs (parenting, school, age, health, etc.) for the particular place they are in their lives. In addition, certainly, to fulfill the term “professional part-time” would mean that these employees would have to be held to the same training, certification, and performance standards as full-time staff.

Another benefit of this approach, particularly at the outset of operations of the new merged PSAP where there had been as many as 40 folks doing these jobs in the six separate PSAPs, could be that by offering prospective employees the choice of PT or FT employment at the generally higher hourly rate of pay we see for this merged PSAP, one could possibly provide jobs for all of today’s dispatchers who wanted to work at the new, merged PSAP. If so, this could resolve what is often one of the stickiest problems, that of dealing with existing employees losing their jobs due to the PSAP merger.



How Much Would Such a Staffing Arrangement Cost Per Year?

Earlier, we established that the pay rates for staff at the six PSAPs today are as follows:

County	Start pay/hour	Top pay/hour	Midpoint
Lyon County Sheriff's Office	\$13.81	\$19.32	\$16.57
Murray County Sheriff's Office	\$14.41	\$18.01	\$16.21
Worthington Police Department	\$17.99*	\$21.17*	\$19.58*
Pipestone County Sheriff's Office	\$13.81	\$18.04	\$15.93
Redwood County Sheriff's Office	\$13.59	\$19.68	\$16.64
Rock County Sheriff's Office	\$13.13	\$19.21	\$16.17
Averages	\$14.46/hour	\$19.24/hour	\$16.85/hour

(*) Top rate

Because we believe that the staff for any new SWMN 6 merged 9-1-1 PSAP/dispatch center would have to come largely (if not entirely) from staff currently employed in these roles at today's stand-alone agencies, we think it is not likely that the rate of pay for employees of this new entity could be less than the highest rate of pay for the incumbent agencies³.

Therefore, we recommend doing this planning using the Worthington City pay rates as the pay rates for all dispatchers in the new entity, with one exception. Specifically, we would recommend a 'Probationary/trainee' rate of pay for new hires with no prior experience at 75 percent of the Worthington pay rate, for the 1st year or until they pass probation, whichever comes first. Simply put, the "failure rate" of new hire dispatchers in most PSAPs is too high to justify spending full pay on un-proven new hires. Therefore, we would suggest paying them \$13.49 per hour to start with an instant raise to \$17.99 per hour once they pass probation. This could be as early as they can prove themselves to their trainers, but not later than one year, at which they either pass probation and get the raise or are let go.

Therefore, for the purpose of building a staffing budget, we will assume that 85 percent of the staff has passed probation at any one-time, and that the midpoint of \$19.58 per hour would represent the average hourly rate of pay for these 85 percent of hours worked. Then the remaining 15 percent of hours would be paid at the \$13.49 hourly rate. The math:

- 12.43 FTE dispatchers are paid for 25,855 hours per year
- 85 percent of 25,855 = 21,977 hours

³ These dispatchers (and others) would be employed by a new entity, and it is our belief that, as such, their labor agreements with any existing entity would no longer be applicable. However, it is also reasonable to assume that these employees of this new agency (except for the Director) would choose to organize as a new represented group. Assuming this took place, these wage rate calculations would certainly be replaced by whatever the negotiated pay rates ended up being.



- 21,977 hours at \$19.58 per hour average pay = \$430,310 per year
- 15 percent (trainees) of 25,855 hours = 3,879 hours
- 3,879 hours at \$13.49 = \$52,327 per year
- Total straight pay dispatcher trainee & regular staff= **\$482,637 per year**

For the Lead Dispatchers, we recommend a premium pay rate 15 percent above the highest rate for dispatchers, or 115 percent of \$21.17/hour = \$24.35/hour, x 2,080 hours per year = \$50,648 x 5 FTE = **\$253,240 per year** in straight pay.

For the 9-1-1 coordinator we recommend a rate of pay equivalent to the “dispatcher trainees” with an average being \$13.49 per hour or **\$28,059 per year** in straight pay.

Finally, for the Executive Director, we have seen compensation for positions such as this well into the \$90,000 - \$100,000 range in other markets. However, in those markets we have also seen significantly higher rates of pay for working staff in PSAPs. Therefore, since the dispatcher pay rates in the SWMN 6 are relatively low (compared to urban markets we have studied), we are also recommending a relatively low pay for the Director of **\$66,000 per year** (150 percent of the highest dispatcher rate of pay and 130 percent of the Lead Dispatcher rate of pay.)

Adding up the above **highlighted** annual totals results in a total direct pay amount of \$829,936 per year for all staff.

Thanks to some very thorough direct and indirect dispatcher labor cost data provided by Rock County, we have determined that the added cost of indirect labor elements (amounts not paid to the employee but which still cost the employer money) such as Holiday Pay, Shift Differential Pay (assuming they are negotiated into a contract), employer contributions for PERA, FICA, Medicare, and Social Security amounts to about a 29.4 percent additive factor, not counting health insurance, which is not dependent on base pay. Therefore, we need to take the above total direct labor expense of \$829,936 and increase it by 29.4 percent, resulting in a new total of \$1,073,937.

To this, we need to add \$6,000 for health insurance times 19 FTE for a total of \$114,000 per year.

This makes the grand total for all labor costs **\$1,187,937**.

This figure represents a 28.24 percent reduction (\$467,543) in overall labor costs when compared to what is being spent in today's six PSAPs.



Where could this Merged PSAP be Located?

Assuming some decision is made by some or all of the six entities to merge their 9-1-1 PSAPs, this has the potential of being the most debated topic of this analysis.

The reasons for this are fairly obvious, predictable and understandable. They include:

- Agency and hometown pride.
- A desire to maintain a higher semblance of local control (even if the PSAP is technically and factually operated and controlled by a JPA Board).
- Convenience for current employees who would like their new workplace to be closer to their homes.
- Attractiveness to potential new member agencies in terms of being more centrally located (from their perspective).
- Convenience for member agencies to attend functions at the merged PSAP, such as board and committee meetings.
- Convenience for member agency field staff to stop by the merged PSAP for business or simply get-acquainted visits (which are not a bad thing!).
- Opportunity for the merged PSAP (especially if it is located in an exiting member agency facility) to provide to that housing agency some service(s) that could not be offered to other member agencies.
 - Example: If the PSAP were housed in Agency X's facility, and from that PSAP room the PSAP staff could monitor (via CCTV) jail activity and, perhaps, open and close doors, that could be of some value to Agency X.
 - Example: Field staff from PSAP hosting agency "County X" would find it much more convenient, and would almost certainly take far greater advantage of stopping by that local and convenient PSAP (presumably in their own HQ building) for coffee, to chat, to use the MN/JIS terminal and so forth. It is easy to imagine that this would likely mean that the PSAP dispatchers would "*feel more a part of*" the County X Sheriff's Department or the City X (same county) Police Department than they would of the County Z Sheriff's Department located 50 miles away, and with whom they rarely had any personal contact.
 - The significance of these dynamics on how a merged PSAP is **perceived** by those it serves most closely and frequently (field law enforcement personnel) should not be under-estimated, and conscious, visible, and even overly obvious steps would need to be taken to counter any such inappropriate perceptions. Some examples of these measure we have seen include (but are not limited to):
 - ◆ A distinct name for the PSAP agency that cannot be confused with any member agencies, and strict adherence to that name in all correspondence and communications.
 - ◆ Distinct uniforms and identity for agency staff that do not look like those of any of the member agencies.
 - ◆ Even if dispatchers do not have uniforms today.



- ♦ Measures to either restrict access to the PSAP space and staff by host agency staff (not recommended) or overt efforts to encourage visits by and to other agency staff to counter this.

While any merged PSAP has to be located someplace, some have chosen to avoid the above issues by passing up the opportunity to use what might otherwise be appropriate and available space in an existing member agency's facility and finding or constructing another structure in some community (which would still end up being located in some county) that would be separate from "Agency X" and could develop its own identity.

Clearly, if there already existed appropriate and available space (at the right price) in one of the member agency's facilities, passing that up and deciding to spend new dollars on a new or retro-fitted PSAP facility elsewhere could be a tough decision to make, especially when the rationale might be viewed as being based on "soft issues" such as *perceptions*.

One of the issues which is not very relevant to this particular analysis for this particular set of six counties is the geographic location (from a technical perspective, at least) for the merged PSAP. This is also an issue, which is somewhat unique to a PSAP consolidation study involving several counties, as opposed to one involving one county and the several city PSAPs located within it.

What we mean by this is that with the E9-1-1 network already in place, all provided by the same vendor for all six counties, and with the State of Minnesota's new NG9-1-1 network well underway, the place where 9-1-1 calls that are dialed from anywhere within the geography of these six counties would be answered is of no technical consequence. Without any overstatement at all, these 9-1-1 calls (seven-digit calls too) could be answered at the Cook County Sheriff's PSAP in Grand Marais, Minnesota, as far away (458 miles) from Luverne as a location somewhat south of Wichita, Kansas would be. That is the power of telecommunications networks.

Similarly, with all six counties set to become users of the statewide ARMER radio network for their day-to-day activity, two-way radio dispatching for all six counties could be done from Grand Marais, just as well.

For example, note that Big Stone County (Ortonville is the County Seat and the location of their Sheriff's Department) has chosen to contract for 9-1-1 call answering and radio dispatch services from Kandiyohi County (Willmar), skipping over or by-passing the geographically closer counties of Lac Qui Parle, Chippewa, Stevens, Swift, Pope, Traverse, and Yellow Medicine.



In the days of Basic 9-1-1 systems (less than a decade ago for some of the SWMN 6 Counties), and with conventional local two-way radio systems, the geographic expanse of any given merged PSAP area would have to be an issue of major concern. And, if one only looks at the example presented by the CCE 9-1-1 PSAP we have studied in Michigan, there they did not have the advantage (back in the mid 1990s when they started up) of a wide area shared, trunked radio system, like ARMER. Rather, when they merged they had to extend access to and control of three county's local two-way radio systems to the new merged PSAP facility on Petosky. This meant either installing expensive microwave towers and links from Petosky to the several radio transmit and receive towers remotely located in Charlevoix and Cheboygan Counties, many dozens of miles away, or using very expensive (high monthly bills from the telephone companies and historically unreliable) leased and dedicated telephone circuits.

However, assuming that all regular two-way radio activity were to be conducted over the ARMER system (and that means all two-way radio communication to and from all law enforcement, fire, and EMS units and any other unitse.g. city public works, county highway department, etc.), and understanding that the ARMER system will be covering the entire state with a "blanket of coverage" adequate to provide service to portable radios, on the street (not necessarily inside buildings, although in-building coverage will be a convenient by-product in many places) virtually everywhere, then the "coverage from the PSAP" issue tends to be a moot point.

However, we stressed two-way communications. We did this to differentiate it from one-way emergency communications activity, such as that used in the paging (often called "toning out") of volunteer fire departments, medical first responder units or personnel and EMS (ambulance) units. Simply put, one cannot do paging on the ARMER 800 MHz system, per se.

That means that most of today's fire departments and other agencies which now rely on VHF (150 MHz) paging for notification of their incidents will continue to do so into the future. This means that any PSAP responsible for paging the XYZ Fire Department will have to still page that department, even if that fire department's paging base station transmitter and tower is located 100 miles away.

Usually, this would mean that said PSAP would have to (like CCE 9-1-1) put in microwave towers and links out to that distant fire paging base station, lease expensive and unreliable telephone circuits out to it, or implement a sort of "poor man's solution" involving a low power radio frequency link over some UHF radio channel (450 MHz) from the PSAP out to the remote paging transmitter. But the existence of the ARMER system and, particularly, it is very high-end and robust microwave network linking all ARMER tower sites provides a good alternative to this problem. Here is how that can work:

- Assume that the merged PSAP is located somewhat near and has connectivity to an ARMER tower. (See the ARMER tower site map in Section 5, page 5-11)



- Assume that the fire departments and others requiring paging are located too far from the merged PSAP to rely on a transmitter on the tower at the merged PSAP.
- Assume that the remote fire and other base stations to be used for paging would be re-located from their current locations to an already existing radio equipment shed at the nearest ARMER tower site and connected to an antenna to be installed on that ARMER tower site.
- Assume that the FCC would re-license said base station in this new location at the ARMER tower site (this is called “frequency coordination” and needs to be done to insure that using this frequency at this new location at this antenna height and power will not cause harmful interference to somebody licensed on this or an adjacent frequency within about 75 miles).
- Create an addressable IP location for this fire paging base station at this ARMER tower site and connect this fire paging base station to the IP network being carried over the ARMER digital microwave backbone and which has a drop at this ARMER tower site.
- Then any PSAP with access to the ARMER microwave backbone network anywhere in Minnesota which has the proper digital code to address this fire paging base station can activate it and send paging tones out over it (and hear any replies that it may also carry) from the distant merged PSAP.
- All of this has no recurring costs and the minimal up-front costs of relocating the fire paging base station and hanging a new antenna up on the nearby ARMER tower site.

The bottom line on this technology piece, especially as it relates to legacy radio systems (old paging systems) is that in some way, the dispatchers in the merged PSAP must be able to get either DC voltage or audible “function tones” or a digital command signal followed by digitized voice or sounds to (and from) the fire paging base station located many miles away before that remote paging base station can do what it is supposed to do.

Having established that technical issues are not a major player in the parameters of the decision on merged PSAP location, it then comes down to the questions of:

- How much space of a certain type is needed?
- Where is such space available (or can it be created or accessed)?
- What other factors should be weighed in the decision?
 - Convenience to potential staff.
 - Convenience to current member agencies.
 - Access to potential new member agencies.
- What process should be used to answer the above questions?
 - We recommend an informed decision by the Merged PSAPs JPA Board.

Having established that some of the issues that will clearly be present in this decision are not amenable to hard cost calculations, it might be appropriate to approach this from two angles.



One is to establish a rather solid known option as one choice and apply to that choice as many as the variables in the decision process as possible. The other would be to set forth a sort of “blind process” that would lead the decision making down a path whereby **“If A = B, and B = C, and C = D, then A = D”** type of outcome.

As we visited the six counties and their current PSAPs, one of the things we were looking for was any candidate places that could serve as a merged PSAP. As we did this, one that stood out was the existing PSAP located in the Prairie Justice facility in Worthington. The reasons for this were totally related to its large size, relatively new construction, security inherent in having no general public access, its recent construction, and the higher technical standards that entails.

However, its location inside the headquarters of two of the agencies who would be participating members of the merged PSAP (Worthington Police and Nobles County Sheriff) was an obvious factor, probably more on the negative than positive side. The reason for this is simple: Any time a joint PSAP is located within the facility of one (or more) of the member agencies, it can be an uphill battle from day one for that merged PSAP to create and maintain its own, independent and “equal service to all” identity.

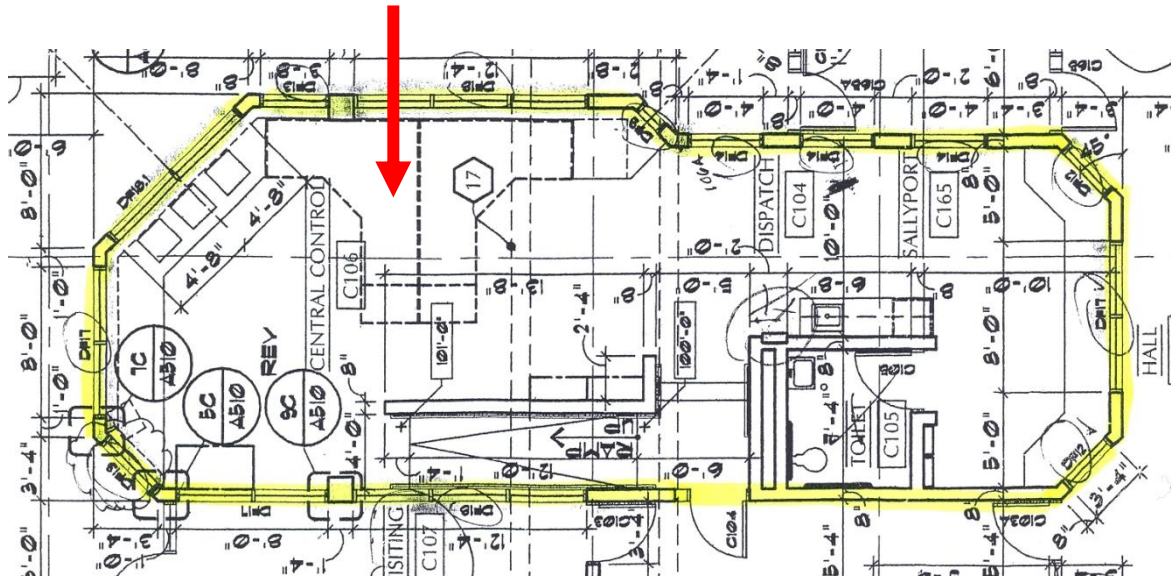
Similarly, being located in Worthington near the far Southwest corner of the six county study area, and further away from any future possible member counties was also a factor, probably not on the positive side.

Ideally, if there were to be (or is) a space equal to that in the Worthington/Nobles PSAP, of the same security and other qualities, with the same access to a tower and a nearby ARMER tower site that was not already identified with some of the member agencies and was already located someplace near Slayton (more in the center of the six county study area) and was available at a reasonable price, such a place would clearly have jumped to the top of the list as a good “known alternative candidate location” for a new merged PSAP.

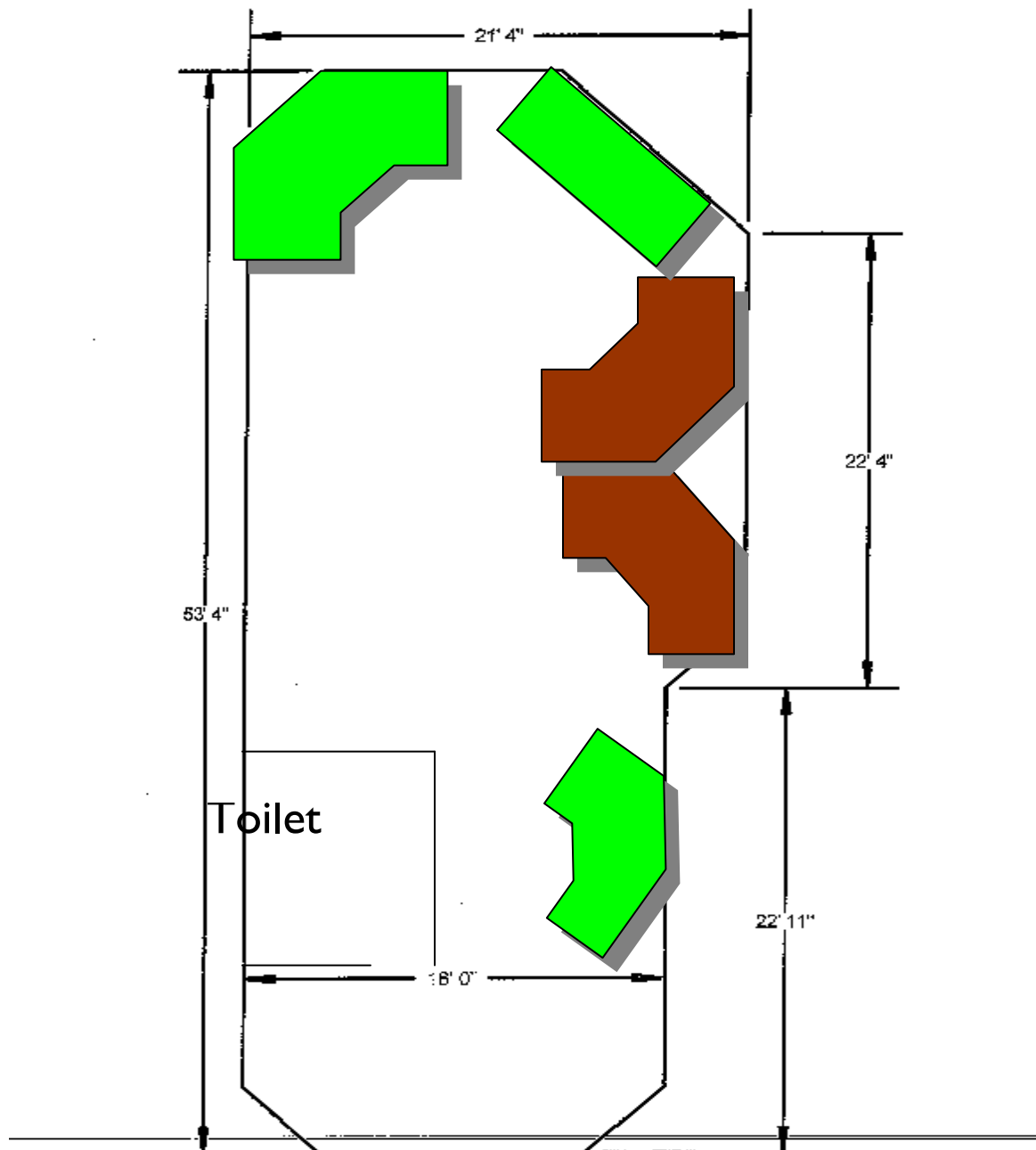
However, we are not aware of such a space, so **for the purpose of this exercise only** we will use the space in the Worthington/Nobles PSAP as a candidate site for analysis and cost development. For brevity, we will call this the “PJC Site” (Prairie Justice Center Site).



The PJC site comprises approximately 1,026 square feet and has the following dimensions and configuration: Existing consoles are indicated by the red arrow.



From another perspective, and adding in potential consoles:



Note: The tan objects above are the existing dispatch consoles.

The green are potential new dispatch consoles/workstations.

Object sizes are not necessarily to scale.



PICTURES OF THE PJC SITE CURRENT PSAP ROOM

Top: View of two existing dispatcher consoles

Right: View down long potential expansion area from existing dispatch consoles. Toilet is behind close wall, ahead to the right.

Bottom: View of potential expansion area. Existing consoles are just out of sight to your left.



Acquiring the PJC PSAP Space for use as a Merged PSAP

There appear to be three ways in which the merged PSAPs JPA Board could gain access to this space:

1. Negotiate a purchase of the space (and any other amenities such as X number of parking spaces, storage rooms, equipment room, etc.) from its owner, the Nobles County Board.
2. Negotiate the lease or rental of said space with the Nobles County Board.
3. Negotiate with the Nobles County Board to establish a fair value for the use of the space and amenities by the PSAP JPA and then factor that fair value into whatever cost sharing formula is used to allocate the annual costs for the JPA PSAP user agencies.
 - a. For example, referring back to our *theoretical* \$1,000,000 annual PSAP operating budget, and using the blended population and assessed valuation allocation model, this negotiation between the JPA Board and Nobles County could establish that the fair value for the use of the space (and amenities) was \$3,000 per month or \$36,000 per year. That Nobles fair value would be reflected in everyone's share as follows on the next page:



“Population side”	Total budget = \$1,000,000	“Assessed Valuation Side”
50% split based on population = \$500,000		50% split based on assessed valuation = \$500,000
Each county's share of this 500K ↓		Each county's share of this 500K ↓
	Each county's total due ↓	
Lyon at 27.7% = \$138,725	\$253,675	Lyon at 22.99% = \$114,950
Murray at 9.98% = \$49,800	\$124,750	Murray at 14.99% = \$74,950
Nobles at 22.7% = \$113,400	\$199,600	Nobles at 17.24% = \$86,200
Deduct for space= (\$18,000)	Deduct \$36,000 'space value' for	Deduct for space= (\$18,000)
Revised total = \$95,400	new total of \$163,600 due	Revised total = \$68,200
Pipestone at 10.77% = \$53,725	\$103,225	Pipestone at 9.9% = \$49,500
Redwood at 18.31% = \$91,550	\$198,650	Redwood at 21.42% = \$107,100
Rock at 10.58% = \$52,800	\$120,100	Rock at 13.46% = \$67,300
Sub-Total: \$482,000	“Space adjusted” total = \$964,000	Sub- Total: \$482,000
50% of \$36,000 space fee based on population share of remaining 5 county total = \$18,000	Each county's total of \$36,000 “space add-on” + regular share from above ↓	50% of \$36,000 space fee based on 5 counties assessed valuation = \$18,000
Lyon at 35.41% = \$6,373.80	\$11,376.00 + <u>253,675.00</u> \$265,051.00	Lyon at 27.79% = \$5,002.20
Murray at 12.98% = \$2,336.40	\$5,596.20 + <u>\$124,750.00</u> \$130,346.20	Murray at 18.11% = \$3,259.80
Pipestone at 14.02% = \$2,523.60	\$4,676.40 + <u>\$103,225.00</u> \$107,901.40	Pipestone at 11.96% = \$2,152.80
Redwood at 23.82% = \$4,287.60	\$8,946.00 + <u>\$198,650.00</u> \$207,596.00	Redwood at 25.88% = \$4,658.40
Rock at 13.77% = \$2,478.60	\$5,405.40 + <u>\$120,100.00</u> \$125,505.40	Rock at 16.26% = \$2,926.80
Space Add-on total = \$18,000	Nobles from above: \$163,600.00	Space Add-on total = \$18,000
New GRAND TOTAL: \$500,000	NEW GRAND TOTAL: \$1,000,000	New GRAND TOTAL = \$500,000



What if it is not Possible to Coalesce Around an Option Such as Using the PJC PSAP as the Merged PSAP Site?

This would not be a terribly surprising outcome. However, on many counts, it would appear as if any other option of using space currently in or provided for by any one of the member agencies would likely encounter similar stumbling blocks and potential resistance.

This leads us to the next option, that being finding or building a truly neutral PSAP facility. It is unclear what would constitute a truly neutral site, other than being built or located on a piece of land that touches all six counties, which does not exist. As such, a neutral site PSAP would end up being in some member agency's county, and maybe even some member agency's city. As such, some 'extra benefit' would accrue to the host county and/or host city. Those benefits could run the gamut from being a closer place for current employees of that host county/city to get to work, to more access and convenience for field responders from that host county or city, to more jobs being retained in that county's labor pool and so forth.

Nevertheless, assuming that it was to become necessary to find such a potential PSAP site, it would be our recommendation that the PSAP JPA enter into a formal "site selection process" that would follow this general course of action:

Retain a consulting architect to develop a "space program" that would specifically define the functional, mechanical, security, electrical and space requirements for a new merged PSAP.

- Task the architect to develop two models:
 - One model presumes no growth for added member counties.
 - One model presumes growth space for added member counties.

With the configuration and space requirements identified, proceed to publish a 'Request for Interest/Statements of Availability' document to the public at large and all units of local government (including school districts) in the six counties.

- This document should specify in some detail:
 - The land area required on which to place said building and its amenities (radio tower, parking lot, secured outdoor diesel generator, etc.).
 - Issues related to the access to said building.
 - ◆ Specify if it needs to be on State highways, County roads or if it does not matter.
 - ◆ Specify the maximum distance (driving time or miles) it can be from key locations (likely the six county seats).
 - Specify access or proximity to electrical service of a certain level.



- Specify access needed to broad band connectivity.
- Specify access needed to and/or maximum distance allowable from the nearest ARMER site.
- Specify if city water, sewer, and gas are required.
- Develop a scoring process to rate each response to this RFI.
- Accept the offered RFIs by a certain well publicized date.
 - Expect submissions from individuals, real estate brokers, units of local government and others.
- Subject the submissions to the scoring process using the criteria developed above.
- Arrive at a ranked list of acceptable locations for the new construction of or remodeling of an existing facility to be the new merged PSAP.

In a parallel process (it might be a good idea to do this first, so as to answer once and for all whether or not any existing governmental space would be acceptable as a merged PSAP facility), using a consulting firm experienced in the design, staffing, operation and management of PSAPs develop a set of specifications for what would be needed in an existing facility that might be used as this new merged PSAP. Think of it as a sort of “bid specification document,” in which the JPA would spell out (this may be just a partial listing):

- We need XXX square feet.
- The space either must or does not need to be stand-alone space.
- We need XYZ land space out doors for parking, generator pad, etc.
- We need XYZ land space outside for a communications tower.
- We need to be served by electrical power of XYZ capacity.
- We need to have a fire sprinkler system.
- We need to be served by city water with a hydrant not more than ____ feet away.
- We need to meet a specified list of security considerations.
- We need to be within X miles or X blocks of a major thoroughfare.
- We need to be served by an insulating “R value” of not less than ____.
- We require/does not require a basement.
- We need XXX factor of tornadic wind protection.
- And so forth.

Then any entity or agency which believes it either has such a building or space that would qualify under the above specifications, or has a building that they would be willing to build, retrofit or remodel so that it would meet these specs would be able to submit their proposal to sell, rent or give their facility to the JPA for its use.



The JPA would then decide if they were going to go this route and enter into an agreement for said structure, or decide that there is nothing existing or that could be remodeled that would meet their requirements and decide to build new, at which time the first process above would proceed.

How much would it Cost to Build a New PSAP, or to Retrofit Some Other Space?

Estimating construction costs for new PSAPs is relatively straightforward. In the past couple of years, we have seen per square foot costs of between \$230 and \$295, reflecting the highly specialized nature of these facilities and their needs for electrical grounding, lightning protection, computer floors, high quality HVAC, extra security and so forth. If one accepts the premise that something between 1,250 and 2,000 square feet would be required, the overall costs (not counting technology inside such as E9-1-1 CPE, CAD, etc.) than one should expect construction costs of between \$287,000 on the low end/small size and \$590,000 on the high end/larger size. These costs do not include the costs of any land purchases that may be required. For planning purposes, we would recommend using a “split the difference” figure of \$435,000 for the facility alone. Remember when assessing the square footage needs that in addition to the common dispatch area there would also be the need for two private offices (Director and 9-1-1 Coordinator), meeting room (JPA Board meetings), rest rooms, locker rooms, storage rooms, equipment rooms, and a break room/kitchen, at a minimum.

As for the costs of either retrofitting an existing structure to serve as a merged PSAP or adding to an existing structure to create said space, the variables would be too many at this stage of the process to arrive at even a decent ‘order of magnitude’ approximation.

Summary on Merged PSAP Location Matters

As stated at the outset of this section, this issue has the potential of being very contentious as well as the possibility of being a very complex and drawn out process. From a practical perspective, it would seem as if the far easiest and fastest course to take would be to consider an option such as that presented by negotiating with the Nobles County Board to take over the PSAP space in the PJC facility. Of course, whether or not such a course would be cost effective would depend significantly the outcome of the financial negotiations between the JPA Board and Nobles County on costs, terms, and conditions. In the preparation of this report, and because only the PJC facility offers a “ready-made” adequate size option, we did discuss this option with the Nobles County Administrator as well as the Sheriff and the Worthington Police Chief, who is the current “occupant” in this PJC PSAP space and there was some interest in seeing the option further considered, should the proposed JPA be created.



What Technologies should be used in the Merged PSAP?

The answer to these questions hinge significantly on the answers to the previous questions of:

- Where will the merged PSAP be located?
 - Will it be in an existing PSAP space?
 - Will it be in a new, remote PSAP space?

The reasons the questions flow together is that several of the complex technologies involved are, or ought to be closely inter-related.

As discussed earlier, there is often (and should be) an integration between a CAD system and the using agency's police or fire records management systems (RMS). Clearly, an RMS needs all of the real-time data collected by the CAD regarding locations, response times, incident types and so forth. Therefore, if the merged PSAP is to be located in an existing PSAP space, is said existing PSAP space already served by an integrated CAD and RMS system? Or is one planned? If so, is or can such a system be interfaced to an MDC system? An AVL system?

Similarly, it is usual for the E9-1-1 CPE at a PSAP to be interfaced to the CAD and AVL systems in use at the PSAP. The E9-1-1 CPE feeds the 9-1-1 caller location data (ALI) to the CAD so the CAD response incident record can be started and there is no need to always re-type the address or location (and risk errors in the process). Then the E9-1-1 CPE, CAD, and AVL are all interfaced with the GIS mapping system so that all relevant information can be visually depicted on one intelligent GIS map.

So clearly, where the PSAP ends up being located, especially in relation to where existing or planned RMS, MDC, and AVL systems are housed can be vitally important.

Computer Aided Dispatch (CAD)?

As of today, only two of the six PSAPs report using CAD systems, two have AVL systems in field units and one has MDCs in field law enforcement units. All report using some sort of RMS.

Currently the Worthington P.D. and Nobles County Sheriff's Office are preparing to implement a new and integrated CAD, RMS, and MDC system in their PSAP (see the next page for the news release describing this plan). We have discussed this system with the Worthington Police Chief and are advised that it is configured to be able to handle as many more dispatch workstations as our merged PSAP would have, and that it is capable of serving the quasi-independent records (RMS), MDC and CAD needs of as many agencies as might participate in this merged PSAP.



Further, he advises that it is feasible for an administrator or main-line user in a law or fire agency miles away from the PSAP to be able to “log on to” their PSAPs CAD/RMS/MDC system either via the internet (presumably via a Virtual Private Network or VPN) or via whatever RF connectivity is serving their MDCs and do a wide range of things, from entering a CAD event to running a DL check to searching old CAD events for a “premise history” and so forth.





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Nobles County (MN) Sheriff's Office and Worthington Police Department Select "ledsSuite"

Sioux Falls, SD -- December 31, 2009 -- The Nobles County (MN) Sheriff's Office and Worthington Police Department have selected Zuercher Technologies to provide a multi-agency public safety software system. For a fully integrated solution, two agencies will together install [ledsSuite](#) for CAD, Records, Mobile CAD and Records, E-Citations, Jail Management, Civil Process Management, Agency Administration, and Reporting.

Nobles County is located in southwest Minnesota and has a population of around 22,000. The Nobles County Sheriff's Office and Worthington Police Department work together closely, employing a combined total of 26 sworn officers who respond to around 12,000 calls for service each year.

Full integration between modules, reduction of redundant data entry, and improved efficiency were among the agencies' key considerations when selecting a system: not only did they need to replace the separate RMS and JMS applications currently in use, they would be adding the agencies' first computer-aided dispatch and mobile records systems. Other significant factors in choosing ledsSuite were its support for the data-sharing needs of a multi-agency environment and its flexibility in allowing for emerging technologies.

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About Zuercher Technologies, LLC

Zuercher Technologies, LLC provides best of breed public safety software solutions to agencies across the U.S. under its flagship product, ledsSuite®, encompassing Computer-Aided Dispatch, Mapping, Criminal Investigations, Crime Analysis, Jail, Civil, Financial, Records, Public Administration, and Mobile CAD and Records. Founded in 2003, Zuercher Technologies is based in Sioux Falls, SD. Information about Zuercher Technologies' products and services can be found at www.zuerchertech.com.



Clearly, further investigation is needed of exactly how this Zuercher system could and would actually meet the needs of not only a merged PSAP, but also the non-dispatch related needs of some or all of the member agencies as well, but it does appear to offer a high degree of promise and merits serious examination. And, while Worthington and Nobles County have clearly already purchased said system, it is reasonable to assume that they would require some equity partnership with other using agencies should these potentials prove worthy of pursuit. How much that would cost, both up front (buy in to the project), for added equipment and recurring costs are important questions, but should be answered in the larger context of “Where will this merged PSAP be located?” Clearly, if it were to be located at the PJC PSAP facility, and if these new systems had already been installed there, arranging for their shared usage by all members agencies should be explored.

E9-1-1 Customer Premise Equipment (CPE)?

As discussed earlier, all of today’s six PSAPs are equipped with pretty much the same CML Sentinel/RescuStar equipment suites. And there are three basic options:

1. Temporarily (defined as a couple of years) take parts from the six sets of CML equipment at the current PSAPs to make one larger suite of said equipment for the merged PSAP and use that in a non NG9-1-1 configuration for a while. We have a cost for this of \$44,000.
 - a. Under this option would also be the alternative of purchasing a used properly sized suite of CML equipment from some other agency and placing it in a new merged PSAP so that none of the equipment from the existing six PSAPs would have to be taken out of service to equip the new PSAP in a different place⁴.
2. Take the NextGen 9-1-1 plunge now and acquire new, owned NG9-1-1 CPE and subscribe to ongoing NG9-1-1 access.
3. Consider accessing a “hosted NG9-1-1” solution where you would not own much CPE at your PSAP but would access it over an IP network hosted by somebody like I.E.S.

GIS Mapping System for Wired and Wireless 9-1-1 Call Plotting and Optional AVL?

We would recommend AVL in all field units, especially in an environment where dispatchers may lack intimate familiarity with all the roads and back roads of each county. With AVL, dispatchers can always literally “see” where the responders are located, and see those locations in relationship with the location of the incident to which they are responding as well as other response units. In addition, this vision can be enhanced even further with aerial photography overlays on top of the GIS maps. We think this would be a must in a six county merged PSAP. AVL requires an in-car GPS receiver, a modem, and an RF link over which data bursts are transmitted. One option for a six county wide RF system for AVL could be whatever RF solution is used for MDCs, or, these data bursts could also be carried over the ARMER system as they are in the Twin Cities Metro area for 1,000+ transit busses.

⁴ It is reasonable to assume that one might be able to find such equipment in the field, as a number of agencies are trading theirs out for NG9-1-1 equipment. Just such a set of equipment was available up until about six months ago from the Burnsville, Minnesota police department, which became surplus when they merged in Dakota County.



Implicitly, high quality GIS maps interfaced with E9-1-1, CAD, and AVL are equally necessary. Today, three of the counties use Bulberry GIS maps and map data and three use GeoComm GIS maps and map data. As long as the map data accuracy and quality is similar between the two, said data should be transportable from one system to the other, so the decision of which system to use in a merged PSAP is not a show-stopper, and should be negotiated with both vendors to find the best solution for a merged PSAP. Some of that decision may be impacted by which CAD system ends up being used, and whether or not that CAD system is already linked to one vendor or another.

The Need for Redundancy and/or a Back-up PSAP

To varying degrees, in planning for such a single dispatch center for a multi-county area, one needs to address the questions of “What do we do if it crashes/burns/dies, etc.” The potential failure scenarios for a PSAP are many and varied, but they generally fall into one of two categories:

- A. System failures where the building can be occupied but one or more systems is not functioning, such as CAD, radio control consoles or E9-1-1 CPE.
- B. Issues which make the building uninhabitable, and which may or may not render the systems therein operational. Examples would be a flood, fire, tornado, etc.

For those items under A, we recommend that internal manual or work-around procedures and equipment be developed, exercised and implemented. For example, if the radio console CEB fails and dispatchers cannot access or control the radio system via their radio consoles, there could be a series of low cost, “RF control stations” mounted under the writing surface at each dispatcher workstation via which the dispatcher could access the ARMER 800 MHz trunked radio systems independent of their console electronics. Similarly for CAD, we would recommend that staff be trained in and regularly drilled on manual (non-CAD) operations using “run cards.” As for 9-1-1 CPE, two options exist. One is to invoke the E9-1-1 network’s inherent ability to re-direct inbound 9-1-1 calls to another PSAP on that network, or to even re-direct them to seven-digit lines, so that there could be a bank of standard seven-digit line telephone jacks (or even cell phones) at the ready to be used to answer re-routed 9-1-1 calls, working around a failed local 9-1-1 CPE element.

For those items under B, an all together different mind-set needs to take over. Specifically, one needs to envision moving one’s entire operation to some place else for a time period that could be hours, days, weeks or months.

This issue has been addressed in many different ways round the United States. These solutions run the gamut from:

- A dedicated “hot standby PSAP” at a remote location with its own CAD, E9-1-1 CPE and radio console access system, just sitting there, always running, always ready to be occupied at a moment’s notice.



This option is by far the most expensive, and very few entities have done this. And one still needs to get one's staff to this facility at the time of its need, not to mention keeping all of the equipment, software, resources, etc. at the back-up PSAP fresh and current.

- A simplified "alternate PSAP" at another location, or even on wheels. We have seen these be in training rooms at a police or fire department where there are telephone jacks for re-routed 9-1-1 calls coming in on seven-digit lines, mobile radios connected to external antennas and wireless access to an internet connection that permits a laptop to connect back to the CAD and even the E9-1-1 systems (depending on vendor) back at the home PSAP. We have even seen these capabilities built into a 40' semi-trailer parked at the city or county equipment yard waiting to be hooked up to a truck/tractor and hauled to a safe location.
- An agreement with another "network connected" (both ARMER and Minnesota's NG9-1-1 networks) entity whereby that neighboring agency is your PSAPs "designated default PSAP" and if your PSAP "goes off the grid" all 9-1-1 calls are re-routed to E9-1-1 trunks at the neighboring PSAP. This is much easier if the neighboring agency is as large as or larger than your PSAP, meaning they could likely absorb the call load for a short time while your people respond to their location. It is also made much easier if the neighboring agency and your agency would happen to share the same networked CAD system (not very common – but a great idea!).

Our preferred alternative in most respects is the neighboring agency concept described above. If this is viewed as a two-way street, with each entity planning to rely on the other entity in time of need and jointly developing plans and agreements to implement this form of "back-up", we have seen them work well, when they need to be employed, which historically is a very rare occurrence.



There are two cost areas to deal with, one being the annual recurring costs and the other being the one-time start up costs.

In terms of recurring costs, we have already established that the total “loaded” personnel only costs for this merged PSAP entity would be about \$1,187,937 per year.

It has been our experience that loaded personnel costs generally amount to about 90 percent of the total annual operating budget of the operating PSAP entity. However, in our experience with studies such as this, factors relating to the cost of acquiring or building the PSAP facility have not been as wide open and/or unclear as they are in this study. In all of our previous studies, there was no good existing candidate place (that was acceptable to the majority of the members), so the decision to build new and equip new was a foregone conclusion. In addition, referring back to the 90 percent figure above, that figure applies to agencies where their PSAP facility “comes with the territory”, so to speak, and there are no costs directly associated with acquiring a PSAP facility.

For this reason, we think that these PSAP acquisition cost estimates need to be figured in, eventually, but we do not have enough data yet to fully incorporate them.

But before we tackle that, reverting back to the 90 percent figure above and leaving the one-time costs for acquiring and equipping the PSAP off the table for the moment, we are projecting that the total annual operating cost of this merged six county PSAP would be \$1,319,930 (of which 90 percent gets us back to our overall labor cost of \$1,187,937).

The current operating costs reported by the agencies for today’s six PSAPs do not include the amortized one-time costs of acquiring today’s in-place technologies, nor do they include any cost factors for the space they are occupying or their utility costs, etc. That makes the current reported cost elements quite comparable to the cost elements reflected in our \$1,319,930 annual operating budget estimate for a six county merged PSAP. Therefore, since this is a decent “apples to apples” comparison of cost elements, it can be said that the operating costs we project for a six county merged PSAP would be \$428,975 per year less than the \$1,748,905 that is being spent by the six counties today, or a savings of 24.52 percent.

For this 24.52 percent annual cost reduction, the SWMN 6 residents would:

- Have far fewer, and hopefully close to no 9-1-1 calls transferred.
- Have dispatchers with on-duty, dedicated 24/7 supervision.
- Have every medical emergency call that requires it receive EMD.



- Have a fully integrated CAD system managing all public safety incidents in a highly coordinated fashion, regionwide.
- Have a fully integrated radio system where all response agencies are on one system and can talk directly to each other.
- Have a staff that is flexible in terms of growing and decreasing in size as the day goes on, and within the shift from discipline to discipline and geographic area to geographic area of the region.
- Have dispatchers with a defined career path available to them.
- Have dispatchers with mandatory annual in-service training.
- Have a truly state of the art emergency communications system and service.

As stated, the one-time, non-recurring costs are still something of a guessing game. The answer depends on many factors that are not currently known or even knowable, such as will it be new construction or a re-used/retro-fitted facility? Would there be an all new CAD and E9-1-1 equipment suite required, or could an existing system be purchased, expanded, and migrated to a new facility, if necessary?

However, it is not acceptable to leave these questions totally unanswered at this stage of the analysis. Therefore, we propose to treat these up-front technology costs as a package, and that the JPA (or one of its sponsor agencies) would likely bond for their acquisition, and we can then treat the cost to retire these 20 year bonds as a component part of the annual cost for the merged PSAP. What must be stressed, though, is that when we do that, it needs to be remembered that none of the individual member agencies would ever have to purchase any of the technology items themselves again, that you would now be purchasing for the merged PSAP. So it would not be fair to 'blame' the merged PSAP concept for \$X million in technology costs as opposed to \$0 in future technology costs for the individual member agencies. In reality, the six member agencies would almost certainly spend considerably more than the merged PSAPs \$X million were they to each purchase equivalent technology over the next decade or so.

Under this "technology package" concept, we envision the following very high end potential cost estimates to be appropriate. (We say very high end because if, for example, the merged PSAP used the already purchased Nobles/Worthington CAD/MDC/RMS system rather than going out and purchasing their own all new CAD/MDC system, it could cost much less.)



Technology item	IX Cost	Comments
5 position CAD with MDC capabilities	\$300,000	Straight CAD with no RMS component
5 position NG 9-1-1 CPE with admin lines incorporated	\$336,309	<ol style="list-style-type: none"> 1. Could be much less up front if “hosted” solution is chosen, but there would be higher recurring costs. Would state pay them or could 9-1-1 grant funds be used for them? 2. Could be as low as \$50,000 if non NG9-1-1 existing equipment were used.
5 position Motorola MCC 7500 ARMER radio control consoles	\$800,000	Could be \$100,000 less if 4 console positions were acquired. Includes NICE™ recorder
4 full dispatcher workstations (such as Watson, Inc.)	\$200,000	5 th workstation would be less than a full console and not require this equipment.
Other peripheral equipment	\$150,000	Copier, projector, GIS mapping, AVL ‘headend’, etc.
TOTAL	\$1,786,309	

The cost of retiring a \$1.8 million 20 year bond issued at five percent would be about \$141,600 per year. And, if this were to be the route followed and the approximate amount needed, then this annual cost would have to be added to the \$1,319,930 we have already established, along with whatever annual costs ended up being associated with acquiring or building a PSAP facility.

And, as a “worst case” scenario, if it were to be necessary to build an all new PSAP from the ground up, and if said PSAP were to cost the earlier estimated \$435,000, and that \$435,000 were to be added to the above referenced \$1.8 million bond issue we would have a new bonding total of \$2.221 million, on which the annual debt service payments would be about \$176,052.

Therefore, as very liberal cost estimate, under the very highest cost scenarios, we can project that the total annual costs of staffing and operating this six county merged PSAP, to include debt service for all possibly necessary technology plus a brand new facility would be about:

\$1,319,930 each year for labor and regular expenses
 \$141,600 per year over 20 years for all new PSAP technology
 \$34,452 per year over 20 years for an all new PSAP facility

Grand Total per Year= \$1,495,982

This figure still comes in at \$252,923 per year less than what is being spent by all six of today’s PSAP entities, and that \$253,000 figure does not include any costs for the implementation of any new NG9-1-1 technology or any ARMER radio control consoles by any of the six PSAPs, were they to stay independent. Nor does it include any costs at the local PSAPs to implement or replace CAD.



GeoComm is confident that the preceding analysis has firmly established that the residents of the SWMN 6 Counties are not getting the best emergency communications and 9-1-1 service and value they can get. This is not to say that the 36+ persons employed to provide these services today are not doing their best and working to the top of their abilities. Rather, it is to say that the environment in which they are operating is not ideal.

We are also confident that we have proposed a logical, functional, and sound way to improve upon the delivery of these services. Early on in this study, we asked three important questions:

Can emergency communications dispatch services be delivered in the SWMN 6 Counties under some other configuration that would:

- Not diminish the current service levels, striving to improve them?
- Do it at a lower annual cost?
- Do it with fewer employees?

We believe we have established that the answers to these questions are:

- Yes, without diminishing current dispatch services¹, and improving them.
- Yes, at an annual cost savings of over 24 percent.
- Yes, with a reduction in Full-Time Equivalency (FTE) employees of over 17.

However, there are still two other important considerations that local policy makers will have to grapple with:

1. What happens to today's 36+ FTE staff if you adopt this plan and everyone participates?
2. Who will do the work now being done by an agency's dispatchers that is not transferable to and/or not logically a duty of the merged PSAP?

As for today's 36+ employees, again using Dakota County as an example, on January 1, 2007, fully a year before they began merged operations in the new DCC, all existing employees of the 5 independent dispatch centers became employees of the DCC JPA Board, even though they continued to work at their old places of employment. On "day one" of operations at the DCC, that number of employees stood at about 65, and every one of those employees came to work at the new DCC on December 27, 2007.

¹ We do not dispute that the removal of today's dispatchers from most (or all) of today's dispatch centers would reduce their availability to provide localized (non-dispatch related) services to their current employing agencies and communities.

It is assumed that some number of them will retire or leave in the next few years, and the ultimate staffing needed to operate the DCC will be adjusted as required, but the key factor is that nobody is losing their job as a result of this merger. Is this the cheapest way to do it? **Absolutely not.** But if one remembers that the success or failure of such a merged operation in delivering a quality service to both the public and the public safety agencies is almost totally in the hands of the people who answer the telephones and dispatch 24 x 7, then doing all that one can and one can afford to do to take the needs and requirements of existing staff into account may be very cost-effective, especially when viewed over the long term.

Assuming one cannot afford or chooses not to do what DCC did, other options exist:

1. Recalling the discussion about permanent, professional part-time dispatcher positions, it is entirely possible that there would be the need for 36+ bodies at a new the SWMN 6 PSAP, with something like 10 of them being full-time and 26 being part-time, and while one cannot know, it is a possibility that as many as 26 of today's 36+ employees might want part-time work at the (for many) higher rate of pay at the new the SWMN 6 PSAP. (Realistically, however, this is probably more optimistic than would actually occur)
2. The new entity could accept applications for new hires from only the existing 36+ employees and select from that pool the 17+ persons needed to staff the new PSAP on day one. Those not hired could be retained by their local employer in some other job with pay comparable to their current jobs. This relates to what we will be discussing below regarding "other tasks."

As it relates to work being done by today's dispatchers at the individual agencies that could or would not be transferable to a new merged PSAP, there will definitely be some of that. Especially in the smaller agencies, the dispatchers do much more than answer emergency telephone calls and dispatch responders to incidents. They are often the department receptionists, 24 x 7. They often greet the public after business hours and sometimes during business hours as well. They sometimes are the department typists doing report typing, and they are often entering criminal justice and/or fire reporting information into state and national data systems. Sometimes they are monitoring jail cells and serving as same sex matrons during arrestee searches. Their duties can be many and varied, and if they just "go away" because the dispatch role went away, the agency could have a real problem. Towards this end, agencies who "lose their dispatchers" often have to re-think the way they do business. This is not impossible, but it is also not always easy. We are aware of many law enforcement agencies far larger than most agencies in the SWMN 6 who do not have their own dispatchers. The City of Brooklyn Park, Minnesota (north suburban Minneapolis) has nearly 73,000 residents and a significant amount of criminal activity.

They have their own police (149 employees, 101 of which are police officers) and fire departments, and they have never had their own dispatch operation. They are served by the Hennepin County Sheriff's 9-1-1 center (which is not a JPA agency with real user control) and even though they could establish their own PSAP, they choose not to.



Many of these “agencies without PSAPs” provide “counter service” using existing clerical or records staff. Others add positions such as “Community Services Officers” to operate a service desk, sometimes 8, 12, or 18 and occasionally 24 hours per day. Some agencies even use volunteers to perform this role at their station. But some agencies will also choose to staff a “front desk” position (perhaps with staff that either chose not to move to the new merged PSAP or were not hired there) for telephones and walk-in traffic perhaps 16 hours per day, and to the extent that this is their choice, any new money spent on this is money that will reduce the savings being realized by not operating their own dispatch center.



This study has established that a merged PSAP for the SWMN 6 Counties is technically feasible, would save money on 9-1-1 dispatch services compared to today's service configuration, would enable the addition of or improvement to certain dispatch and dispatched related services not currently provided (EMD, better supervision and direction, more training, more career opportunities for staff, etc.)

It has also established that there are many, many issues that would need to be resolved before any such 9-1-1 merger could or should proceed. Chief among them is the question of whether or not there is the **political will** to begin the process of seeing if there are solutions possible to the many questions relating implementation.

We think that the fundamental question at this point should be: "Assuming we could come up with an acceptable governance framework, an equitable cost sharing agreement and a conceptual 'way forward' to identifying a PSAP location, does our county want to proceed with this process?"

The suggestions and recommendations we have put forward regarding a governance structure, a cost sharing formula, a staffing configuration, space requirements, technology choices, and the like are all subject to modification by persons of good will and who are committed to moving this process forward. And, in the end, some of the outcomes of this process may not be "pure" and "perfect", and they may just represent "that which we could agree to do", and that's not all bad either.

Therefore, we suggest that a way forward in this process could be as follows:

- I. Each of the six County Boards is asked to consider a resolution by no later than July 1, 2010. Said resolution could read as follows:
 - a. The _____ County Board of Commissioners, having authorized this county's participation in and having reviewed the February 2010 report from GeoComm Corporation regarding Joint Dispatch, Records and Radio Systems hereby agrees to participate in the development of a Joint Powers Agreement with such other counties as may agree to participate.
 - b. The purpose of said agreement would be to further the specific research into and conceptual planning of a multi-county 9-1-1 Emergency Communications Center with the objective of achieving a recommended governance structure, cost sharing allocation formula and ultimate joint 9-1-1 dispatch center location or a location selection process by not later than 6 months after the ratification of resolutions similar to this by the last such county to so approve.
 - c. We further act today to appoint Commissioner _____ from this County Board along with Sheriff _____ and the County Administrator/Auditor: _____ to serve on this JPA.
 - d. Said JPA will become effective only if four or more counties agree to participate.



- e. If said JPA becomes effective, we hereby authorize said JPA to fulfill the role of the “9-1-1 planning committee” for _____ County as required under M.S.S. 403 for the purpose of developing any required modifications to the 9-1-1 Plan of _____ County for future consideration and action by this Board.
- f. Said JPA, if activated as above, is required to report back to all its participant County Boards in the first month after their six month exploration into the above issues with a specific set of actions intended to either effect the implementation of a 9-1-1 dispatch merger plan or to specifically reject the concept of any merger of 9-1-1 services.
- g. For purposes of furthering this process, should the JPA be activated as above, this resolution is intended to also authorize the expenditure of any remaining grant funds from the 2009 MN/DPS grant awarded to this county for the purpose researching this issue to its logical conclusion.

Such a resolution is intended to make all parties get serious about the issue.

If a given county, in no way wants to merge its 9-1-1 operations with any other county(ies), then that County’s Board should vote on and not approve the above resolution, and step aside.

If, however, a given county is willing to further consider the issues and work them to whatever resolution is available, then approving the above resolution would create a JPA tasked to run all of the issues that are important to ground, and then report back to all of the participant County Boards by a specific, rather short deadline.

Note that the resolution states that the JPA would not come to life unless four or more counties agreed for it to come to life. In addition, the resolution does not specify that those four counties must come from the six that participated in this study. However, it does clearly require there to be a “critical mass” of political will to move the process forward. It is our opinion that without said political will being overtly demonstrated by resolutions such as this coming from four or more County Boards, any further time spent on this process is not likely to bear fruit.

If the above JPA were to become active via the resolution process set forth (or one like it), then it would be formed and work on coming up with answers to the several important questions we have raised in the report. It could (probably) use some of the nearly \$75,000+ remaining from the DPS grant to staff itself via a consultant contract to some facilitator who could serve somewhat as the JPA’s “administrator” for its short duration. If this initial JPA process were to result in a serious set of plans that was intended to move the concept towards reality, then the County Boards would again be asked to approve of the specifics for a new, permanent JPA Board and the broad outlines of the vision that the new JPA Board would be tasked to implement on behalf of the member counties.



From a technology perspective, all of this could be accomplished in 18 months from today (even if a building needed construction), assuming that the ARMER network is ready and local participation is implemented by all agencies to be served. Given that, a reasonable target date would be January 1, 2012.



Items relating to Dakota Communications Center (DCC)

For up to date information check this Web site: <http://www.mn-dcc.org>

Joint Powers Agreement Establishing the Dakota Communications Center

This Agreement is entered into between the following political subdivisions of the State of Minnesota, by and through their respective governing bodies:

- City of Apple Valley
- City of Lakeville
- City of Burnsville
- City of Mendota Heights
- City of Eagan
- City of Rosemount
- City of Farmington
- City of South St. Paul
- City of Hastings
- City of West St. Paul
- City of Inver Grove Heights
- County of Dakota

Individually and collectively, the parties to this Agreement are referred to as the “Members” of the Dakota Communications Center, hereinafter referred to as the “DCC.”

RECITALS

WHEREAS, pursuant to Minnesota Statutes § 471.59, the Members are empowered to provide assistance to, and act in coordination with, other political subdivisions within the State of Minnesota as deemed necessary to benefit the public; and

WHEREAS, pursuant to Minnesota Statutes § 465.717, the Members are empowered to incorporate the joint powers entity created by this Agreement as a Minnesota nonprofit corporation if deemed necessary or beneficial to the Members; and



WHEREAS, the Members wish to cooperatively engage in the establishment, operation and maintenance of a countywide public safety answering point and communications center for law enforcement, fire, emergency medical services (EMS), and other public safety services for the mutual benefit of all; and WHEREAS, by creating the DCC the Members intend to provide a level of public safety communications services to Dakota County communities that is commensurate with industry standards; and

WHEREAS, each Member represents that it is duly qualified and authorized to enter into this Agreement and will comply with its respective obligations and responsibilities as set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual undertaking and agreements hereinafter set forth, the Members agree as follows:

ARTICLE I: PURPOSE

Through this Agreement and the authority provided by Minnesota Statutes § 471.59 to act cooperatively, the Members hereby create a joint powers entity referred to as the DCC for the following purposes:

To acquire and provide the facilities, infrastructure, hardware, software, services and other items necessary and appropriate for the establishment, operation and maintenance of a joint law enforcement, fire, EMS, and other emergency communications system for the mutual benefit of the Members and the people of Dakota County;

To provide public safety communications system services to other governmental units that are not Members through a fee for service contract;

To define the rights and obligations of the Members with respect to the establishment, operation and maintenance of the DCC; and

To provide a forum for discussion, study, development and implementation of recommendations of mutual interest regarding public safety communications, information systems, and statistical matters within Dakota County, Minnesota.

ARTICLE II: TERM

This Agreement shall be effective upon execution by all the parties hereto and shall continue until terminated as provided in Article XI. No party may withdraw from this Agreement from the date this Agreement is executed by all parties until five (5) years from the initial date of operation of the DCC (the Initial Term). The Board of Directors shall determine the initial date of operation of the DCC.



ARTICLE III: POWERS

The DCC shall have the following powers in its own name:

- a.) To take actions necessary and convenient to discharge the duty to implement, maintain, and operate a countywide public safety communications center;
- b.) To adopt ByLaws and rules or policies consistent with this Agreement that are required to effectively exercise the powers or accomplish the objectives of the DCC;
- c.) To adopt an annual operating and capital budget, including a statement of sources of funding and allocation of costs to the Members of the DCC;
- d.) To enter into contracts in its own name, including contracts to provide public safety communications services to other governmental units who are not Members;
- e.) To acquire, lease, hold, and dispose of property, both real and personal, including transfer of property from a Member to the DCC;
- f.) To incur debt obligations that do not exceed ten years, liabilities or other obligations necessary to accomplish its purposes that are consistent with any financial and debt policies established by the Board of Directors, or to arrange with one or more of the Members to incur debt or issue bonds for the benefit of the DCC, as permitted by law;
- g.) To operate and maintain a communications system that will receive calls for law enforcement, fire, and emergency medical services (EMS) services and dispatch field units in response to such calls;
- h.) To hire, discipline or discharge employees required to accomplish the purposes of this Agreement including employing an Executive Director and delegating authority to the Executive Director as determined by the Board of Directors;
- i.) To purchase any insurance or indemnity or surety bonds as necessary to carry out this Agreement and the purposes of the DCC;
- j.) To seek, apply for and accept appropriations, grants, gifts, loans of money or other assistance as permitted by law from any person or entity, whether public or private;
- k.) To sue;
- l.) To exercise all powers necessary and incidental to carrying out the purposes set forth in Article I of this Agreement;
- m.) To charge fees to Members or other governmental entities for special services or communications system functionality that is not provided to all Members; and
- n.) To incorporate the DCC as a Minnesota nonprofit corporation if approved by a majority of the Board of Directors.

ARTICLE IV: MEMBERSHIP**4.1 Definition of Members**

All parties to this Agreement are Members of the DCC. No Member may withdraw from this Agreement during the Initial Term of this Agreement.



4.2 Requirement of Good Standing

Continued Membership in the DCC shall be contingent upon the payment by each Member of an annual assessment and any additional fees as determined by the Board of Directors consistent with the financing procedures set forth in Article IX hereunder.

4.3 Addition of New Members

Any unit of government within Dakota County that has at least 10,000 residents and maintains a law enforcement agency is eligible for Membership in the DCC. A new Member may be added to the DCC if first approved by the Board of Directors and if the existing Members and the unit of government seeking membership execute an amendment to this Agreement to add the new Member upon the terms as agreed to by them. Any unit of government that becomes a Member of the DCC after the execution of this Agreement shall be subject to all existing debts and liabilities of the DCC on a proportionate basis to the same extent as all then existing Members. In addition, any new Member shall be solely liable for all costs of adding or modifying hardware, software or services necessary to effectively accommodate the operational needs of the new Member, and of insuring that there is no degradation of existing capability due to the new Member's needs, as determined by the Board of Directors. Each new Member shall pay a proportionate share of the normal, continuing operating expenses of the DCC as well as a proportionate share of any special assessment, as approved from time to time by the Members. An entity seeking to become a Member may be required to and shall pay one-time initiation, assessment or capital investment fees or establish an escrow account for such fees as determined by the Board of Directors.

4.4 Withdrawal of Member

Withdrawal of any Member after the Initial Term of this Agreement shall not terminate this Agreement except as provided in Article XI. Withdrawal shall be accomplished as set forth in Article XII of this Agreement. Withdrawal shall not discharge any liability incurred or chargeable to any Member before the effective date of withdrawal. No Member is entitled to a refund of cost-sharing assessments or other fees imposed by the Board of Directors that have been paid to, or is owed to, the DCC on the effective date of withdrawal.

ARTICLE V: BOARD OF DIRECTORS

5.1 Membership on the Board

There is hereby established a Board of Directors of the DCC which shall consist of an elected official from each Member. These Directors shall serve without salary, but may be reimbursed for expenses incurred in connection with DCC business as determined by the Board of Directors. Each Member shall designate one named elected official as a Director consistent with the term and procedures set forth in the ByLaws adopted by the Board of Directors. Each Member may also designate one named elected official as an Alternate Director to attend Board meetings and vote on measures brought before the Board when a Director is absent, consistent with the procedures set forth in the ByLaws.



If any Director or Alternate Director ceases to be an elected official of a Member during his or her term, such seat shall be vacant until a successor elected official is appointed by such Member.

5.2 Powers of the Board

The Board of Directors shall have the following powers and duties:

- a.) provide policy leadership and approve the general policies of the DCC relating to budget, finance, and legal matters;
- b.) contract with a Member or third party for auditing, financial, human resources, legal and other services as needed for the DCC;
- c.) adopt Board ByLaws and amend the ByLaws from time to time as it deems necessary;
- d.) approve changes to the membership of the DCC;
- e.) approve contracting and purchasing policies for the DCC;
- f.) approve the annual operating and capital budget, cost allocation formula, Member fees and assessments of the DCC;
- g.) hire, discipline, terminate and set the compensation for the Executive Director; and
- h.) incur debt and approve financial obligations of the DCC that are significant in amount and non-recurring. Board approval is not required for payment of monthly budgeted expenditures and employee salaries and benefits.
- i.) incorporate the DCC as a Minnesota nonprofit corporation as permitted by Minnesota Statutes § 465.717, subdivision 2, if approved by a majority of Members at a meeting of the Board of Directors.

5.3 Voting by Directors

Each Member of the DCC shall have one seat on the Board of Directors and is entitled to one vote. The Directors' votes shall be non-weighted (all votes having the same weight) when voting on matters coming before the Board, except as provided below. The Directors' votes shall be weighted when the Board is exercising its powers under Section 5.2 (f) and (h) of this Agreement.

The comparative weight of each Director's vote on those matters is determined by the proportionate share of the DCC annual operating and capital budget for that calendar year that is the responsibility of the Member casting that vote.

The Board of Directors shall arrange for or contract with one or more of its Members or an independent contractor to provide personnel/human resource, accounting and finance, procurement/contracting, payroll administration and legal services for the DCC.

The DCC shall not create its own personnel/human resource, accounting and finance, procurement/contracting, payroll administration or legal departments unless approved by a four-fifths (4/5) majority of the Board of Directors by non-weighted votes.



After the first full year that the DCC is in operation, the Board of Directors may amend the cost allocation formula and associated definitions by a 2/3 majority of the weighted vote total of those Members present and voting at a properly noticed Board of Directors meeting.

In case of a tie vote, the Chair of the Board of Directors shall cast a second and deciding vote. No proxy votes or absentee voting shall be permitted except as provided in this Agreement or in the ByLaws of the Board.

5.4 Board Meetings

- a.) The Board of Directors shall have regular meetings at least twice each calendar year at a date, time, and location included in the meeting notices. The Board may schedule more regular meetings as it deems appropriate or as established by the ByLaws adopted by the Board. At least 30 days prior notice shall be provided to each Member, Director, and Alternate Director of the date, time, and location of such regular meetings.
- b.) A special meeting of the Board of Directors may be called by its Chair, or by any four Directors of the Board consistent with the procedures set forth in the ByLaws.

Officers of the Board of Directors

- a.) Officers of the Board of Directors shall consist of a Chair and Vice Chair. The Chair and Vice Chair shall be elected from among the Directors of the DCC. The officers shall hold office for the terms and under the conditions set forth in the ByLaws adopted by the Board of Directors. Page 7 of 33
- b.) Chair: The Chair of the Board shall Conduct meetings of the Board of Directors, sign, with the Executive Director, any instrument which the Board of Directors has authorized to be executed, or as authorized by the ByLaws or approved DCC procedural rules of operation, and perform all duties incident to the office of Chair and such other duties as may be prescribed by the Board of Directors from time to time, provided that such actions are consistent with this Agreement and the ByLaws.
- c.) Vice Chair: In the event of the absence of the Chair, or in the event of the inability or refusal of the Chair to act, the Vice Chair of the Board shall perform the duties of Chair.

5.6 Secretary of the Board of Directors

The Executive Director of the DCC shall serve in the administrative role of Secretary to the Board and shall keep the minutes of the meetings of the Board of Directors, see that all notices are duly provided and/or published in accordance with the provisions of this Agreement and the ByLaws adopted by the Board of Directors or as otherwise required by law, act as custodian of the business records of the DCC, and perform all duties incident to the office of Secretary and such other duties as from time to time may be assigned by the Board of Directors.



A high-level outline of the governing organizational structure of the DCC is graphically represented in Attachment A.

ARTICLE VI: EXECUTIVE COMMITTEE

6.1 Membership on the Executive Committee

There is hereby established an Executive Committee of the DCC, the members of which shall serve without salary and shall oversee the operations and functions of the DCC as set forth in this Article and the ByLaws of the Committee. The Executive Committee shall consist of the chief administrators of each Member. Each Member shall have one seat on the Executive Committee. Each Member may also designate a second employee or staff person as an alternate representative to attend Committee meetings and vote, on behalf of such Member, on matters brought before the Committee when a representative is absent, consistent with the procedures set forth in the ByLaws. Each representative and alternate representative shall serve without salary, but each may be reimbursed for necessary expenses incurred in connection with the DCC business, as determined by the Board of Directors. If any Committee representative ceases to be the chief administrator of a Member, such seat may be occupied by the alternate representative until a successor chief administrator or interim chief administrator is appointed by such Member.

6.2 Purpose and Powers of the Committee

The Executive Committee shall have the following powers and duties:

- a.) provide direction and oversight of the operations of the DCC, subject to the policy direction established by the Board of Directors, and within the limits fixed by the operating and capital budgets, provided that no financial obligation exceeding the amount of the approved budget shall be incurred by the Executive Committee without the prior consent of the Board of Directors;
- b.) carry out the policy decisions of the Board of Directors and make recommendations to the Board of Directors;
- c.) adopt Committee ByLaws and amend the ByLaws from time to time as it deems necessary;
- d.) review all administrative decisions concerning personnel, development efforts, operations, cost sharing, expenditure approval, utilization of personnel and equipment, and operational decisions made by the Executive Director as deemed necessary by the Committee;
- e.) assist the Board of Directors in the recruitment of candidates for the position of Executive Director and the review of candidate qualifications and provide recommendations to the Board of Directors on the hiring, termination and review of the performance of the Executive Director;
- f.) conduct an annual evaluation of the Executive Director's performance and present its findings and recommendations to the Board of Directors before the date the Board approves the annual operating and capital budgets;
- g.) establish and assign tasks to advisory subcommittees as the Committee deems necessary;
- h.) make recommendations to the Board of Directors on changes to the membership of the DCC;



i.) Review, modify, and approve to the proposed annual operating and capital budgets prepared by the Executive Director prior to submittal to the Board of Directors.

6.3 Voting by Committee Members

Each Member is entitled to one vote at committee meetings and each vote shall be non-weighted (each vote having equal weight). In the case of a tie, the Chair of the Executive Committee shall cast a second and deciding vote. Only the chief administrator, or the designated alternate representative of a Member in the absence of the chief administrator, shall vote on matters coming before the Executive Committee.

No proxy votes or absentee voting shall be permitted except as provided in this Agreement or in the ByLaws of the Committee.

6.4 Meetings

- a.) Regular meetings of the Executive Committee shall be held as needed, but at least quarterly. At least 15 days prior notice shall be provided to each committee member of the date, time, and location of such meetings.
- b.) Special meetings of the Executive Committee may be called by its Chair, or any four members of the Executive Committee acting in concert, consistent with the procedures set forth in the ByLaws or operating procedures adopted by the Committee.

6.5 Officers of the Executive Committee

Officers of the Executive Committee shall consist of a Chair and a Vice Chair. The Chair and Vice Chair shall be elected from among the representatives of the Members serving on the Executive Committee. The officers shall hold office for the terms and under the conditions set forth in the ByLaws adopted by the

Executive Committee.

- a.) Chair. The Chair shall conduct meetings of the Executive Committee and shall serve as the liaison between the Board of Directors and the Executive Committee. The Chair may sign, with the Executive Director, any instruments, which the Executive Committee, acting as a Committee, has authorized to be executed or as authorized by the DCC procedural rules of operation. The Chair shall also perform all duties incident to the office of Chair and such other duties as may be prescribed by the Executive Committee from time to time, provided that such actions are consistent with this Agreement and the ByLaws.
- b.) Vice Chair. In the absence of the Chair or in the event of the Chair's inability or refusal to act, the Vice Chair shall perform the duties of Chair. The Vice Chair shall perform such other duties as may be requested by the Chair.



ARTICLE VII: EXECUTIVE DIRECTOR

7.1 Appointment and Vacancy

- a.) The DCC shall have a chief operating officer of the title Executive Director. The Executive Director shall be the administrative head of the DCC and shall report to the Executive Committee for the administration and operation of the DCC. The Executive Director shall be an employee of the DCC.
- b.) The Executive Director shall have appropriate administrative and executive qualifications for the position and shall have actual experience in and knowledge of accepted practices for a public safety communications system.
- c.) Any vacancy in the office of Executive Director shall be filled as soon as possible after the effective date of such vacancy. In the case of absence or disability of the Executive Director, the Board of Directors may designate any other qualified person to carry out the duties of the Executive Director during such absence or disability.

7.2 Powers and Duties

The responsibilities and duties of the Executive Director shall include the following:

- a.) To attend meetings of the Board of Directors, the Executive Committee and the Operations Committee;
 - (1) The Executive Director shall have the right to take part in the discussion of all matters coming before the Board of Directors, the Executive Committee, and the Operations Committee but shall have no vote thereon;
 - (2) The Executive Director shall be entitled to and be given notice of all meetings, regular and special, of the Board of Directors, the Executive Committee and the Operations Committee;
 - (3) When the Executive Director is unable to attend a meeting, the Executive Director may appoint a DCC staff member to attend;
- b.) To appoint, evaluate, promote, demote or remove employees of the DCC pursuant to the approved DCC budget and in accord with the policies and procedures of the DCC;
- c.) To recommend to the Executive Committee for adoption such policies and procedures as may be deemed necessary or expedient for the efficient operation of the DCC;
- d.) To direct and oversee the day-to-day operations of the DCC and its employees and to expend operating and capital budgets consistent with the policies and direction of the Board of Directors;
- e.) To enforce, administer, and implement the policies of the DCC as established by the Board of Directors and Executive Committee;
- f.) To prepare a quarterly report of the DCC activities and provide copies to the Board of Directors and the Executive Committee;
- g.) To prepare a proposed annual operating and capital budget as well as a report of estimated revenues in order to determine the estimated funds necessary to defray the expenses of the DCC for each fiscal year and to present the proposed operating and capital budget to the Executive Committee in the manner set forth under Article IX herein;



- h.) To serve as a staff resource to the Executive Committee and the Operations Committee and coordinate the activities of the respective committees as required;
- i.) To serve as a Member of regional committees, organizations, and forums related to public safety communications and represent the collective interests of the DCC and its Members as required;
- j.) To communicate regularly with the Members and other agencies utilizing the DCC communication services about operational, policy and training issues;
- k.) To keep minutes of the meetings of the Board of Directors, Executive Committee, and Operations Committee and see that all notices of the Board and Committee are duly provided and/or published in accordance with the provisions of this Agreement and the ByLaws adopted by the Board, Executive Committee and Operations Committee or as otherwise required by law;
- l.) To act as custodian of the business records of the DCC; and
- m.) To perform such other duties as may be delegated from time to time by the Board of Directors or by the Executive Committee.

ARTICLE VIII: OPERATIONS COMMITTEE

8.1 Membership on the Operations Committee

Each law enforcement agency and fire agency of a Member of the DCC and the Dakota County Joint EMS Council shall have one seat on the Operations Committee. Each law enforcement agency, fire agency and the Dakota County EMS Council shall designate a primary member and an alternate member to the Committee. Each law enforcement agency and fire agency of a community that is served by the DCC but is not a Member of the DCC may participate in the Operations Committee as a non-voting, ad-hoc member. The Executive Director shall provide staff support to the Operations Committee and its subcommittees and shall provide information and guidance to the Committee and subcommittees as needed.

8.2 Purpose and Powers of the Committee

There is hereby established an Operations Committee of the DCC. The Operations Committee may establish and abolish advisory subcommittees, as it deems necessary. Initially, the Committee will have two subcommittees – the Law Enforcement Subcommittee and the Fire/EMS Subcommittee. The Members of the Operations Committee and its subcommittees shall serve without compensation and shall be available to the DCC Executive Director and Executive Committee to assist in the coordination of:

- Unified radio procedures.
- DCC procedural changes that affect one or more Members of the DCC.
- Field training and back up exercises.
- DCC and Members' records management functions.
- The orderly transmittal of inquiries regarding the handling of specific matters by the DCC.
- Obtaining and preparing recommendations concerning operational input from the Executive Director of the DCC and the Members' public safety departments.



The Operations Committee Shall have the Following Powers and Duties:

- a.) Be the personal contact at each Member's law enforcement or fire/EMS department for the Executive Director for daily procedural and operational issues;
- b.) Provide liaison to the DCC Executive Director in the coordination and preparation of unified procedures and policies;
- c.) Be a resource for the Executive Committee in researching special topics of interest;
- d.) Forward comments and inquiries on the operation of the DCC from their respective agencies to the Executive Director after initial local review and screening;
- e.) Coordinate field training and back-up exercises;
- f.) Perform any other duties as required by the Executive Committee.

8.3 Voting by Committee Members

It is expected that decisions and recommendations of the Operations Committee shall be made by consensus, but where consensus does not exist, the following procedure shall apply:

- a.) Each Member of the DCC shall have a maximum of two votes on the Operations Committee – one from the law enforcement agency and one from the fire agency of that Member. A Member that operates a joint law enforcement or fire agency with another Member shall continue to have a voting seat on the Operations Committee for each joint agency. A Member that has only a law enforcement agency or fire agency is entitled to one vote. The Dakota County EMS Council shall have one vote on the Operations Committee. Votes shall be cast by the representative of each agency (or by his/her designated alternate, if such representative is absent) as the official representative to the Operations Committee.
- b.) No proxy votes or absentee voting shall be permitted except as otherwise provided in the ByLaws of the Executive Committee.
- c.) Membership and voting on subcommittees established by the Operations Committee shall be as required by the ByLaws of the Committee or the resolution of the Committee that establishes the subcommittee. Each Member that maintains a law enforcement agency individually or jointly with another Member shall have one representative and one vote on the Law Enforcement Subcommittee. Each Member that maintains a fire agency individually or jointly with another Member shall have one representative and one vote on the fire agency Subcommittee.

8.4 Meetings and Actions

The Operations Committee shall meet at least six times each year and may schedule additional meetings as deemed necessary and appropriate by the Membership. The meetings will be conducted in compliance with any direction provided to the Committee by the Executive Committee, subject to the policies established by the Board of Directors and the Executive Committee. Except as otherwise stated in the ByLaws, no action of the Operations Committee or its subcommittees shall be in effect until approved or ratified by



the Executive Committee or, if deemed necessary by the Executive Committee, until approved or ratified by the Board of Directors.

Any law enforcement, fire or EMS agency that receives dispatch services from the DCC may appear before the Operations Committee or its subcommittees to discuss concerns, complaints or other operational issues concerning the DCC. If the agency is not satisfied with the action or lack of action taken by the Operations Committee, that agency may appear before the Executive Committee to discuss the actions or policies of concern. Prior to appearing before the Executive Committee, the agency shall meet and confer with the Executive Director about the issues to be discussed with the Executive Committee.

ARTICLE IX: BUDGET

9.1 Recommended Annual Budget

The Executive Director shall prepare a proposed annual operating and capital budget for the Executive Committee no later than May 1st of each year to allow the Executive Committee members to consult with their respective governing bodies and prepare a recommended annual operating and capital budget for consideration by the Board of Directors. An annual operating and capital budget shall be adopted by the Board of Directors at a regular meeting before September 1st each year. If the Board fails to adopt a budget by September 1st, the budget from the current year shall be deemed approved for the next year. This requirement to adopt a budget at a regular meeting of the Board by September 1st does not apply to the calendar year in which this Agreement is first executed.

9.2 Distribution of Recommended Budget

No later than May 1st, copies of the proposed operating and capital budget as recommended by the Executive Director shall be delivered to each Executive Committee Member.

9.3. Review by Executive Committee

Not later than August 1st of each year, the Executive Committee shall review the annual operating and capital budget as proposed by the Executive Director and make such modifications, as it deems proper. Following approval by the Executive Committee, the proposed operating and capital budget shall be submitted to the Board of Directors for final approval.

9.4 Allocation of Costs to Members

The cost of the operations and maintenance, and capital projects of the DCC will be shared by the Members. At the time of approval of the annual operating and capital budget, the Board of Directors shall fix the cost-sharing charges for all Members and any other participants in the DCC in amounts sufficient to provide the funds required by the approved annual operating and capital budget for the following year. Each Member shall take all required actions to authorize the funds necessary to meet its obligations under the approved annual operating and capital budget.



From the effective date of this Agreement as defined in Article II until the completion of the first full calendar year that the DCC is in operation, the allocation of annual operating and capital budget costs to Members shall be based upon the Cost Allocation Model contained in Table I of Attachment B, which is incorporated into and made a part of this Agreement. When the Board adopts an operating budget and cost allocation for 2006, it shall also adopt a budget and cost allocation for 2005 to cover the expenses the DCC has incurred or will incur for the period from the effective date of this Agreement to December 31, 2005.

After the first full calendar year that the DCC is in operation, the allocation of annual operating and capital budget costs to Members shall be based on the percentage of the total number of events processed by the DCC in the previous twelve months that are attributable to that Member. An event is defined as a Computer Aided Dispatching system (CAD) event (transaction as logged), a 9-1-1 telephone call processed, a ten-digit telephone call for service processed, and, when the DCC is able to capture this information, the number of data system inquiries processed by DCC employees. The calculation of the annual operating and capital cost allocation after commencing operations will be based on the formula in Attachment B, Table 3, which is incorporated into and made a part of this Agreement.

During the first five years that the DCC is in operation, the County of Dakota will provide a cash subsidy toward the operational budget in the amount of \$62,500 per month based upon the Allocation of County Subsidy contained in Table 2 of Attachment B. The amount of the County of Dakota subsidy for twelve months of DCC operation will be \$750,000. The County of Dakota is not obligated to provide an operational budget subsidy after the initial five years of DCC operations.

9.5 Billing and Delinquent Payments

Invoices for the cost-sharing charges shall be provided to Members monthly. Any Member whose charges have not been paid within thirty (30) days after billing shall be assessed interest on the delinquent payment(s) at a rate determined by the Board of Directors, not to exceed the maximum authorized by law at the time the payment becomes delinquent. The Directors and representatives of a Member that is delinquent on such payment shall not be entitled to vote on any matters coming before the Board of Directors or the Executive Committee until all delinquent payments and interest have been paid.

9.6 Expenditure of the Annual Budget.

The Board of Directors and/or the Executive Committee may establish procedures and limitations as may be necessary to preserve the integrity and purpose of the approved operating and capital budget. After adoption of the annual operating and capital budget by the Board of Directors, the Executive Director and the Executive Committee shall make all expenditures in accordance with such budget. Purchases and/or letting contracts shall be done in accordance with procedural guidelines established by resolution of the Board of Directors, consistent with Minnesota law.



The Executive Director shall have the power to transfer funds within the total annual operating budget in order to meet unanticipated needs or changed situations. The Executive Director shall not transfer funds within the total annual capital budget or between the operating budget and capital budget. The Executive Director shall report any transfer of funds within the annual operating budget to the Board of Directors and the Executive Committee in the Director's next quarterly report.

9.7 Credit or Payment to Members for Services

The Board of Directors may approve contract payments or cost-allocation credits to any Member that provides services, resources or property to the DCC.

ARTICLE X: AUDIT

The Board of Directors shall call for an annual audit of the financial affairs of the DCC, to be performed by an independent Certified Public Accountant retained by the Board in accordance with generally accepted auditing principles. A copy of the annual audit report shall be provided to each Member.

ARTICLE XI: TERMINATION AND DISSOLUTION

11.1 Termination.

This Agreement shall terminate upon the occurrence of any one of the following events:

- a.) When 4/5^{ths} of the Members agree by non-weighted voting, pursuant to a resolution of their governing bodies, to terminate the Agreement.
- b.) When necessitated by operation of law or as a result of a decision by a court of competent jurisdiction.

11.2 Effect of Termination.

Upon the occurrence of one or more of the events in Section 11.1, the DCC shall be terminated and dissolved in accord with the provisions hereof.

- a.) Termination shall not discharge any liability incurred by the Board or by the Members during the term of this Agreement.
- b.) Each Member shall be liable for its own acts and for the acts of the Board to the extent provided by law and this Agreement.
- c.) Property that is owned by the DCC at the time of termination, including any surplus money, shall be divided among the units of government that are Members of the DCC at the time of termination, in proportion to their average respective regular and special assessment payments toward the operating and capital budgets for the preceding three (3) fiscal years. If liabilities exceed all assets, the difference shall be made up by contributions from all Members on a proportionate basis according to the then prevailing annual budget assessment formula.
- d.) The Board shall approve a final report of its activities and affairs prior to dissolution of the DCC.
- e.) Upon such termination and dissolution, and after payment of all debts, all files and documentation shall be distributed to the Member community that has jurisdiction of the subject matter of the file or



documentation without charge or offset. Records of the DCC shall be retained by the County of Dakota consistent with its current document retention schedules.

f.) Equipment and property that is owned by an individual Member or Members that is being used by the DCC at the time of termination shall be returned to the owner(s) upon termination and dissolution of the DCC.

ARTICLE XII: WITHDRAWAL OF A MEMBER

At any time after the Initial Term of this Agreement, any Member may withdraw from the DCC subject to the provisions of this Article.

- a.) Such withdrawing Member shall give written notice before July 1st of any year and at least 18 months prior to the intended date of withdrawal, in the form of a certified copy of a resolution passed by its governing body, a copy of which must be mailed or delivered to the Executive Director of the DCC and the Chairs of the Executive Committee and Board of Directors.
- b.) Sixty (60) days notice provided by the Executive Director or the Board of Directors to any Member of its nonpayment of cost allocation fees as set forth herein, and/or the refusal or declination of any Member to be bound by any obligation of the DCC, shall also constitute notice of withdrawal of such Member, and if the Member fails to cure nonpayment or refuses to comply with an obligation within the Sixty days (60), withdrawal of that Member from the DCC shall become effective on the Sixty First day after mailing of said notice. The Force Majeure provisions of Article XV apply to a non-payment of charges and fees and the refusal or declination of a Member to act.
- c.) Withdrawal of a Member shall also constitute withdrawal of its representatives to the Board of Directors, the Executive Committee and the Operations Committee and subcommittees.
- d.) The withdrawing Member shall forfeit any and all interest, right and title to DCC property and assets of any type whatsoever.
- e.) The withdrawing Member shall be liable for all costs incurred by the DCC as a result of the Member's separation and withdrawal. This may include, but is not necessarily limited to, legal fees, court costs and interest-on late payment of obligations.
- f.) The withdrawing Member shall continue to be responsible for:
 - One hundred (percent of that Member's pro rata share of the operating costs of the DCC that are incurred up to the date of withdrawal, and One hundred percent of that Member's pro rata share of any capital debts, liabilities or obligations of the DCC that were incurred prior to the date of providing notice of intent to withdraw and are due and payable before the effective date of withdrawal.
 - For any contractual obligations, it has separately entered into with the DCC.



ARTICLE XIII: INSURANCE AND INDEMNIFICATION

13.1 Insurance and Limitations on Liability

The DCC shall purchase insurance for the operation, equipment, and facilities of the DCC and workers compensation insurance for DCC employees, as the Board of Directors or Executive Committee deems necessary. Such insurance shall name each Member as an additional insured, and may name other entities that purchase communications services from the DCC as additional insureds if deemed appropriate. By purchasing insurance the Members do not intend to waive, and shall not be interpreted to constitute a waiver by any Member of limitations on liability or immunities provided by any applicable Minnesota law, including Minnesota Statutes, Chapter 466.

If the DCC incurs a legal liability that is not covered by insurance, is within its statutory liability limitations and to which no liability exemption or immunity applies, that liability shall be paid by contributions from all Members on a proportionate basis according to the then prevailing annual operating budget assessment formula. If the Board of Directors incorporates the DCC as a nonprofit corporation, the Members shall collectively be responsible for any liability not covered by insurance only to the extent required by law.

13.2 Third Party Action Against a Member

Each Member that is subject to a claim of any nature commenced by a person or entity that is not a Member of the DCC, which arises as a consequence of the acts or omissions of such Member's personnel in responding to, or providing emergency services pursuant to a dispatch by the DCC shall, at such Member's sole expense, indemnify and save free and harmless any other Member, and its officers, employees and agents from any cost, expense, attorney fees, judgment or liability of any nature when any other Member is subject to the same claim solely as a consequence of such other Member being a Member of the DCC.

13.3 Third Party Action Against the DCC

In the event the DCC and/or its Directors, officers, employees and agents are subject to a claim of any nature which arises as a consequence of the acts or omissions of Member's personnel in responding to or providing emergency services pursuant to a dispatch by the DCC, such Member shall at its sole expense, indemnify and save free and harmless from any cost, expense, attorney fees, judgments or liability of any nature the DCC and/or its officers, Directors employees and agents unless it is determined that the officers, Directors, employees and/or agents of the DCC acted in a negligent or intentionally wrongful manner in connection with dispatching the personnel of the Member.

13.4 Member Action Against the DCC

In the event that any Member should file suit or an action against the DCC, all representatives of that Member shall be prohibited from attending any meetings or discussions or having access to the results of such meetings related to the defense of the suit or action.



The Member's representatives shall have no direct access to any written communication concerning the matter except by legal process, and no representative of the Member shall be allowed to vote on any issue related to the suit or action.

ARTICLE XIV: RESOLUTION OF DISPUTES

The Members agree to engage in good faith efforts to resolve any disputes that arise over the establishment, operation or maintenance of the DCC. Members that have concerns about the operations of the DCC may appear at meetings of the Operations Committee, Executive Committee and Board of Directors to discuss issues of concern.

ARTICLE XV: FORCE MAJEURE

A Member shall not be liable to the DCC or another Member for the failure to perform an obligation under this Agreement due to unforeseeable acts or events outside the defaulting party's reasonable control, providing the defaulting Member gives notice to the Board of Directors and Executive Committee as soon as possible. Acts and events may include acts of God, acts of terrorism, war, fire, flood, epidemic, acts of civil or military authority, and natural disasters.

ARTICLE XVI: MISCELLANEOUS PROVISIONS

16.1 Entire Agreement: This Agreement shall supersede all prior oral or written statements, agreements, and understandings between or among the parties hereto with respect to the establishment and operation of a countywide public safety communications center.

16.2 Attorneys' Fees: In the event of litigation relating to the Agreement, the prevailing party (e.g. the party whose position is substantially upheld) shall be entitled to recover from the losing party any costs or reasonable attorney's fees incurred by the prevailing party in connection with such litigation.

16.3 Severability: If any provision of this Agreement shall be held to be invalid by a court of competent jurisdiction, the remaining terms of this Agreement to the extent not inconsistent with any such holding, shall not be affected thereby if such remaining terms would then continue to conform with the requirements of applicable laws.

16.4 Counterparts: This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall be deemed to constitute one and the same agreement.



16.5 Waiver: Any right or remedy that a party may have under this Agreement may be waived in writing by such party without the execution of a new or supplementary agreement, but any such waiver shall not affect the future exercise of the rights of such party hereunder (to the extent not previously waived in writing) or any other rights of the parties not specifically waived. No waiver of any right or remedy by any party at any one-time shall be deemed to be a waiver of any such right or remedy in the future.

16.6 Amendments, Modifications: This Agreement may be amended or modified only by a written document, duly executed by all parties that are Members of the DCC on the date the amendment is executed.

16.7 Section Headings: The descriptive headings of the articles, sections and subsections of this Agreement are for convenience only and shall not affect the meaning or construction of any of the provisions hereof.

16.8 Governing Law: The respective rights, obligations, and remedies of the parties under this Agreement and the interpretation thereof shall be governed by the laws of the State of Minnesota which pertain to agreements made and to be performed in the State of Minnesota.

16.9 Binding Effect: This Agreement shall be binding upon and shall inure to the benefit of the parties hereto.

16.10 Further Assurances: Each party hereto shall from time to time execute, acknowledge and deliver such further instruments and perform such additional acts at no cost to such party as the other party may reasonably request to further effectuate or confirm the intent of this Agreement.

16.11 Good Faith: In exercising its rights and fulfilling its obligations hereunder, each party shall act in good faith. Each party acknowledges that this Agreement contemplates cooperation between and among the parties.



IN WITNESS WHEREOF, the undersigned governmental units, by action of their governing bodies, have caused this Agreement to be executed in accordance with the authority of Minnesota Statute §471.59.

Approved by the City Council **CITY OF APPLE VALLEY**

Date _____ By _____
Date of Signature _____ Attest and Date of Signature _____

(NOTE: Identical signature blocks appear for the following:)

Approved by the City Council **CITY OF BURNSVILLE**

Approved by the City Council **CITY OF EAGAN**

Approved by the City Council **CITY OF FARMINGTON**

Approved by the City Council **CITY OF HASTINGS**

Approved by the City Council **CITY OF INVER GROVE HEIGHTS**

Approved by the City Council **CITY OF LAKEVILLE**

Approved by the City Council **CITY OF MENDOTA HEIGHTS**

Approved by the City Council **CITY OF ROSEMOUNT**

Approved by the City Council **CITY OF SOUTH ST. PAUL**

Approved by the City Council **CITY OF WEST ST. PAUL**

Approved by Dakota County Board **COUNTY OF DAKOTA**



PSAP Staff

Executive Director

Emergency Communications

*(Staff Resource to the Executive and
Operations Committees)*

Operations Committee

*(Consensus When Possible; When Voting, 1 Seat - 1 Vote From Each
Fire & Law Enforcement Agency
Of The JPA Member Communities and the Dakota County EMS Council
With The Chair As Tiebreaker)*

Executive Committee

*(Chief Administrative Officers of Member
Jurisdictions with voting as per Section 6.3)*

Board of Directors

(Elected Officials with voting as per Section 5.3)

County Board

City Councils

Attachment A: Dakota Communications Center Joint Powers Agreement Organizational Structure



Dakota Communications Center JPA

Attachment B**Table 1 – Budget Cost Allocation Model for Joint Dispatch Applies to all time periods prior to operation**

Community	Apple Valley	Burnsville	Dakota County	Eagan	Farmington	Hastings	Inver Grove Heights	Lakeville	Mendota Heights	Rosemount	South Saint Paul	West Saint Paul
% of Total Activity	12.60	17.09	6.97	18.00	4.83	4.08	6.39	11.48	1.74	4.89	5.87	6.04

Percentages calculated based on end of year activity totals for 2004; these percentages were calculated during the HiPP Joint Dispatch Project and presented as back-up data to the City and County resolutions for participation in a Countywide Joint Dispatch Operation (Cost Model 2 Revision 050405).

Table 2 – Allocation County Subsidy

The County has agreed to provide a subsidy for the first five years (60 months) of operation for the joint dispatch entity. This subsidy will be \$750,000 for the first twelve months. After the first full year of Joint Dispatch Operation, the County Subsidy amount will be adjusted by the U.S. Dept. Labor Bureau of Labor Statistics Consumer Price Index – All Urban Consumers for Minneapolis-St Paul for the previous calendar year. The table below illustrates the aggregate amount of the subsidy at a run rate of \$62,500 per month; this table is to be used to determine the subsidy amount on a pro-rated basis for the first calendar year period that joint dispatch is “operational”.

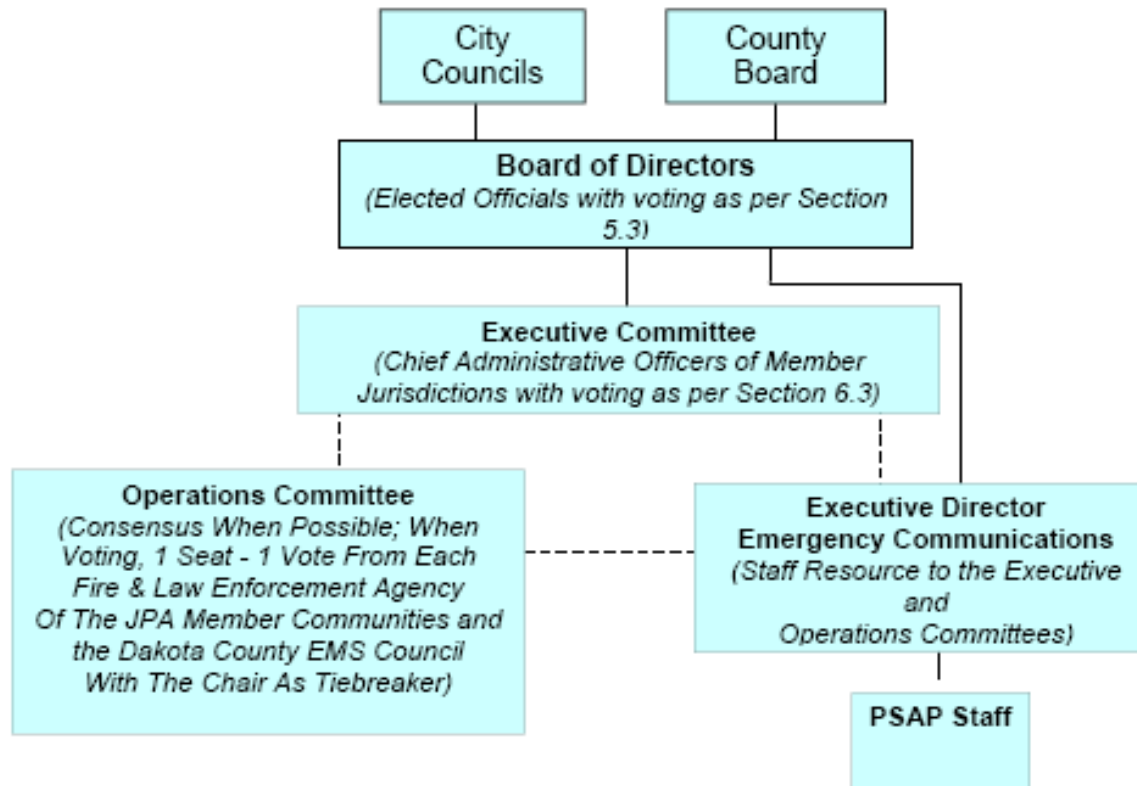
Annual Months of Operation	1	2	3	4	5	6	7	8	9	10	11	12
Amount of County Subsidy	\$62,500	\$125,000	\$187,500	\$250,000	\$312,500	375,000	\$437,500	\$500,000	\$562,500	\$625,000	\$687,500	\$750,000

Table 3 – Calculation of Annual Operating Cost Allocation after Joint Dispatch is Operational

Annual Share of Operating Costs = [Total Operating Costs – (Calculated County Subsidy)] x Percent of Total Activity for Community



*Attachment A: Dakota Communications Center Joint Powers Agreement
Organizational Structure*



Dakota Communications Center (DCC) ByLaws March 16, 2006**Name**

The name of the Joint Powers Board shall be the Dakota Communications Center, herein after referred to as the "DCC".

Purpose

The purpose of the DCC is to acquire and provide the facilities, infrastructure, hardware, software, services, and other items necessary and appropriate for the establishment, operations, and maintenance of the joint law enforcement, fire, EMS, and other emergency communications system for the mutual benefit of the members and the people of Dakota County.

Term

These ByLaws shall become effective upon approval by the DCC Board of Directors and shall continue in full force and effect for such time as the Joint Powers Agreement, dated September 20, 2005 remains in effect.

Organization

The DCC shall consist of a Board of Directors, an Executive Committee, and an Operations Committee. The Board of Directors shall provide policy leadership and approve the general policies of the DCC; the Executive Committee shall oversee the operations and functions of the DCC; and the Operations Committee shall be advisory to the Executive Director and the Executive Committee in the coordination and preparation of unified procedures and policies, coordinate field training and back up exercises, and be the contact at each member's law enforcement or fire/EMS department. The Operations Committee may establish subcommittees as necessary for the conduct of its duties. Initially, the Operations Committee shall have two subcommittees, Law Enforcement and Fire/EMS.

Appointments and Terms**5.1 Board of Directors**

The governing body of the DCC is its Board of Directors, which consists of an elected official from each Member. Each Member shall appoint an elected official to serve as a Director, and an elected official to serve as an Alternate Director to serve in the absence of the named Director. Each Member shall appoint a Director and Alternate at the time the Joint Powers Agreement is approved. Thereafter, Farmington, Hastings, Inver Grove Heights, Mendota Heights, Rosemount, South St. Paul, and West St. Paul shall appoint a Director and an Alternate in January of each odd numbered year beginning in 2007, and Apple Valley, Burnsville, Dakota County, Eagan, and Lakeville shall appoint a Director and an Alternate in January of each even numbered year beginning in 2008.



Except for the first term, the term of each Director and Alternate shall be for two years. Directors and Alternates may be reappointed at the discretion of the Member.

Executive Committee

The Executive Committee shall consist of the chief administrators of each Member. Each Member shall appoint an alternate at the time the Joint Powers Agreement is approved. Thereafter, the Members shall appoint an alternate in January of every even numbered year, beginning in 2008. The term of the alternate shall be for two years.

Operations Committee

Each law enforcement agency, fire agency and the Dakota County EMS Council shall designate a primary member and an alternate member to the Committee after approval of the Joint Powers Agreement. Thereafter, the each law enforcement agency, fire agency, and the Dakota County EMS Council shall appoint a member and an alternate in January of each even numbered year beginning in 2008. The terms of the member and alternate shall be for two years.

Each law enforcement agency and fire agency of a community that is served by the DCC but is not a Member of the DCC may participate in the Operations Committee as a non-voting, ad-hoc member.

Officers and Terms

6.1 Board of Directors

1. The DCC Board of Directors shall elect a Chair and a Vice Chair from among the Directors at its first meeting after approval of the Joint Powers Agreement. Thereafter, the DCC Board of Directors shall elect a Chair and a Vice Chair at its first meeting of each even numbered year beginning in 2008.
2. The Chair and the Vice Chair shall serve two year terms or until their successors are elected. The term of office shall be at the close of the meeting at which the Chair and Vice Chair are elected. No member may hold more than one office at a time.
3. In the event of a vacancy in the office of Chair or Vice Chair, the Board members shall elect a replacement to serve for the remainder of the term at the first meeting following the vacancy.
4. The Chair's duties and responsibilities include representing the Board as its principal spokesperson; presiding at Board meetings; directing the preparation of the agenda for all Board meetings; and appointing members to special committees.
5. The Vice Chair shall exercise the duties and responsibilities of the Chair whenever the Chair is unable to serve.
6. The Chair and Vice Chair shall not serve for more than two consecutive terms.
7. The DCC Executive Director shall serve as the Secretary to the Board.



Executive Committee

1. The Executive Committee shall elect a Chair and Vice Chair from among its members at its first meeting after approval of the Joint Powers Agreement. Thereafter, the Executive Committee shall elect a Chair and Vice Chair at its first meeting of every even numbered year beginning in 2008.
2. The Chair and Vice Chair shall serve two year terms or until their successors are elected. The term of office shall be effective at the close of the meeting at which the Chair and Vice Chair are elected. No member may hold more than one office at a time.
3. In the event of a vacancy in the office of Chair or Vice Chair, the Committee members shall elect a replacement to serve for the remainder of the term at the first meeting following the vacancy.
4. The Chair's duties and responsibilities include representing the Executive Committee at its principal spokesperson; presiding at Committee meetings; directing the preparation of the agenda for all Committee meetings; and appointing members to special committees.
5. The Vice Chair shall exercise the duties and responsibilities of the Chair whenever the Chair is unable to serve.
6. The Chair and Vice Chair shall not serve for more than two consecutive terms.
7. The DCC Executive Director shall serve as the Secretary to the Executive Committee.

Operations Committee

1. The Operations Committee shall elect Co-Chairs, one from law enforcement and one from fire/EMS, at its first meeting after approval of the Joint Powers Agreement. Thereafter, the Operations Committee shall elect the police Co-Chair at its first meeting of every odd numbered year beginning in 2007, and the fire/EMS Co-Chair at its first meeting of every even numbered year beginning in 2008.
2. The Co-Chairs shall serve two year terms or until their successors are elected. The term of office shall be effective at the close of the meeting at which the Co-Chairs are elected.
3. In the event of a vacancy of a Co-Chair, the Committee members shall elect a replacement to serve for the remainder of the term at the first meeting of the Committee following the vacancy.
4. The Co-Chairs shall preside at all meetings and perform such duties as are normally associated with that position.
5. The Co-Chairs of the Operations Committee shall serve as the Chairs of their respective subcommittees.
6. The Co-Chairs shall not serve for more than two consecutive terms.
7. The DCC Executive Director shall provide staff support, including secretarial duties such as keeping minutes and sending minutes via email to all members and alternates, to the Operations Committee and its subcommittees.



Chair Pro-Tem

In the absence of the Chair and the Vice Chair of the Board of Directors, the Executive Committee, and both Co-Chairs of the Operations Committee, the remaining members of the Board or Committee shall elect from among themselves a Chair Pro-Tem who shall perform the duties of Chair for that meeting.

MEETINGS

7.1 Board of Directors

- a.) The Board of Directors shall have regular meetings as least twice each calendar year. The Chair upon agreement by a majority of the members may cancel regular meetings. Notice of such cancellation shall be provided as far in advance of the scheduled meeting as possible.
- b.) A quorum for the conduct of all business by the Board of Directors shall consist of a majority of the Directors, or in their absence Alternate Directors, then holding office.
- c.) For regular meetings, thirty days prior notice shall be provided to each Member, Director, and Alternate Director of the date, time, and location. Notice shall be provided in writing and by email.
- d.) Five days prior to each regular meeting, the Secretary shall send an agenda to each Director and Alternate Director and to each member of the Executive Committee. At the beginning of a regular meeting, any member may move to amend the meeting agenda.
- e.) Regular meetings of the Board will be conducted in the following order:
 - 1. Call the Meeting to Order;
 - 2. Roll Call;
 - 3. Approve Agenda;
 - 4. Consent Agenda
 - 5. Action Items;
 - 6. Information Updates and Discussion Items;
 - 7. Other Business;
 - 8. Adjourn.
- f.) Upon the request of any Board member, immediately preceding a vote by the Board, the Secretary shall repeat the motion, name of the person making the motion and the name of the person who has seconded the motion. Any Board member may request to have their vote entered in the minutes.
- g.) Special meetings may be called by the Chair, or by any four Directors.
- h.) For special meetings, three days written and email notice shall be provided to all Members, Directors and Alternate Directors that shall include an agenda specifying the subjects of such special meeting. The business conducted at a special meeting shall be limited to those items specified in the agenda.
- i.) When the member and their alternate are present a regular meeting or special meeting, only the member is to be seated at the meeting table.
- j.) When the member and their alternate are present at a regular or special meeting, only the member may cast votes and be recorded in the proceedings.



Executive Committee

- a.) The Executive Committee shall meet quarterly or more often as determined by the Chair. The Chair upon agreement by a majority of the members may cancel regular meetings. Notice of cancellation shall be provided as far in advance of the scheduled meeting as possible.
- b.) A quorum for the conduct of all business by the Executive Committee shall consist of a majority of members, or in their absence, alternate members.
- c.) For regular meetings, 15 days prior notice shall be provided to each Committee member and alternate of the date, time, and location. Notice shall be provided in writing and by email.
- d.) Five days prior to each regular meeting, the Secretary shall send an agenda to each member and alternate member of the Committee. At the beginning of a regular meeting, any member may move to amend the meeting agenda.
- e.) Regular meetings of the Committee shall be conducted in the following order:
 - 1. Call the Meeting to Order;
 - 2. Roll Call;
 - 3. Approve Agenda;
 - 4. Consent Agenda
 - 5. Action Items;
 - 6. Information Updates and Discussion Items;
 - 7. Other Business;
 - 8. Adjourn.
- f.) Upon a request of any Committee member, immediately preceding a vote by the Committee, the Secretary shall repeat the motion, name of the person making the motion and name of the person who has seconded the motion. Any Committee member may request to have their vote entered in the minutes.
- g.) Special meetings may be called by the Chair, or by any four members.
- h.) For special meetings, three days written notice and email notice shall be provided to all members and alternates that shall include an agenda specifying the subjects of such special meeting. The business conducted at a special meeting shall be limited to those items specified in the agenda.
- i.) When a member and their alternate are present at a regular meeting or special meeting, only the member is to be seated at the meeting table.
- j.) When a member and their alternate are present at a regular or special meeting, only the member may cast votes and be recorded in the proceedings.

Operations Committee

- a.) The Operations Committee shall meet six times per year, or more often as determined by the Co-Chairs. The Co-Chairs upon agreement by a majority of the members may cancel regular meetings. Notice of such cancellation shall be provided as far in advance of the scheduled meeting as possible.
- b.) A quorum for the conduct of all business by the Operations Committee and its subcommittees shall consist of a majority of the members, or in their absence, the alternate members.



- c.) Regular meetings of the Operations Committee shall be scheduled at the Committee's first meeting of each year.
- d.) For regular meetings, ten days prior notice shall be provided to each member and alternate of the date, time, and location. Notice shall be in writing and by email.
- e.) Five days prior to each regular meeting, the Executive Director shall send an agenda to each member and alternate. At the beginning of a regular meeting, any member may move to amend the agenda.
- f.) Regular meetings of the Committee will be conducted in the following order:
 - 1. Call the Meeting to Order;
 - 2. Roll Call;
 - 3. Approve Agenda;
 - 4. Consent Agenda;
 - 5. Action Items;
 - 6. Information Updates and Discussion Items;
 - 7. Other Business;
 - 8. Adjourn.
- g.) Upon the request of any Committee member, immediately preceding a vote by the Committee, the recording secretary shall repeat the motion, name the person making the motion, and the name of the person who has seconded the motion. Any Committee member may request to have their vote entered in the minutes.
- h.) Special meetings may be called by the Co-Chairs
- i.) For special meetings, three days notice shall be provided to all members and alternates that shall include an agenda specifying the subjects of such special meeting. The business conducted at a special meeting shall be limited to those items specified in the agenda.
- j.) When a member or their alternate are present at a regular or special meeting, only the member may cast votes and be recorded in proceedings.

Voting

Voting by the Board of Directors, the Executive Committee, and the Operations Committee and its subcommittees, shall be as defined in the Joint Powers Agreement. In addition, no proxy votes or absentee votes shall be allowed.

Robert's Rules

Robert's Rules of Order shall govern all meetings of the Board of Director's, the Executive Committee, and the Operations Committee and its subcommittees.



Amendment of ByLaws

These ByLaws may be amended at any regular meeting of the Board of Directors by an affirmative vote of 2/3 of the Directors, provided the amendment is not inconsistent with the Joint Powers Agreement. At its discretion, the Board of Directors shall provide an opportunity for the Executive Committee, the Operations Committee and/or other affected parties to review and comment on a proposed amendment. Proposed amendments shall be submitted to the Board of Directors 30 days prior to the meeting at which they will be considered, and the agenda for the meeting shall state that the amendment will be offered. The action of the Board of Directors on any amendment shall be final.

New Dispatch Center is Up and Running

Nathan Hansen

The Farmington Independent – 01/03/2008

There are still some things to put in closets and cabinets and a few loose ends to tie up here and there, but the future of emergency dispatch in Dakota County is officially up and running.

Officials at the new Dakota Communications Center flipped the Switch to transfer 9-1-1 services to the center around 5 a.m. Dec. 27. By Saturday, fire, and municipal calls had been transferred as well and the center, two years in the making, was up and running.

The dispatch center handled 400 incidents in its first 24 hours. So far, so good. “We had no surprises on technology on any of those cutover days. Everything worked very smoothly,” said Kent Therkelsen, the DCC’s executive director. “We haven’t had time to really sit back and take it all in. Right now we’re working hard to make sure we’re understanding all concerns and dealing with them. “We’ve had a couple of clarifications on what happens to telephone calls after hours. How do we get a hold of Lakeville Public Works at 3 in the morning if a water main breaks?”

There were a few issues over the weekend — the state’s computer system did not recognize some DCC computers when they tried to check criminal histories — but most were fixed by Monday. Last week’s changeover was the culmination of a process that started with discussions about how to operate more efficiently and how to improve communication among police and firefighters countywide. According to Therkelsen, replacing the five dispatch centers that formerly operated in Dakota County will result in \$2.4 million in savings over the next three years. The consolidation did not result in any layoffs, but there were some retiring or resigning employees who were not replaced. All told there are 64 full-time employees at the DCC, 58 of whom are dispatchers.

Therkelsen said the center will improve communication among agencies, with dispatchers handling calls from multiple cities and communication systems linked to all departments in Dakota County.



The call center is set up with three banks of dispatchers to handle different areas of the county, but dispatchers from one area can easily step in to help if a particular area receives an overwhelming number of calls. That wasn't the case before. "That's one of the major things we gain with this approach," Therkelsen said. "If the Lakeville center got overwhelmed with activity there wasn't much the other centers could do to help out."

Each dispatcher works at a futuristic-looking station with six computer screens. Desks rise and lower at the push of a button to adjust to dispatchers of different heights. There will be one station dedicated to calls from officers looking for criminal background information.

Therkelsen is confident the new dispatch center will provide a number of benefits to police and fire departments across the county, but for the people doing the dispatching there have been some changes, from where they work to where they get their checks. The DCC is a separate entity from the county, run by a cooperative of cities within the county. All of the county's dispatchers officially became DCC employees in January of 2007.

Some changes have clearly been for the better. Many of the five dispatch centers that are being replaced were like bunkers — cramped rooms stuck deep inside a police department. At the DCC dispatchers work together in a large room with several windows to let in daylight. On one wall Monday morning a large TV showed the Montel Williams show with the sound turned off. The center also includes a break room with refrigerators for each of the three shifts, a small exercise room and a so-called "quiet room" dispatchers can retreat to if they need to get away for a moment.

Other changes, like dispatching for multiple cities, might take some adjustment. Therkelsen knows some dispatchers might not feel comfortable with the new arrangement, but he's hoping all will eventually adjust. There will be adjustments for police officers and firefighters, too. Therkelsen has encouraged emergency workers to stop in at the DCC when they have time to meet the people whose voices they're now hearing on the other end of their radios.

Farmington fire marshal John Powers, Farmington's fire department representative on the DCC operations committee, believes the new center will be a benefit to Farmington residents. He expects the centralized call center plus the installation of new 800 MHz radio system countywide will improve communication and ultimately lead to better response times. "It's all about us trying to provide a better service to the public," Powers said. "We can be more efficient." Therkelsen knows he isn't done working out the kinks with this new system. As operations continue he expects to run into problems that nobody has thought of yet. But he believes the system that's in place now is already better suited to handling emergencies than the one it's replacing. The biggest challenge he sees is dealing with calls from residents who are reporting their golf clubs stolen or their cat up a tree.



“The biggest challenges is keeping that high customer-service feel that our residents are used to,” Therkelsen said. “I think there’s always the perception that when you get bigger you get more generic. “ That’s going to be our main challenge. To make sure that (minor) call gets the same care.”

Editorial: Dispatch Center Will Benefit Many
The Farmington Independent – 01/03/2008

The new Dakota Communication Center is an impressive place. Inside a large main room there are dozens of high-tech workspaces. Each features six flat computer monitors arranged in an arc in front of the dispatcher. They wouldn't look entirely out of place on the bridge of the Starship Enterprise.

But those workstations are not the biggest benefit of the new DCC, the countywide dispatch center in Empire Township that officially went live last week. The 40-person meeting room, which will be available to the cities that are part of the DCC, will be nice, too. But that's not the center's biggest benefit. Nor is the fact the building is built to withstand tornado-force winds and be self-sufficient for up to three days in the event of an emergency.

The biggest benefit of this new dispatch center is the communication it will foster among the agencies involved and the efficiencies it will create as the county's police officers and firefighters go about their jobs.

There might have been some concerns early on about dispatchers working in cities — and with people — with which they were unfamiliar. But there seems to be enough technology and enough experience involved here to put minds at ease. Now, people seem excited about the potential this new system has to help agencies work together. Dispatchers working in different areas will not have to communicate by telephone. They will be in the same room. In the wake of disasters such as the collapse last August of the I-35W bridge it is becoming clear agencies from different areas must have the ability to work together seamlessly.

Things are moving in that direction. DCC executive director Kent Therkelsen said the 35W collapse was the first emergency in recent memory in which the first complaint was not about the failure of radio communications. Combining dispatch operations makes economic sense. Therkelsen expects the DCC to cost \$2.4 million less to operate over the next three years than the five dispatch centers it replaces. It should create other efficiencies as well. Therkelsen expects new options available at the DCC will mean firefighters will be called for fewer minor medical situations where they are not needed.

There will surely be some bugs to work out with the new DCC. But the opportunities it creates should be exciting for everyone involved.



4-1-1 on Dakota County's New 9-1-1 Center

State-of-the-art dispatch will be able to handle 400,000 calls a year and has lines to communicate with other metro counties quickly.

By KEVIN DUCHSCHERE, Star Tribune

Last update: January 4, 2008 - 9:46 PM

The first 9-1-1 call in the Twin Cities was placed 25 years ago, and still there are some people who aren't entirely sure when they should use it.

Kids scribbling graffiti next door? Chest pains? Wreck on the highway? Say, what time is that parade going down Elm Street?

With Dakota County's new dispatch center near Rosemount open for business as of Dec. 27, officials want to remind everyone that the number isn't just for emergencies.

You should always dial 9-1-1 if you need a response from police officers, firefighters, or paramedics, said Kent Therkelsen, the center's executive director. Don't worry about calling if you don't think it's a life and death situation. "People tend to assess their own situation pretty subjectively," said Therkelsen, a veteran law enforcement officer who was Eagan police chief before becoming director of the 9-1-1 center in 2006. "We've had people who are truly experiencing severe medical issues who will call the ten-digit [non-emergency] number because they don't want to bother anyone." Our dispatchers are trained to ask the right questions and prioritize the calls. Let's let them triage the calls."

Another advantage of calling 9-1-1 is that the dispatch computer program speeds up call-handling, he said.

Dakota County's state-of-the-art center consolidates five former dispatch centers under one roof. It enables dispatchers to handle more than 400,000 calls a year and communicate with other metro counties on the new 800 MHz regional system.

The county built the center for \$7.8 million and will get reimbursed each year by the 12 jurisdictions it serves according to their share of calls handled. Savings because of the consolidation are expected to top \$6 million in the next three years.



One Option is 3-1-1

According to a recent police guide from the U.S. Department of Justice, non-emergencies such as car break-ins or problem property complaints continue to make up a large percentage of 9-1-1 calls. To take up the slack, some cities have turned to a 3-1-1 system, which offers information on city services. The 3-1-1 system in Minneapolis turned two years old on Friday, and remains the only such system in Minnesota. Offloading non-emergency 9-1-1 calls wasn't the main reason the city adopted 3-1-1 – officials mainly wanted to give residents an easier way to get answers from City Hall -- but it has had that effect, said John Dejung, director for the city's 9-1-1/3-1-1 department. Calls to 3-1-1 were up 28 percent in 2007, said Don Stickney, assistant director of Minneapolis 3-1-1.

Meanwhile, non-emergency 9-1-1 calls have declined by nearly 16 percent from 2005, the last year before 3-1-1 came to Minneapolis, Dejung said. Non-emergency 9-1-1 calls "are less of a problem than it used to be, but it certainly still occurs," Dejung said. "We're a little philosophical about it. We'd rather have the residents call [9-1-1] when in doubt, than not call." He added, "That's not to say we want frivolous calls."

Others said that the public has become much better about knowing when and when not to use 9-1-1. Gary Shelton, Scott County deputy administrator, said that they seldom receive an inappropriate 9-1-1 call. Scott Williams, emergency communications director for Ramsey County, agreed that it hasn't been much of a problem -- save for those who hesitate to call 9-1-1 because they don't want to be any trouble. "People are still a little Minnesota Nice," he said. "When in doubt, call 9-1-1."

Kevin Duchscher • 952-882-9017

Dakota County: 1,100 calls a day -- 400,000 calls per year
The new Dakota Communications Center will consolidate five centers and have state-of-the-art technology.

By Jim Adams, Star Tribune

Dakota County's new 9-1-1 dispatch center will consolidate five existing dispatch centers into one building equipped with the latest in radio and communications equipment, allowing it to respond to 400,000 calls a year.

It's a joint venture with 11 cities that will eventually save millions, county officials say. Eight to 16 dispatchers on duty will handle about 1,100 calls a day for police, fire, and emergency medical service. The center, which is south of Rosemount in Empire Township, is holding a dedication ceremony and open house on Saturday. The executive director of the center, Kent Therkelsen, recently fielded questions.



Q Why was the Dakota Communications Center built now?

A County leaders began studying a new dispatching system in earnest in 1997 after state legislators set up the Metropolitan Radio Board. That meant that Isanti and Chisago and the seven metro counties had to start planning how they would connect to a new 800 MHz regional radio system. After the 9/11 terrorist attacks in 2001, being connected to other agency dispatch systems became more important and federal grants were offered as incentives. So far, Hennepin, Ramsey, Anoka and Carver counties use the new regional system and can talk to and back up each other. Dakota will join them in December, when the new center starts operating.

Q What's new?

A The center will be able to call in volunteer firefighters countywide, which didn't happen before. It will also be able to give callers with medical needs some care instructions before paramedics arrive. That is now done only in Burnsville. The center, which has about six miles of telephone, radio, and computer cables below its floor, is also equipped for the next generation of Internet-based 9-1-1 service. A new 300-foot transmission tower was built next to the center, which also uses eight other towers around the county.

Q How many calls can the center handle?

A It will handle more than 400,000 calls a year to start. The 800 MHz regional system it uses is the same one that Hennepin County used, without any call capacity problem, to handle the I-35W Bridge collapse. If the center was incapacitated, its calls could be transferred to neighboring counties on the system. The center has 23 workstations, each with six computer screens, to be staffed around the clock by 52 dispatchers and six supervisors.

Q Will going from five dispatch centers (in Eagan, Apple Valley, Burnsville, Lakeville, and Hastings) to one save money?

A The county estimates that not installing the 800 MHz equipment in the other centers saved \$3.8 million. Trimming five dispatchers and other operational cost reductions are expected to save another \$2.4 million in the first three years.



Q What did the facility cost, and how was it financed?

A The county paid \$7.8 million to build the center and leases it to the Dakota Communications Center, a legal entity that will assess its 12 user members to repay the county and cover \$7.3 million in revenue bonds sold to pay for equipment and other startup costs. The county owned the center site, next to its transportation building, and is providing a \$3.5 million subsidy to defray operating costs in the first four years.

Q Who governs and pays for the center?

A It has a board of directors composed of one member from the county and from each of its 11 cities that have police departments. The 12 board members vote and pay for service based on the share each had of 9-1-1 and service calls in the prior year (2004 call shares are used in the first year). The current member shares are: Eagan, 18 percent; Burnsville, 17 percent; Apple Valley, 12.6 percent; Lakeville, 11.5 percent; Dakota County, 7 percent (covers 13 townships); Inver Grove Heights, 6.4 percent; West St. Paul, 6 percent; South St. Paul, 5.9 percent; Rosemount, 4.9 percent; Farmington, 4.8 percent; Hastings, 4 percent, and Mendota Heights, 1.7 percent.



Dakota Communications Center

The DCC encourages the use of 9-1-1 for any situation which requires the response of police, fire or emergency medical personnel. This includes non-emergency situations such as reporting a crime, a traffic situation or suspicious activity. The dispatcher will ask questions to help assure the proper level of response and assure that emergencies receive the highest priority. 9-1-1 should not be used for information-only purposes.

Examples of Proper 9-1-1 Usage:

- Reporting any situation that requires a police officer at the scene (e.g. assaults, traffic accident, burglary report, damage to property, parking complaint, other ordinance violations, etc.)
- Summoning an ambulance for medical assistance.
- Reporting fire, smoke or fire alarm.
- Reporting a crime in progress.
- Reporting suspicious or criminal activity. (shouts for help, glass breaking, vehicle or person that does not appear to belong in neighborhood).

Examples of Improper 9-1-1 Usage:

- Informational requests. (e.g. local event information, status of persons under arrest, impounded vehicle questions, ordinance or law questions).

Contact your Local Police Department or Sheriff's Administrative Phone Line to:

- Ask for information regarding the status of a report or investigation.
- Ask for information regarding a city ordinance.
- Talk with a specific officer or employee of the department.
- Information regarding person under arrest.
- Inquire about impounded vehicles or animals.
- Request a copy of a police report.

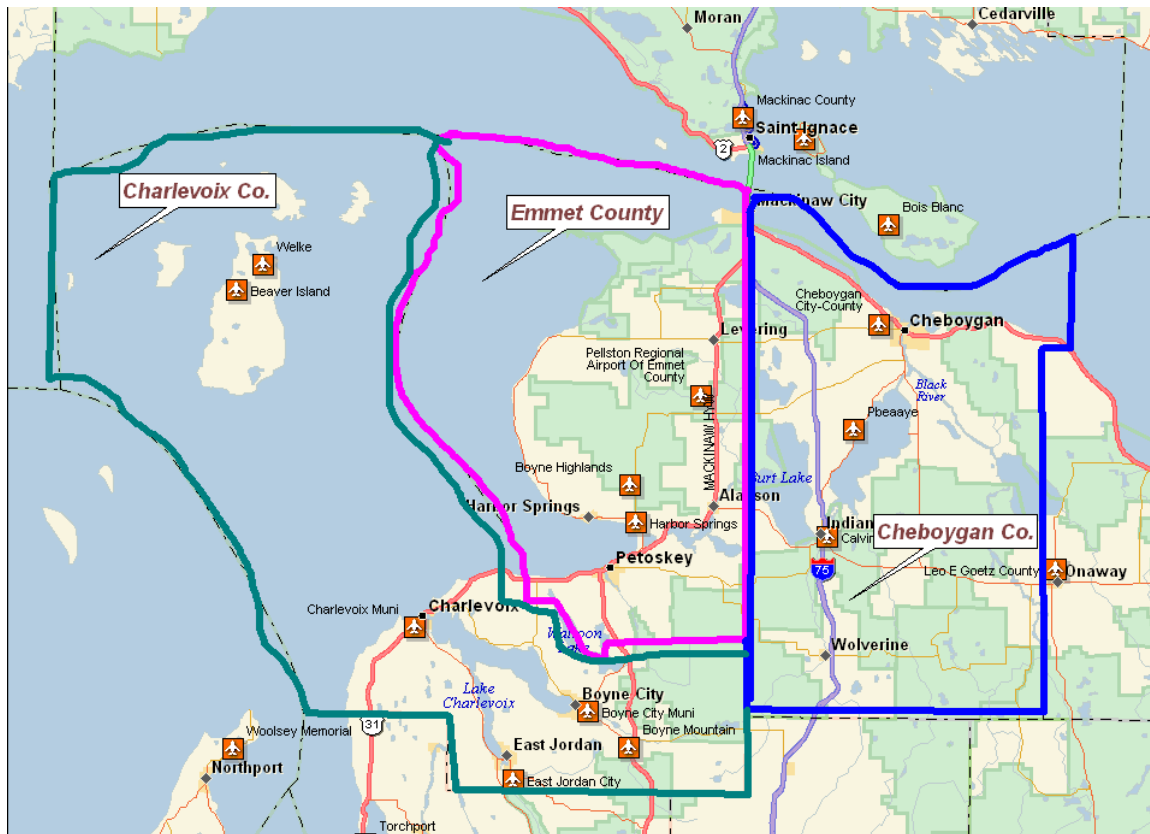


Joint 3 County 9-1-1 Dispatch in Michigan

Appendix 2: Information related to “CCE 9-1-1” Services 3 Counties in Michigan “CCE911” Serves Charlevoix, Cheboygan, and Emmet Counties in Michigan

Opened in 1996 it took over the dispatch role for three Sheriff's Departments and several city police and fire department operations. It is a true “joint powers” organization binding the three counties together with a 9 member board consisting of 1 County Commissioner from each county, 1 city-village elected official or administrator from each county and 1 township elected official from each county. They have 20 FTE consisting of 12 dispatchers, four Lead Dispatchers, one Assistant Director, one Admin Aide, and one Director. The total population served is about 83,875 split 37 percent Emmet County, 32.5 percent Cheboygan County and 31.1 percent Charlevoix County. Nearest serving airport is Traverse City. The total square mileage of the three counties is 1,601, or an average of 534 each. (For comparison purposes, the total square mileage of the 6 SW MN counties is 3,963 or an average of 660 each).

CONTACT POINT: Robert Bradley, Director @ 231.439.3300. E-mail is Bradley@cce911.com



911 C.A.L.M.

911

**Central Dispatch Authority of Lower
Michigan**

AGREEMENT

BETWEEN THE COUNTIES OF

CHARLEVOIX, CHEBOYGAN, AND EMMET

ON BEHALF OF PARTICIPATING MUNICIPALITIES



April, 1993

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AGREEMENT

9 | 1

CENTRAL DISPATCH AUTHORITY OF LOWER MICHIGAN

This Agreement is made by and between the counties of Charlevoix, Emmet and Cheboygan on behalf of the participating municipalities as described herein.

SECTION I: PURPOSE

The participating municipalities desire to centralize the dispatch of emergency service responders including private safety entities within Charlevoix, Emmet and Cheboygan Counties. The intent of this Agreement is to create for this purpose a separate authority, entitled **911 Central Dispatch Authority of Lower Michigan (911C.A.L.M.)** through the auspices of the Inter-Governmental Contracts Between Municipalities Act, Urban Cooperation Act, and Emergency Telephone Service Enabling Act.

SECTION II: DEFINITIONS

As used in this Agreement, the following terms shall have the following meanings:

- 2.1 **Board** refers to the Board of Directors described in this Agreement.
- 2.2 **Budget** refers to the annual fiscal plan regarding anticipated expenditures and revenue adopted by the Board at its October meeting.
- 2.3 **Emergency Telephone Service Enabling Act** refers to 1986 P.A. No. 32, as amended, MCLA 484.1101 et seq.
- 2.4 **Executive Committee** refers to the chairperson, vice-chairperson and secretary of the Board.
- 2.5 **Fiscal year** shall be the same as the calendar year.



- 2.6 ***Inter-Government Contracts Between Municipalities Act*** refers to 1982 P.A. No. 138, as amended, MCLA 124.1 et seq.
- 2.7 ***Legislative body*** refers to the governing body of each participating municipality.
- 2.8 ***Municipalities*** refers to the counties of Charlevoix, Cheboygan and Emmet, and the cities, villages and townships within said counties.
- 2.9 ***911 C.A.L.M.*** refers to 911 Central Dispatch Authority of Lower Michigan as created herein.
- 2.10 ***Participating agencies*** refers to the emergency service responders of the participating municipalities.
- 2.11 ***Participating municipalities*** refers to those units of government receiving services from ***911 C.A.L.M.***
- 2.12 ***Private Safety Entity*** refers to a private entity, which provides emergency fire, ambulance, or medical services.
- 2.13 ***Properly convened meeting*** refers to a Board or Technical Advisory Committee meeting where a majority of the appointed members are present and which was the subject of 5 days prior written notice to each member or prior attempts to reach each member telephonically if the meeting was called with less than 5 days notice.
- 2.14 ***Proper vote*** refers to a polling of the members of the Board or Technical Advisory Committee which results in an affirmative majority of those members present and voting, not less than five (5) in the case of the Board.
- 2.15 ***Public Safety Answering Point (PSAP)*** refers to a communications facility operated on a 24 hour basis, assigned responsibility to receive both emergency and non-emergency requests for service, as appropriate, to process service requests by means of either the direct dispatch method, the relay method, or the transfer method.

- 2.16 **Urban Cooperation Act** refers to 1967 P.A. Ex. Sess. No. 7, as amended, being MCLA 124.501 et seq.
- 2.17 **Year End Contribution Figures** refers to the financial contribution figures, annually calculated by the auditors, for all participating and supporting municipalities.
- 2.18 **911 Plan** refers to the Plan adopted by the County Board of Commissioners pursuant to the Emergency Telephone Service Enabling Act.

SECTION III: GOVERNANCE

- 3.1 **STATUS: 911 C.A.L.M.** through its Board, shall be the legal entity separate and independent from the participating municipalities.

3.2 **BOARD OF DIRECTORS**

A. **Composition:** The general policies governing **911 C.A.L.M.** shall be established by a board of directors (**Board**) of nine (9) members to be composed as follows:

Three county commissioners: one appointed from each county board of commissioners.

Three city or village representatives: one selected from each county. The local government representative shall be selected by majority vote of all the mayors in the county, and may be the mayor, village president, village trustee, city councilmember or city manager.

Three township representatives: one selected from each county. This representative shall be selected by majority vote of the Michigan Township Association chapter in each county. This person shall be any elected township official.

(I) Each representative shall serve at will for a three-year term and may be removed in the same manner as selected. Each member shall serve without compensation from **911 C.A.L.M.**



(2) The terms of the board members shall be staggered with the Charlevoix representatives initially appointed to serve for three (3) years; the Cheboygan representatives two (2) years and the Emmet representatives one (1) year. Thereafter the terms of said board members shall be three (3) years.

(3) The selection of board members should be made with intention of achieving geographic equality and balance within each county.

B. **Powers:** In addition to general policy-making authority and other powers conferred herein, the Board is authorized to perform the following functions for **911 C.A.L.M.** in order to facilitate the purpose of this Agreement:

- (1) enter into contracts;
- (2) acquire, hold or dispose of property;
- (3) construct, manage, or operate buildings or improvements;
- (4) contract with participating agencies to provide manpower, equipment or administrative services;
- (5) receive and administer grants, gifts, bequests, or assistance funds;
- (6) incur debt and liabilities;
- (7) approve **911 C.A.L.M.** annual Budgets;
- (8) approve all **911 C.A.L.M.** expenditures;
- (9) contract with municipalities or private agency regarding the provision of central dispatch services in exchange for financial or other contribution; and



- (10) notwithstanding the above, the authority of the Board shall be limited to **911 C.A.L.M** and its funds and the Board shall not have the authority to bind, commit or encumber the funds of the participating municipalities or the participating agencies, public or private. **911 C.A.L.M.** shall not possess the power to levy any type of bond in its own name.
- C. **Exercise of Authority:** The Board shall meet at least quarterly with a mandatory meeting in January and October. The Board may meet more frequently at its discretion. At the January meeting, the Board shall elect a Chairperson, Vice-Chairperson and Secretary from its membership and a Fiscal Agent who may be from its membership or may be the fiscal agent of a participating municipality. At its October meeting it shall adopt a Budget for the ensuing fiscal year. Powers shall be exercised upon a proper vote at a properly convened meeting. Each member shall be entitled to one vote.
- D. **Executive Committee**
- (1) Board Chairperson elected at the January meeting of the Board shall preside over meetings of the Board. The Chairperson may appoint committees and call special meetings of the Board.
 - (2) Board Vice-Chairperson shall be selected in like manner as the Chairperson and shall preside in the absence of the chairperson.
 - (3) Board Secretary shall be selected in like manner as the Chairperson and shall keep accurate minutes of all Board meetings and distribute the same to each member prior to each meeting. The Secretary shall also maintain all official records of the Board and present them upon request of the Board or public under the Freedom of Information Act.



E. **Board Fiscal Agent**

The board shall select a fiscal agent who shall collect and disburse funds as directed by the board. The fiscal agent shall maintain all financial records and report to the board at regular meetings. The fiscal agent shall serve at will, without compensation and without voting rights unless the fiscal agent is a member of the board.

F. **Board Legal Counsel**

The board shall appoint one of the prosecuting attorneys from Charlevoix, Cheboygan, or Emmet County to serve as legal counsel to the board. Counsel shall serve at will, without compensation and without voting rights.

3.3 **TECHNICAL ADVISORY COMMITTEE**

A. **Composition**

A Technical Advisory Committee shall be established and shall be directly responsible for the administration and operation of the functions assigned to it by the Board. The Technical Advisory committee is an advisory body and shall make recommendations to the Board. The Technical Advisory Committee shall be comprised of the following representatives:

- (1) The County Sheriff from each county.
- (2) One (1) Chief of Police, or Director of Public Safety from each county appointed by the board of directors.
- (3) The Commanding Officer of each State Police Post in each county.
- (4) One (1) Fire Chief from each county to be selected by the board of directors.
- (5) One (1) Emergency Medical Services representative appointed by the medical authority of each county.
- (6) One (1) Prosecuting Attorney from one of the participating counties to be selected by the board of directors.

Each representative that is appointed shall serve at will of the board.



B. Executive Committee

- (1) Chairperson. A Chairperson shall be selected at the first meeting of the Technical Advisory Committee and shall serve for one (1) year. The Chairperson shall preside over all meetings of the Technical Advisory Committee and appoint whatever committee, which may be necessary to complete the business of the Technical Advisory Committee.
- (2) Vice-Chairperson shall be selected in like manner as the Chairperson and shall preside in absence of the Chairperson.
- (3) Secretary shall be selected in like manner as the Chairperson and shall keep accurate minutes of all Technical Advisory Committee meetings and distribute the same to the Technical Advisory Committee and the Board prior to the regular meetings.

C. Meetings

The Technical Advisory Committee shall meet as necessary. Each member shall serve without compensation from **911 C.A.L.M.** and shall be entitled to one vote. All decisions of the Technical Advisory Committee shall be made by a proper vote at a properly convened meeting. Notwithstanding the above, all decisions of the Technical Advisory Committee and its members are subject to review by the Board, or its executive committee, at its next properly convened meeting.

SECTION IV: OPERATIONS

- 4.1 PERSONNEL: 911 C.A.L.M.** Board shall have the authority to employ personnel. Additionally or in the alternative, **911 C.A.L.M.** may contract with participating municipalities for the assignment of personnel to **911 C.A.L.M.**

A. Executive Director of the Authority

The Board shall employ an **Executive Director of the Authority** who shall within limits set by the board, employ other necessary



personnel. In addition to supervisory responsibilities, the Director shall prepare the annual budget for the operation of Central Dispatch for submission to the Board. The Director shall keep an accurate accounting of the financial operations of the Central Dispatch and shall report to the Board regarding the financial condition of this operation.

- 4.2 **CENTRAL DISPATCH: 911 C.A.L.M.** is charged with the responsibility of operating a Public Safety Answering Point (PSAP) and Central Dispatch Center for participating agencies. The Board may contract with a service supplier for 911 emergency service system covering all jurisdictions served by participating municipalities. Any contract with the service supplier must be consistent with the provisions of the Emergency Telephone Service Enabling Act.

- 4.3 **LIABILITIES: 911 C.A.L.M.** Board of Directors may contract for and shall carry appropriate coverage's including but not limited to:

Workers Compensation

Employer's Liability

Business Automobile Liability

Comprehensive General Liability

- 4.4 **INDEMNIFICATION: 911 C.A.L.M.** may indemnify any participating municipality against any general losses, damages, or liabilities arising out of the service and activities of the **911 C.A.L.M.** or participation in **911 C.A.L.M.** up to its liability insurance policy limits. **911 C.A.L.M.** liability or losses in excess of such limits shall be apportioned among the participating municipalities, each according to the percentage its year end contribution figures bear to the total year end contribution figures of participating municipalities for the year or years in which the actions or omissions resulting in the liability or losses occurred but only if and to the extent such liability or losses can be legally imputed to the participating municipalities in the absence of this provision.



SECTION V: FISCAL ADMINISTRATION

- 5.1 **FINANCING:** The funding formula for the participating municipalities, by county shall be:
- a) 40% allocated based on telephone lines. It is agreed that of this amount Emmet County participating municipalities shall be responsible for 45%, Charlevoix County participating municipalities 30%, and Cheboygan County participating municipalities 25%.
 - b) 60% equally (1/3 each) between Charlevoix, Emmet and Cheboygan Counties participating municipalities.
 - c) This formula shall be reviewed every five (5) years. The funds shall be payable quarterly in advance beginning January 1 and each quarter thereafter, based on established budget, to be reconciled at the end of the year.
 - d) Penalty. Late payments shall be subject to a 10% interest penalty. Non Payment may result in termination of Central Dispatch Service, after proper notification pursuant to this agreement pursuant to Section 6.2.
- 5.2 **BUDGET:** For each fiscal year, the Board shall adopt a Budget which shall generally segregate anticipated revenues into accounts designed to cover expected expenditures. The Budget shall balance anticipated revenues with expected expenditures and contingency



accounts. No expenditure may be authorized if it will result in an actual budgetary account deficit or is at a rate which will eventually lead to an actual budgetary account deficit prior to the end of the fiscal year. The Board shall amend the Budget to meet deviations in expected revenues or authorized expenditures.

5.3 **DEPOSITORY:** The Board shall designate such depositories which shall be a federally or state regulated bank or saving institution, and established therein accounts wherein the fiscal agent shall deposit all **911 C.A.L.M.** revenues. The secretary's signature, or one other person designated by the Board, shall be required before the depository may release any **911 C.A.L.M.** funds.

5.4 **ANNUAL AUDIT:** All **911 C.A.L.M.** finances and expenditures shall be subject to a complete annual audit which will include an unqualified audit opinion to be performed by a certified public account. As part of the audit, the auditors shall calculate the financial contribution of each participating municipality to **911 C.A.L.M.** for that year including a reasonable dollar quantification for all in-kind services provided by the participating municipalities to **911 C.A.L.M.** These figures entitled



“year-end contributions figures”, shall be used in determining the historical contribution of each municipality as detailed in Section 6, entitled “Dissolution”.

- a) Each participating municipality may review the documentation and utilized work papers generated in each annual audit.
- b) The Technical Advisory Committee shall establish procedures in conjunction with the auditor that preserve the confidentiality of **911 C.A.L.M.’s** operations and notwithstanding anything contrary in this Agreement, the audit may be qualified to the extent necessary to preserve confidentiality. A copy of the Annual Audit shall be available to the legislative body of each participating municipality. The legislative body of each participating municipality shall also have the right to request other financial information regarding **911 C.A.L.M.’s** Budget, funds and expenditures. The Board shall respond to such a request within 10 business days and may only deny the request if release of the information would jeopardize the confidentiality of **911 C.A.L.M.’s** operations.



SECTION VI: DISSOLUTION

6.1 VOLUNTARY DISSOLUTION

- a) In the event this Agreement is terminated, each participating municipality active in **911 C.A.L.M.** at the time of termination shall be entitled to a portion of **911 C.A.L.M.**'s assets after reasonable dissolution expenses are deducted. Upon dissolution, all **911 C.A.L.M.**'s assets shall be distributed among the then active participating municipalities according to their historical contribution to **911 C.A.L.M.** Such municipality's historical contribution shall be computed by adding all of its year-end contribution figures together and dividing that sum by the total of all year-end contribution figures of all active participating municipalities in **911 C.A.L.M.** The resulting percentage shall be multiplied by **911 C.A.L.M.**'s assets to achieve the municipality's share.
- b) Each participating municipality shall, at the execution of this agreement, designate a public safety answering point in the event of termination of this agreement.



6.2 **INVOLUNTARY DISSOLUTION**

a) A participating municipality may be subject to termination of services under this agreement for a breach of the terms herein. A participating municipality that is involuntarily dissolved from this agreement shall not be entitled to any portion of **911 C.A.L.M.'s** assets and shall forfeit any contributions to the same.

b) A participating municipality that is terminated from **911 C.A.L.M.** shall have all calls to emergency service responders forwarded to their public safety answering point.

SECTION VII: ADDITION OF OTHER MUNICIPALITIES

7.1 Pursuant to MCL 124.603, as amended, and the approval of 2/3 vote of the board other municipalities may be added to this agreement.

SECTION VIII: MISCELLANEOUS

8.1 **INTENT:** This Agreement constitutes the complete expression of the agreement between the participating municipalities and there are no other oral or written agreements or understandings between the municipalities concerning **911 C.A.L.M.**



- 8.2 **SEVERABILITY:** This Agreement shall be interpreted in a manner consistent with applicable law. If any portion is held to be illegal, invalid, or unenforceable, the remainder of the Agreement shall be deemed severable and shall remain in full force and effect.
- 8.3 **TERM:** This Agreement shall be perpetual unless terminated by resolution approved by three-fourths of the participating municipalities, or as provided in Section 8.4.
- 8.4 **AMENDMENT:** This Agreement may be amended by majority vote of all 3 county Board of Commissioners on behalf of the participating municipalities through a resolution approving the amendment. Such amendments shall not become effective until 60 days after the approval was obtained.



EXECUTION

COUNTY OF CHARLEVOIX

Itself and on behalf of the participating
municipalities of Charlevoix County

By _____

Its _____

Attest:

By _____

Its _____

CERTIFICATION

I, _____, the Clerk of the County of Charlevoix, hereby
certify that its legislative body duly approved this Agreement and directed that it be executed by its
Chairman, whose signature has been applied above.

County Clerk

Dated: _____



EXECUTION

COUNTY OF EMMET

Itself and on behalf of the
participating municipalities of
Emmet County

By

Its

Attest:

By

Its

CERTIFICATION

I, _____, the Clerk of the County of Emmet, hereby certify that its
legislative body duly approved this Agreement and directed that it be executed by its Chairman,
whose signature has been applied above.

County Clerk

Dated:



EXECUTION

COUNTY OF CHEBOYGAN

Itself and on behalf of the
participating municipalities of
Cheboygan County

By

Its

Attest:

By

Its

CERTIFICATION

I, _____, the Clerk of the County of Cheboygan, hereby certify that
its legislative body duly approved this Agreement and directed that it be executed by its Chairman,
whose signature has been applied above.

County ClerkDated:



Data Collection Instruments Used in this Study

Appendix 3: Data Collection Instruments Employed





Southwest Minnesota Six County

Joint Dispatch Study

Public Safety Communications Activity & Cost Data Collection Sheet

*The term “Center” below refers to Dispatch Center
or PSAP (Public Safety Answering Point)*

Center Name _____ Contact person _____

Contact Telephone: _____; E-mail: _____; Fax: _____

Is your Dispatch Center a **“PRIMARY PSAP”** (A 1st “answerer” of 9-1-1 calls) or a “Secondary Dispatch Point” (to which already answered 9-1-1 calls are transferred)?

___ Primary; ___ Secondary on 9-1-1; ___ Calls transferred to our seven-digit line only

A. _____ # **seven-digit telephone calls** answered by your center in CY 2008.

*Try a 2 week "sample survey" if annual # not known. For this count, please do **not** count calls initially dialed to 9-1-1 that are transferred to your seven-digit line. That is Item B below)*

- Is your center the general telephone operator for this agency 24/7? ___Yes ___No

○ Specify details: _____

Is a seven-digit breakout by day/time available? ___Yes ___No (Attach if available)

B. _____ # **9-1-1 telephone calls** answered by your Center in CY 2008.

Count calls you initially answer on 9-1-1 lines, calls transferred to your 9-1-1 lines and 9-1-1 calls that are transferred to your seven-digit lines by a PSAP.

Is a breakout by day/time available? ___Yes ___No (Attach if available)



If you have any solid data regarding "telephone call processing times"
"per event processing times", please send that data along as well.

C. _____ # of CJRS/NCIC inquiries run **BY DISPATCHERS** in '08.

Is a breakout by day/time available? _____ Yes _____ No (Attach if available)

D. _____ # of CJRS/NCIC entries done **by dispatchers** in '08.

E. _____ # of "**dispatched events**" handled by your dispatchers in '08.

Use this definition: An "EVENT" is an incident to which an emergency service responder is told to respond, or which a responder comes across in the field, and notifies dispatch (such as a traffic stop/arrest) regardless of whether or not a crime, incident, or accident report is generated. Often they result in a CAD entry.

Is a breakout by day/time available? _____ Yes _____ No (Attach if available)

F. _____ # of other quantifiable and verifiable activities handled at Center per year.

Specify these activities. (Examples: "walk-ins" assisted @ window; persons fingerprinted; accident reports sold/provided over counter; DL or other checks done for counter visitors; tow calls placed, etc.)

G. Is your Center's 'service counter/window' available to public 24/7? ____ Yes ____ No

- Is there another "receptionist" position staffed at any time which means your dispatchers do not have to handle window traffic sometimes? ____ Yes ____ No

Specify: _____

H. Number of FT dispatch and/or 9-1-1 operator staff authorized for 2009: _____

I. Number of PT dispatch and/or 9-1-1 operator staff authorized for 2009 _____

J. Number of above who are FT dispatch center supervisors or managers _____



- Are Supervisors/Managers assigned to a console for any hours per day? ____ Yes ____ No

- If YES, how many hours per day (avg.) do they perform these duties? _____

K. FY **2008** total annual expenditures for all dispatch center costs: \$_____

a. Personnel portion of this expenditure: \$_____

b. Equipment portion of expenditure: \$_____

c. Other expenses (specify) portion: \$_____

L. Wages/salaries:

a. In terms of \$/hour, please provide the following for 2009 for your personnel classified as "9-1-1 dispatchers" or whatever title you use for these roles:

i. Starting hourly wage: \$_____/hour

ii. Top hourly wage: \$_____/hour

iii. Number of "Steps" between starting and top wage: _____

iv. Time from starting to top pay step: _____ years

v. Any "shift differential" pay? ____ Yes ____ No

I. IF YES, describe: _____

vi. Any "holiday pay"? ____ Yes ____ No

I. IF YES, describe: _____

vii. Any "longevity" type pay? ____ Yes ____ No

I. IF YES, describe: _____

viii. Number of scheduled work hours per year for FT: _____

M. Benefits:

i. All enrolled in the PERA public employees pension plan? ____ Yes ____ No

ii. If "NO", then what retirement plan? _____ (Attach details)

I. Retirement plans other than state? ____ Yes ____ No



2. If YES, then what are they: _____

a. (Attach details)

iii. Are they covered by a "401K/403B type" program? ____ Yes ____ No

i. If YES, please describe and mention County contribution rate:

iv. Briefly describe health and/or dental insurance benefits, and provide the County/employer costs per covered employee:

v. What is the vacation accrual rate per pay period? _____

vi. What is the sick leave accrual rate per pay period? _____

vii. In the alternate, is such time accrued as Personal Leave Time? _____

viii. Are these positions covered by a labor agreement? ____ Yes ____ No

If YES, name of union: _____ Can you provide a copy of the current labor agreement? If so, mail or fax it to us.

ix. Please describe any other "benefit" you think we should be aware of below, Ex: uniforms, education, wellness incentives, membership fees etc:

On added sheets (or below), please provide added information or comments that would help better define the picture of the total workload and activities of your dispatch center. For example, if your Center staff is involved in the writing/entering of police reports into a Records Management System (RMS), please explain and quantify that activity. A good context for answering this question is to ask yourself, "If our dispatch staff was not here to do _____, then we would either need to have some replacement type of staff to do _____ (because it is critical to do _____ XX hours per day), or we would just live without _____ being done _____ hours per day." Now tell us what "_____" is in the previous statement, and how many _____'s you handle per year or how much time you spend handling _____s in a year.

When complete, return to PAUL LINNEE, by **not later than November 20, 2009** to GeoComm at fax number 612-235-6770 or via U.S. mail. If you need help interpreting any questions, call Paul @ 612-869-6164 or send an e-mail to paul911@aol.com

You can mail completed surveys to: Paul Linnee GeoComm 5800 Park Avenue Minneapolis, MN 55417

Thanks for your assistance with this project!





Southwest Minnesota Six County

Emergency Communications Technology Inventory

NOTE: If you need help interpreting any questions, call Paul @ 612-869-6164 or send an e-mail to paul911@aol.com.

1. Dispatch Center (aka: PSAP or "Center") Name: _____
2. Person completing this form: _____
 - a. Telephone number: _____
 - b. E-mail: _____
 - c. Fax #: _____
3. Does your agency have Computer Aided Dispatch (CAD)? ____Y ____N
 - a. If yes:
 - i. Name of software supplier: _____
 1. Name of software: _____
 2. Support contact name/ #: _____
 - ii. # of workstations _____
 - iii. PC or "main frame" based? _____
 - iv. Any access from outside your building? _____
 - v. Windows based? ____Y ____N
 1. If no, what is OS? _____
 - vi. Last Known Update to system by supplier? _____
4. Does your agency have E9-1-1 telephone equipment? ____Y ____N
 - a. If yes
 - i. Brand name: _____
 1. Model name _____
 - ii. Owned or leased? _____
 1. If leased, from who? _____



2. Term of lease? _____
- iii. # workstations _____
- iv. When installed: _____
- v. # of 9-1-1 trunks: _____
1. Separate wireless 9-1-1 trunks? _____ How many? _____
- vi. TDD Present? ____Y ____N (Is device separate, and not part of CAD software or E9-1-1 telephone equipment?) Explain:
1. Make and model: _____
- vii. ANI printer? ____Y ____N
- viii. ALI printer? ____Y ____N
5. Does your PSAP **initially** answer wireless 9-1-1 calls?
- a. If YES, are they ____ Phase 0; ____ Phase 1; ____ Phase 2
- b. If NO, where are they initially answered? _____
- i. And if these wireless 9-1-1 calls are then transferred to you, do you receive them on E9-1-1 trunks along with wireless E9-1-1 location data? ____ Yes ____ No
- ii. If NO, on what trunk or telephone line to you receive them, and with what (if any) location and call back number data? _____
6. Does your PSAP have GIS mapping? ____ Yes ____ No
- a. If yes:
- i. Interfaced to E9-1-1 for automatic plot of caller location?
1. Wired calls? ____
2. Wireless P1 calls? ____
3. Wireless P2 calls? ____
- ii. Interfaced to CAD for plotting after CAD event entry?
1. Wired calls? ____
2. Wireless P1 calls? ____
3. Wireless P2 calls? ____
- b. Status of GIS map data?
- i. Centerline data is MSAG valid? ____Y ____N
- ii. Point file? ____Y ____N
1. If Yes, how updated? _____
7. Do you have a computerized Records Management System (RMS)?



This not CAD but CAD may be a part of RMS

_____ Yes _____ No

a. If YES

i. Vendor and software version #: _____

ii. Shared with others or just your agency? _____

iii. List modules you use:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

b. Are dispatchers the main entry point for data? ____ Y ____ N

i. If yes. Which types of data? _____

8. Does your agency have Mobile Data Terminals (MDTs or MDCs)? ____ Y ____ N

a. If Yes

i. Make and model _____

ii. Interfaced to NCIC through State of Minnesota? ____ Y ____ N

iii. Interfaced to agency's CAD? ____ Y ____ N

iv. Interfaced to agency's RMS? ____ Y ____ N

v. Over what radio system do the MDTs operate? _____

1. Who owns/manages this data radio system? _____

vi. Are they "dumb" MDTs, or laptop PC MDCs? _____

9. Does your agency have Automatic Vehicle Location (AVL)? ____ Y ____ N

Two-way radio system elements

a. Does your Center have control console(s)? ____ Y ____ N

i. Make and model: _____

1. Examples: Motorola Gold Elite or Zetron 4000

ii. Number of console operating positions: _____

b. How many radio channels controlled in each console? _____

c. Which channels (names and frequencies, please): _____



- | | |
|------------|-------------|
| i. _____ | viii. _____ |
| ii. _____ | ix. _____ |
| iii. _____ | x. _____ |
| iv. _____ | xi. _____ |
| v. _____ | xii. _____ |
| vi. _____ | xiii. _____ |
| vii. _____ | xiv. _____ |

d. Describe the radio channels controlled above and what they are used for, whether they are repeated or simplex, whether or not they have satellite receivers. etc. :

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____
- vi. _____
- vii. _____
- viii. _____
- ix. _____
- x. _____
- xi. _____

e. Are any of the radio channels “scrambled” or encrypted? ____Y ____N?

i. Which ones: _____

f. Is/are there radio channels over which you can inter-operate and communicate with other departments and agencies? ____ Y ____ N

i. What are they and with whom?

PLEASE PROVIDE COPIES OF ALL RELEVANT FCC RADIO LICENSES

g. What radio frequencies is your agency licensed for?

- i. _____ MHz Function: _____
- ii. _____ MHz Function: _____
- iii. _____ MHz Function: _____

10. Does your Center monitor closed circuit TV? ____ Y ____ N



- a. If yes, what do you monitor? _____
11. Are there times when your active PSAP dispatcher(s) are **exclusively** responsible for the monitoring and care of prisoners in cells? ____ Yes ____ No
- a. If YES, during what times and for ABOUT how many hours per week?

12. Are there occasions when your dispatcher(s) are responsible for serving as jail “matrons” for searches, etc.? ____ Yes ____ No
- a. If YES, please estimate the number of times a week this occurs _____
13. Does your Center monitor by direct connection (i.e. no third party alarm center intercept) any “private alarms” (burglar, fire, etc.) ____ Y ____ N
- a. If yes, how many and under what general policies?
14. Does your Center monitor by direct connection (i.e. no third party alarm center intercept) any “public building alarms” (duress, burglar, fire, environmental etc.) ____ Y ____ N
- a. If yes, how many and under what general policies?
15. Does your Center answer seven-digit telephone lines? ____ Y ____ N
- a. If YES, which ones:
- i. ____ - ____ and its function is: _____
 - ii. ____ - ____ and its function is: _____
 - iii. ____ - ____ and its function is: _____
 - iv. ____ - ____ and its function is: _____
 - v. ____ - ____ and its function is: _____
 - vi. ____ - ____ and its function is: _____
 - vii. ____ - ____ and its function is: _____
 - viii. ____ - ____ and its function is: _____
 - ix. ____ - ____ and its function is: _____
 - x. ____ - ____ and its function is: _____
16. Do you have an automatic way of counting seven-digit calls? ____ Y ____ N
17. Do you answer all these seven-digit lines 24 x 7 or are some of them only during “office closed” hours? Explain:



18. Does your Center have an NCIC terminal in it? ____Y ____N

a. If yes:

- i. Are dispatchers the prime operators for inquiries? ____Y ____N
- ii. Are dispatchers the prime operators for entries? ____Y ____N
- iii. Do you do NCIC entries for any other agencies? ____Y ____N

19. Do you provide "Emergency Medical Dispatch" (EMD) ____Y ____N

a. If Yes:

- i. Which protocol do you use: _____
- ii. Flip cards or PC based: _____
- iii. Quality control regimen? ____Y ____N
 - 1. Explain: _____
 - 2. Medical direction provided by: _____

b. If **NO**, do you transfer callers elsewhere for EMD? ____Yes ____No

c. If you transfer callers elsewhere for EMD, where to you transfer to?

20. Do your 9-1-1 call takers provide direct dispatch (they also talk on the radio to responders) for all agencies for whom you answer 9-1-1 calls? ____Yes ____No

a. If NO, for which received 9-1-1 calls do you NOT provide direct dispatch, and how do you handle the dispatch on these calls? Please explain: ____

FIELD RADIO INVENTORY: If you have printed inventory of all mobile and portable radios owned by all of the agencies for which provide dispatch service, please provide a copy. Also, please include information as to the frequency 'band' of the radios (VHF, UHF, low band, 800 MHz, etc.) and as much identifying information as possible. If you do not have such an inventory for all agencies you dispatch for, please provide contact info for an individual in **each of those agencies**, from whom we could get that information. Please list below all of the separate agencies from which you provide dispatch services in your County.

21. Are there any other process or technical things you think we should know about your dispatch center? (Attach as many sheets as required)



9-1-1 Grant Fund Audit Sheet

Appendix 4: MN/DPS Annual 9-1-1 Fund Audit Form and Listing of Allowable Expenditures



DETAIL OF EXPENDITURES FOR CY 2009				
PSAP NAME: _____				
Allowable Expense Type as listed in Statute	Items included		Budget Code	Notes PSAPs can add their own notes in this column if needed
1	Lease, purchase, lease-purchase, or maintain enhanced 911 telephone equipment		AX-001	
1a		Telephone switching equipment (also known as key systems or PBX)	\$	In addition to the ANI/ALI controller, the E911 funds can be used to pay for the telephone switching equipment required to answer the administrative lines including headsets.
1b		Telephone Sets for Admin Lines	\$	E911 funds can be used to purchase telephone sets for the Admin lines that 911 calls route to when PSAP trunks are busy, when calls need to be transferred, or when 911 calls do not have routing information and are defaulted to the Admin lines. This could be same item as above. The 911 Program pays the monthly recurring charges to the service providers for the Admin lines.
1c		Equipment listed above for Secondary PSAP	\$	The 911 program does not pay directly to service providers the network from the Selective Router and ALI trunks for secondary PSAPs. The 911 fee grant provided to the county can be utilized for this equipment if it is in support of primary PSAP and after obligations of the Primary PSAP are met.
Sub-total 1			\$0.00	
2	Lease, purchase, lease-purchase, or maintain enhanced 911 recording equipment		AX-002	
2a		Recorder	\$	
Sub-total 2			\$0.00	
3	Lease, purchase, lease-purchase, or maintain enhanced 911 computer hardware		AX-003	
3a		ANI/ALI Controller	\$	
3b		Computer hardware to support allowable software listed below	\$	
Allowable Expense Type as listed in Statute		Items included	Budget Code	Notes PSAPs can add their own notes in this column if needed
3c		Hardware to support allowable software listed below for Secondary PSAP	\$	The 911 program does not pay directly to service providers the network from the Selective Router and ALI trunks for secondary PSAPs. The 911 fee grant provided to the county can be utilized for this equipment if it is in support of primary PSAP and after obligations of the Primary PSAP are met.
Sub-total 3			\$0.00	
4	Computer software for database provisioning, addressing, mapping, and any other software necessary for automatic location identification or local location identification		AX-004	
4a		CAD software	\$	
4b		Mapping Software	\$	
4c		GIS software	\$	
4d		Records Management System (RMS)	\$	
4e		Software to support Secondary PSAP allowable hardware as listed above	\$	The 911 program does not pay directly to service providers the network from the Selective Router and ALI trunks for secondary PSAPs. The 911 fee grant provided to the county can be utilized for this equipment if it is in support of primary PSAP and after obligations of the Primary PSAP are met.
Sub-total 4			\$0.00	

DETAIL OF EXPENDITURES FOR CY 2009			
PSAP NAME: _____			
Allowable Expense Type as listed in Statute	Items included	Budget Code	Notes PSAPs can add their own notes in this column if needed
5	Trunk lines	AX-005	
5a	Administrative Lines	\$	The 911 Program pays directly to the service provider for the Administrative lines that 911 calls roll to if 911 trunks are busy, no ALI record is found, and for other call routing conditions. The Primary PSAP can use the E911 funds to pay any long distance charges incurred on those Admin Lines and the amount should be listed in section 10 below.
5b	Internet	\$	Internet Formula: In most cases the billing for internet service is a "flat fee" for the entire county or Sheriff's Office. In that case, take the number of IP addresses or computers served and divide out a per unit cost. To determine the "dispatch" cost, take the number of computers or IP addresses used in dispatch times the cost per computer or IP address.
5c	Wire line and Wireless service provider 911 trunks, PSAP/EM trunks and ALI circuits used to transport the 911 call from the Selective Router and ALI to the Secondary PSAP	\$	The 911 program does not pay service providers for the Wire line or Wireless PSAP/EM trunks to the Selective Router or the ALI trunks for secondary PSAPs. The 911 fee grant provided to the county can be utilized for this equipment if it is in support of primary PSAP and after obligations of the Primary PSAP are met.
Sub-total 5		\$0.00	
6	Master street address guide	AX-006	
6a	Creation of MSAG	\$	Some PSAPs create MSAG by using a third party vendor and some choose to do this work in-house. Only the documented portion of the salary and benefits dedicated to creating the MSAG is an allowable 911 expense.
6b	MSAG maintenance	\$	Some PSAPs purchase MSAG maintenance service from a third party vendor and some choose to do this work in-house. Only the documented portion of the salary and benefits dedicated to maintaining the MSAG is an allowable 911 expense.
Sub-total 6		\$0.00	
7	Dispatcher public safety answering point equipment proficiency and operational skills	AX-007	
7a	Cost of vendor training on ANI/ALI, CAD/RMS, MAP, GIS applications	\$	
7b	Dispatcher training excluding CJDN and BCA training.	\$	Dispatcher salaries and benefits during training are not allowable expenses.
7c	FTO Training of new employee only	\$	This includes the salary and benefits of the in-house FTO for documented length of training.
7d	NENA, APCO Conference Training	\$	This does not include salary and benefits of the dispatcher during the conference but does include the expenses of attending the conference training.
Sub-total 7		\$0.00	
8	Equipment necessary within the public safety answering point for community alert systems.	AX-008	
8a	Reverse type 911 alert system such as Reverse 9-1-1 or EPN-Emergency Preparedness Network	\$	
Sub-total 8		\$0.00	

<u>Allowable Expense</u> Type as listed in Statute		<u>Items included</u>	<u>Budget Code</u>	<u>Notes</u> PSAPs can add their own notes in this column if needed
7a		Cost of vendor training on ANI/ALI, CAD/RMS, MAP, GIS applications	\$	
7b		Dispatcher training excluding CJDN and BCA training.	\$	Dispatcher salaries and benefits during training are not allowable expenses.
7c		FTO Training of new employee only	\$	This includes the salary and benefits of the in-house FTO for documented length of training.
7d		NENA, APCO Conference Training	\$	This does not include salary and benefits of the dispatcher during the conference but does include the expenses of attending the conference training.
Sub-total 7			\$0.00	
8		Equipment necessary within the public safety answering point for community alert systems.	AX-008	
8a		Reverse type 911 alert system such as Reverse 9-1-1 or EPN--Emergency Preparedness Network	\$	
Sub-total 8			\$0.00	

