

PUBLIC SAFETY ANSWERING POINT CONSOLIDATION GROUP

Consolidation Study for the Counties of Grant, Douglas, Lac Qui Parle,
Otter Tail, Pope, Stevens, Todd, Traverse, Wadena, and Wilkin

Final Report October 6, 2010

Presented by

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and
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Section 1 - EXECUTIVE SUMMARY

Elert & Associates and Baker Tilly are pleased to present this report to the ten counties participating in this consolidation feasibility study. This report and the recommendations contained within it are the result of information gathered, analyzed, discussed, and documented, and are based upon our extensive experience in the area of dispatch and government consolidation management including required consolidation success factors. Each of the counties provided personnel time for interviews, departmental information, personal opinions, and documentation (including financial information, staffing, PSAP statistical data, and other reports). In addition, other studies were reviewed along with best practices documentation and the Minnesota Governor's Work Group on Regional Public Safety Answering Points.

The Sheriffs of the Minnesota Counties of Douglas, Grant, Lac qui Parle, Otter Tail, Pope, Stevens, Todd, Traverse, Wilkin, and Wadena entered into an agreement with Elert & Associates to provide a consolidation study for the counties. Elert & Associates partnered with Baker Tilly Virchow Krause to provide the counties with a broad range of expertise and experience.

The objective of this study was to assess the feasibility of consolidating current PSAP operations—including 911, dispatch, CAD, and RMS functions—for the most cost effective means of providing public safety answering point services to the region.

The initial project meetings were held with county personnel to introduce the team and to gather information about the counties' ideas, methods of operations, functions, area of responsibilities, and political climate. These meetings were held over the course of three days at the City of Elbow Lake, City of Morris, and City of Wadena. A request was made for specific data from each of the counties.

On-site interviews were held during the last week of February and the first two weeks of March. Interviews were conducted with various county personnel, including dispatch supervisors, dispatchers, chief deputies, IT personnel, records management personnel, investigative supervisors, etc. Information was gathered on operations and technology currently being utilized in the PSAP operations. A survey was conducted on the physical aspects of the dispatch centers, including security, safety, and environmental conditions.

Further information was gathered by reviewing ARMER study reports and ARMER Participation Plans. Meetings and discussions were held with Jackie Mines, Emergency Communications Network 911 Program Manager for the State of Minnesota, and members of the OET, who manage the MNet. Information was gathered about the CIS software programs, and a survey was presented to the counties so pricing could be obtained for migration to the CIS software.

Key factors for a success consolidation include the following:

- Positive Impact on Service
- Clear Fiscal Benefit

- Track Record of Cooperation
- Shared Perception of Need
- Community Support

Including ten counties in the study group creates many possible options for consolidation. This study reveals that a refined partial consolidation makes the most sense due to the technology infrastructure currently in place and the specific staffing approaches within each PSAP. The two primary options were to create a partial consolidated center in two locations or to create partial consolidated centers in three locations. Each option has two sub-options that either include all the counties or limit the consolidation to counties with stand-alone dispatch operations.

Capital costs, avoidable costs, staffing requirements, CAD/RMS and wide area networks, revenue, and service requirements were all taken into consideration. Cost allocation approaches, management and governance considerations, and fiscal and staffing impact of the options are discussed in detail.

Multiple forms of governance are available, including a separate dispatch department with a participating county, a joint powers structure, and a contract with the dispatching agency. The recommended governance is based upon the option selected.

All of the PSAP facilities were reviewed on a high level for physical aspects and vulnerability for unwanted events ranging from weather conditions to terrorism. The existing facilities do not meet the FEMA standards or all of the NFPA standards. The PSAPs were also reviewed for the existing technology used. This report contains details of findings of each of the county PSAPs and the planned and desired new facilities.

While all of the options have merit, the consolidation option that we would recommend the region pursue is:

Option 2A		
Location of center	Otter Tail	Douglas
Counties consolidating	Grant	Pope

Option 2A: Otter Tail and Douglas County provide dispatch services for Grant and Pope Counties, respectively, and the others maintaining independent centers. In this option, Stevens County is the only county with a stand-alone Dispatch Center (i.e. dispatchers do not have jail responsibilities), that does not participate in a consolidation. This option is preferred, in part, over a similar option that would involve Otter Tail providing services to Stevens County, because of Stevens County’s investment in its Courthouse capital project. Option 2a offers significant operational, staffing, and financial benefits to four of the five counties operating stand-alone dispatchers and has the highest feasibility of being adopted. This option is recommended because it results in over \$8 million in potential savings and works within existing infrastructure and collaborative relationships.

Consolidation planning is necessary for a successful consolidation. The first step is this report and decision making. The second step is organizational and implementation

planning and the third step is the actual implementation. The report outlines steps that need to be taken for an effective consolidation.

Section 2 - CONSOLIDATION

2.01 TO CONSOLIDATE OR NOT TO CONSOLIDATE

Consolidation of dispatch centers has occurred all over the country and world for many years. Most succeed, some have studied the possibility and decided not to proceed, and some have failed. What are the driving factors to even think about consolidation? Technological advances, increased populations, advanced training and skill requirements, regional cooperation, and higher costs impact all cities and counties. Can a consolidation work? Will it work for my county? Would it benefit my county? Will we lose our identity? Will we provide the level of support we currently provide? These are some of the questions county members ask.

At the start of this consolidation study, we outlined a number of factors that are needed for a successful consolidation. There were:

- Positive impact on service delivery
- Clear fiscal benefit
- Track record of cooperation between agencies
- Shared perception of need
- Community support

In reviewing each of these factors, it appears that only three of the five critical factors are met in this situation.

Factor	Factor Present	Number of Counties with Factor Present
Positive Service Delivery Impact	Yes	8
Clear Fiscal Benefit	Yes	9
Track Record of Cooperation	Yes	9
Shared Perception of Need	No	1
Community Support	No	unknown

That is not to say that through proactive efforts, the status of these could not change; however, the current situation **does not appear** to support a successful and sustainable scenario for consolidation of a majority of the Counties. As will be demonstrated in this report, there is a clear business case for consolidation of nearly all of the ten participating Counties. However, merely demonstrating potential fiscal benefits is not sufficient to create an environment under which sustainable consolidation initiatives can occur. For example, the County that has perhaps been most aggressive in pursuing consolidation efforts in the past, Pope County, has been unable to implement any regional approaches to service delivery due to a lack of a consistent level of community support. For the remaining Counties that choose to consolidate under one of the presented options, or under other cooperative efforts, initiatives will be required to ensure community support.

Finally, it should be noted that a very large number of potential consolidation options are available to a group of counties that is as large as the PCSG. The options outlined in this report represent the most feasible that involved each of the participating counties in at least one consolidation option. However, it is important to recognize that consolidation efforts between smaller subsets of the overall group, or pairs of counties, could prove to be feasible and perhaps may be more achievable given the current levels of perceived need and community support. Therefore, we recommend that, even if larger consolidation efforts may prove to be less realistic, participating counties should strongly consider smaller steps. Due to FCC requirements for narrow banding and the costs or potential savings, however, the steps would have to take place quickly.

Below is our assessment of each of these success factors as they pertain to the potential for consolidation between the ten counties in this study.

2.02 POSITIVE IMPACT ON SERVICE DELIVERY

All ten of the counties participating in this study have PSAPs that provide emergency dispatch operations. Some dispatchers have other functions, such as jailers, typists, secretarial duties, etc. All appear to function well within the normal daily activities. During our team’s visit to the dispatch centers, no major emergency or event occurred. It is very apparent, however, that with only one or two dispatchers on duty in many of these centers and with several of them also serving in other critical capacities (e.g., jailer functions), a major event would quickly overwhelm the dispatch resources. A long-lasting event would also require the dispatchers to work long hours with little relief. While the Sheriffs’ Offices have put backup plans into place, the current situation places both the dispatch and the jail function in a risky situation if a major event were to occur.

As shown in the figure below, most of the counties participating in this study currently have just a single dispatcher on duty for most of the day (excluding supervisory staff, who often have other duties).

County	Day Shift	Night Shift	Risk Level
Douglas	3	2	Lower
Grant	1	1	Higher
Lac qui Parle	1	1	Higher
Ottertail	2	2	Lower
Pope	1	1	Higher
Stevens	1	1	Higher
Todd	1	1	Higher
Traverse	1	1	Higher
Wadena	1.5	1	Higher
Wilkin	1	1	Higher

A larger dispatch center normally has more personnel on duty to handle the initial volume of calls from an emergency and also has the resources to call in additional

personnel and distribute the long hours among them. For emergency services, a larger resource pool can provide a greater service to more law enforcement, EMS, and fire personnel than a smaller one can. A regional center also has the communications in place and the knowledge of region-wide resources of more public safety entities and assets, thus having an increased ability to get the right resources there more quickly. In addition, a regional dispatch center can provide more effective call handling, given their ability to spread out more calls over the same number of staff members and their ability to have more than one staff person pick up calls in the queue. Fewer telephone transfers reduce the overall response time from the time of call to the arrival of the service requested.

2.03 CLEAR FISCAL BENEFIT

Economic conditions locally and nationally are impacting cities and counties all over the country. All ten counties have older 911 systems, which will need to be modified or replaced with next generation 911 equipment within the next few years. In addition, many of the recording systems need to be replaced.

Not one of the ten counties has a communications center that meets the FEMA and NFPA standards. Building a new facility or remodeling a building to meet the standards is a costly endeavor that each of the counties has to consider. Each county must weigh the risk and value for funding a communications center to meet current standards for all types of events.

A consolidated dispatch center can derive cost benefits from any of the following:

- Consolidating computer aided dispatch systems
- Sharing law enforcement records management systems
- Reducing IT support for software systems
- Consolidating E911 systems
- Sharing mapping resources
- Consolidating radio consoles
- Reducing the cost of recording equipment
- Reducing the cost of peripheral equipment
- Reducing the total number of employees (reducing long-term employee and benefit costs)
- Reducing ongoing maintenance costs because of less equipment
- Reducing training costs for dispatch personnel
- Eliminating duplicate services

The dollar figures used in our calculations have been either provided by the agency or in the case of the ARMER system from the ARMER studies. As shown

in the figure below, the amount of fiscal savings under each of the four consolidation options varies, both overall and by county. Overall, the counties that currently have standalone dispatch centers tend to have the greatest opportunity for fiscal benefits, when compared to those counties where the dispatch function is integral to their jail operations. We estimate that Todd County is the only participating county not expected to realize fiscal benefits from at least one of the consolidation options. Each option is discussed in detail in Section 3, but the overall fiscal impact is presented below as a reference and overview.

Estimated Net 10-Year Fiscal Savings by Option

	10-year Fiscal Savings			
	1A	1B	2A	2B
Douglas County	\$ 2,257,828	\$ 5,537,549	\$2,257,828	\$ 4,564,459
Grant County	\$ 3,498,227	\$ 3,730,930	\$3,361,484	\$ 3,602,056
Lac qui Parle County	\$ -	\$ 417,434	\$ -	\$ (759,196)
Otter Tail County	\$ 2,651,396	\$ 4,894,666	\$1,333,494	\$ 3,652,189
Pope County	\$ 1,847,132	\$ 2,637,688	\$1,847,132	\$ 2,406,459
Stevens County	\$ 2,334,981	\$ 2,758,721	\$ -	\$ 3,746,002
Todd County	\$ -	\$ (586,754)	\$ -	\$ (1,154,415)
Traverse County	\$ -	\$ 736,319	\$ -	\$ 87,924
Wadena County	\$ -	\$ 440,963	\$ -	\$ 759,424
Wilkin County	\$ -	\$ 902,337	\$ -	\$ 775,326
Total	\$ 12,589,564	\$21,469,854	\$8,799,938	\$17,680,229

The primary reasons Todd County would not see a fiscal benefit are as follows:

- Dispatch operations are integral to the jail, limiting the opportunity for staffing reductions;
- Todd County is relatively larger in size and call volume, meaning its share of operating costs under Option 1B and 2B is higher than other participating counties (although still less than the hosting county); and
- Avoidable system infrastructure capital costs (ARMER and 911) are not large enough to offset the loss of E911 revenues over a 10-year period, given the lack of an opportunity for staffing reductions.

When viewed from an overall regional perspective, Option 1B provides the greatest opportunity for fiscal savings. However, it is also the least feasible, in the

sense that it would involve the most significant amount of implementation and involve ten separate sets of county decision makers.

2.04 TRACK RECORD OF COOPERATION BETWEEN AGENCIES

Almost all of the agencies included in this study have at least some track record of cooperation with other Sheriffs' Offices, as well as with local public safety agencies within their respective counties. Participating counties were open to various degrees to the idea of cooperative efforts that balance cost savings and service delivery improvements, as long as they do not impede local operational and fiscal decision making.

- A. Douglas County reported a strong working relationship with the Alexandria Police Department, which shares a portion of the operating cost of the dispatch center. Further, the Sheriff's Office is part of the Douglas County SWAT team, which consists of both Sheriff Deputies and officers from the Alexandria Police Department. In addition, Douglas County is a part of the West Central Drug Task Force, which involves the counties of Otter Tail, Wilkin, Grant, Pope, and Wadena, in addition to two other counties and nine municipalities.
- B. The Pope County Sheriff's Office has been fairly aggressive in its efforts to identify shared services arrangements with its neighbors. In addition to the current study, Pope County also actively participated in a multi-county jail consolidation study. In addition, the County currently participates in the West Central Drug Task Force, and in a 22-member training consortium that involves Otter Tail, Grant, Wilkin, Wadena, Stevens, and Traverse Counties, plus a significant number of municipal public safety agencies. Unfortunately, there also appears to be a certain element of distrust among some key Pope County decision makers relative to multi-county cooperative efforts.
- C. Otter Tail County reported that, in addition to the West Central Drug Task Force and operational cooperation with municipalities within the County, the County also participates in a three county SWAT team with the Counties of Grant and Wilkin. In addition, the County participates in the training consortium mentioned above. A number of the other counties participating in this study specifically cited Otter Tail County as a partner agency with whom they worked particularly well.
- D. Stevens County reported that there is a significant track record with Pope County in exploring potential shared services arrangements relative to the dispatch function, which have not as yet led to implementation. In addition, Stevens County also participates in a multi-county SWAT team together with Traverse, Pope, and Big Stone Counties, as well as several municipal police departments. The County also participates in the training consortium.
- E. Grant County staff noted that there is a track record of cooperation with several neighboring counties, but with Otter Tail County in particular. Grant and Otter Tail County cooperate together in criminal investigations, a multi-

County SWAT team, the West Central Drug Task Force, and the training consortium. The Grant County Sheriff's Office also has significant experience in intergovernmental cooperation through its provision of providing contracted patrol services to rural towns within the County.

- F. Wadena County reported strong day-to-day operational cooperation with bordering counties, including Otter Tail, Todd, and Hubbard, albeit less so with Cass and Becker. In addition, the County participates in the West Central Drug Task Force and the training consortium.
- G. As a county situated along the state border, Wilkin County frequently has occasion to cooperate with the City of Wahpeton, North Dakota, in addition to Otter Tail County, since part of the City of Rothsay lies in Otter Tail County. Wilkin County also participates in the training consortium and in a multi-county SWAT team with Otter Tail and Grant Counties.
- H. Traverse County's primary intergovernmental cooperative efforts largely revolve around supplying contracted jail bed space for Grant, Stevens, and Big Stone Counties, as well as participation in a multi-county SWAT team with Stevens, Pope, and Big Stone.
- I. Todd County has participated in several technology- related cooperative planning activities in the past, and is part of the Central Minnesota Drug Task Force together with Stearns, Benton, and Morrison Counties. While open to studying the feasibility of increased intergovernmental cooperation with the other counties included in this study, Todd County is not part of several of the key organizations (e.g., West Central Drug Task Force, the training consortium) that are currently shared by other counties in the PCSG.
- J. Lac qui Parle does not currently participate in any major multi-jurisdictional cooperative efforts. The County recently decided to cease participation in the C.E.E.VI Drug Task Force (which does not include any of the other counties participating in this study), due to concerns about the cost.

2.05 SHARED PERCEPTION OF NEED

Throughout the interviews with personnel from the ten counties, we spoke with only one person who strongly supported the consolidation of dispatch centers. Others noted that consolidation may be a good idea in order to save on capital costs, share CAD and RMS systems, and improve services, while others wanted to wait to see what the result of this report would be.

2.06 COMMUNITY SUPPORT

Since the start of this study, the general public of the communities involved has been provided little detail other than their county's resolution to participate in this study. To gather community support, an effort would need to be made by each of the counties to educate community members on the benefits of consolidation and to ensure them that they will continue to receive the same or better quality of

support from a regional dispatch center. In general, those counties that, through this study, are able to identify fiscal and service delivery advantages through one of the options for a consolidated dispatch should develop a strategy to ensure community support. This strategy should involve the following::

- A. Identifying stakeholders most likely to have concerns with a proposed consolidation and, to the extent possible, anticipating their objections.
- B. Getting agreement on the fiscal and service delivery impacts from influential opinion leaders in the community, including, critically, members of the local business community.
- C. Potentially conducting a series of public meetings to educate and inform the community about the benefits and impacts of a consolidation effort, and providing a mechanism for public input.
- D. Developing a media plan that features a consistent message and that includes both traditional media outlets as well as emerging social media (as appropriate) and community interest websites to provide a platform to inform the community.

2.07 FACILITIES

While visiting each of the PSAP locations in the ten counties, we found that none would meet the FEMA 361 standards and all of the NFPA 1221 standards. The FEMA standards were developed to provide construction guidance for safe rooms for both residential and public places. Dispatch centers and emergency operations centers (EOCs) need to be able to provide emergency services when disasters strike without interruption of service. The FEMA standards in 361 and 426 provide for risk assessment, vulnerability, and risk management to help architects and engineers ensure the best and most cost-effective construction. In addition, FEMA 426 provides a reference manual for creating a building environment that is safer from threats or hazards.

In Section 5, we provided detailed information on locations, vulnerability, mitigating risks, and technology. In Section 6 of this report, we detailed our observations in reference to the location, vulnerability, dispatch facility, and technology. In this section is a brief description of any natural or manmade hazards, such as proximity to highways, propane, railroads, flood areas, etc., for each of the PSAPs.

Construction is currently underway in Stevens County for an addition onto the courthouse, which will include a new Sheriff's Office and dispatch center. Douglas County is moving forward in a phased approach that includes a new dispatch center, EOC, and Sheriff's Office. Ottertail County is discussing the relocation of their dispatch center.

Section 3 - CONSOLIDATION OPTIONS

3.01 CONSOLIDATION

There are a very large number of potential consolidation options among the ten counties.

The Governor's Working Group described four models for consideration, including 1) Full Consolidation, 2) Partial Consolidation, 3) Co-location, and 4) Hybrid.

We believe that the best opportunity for the West Central Region would be to refine the **Partial Consolidation Model** discussed within the Governor's Working Group. This model would involve combining dispatch for multiple public safety agencies within a geographic area, but expanding it to include all disciplines and structuring it either to a) function as a stand-alone entity or b) operate under the responsibility of an existing Sheriff's Office.

In order to focus analysis on the most feasible options, we took into account the operational deployment of dispatch staff relative to other assigned duties, facility capacity, track record of working with other agencies, and technology infrastructure of each dispatch center. To select the most appropriate options, we considered the following factors:

- Does the county operate a stand-alone dispatch center, which creates the opportunity to avoid significant staffing costs?
- Is the county equipped from a facility, infrastructure, and staffing standpoint to absorb additional call-taking duties from potential partners?
- Based on the current trunk system, what geographic based configurations make the most sense from a reliability and backup standpoint?
- Are potential partners in relative geographic proximity and/or bordering one another to build on existing track records of operational cooperation?

3.02 CONSOLIDATION OPTIONS

Option 1: Create Partial Consolidated Centers in Two Locations (Otter Tail and Douglas)

1a: Limit to counties with stand-alone dispatch operations

1b: Include all counties

Option 2: Create Partial Consolidated Centers in Three Locations (Otter Tail, Douglas, and Stevens)

2a: Limit to counties with stand-alone dispatch operations

2b: Include all counties

A critical point that was established during fieldwork was that several counties unequivocally stated that they were not interested in consolidation. As discussed, there must be leadership and community support for a potential consolidation to be successful. It is important to note, however, that an objective assessment of potential fiscal and service delivery benefits has not previously been completed. Thus, it is possible that some participating counties might reconsider their firmly stated opposition to consolidation if the fiscal benefits are sufficiently large.

3.03 CAPITAL COSTS

Capital costs, including depreciation of existing assets, are an important element in identifying the overall expenditure levels for dispatch operations. However, in terms of annual operating costs, personnel are by far the largest expenditure. As shown in the figure below, personnel costs represented an average of 88.7% of annual operating costs. Therefore, the greatest opportunity for fiscal benefits emerges when a county is in a position to reduce staffing levels through a consolidation.

Wages as a Percentage of Operating Expenditures

County	Salaries & Benefits	Other Expenditures	Wages as Percent of Operating Expenditures
Wadena	\$ 286,920	\$ 15,045	95.0%
Pope	\$ 260,109	\$ 15,916	94.2%
Otter Tail	\$ 669,676	\$ 49,808	93.1%
Grant	\$ 300,226	\$ 29,563	91.0%
Todd	\$ 338,195	\$ 34,683	90.7%
Wilkin*	\$ 226,318	\$ 25,574	89.8%
Traverse	\$ 207,254	\$ 38,500	84.3%
Lac Qui Parle*	\$ 519,780	\$ 100,694	83.8%
Stevens	\$ 235,347	\$ 45,948	83.7%
Douglas	\$ 595,018	\$ 137,662	81.2%
*Estimated			

One of the key findings during fieldwork was the extent to which many of the counties relied on dispatch staff to serve as jailers in the day-to-day operation of their jails. This factor was strongly considered when defining the feasible consolidation options.

3.04 OPTIONS FOR CONSOLIDATION

In analyzing the many possible arrangements for consolidation of dispatch centers, two ultimately proved to be the most feasible in terms of capacity, geography, and financial considerations. The two options focus on creating two or three regional centers. Both of these options have two permutations: a) including those without jail operations, or b) including all regardless of whether a jail exists.

Dispatch Center Jailing Status

County	Stand alone Dispatch	Dispatch Staff Serve as Correctional Officers	Opportunity for Staffing Reduction
Douglas	Yes	No	Yes
Grant	Yes	No	Yes
Otter Tail	Yes	No	Yes
Pope*	Yes	No	Yes
Stevens	Yes	No	Yes
Lac Qui Parle	No	Yes	No
Todd	No	Yes	No
Traverse	No	Yes	No
Wadena	No	Yes	No
Wilkin	No	Yes	No

* Pope County is considering approval of the construction of a 'Mini Jail'

3.05 OPTIONS SUMMARIZED

Option 1A		
Location of center	Otter Tail	Douglas
Counties consolidating	Grant	Pope
	Stevens	

Option 1A considers consolidating a subset of dispatch centers that do **not** currently provide jailing services (detailed in the table below) into Otter Tail or Douglas Counties’ respective centers. Lac qui Parle, Todd, Traverse, Wadena, and Wilkin Counties continue to operate their own dispatch centers as currently operated.

Option 1B		
Location of center	Otter Tail	Douglas
Counties consolidating	Grant	Pope
	Stevens	Todd
	Lac Qui Parle	Wadena
	Traverse	
	Wilkin	

Option 1B consolidates all dispatch centers, regardless of their status as stand-alone or integral to the jail, into either Otter Tail or Douglas County. It should be noted that Pope County is currently considering construction of a “mini jail,” for which dispatchers would assume correctional officer responsibilities.

Option 2A		
Location of center	Otter Tail	Douglas
Counties consolidating	Grant	Pope

Option 2A consolidates only stand-alone dispatch centers, except that in this option, Stevens County continues as an independent operation, and no other county is consolidated other than Otter Tail and Grant, and Douglas and Pope.

Option 2B			
Location of center	Otter Tail	Douglas	Stevens
Counties consolidating	Grant	Pope	Traverse
	Wadena	Todd	Lac Qui Parle
	Wilkin		

Option 2B consolidates **all** dispatch centers into Douglas, Otter Tail, or Stevens Counties.

3.06 AVOIDABLE COSTS

Each of the counties participating in this study devotes a considerable portion of their annual operating costs to wages and benefits. However, as noted above, the Dispatch function is integral to Jail operations in many of the participating Counties. The table below presents the net 10-year avoidable costs for all ten Sheriffs' Offices. All of the Counties have a potential for avoiding capital system expenditures if they were to consolidate with potential partners, yet those Counties that do not have stand-alone Dispatch centers (Lac qui Parle, Todd, Traverse, Wadena, Wilkin, and potentially Pope) are much less likely to realize fiscal benefits from consolidation in terms of operating expenditures.

Summary of Estimated Avoidable Operating and Capital System Costs

County	10 year Estimated Annual Operating Costs less Revenues ²	10 year Avoidable Operating Costs ³	Avoidable System Expenditures (ARMER and 911) ⁴
Douglas	\$ 5,736,404	\$ 5,525,668	\$ 1,539,851
Grant ^{1, 8}	\$ 3,344,200	\$ 2,682,968	\$ 1,049,888
Lac qui Parle ^{1, 5, 7}	\$ (244,639)	\$ (248,239)	\$ 667,779
Otter Tail ¹	\$ 3,508,238	\$ 3,433,737	\$ 1,404,989
Pope ¹ (No 'Mini Jail')	\$ 2,305,968	\$ 2,266,516	\$ 790,538
Pope ^{1, 6, 7} (with 'Mini Jail')	\$ 2,305,968	\$ (261,977)	\$ 790,538
Stevens ¹	\$ 1,777,344	\$ 1,477,202	\$ 1,285,032
Todd ^{1, 7}	\$ 3,986,745	\$ (298,357)	\$ 733,272
Traverse ^{1, 7}	\$ 2,643,563	\$ (186,188)	\$ 923,671
Wadena ^{1, 7}	\$ 3,390,408	\$ (202,715)	\$ 1,324,799
Wilkin ^{1, 7}	\$ 1,395,983	\$ (244,211)	\$ 1,148,441

¹ Depreciation costs estimated or not available

² Annual Operating Costs include personnel, planned capital purchases, other operating costs, E911 expenditures, and depreciation. Revenues include E911 revenues and partner cost sharing (ie. municipalities)

³ Avoidable Operating Costs include non-Correctional Officer/Dispatch staff, and depreciation.

⁴ Estimated ARMER costs associated with Dispatch operations - does not include total ARMER costs for subscriber units and system architecture that would remain regardless of whether County maintains a Dispatch center

⁵ Lac qui Parle does not maintain separate Dispatch budget: E911 revenues are greater than recorded Dispatch expenditures, hence the negative value (credit)

⁶ Should Pope County construct a 'Mini Jail,' consolidating Dispatch functions will result in an overall net loss in operating expenditures due to loss of E911 revenues (excluding avoidable system expenditures)

⁷ Dispatch function is integral to Jail operations in these Counties - consolidation of Dispatch function would result in an overall net loss in operating expenditures due to loss of E911 revenues (excluding avoidable system expenditures)

⁸ Grant County avoidable operating costs assume that 1.0 FTE Records Clerk would be retained to perform administrative support duties.

For those counties with combined dispatch/jail functions, the lack of opportunity for realizing fiscal benefits from consolidation is the result of the following:

- No opportunity for staffing reductions because these employees will still need to staff the master control board in the jail and perform video monitoring functions; and
- The loss of E911 revenue from the State.

3.07 PLANNED CAPITAL COSTS

Depending on the specific option, counties that consolidate may realize significant fiscal benefits through avoided costs relative to capital system expenditures. The Statewide Radio Board of Minnesota was created in 2004 to put into operation the Statewide Interoperable Public Safety Radio and Communication System Plan. The Plan, ultimately given the name Allied Radio Matrix for Emergency Response (ARMER), is a major element of the state's long-term interoperable communications infrastructure, creating a standards-based shared public safety radio system with a maximum level of cross-agency compatibility. As such, the new system allows local governments' radio systems the opportunity to integrate into a common system with the entire state. Upgrading each county's system warrants significant costs, as new equipment such as radio consoles, microwave transmitters, and control stations will have to be purchased to fit into the expanding system.

That being said, if regional consolidation occurred, each county would no longer have to purchase the entire package of these capital intensive items, as only the counties with the centers themselves will need to acquire ARMER upgrades necessary to operate a dispatch center. The costs associated with upgrading to ARMER are twofold: first, the physical assets must be purchased, and second, the assets must be maintained and replaced during the foreseeable future. The figure below summarizes the avoidable capital costs each dispatch center could potentially realize from a consolidation. The "ARMER Total" represents the cost for each to upgrade their communications infrastructure *and* to maintain an independent dispatch center. The "ARMER Avoidable" and "911 System" columns represent cost estimates that would not be needed if the County no longer performed dispatch functions on its own. (The ARMER costs from the ARMER studies have been used for this report. In some cases the actual cost for a county may be less due to changing pricing and or modifying the required equipment. An example would be the use of control stations with an existing radio console instead of purchasing a new radio console. In this case a county may selected a more cost effective solution but loose functionality and safety features of a new radio console. Each county must review all the options)

Potential ARMER Related Avoided Costs

County	ARMER Total	ARMER Avoidable	911 System
Douglas	\$ 4,479,670	\$ 1,275,138	\$ 264,713
Grant	\$ 2,896,059	\$ 829,920	\$ 219,968
Lac qui Parle	\$ 2,100,000	\$ 447,811	\$ 219,968
Otter Tail	\$ 8,020,134	\$ 1,140,276	\$ 264,713
Pope	\$ 2,599,641	\$ 570,570	\$ 219,968
Stevens	\$ 2,314,180	\$ 1,065,064	\$ 219,968
Todd	\$ 3,112,200	\$ 468,559	\$ 264,713
Traverse	\$ 1,301,330	\$ 703,703	\$ 219,968
Wadena	\$ 7,295,286	\$ 1,104,831	\$ 219,968
Wilkin	\$ 4,386,326	\$ 928,473	\$ 219,968

The overall costs essentially amount to the costs associated with purchasing new dispatch equipment (specifically, a new radio console, a new microwave system, and new backup control stations), but also system elements that would still need to be purchased regardless of whether the county maintained a dispatch operation, such as mobile and portable radios, training, service and maintenance, and sales tax. The avoidable cost figure is an estimate of the ten-year costs correlated with incorporating dispatch functionality into the ARMER system in a county. This table does not take into consideration future State or Federal grants that may be available to reduce the county's costs.

3.08 COMPUTER AIDED DISPATCH, RECORDS MANAGEMENT, AND MINNESOTA'S NETWORK FOR ENTERPRISE TELECOMMUNICATIONS (MNET)

Minnesota's Office of Enterprise Technology (OET) connects state agencies, counties, and others on a managed IP-Multiprotocol Label Switching (MPLS) network using leased lines. Some of this network has excess bandwidth that can be utilized to allow multiple counties to share this network for data requirements. Areas where the bandwidth is utilized at or near full capacity may be increased to allow further data usage. Using this existing network for sharing of Computer Aided Dispatch (CAD) and Record Management Systems (RMS) has been approved by the OET. The counties are currently paying a portion of the cost of this shared network. This would allow a central location or locations for a CAD/RMS shared system. If desired, the counties could have a central location for CAD/RMS and have a redundant or backup system at a second location. The backup system would keep all information current in the event that the primary location fails.

Three counties (Douglas, Otter Tail, and Stevens) are located on main trunk lines of the MNET system. The main lines have higher bandwidths and redundant paths that provide greater reliability and reduce risk of communications failure.

The State is also working to replace the existing 911 low speed data and voice lines with IP networks to serve PSAPs within the state. A backup network with separate independent connections will be recommended in case of network failure. The backup can be through a telephone company, cable company or

possibly through the ARMER microwave system. In an ideal world, the MNET, next generation 911 network, and ARMER backbone should all back each other up in case of outages or overloads. The State is currently looking at these options. See appendix for further information on the network systems.

3.09 CAD/RMS

Currently three counties (Douglas, Otter Tail, and Wadena) use CIS for their records management and CAD systems. The remaining counties in the PCSG all have a records management system, but some do not have a CAD system. Other records management systems include an Access program, Dave Rupp software, LETC, and PC Enfors. Prior to this project, several of the counties began discussions on sharing or cooperatively using CAD and records, not only to share costs, but more importantly to share the collective data information and have backup systems in place. The CAD/RMS could expand outside of the study group to other counties and utilize the MNET. The counties all submitted information to CIS on needs and requirement, and CIS has responded back with estimated costs. E&A has not been provided with the costs or possible combinations, so this information is not included within this report. There should be some long term cost saving sharing the same RMS system.

3.10 E911 REVENUE

In accordance with Minnesota State Statute 403.113, each county receives funds from the state to help offset some of the costs associated with providing E911 service. Within the existing model of independent centers for each county, dispatch operations revenue sources include county levy funding, community contributions, and 911 assessment funding. These funds are distributed to PSAPs throughout the state using a two- factor formula:

- A. Half of the funds are distributed equally to the qualified counties, existing 10 Minnesota State Patrol PSAPs, and each governmental entity operating the individual public safety answering points serving the Metropolitan Airports Commission, the Red Lake Indian Reservation, and the University of Minnesota Police Department.
- B. The remaining one-half is distributed to qualified counties and cities with existing 911 systems based on each county's or city's percentage of the total population of qualified counties and cities. The population of a qualified city with an existing system must be deducted from its county's population when calculating the county's share under this clause if the city seeks direct distribution of its share.

Thus, for the counties involved in this study, the annual 911 funding amounts to \$926,284 distributed as follows:

Annual E911 Payments

County	Amount
Douglas	\$113,901
Grant	\$77,054
Lac Qui Parle	\$79,523
Otter Tail	\$147,700
Pope	\$83,924
Stevens	\$82,281
Todd	\$102,242
Traverse	\$74,061
Wadena	\$87,364
Wilkin	\$78,233

Per staff from the MN DPS 911 Program, a precedent has been set with previous county consolidations, in that the amount of the disbursement to each county is calculated exactly the same as if the Counties continued to operate distinct PSAPs. There is no change in how the distribution is configured, as discussed above.

The State would continue to send the disbursement to each of the individual counties in the same amount as they receive today unless the county or counties specified that their E911 funding should be sent to another County. The State would require that this arrangement would have to be formalized in a joint powers agreement or county resolutions. Further, the county's 911 plan would need to be updated and resubmitted, and, finally, the arrangement would have to be filed with the State to ensure proper transfer of funding.

3.11 POTENTIAL SERVICE REQUIREMENTS AND WORKLOAD

Each participating dispatch center provided data detailing their emergency call volume in 2009. These numbers were used to estimate staffing projections for any and all possible combinations for consolidation, detailed in the chart below.

Call Statistics by County, 2009¹

	Douglas	Grant	Lac Qui Parle	Otter Tail	Pope	Stevens	Todd	Traverse	Wadena	Wilkin
Emergency Calls	8,410	1,318	1,331	17,777	2,191	1,449	5,612	707	3,400	1,226
Percent of Total	19.4%	3.0%	3.1%	40.9%	5.0%	3.3%	12.9%	1.6%	7.8%	2.8%
Average Call Duration (secs)	89.5	71.5	70.8	51.8	68.1	131.0	73.3	75.4	95.1	69.0

With the detailed call logs provided by each county, it is possible to use Erlang queuing theory to predict the total number of dispatchers needed to respond to all emergency calls in a timely manner. The basic premise behind the theory is to analyze the *busiest* hours during both a day shift and a night shift in a given time period (in this case, one year), thereby staffing dispatch centers to be capable of

¹ Data were reliable for 117 of 120 months; remaining 3 months' data were estimated using reliable data.

handling the worst emergency at all times. Although this may result in overstaffing for a majority shifts, it also insures that when extreme emergencies do occur, centers will be adequately staffed to handle the concentrated surge in call volume.

With the exception of Otter Tail County, none of the participating agencies was able to provide us with data relative to administrative call load. We estimated administrative call loads for each county based on data from Otter Tail, as well as administrative call data from other comparable consolidation projects we have successfully completed in the past, to create a weighted ratio of 911 calls to administrative calls. These estimates are built into the staffing workload estimates that are presented under each consolidation option. The assumption we used in those estimates is that 911 calls typically represent 17% of total call volume.

3.12 COST ALLOCATION APPROACHES

A key component to any consolidated approach is the manner in which participating entities pay for their share of services received. The following outlines a variety of approaches that have been successfully used in other public safety communications answering point consolidation situations.

A. Municipal Cost Sharing

Half of the participating counties currently operate under a cost sharing arrangement, generally with the largest municipality within their county. However, a relatively small percentage of participating agencies pay to participate under the current independent dispatch models. The total amount of funds received from communities participating is approximately 17% of total operating expenditures (e.g., \$771,500 of \$4.5 million) for all dispatch entities. Some of the cost sharing arrangements are tied to the percent of calls for service, but not all.

	Douglas	Grant	Lac Qui Parle	Otter Tail	Pope	Stevens	Todd	Traverse	Wadena	Wilkin
Operating Budget plus Depreciation	\$802,600	\$377,484	\$60,542	\$769,126	\$342,254	\$544,870	\$480,097	\$335,601	\$460,512	\$328,153
State Funds	\$113,901	\$77,054	\$79,523	\$147,700	\$83,924	\$82,281	\$102,242	\$74,061	\$87,364	\$78,233
Community	Alexandria	-	-	Fergus Falls	Glenwood, Starbuck	Morris	-	-	-	Breckenridge
Percentage of Total Budget	25.6%	-	-	39.2%	14.8%	17.7%	-	-	-	35.8%
Percentage of Total Calls	50.0%	-	-	45.0%	30.0%	47.0%	-	-	-	60.0%
Amount Paid by Community	\$205,255	-	-	\$301,354	\$50,726	\$96,665	-	-	-	\$117,500
Net Cost to County	\$483,444	\$300,430	-\$18,981	\$320,072	\$207,604	\$365,924	\$377,856	\$261,540	\$373,148	\$132,420

Notes:
 Operating Budget plus Depreciation estimated for all Counties except Douglas: Douglas budgets Dispatch Operations, E911 Expenditures, and Depreciation separately from overall Sheriff Budget
 Lac qui Parle Dispatch budget is integral to Sheriff's Office budget - no break out is available.
 Amount paid by Fergus Falls is estimated based on 45% contribution rate of Otter Tail personnel costs.

The amount received through community contributions for individual centers ranges from 14.8% to 39.2% of total budget. These arrangements are changing, however, as communities struggle with tight budgets.

Funding Source	Douglas	Grant	Lac Qui Parle	Otter Tail	Pope	Stevens	Todd	Traverse	Wadena	Wilkin	Totals
County Levy	60.2%	79.6%	-31.4%	41.6%	60.7%	67.2%	78.7%	77.9%	81.0%	40.4%	62.3%
911 State Funds	14.2%	20.4%	131.4%	19.2%	24.5%	15.1%	21.3%	22.1%	19.0%	23.8%	20.6%
Community Contribution	25.6%	-	-	39.2%	14.8%	17.7%	-	-	-	35.8%	n/a

3.13 BEST PRACTICE INSIGHTS ON COST ALLOCATION

One of the most significant issues faced by public sector collaborations is agreement as to the cost allocation methodology. In fact, in our experience with consolidated operations, one of the most frequent concerns of members and/or causes of dissolution is the perception of unfair cost allocation practices. Therefore, it is important to get agreement up front as to the methodology to be used for allocating costs to participants and more importantly the framework within which this methodology will be reviewed and revised.

The following are some specific best practices that we recommend regardless of the actual cost allocation methodology:

- Include the tenets of the cost allocation methodology in the bylaws or an addendum to the bylaws (i.e., to be based on percentage of calls, population, or a combination of factors including but not limited to call volume, equalized value, population, etc.)
- Appoint a representative group of members to be responsible for reviewing the methodology on an annual basis.
- Agree up front as to who from each entity will sign off on the original cost allocation methodology and any modifications thereafter (e.g., County Finance Director/Committee, Sheriff, Sheriff's office representative).
- Ensure that the entity responsible for the cost allocation employs transparency in all cost allocation activities and allows review of these procedures at any time.
- Ensure that members receive a forecast of their required payment well in advance of the expected payment. (Note: This should correlate with member budget cycles.)
- Require advance notice of decisions to discontinue membership in the consortium in order to ensure that cost allocations can be revised and communicated in advance of the next annual budget planning process.

3.14 OPTIONS FOR COST ALLOCATION OF CONSOLIDATED CENTERS

A range of potential cost allocation approaches could be used under the options identified in this report.

A. Method A: Call Volume and Population Formula

Participating counties currently employing cost sharing arrangements with municipalities have adopted varying approaches to cost allocation. We typically recommend a blended approach that balances a partner's ability to pay, as represented by percent of population within a consolidated entity, with a service delivery variable such as calls for service. The primary advantages of this cost allocation approach are its relative simplicity to calculate and communicate, and that it balances service utilization with potential service demands and general ability to pay.

For the purposes of estimating potential fiscal impacts of the options identified in this report, we used a cost allocation formula that is weighted equally: 50% based on population and 50% on calls for service (as measured by average monthly Erlangs). However, other service utilization measures could easily be used, such as total number of calls for service (irrespective of call duration). In the interest of clarity, given the number of counties involved in this study, we did not develop a separate fiscal impact estimate using each of the following cost allocation approaches.

We recommend this approach because it represents a balance between ease of calculation and methodological rigor.

B. Method B: Equal Share and Population Formula

One often used and simple formula is to distribute costs based on a fixed equal share, plus a proportionate share based on population. There are certain fixed costs associated with operating a dispatch center that are required regardless of the size, call volume, and location of a center. For example, a base radio and one tele-communicator are required regardless of the number of calls dispatched. On average, these fixed costs equate to approximately 20% of operating costs. The balance of the costs is then distributed on a per capita basis. The theory that supports this formula is that the primary responsibility of police, fire, and EMS departments is to protect people, and people generate calls. Therefore, on average, the larger the municipality's population, the more calls it is likely to generate. The equal portion (20% of operations) and the per capita portion (% of population to the total county) are combined to determine the total cost to the municipality.

C. Method C: Equal Share, Population, and Equalized Value Formula

A second option used by many consolidated dispatch centers includes equalized value in the formula. Typically the costs are distributed based on the formula used in the example below:

20% equal share + proportion of population x 80% of costs divided by 2 + proportion of equalized value x 80% of costs divided by 2 = cost share.

In this case, each County would be charged a 20% equal share. The balance would be divided equally between each county's proportionate share of population and equalized value.

D. Method D: Equal Share, Population, Equalized Value, and Call Volume Formula

A fourth option is to include call volume in the formula together with equal share, population, and equalized value. The primary advantage of this approach is that it brings in a number of cost drivers for the operation. It is more difficult to use this formula at the outset of a new system, because few PSAPs record calls in the same fashion. However, once a consolidated center is operating and a uniform system of determining call volumes is established, this method represents the closest system to an actual "user charge" system, and along with a 20% equal share may be the most equitable way of distributing costs.

An example formula for this approach is as follows:

20% equal share + proportion of population x 80% of costs divided by 3 + proportion of equalized value x 80% of costs divided by 3 + proportion share of calls (with fire EMS calls doubled) x 80% of costs divided by 3 = cost share

There are a number of other funding formulas that weigh various factors and take into consideration such things as high concentrations of retail or industrial properties that may have an impact on police and fire call volumes. These factors should be taken into consideration at the time a methodology is developed.

3.15 "EMPLOYER AUTHORITY," MANAGEMENT RIGHTS, AND STAFFING

A key concern for implementing any consolidation option for those counties that would eliminate their dispatch function is the authority to change their staffing complement through a reduction in force. Generally, labor contracts for most Minnesota counties include a section entitled "Employer Authority," which provides blanket management rights to provide or cease providing specific services and functions and grants the ability to either increase or decrease staffing levels accordingly.

Nevertheless, layoffs that would be contemplated under a consolidation do involve very difficult decisions regarding valued and often long tenured staff. Further, most of the consolidation options do not envision a staffing increase at the host counties, limiting the ability to offer laid off staff employment in another county. The business case for consolidation is clear for most counties in the PCSG, however. This means that the policy makers in those counties will have to

balance the potential savings against other factors, such as the desire to retain dispatch in house and continue to employ current staff.

3.16 FISCAL AND STAFFING IMPACT OF EACH CONSOLIDATION OPTION

The following section applies the recommended “Method A” cost allocation method (50% population/50% calls for service) to estimate potential fiscal benefits from consolidation. As part of the fiscal feasibility analysis, call volumes and staffing levels were also assessed to determine whether, in consolidating operations, staffing requirements (and therefore operating costs) would likely need to be increased to maintain current service levels.

Key variables in all of the following estimates include 10-year operating costs, avoidable capital system costs (ARMER and 911 system), E911 revenues, and required staffing levels. A full breakdown of cost estimates for each county, including estimated data, is included as an appendix to this report.

Within each section, we discuss the estimated fiscal benefits and overall staffing requirements under each option. One of the key elements of our staffing analysis is to estimate the impact of increased administrative call duties over and above the 911 call volume in the consolidated operations. As is well known, dispatch staff do much more than answer 911 calls – they are also responsible for answering administrative calls, making radio dispatch transmissions, and handling administrative support tasks, such as entering and clearing warrants, patrol support, and other tasks not directly related to call taking. We use a concept called *utilization* to estimate the amount of time a dispatcher is actually on the phone (regardless of whether it is a 911 or an administrative call) to determine the amount of time that dispatcher has for radio calls and administrative support activities. For each option, we present the estimated utilization for dispatch staff under a consolidated operation. The estimated fiscal benefits outlined in the business case under each option include the assumption that administrative duties would be either absorbed by the host County, or re-assigned to existing staff outside the Dispatch staff roster. In other words, the business case would be reduced to the extent that a County did not eliminate all civilian Dispatch positions. This caveat applies to those Counties with stand-alone Dispatch operations. We assume that those Counties that do not have stand-alone Dispatch operations would not eliminate any current Dispatch staff, because of their other duties as jail staff.

Option 1A: Two Centers - Partial Consolidation/Select Counties

(Grant and Stevens County into Otter Tail County, and Consolidation of Pope County into Douglas County)

This alignment of dispatch centers represents a consolidation of five facilities that currently operate stand-alone dispatch operations, in order to maximize potential operational cost savings. Grant and Stevens County would receive service from Otter Tail County, while Pope County will be served by Douglas County.

As shown in the figure below, we estimate that the net 10-year costs to operate a combined dispatch function would be an estimated \$2.9 million in Otter Tail County and \$6.2 million in Douglas County (factoring in full E911 payments from partner Counties).

**Option 1A Ten-Year Net Operating Dispatch Costs
(PSAP Costs Only, Expenditures Less Revenues)**

	10 year Operating Cost Estimate	Allocatable Capital Costs	Total 10 year Costs	Increased E911 Revenues	Net 10 year Allocatable Costs
Otter Tail	\$ 3,508,238	\$ 1,404,989	\$ 4,913,227	\$ 1,989,515	\$ 2,923,712
Douglas	\$ 5,736,404	\$ 1,539,851	\$ 7,276,255	\$ 1,047,907	\$ 6,228,348

Allocable capital costs refer to the amount each county's ARMER plan specified for the total cost of purchasing a radio console, microwave, and backup control stations for the ARMER system upgrade. In other words, that portion of ARMER costs for the two counties that involve operating a dispatch function. In order to properly gauge the long-term savings related to consolidation, it is necessary to use a timeframe longer than a single year.

Using the Method A (50% population/50% Calls for Service) cost allocation discussed above, we estimate that ten-year costs for each county to participate range from a low of \$234,628 for Grant County to a maximum of \$5.0 million for Douglas County. Total ten-year costs for both Otter Tail and Douglas Counties would be partially offset by increased E911 revenues from the participating counties. Cost allocation would further reduce costs for both host counties.

Net Ten-Year Cost Allocations

	Population	Population Percentage	Calls for Service (Avg. Monthly Erlangs)	Calls for Service	Share of Net Costs	10 year Costs
Otter Tail	56,588	78.5%	22,936	76.2%	77.4%	\$ 2,261,832
Grant	5,835	8.1%	2,394	8.0%	8.0%	\$ 234,628
Stevens	9,629	13.4%	4,776	15.9%	14.6%	\$ 427,253
Total	72,052	100.0%	30	100.0%	100.0%	\$ 2,923,712
Douglas	36,390	77.0%	18,944	84.1%	80.6%	\$ 5,018,427
Pope	10,869	23.0%	3,569	15.9%	19.4%	\$ 1,209,922
Total	47,259	100.0%	22,513	100.0%	100.0%	\$ 6,228,348

Note: Calls for Service percentages based on Erlang Data

When comparing the net ten-year costs to each county under this option against what they would have spent without consolidation, we estimate that significant fiscal benefits could be realized by these five counties under this option. As shown in the figure below, estimated ten-year costs under this option would be \$2.7 million lower for Otter Tail County and \$2.3 million lower for Douglas County. Grant County could potentially experience the largest savings of any county over ten years, at an estimated \$3.5 million. Stevens County could potentially save an estimated \$2.3 million, while savings for Pope County depend largely on whether that county decides to construct a "mini jail" and integrate dispatch staff into correctional operations.

Comparison of Estimated Total Costs, Avoided Costs, and Share of Net Costs

County	Net 10 year Costs	Share of 10 year Costs for Consolidated Center	Net 10-year Savings
Otter Tail	\$ 4,913,227	\$ 2,261,832	\$ 2,651,396
Grant	\$ 3,732,856	\$ 234,628	\$ 3,498,227
Stevens	\$ 2,762,233	\$ 427,253	\$ 2,334,981
Douglas	\$ 7,276,255	\$ 5,018,427	\$ 2,257,828
Pope (No 'Mini Jail')	\$ 3,057,054	\$ 1,209,922	\$ 1,847,132
Pope ('Mini Jail')	\$ 528,561	\$ 1,209,922	\$ (681,361)
Notes: Net 10 year costs include estimated avoidable personnel and operating costs, 911 system-avoidable, and ARMER-avoidable.			
Grant County Net 10-year Cost assumes retention of 1.0 FTE Records Clerk to perform administrative support duties.			

Otter Tail County Consolidated Dispatch Center: Grant and Stevens County

Grant and Otter Tail Counties have an extensive track record of cooperation with each other, which, when combined with the significant operational costs currently incurred by Grant County in maintaining a stand-alone dispatch operation, create perhaps the most desirable consolidation option we reviewed. Stevens County was also included in this option, in spite of their lack of geographic proximity to Otter Tail County, because there is a more extensive track record of cooperation between Stevens and Otter Tail when compared to Stevens and Douglas Counties, and it is feasible to receive reliable service through the existing trunk system configuration.

As noted, a critical analysis for the feasibility of a consolidated dispatch operation is the extent to which a merged dispatch center can either absorb call volume from potential partners, or whether additional shift staffing will be required to handle the increased call volume. Analyzing monthly call data recorded in hourly intervals provided 288 unique hours throughout the year to evaluate for each dispatch center, which we completed using an Erlang analysis. Naturally, staffing every shift to reflect the call volume for the single busiest hour in the year may lead to periods where staffing will exceed the required call-taking capacity of the dispatch center; nevertheless, it is extremely difficult to predict when emergency situations will occur that require increased staff presence, which is the exact reason Erlang queuing theory plans for this contingency on every shift. To estimate the staffing need for a merged PSAP, the figures below present peak call volume for the specific combination of potential partner Counties (the month varies by Option, depending on which Counties are included).

Otter Tail Staffing Requirements Before & After Consolidation

County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (July)	Merged Peak 911 Call Volume (July)	Current Peak 911 Call Volume (July)	Merged Peak 911 Call Volume (July)
Otter Tail	0.059	0.082	0.042	0.061
Stevens	0.019	-	0.014	-
Grant	0.004	-	0.005	-
Total	0.082	0.082	0.061	0.061

Current Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Otter Tail	0.059	2	0.042	2
Stevens	0.019	2 (1 current)	0.014	2 (1 current)
Grant	0.004	1	0.005	1
Total	0.082	5 (4 current)	0.061	5 (4 current)

Merged Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Otter Tail	0.082	2	0.061	2
Stevens	-	-	-	-
Grant	-	-	-	-
Total	0.082	2	0.061	2

Note: Stevens County currently has 1 dispatcher on both day and night shifts; however, peak busiest hour indicates staffing should be at 2 dispatchers.

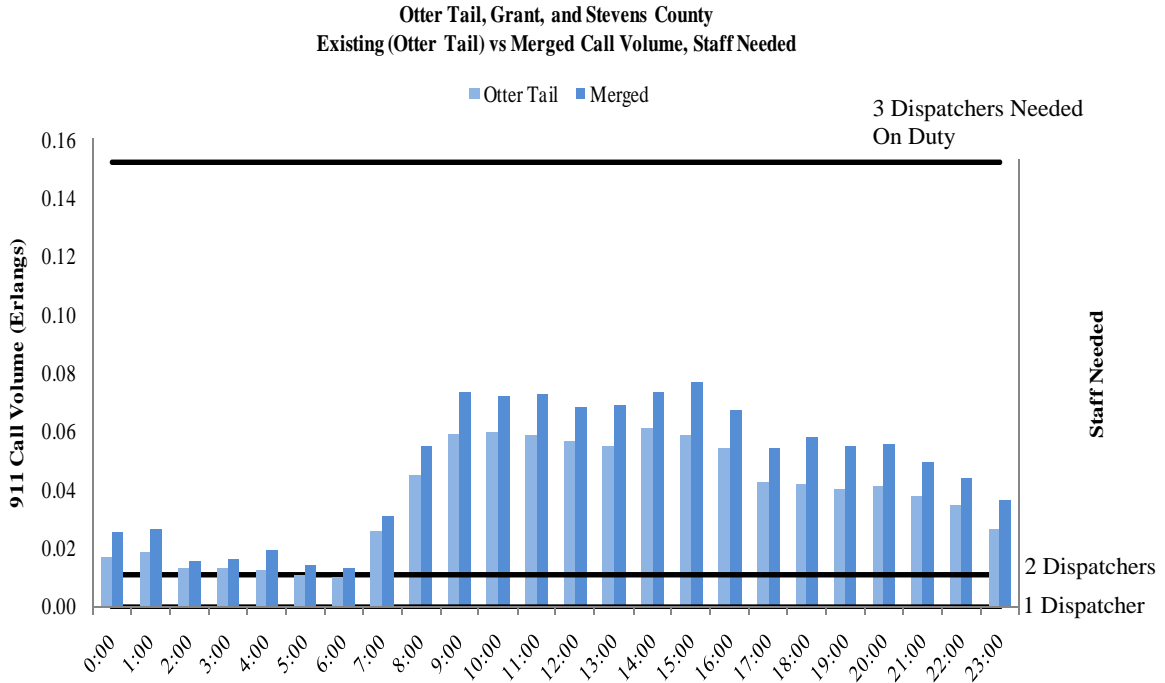
The total shift staffing currently in place at Otter Tail, Stevens, and Grant Counties is four dispatchers on both the day and night shifts. However, based on our analysis of Stevens “peaking” call volume during the busiest hour, 2 dispatchers would normally be required to handle the call volume. It should be noted that Stevens County experiences significant periods of very low or zero call volumes, punctuated by occasional “spikes” in call volume up to a level that would ideally be handled by 2 dispatchers.

Nevertheless, the combined 911 call volume in the “peak” or busiest hour for all three Counties could be handled by a total of the two staff currently on duty at Otter Tail’s dispatch center. The figure below presents the Erlang chart we used to calculate staffing for this and the following options.

Shift Staffing Requirements by Erlang Volume

Staff per Shift	"Erlang" Call Volume
1	0.000 - 0.010
2	0.011 - 0.151
3	0.152 - 0.451
4	0.452 - 0.862

The chart below presents current 911 call volumes for Otter Tail, as well as the call volumes if Otter Tail absorbed 911 calls for Grant and Stevens County as well during the combined peak month of July. Clearly, there is more than enough capacity available for assuming responsibility for 911 call-taking for all three counties.



However, 911 calls represent just a portion of the typical duties assigned to dispatch staff. Significantly, administrative calls are a critical function for these staff. As shown in the figures on the next page, annual estimated total call volume (911 and administrative combined), represented by the amount of time actually spent on the phone by day shift dispatchers, was 1,057 hours and 45 minutes in Otter Tail, 170 hours and 51 minutes in Stevens County, and 87 hours and 49 minutes in Grant County. When compared to the total number of day shift hours available (365 days * 12-hour day shift * 2 positions = 8,760 hours) over the course of the year, the combined call volume represents an estimated 1,316 hours and 25 minutes, or roughly 15% of the total staff time available. This means that under Option 1A, an estimated 85% of the Otter Tail dispatcher staff time would be available during day shift for administrative support activities, even after administrative call taking for both Grant and Stevens County is considered. **The 85% represents available time when Dispatchers are not on a call, as opposed to productive time in which the Dispatchers are not on a call, but are performing other administrative or support tasks.** We had no reliable data to estimate productive time. Night shift administrative calls are typically minimal.

**Estimated 911 and Administrative Call Staff Utilization
Otter Tail, Grant, and Stevens**

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Otter Tail	179:49:04	877:56:01	1057:45:05	8760:00:00	12.1%
Stevens	29:02:41	141:48:24	170:51:05	4380:00:00	3.9%
Grant	14:55:41	72:53:03	87:48:44	4380:00:00	2.0%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Otter Tail	99:15:16	8760:00:00	1.1%
Stevens	29:04:14	4380:00:00	0.7%
Grant	13:42:44	4380:00:00	0.3%

Douglas County Consolidated Dispatch Center: Pope County

Douglas County, like Otter Tail, is one of the two larger dispatch centers among participating counties. Pope County, which currently has a stand-alone dispatch operation, borders Douglas County, and therefore Douglas County is a more logical potential partner for Pope County than Otter Tail. However, there are several critical factors that need to be identified to fully assess the feasibility of this option for Douglas and Pope County. First, Pope County has an extensive track record of cooperation with Stevens County, rather than Douglas County. Further, Pope County is currently considering a significant change to its facility and staffing strategy relative to dispatch through the construction of a “mini jail.” Should the “mini jail” be built, dispatch staff in Pope County will be integrated into correctional operations through master control board duties and potentially other correctional officer responsibilities. Because Pope currently has a stand-alone dispatch operation, the opportunity for fiscal benefits is the greatest. If the County builds the “mini jail,” however, the majority of operational costs will no longer be avoidable under this consolidation option.

We performed a staffing calculation for Douglas County to identify likely call volume impacts related to providing dispatch functions for Pope County. As shown in the figure below, we estimate that Douglas County can absorb the 911 call volume for Pope County without additional staffing.

Douglas County Staffing Requirements Before & After Consolidation

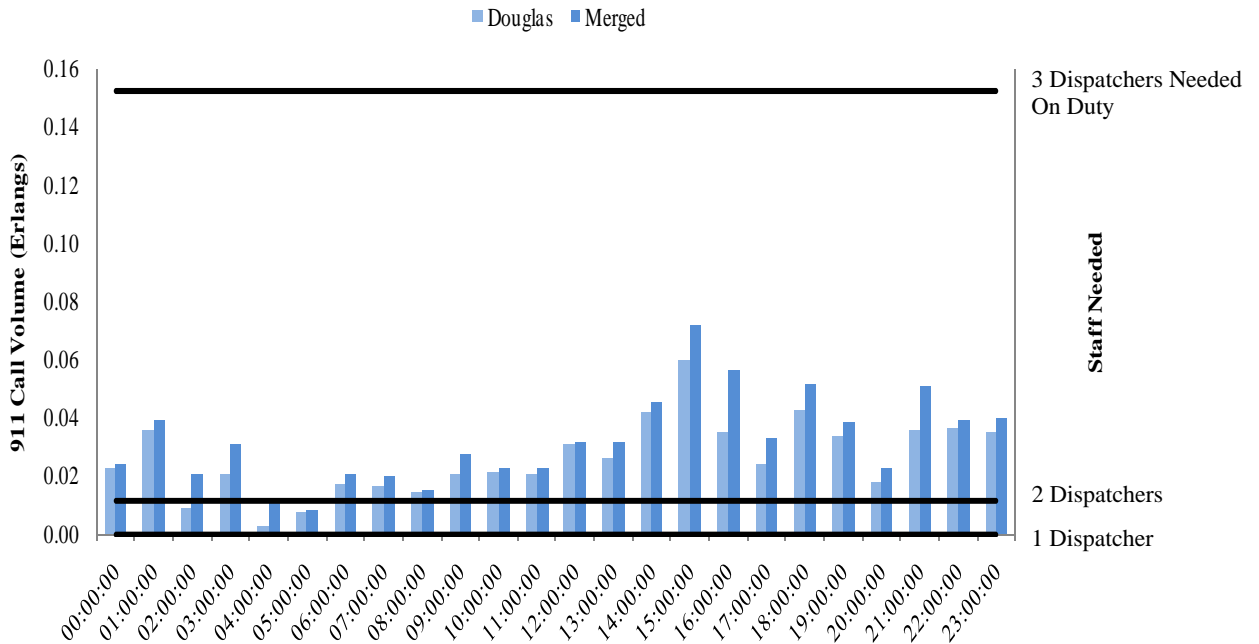
County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)
Douglas	0.063	0.075	0.051	0.060
Pope	0.012	-	0.009	-
Total	0.075	0.075	0.060	0.060

Current Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.063	2	0.051	2
Pope	0.012	2	0.009	1
Total	0.075	4	0.060	3

Merged Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.075	2	0.060	2
Pope	-	-	-	-
Total	0.075	2	0.060	2

The following chart visually depicts the current 911 call volume for Douglas County, as well as the estimated call volume for a combined operation.

Douglas and Pope County Existing (Douglas) vs Merged Call Volume, Staff Needed



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization will increase from the current 5.2% of total available hours to an estimated 7.9% under a combined operation. The figures below summarize day and night shift staff utilization for Douglas and Pope Counties.

**Estimated 911 and Administrative Call Staff Utilization
Douglas and Pope Counties**

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Douglas	117:10:49	572:06:56	689:17:45	13140:00:00	5.2%
Pope	21:08:19	103:12:22	124:20:41	4680:00:00	2.7%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Douglas	112:20:19	8760:00:00	1.3%
Pope	22:45:25	4680:00:00	0.5%

Option 1B: Two Centers - Partial Consolidation/Select Counties

(Grant, Lac qui Parle, Stevens, Traverse, and Wilkin Counties into Otter Tail County, and Consolidation of Pope, Todd, and Wadena Counties into Douglas County)

A primary feature of this option relative to fiscal impacts is that ten-year operating costs for Otter Tail and Douglas will be reduced more significantly than in Option 1A through greater E911 revenues. Further, by spreading operating and capital costs over a larger number of partners, net costs are reduced still further.

As shown in the figure below, we estimate that the net ten-year costs to operate a combined dispatch function would be an estimated \$29,160 in Otter Tail County and \$3.9 million in Douglas County, after factoring in E911 revenues. **The combined estimated ten-year value of E911 revenues from the five potential partner Counties that would flow to Otter Tail County to provide PSAP services would be essentially equivalent to Otter Tail's total costs during this period, far exceeding the estimated costs for PSAP capital improvements.** It should be noted, however, that increased E911 revenues are restricted funds, in the sense that the County may not use them for operating expenditures. In our view, this would tend to limit the apparent business case for this Option, but that is ultimately a policy matter for Otter Tail County to decide together with its potential partners.

Option 1B Net Operating Dispatch Costs

	10-year Operating Cost Estimate	Allocatable Capital Costs	Total 10-year Costs	Increased E911 Revenues	Net 10-year Allocatable Costs
Otter Tail	\$ 3,508,238	\$ 1,404,989	\$ 4,913,227	\$ 4,884,067	\$ 29,160
Douglas	\$ 5,736,404	\$ 1,539,851	\$ 7,276,255	\$ 3,415,394	\$ 3,860,861

Allocable capital costs refer to the amount each county's ARMER plan specified for the total cost of purchasing a radio console, microwave transmitter, and control stations for the ARMER system upgrade—in other words, that portion of ARMER costs for the two counties that involve operating a dispatch function. In order to properly gauge the long-term savings related to consolidation, it is necessary to use a timeframe longer than a single year.

Using the Method A (50% population/50% calls for service) cost allocation approach discussed above, we estimate that ten-year costs for each county to participate range from a low of \$1,163 for Traverse County to a maximum of \$1.7 million for Douglas County. Total ten-year costs for both Otter Tail and Douglas Counties would be partially offset by increased E911 revenues from the participating counties. Allocating costs among a larger number of partners, as shown in the figure below, would further reduce costs for both host counties.

Cost Allocation for Net Ten-Year Allocable Costs

	Population	Population Percentage	Calls for Service (Avg. Monthly Erlangs)	Calls for Service	Share of Net Costs	10-year Costs
Otter Tail	56,588	63.6%	22.94	63.7%	63.7%	\$ 18,561
Grant	5,835	6.6%	2.39	6.7%	6.6%	\$ 1,926
Lac qui Parle	7,110	8.0%	2.32	6.5%	7.2%	\$ 2,106
Stevens	9,629	10.8%	4.78	13.3%	12.0%	\$ 3,512
Traverse	3,573	4.0%	1.43	4.0%	4.0%	\$ 1,163
Wilkin	6,264	7.0%	2.14	5.9%	6.5%	\$ 1,892
Total	88,999	100.0%	35.99	100.0%	100.0%	\$ 29,160
Douglas	36,390	43.1%	18.94	47.0%	45.0%	\$ 1,738,705
Pope	10,869	12.9%	3.57	8.8%	10.9%	\$ 419,366
Todd	23,869	28.3%	9.94	24.6%	26.5%	\$ 1,021,669
Wadena	13,269	15.7%	7.89	19.6%	17.6%	\$ 681,121
Total	84,397	100.0%	40.35	100.0%	100.0%	\$ 3,860,861

Note: Calls for Service percentages based on Erlang Data

When comparing the net ten-year costs to each county under this option against what they would have spent without consolidation, we estimate that significant fiscal benefits could be realized by these five counties under this option, particularly those that operate stand-alone dispatch centers. As noted above, the host Counties of Otter Tail and Douglas will receive an additional \$4.8 million and \$3.4 million, respectively.

As shown in the figure below, estimated ten-year costs for Otter Tail would be an estimated \$4.9 million lower under this option, and \$5.5 million lower for Douglas County, over and above the additional \$3.4 million in E911 revenues over the ten years. Grant County could potentially experience the largest savings of any non-hosting county over ten years, at an estimated \$3.7 million. Stevens County could potentially save an estimated \$2.8 million, while savings for Pope County depend largely on whether that county decides to construct a “mini jail” and integrate dispatch staff into correctional operations.

Comparison of Estimated Total Costs, Avoided Costs, and Share of Net Costs

County	Net 10-year Avoidable Costs	Share of 10-year Costs for Consolidated Center	Net 10-year Savings
Otter Tail	\$ 4,913,227	\$ 18,561	\$ 4,894,666
Grant	\$ 3,732,856	\$ 1,926	\$ 3,730,930
Lac qui Parle	\$ 419,540	\$ 2,106	\$ 417,434
Stevens	\$ 2,762,233	\$ 3,512	\$ 2,758,721
Traverse	\$ 737,482	\$ 1,163	\$ 736,319
Wilkin	\$ 904,229	\$ 1,892	\$ 902,337
Douglas	\$ 7,276,255	\$ 1,738,705	\$ 5,537,549
Pope (no 'Mini Jail')	\$ 3,057,054	\$ 419,366	\$ 2,637,688
Pope ('Mini Jail')	\$ 528,561	\$ 419,366	\$ 109,195
Todd	\$ 434,915	\$ 1,021,669	\$ (586,754)
Wadena	\$ 1,122,084	\$ 681,121	\$ 440,963
<p><i>Note: Net 10 year costs include estimated avoidable personnel and operating costs, 911 system-avoidable, and ARMER-avoidable.</i></p> <p><i>Todd County avoidable ARMER costs not available - net 10-year savings would be higher</i></p> <p><i>Grant County Net 10-year Cost assumes retention of 1.0 FTE Records Clerk to perform administrative support duties.</i></p>			

The net ten-year fiscal savings for Todd County suggest a net loss from participation, due to the following factors:

- Dispatch is integral to the jail, meaning there is no opportunity for reduced operating costs through reductions in workforce;
- The avoidable ARMER costs are not sufficiently large to offset the loss of E911 funding; and
- Todd County has a relatively larger population and number of calls for service than Pope or Wadena, meaning its share of the consolidated dispatch operating budget would be larger.

Otter Tail County Consolidated Dispatch Center: Grant, Lac Qui Parle, Stevens, Traverse, and Wilkin Counties

Our assessment of staffing impacts under this consolidation option suggest that Otter Tail could maintain its current staffing levels while simultaneously adding service to all five counties. To estimate the staffing need for a merged PSAP, the figures below present peak call volume for the specific combination of potential partner Counties (the month varies by Option, depending on which Counties are included).

Otter Tail County Staffing Requirements Before & After Consolidation

County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (July)	Merged Peak 911 Call Volume (July)
Otter Tail	0.051	0.085	0.041	0.069
Stevens	0.012	-	0.015	-
Grant	0.003	-	0.005	-
Lac Qui Parle	0.007	-	0.005	-
Traverse	0.008	-	0.000	-
Wilkin	0.004	-	0.002	-
Total	0.085	0.085	0.069	0.069

Current Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Otter Tail	0.051	2	0.041	2
Stevens	0.012	2 (1 current)	0.015	2 (1 current)
Grant	0.003	1	0.005	1
Lac Qui Parle	0.007	1	0.005	1
Traverse	0.008	1	0.000	1
Wilkin	0.004	1	0.002	1
Total	0.085	8 (7 current)	0.069	8 (7 current)

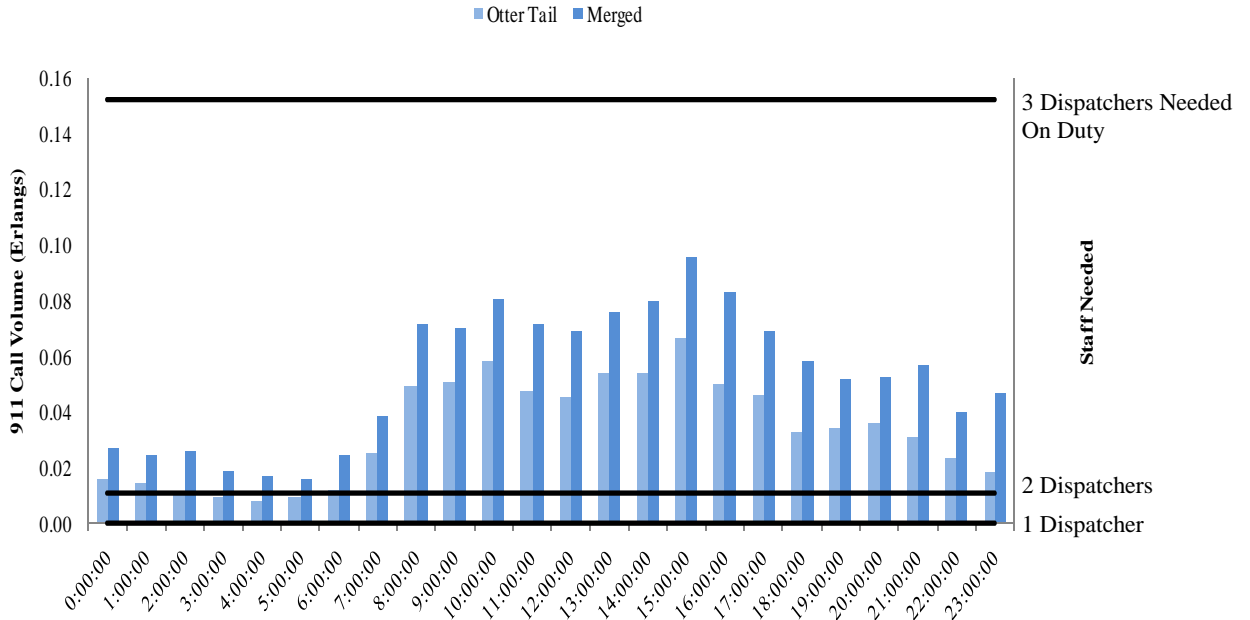
Merged Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Otter Tail	0.085	2	0.069	2
Stevens	-	-	-	-
Grant	-	-	-	-
Lac Qui Parle	-	-	-	-
Traverse	-	-	-	-
Wilkin	-	-	-	-
Total	0.085	2	0.069	2

Note: Stevens County currently has 1 dispatcher on both day and night shifts; however, peak busiest hour indicates staffing should be at 2 dispatchers.

The total shift staffing currently in place at Otter Tail, Stevens, Grant, Lac qui Parle, Traverse, and Wilkin Counties is seven dispatchers on both the day and night shifts. However, based on our analysis of Stevens “peaking” call volume during the busiest hour, 2 dispatchers would normally be required to handle the call volume. It should be noted that Stevens County experiences significant periods of very low or zero call volumes, punctuated by occasional “spikes” in call volume up to a level that would ideally be handled by 2 dispatchers.

Nevertheless, our estimates suggest that the entire 911 call volume for these six counties could be adequately handled by two dispatch shift staff, rather than the seven dispatchers currently assigned to call taking in these counties. It should be noted, however, that for counties where dispatch is integral to jail operations, avoidable operating costs are largely limited to avoided capital costs, rather than ongoing operational savings. The chart below presents a graphical depiction of current and potential consolidated operation.

**Otter Tail, Grant, Lac Qui Parle, Stevens, Traverse, and Wilkin County
Existing (Otter Tail) vs Merged Call Volume, Staff Needed**



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization in Otter Tail will increase from the current 12.1% of total available hours to an estimated 17.7% under a combined operation (the sum of the Utilization Rate column in the figures below). The figures below summarize day and night shift staff utilization for the six Counties in this potential group.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Otter Tail	179:49:04	877:56:02	1057:45:06	8760:00:00	12.1%
Stevens	29:02:41	141:48:24	170:51:05	4380:00:00	3.9%
Grant	14:55:41	72:53:03	87:48:44	4380:00:00	2.0%
Lac Qui Parle	15:30:46	75:44:20	91:15:06	6570:00:00	1.4%
Traverse	8:10:40	39:55:36	48:06:16	7300:00:00	0.7%
Wilkin	16:09:33	78:53:41	95:03:14	6570:00:00	1.4%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Otter Tail	99:15:16	8760:00:00	1.1%
Stevens	29:04:14	4380:00:00	0.7%
Grant	13:41:44	4380:00:00	0.3%
Lac Qui Parle	12:31:28	4380:00:00	0.3%
Traverse	9:15:44	7300:00:00	0.1%
Wilkin	9:51:15	6570:00:00	0.1%

Douglas County Consolidated Dispatch Center: Pope, Todd, and Wadena Counties

Three of the counties neighboring Douglas County could eliminate their dispatch centers and allow Douglas County to provide emergency call center assistance to the entire four-county area. As noted, it appears that significant fiscal benefits potentially exist under this option, with Pope County saving almost \$3.0 million and Todd and Wadena avoiding over \$3.3 million and \$3.8 million in costs, respectively.

Douglas County Staffing Requirements Before & After Consolidation

County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (September)	Merged Peak 911 Call Volume (September)
Douglas	0.065	0.132	0.048	0.127
Pope	0.012	-	0.012	-
Todd	0.035	-	0.027	-
Wadena	0.021	-	0.039	-
Total	0.132	0.132	0.127	0.127

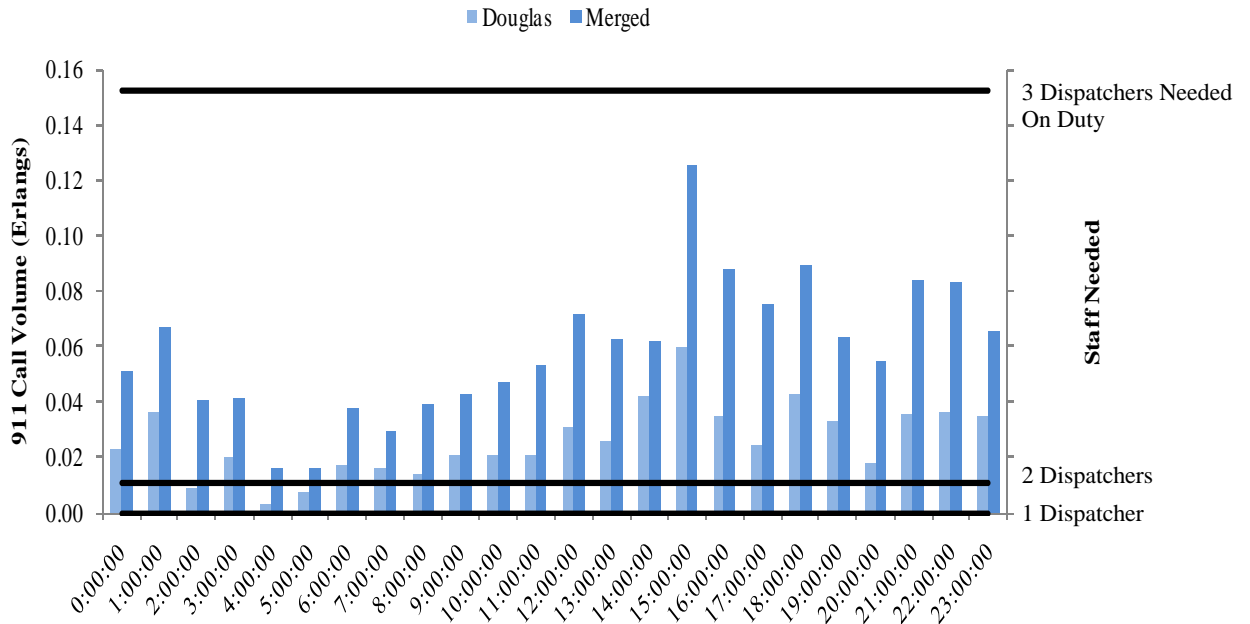
Current Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.065	2 (3 current)	0.048	2
Pope	0.012	2 (1 current)	0.012	2 (1 current)
Todd	0.035	2 (1 current)	0.027	2 (1 current)
Wadena	0.021	2 (1 current)	0.039	2 (1 current)
Total	0.132	8 (6 current)	0.127	8 (5 current)

Merged Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.132	2 (3 current)	0.127	2
Pope	-	-	-	-
Todd	-	-	-	-
Wadena	-	-	-	-
Total	0.132	2 (3 current)	0.127	2

The total shift staffing currently in place at Douglas, Pope, Todd, and Wadena Counties is six dispatchers on the day and five on night shifts. However, based on our analysis of “peaking” call volume during the busiest hour, 2 dispatchers would normally be required to handle the call volume for Pope, Todd, and Wadena, while Douglas County appears to have one additional Dispatch position on day shift. It should be noted, however, that the merged peak volume for Douglas County would approach the industry standard of 3 Dispatchers for at the 0.152 Erlang level during days. **If Douglas County were to consider reducing Dispatch staff levels on day shift, additional fiscal savings would be available.**

Regardless, Douglas County will be able to maintain its current level of service while adding the full emergency call volume of Pope, Todd, and Wadena Counties. As shown in the figure on the next page, the call volume for these four counties could be absorbed by staff currently assigned to the Douglas County Dispatch. The chart below presents the call volume for Douglas County under this option.

**Douglas, Pope, Todd, and Wadena County
Existing (Douglas) vs Merged Call Volume, Staff Needed**



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization in Douglas will increase from the current 5.2% of total available hours to an estimated 21.0% under a combined operation. The figures below summarize day and night shift staff utilization for Douglas and Pope Counties.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Douglas	117:10:49	572:06:56	689:17:45	13140:00:00	5.2%
Pope	21:08:19	103:12:22	124:20:41	4680:00:00	2.7%
Todd	64:03:50	312:46:57	376:50:47	4380:00:00	8.6%
Wadena	50:37:24	247:09:40	297:47:04	6570:00:00	4.5%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Douglas	112:20:19	8760:00:00	1.3%
Pope	22:45:25	4680:00:00	0.5%
Todd	57:52:14	4380:00:00	1.3%
Wadena	47:32:02	6570:00:00	0.7%

Option 2A: Three Centers - Partial Consolidation/Select Counties

(Grant County into Otter Tail County; Pope County into Douglas County; and Stevens County Remaining Independent)

Option 2A is very similar to Option 1A in that it considers only those dispatch centers that do not currently have jailing responsibilities. Option 2A creates two consolidated centers, however, while Stevens County remains independent. Interviews and correspondence with staff indicated that Stevens County is currently building a new dispatch facility, to be ready by spring 2011.

As shown in the figure below, we estimate that the net ten-year costs to operate a combined dispatch function would be an estimated \$4.0 million in Otter Tail County and \$6.2 million in Douglas County, after factoring in additional E911 revenues.

Option 2A Net Operating Dispatch Costs

	10 year Operating Cost Estimate	Allocable Capital Costs	Total 10 year Costs	Increased E911 Revenues	Net 10 year Allocable Costs
Otter Tail	\$ 3,508,238	\$ 1,404,989	\$ 4,913,227	\$ 962,122	\$ 3,951,105
Douglas	\$ 5,736,404	\$ 1,539,851	\$ 7,276,255	\$ 1,047,907	\$ 6,228,348

Allocable capital costs refer to the amount each county's ARMER plan specified for the total cost of purchasing a radio console, microwave transmitter, and control stations for the ARMER system upgrade—in other words, that portion of ARMER costs for the two counties that involve operating a dispatch function. In order to properly gauge the long-term savings related to consolidation, it is necessary to use a timeframe longer than a single year.

Using the 50% population/50% calls for service cost allocation discussed above, we estimate that ten-year costs for each county to participate range from a low of \$371,372 for Grant County to a maximum of \$5.0 million for Douglas County. Total ten-year costs for both Otter Tail and Douglas Counties would be significantly offset by increased E911 revenues from the participating counties; cost allocation would further reduce costs for both host counties.

Cost Allocation for Net 10-year Allocable Costs

	Population	Population Percentage	Calls for Service (Avg. Monthly Erlangs)	Calls for Service	Share of Net Costs	10 year Costs
Otter Tail	56,588	90.7%	22,936	90.5%	90.6%	\$ 3,579,733
Grant	5,835	9.3%	2,394	9.5%	9.4%	\$ 371,372
Total	62,423	100.0%	25	100.0%	100.0%	\$ 3,951,105
Douglas	36,390	77.0%	18,944	84.1%	80.6%	\$ 5,018,427
Pope	10,869	23.0%	3,569	15.9%	19.4%	\$ 1,209,922
Total	47,259	100.0%	22,513	100.0%	100.0%	\$ 6,228,348

When comparing the net ten-year costs to each county under this option against what they would have spent without consolidation, we estimate that significant fiscal benefits could be realized by these four counties under this option, particularly those that operate stand-alone dispatch centers. As shown in the figure below, estimated ten-year costs for Otter

Tail would be \$1.3 million lower under this option, and costs are estimated to be \$2.3 million lower for Douglas County. Grant County could potentially experience the largest savings of any county over ten years, at an estimated \$3.4 million. Savings for Pope County depend largely on whether that county decides to construct a “mini jail” and integrate dispatch staff into correctional operations or maintain as a separate unit.

Comparison of Estimated Total Costs, Avoided Costs, and Share of Net Costs

County	Net 10-year Costs	Share of 10-year Costs for Consolidated Center	Net 10-year Savings
Otter Tail	\$ 4,913,227	\$ 3,579,733	\$ 1,333,494
Grant	\$ 3,732,856	\$ 371,372	\$ 3,361,484
Douglas	\$ 7,276,255	\$ 5,018,427	\$ 2,257,828
Pope (No 'Mini Jail')	\$ 3,057,054	\$ 1,209,922	\$ 1,847,132
Pope ('Mini Jail')	\$ 528,561	\$ 1,209,922	\$ (681,361)
<p><i>Note: Net 10 year costs include estimated avoidable personnel and operating costs, 911 system-avoidable, and ARMER-avoidable.</i></p> <p><i>Grant County Net 10-year Cost assumes retention of 1.0 FTE Records Clerk to perform administrative support duties.</i></p>			

Otter Tail Consolidated Dispatch Center: Grant County

Consolidating Grant County’s dispatch operations with those in Otter Tail County appears feasible when considering the impact of the added call volume relative to existing staff. As with previous consolidation permutations, it appears that Otter Tail could absorb Grant County’s entire emergency call volume without hiring additional dispatchers to answer the increased telephone traffic. To estimate the staffing need for a merged PSAP, the figures below present peak call volume for the specific combination of potential partner Counties (the month varies by Option, depending on which Counties are included). It should be noted that many administrative duties handled by Dispatchers in other Counties (such as transcription, statements, warrants, etc.) are assigned to a separate unit in Otter Tail County; in other words these tasks are not currently performed by Otter Tail Dispatchers, and any option involving Otter Tail would need to address this.

Otter Tail County Staffing Requirements Before & After Consolidation

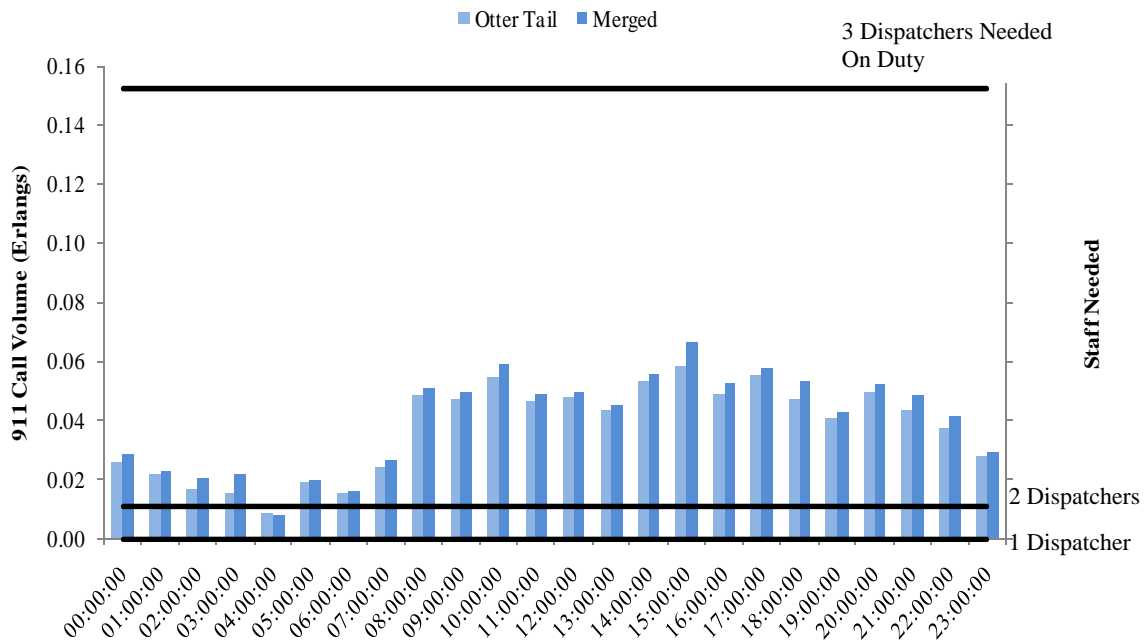
County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (June)	Merged Peak 911 Call Volume (June)	Current Peak 911 Call Volume (December)	Merged Peak 911 Call Volume (December)
Otter Tail	0.056	0.064	0.039	0.053
Grant	0.008	-	0.015	-
Total	0.064	0.064	0.053	0.053

County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Otter Tail	0.056	2	0.039	2
Grant	0.008	1	0.015	1
Total	0.064	3	0.053	3

County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Otter Tail	0.064	2	0.053	2
Grant	-	-	-	-
Total	0.064	2	0.053	2

The call volume for a consolidated dispatch operation is estimated to be well below the level required for Otter Tail County to consider having to add a third dispatcher to the shifts under this option. The chart on the following page provides a graphical representation of call volume before and after consolidation under this option.

Otter Tail and Grant County Existing (Otter Tail) vs Merged Call Volume, Staff Needed



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization in Otter Tail will increase from the current 12.1% of total available hours to an estimated 14.0% under a combined operation. The figures below summarize day and night shift staff utilization for Douglas and Pope Counties.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Otter Tail	179:49:04	877:56:01	1057:45:05	8760:00:00	12.1%
Grant	14:55:41	72:53:03	87:48:44	4680:00:00	1.9%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Otter Tail	99:15:16	8760:00:00	1.1%
Grant	13:41:44	4680:00:00	0.3%

Douglas County Consolidated Dispatch Center: Pope County

Consolidating Pope County’s dispatch operations with those in Douglas County appears feasible when considering the impact of the added call volume relative to existing staff. As with previous consolidation permutations, it appears that Otter Tail could absorb Grant County’s entire emergency call volume without hiring additional dispatchers to answer the increased telephone traffic.

Douglas County Staffing Requirements Before & After Consolidation

County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (October)	Merged Peak 911 Call Volume (October)
Douglas	0.063	0.075	0.051	0.060
Pope	0.012	-	0.009	-
Total	0.075	0.075	0.060	0.060

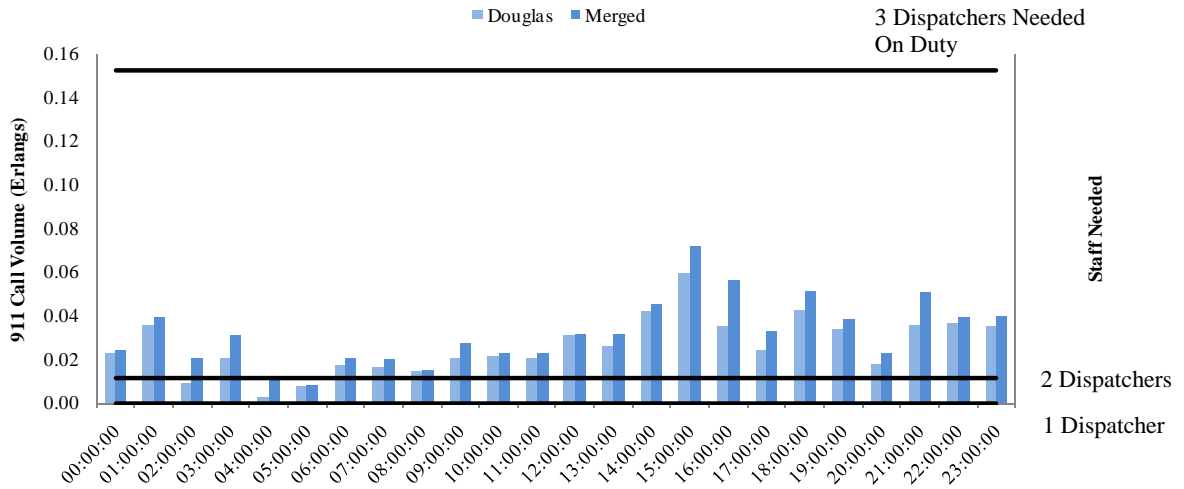
Current Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.063	2 (3 current)	0.051	2
Pope	0.012	2 (1 current)	0.009	1
Total	0.075	4	0.060	3

Merged Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.075	2 (3 current)	0.060	2
Pope	-	-	-	-
Total	0.075	2 (3 current)	0.060	2

The total shift staffing currently in place at Douglas and Pope Counties is four dispatchers on the day and three on night shifts. However, based on our analysis of “peaking” call volume during the busiest hour, 2 dispatchers would normally be required to handle the call volume for Pope, while Douglas County appears to have one additional Dispatch position on day shift. **If Douglas County were to consider reducing Dispatch staff levels on day shift, additional fiscal savings would be available.**

Based on the estimated call data, Douglas County should be able to accommodate the additional call volume from Pope County under this option without having to add staff. The chart below provides a graphical representation of call volume before and after consolidation under this option.

**Douglas and Pope County
Existing (Douglas) vs Merged Call Volume, Staff Needed**



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization will increase from the current 5.2% of total available hours to an estimated 7.9% under a combined operation. The figures below summarize day and night shift staff utilization for Douglas and Pope Counties.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Douglas	117:10:49	572:06:56	689:17:45	13140:00:00	5.2%
Pope	21:08:19	103:12:22	124:20:41	4680:00:00	2.7%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Douglas	112:20:19	8760:00:00	1.3%
Pope	22:45:25	4680:00:00	0.5%

Option 2B: Three Centers - Partial Consolidation/All Counties

(Grant, Wadena, and Wilkin County into Otter Tail County; Consolidation of Pope and Todd County into Douglas County; and, Consolidation of Lac Qui Parle and Traverse County into Stevens County)

Much like Option 1B explored above, Option 2B considers consolidating the dispatch services provided by all counties participating in this study. Unlike the previous option, however, which considered consolidating all the dispatch centers into two facilities, Option 2B looks to consolidate the ten counties into three dispatch centers in Otter Tail, Douglas, and Stevens County.

As shown in the figure below, we estimate that the net ten-year costs to operate a combined dispatch function would be an estimated \$1.8 million in Otter Tail County, \$5.0 million in Douglas County, and \$3.8 million in Stevens County, after factoring in increased E911 revenues.

Option 2B Net Operating Dispatch Costs

	10 year Operating Cost Estimate	Allocable Capital Costs	Total 10 year Costs	Increased E911 Revenues	Net 10 year Allocable Costs
Otter Tail	\$ 3,508,238	\$ 1,404,989	\$ 4,913,227	\$ 3,029,826	\$ 1,883,401
Douglas	\$ 5,736,404	\$ 1,539,851	\$ 7,276,255	\$ 2,324,535	\$ 4,951,720
Stevens	\$ 4,418,569	\$ 1,285,032	\$ 5,703,601	\$ 1,917,707	\$ 3,785,893

Using the 50% population/50% calls for service cost allocation discussed above, we estimate that ten-year costs for each county to participate range from a low of \$128,904 for Wilkin County to a maximum of \$2.7 million for Douglas County. Total ten-year costs for Otter Tail, Douglas, and Stevens Counties would be significantly offset by increased E911 revenues from the participating counties. Cost allocation would further reduce costs for all three host counties.

Cost Allocation for Net Ten-Year Allocable Costs

	Population	Population Percentage	Calls for Service (Avg. Monthly Erlangs)	Calls for Service	Share of Net Costs	10 year Costs
Otter Tail	56,588	69.0%	22,936	64.9%	67.0%	\$ 1,261,038
Grant	5,835	7.1%	2,394	6.8%	6.9%	\$ 130,799
Wadena	13,269	16.2%	7,893	22.3%	19.3%	\$ 362,660
Wilkin	6,264	7.6%	2,138	6.0%	6.8%	\$ 128,904
Total	81,956	100.0%	35	100.0%	100.0%	\$ 1,883,401
Douglas	36,390	51.2%	18,944	58.4%	54.8%	\$ 2,711,796
Pope	10,869	15.3%	3,569	11.0%	13.1%	\$ 650,594
Todd	23,869	33.6%	9,943	30.6%	32.1%	\$ 1,589,330
Total	71,128	100.0%	32,456	100.0%	100.0%	\$ 4,951,720
Stevens	9,629	47.4%	4,776	56.0%	51.7%	\$ 1,957,599
Traverse	3,573	17.6%	1,426	16.7%	17.2%	\$ 649,558
Lac qui Parle	7,110	35.0%	2,325	27.3%	31.1%	\$ 1,178,736
Total	20,312	100.0%	8,526	100.0%	100.0%	\$ 3,785,893

Note: Calls for Service percentages based on Erlang Data

When comparing the net ten-year costs to each county under this option against what they would have spent without consolidation, we estimate that significant fiscal benefits could be realized by these five counties under this option, particularly those that operate stand-alone dispatch centers.

As shown in the figure below, estimated ten-year center-related costs for Otter Tail would be \$3.7 million lower under this option, \$4.6 million lower for Douglas County, and \$1.1 million lower for Stevens County. Douglas County could potentially experience the largest savings of any county over ten years, at an estimated \$4.6 million. Savings for Pope County depend largely on whether that county decides to construct a “mini jail” and integrate dispatch staff into correctional operations.

Comparison of Estimated Total Costs, Avoided Costs, and Share of Net Costs

County	Net 10-year Costs	Share of 10-year Costs for Consolidated Center	Net 10-year Savings
Otter Tail	\$ 4,913,227	\$ 1,261,038	\$ 3,652,189
Grant	\$ 3,732,856	\$ 130,799	\$ 3,602,056
Wadena	\$ 1,122,084	\$ 362,660	\$ 759,424
Wilkin	\$ 904,229	\$ 128,904	\$ 775,326
Douglas	\$ 7,276,255	\$ 2,711,796	\$ 4,564,459
Pope (No 'Mini Jail')	\$ 3,057,054	\$ 650,594	\$ 2,406,459
Pope ('Mini Jail')	\$ 528,561	\$ 650,594	\$ (122,033)
Todd	\$ 434,915	\$ 1,589,330	\$ (1,154,415)
Stevens	\$ 5,703,601	\$ 1,957,599	\$ 3,746,002
Traverse	\$ 737,482	\$ 649,558	\$ 87,924
Lac qui Parle	\$ 419,540	\$ 1,178,736	\$ (759,196)
<i>Note: Net 10 year costs include estimated avoidable personnel and operating costs, 911 system-avoidable, and ARMER-avoidable.</i>			
<i>Grant County Net 10-year Cost assumes retention of 1.0 FTE Records Clerk to perform administrative support duties.</i>			

The net ten-year fiscal impact for Todd County suggests a net loss from participation due to the reasons discussed under Option 1B, above.

It should be noted that Option 2B is the only one of the four options wherein a county will be required to increase dispatch staffing to accommodate the increased call volume resulting from consolidation. Specifically, Option 2B would require Stevens County to increase its shift staffing from one position to two positions on both day and night shifts to accommodate call volume from Traverse and Lac qui Parle.

This results in increased operating costs for Stevens County, but overall net negative fiscal impacts on Traverse and Lac qui Parle, rendering this option unfeasible from a fiscal perspective.

Otter Tail County Consolidated Dispatch Center: Grant, Wadena and Wilkin Counties

Our assessment of staffing impacts under this consolidation option suggest that Otter Tail could maintain its current staffing levels while simultaneously adding service to all three counties. To estimate the staffing need for a merged PSAP, the figures below present peak call volume for the specific combination of potential partner Counties (the month varies by Option, depending on which Counties are included).

Otter Tail County Staffing Requirements Before & After Consolidation

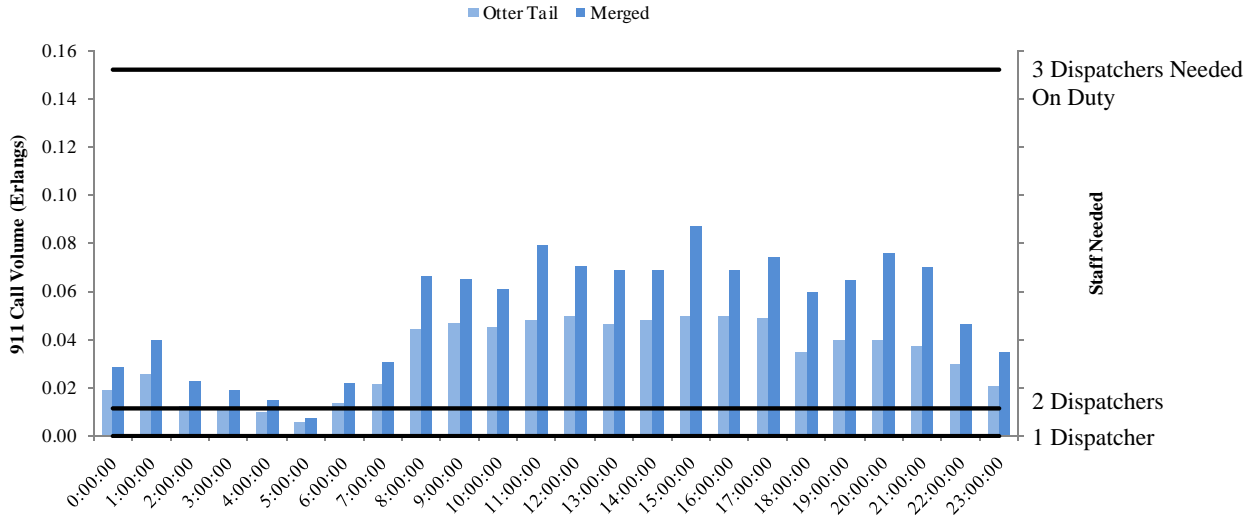
County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (September)	Merged Peak 911 Call Volume (September)
	Ottertail	0.050	0.093	0.040
Grant	0.006	-	0.004	-
Wadena	0.034	-	0.044	-
Wilkin	0.003	-	0.001	-
Total	0.093	0.093	0.087	0.087

County	Current Call Volumes and Staffing			
	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Ottertail	0.050	2	0.040	2
Grant	0.006	1	0.004	1
Wadena	0.034	2	0.044	2
Wilkin	0.003	1	0.001	1
Total	0.093	6	0.087	6

County	Merged Call Volumes and Staffing			
	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Ottertail	0.093	2	0.087	2
Grant	-	-	-	-
Wadena	-	-	-	-
Wilkin	-	-	-	-
Total	-	-	-	-

Our estimates suggest that the entire 911 call volume for these four counties could be adequately handled by two dispatch shift staff, rather than the six dispatchers currently assigned to call-taking in these counties. It should be noted, however, that for those counties where dispatch is integral to jail operations, avoidable operating costs are minimal. The chart below presents a graphical depiction of current and potential consolidated operation.

**Otter Tail, Grant, Wadena, and Wilkin County
Existing (Otter Tail) vs Merged Call Volume, Staff Needed**



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization in Otter Tail will increase from the current 12.1% of total available hours to an estimated 22.0% under a combined operation. The figures below summarize day and night shift staff utilization for Otter Tail, Grant, Wadena, and Wilkin Counties.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Ottertail	179:49:04	877:56:02	1057:45:06	8760:00:00	12.1%
Grant	29:02:41	141:48:24	170:51:05	4380:00:00	3.9%
Wadena	50:37:24	247:09:40	297:47:04	6570:00:00	4.5%
Wilkin	16:09:33	78:53:41	95:03:14	6570:00:00	1.4%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Ottertail	99:15:16	8760:00:00	1.1%
Grant	13:41:44	4680:00:00	0.3%
Wadena	47:32:02	6570:00:00	0.7%
Wilkin	9:51:15	6570:00:00	0.1%

Douglas County Consolidated Dispatch Center: Pope and Todd Counties

Two of the counties neighboring Douglas County could merge their dispatch centers and allow Douglas County to provide emergency call center assistance to the entire three-county area. Critically, Douglas County will be able to maintain its current level of service while adding the full emergency call volume of Pope and Todd Counties.

Douglas County Staffing Requirements Before & After Consolidation

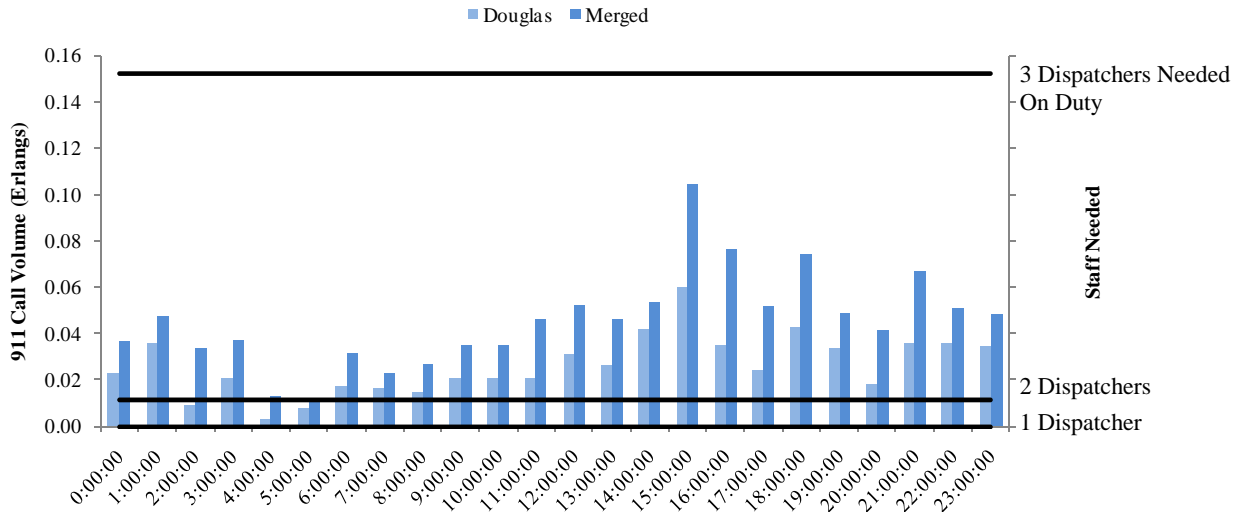
County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (September)	Merged Peak 911 Call Volume (September)
Douglas	0.065	0.112	0.048	0.106
Pope	0.012	-	0.012	-
Todd	0.035	-	0.045	-
Total	0.112	0.112	0.106	0.106

County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.065	2 (3 current)	0.048	2
Pope	0.012	2 (1 current)	0.012	2 (1 current)
Todd	0.035	2 (1 current)	0.045	2 (1 current)
Total	0.112	6 (5 current)	0.106	6 (4 current)

County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Douglas	0.112	2 (3 current)	0.106	2
Pope	-	-	-	-
Todd	-	-	-	-
Total	0.112	2 (3 current)	0.106	2

The total shift staffing currently in place at Douglas, Pope, and Todd Counties is five dispatchers on the day and four on night shifts. However, based on our analysis of “peaking” call volume during the busiest hour, 2 dispatchers would normally be required to handle the call volume for Pope and Todd, while Douglas County appears to have one additional Dispatch position on day shift. **If Douglas County were to consider reducing Dispatch staff levels on day shift, additional fiscal savings would be available.** However, shown in the figure below, the call volume for these three counties could be absorbed by staff currently assigned to the Douglas County Dispatch.

Douglas, Pope, and Todd County Existing (Douglas) vs Merged Call Volume, Staff Needed



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization in Douglas will increase from the current 5.2% of total available hours to an estimated 16.5% under a combined operation. The

figures below summarize day and night shift staff utilization for Douglas, Pope, and Todd Counties.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Douglas	117:10:49	572:06:56	689:17:45	13140:00:00	5.2%
Pope	21:08:19	103:12:22	124:20:41	4680:00:00	2.7%
Todd	64:03:50	312:46:57	376:50:47	4380:00:00	8.6%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Douglas	112:20:19	8760:00:00	1.3%
Pope	22:45:25	4680:00:00	0.5%
Todd	57:52:14	4380:00:00	1.3%

Stevens County Consolidated Dispatch Center: Lac qui Parle and Traverse Counties

Two of the counties neighboring Stevens County could merge their dispatch centers and allow Stevens County to provide emergency call center assistance to the entire three-county area. **However, under Option 2B, Stevens County would be required to fill two dispatch positions on both day and night shifts. This represents an increase of 4.9 FTE staff over current staffing levels in order to fully staff four dispatch posts 24/7/365.**

Stevens County Staffing Requirements Before & After Consolidation

County	Day Shift		Night Shift	
	Current Peak 911 Call Volume (May)	Merged Peak 911 Call Volume (May)	Current Peak 911 Call Volume (October)	Merged Peak 911 Call Volume (October)
Stevens	0.013	0.030	0.030	0.030
Lac Qui Parle	0.008	-	0.000	-
Traverse	0.009	-	0.000	-
Total	0.030	0.030	0.030	0.030

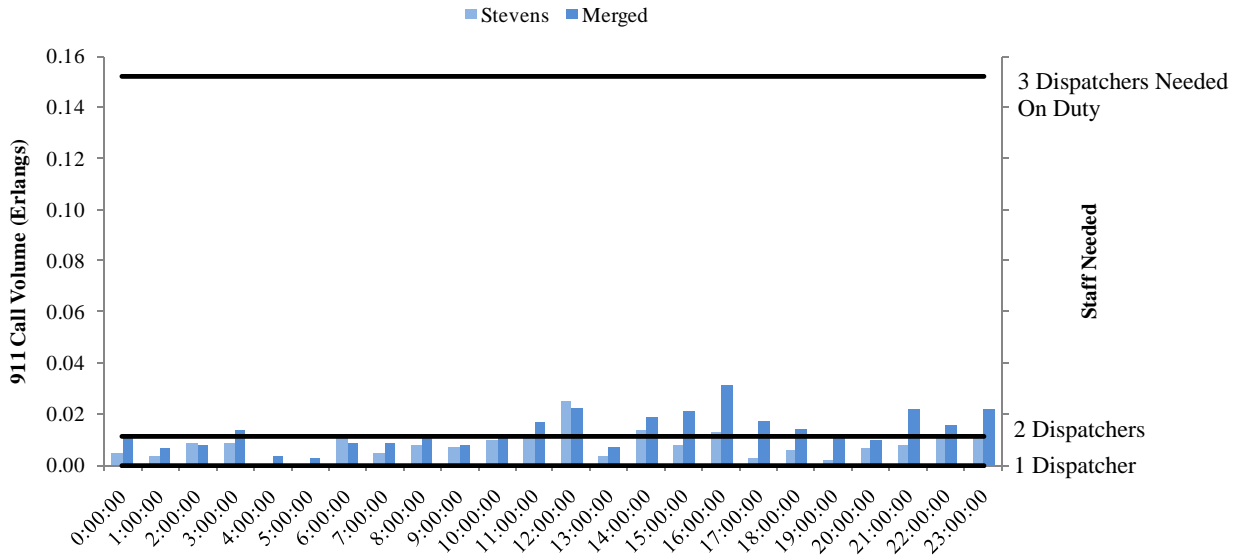
Current Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Stevens	0.013	2 (1 current)	0.030	2 (1 current)
Lac Qui Parle	0.008	1	0.000	1
Traverse	0.009	1	0.000	1
Total	0.030	2	0.030	2

Merged Call Volumes and Staffing				
County	Day Shift		Night Shift	
	Peak 911 Call Volume	Shift Staffing Needed	Peak 911 Call Volume	Shift Staffing Needed
Stevens	0.030	2 (1 current)	0.030	2 (1 current)
Lac Qui Parle	-	-	-	-
Traverse	-	-	-	-
Total	-	-	-	-

Note: Stevens County currently has 1 dispatcher on both day and night shifts; however, peak busiest hour indicates staffing should be at 2 dispatchers.

As shown in the figure below, the call volume for these three counties could be absorbed by staff currently assigned to the Stevens County Dispatch.

**Stevens, Lac Qui Parle, and Traverse County
Existing (Stevens) vs Merged Call Volume, Staff Needed**



Relative to impacts on staff utilization from combined 911 and administrative calls, we estimate that day shift dispatcher utilization in Stevens will increase from the current 3.9% of total available hours to an estimated 7.1% under a combined operation. The figures below summarize day and night shift staff utilization for the three counties.

Estimated 911 and Administrative Call Staff Utilization

DAY SHIFT					
	911 Call Volume	Administrative Call Volume	Total Call Volume	Day Shift Total Hours	Utilization Rate
Stevens	29:02:41	141:48:24	170:51:05	4380:00:00	3.9%
Lac Qui Parle	15:30:46	75:44:20	91:15:06	6570:00:00	1.4%
Traverse	8:10:40	39:55:36	48:06:16	7300:00:00	0.7%

NIGHT SHIFT			
	911 Call Volume	Night Shift Total Hours	Utilization Rate
Stevens	29:04:14	4380:00:00	0.7%
Lac Qui Parle	8:10:40	4380:00:00	0.2%
Traverse	16:09:33	7300:00:00	0.2%

3.17 GOVERNANCE STRUCTURE OF CONSOLIDATED DISPATCH CENTERS

Current State

Currently each county-controlled center is housed in the Sheriff's Office and is managed through the county governance structure reporting directly to the Sheriff. This structure is indicated to work well in that it aligns the center with the entity most often coordinating emergency response on behalf of the local, regional, and/or state agencies involved in such response. For many of these counties, it has also allowed for optimization of resources through the performance of dual roles. Budgeting and expenditure management is the responsibility of the Sheriff's Office, with oversight provided in most cases by the Board of Commissioners and special committees overseeing capital projects and/or inter-governmental cooperation.

The State Patrol also maintains and manages a separate emergency dispatch center in Detroit Lakes.

As noted below, the Minnesota Governor's Work Group on Regional Public Safety Answering Points indicates that most of those involved statewide with the current dispatch delivery system feel that a significant loss of control will occur as the result of any form of consolidation.

Key Issue	Full Consolidation	Partial Consolidation	Co-location*	Hybrid Consolidation
Potential for Service Improvement	High	Medium	Low - High	High
Potential for Cost Savings	Low - High	Low - Medium	Medium	Low - High
Potential for Improved Communication	High	Low - Medium	Medium	High
Potential Benefits from Shared Technology	High	Medium	High	High
Potential for Training Consistency	High	Medium	Low	High
Potential for Organizational Expansion	High	Medium	Low	High
Degree of Control Loss	High	Medium	Low	High
Degree of Change for Management of Non-Dispatch Tasks	High	Low - High	Low	High

Source: 2009 Governor's Working Group on Public Safety Answering Point Consolidation: A Guidebook for Consolidation Strategies

Thus, ideally, the governance structure for any future consolidated or shared service model for public safety answering point services will realize the desired fiscal and service benefits while also retaining the ability for participating agencies to have input into the consolidated operations in order to ensure that local needs are met. The chart above indicates that the partial consolidation and/or co-location model creates the least amount of concern relative to loss of control while maximizing the benefits of improved service and cost savings.

Recommended Governance Structure

As was discussed by the Governor's Working Group, different structures are used to oversee a consolidated operation. These structures include the following:

1. Separate Emergency Dispatch Department within a Participating Agency (County)

Per the Governor's Working Group 2009 Report:

In this governance model, the consolidated PSAP is part of the organizational structure of one of the participating entities. The PSAP is its own independent department or part of an existing department, such as an Office of Emergency Management. Completely independent from any law enforcement, fire, or EMS agency it serves, a civilian director manages the PSAP. The director is a department head reporting to the same position within the organization structure as other department heads.

All of the current dispatch centers are administered through the county sheriff's office. However, under a consolidated model, the newly created center will dispatch calls to a variety of public safety agencies from several counties. In order to properly and equitably administer the dispatch center, it may be best to create a separate dispatch department within the county in order to disassociate the new cooperative dispatch call center from the Sheriff's office, which serves mostly within a single county and is managed by an elected official within that county. It is our assumption that under this model an advisory committee with representatives from all participating agencies will be formed to advise the Dispatch Department Director on key policy, operational, and capital issues. The ultimate decision-making authority will still reside within the Board of the participating agency that is overseeing the dispatch operations.

2. Joint Powers Structure

Per the Governor's Working Group Report:

In this governance model, the consolidated PSAP is an independent agency headed by a civilian director. Under this type of structure, the PSAP is not part of any larger government structure, but is in fact an independent entity. The director traditionally reports to a board comprising representatives of the participating members.

Communities that pursue a jointly operated dispatch center typically create a commission or board to oversee the new center. Often these bodies consist of one representative from each municipality or county included in the consolidated center. The manner in which the representative is chosen is left to the respective community's discretion. Once formed, the commission oversees annual budgets (both operational and capital) and policy, normally passing and rejecting proposals through a simple majority. However, certain situations warrant more

than a simple majority. These occurrences are clearly defined in a general services document signed by each county, and include requirements for approving purchases exceeding a specific amount (e.g., \$50,000), adding or expelling commission members, and amending the funding formula for the consolidated center.

Lastly, the commission may also wish to create committees as it deems necessary to handle caveats such as personnel and technology, as these issues may be beyond commissioner's typical breadth of knowledge. Additionally, fiscal agents are often contracted to insure proper financial records while simultaneously preventing any conflicts of interest while accounting.

3. Part of a Participating Agency (Contract Arrangement)

Per the Governor's Working Group 2009 Report:

In this governance model, the consolidated PSAP is part of one of the existing law enforcement, fire, or EMS agencies. Under this type of structure, sworn personnel often manage the PSAP and fall under the authority of the hosting agency head such as the sheriff, law enforcement, or fire chief.

Under this scenario, counties participating in a consolidated center pay a lump sum (determined by an agreed-upon cost allocation method) to the county hosting the center. Although these arrangements typically do not allow the parties contracting for the service to directly participate in any oversight of the agency or department, each county paying an annual contractual fee ultimately has the ability to review budgets and make fiscal decisions regarding the arrangement. That is to say, each individual county's board must decide annually whether to maintain the status quo and contract for service or opt to pursue other methods of providing the service to residents.

Likely the most equitable approach to oversight and governance in this consolidation model is the creation of a contract or legal document clearly defining the following:

- 1) The length of the contract, as well as the payment schedule and any annual/future increases in fees
- 2) Any capital costs participating agencies will pay, as well as how future capital costs will be divided amongst participating members
- 3) The hiring process for new dispatchers
- 4) The process for renewal of the contract
- 5) The process for termination of the contract

Governance Structure Recommendation

A majority of interviewees noted their preference for a joint powers structure if consolidation were to occur. Several indicated that without an equal voice for each county, consolidation of any kind would be impossible. However, the breadth of options available and the variations of the possible participants in each consolidation warrant consideration of different structures based on the type of collaborative model implemented. Thus, we recommend the following for each of the following options.

Governance Recommendation

Option 1A: Two Centers - Partial Consolidation/Select Counties – Separate Entity within a Participating Agency

Given the scalable nature and intent of the model laid out in Option 1A, it is recommended that a governance structure that allows the region to realize cost savings and enhanced service but preserves the ability of each entity to have some control over decisions at the local level be adopted. This structure allows these centers to reduce overall cost, while still having the ability to ensure that dispatch and administrative phone coverage meet individual department needs. It will however, require the Center Director to be clear in outlining how these individual needs will be met. With a small group (one or 2 entities), combining this should be a feasible expectation.

Option 1B: Two Centers - Partial Consolidation/All Counties – Joint Powers Structure

Given the fact that several entities will be coming together into two distinct centers, it will be necessary to create stand-alone entities in order to ensure neutrality in decision-making and a focus on equitable allocation of resources toward all participating entities' needs. By creating separate entities, the mission of the department becomes the good of the whole with a stand -alone mission and independent authority to fulfill that mission. Also, with the size of each of the stand-alone entities, any cost for support services should be minimal when considered on an individual entity basis. The joint powers structure allows for representation in key decision-making and the ability to drive resource allocation based on priority needs for the center as a whole.

Option 2A: Three Centers - Partial Consolidation/Select Counties – Contract Arrangement

The simplicity of the contract arrangement works well in this situation, which in effect increases the utilization of resources already committed within one agency by adding the workload of another. Through mutually agreed-upon contract parameters, both entities benefit from the existing infrastructure and support provided while being allowed to reduce the operational costs incurred from lower than ideal utilization of staff. The participating agency has the ability to indicate performance standards in the contract and/or to discontinue the contract if needs are not being met.

Option 2B: Three Centers - Partial Consolidation/All Counties – Separate Entity within a Participating Agency

Given the involvement of more than one entity in each center, yet the lack of a significant number of participants in each center, this approach allows the ability to optimize resources without creating robust or complicated organizational and governance structures. The advisory board offers the ability for input. A separate joint powers agreement would also be possible for this option, but the lack of significant size for two of these centers may render the administrative and support infrastructure cost prohibitive.

3.18 GOVERNANCE STRUCTURE IMPLEMENTATION FACTORS

Regardless of which governance structure is implemented, responsibility and accountability for each of the following must be outlined in specific terms within a contractual agreement to be signed by each participating entity.

Governance	<ul style="list-style-type: none"> ▪ Board composition and membership ▪ Voting requirements and results parameters ▪ Meeting Frequency ▪ Officer Election protocol ▪ Committee Structure and membership ▪ Board Authority ▪ Compensation
Financial Management	<ul style="list-style-type: none"> ▪ Funding parameters ▪ Cost allocation methodology ▪ Designated fiscal agent authority and responsibilities ▪ Expenditure authority ▪ Ownership of Assets ▪ Borrowing policy ▪ Budgeting process and authority (capital and operations)
Operations Management	<ul style="list-style-type: none"> ▪ Appointment authority for Director ▪ Span of control and overall operational authority parameters and limitations ▪ Employee designation ▪ Facility ownership ▪ Insurance requirements and responsibility ▪ Records ownerships ▪ Std operating procedure approval process ▪ Participant complaint resolution and input
Agreement (initiation and termination)	<ul style="list-style-type: none"> ▪ Duration of agreement ▪ Minimal participation terms ▪ Participation withdrawal terms ▪ Grounds for participant termination ▪ Distribution of assets upon termination ▪ Additional participant parameters ▪ Hold harmless and liability language ▪ Listing of participating entities ▪ Full description of funding methodology

3.19 ADMINISTRATIVE FUNCTION IMPLEMENTATION FACTORS

Prior to implementing any of the options presented in this report, careful consideration must be given to the non-dispatch workload impacts of eliminating the Dispatch function, or of adding new public safety agencies to the current PSAP's dispatch duties.

The amount of time spent by dispatchers on administrative and operational support tasks varies by the preferred operational approach of each Sheriff's Office, by time of day, by the extent to which patrol deputies are currently assigned to completing administrative and support tasks (ie. report writing, lookups, etc), and to some extent by personal skill sets of individual dispatchers. Further, in several of the Counties, dispatchers may also serve in a customer service role at the entrance to the facility.

Therefore, we recommend that prior to implementing a merger of PSAP operations, the potential partners should perform a time study of administrative and support tasks currently performed by dispatchers to estimate the amount of staff time likely to be added (or lost) under the merger. For those Counties where the PSAP is currently integral to jail operations, this is less of an issue because the business case already assumes that these staff will continue to be employed as jailers (hence the lower avoidable cost estimates), and will be available for administrative and customer service duties.

We attempted to collect anecdotal information on the breakdown between administrative and support tasks when compared to dispatch operations, but the information was not consistent with call data results or with that reported by other Counties in the PCSG study group, thus limiting its usefulness.

A relatively simple approach to completing such a time study would be to have dispatchers and administrative support staff (as currently assigned) spend five minutes a day, over the course of a month, recording the amount of time spent each shift on various categories of administrative and support tasks. The resulting data can then be used to estimate the non-dispatch workload impacts of a potential merger. In other words, these data should indicate how much unassigned administrative workload there would be if Dispatchers were no longer at the Sheriff's Office, and the extent to which this workload would either:

- Be at a level (both volume and type of task/priority) that could feasibility be re-assigned to other staff; or
- Require additional support staff to complete (thereby reducing avoidable costs under the business case).

Section 4 - PSAP FACILITIES

4.01 PSAP BUILDINGS AND LOCATIONS

Many fire and law enforcement agencies started with the use of lights, sirens, and call boxes to indicate an incident or fire that needed attention. As radio communications arrived, central dispatch locations were developed with a telephone, radio, pencil, and paper. Dispatch centers were located wherever space was available, from garages to basements, trailers, to any floor in a courthouse or police or fire building. As population increased, the demands for quick response, accurate record keeping, and better communications were required. What started with a city marshal, policeman, sheriff, and hand-pumped fire trucks has evolved into modern Public Safety Answering Points (PSAPs) with full-time law enforcement, full-time and organized volunteer fire departments, and emergency medical personnel.

Today we are still modernizing PSAPs with new radio systems, computer aided dispatch, police and fire records management, mapping systems, and telephone systems, all with reliability and redundancy. Many agencies have outgrown the space available and have moved into new space or new facilities. With the current demands and the use of technology, more requirements are necessary for hardware, such as networks, cabling, servers, uninterrupted power supplies, generators, etc. Today the growing pains continue, with new developments and demands in radio communications interoperability, VoIP 911 service, record keeping, training, and costs associated to all of it.

In this study, we are reviewing the physical aspects of PSAP locations and making a general comparison of the existing conditions to the NFPA 1221 standards and the FEMA361 Design and Construction Guidance for Community Shelters. This portion of the study is not an in-depth study but viewed from a high level. In addition to FEMA 361 is FEMA 461. FEMA 461 is a *Reference Manual to Mitigate Potential Terrorist Attacks against Buildings*. FEMA 461 deals with terroristic activities as related to buildings, vulnerability, value and risk assessments, and design characteristics. The NFPA 1221 standards cover almost all aspects of a communication center, including construction, utilities, wiring, cabling, fire protection, telephone equipment, dispatching systems, records, and training. FEMA 361 is a guide for engineers, architects, building officials, and owners. The intent of the manual is for construction of a shelter area to provide protection for people during tornados, hurricanes, and high winds. This guide includes police, fire, and emergency operations centers. For the ten-county area of this study, the guide indicates the buildings should be designed for 200 to 250 MPH winds depending on the location. The guide covers all aspects of building construction, including footings, walls, roofs, materials, and bonding systems together. All new construction and remodeling should use the FEMA 361 and ICC-500 Storm Shelter Standards in design and engineering. See <http://www.fema.gov/library/viewRecord.do?id=1657>.

4.02 VULNERABILITY

The first criterion for site selection or building is the site's vulnerability for potential unwanted events and the subsequent impact. To predict vulnerability, we reviewed a FEMA-developed system consisting of 22 events that could impact the site and may impact the 24-hour operation of the 911 communications center. The same methods are used in site selections for emergency operations centers. The vulnerability events are as follows:

- Traffic Accidents
- Arson
- Road Construction
- Explosion
- Cyber Crime/Hackers
- Fire
- Power Outage/Surges
- Acts of War
- Sabotage/Terrorism
- Mechanical Failure
- Public vs. Non-public Access
- Train Derailment
- Earthquake
- Chemical Release
- Human Error
- Flood
- Wind
- Hail
- Tornado
- Lightning
- Loss of Utilities/Communications
- Loss of Access

Any one of these 22 events could impact the site selected for the communications center. Even though Minnesota is not well known for earthquakes, there are some recorded events dating back to 1860. The closest earthquake was in 1917 in Staples, and the shock was felt in Brainerd. Earthquakes outside of Minnesota can also affect locations within the state. Further information on earthquakes and earth seismic hazard maps can be found at <http://earthquake.usgs.gov/earthquakes/>.

Following the type of event is the probability or likelihood that the event would occur and what the impact would be. The impact range is from minor, noticeable, severe, to devastating. The combination of probability and type of event provides a risk to the facility that could be low, moderate, or high. It is highly desirable for all categories to be in the low risk range. Through this exercise of comparing risks at each of the sites, we found a number of events that could occur that would result in severe or devastating outcomes. Comments are made in the section of this report on the vulnerability of each county.

A. The high-risk events with impact that is severe or devastating are as follows:

- Explosion
- Train Derailment
- Chemical Release
- Flood
- Tornado
- Lightning
- Cyber Crime/Hackers

B. The following events present a moderate risk, with impact that would be minor to severe:

- Fire
- Sabotage/Terrorism
- Wind
- Hail
- Loss of Utilities/Communications

C. The remaining events were low risk, ranging from minor to severe impact.

4.03 MITIGATING THE RISKS / PSAP SURVIVABILITY

The survivability of the communications center can be improved through location selection, design criteria, security implementation, training, and technology.

- A. Explosion: An interior wall around a public lobby can be hardened while the exterior wall is made of lighter material, so that a blast in the lobby would direct its force outside and not into the building. An outside blast close to the building, however, would go through the lighter constructed area but should protect the critical interior. Vehicles with explosives can be prevented from getting close to a facility through road and parking lot design and decorative barriers. FEMA recommends that facilities be at least 33 feet from the parking area and 120 feet from any active roadways.
- B. Railroad: Trains carry an enormous variety of hazardous materials daily throughout the country. Rail traffic for the miles and quantity of cargo transported is generally very safe. Lower speeds reduce the risks of accidents and risk factors for hazardous materials. Critical infrastructure should never be built close to rail traffic or major highways. Facilities located next to railways may be directly impacted by derailment or accident, further compounding the hazards.
- C. Chemical Release: Chemical release may be from a vehicle, railroad, industrial location, or by person. Again, locating facilities farther away from major highways or railroads and noting prevailing winds can reduce the impact. Chemical release by an individual will be smaller, but will likely be concentrated at building air intakes. Air intakes can be located high on the building or screened at an angle so that anything placed or thrown would slide off. The building can also have motorized dampers to stop outside air infiltration for a period of time.
- D. Flood: For most of the ten PSAPs, flooding is not a direct issue. In risk areas, elevating the ground in new construction can reduce the risk of flooding. Using an upper level for the dispatch center and all critical support systems is another method to allow operation during flooding events. Power panels, generators, servers, and radio equipment all have to be elevated to continue

operations. A new facility should never be built lower than the 500-year flood level.

- E. Tornado: We cannot predict or control the direction of a tornado, but we can build a building that can withstand the effects of extreme wind pressure and debris. The design and construction of a new building should withstand wind gusts up to 250 MPH and impact of a 15-pound 2x4 traveling at 100 MPH. Normal buildings can withstand wind gusts up to 90 MPH for three seconds. Roofs can be built to withstand 360 pounds per square foot of uplift pressure instead of the normal 90 psf. Concrete roofs can provide protection from debris and hail. The emergency generator can be enclosed within a masonry wall with steel mesh or baffles above for debris impact.
- F. Lightning: A building and most of the equipment can be protected for direct lightning hits on the building with the use of proper grounding. Utilities should meet grounding codes, and grounding protection should be in place for radio towers, radio antenna systems, and transmission lines. A direct lightning hit on an antenna will cause damage. A modern PSAP must have alternate means of basic communications.
- G. Cyber Crime/Hackers: The radio system and 911 system are generally managed on independent networks and not subject to cyber crimes or hackers. The computer aided dispatch system being shared on either the City or County network makes it an open target, and measures must be taken to secure the network by firewalls and other security measures. Constant vigilance and maintenance is required to maintain the security.
- H. Fire: Modern buildings with fire systems in place have lowered the damage from fires significantly. Equipment fires are always a possibility, however, as is human error. A fire could occur and the risk could vary from minor to severe. Equipment rooms should have a Halon, Hc-134c, or similar fire suppression system.
- I. Sabotage/Terrorism: The ten counties in this consortium are unlikely locations for terrorist events, but if an event occurred, it would have a severe impact. A properly constructed building, including entrances, exits, parking, and roadways, will discourage attempts of this nature.
- J. Wind: Normal windy conditions are not an issue with the county PSAPs and would not be an issue with good construction and design. Wind and heavy snow could make access harder, however.
- K. Hail: Construction can mitigate damage to the building, but ice on towers or cable surfaces can fall, resulting in a hazardous condition below. This can be a danger to people and cause damage to buildings and vehicles.
- L. Loss of Utilities/Communications: All the counties are equipped with an emergency generator for loss of electricity. The loss of natural gas is rare but unlikely, though in flood conditions it may be turned off to protect the greater

good. Some buildings are heated with propane and need to be filled and checked on a regular basis. At least one county building is heated by fuel oil. Loss of water is unlikely unless there is a flood that breaches the water distribution system and results in contaminated water. Drinking water can be either stored or brought into the location. Loss of communication could mean either telephone or radio communication, and either could have a severe impact. 911 communications can be routed to alternate telephone numbers, to cellular phones, or to another PSAP. The impact of loss of administrative telephone lines would be minimal. As noted earlier, radio communications should have redundancy by usage of mobile radios or control stations. Redundancy should be designed into the new 800 MHz system and included in the design offered.

4.04 RELIABILITY AND REDUNDANCY

A. Computer Aided Dispatch (CAD)

Computer Aided Dispatch (CAD) refers to software residing on a computer to aid and assist a dispatcher in performing his/her duties. It allows emergency operations and communications to be assisted, augmented, or partially controlled by an automated software system. The most important part of a dispatch system is the dispatcher or communications specialist and the tools available to him/her. Dispatchers in a modern communications center are trained specialists with the ability to do multiple tasks in a quick, accurate, and complete manner.

In years past, dispatchers were untrained, recorded little information, and provided few details to a responding person. As time went by, dispatchers were required to document more information, provide more details, and handle all types of callers with all of their problems. Hand-written records were difficult to fill out, difficult to maintain, and sometimes impossible to find when they were needed later. Some when found were illegible. Today, computers assist the dispatchers in recording events, providing information, maintaining an audit trail, and allowing the dispatchers to access large amounts of information relating to locations, people, events, resources, and table-driven codes and recommendations.

A computer aided dispatch system must provide state-of-the-art functions within a communications center. The system must be functionally friendly, with the ability to multitask many different processes in a quick action environment. The process of gathering, verifying, coding, saving, and retrieving information is not simple. This process must be done quickly and correctly. CAD software is complicated, sophisticated, highly reliable, and necessary in a modern communications center. The CAD system must control emergency vehicle dispatching, vehicle status, incident reporting, and management of information, along with many other tasks.

There are two types of CAD systems – call taker and dispatch. In a call taker system, a call-taker receives and places information into the computer. The information is transferred electronically to a dispatcher. The dispatcher then dispatches the call based upon the information. With the call-taker system, the call-taker and dispatcher can work in separate rooms or areas. Some call taker dispatch systems separate police and fire dispatchers. With modern CAD systems, both methods are available and CAD can be accessed on any networked computer with the proper authority. In cases of major incidents or disasters, other personnel can enter information into the CAD system from other areas and the dispatchers can then process the call.

A public safety agency receives information in many ways. Information may be received by mail, telephone (9-1-1)/(TDD), direct contact at the agency, officer contact, radio, e-mail, or computer network. The next generation 911 will give access via other mobile devices. A computer aided dispatch system increases dispatcher efficiency and accuracy by providing more timely and accurate communications and information. Information is entered into the computer while being received in a systematic and logical format. The information a dispatcher receives will determine if a response is necessary and the type of response. The response may be police, fire, or emergency medical services, or a combination of these. Correct geographic and supplemental information about a location is critical.

The CAD system provides dispatchers with geographic information and history, recommends the best response, shows unit status, transmits the data to mobile units or faxes, and tracks all the information and places it into a record for later retrieval or review. The record should be an accurate, chronological, and easily read record of every incident and unit activity.

A CAD system improves the means of handling calls from the public; provides greater accuracy, speed, and efficiency; minimizes data handling; provides accurate, up to date information; increases officer productivity; and most importantly, provides important information to officers for their safety.

A sophisticated computer aided dispatch system, as you may well imagine, does not take care of itself, and a new CAD system does not prepare itself at startup time. It takes an enormous effort to place a new CAD system in running order. Installing a new CAD system requires a total commitment from the agency to dedicate time from supervisors, dispatchers, trainers, IT personnel, and the vendors.

Once installed, a CAD system requires constant updates in data fields, to ensure information remains accurate as locations change and new roads, homes, and buildings are constructed. A key item for a successful installation and smooth running is training. Training is required of all the users, administrators, staff, and IT personnel involved. Training needs to be a high priority, not minimized.

Some agencies with a CAD system also have a redundant CAD server working in tandem in the event that one fails. This server should be located at a backup site or another PSAP that is utilizing the same software.

B. Radio Systems

In general terms, the existing radio systems of the ten counties are VHF conventional radio systems. According to information learned in the interviews, all ten counties intend to move to the 800 MHz system for voice communications unless funding becomes a larger issue.

C. Paging Systems

All ten counties use paging for first responders for fire and EMS. Each of the ten counties knows that paging is not possible on the ARMER system and that the paging infrastructure equipment and pagers must be narrowband by the end of 2012. In addition, all licensing must be modified with the FCC.

As the counties progress in updating their paging equipment, they should keep in mind that paging transmitters may be controlled over the ARMER microwave system if the transmitter is located on an ARMER site.

D. Networks

Currently the MNet, which carries all the CJDN data, is available for shared usage between counties for a shared CAD/RMS package. There may be some bandwidth issues that need to be addressed by the counties and the OET. A second network to carry next generation 911 is being planned and may also use the MNet as a backup in case of line failure. The third network that is being installed is the ARMER backbone network or network between all the tower sites with ARMER equipment. This network will consist mostly of microwave and some fiber. Talks are underway to determine whether this network can be made available.

E. Microwave

Modern microwave systems are built with a high level of reliability and should not fail during rain or snow storms. Backup power supplies are required on both ends of the system. The microwave should be on a UPS to prevent restarting in the event of a power failure.

Section 5 - EXISTING COUNTY FACILITIES

5.01 DOUGLAS COUNTY

A. PSAP Location

The Sheriff’s Office and PSAP are located at 216 Seventh Ave W, Alexandria, MN. The building is a remodeled junior high school and is the Douglas County Law Enforcement Center.

B. Vulnerability

The building construction is concrete block with a brick face and was built in 1921. The building has three levels including the basement. The building is approximately 500 feet (1 block) west of Hwy 27 and three miles north of Interstate 94. The Canadian Pacific railway is approximately ¾ mile north of the PSAP. The building is approximately 60 feet from the street and there is no fencing or barriers around the building. There is on-street parking and a parking lot adjacent to the building on the east side along the garage area. Propane storage tanks are located one mile from the building on Hwy 27. There are no adjacent rivers, and the area is not prone to flooding. The exterior windows are not impact resistant. The building would be considered a medium to high risk building.

C. PSAP – Dispatch Facility

The dispatch center is located on the main level with an exterior wall of concrete block and interior walls of steel studs and sheetrock. The floor is concrete covered with carpet. The ceiling is standard ceiling tile. The dispatch room is approximately 714 square feet. The public windows are impact resistant. The room has three dispatch console positions. There is an adjacent bathroom and break area and a lunch room is available. The technical and radio room is adjacent to the dispatch center. The Sheriff’s office has a conference room that can be used for training purposes.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	Three consoles by Watson
Space for Additional Consoles #	None
Supervisor Console or Office	Office
CAD System	CIS
CAD Interface to State	Yes
CAD Interface to 911	No
CAD Interface to RMS	Yes
CAD Interface to Warrants	Yes
RMS System	CIS
Jail Management	CIS

Civil Process	CIS
Mapping System	Geo Lynx
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Arvig Communications
911 Alternate Routing 1	Todd County
911 Alternate Routing 2	Pope County
Administrative Telephone System	Nortel
Instant Recall - Radio	Eleven
Instant Recall - Telephone	Dictaphone
Mobile data	Yes
Radio Console	Motorola Centracom II with Computer
Weather Monitor	Yes
Peripheral Equipment	Three printers. One is fax/printer/scanner combo.
Building Fire Alarm	Yes – panel in dispatch
Alarms – All Others	Court and services building , library – all others via telephone
Cable/Satellite TV Monitor	Cable
Generator Monitor	Yes
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	Radio and manual
Locations of Sirens	Alexandria (R12) Brandon (R1) Forada (R1) Garfield (R1) Mitona (R1) Nelson (R1) Osakis (R1) Evansville (M1) Kensington (M1) Leef Valley (M1) Millerville (M1)
LAN	Gb – 2003 Server
WAN	CJDN – Fiber to Alexandria Technical College
EOC	Yes

E. Radio System

The Douglas County radio system is conventional wideband VHF with one main transmit site and five voted receiver sites. The sites are Viking towers located near the PSAP, Evansville, Garfield, Kensington, and Osakis. Fire paging is from the Garfield site. The dispatcher may select the Viking tower or Garfield tower for law enforcement communications. See GeoComm's Public Safety Radio Communications Project report for further information.

F. ARMER

The budgetary estimate provided to the County by GeoComm in the ARMER study was \$2,530,814. This included all equipment to migrate all public safety users onto the State of Minnesota 800 MHz trunked system. \$525,000 was for a three-position radio console. Mobile and portable costs were estimated at \$1,179,300. Other fixed equipment to operate on the 800 MHz system is estimated at \$302,910. Updating paging equipment was listed as \$123,250. The remaining costs were for training, programming, contingency, and other fees. The cost included a microwave link to the state tower for direct connection to the zone controller. An additional cost of \$12,500 is for training and \$52,500 annual costs for maintenance. The pricing did not include state sales tax.

5.02 GRANT COUNTY

A. PSAP Location

The PSAP is located in the Grant County Courthouse at 10 2nd Street NE, Elbow Lake, MN.

B. Vulnerability

The Grant County Courthouse is located on the north side of Hwy 79 at the intersection of Hwy 55. The courthouse is approximately 130 feet from the highway. On the north side of the courthouse is a parking lot that abuts the building. There are no barriers or fencing around the building. The building is not subject or prone to flooding. The building is constructed of heavy brown stone. Windows are all of regular glass panes and are not impact resistant. The railroad is approximately 1500 feet (3½ blocks) south of the courthouse. There is a propane storage facility about 1 mile northwest of town. The building does not have a fire alarm system or sprinklers. The building would be considered a high-risk facility.

C. PSAP – Dispatch Facility

The building has three floors, and the dispatch center is on the main level. The dispatch area is approximately 308 square feet. The room has one dispatch position but has two 911 phones. The dispatch position is a standard counter surface with no ergonomic features. The room could be rearranged to accommodate two dispatch consoles. The room has two exterior windows and one window to serve the public. The windows are not impact resistant. The exterior wall is brown stone and one interior wall is cement. The others are standard stud and sheetrock construction. The room has hot water heat and a window air conditioner. The room lighting is fluorescent, the floor has carpet, and the ceiling is standard tile. The exterior of the building has access control; the dispatch center does not, but it has a lock. The dispatchers use the public restrooms and take breaks within the dispatch center. The building has CCTV for doors, court room, conference room, etc. The radio equipment is in the

attic of the building with no environmental control. The technical closet is adjacent to the dispatch center. There is not a backup dispatch center.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	One
Space for Additional Consoles #	Yes – total of two
Supervisor Console or Office	Yes
CAD System	None
CAD Interface to State	None
CAD Interface to 911	None
CAD Interface to RMS	Dave Rupp
CAD Interface to Warrants	None
RMS System	Dave Rupp
Jail Management	No Jail
Civil Process	None
Mapping System	Geo Lynx
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Runestone in Hoffman, MN
911 Alternate Routing 1	
911 Alternate Routing 2	
Administrative Telephone System	Comdial
Instant Recall – Radio	CML
Instant Recall – Telephone	CML
Mobile Data	No
Radio / Phone Recorder	Dynamic Di Voice Vault
Radio Console	Zetron 4010 button console
Weather Monitor	Cable TV
Peripheral Equipment	Printer, shredder in adjacent room
Building Fire Alarm	None
Alarms – All Others	Silent Knight – 68 residential and business alarms
Cable/Satellite TV Monitor	Cable
Generator Monitor	Yes
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	Radio and manual
Locations of Sirens	Ashley (1R), Elbow Lake (1r), Hoffman (1R), Barrett (1R), Wendell (1M), Herman (1M)
LAN	
WAN	CJDN
EOC	None

E. Radio System

The County operates on a VHF wideband conventional system for law enforcement, fire, EMS, County Highway Department, local agencies, and paging. The radio systems operate out of the Brandon tower via wire line. This includes the law enforcement repeater, fire channels, and MSNEF. Paging is also on the Brandon tower. See the GeoComm ARMER study for further details.

F. ARMER

The County would purchase a Motorola MCC7500 radio console to connect to the ARMER network over leased lines. The participation plan indicates a multicast configuration from the towers in and around the County to include Erdahl, Herman, Hoffman, Eagle Lake, and Nashua. The County will use 800 MHz control stations for backup. GeoComm estimated the total cost at \$1,647,931 plus an additional \$12,500 for training and an annual maintenance cost of \$63,920 per year after warranty.

5.03 LAC QUI PARLE

A. PSAP Location

The PSAP is located at 600 6th Street, Madison, MN. The building is built in two sections. One section houses the jail and dispatch center and the other contains the Sheriff's offices, which were converted from the Sheriff's house. The exterior of the jail and dispatch center is concrete block with brick face.

B. Vulnerability

The PSAP location is two blocks from the downtown area of Madison. It is approximately 630 feet (two blocks) east of Hwy 75 and 2,000 feet (six blocks) north of Hwy 40. The town is served by a spur railway but is dead ended and is used for farm product shipping. The site is not prone to flooding and there are no rivers close by. The town has natural gas and there are no large propane storage tanks or fuel storage located nearby. The jail and office building are within fifteen feet of the roadway, and parking is allowed on the adjacent streets. There is no fencing or barriers around the building. The exterior windows in the office and PSAP are normal glass windows and are not impact resistant. The building would be considered a high risk.

C. PSAP – Dispatch Facility

The PSAP is within the jail portion of the building. The walls are concrete, the floor is concrete covered with carpet, and the ceiling has standard ceiling tile. The window to the public lobby is impact resistant but has no window coverings. The dispatch area is approximately 144 square feet. The room has HVAC, but the AC does not always work properly. The room has electric locks with access control. The jail area does have a fire alarm system meeting state requirements, but it does not have a sprinkler system in the jail or dispatch area. The dispatch area would not meet ADA requirements.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	One
Space for Additional Consoles #	None
Supervisor Console or Office	None
CAD System	Dave Rupp
CAD Interface to State	No
CAD Interface to 911	No – RMS has batch file to state
CAD Interface to RMS	Yes
CAD Interface to Warrants	Yes
RMS System	Dave Rupp
Jail Management	Dave Rupp
Civil Process	Dave Rupp
Mapping System	Dave Rupp
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Frontier
911 Alternate Routing 1	Big Stone County
911 Alternate Routing 2	Yellow Medicine
Administrative Telephone System	Nortel – with three admin lines
Instant Recall – Radio	
Instant Recall - Telephone	CML
Mobile Data	No
Radio / Phone Recorder	Dictaphone
Radio Console	Motorola Centracom Series II
Weather Monitor	Yes – and cable TV
Peripheral Equipment	All in one printer, fax, scanner.
Building Fire Alarm	Yes – Court and Jail area
Alarms – All Others	Four on alarm modules and other via telephone
Cable/Satellite TV Monitor	Cable
Generator Monitor	No – They can hear when the generator is on
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	Radio
Locations of Sirens	Bellingham (1) Boyd (1) Dawson (1) Madison (1) Marietta (1)
LAN	10/100 Mbps
WAN	CJDN
EOC	New facility now operational

E. Radio System

The existing Lac qui Parle County radio system consists of wideband VHF systems for voice and paging. The primary law enforcement site is about one mile north of town connected via copper wire. The fire system is from a base station located at the PSAP. Paging is provided from three sites located in Madison, Boyd, and Dawson. The County also has a Point-to-Point and MINSEF base station. For further details, please refer to the Federal Engineering Radio Study.

F. ARMER

The budgetary estimate provided to the County by Federal Engineering in the ARMER study was \$1,236,000. This included all equipment to migrate all public safety users onto the State of Minnesota 800 MHz trunked system. \$269,000 was for fixed equipment to operate on the 800 MHz system. The user or subscriber equipment estimate was \$704,000. Updating paging equipment was listed as \$42,000. The remaining costs were for training, programming, and other fees and taxes. The pricing included two unknown radio consoles for \$120,000 that would control five base stations, two circuits to the Madison tower for paging, and a T1 line to the Madison tower for connectivity to the ARMER system.

5.04 OTTER TAIL COUNTY

A. PSAP Location

The PSAP is located in the Otter Tail County Justice Center at 417 Court Street, Fergus Falls, MN.

B. Vulnerability

The Justice Center is located on the edge of the downtown area approximately 1½ mile from Interstate 94, approximately 700 feet from Hwy 297, and 1,200 feet from Hwy 210. There is a spur railroad track on the south side of the Courthouse property below grade. The building is concrete block and has four levels. There is parking on site and on street adjacent to the building. The window material is impact resistant. The site is not adjacent to a river or prone to any flooding. There is no fencing or barriers around the building. The building would be medium to high risk.

C. PSAP – Dispatch Facility

The dispatch facility is on the main level of the Courthouse in an area of approximately 266 square feet. The room has two ergonomic work stations for dispatchers and one position for a supervisor in a separate room. There is no additional space for expansion. The walls consist of concrete block and wood studs with sheetrock. The floor is concrete with carpet, and the ceiling is standard ceiling tile. The lighting is overhead fluorescent with three sections,

and each work station has task lighting. The public window is impact resistant. The dispatch area has an adjacent bathroom and an area for a coffee pot and microwave. The dispatch center was remodeled in 2000. HVAC was rated fair to poor. The technical closet and radio CEB is located in the basement.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	Two - Watson
Space for Additional Consoles #	None
Supervisor Console or Office	Yes
CAD System	CIS
CAD Interface to State	No
CAD Interface to 911	Yes
CAD Interface to RMS	Yes
CAD Interface to Warrants	Yes
RMS System	CIS
Jail Management	Yes
Civil Process	Yes
Mapping System	Yes
911 System Mfg	Geo Lynx
Number of 911 Trunk Lines	Four
911 Telephone Company	Qwest
911 Alternate Routing 1	Grant County
911 Alternate Routing 2	None
Administrative Telephone System	CML
Instant Recall - Radio	Moducom
Instant Recall - Telephone	CML
Radio / Phone Recorder	
Mobile Data	Yes
Radio Console	Moducom
Weather Monitor	Yes
Peripheral Equipment	Printers, shredder,
Building Fire Alarm	No
Alarms – All Others	Via Telephone
Cable/Satellite TV Monitor	Cable TV
Generator Monitor	No
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	
Locations of Sirens	Battle Lake, Deer Creek, Fergus Falls, Parkers Prairie, Perham, Richville, Underwood
LAN	Novell and Windows 2003 100 Mbps
WAN	CJDN
EOC	Yes – Otter Tail City

E. Radio System

Otter Tail County utilizes a VHF conventional wideband radio system for law enforcement, fire, EMS, public works, highway department, and land management. The system has seven sites within the county for voice and paging.

F. ARMER

The budgetary estimate provided for Otter Tail County by GeoComm in the ARMER study was \$4,613,597. This included all equipment to migrate all users onto the State of Minnesota 800 MHz trunked system. Of this cost, \$1,529,000 is for mobile and portable radios. The two-position radio console was \$477,000. An additional radio tower site and added channels was \$795,880. Two microwave links were \$170,000. Control stations and new repeaters added an additional \$172,000. The remaining amount is for contingency, licensing, site improvements, and consulting fees. The estimated system maintenance for the radio console is approximately \$84,000 per year. Training was quoted at \$15,000 for dispatchers and first responders. See GeoComm's report for further details. We noted pricing in the GeoComm report for two radio positions and three in the Participation Plan provided by SEH. The additional console position and sales tax will change the estimated amounts.

5.05 OTTER TAIL PATROL OFFICE

A. Location

The Otter Tail County Patrol Office is located at 469 W Main Street in Otter Tail, MN, near the intersection of Hwy 55 and Hwy 108. The building is used for the patrol office, training center, and emergency operations center. The building is a single level with no basement. The location is between one and two miles from a proposed ARMER tower.

B. Vulnerability

The building is constructed from precast concrete, with windows in the patrol area and at the entrance to the building. The patrol office has an F2 tornado rating, while the rest of the building has an F4 rating. The building has geo thermal heating and cooling with no propane or natural gas. There is a railroad track approximately one mile to the east of the site. The building is not close to the highways, has no adjacent rivers and is not subject to flooding, and has no propane or other hazardous materials in the near proximity. With the addition of fencing, access control gates, and additional exterior CCTV this would be a very low risk building.

C. Other

The building is equipped with a large generator and has a fiber connection to Fergus Falls Justice Center. This would be an excellent location for a dispatch center.

D. Shultz & Associates, LTD

The following paragraphs were copied from the Shultz & Associates web site, which contains a description of the facility:

The Otter Tail Operations Center functions as both the Emergency Operations Center and a centrally located command post for the Otter Tail County Sheriff's Office. Storm water management, native vegetation, rain water collection, day lighting, low emission material, and occupancy controls are some of the green features of the facility.

The facility is constructed of precast concrete and masonry bearing walls, and precast concrete and steel roof construction. The building is heated and cooled with a hydronic heat pump system with vertical geothermal loops. Heat recovery units provide for efficient tempering of incoming fresh air. The electrical system is backed up with an engine generator covering the load of the entire facility. Automated lighting controls (occupancy sensors) are used throughout the facility, along with daylight dimming in spaces with accessibility to glass.

The building is Silver LEED Registered.

The Otter Tail County Operations Center was awarded an Award of Merit by the North Dakota AIA.

5.06 POPE COUNTY

A. PSAP Location

The PSAP is located in the Pope County Courthouse at 230 Minnesota Avenue West in Glenwood, MN.

B. Vulnerability

The Courthouse is on north side of Hwy 29 (Minnesota Avenue), approximately 860 feet west of the intersection of Hwy 29, 28, and 104, and about one mile west of Hwy 55. There is a lake southwest of the site, but the site is not subject or prone to flooding. The railroad is approximately 1.2 miles to the east of the Courthouse. There is parking adjacent to the building and on the street. There is not adequate parking for employees. The building is constructed of concrete and has three levels with a partial basement with boiler room. The building is heated with natural gas. This building would be considered a medium to high risk building.

C. PSAP – Dispatch Facility

The dispatch center is on the main level of the Courthouse and has painted concrete block walls, concrete floor, and standard ceiling tile. The dispatch room is approximately 154 square feet and has two console positions. The positions are not ergonomic or adjustable but are standard work surfaces. The room has a door but no access control. The room has fluorescent lighting and has an adjacent bathroom and an area for microwave and refrigerator. They do not have a break, lunch, or training room. The dispatch room has an adjacent bathroom. The building has a fire alarm and sprinkler system. The building has CCTV with approximately 60 cameras. The room does get warm at times and a fan is utilized.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	Two
Space for Additional Consoles #	None
Supervisor Console or Office	Yes
CAD System	None
CAD Interface to State	None
CAD Interface to 911	None
CAD Interface to RMS	None
CAD Interface to Warrants	None
RMS System	Dave Rupp
Jail Management	None
Civil Process	Rupp
Mapping System	Pro West
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Qwest
911 Alternate Routing 1	Douglas County
911 Alternate Routing 2	Stevens
Administrative Telephone System	Inter Tel
Instant Recall - Radio	Five
Instant Recall - Telephone	CML
Radio / Phone Recorder	High Ground
Mobile Data	No
Radio Console	Motorola Gold Elite
Weather Monitor	Yes
Peripheral Equipment	One Printer /Fax
Building Fire Alarm	Yes
Alarms – All Others	Courthouse Panic and 170 business and residential
Cable/Satellite TV Monitor	Yes

Generator Monitor	Yes
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	Yes
Locations of Sirens	Glenwood (2), Long Beach (1)
LAN	10/100/1000 Mbps
WAN	CJDN and Local
EOC	

E. Radio System

Pope County has a VHF radio system with two-position Motorola Gold Elite radio console. The console is linked to the transmitter sites via UHF control links and leased lines. Transmitter sites are located at Terrace, Glenwood, and Pope County Courthouse. See the GeoComm ARMER report for further details.

F. ARMER

The budgetary estimate provided by GeoComm for moving to the ARMER system was a total of \$1,503,552. The major cost of \$1,055,310 is for mobile and portable radios, control stations, microwave link, radio console upgrades, and documentation. The upgrade for paging added another \$168,700, and contingency fees, consulting fees, upgrade in grounding, and training was estimated at \$279,542. See GeoComm's ARMER report for further details.

5.07 STEVENS COUNTY

A. PSAP Location

The Morris County PSAP is currently located at 215 Atlantic Ave in Morris, MN. The location is a temporary facility while construction is being completed on an addition to the courthouse at 400 Colorado Avenue, Morris, MN. The new PSAP will be in the interior of the Sheriff's Office.

B. Vulnerability

The Sheriff's office is under construction at this time. A quick review of the drawings indicated that it may not meet all the FEMA 361 standards and NFPA guidelines. The building is located approximately 1,100 feet (3 blocks) northeast of the intersection of Hwy 59 and Hwy 28. Hwy 59 runs in a northwest southeast direction through the town. It is also approximately 1,300 feet from the Burlington Northern railway, which runs parallel to Hwy 59. A propane and fuel storage area is located 1.2 miles to the west of the courthouse. The storage facility contains two 30,000-gallon tanks of propane along with many 100-gallon tanks. It also has one 10,000-gallon, three 21,000-gallon, and eight 15,000-gallon tanks of fuel and gasoline. The storage facility also contains tanks of anhydrous ammonia.

The new facility will be constructed of concrete block, and the ceiling of the dispatch center will be precast plank. The building is not F4 rated for tornados, but would need further evaluation after completion for a PSAP rating. At this time, it would appear to be a medium risk facility.

C. PSAP – Dispatch Facility

The new dispatch facility will have impact/attack resistant windows with concrete block walls. The HVAC will be new, and the structure will have fire sprinklers and alarm systems along with CCTV for interior and exterior cameras. The dispatch center will have two consoles with the capacity for four.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	New - Two
Space for Additional Consoles #	Yes - Two
Supervisor Console or Office	Yes
CAD System	Enfores
CAD Interface to State	Yes
CAD Interface to 911	Yes
CAD Interface to RMS	Yes
CAD Interface to Warrants	Yes
RMS System	Enfores
Jail Management	No Jail
Civil Process	None
Mapping System	Geo Lynx
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Qwest
911 Alternate Routing 1	Grant
911 Alternate Routing 2	Pope
Administrative Telephone System	Onvoy
Instant Recall - Radio	Zetron
Instant Recall - Telephone	Cyber Tech
Radio / Phone Recorder	Cyber Tech
Mobile Data	No
Radio Console	Centracom
Weather Monitor	Cable TV
Peripheral Equipment	?
Building Fire Alarm	New building; yes
Alarms – All Others	Via telephone
Cable/Satellite TV Monitor	Cable TV
Generator Monitor	Yes
Siren Control	Yes

Sirens Controlled via Radio/Wire Line	Radio
Locations of Sirens	Alberta, Chokio, Donnelly, Hancock, and Morris
LAN	100/1000 Mbps – Server 2003
WAN	CJDN and Local
EOC	

E. Radio System

Steven County has a conventional wideband VHF system operated from a tower at the Courthouse with temporary connections to their current location. The courthouse tower has the Sheriff’s, public works, and EMS control stations with radio equipment at the Mediacom site, Morris Water Tower, and MnDOT site on the northwest edge of Morris. This tower is located adjacent to the propane and fuel storage area and would be adversely affected if a disaster occurred at the storage area.

F. ARMER

The budgetary estimate for moving to the ARMER system provided by GeoComm’s study was for a total of \$1,720,795. The two-position radio consoles were estimated at \$486,000; mobile radios at \$323,900; portable radios at \$307,300; microwave link at \$85,000; paging equipment at \$78,750; and training at \$12,500. The remaining \$382,345 is for licensing, consulting, miscellaneous costs, and contingency. After warranty, the estimated costs will be \$37,600 annually.

5.08 TODD COUNTY

A. PSAP Location

The PSAP is located in the Sheriff’s Office at 115 3rd Avenue South, Long Prairie, MN. The Sheriff’s Office is within a large facility that includes the Todd County Government Center and detention facility. The Courthouse is adjacent to the Government Center.

B. Vulnerability

The Sheriff’s Office is located on the edge of the downtown area and approximately 1,100 feet east of Hwy 71 (3 blocks) and 1,000 feet north of Hwy 287. The Sheriff’s facility was built in 1985 and remodeled in 2007. The building is constructed of concrete block and has double pane low E windows. The City of Long Prairie does not have a railroad, and the building is not subject or prone to flooding. There is a parking lot to the west of the building and parking on the street adjacent to the front entry of the Sheriff’s Office. There is no fencing or bollards to protect the building. The building is heated with natural gas and has a backup generator. Due to the close proximity of the roadway and parking this would be a medium to high risk building.

C. PSAP – Dispatch Facility

The dispatch center is located within the Sheriff’s Office on the main level. The walls are concrete block, and windows on the jail side are impact resistant but office windows are not. The room is approximately 370 square feet and has three ergonomic Watson dispatch positions. The flooring is a raised computer floor with anti-static carpet, and the ceiling is standard ceiling tile. The lighting is fluorescent, and the air conditioning needs improvement. The room has access control, but the door is left open into the secure law enforcement area. The building has sprinklers and a fire alarm system. There is an adjacent bathroom, and dispatchers take their breaks in the room, which does have a refrigerator, microwave, coffee maker, and sink. The technical closet is next to the dispatch center and contains servers and radio electronics.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	Three
Space for Additional Consoles #	None
Supervisor Console or Office	Console
CAD System	LETC
CAD Interface to State	Yes
CAD Interface to 911	Yes
CAD Interface to RMS	Yes
CAD Interface to Warrants	Yes
RMS System	LETC
Jail Management	
Civil Process	
Mapping System	Geo Lynx
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Sprint
911 Alternate Routing 1	Douglas County
911 Alternate Routing 2	Wadena County
Administrative Telephone System	Onvoy - Polycom
Instant Recall – Radio	Eventide
Instant Recall – Telephone	Eventide – CML
Radio / Phone Recorder	Eventide
Mobile Data	Yes
Radio Console	Moducom
Weather Monitor	Yes and Cable TV
Peripheral Equipment	Printers/Copier/fax combo, backup, radio, fax
Building Fire Alarm	Yes
Alarms – All Others	Panic – County offices, jail, admin, court

Cable/Satellite TV Monitor	Cable
Generator Monitor	Yes
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	Radio
Locations of Sirens	Burtrum, Grey Eagle, Lone Prairie, Bowerville, Clarissa, Eagle Bend, Bertha, Hewitt, Staples, Sylvia Shore, and Big Sauk Lake
LAN	100/1000 Mbps - MS 2003 Server
WAN	CJDN – T-1 and local area
EOC	Yes

E. Radio System

Todd County has a conventional VHF radio system. The system consists of a two-position radio console and a law repeater in Long Prairie and fire repeaters in Bertha, Grey Eagle, Long Prairie, and Staples.

F. ARMER

The County's participation plan indicates the County will use towers at Long Prairie, West Union, Lincoln, and Hewitt. These towers will have six channels, and the County will use the Moducom radio console with eight control stations to connect to the ARMER system talk groups. Paging will continue on VHF with upgrades necessary and for support of agencies not migrating to ARMER. The estimated cost in the GeoComm study was \$1,491,800 for upgrading to the ARMER system. See the GeoComm study for further details.

5.09 TRAVERSE COUNTY

A. PSAP Location

The PSAP is located in the Law Enforcement Center at 203 7th Street North, Wheaton, MN. The building is about two years old and constructed of standard stud construction with a vinyl exterior and sheetrock interior walls. Interior secure areas are constructed with concrete block.

B. Vulnerability

The PSAP and Sheriff's office is located adjacent to the County Courthouse, in a residential area three blocks from the downtown area. The PSAP is approximately 800 feet or 1½ long blocks west of Hwy 75 and approximately 850 feet or three blocks north of Hwy 27. The building does have a sprinkler system with an alarm panel in the dispatch room. Adjacent to the building are three propane tanks with a total capacity of 4,500 gallons of propane. One is located on the west side and the other two on the southeast corner of the building. There are no railroad tracks in the area, and ground elevation is not subject to flooding. Parking is allowed on the adjacent streets and in the

parking lots on the east and west side of the building. Parking on the west side is within ten feet of the building. The building does not meet the standards for FEMA shelters or the NFPA guidelines. The building would be considered a high-risk building.

C. PSAP – Dispatch Facility

The building is a single level with the PSAP on the ground floor. The dispatch area is approximately 224 square feet with one ergonomic console, additional desktop space, and countertops with filing cabinets. The room is constructed with walls of concrete block, a concrete floor with carpeting, and ceiling with standard ceiling tile. The room has a separate HVAC system and control. There is an adjacent bathroom and a break/lunch room available. Lighting is provided by both incandescent and florescent. The windows in the dispatch area are impact resistant. A jailer supervisor position is adjacent with approximately 88 square feet. The building has access control and the dispatch room also has access control.

D. Dispatch Equipment

The dispatch has one position, but there are two 911 workstations in the room. One is located at the dispatch position and the other on the work surface adjacent to the dispatch position. The dispatch position also has the radio console, two CCTV monitors for interior, courthouse, and exterior of the building, one jail room monitor, a door control system monitor, state computer, and a computer used for a radio communications log. A mapping computer, weather monitor, and cable TV also are next to the dispatch position.

E. Dispatch Function

The dispatchers and jailors are crossed trained and work both positions.

F. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	One Watson ergonomic console position with desktop space adjacent. A supervisor jailer position is in an adjoining room.
Space for Additional Consoles #	No
Supervisor Console or Office	Dispatch supervisor - No
CAD System	Access database
CAD Interface to State	No
CAD Interface to 911	No
CAD Interface to RMS	No / RMS has interface to State
CAD Interface to Warrants	No
RMS System	Masys / Positron
Jail Management	No – Jail has 12 beds.

Civil Process	Access Database
Mapping System	Geo Lynx
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Frontier
911 Alternate Routing 1	Wilkin County
911 Alternate Routing 2	None
Administrative Telephone System	Unk
Instant Recall - Radio	
Instant Recall - Telephone	CML
Radio / Phone Recorder (Age & Channels)	Mactek System – to be replaced
Mobile Data	No
Radio Console	Zetron – one position - Version 1.6.14
Weather Monitor	Yes
Peripheral Equipment	Printers, copier, fax, shredder
Building Fire Alarm	Yes
Alarms – All Others	Via Telephone
Cable/Satellite TV Monitor	Yes
Generator Monitor	Yes
Siren Control	Yes
Sirens Controlled via Radio/Wire Line	Radio
Locations of Sirens	Wheaton (4), Browns Valley (1), Dumont, Tintah (1)
LAN	100 Mbps, MS 2003 Server,
WAN	VPN – Browns Valley, CJDN slow speeds
EOC	None at this time

G. Radio System

The Traverse County radio system is a VHF conventional wideband radio system. The Sheriff's transmitter/receiver is located at the tower adjacent to the Law Enforcement Center. There are repeaters located in Tintah, Dumont, and Easter, which are for the Browns Valley area and are used for local police and fire departments and for paging. The County also has point-to-point and MNSEF. For further details, refer to the Traverse County GeoComm radio study.

H. ARMER

The budgetary estimate prepared by GeoComm for Traverse County was \$758,400 for a radio console, portable and mobile radios, microwave link, and control stations. GeoComm listed an additional cost of \$189,264 for a base repeater, contingency escrow, and consulting fees. GeoComm also provided reduced inventory pricing at \$586,900 with an optional cost of \$153,249 for repeaters, contingency escrow, and consulting fees.

5.10 WADENA COUNTY

A. PSAP Location

The PSAP is located in the Wadena Courthouse at 415 South Jefferson Street, Wadena, MN. The building exterior is concrete, and the PSAP is within the interior of the building. The building windows are not impact resistant.

B. Vulnerability

The courthouse is located adjacent to Hwy 71 (Jefferson Street) on the edge of the downtown area. Parking is available on South Jefferson next to the building, and a parking lot is located on the north side of the building. On the west side of the building is an alleyway separating residential homes and the courthouse. There is no fencing or barriers to prevent vehicles from approaching the building. The ground elevation is approximately 1,350 feet and is not prone to flooding. The Courthouse is approximately five blocks from the railroad tracks located on the south side of Highway 10. On the west side of the intersection of Hwy 71 and Hwy10, there are two storage facilities with multiple above ground tanks for fuel and gasoline. There are also two 30,000-gallon tanks of propane just to the west of the fuel tanks. The fuel storage and propane tanks are located adjacent to the railroad tracks. Estimated train speeds observed are between 40 to 45mph through town. There are also fuel and propane storage tanks on the east end of town on Highway10 approximately 1.4 miles from Hwy 71. The tanks appear to have a total capacity of 50,000 gallons of propane and 125,000 gallons of fuel and gasoline. The existing location and building would be classified as a high risk.

C. PSAP – Dispatch Facility

The dispatch facility is located on the lower level and occupies a space of approximately 252 square feet. The room is rectangular in shape with two doors, concrete block walls, standard ceiling tile, and concrete floor with carpet. There are three windows into an adjacent hallway that are impact resistant. The windows are equipped with blinds and the room is lighted with florescent lighting. The room is on a separate air conditioning system and is not equipped with fire sprinklers. The jail area does have a fire sprinkler system. The room has access control with electric locks. There is an adjacent bathroom but no locker room, break room, training room, work room, or lunch room convenient to dispatchers. The technical closet for data and servers is across from the Sheriff's office. The radio transmitters/receivers are located in the penthouse of the courthouse. The police department is utilized as a backup location for dispatch operations. Currently there is no EOC set up for operations.

D. Dispatch Equipment

The room has an in-building alarm system, panic alarm system, fire alarm, cable TV, printer, fax, and generator monitor. The dispatchers monitor

security cameras for building and jail areas. The dispatch workstations are equipped with CAD, radio console, and 911. The third station has the CAD, mapping, and jail control. Communications are recorded with a Voice Point International recorder.

E. Dispatch Function

The dispatchers function as call takers, dispatchers, and jailors and are all cross trained in their duties.

F. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	The dispatch center is equipped with two Watson ergonomic work stations and one jailer position with a fixed counter.
Space for Additional Consoles #	None
Supervisor Console or Office	None
CAD System	CIS
CAD Interface to State	Yes
CAD Interface to 911	No
CAD Interface to RMS	Yes
CAD Interface to Warrants	Yes – Warrants on file in dispatch
RMS System	CIS
Jail Management	CIS
Civil Process	CIS
Mapping System	Pro West – Arc View - GIS9 Interfaced to CAD
911 System Mfg	Zetron
Number of 911 Trunk Lines	4 trunks
911 Telephone Company	Qwest
911 Alternate Routing 1	Otter Tail County
911 Alternate Routing 2	Todd County
Administrative Telephone System	Two administrative lines
Instant Recall – Radio	Zetron
Instant Recall – Telephone	
Radio / Phone Recorder (Age & Channels)	Voice Point International
Mobile Data	Yes
Radio Console	Zetron
Weather Monitor	Weather radio and monitor cable TV
Peripheral Equipment	Ethernet printer, printer fax combination, and copier in adjacent room. Shredder available.
Building Fire Alarm	Yes, with panel in dispatch
Alarms – All Others	Some business alarms and all others via telephone
Cable/Satellite TV Monitor	Cable TV

Generator Monitor	In dispatch center
Siren Control	Controlled via radio console
Sirens Controlled via Radio/Wire Line	All sirens are radio controlled.
Locations of Sirens	Wadena (2), Sebeka (1), Verndale (1)
LAN	Microsoft w/server 2003
WAN	MNet 10 MB to Brainerd – can be slow at times

G. Radio System

The County uses a VHF conventional wideband radio system with transmitters at the Law Enforcement Center and six remote sites. The sites are at Verndale, Wadena, Menaha, Sebeka, and the municipal building in Wadena. Four sites (Menaha, Sebeka, Verndale, and Wadena) have repeaters for law enforcement. The system supports law enforcement, fire, bus services, corrections, EMS, schools, and other county services. See ARMER study prepared by GeoComm for further details.

H. ARMER

The budgetary estimate prepared by GeoComm for Wadena County was a total of \$4,219,367 with an annual maintenance of \$146,640. The breakdown of costs is as follows: radio consoles with logger were \$479,000; mobile radios \$267,200; portable radios \$210,000; microwave links \$340,000; control stations and repeaters \$154,000; paging equipment \$107,138; training \$15,000; ARMER additional sites and equipment \$1,797,000; and contingency, consulting, licensing, and miscellaneous cost make up the remainder.

5.11 WILKIN COUNTY

A. PSAP Location

The PSAP is located in the Wilkin County Courthouse at 515 Dacotah Avenue, Breckenridge, MN. The building exterior is concrete, and the PSAP is within the interior of the building.

B. Vulnerability

The County Courthouse is located approximately two blocks from the downtown area or 1,000 feet south of Hwy 12 (Minnesota Avenue) and on Hwy 75 and Hwy 9 (5th street). The area around the courthouse is residential. An east west railroad is about 700 feet north of the courthouse. There is a propane storage facility less than one mile southwest of the courthouse on Hwy 75. The facility has one 20,000 and one 30,000 gal propane tanks. The courthouse and city area are prone to flooding from the Red River, but some diversions have been put in place since the flood of 1997. There are parking lots on the northeastern and east side of the building. There is no fencing or

barriers to protect the building from vehicles. The building is constructed of concrete and has three levels. This would be considered a high risk building.

C. PSAP – Dispatch Facility

The dispatch center and equipment room is on the ground level of the courthouse. The dispatch center is a combination dispatch center and backup jail control. There is a primary jail control room. The room encompasses approximately 560 square feet. The walls are constructed with cement block and the room has a concrete floor and standard ceiling tile. The windows are impact resistant and the room has windows on three sides. The room contains one ergonomic dispatch work station and counters for jail control and other equipment. The dispatch supervisor's desk is located within the dispatch area. The building has a fire alarm and sprinkler system with the monitor in the dispatch center. The room is equipped with access control and there are CCTV monitors for cameras located in the interior and exterior of the building. The room HVAC operates well, although there is no control in the room. There is an adjacent bathroom and a kitchen sink, coffee maker, microwave, toaster, and refrigerator for the dispatchers' use located in the room. The servers and radio console equipment are located in the data room on the main level. A tower is located next to the courthouse for radio communications. There is no backup dispatch center.

D. Technology Table

Dispatch Equipment	
Number of Dispatch Consoles	One ergonomic Watson
Space for Additional Consoles #	Yes, with remodeling
Supervisor Console or Office	Yes
CAD System	None
CAD Interface to State	No
CAD Interface to 911	No
CAD Interface to RMS	No
CAD Interface to Warrants	No
RMS System	Enforces
Jail Management	Enforces
Civil Process	Home Grown
Mapping System	Geo Lynx
911 System Mfg	CML
Number of 911 Trunk Lines	Four
911 Telephone Company	Qwest
911 Alternate Routing 1	Otter Tail
911 Alternate Routing 2	None
Administrative Telephone System	NEC
Instant Recall – Radio	None – will be set up
Instant Recall – Telephone	None – will be set up

Radio / Phone Recorder (Age & Channels)	Cyber Tech
Mobile Data	No
Radio Console	Motorola MCC5500
Weather Monitor	Cable
Peripheral Equipment	Printers, shredder, backup radio
Building Fire Alarm	Yes; panic in county departments and lift stations and WD
Alarms – All Others	Via telephone
Cable/Satellite TV Monitor	Yes – Cable
Generator Monitor	Yes
Siren Control	Yes – Radio console
Sirens Controlled via Radio/Wire Line	Radio
Locations of Sirens	Breckenridge (4), Campbell (1) Fairmont (1), Foxhome (1)
LAN	10/100 Mbps – Server MS 2003
WAN	CJDN

E. Radio System

The County uses a VHF conventional wideband radio system consisting of repeaters at the Law Enforcement Center and Breckenridge Water Tower. The County fire is dispatched from LEC and Wolverton Water Tower. See GeoComm's study report for further details.

F. ARMER

The budgetary estimate prepared by GeoComm for Wilkin County was a total of \$2,540,000, with an annual maintenance cost of \$92,540. The breakdown of costs is as follows: radio consoles \$377,000; mobile radios \$289,700; portable radios \$179,500; microwave links \$170,000; control stations and repeaters \$183,000; and paging equipment \$138,330. Additional ARMER sites and equipment account for \$734,000; and contingency, consulting, licensing, and miscellaneous cost make up the remainder. Training was not included, but is estimated at \$12,500. Siren upgrade costs were also not included and the cost is unknown at this time. This cost is usually paid for by the community where the sirens are located.

Section 6 - TECHNOLOGY REQUIREMENTS

6.01 CAD/RMS

The majority of the counties would like to migrate to the CIS public safety software that is currently being used in Douglas, Otter Tail, and Wadena Counties and share a common CAD/RMS server platform. One primary set of servers may be located in one county and redundant or backup servers may be located in another county in the event of a failure of the primary site. The counties have received pricing from CIS and are not included within this report. In addition, bandwidth estimates need to be made to ensure there is enough bandwidth in the MNet. Prior to any consolidation, the CAD/RMS/mobile data software needs a complete review to determine if it will meet the needs of a consolidated group or all the major functions. Will CAD perform as a multi-jurisdiction system? What data in the RMS will be shared with others, and how? Will the mobile data system provide the necessary reporting requirements for each entity? How do the backup or redundant CAD servers work and come online? CAD and 911 are the most important tools the dispatchers have, and they need to work 100% of the time. All systems need to be thoroughly tested before being brought online.

6.02 911 SELECTIVE ROUTERS

The existing 911 call distribution is served by selective routers located throughout the state. IES has seven selective routers serving 60 counties, and Qwest has five selective routers serving 27 counties. Nine of the ten counties in this study are served by one IES selective router. The County of Lac qui Parle is on a different router, but if a consolidation were to occur, the 911 calls will need to be rerouted through a different selective router if the telephone company has trunks into the selective router. It may also be possible to route the calls over the inter-tandem trunks to the new router.

6.03 911 SYSTEMS

All ten counties currently have CML 911 equipment. The CML 911 systems are near end of life and are not capable of moving to next generation 911 and will need to be replaced. The replacement cost depends on the number of work stations, options, and maintenance plan. See table for costs.

6.04 LOGGING RECORDERS

Logging recorders are required to preserve radio transmissions, 911 calls, and administrative calls, all of which may have different formats and recording requirements. In addition, an instant playback is required for dispatchers for reviewing or retrieving information immediately after a call. The administrative phone system may be digital, the 911 analog, and the radio system may be either digital or analog depending on the system. Radio consoles such as the Motorola Gold Elite, Zetron, Tait, and Harris all have some type of an ATIA server that the recording device is attached to. The Motorola MCC7500 uses an Archiving Interface Server (AIS) to provide the data connection to a recorder. The Motorola

uses a NICE recorder provided by Motorola. The NICE recorder supports up to 120 simultaneous transmissions and up to 256 talk groups depending on encryption. A second AIS may be added if the requirement is beyond the 120 simultaneous recordings or 256 talk groups. The NICE recorder will record only the radio traffic and not the 911 or administrative telephones. A second recorder must be in place, and both recorders then send the recordings to a storage and retrieval unit for access in a logical sequence. Another recorder manufactured by Cybertech can be used to capture all of the recording on one device. Motorola will charge a license fee to connect to the AIS server, and as we understand it, approval is on a case by case basis based upon compelling need.

6.05 NETWORK – LAN – CJDN

Each of the counties has internal networks to handle connectivity within the county departments and connections to the Criminal Justice Data Network (CJDN) and the Minnesota network (MNet). The MNet is used for all criminal justice reporting and inquiries to the State and NCIC and also used by social services and courts.

The MNet has hubs located throughout the state, with hubs and spurs from the hubs to the counties. The following chart indicates the city where the hub is located and bandwidth to the county.

Hub	City /County
Fergus Falls	Fergus Falls / Otter Tail
Fergus Falls	Breckenridge / Wilkin
Morris	Elbow Lake / Grant
Morris	Wheaton / Traverse
Morris	Morris / Stevens
Morris	Madison / Lac qui Parle
Morris	Glenwood / Pope
Alexandria	Alexandria / Douglas
Alexandria	Long Prairie / Todd
Brainerd	Wadena / Wadena

The following table was provided by the Office of Enterprise Technology by request for this study.

	Current Connection (access circuit capacity)	Access Type	Aver. BW (Mbps)	Peak BW (Mbps)	Current Cost to County	Current Total Cost (Note 3)
Douglas County	100.0	100 Mbps Ethernet	1.8	43.0	\$ 900.00	\$ 2,775
Grant County	3.0	2xT1	1.0	2.2	\$ 900.00	\$ 3,404
Lac Qui Parle County	1.5	1xT1 (Note 1)	1.0	1.4	\$ 300.00	\$ 2,882
Otter Tail County	4.5	3xT1 (Note 2)	3.0	3.5	\$ 1,200.00	\$ 3,743
Pope County	1.5	1xT1 (Note 1)	0.9	1.4	\$ 600.00	\$ 1,958
Stevens County	3.0	2xT1	1.5	3.0	\$ 600.00	\$ 2,346
Todd County	1.5	1xT1	1.0	1.5	\$ 600.00	\$ 2,356
Traverse County	1.5	1xT1 (Note 4)	1.0	1.5	\$ 300.00	\$ 2,159
Wadena County	10.0	10 Mbps Ethernet	3.0	3.5	\$ 900.00	\$ 3,840
Wilkin County	1.5	1xT1	1.4	1.5	\$ 300.00	\$ 1,854
<p>Note 1 - 10 Mbps connection being considered by county board Note 2 - 100 Mbps connection on order Note 3 - Currently the State/County Collaboration Program (SCCP) shares the cost of a managed IP connection to counties to MNET among 86 counties (Hennepin County has its own) Note 4 - We are planning to add another T1 for increased capacity</p>						

6.06 MOBILE DATA

The Counties of Douglas, Ottertail, Todd, and Wadena have mobile data units in their police vehicles with wireless networks provided via the phone companies. Two counties have mobile reporting, and one county has mapping in the vehicle. Mobile data with report writing and mapping are important assets to the public safety sector. With consolidation of CAD/RMS and the possibility of consolidating PSAPs, counties without mobile data should budget for this addition.

Section 7 - NEW FACILITIES

7.01 STEVENS COUNTY – UNDER CONSTRUCTION

Stevens County is currently constructing an addition on to the courthouse that will be the new Sheriff's Office and includes a dispatch center. The new dispatch center will have four dispatch consoles.

7.02 DOUGLAS COUNTY

Douglas County is currently investigating the possibility of a phased plan for a new jail holding area for court, a new dispatch center and EOC, and a new Sheriff's Office. Douglas County is in the process of completing a schematic design and getting cost estimates.

7.03 OTTER TAIL COUNTY

Otter Tail County is discussing options for a new dispatch center. Otter Tail County has a new patrol and EOC facility in the town of Otter Tail. The facility is also used as a regional training center. In reviewing the facility with Sheriff's staff and talking with the building architect, we are confident that an addition to the Otter Tail facility would be one of several possible options. An addition could meet all the FEMA requirements and NFPA standards for a public safety shelter and dispatch center. A rough estimate for a 2,500 square foot addition for the building and equipment will be in the range of \$1,200,000 to \$1,500,000.

Section 8 - RECOMMENDATION

Among the four potential options analyzed in this study, we recommend Option 2A most strongly for consideration by the PCSG. Option 2A involves Otter Tail and Douglas County providing dispatch services for Grant and Pope Counties, respectively. When viewed purely from a fiscal savings perspective, only Option 1A and 2A provide a win-win fiscal benefit for all counties involved.

As noted, the counties that stand to realize the most potential fiscal savings are those that operate a stand-alone dispatch center, including Douglas, Otter Tail, Grant, Pope, and Stevens. Given the relative larger size of the dispatch center operations, we considered Otter Tail and Douglas County to provide the most feasible locations for the providing dispatch services to one or more other counties. While Stevens County was also considered as a host county, Stevens County's current smaller shift staffing pattern (when compared to Otter Tail and Douglas) is not sufficient to absorb call volume without increasing the number of dispatch posts, and therefore operating costs. Similarly, all other counties except Douglas and Otter Tail operate their dispatch centers with one dispatcher on duty on each shift on a typical day. Absorbing the call volume from one or more other counties would require additional staffing for all of these counties, which limits the business case for options other than 2A and 1A.

Option 1A also offers significant financial benefits to the five counties currently operating stand-alone dispatch centers, but we believe this option is less feasible because it involves Stevens County ceasing dispatch operations and consolidating with Otter Tail. Given the significant effort and investment made by Stevens County in the new courthouse, including dispatch center, it may be less feasible for the County to cease dispatch operations at this point in time.

While a strong business case appears in Option 2A, there are other success factors to consider and to overcome for this option to be successful. Specifically, in the case of Grant County, concerns about local control and service delivery will need to be addressed. In the case of Pope County, there does not appear to be a particularly robust track record of cooperation thus far with Douglas County. In both of these cases, consolidation is possible only if these issues can be overcome. The County Boards, Sheriffs, and other stakeholders in all four of the counties involved will need to balance the potential fiscal benefits against the potential risks involved in implementation.

Options 1B and 2B involve some counties (primarily those with smaller avoided system costs) potentially incurring *negative* fiscal impacts under consolidation due to the loss of E911 revenue. Clearly, for a consolidation effort to make sense, it must be a win-win situation.

Section 9 - CONSOLIDATION PLAN

A multitude of steps and actions must be taken for an actual consolidation to take place. One major step is to overcome stakeholders' concern and skepticism about consolidations providing the level of service they are now providing. Will they provide the level of service needed? Do they know the local hot spots, the roads and business locations, the habitual offenders, the chronic callers, etc.? With a good governance plan, training, computer aided dispatch, mapping, shared data, good communications, clear roles and responsibilities, operational feedback, and good management and support staff, the consolidation will be successful. Nonsupport by staff members, including Sheriffs, Chief Deputies, and Dispatch Supervisors, can harm or prevent a successful consolidation.

This study is the first step for a possible consolidation. The second step is organizational and implementation planning and the third is implementation. The following is a list of steps for each county to take. (This list is not all inclusive.)

- Discuss consolidation within the agency.
- Make the decision to participate.
- Discuss and decide whether the county will accept another entity.
- Make a public announcement and seek support for consolidation.
- Decide on governance between entities.
- Decide on cost sharing between entities.
- Conduct financial planning and develop a budget.
- Form groups for each consolidation to discuss dispatch policies and procedures.
- Develop new standards for policy and procedures.
- Review and revise radio consoles decisions and control stations for non-dispatch centers.
- Revise ARMER Participation Plan and seek necessary approvals.
- Discuss the wide area network with IT and OET.
- Discuss administrative telephones and after-hours answering.
- Discuss CCTV and alarms for entities that will not have personnel on duty.
- Make decisions about CAD/RMS and mobile data.
- Decide upon radio design for paging and siren control.
- Ensure adequate facilities and working conditions, including lighting, bathrooms, break rooms, and HVAC.

- Provide dispatcher training, including training on new systems and geography.
- Organize dispatcher visits and tours of unknown areas or provide a ride-along program.
- Provide EMD training.
- Provide field personnel training.
- Introduce and train the dispatchers and field personnel.
- Back up facilities.
- Make decisions on personnel issues – addition or reduction of employees.
- Upgrade CAD/RMS to multi-agency.
- Publish and release an RFP for upgrading 911 to next generation VoIP.
- Publish and release an RFP for upgrading radio console.
- Publish and release an RFP for recording system.
- Install new equipment and conduct testing and acceptance.
- Manage implementation.

Section 10 - APPENDIX

10.01 BUDGET AND EXPENDITURE SUMMARY

This chart shows how the calculations were made for the projected and avoided costs for each option.

County	10-Year Estimated Annual Operating Costs Less Revenues ²	10-Year Avoidable Operating Costs ³	Avoidable System Expenditures (ARMER and 911) ⁴
Douglas	\$ 5,736,404	\$ 5,525,668	\$ 1,539,851
Grant ¹	\$ 3,344,200	\$ 3,344,200	\$ 1,049,888
Lac qui Parle ^{1, 5, 7}	\$ (244,639)	\$ (248,239)	\$ 667,779
Otter Tail ¹	\$ 3,508,238	\$ 3,433,737	\$ 1,404,989
Pope ¹ (No “Mini Jail”)	\$ 2,305,968	\$ 2,266,516	\$ 790,538
Pope ^{1, 6, 7} (with “Mini Jail”)	\$ 2,305,968	\$ (261,977)	\$ 790,538
Stevens ¹	\$ 1,777,344	\$ 1,477,202	\$ 1,285,032
Todd ^{1, 7}	\$ 3,986,745	\$ (298,357)	\$ 733,272
Traverse ^{1, 7}	\$ 2,643,563	\$ (186,188)	\$ 923,671
Wadena ^{1, 7}	\$ 3,390,408	\$ (202,715)	\$ 1,324,799
Wilkin ^{1, 7}	\$ 2,708,307	\$ (244,211)	\$ 1,148,441

¹Depreciation costs estimated or not available

²Annual operating costs include personnel, planned capital purchases, other operating costs, E911 expenditures, and depreciation. Revenues include E911 revenues and partner cost sharing (i.e., municipalities).

³Avoidable operating costs include non-correctional officer/dispatch staff, and depreciation.

⁴Estimated ARMER costs associated with dispatch operations—does not include total ARMER costs for subscriber units and system architecture that would remain regardless of whether county maintains a dispatch center.

⁵Lac qui Parle does not maintain separate dispatch budget: E911 revenues are greater than recorded dispatch expenditures, hence the negative value (credit).

⁶Should Pope County construct a “Mini Jail,” consolidating dispatch functions will result in an overall net loss in operating expenditures due to loss of E911 revenues (excluding avoidable system expenditures).

⁷Dispatch function is integral to jail operations in these counties—consolidation of dispatch function would result in an overall net loss in operating expenditures due to loss of E911 revenues (excluding avoidable system expenditures).

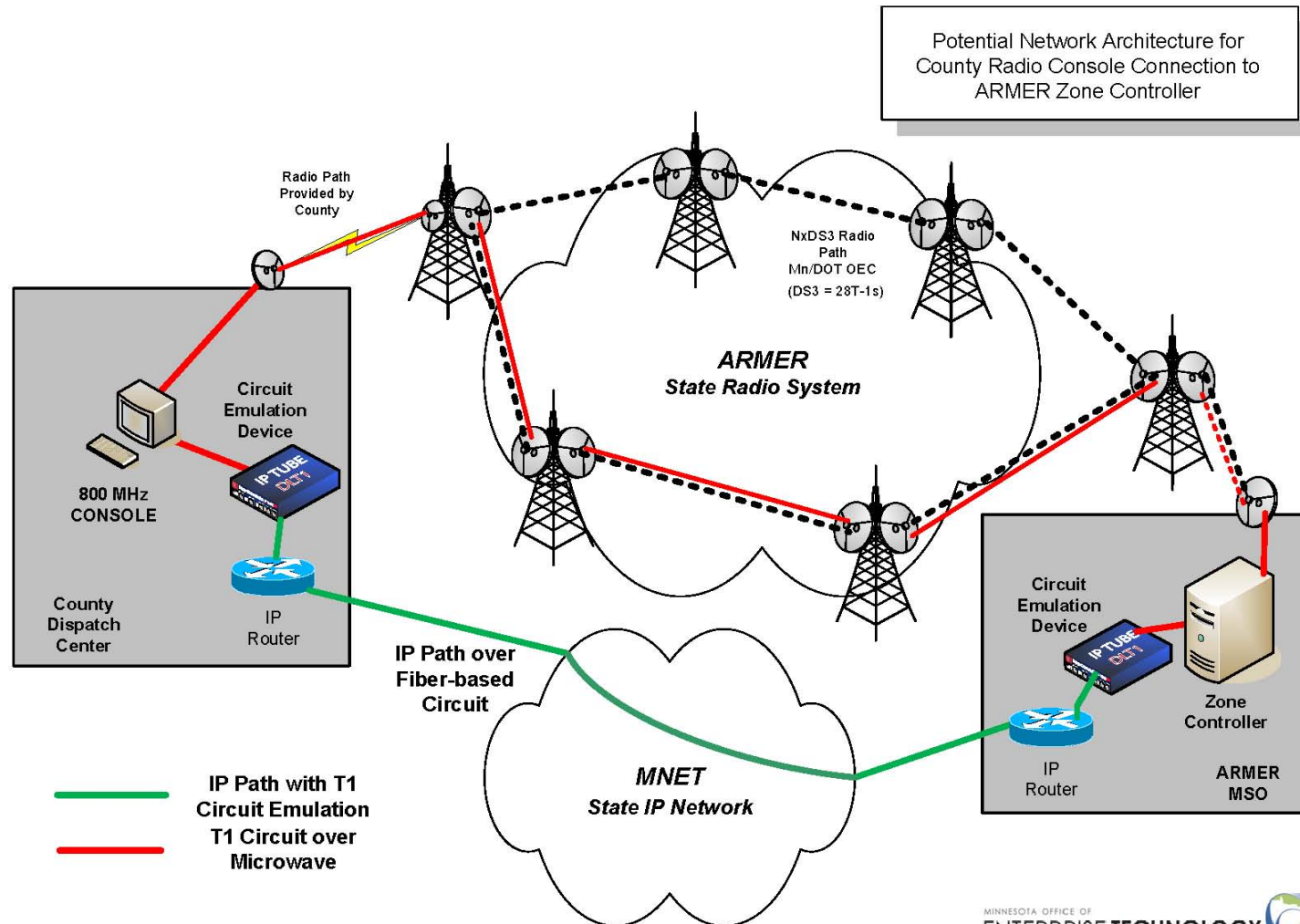
10.02 BUDGET AND EXPENDITURE SUMMARY

This chart indicates how the cost breakouts were calculated.

County	ARMER Total	ARMER Avoidable	911 System
Douglas	\$ 4,479,670	\$ 1,275,138	\$ 264,713
Grant	\$ 2,896,059	\$ 829,920	\$ 219,968
Lac qui Parle	\$ 2,100,000	\$ 447,811	\$ 219,968
Otter Tail	\$ 8,020,134	\$ 1,140,276	\$ 264,713
Pope	\$ 2,599,641	\$ 570,570	\$ 219,968
Stevens	\$ 2,314,180	\$ 1,065,064	\$ 219,968
Todd	\$ 3,112,200	\$ 468,559	\$ 264,713
Traverse	\$ 1,301,330	\$ 703,703	\$ 219,968
Wadena	\$ 7,295,286	\$ 1,104,831	\$ 219,968
Wilkin	\$ 4,386,326	\$ 928,473	\$ 219,968

10.03 PUBLIC SAFETY NETWORK INTEGRATION AND MNET

The following documents were provided by the Office of Enterprise Technology.



Potential Network Architecture for County Radio Console Connection to ARMER Zone Controller

— IP Path with T1 Circuit Emulation
— T1 Circuit over Microwave

MINNESOTA OFFICE OF ENTERPRISE TECHNOLOGY
 oet.stg@mn.us

Circuit Emulation Example

18 May 2010	Version 1.1	Drawn M/MN
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High-Availability Network Architecture
for
County and State Public Safety Applications

