2014-103

BOARD OF COUNTY COMMISSIONERS SARPY COUNTY, NEBRASKA

RESOLUTION OF INTENT REGARDING JOINT AND COOPERATIVE COMMUNICATIONS SERVICES (Amended 2)

WHEREAS, pursuant to Neb. Rev. Stat. § 23-104 (Reissue 2012), the County has the power to do all acts in relation to the concerns of the County necessary to the exercise of its corporate powers; and,

WHEREAS, pursuant to Neb. Rev. Stat. § 23-103 (Reissue 2012), the powers of the County as a body are exercised by the County Board; and,

WHEREAS, pursuant to Neb. Rev. Stat. §13-801 *et seq.* (Reissue 2007), an Interlocal Cooperation Act Agreement has been adopted by the City of Gretna, Nebraska, City of Papillion, Nebraska, City of Bellevue, Nebraska, City of LaVista, Nebraska, City of Springfield, Nebraska, and Sarpy County for the purpose of improving the coordination, cooperation and efficiency of health, safety and welfare services through the single county-wide communications system (Sarpy County Communications System), said Agreement found in the records of the Sarpy County Clerk at Resolution 2011-373 and hereinafter referred to as the "Agreement"; and,

WHEREAS, pursuant to paragraph 4.8 of said Agreement, a study was conducted to determine if the services provided pursuant to the Agreement could be better provided jointly and cooperatively with other public bodies on a regional basis, hereinafter referred to as the "Matrix Study", a copy of which is attached hereto and incorporated by reference; and,

WHEREAS, there have been communications between representatives of Sarpy County, the cities within Sarpy County, the City of Omaha and Douglas County regarding cooperative efforts to provide communication services within their respective jurisdictions, and it is the intent of the Sarpy County Board of Commissioners to formally describe the future actions to be taken towards such efforts.

NOW, THEREFORE, BE IT RESOLVED by the Sarpy County Board of Commissioners that this Board believes that the best interests of the citizens of Sarpy County will best be served by:

1. Virtual Consolidation of the Sarpy and Douglas County communications systems, as such process is described in the Matrix Study.
2. Sarpy County maintaining a dispatch center that is separate and distinct from a similar facility operated by Douglas County or from any joint dispatch center.
3. That the current Agreement be amended so that the cities of Sarpy County will not be required to contribute to the communications system after fiscal year ending in 2017.
4. That a separate entity be formed pursuant to Neb. Rev. Stat. § 86-416 as part of the aforementioned Virtual Consolidation, with the understanding that said entity be terminated as of July 1, 2017, or when the cities of Sarpy County are no longer contributing to the communications system, whichever is sooner.

BE IT FURTHER RESOLVED that the Chair, County Administrator and such other County representatives as may be necessary are hereby directed and authorized to pursue the goals and intent of this Resolution, to negotiate such agreements as may be necessary to achieve the goals of this Resolution, and to report their activities to this Board at intervals of no less than 14 days.

The above and foregoing Resolution was duly approved by a vote of the Sarpy County Board of Commissioners at a public meeting duly held in accordance with applicable law on this 18th day of March, 2014.

Chairman, Sarpy County Board

Sarpy County Clerk

DEBRA J. HOUGHTALING, COUNTY CLERK SEAL SARPY COUNTY, NEBRASKA

E911 STUDY

SARPY COUNTY, NEBRASKA

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February 2014

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The Matrix Consulting Group was retained by Sarpy County, Nebraska to conduct an E911 Study of the current Sarpy County Communications and assess the feasibility of consolidating E911 operations with Douglas County. The focus of the Scope of Services from the County's Request for Proposals was on the following key issues:

- Conduct an inventory of the existing 911 facility, equipment and systems in use.
- Assess the current call volume and dispatch performance.
- Review opportunities for improvement in the organization, staffing and scheduling of the Center.
- Review opportunities to identify improvements to the current operations.
- Assess the feasibility of consolidating dispatch services with other metro Omaha public safety dispatch centers.

The project team began working with the County in the beginning of September 2013, in a process that involved a number of key steps. These included:

- The firm worked with a project steering committee comprised of stakeholder communities and County Management.
- The project team met with the project steering committee in order to kick off the project and explain their role in reviewing our progress related to interim documents.
- Members of the project team engaged in extensive rounds of interviewing. These included interviews with the following:
  - Each member of the Steering Committee.
  - Communications staff at all levels, including conducting sit in interviews in the Communications Center.
  - Sheriff Department Staff

- Fire Department Staff.
- Police Department Staff.
- Numerous City Department heads.
- Douglas County Administrator.
- Douglas County Communications personnel.

Overall, more than 50 people were interviewed as part of this process, providing the project team with a wide variety of viewpoints.

- In an effort to expand upon this inclusiveness, the project team distributed three confidential survey instruments. These included the following:

  - **Sarpy County Communications Staff Survey**: this went to all current employees of the Department. The project team received responses from 29 personnel in the Communications Center.

  - **Sarpy County Communications Customer Survey**: this was distributed to all personnel in the Sheriff, Fire and Police agencies who have regular contact with the dispatch center. This included personnel in Patrol, company officers in the Fire Department and supervisors. A total of 150 responses were received from the user agencies, primarily from the Sheriff and Police Department users.

  - **Comparative Survey**: this instrument was distributed to communications centers that have successfully consolidated and were thought to have been operating for a minimum of 3 years. Eleven consolidated centers were surveyed and each responded to a variety of the questions asked.

- The project team also collected data from a wide range of sources in an effort to understand workloads, service demands and other issues. Examples of the kinds of data collected by the project team include:

  - Calls for service for the Communications Center.
  - Call processing time.
  - Talk-group minutes from the 800 MHz system.
  - Phone data (incoming, outgoing, time per call).
  - Utilization of leave by staff.

- Salary and benefit cost information.

- The project team engaged the Steering Committee in a process by which interim documents were reviewed and discussed. This approach was utilized by the Matrix Consulting Group to ensure the factual basis for our analyses, to review issues and the various surveys and to review this report as a draft.

The next section provides a summary of our key findings, analyses, and recommendations.

Executive Summary

The County was most interested in determining the feasibility of consolidating E911 dispatch services and whether the potential for cost savings and improved service delivery from a consolidated approach. There was also a desire to ensure the Communications center was performing according to industry best practices and to identify areas for improvement for the current center operations. It is important to note that the Communications Center has recently taken a number of steps to improve management and operations. These steps include removing the ancillary duties of emergency management from the Center Director and improving the new employee training program. It is also important to note that many of the project team's recommendations depend on adequate staffing to achieve the recommended change and to improve operations.

It should also be noted that the project team found that the success of the Communications Division is largely predicated on the relationships between the Communications Center management Sarpy County and the client agencies. The agencies need to continue to work together to establish agreed upon performance standards for all agencies so dispatch center personnel have one set of standards from which to work and be held accountable to.

The table, which follows, provides a summary of our findings, recommendations, fiscal impact and our assessment of the priority for addressing each issue.

Reference	Finding	Recommendation	Priority	Fiscal Impact
Page 28	The governance committee is not effectively utilized for dealing with operational priorities.	The governance committee should be utilized more effectively as a forum to discuss key policy and budgetary issues between Sarpy County and the user agencies.	Medium	None
Page 32	The Communications Center does not have clearly defined performance measures for the dispatching of critical calls.	The County should adopt formal performance measures for dispatching high priority police and fire calls at 90 seconds or less 90% of the time. The quality assurance process should focus on dispatcher performance related to meeting established time standards.	Medium	None
Page 33	The Communications Center is not processing 911 emergency calls in a timely fashion. The only quality assurance review occurring relates to reviewing EMD calls for adherence to established protocols.	The Center should focus on addressing the call processing time and improving performance. Lead dispatchers should be tasked with monitoring the performance of dispatch center personnel.	High	None
Page 38	The current staffing of shift personnel in the dispatch center is appropriate given the workload demands of the center.	Continue to authorize 33 shift positions to the Communications Center. Filling vacancies within the Communications Center should continue to be a priority for the County.	High	None

Reference	Finding	Recommendation	Priority	Fiscal Impact
Pages 39 - 42	The current staffing of administrative and support personnel in the Communications Center is appropriate.	Continue with the current staffing plan for administrative and support positions in the Center.	High	None
Page 59	Sarpy and Douglas County have taken many steps to regionalize the use of equipment and technology in their respective Dispatch Centers.	Sarpy and Douglas County should explore opportunities to consolidate the emergency communications centers in a virtual or fully consolidated approach. Regardless of the decision to consolidate, Sarpy County should connect to the Douglas County ORION system as a subscriber.	High	Sale of current system estimated ($500,000).

The following chapters include the project team's analysis of the current organization and feasibility of consolidating emergency communications operations.

2. EXISTING EMERGENCY COMMUNICATIONS IN SARPY AND DOUGLAS COUNTIES

This chapter discusses the existing Emergency Communications in Sarpy and Douglas Counties; including staffing, infrastructure and technology utilized by the agencies to provide services to their customers. The purpose of this descriptive profile is to document the project team's understanding of these Public Safety Answering Points' (PSAP) governance, organization, allocation of staff by unit and function, and principal assigned roles and responsibilities of staff. Data contained in this section were developed based on the work conducted by the project team over course of the project, including:

- Interviews with supervisory and staff positions on location at both PSAPs including managers, supervisors, dispatchers, etc.
- Interviews with numerous executive representatives of the Counties.
- Collection of various data describing organization and staffing, workload and service levels as well as costs. These efforts will continue, as necessary, until development of the Draft Report.
- Documentation of key practices as that relates to work planning and scheduling, policies and procedures, as well as work processes.

The Descriptive Profile does not attempt to recapitulate all organizational and operational facets of the PSAPs; our work continues to document these characteristics. In this draft document, the structure of this Descriptive Profile is as follows:

- Description of staff positions, by classification, and description of appropriate reporting relationships.
- Summary descriptions of key roles and responsibilities of staff. The responsibility descriptions provided in the Descriptive Profile also summarize the team's understanding of the major programs and service activities to which staff are

currently assigned. It should be clearly noted that responsibility descriptions are not intended to be at the "job description" level of detail. Rather, the descriptions are intended to provide the basic nature of the job and include deployment and work schedules, major duties and responsibilities, and the like.

- Primary operational data describing work characteristics currently collected and associated with each PSAP. These are not yet all-inclusive, but represent many important data elements.

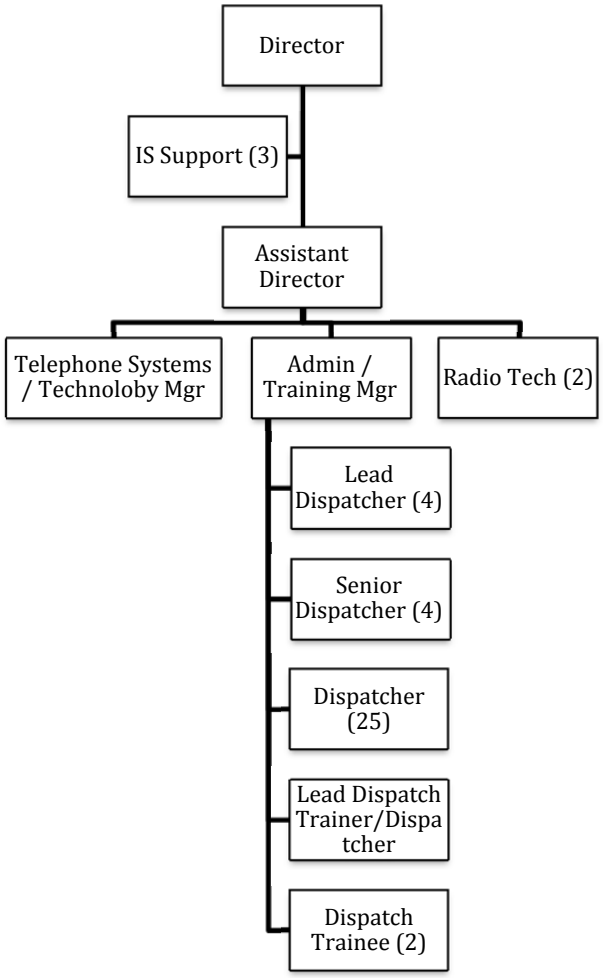
This information was reviewed for accuracy and completeness by relevant staff at each PSAP and members of the Steering Committee. Comments and corrections generated from staff reviews have been incorporated into this report.

2. SARPY COUNTY

The following provides an overview of the organization, staffing and responsibilities of the Sarpy County Communications Center.

(1) Sarpy County Organizational Structure

The following reflects the authorized staffing levels and organizational structure for the Sarpy County Communications Center. In addition to the full time personnel shown below, the agency also utilizes part-time personnel to staff the center as needed.



(2) Sarpy County Staff Positions

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Director	1	1	The Director, who reports to the County Administrator for day-to-day direction, performs organizational oversight of the Communications Center through the day-to-day reporting to the County Administrator. The Director is an appointed administrative position reporting directly to the County Board. The Director directly manages the department, The Assistant Director and IS support positions are direct reports to the Director. In the absence of the Assistant Director, the position provides day-to-day administrative oversight in addition to providing broader feedback relative to budget, operations, technologies, and organizational issues impacting the Department. This position is also responsible for strategic planning and regional 911 planning.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
IS Support	3	3	1 full time person is responsible for data related to the operation of the communications center. These positions install and maintain the CAD software, law enforcement management software (LRMS), fire records management systems, mobile data computer software, NCIC software, provide support for E-911 mapping and coordinate the upgrading of existing computer systems.
Assistant Director	1	1	The Assistant Director reports to the Director as the operations manager for the 911 Center. This position provides the day-to-day operational support to the Communications Center. This position also serves as the Terminal Agency Coordinator (TAC)
Telephone Systems and Technology Mgr.	1	1	This position reports to the Director and is responsible for the 911 telephone system. Administers and maintains the 9-1-1 telephone switch including analyzing user requests and issues; and consults with users and vendors to provide viable solutions. Builds, updates, changes, and maintains records for the 9-1-1 telephone switch; analyzes, determines, and fixes 9-1-1 telephone switch problems as able. Maintains the Master Street Address Guide (MSAG) for E-911. Compiles and analyzes reports showing 9-1-1 trunk usage and compiles reports from CAS (Call Accounting System) and the Positron MIS reporting software. Administrative duties of preparing Court recordings and appears in court. Back up in the payroll software.
Radio Technician	2	2	Two radio technicians report to the Director and serve as the maintenance arm of the center related to maintaining the radio, HPD, phones and systems associated with the E-911 center.
Administrative and Training Mgr.	1	1	The administrative and training manager develops, schedules and coordinates the training activities of the center related to new hire training and ongoing continual education. This position also updates center policy and procedures as required. The position reports directly to the Assistant Director.

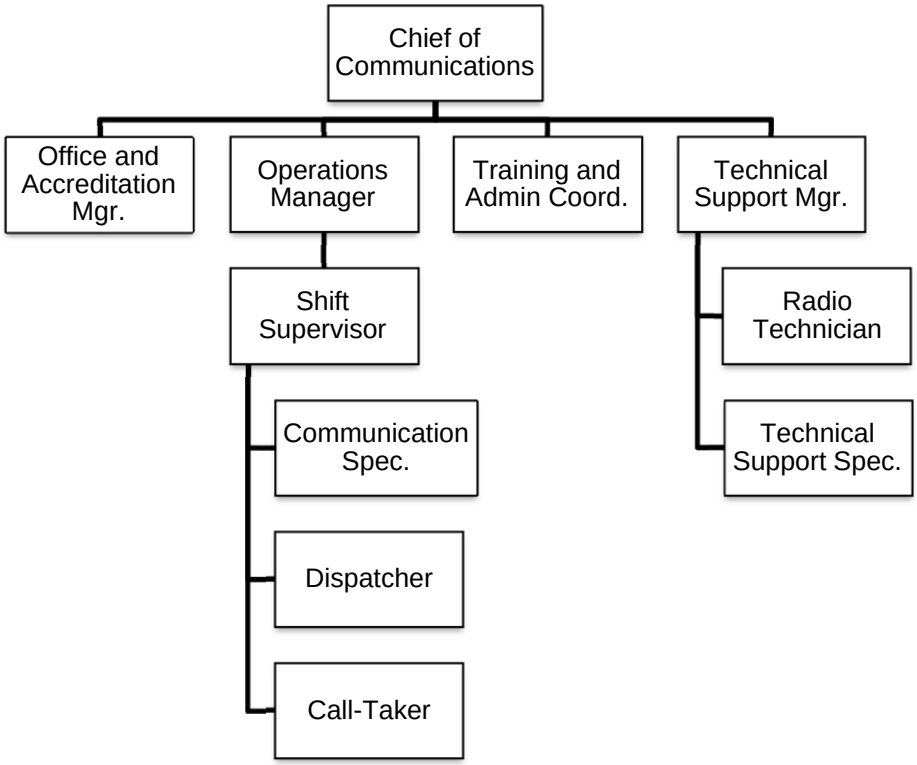
Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Lead Dispatcher Senior Dispatcher Dispatcher Trainer / Lead Trainer Dispatcher	4 4 25	4 4 20	The Lead Dispatcher is responsible for overseeing the day-to-day operations of the Communications Unit including staffing and operation. Responsible for all administrative supervision of Communications Unit including recruitment and hiring, training coordination, shift scheduling, shift and payroll data preparation, and employee evaluations. This position also handles employee recognition and discipline (investigates complaints and makes discipline recommendations). The Senior dispatcher position steps up to the lead dispatcher role in the absence of the lead dispatcher. All Telecommunicator positions report directly to Assistant Director. These personnel answer and process emergency and non-emergency phone calls. Initiate computer aided dispatch (CAD) calls for service. Assigns and dispatches appropriate police, fire, EMS and City units to calls for service and provide Emergency Medical Dispatch (EMD). Monitors the status of beat assignments of each on-duty unit to enable efficient assignment of call and to help assure the safety of personnel. Performs entries and queries into local, state and federal databases. Handles walk-in requests for service. Answers and processes phone calls for other City services after hours, on weekends and on holidays. Routs callers to appropriate voice mail or takes phone messages. The Communications Unit dispatches the Sarpy County Sheriff, La Vista PD and Fire, Bellevue PD and Fire and Papillion PD and Fire, Gretna Fire and Rescue and Springfield Fire and Rescue.
TOTAL	42	37	

3. DOUGLAS COUNTY

The following provides an overview of the organization, staffing and responsibilities of the Douglas County Communications Department.

(1) Douglas County Organizational Structure

The following reflects the authorized staffing levels and organizational structure for Douglas County Communications Department.



(2) Douglas County Staff Positions

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Chief of Communications	1.0	1.0	The Chief of Communications reports to the Chief County Administrative Officer and the County Board of Commissioners. This position is responsible for the overall operation of the Communications Department and 911 system. The position establishes the short and long-term goals of the organization, administers personnel functions and serves as the custodian of 911 records.
Operations Manager	1.0	1.0	Reports to the Chief of Communications. Supervises and directs the work of employees in the operations division of the Communications Department. Responsible for the integration of new technology, drafting of purchasing orders, preparing records for court, investigating complaints against the operations or policies of the Center and ensures training programs meet the needs of the Center.
Technical Support Manager	1.0	1.0	The Technical Support Manager reports directly to the Chief of Communications. This position is responsible for the selection, design, development, implementation and maintenance of all computer and telephone hardware and software systems utilized by the Center. Supervises the Radio Technician and Technical Support Specialist.
Radio Technician	1.0	1.0	This position reports to the Technical Support Manager. The position is responsible for installing, programing, testing calibrating, repairing and managing the radio communications network of the Communications Center. This includes the mobile data network, radios, computer systems and other electronic equipment. The position is also responsible for updating GIS mapping files and assisting other technical support staff with required upgrades and maintenance of the CAD, telephone, radio and computer hardware utilized in the Center.
Technical Support Specialist	1.0	1.0	This position reports the Technical Support Manager. The position is responsible for the day-to-day maintenance and operation of the technical support systems for the Communications Center and the service area of the County. This position is responsible for ensuring continual operation of technical facilities supporting the mission critical services of the agency.
Office and Accreditation Manager	1.0	1.0	This position reports to the Chief of Communications. The position provides supervisory and management duties related to the administrative functions of the Communications Department. This position oversees the administrative aspects of the agency including, FMLA, policies, payroll, purchasing and budget. The position is responsible for monitoring the budget and tracking expenditures over an 18-month period. The position also supervises the purchasing and inventory control process to

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
			include receipt and credit from vendors and attorneys. Finally the position serves as the liaison to CALEA and the local accreditation managers related to the accreditation process for their agencies.
Training and Administrative Coordinator	1.0	1.0	Reports to the Chief of Communications. This position is responsible for the implementation, development and monitoring of the agency training program for new hires and incumbents. The position also develops and implements quality control programs to ensure compliance with federal, state and local regulations related to 911 operations.
Shift Supervisor	3.0	4.0	Report to the Operations Manager. This position is responsible for supervising, monitoring and controlling the work of the communication specialists, dispatchers and call-takers in the Communications Center. The position ensures personnel adhere to established policies, rules and regulations. Assists in the development of policies and procedures, coordinates quality control efforts, performs limited maintenance on technical equipment used in the Center.
Communications Specialist	3.0	4.0	Supervised by the Shift Supervisor. This position provides classroom and hands on training for the employees of the Communications Center. The position assists the shift supervisor in coordinating, directing and monitoring the day-to-day operation of the Communications Center and the assigned shift personnel on each shift.
Dispatcher	40.0	36.0	Reports to the Shift Supervisor. This position is responsible for monitoring and operating the Douglas County emergency telephone and radio equipment to ensure the timely dispatching of police, fire and EMS personnel to emergency situations. The Dispatchers maintain the current status of personnel and equipment dispatched to emergency scenes.
911 Operator	17.0	17.0	This position reports to the Shift Supervisor and is responsible for the initial call taking and routing of emergency and non-emergency requests for public safety services. This position process the calls for law enforcement, Fire and EMS services received from the general public and questions the callers to ascertain the nature of the emergency, enter the information into the CAD system and route the caller to the fire/EMS dispatcher as appropriate.
Total	70.0	66.0	

4. SUMMARY OF OPERATIONS

The following section provides separate tables summarizing relevant operational elements of each of the dispatch centers.

(1) Annual Budget

As shown below the annual budget for the Sarpy County Communications Center is $3.73 million, while the annual budget for Douglas County is $7.48 million.

Item	Sarpy County	Douglas County
Annual Budget	The annual budget for Sarpy County in FY 2014 is $3,730,537 broken down into the following four broad categories: • Personnel - $3,302,037 • Operating $177,500 • Supplies/Rent - $74,500 • **Subtotal - $3,554,037** • Capital - $176,500 • **TOTAL - $3,730,537**	The annual budget for Douglas County in FY 2014 is $5,511,094 broken down into the following three broad categories: • Payroll - $5,459,032 • Operating - $1,924,000 • Supplies/Rent - $61,200 • **Subtotal - $7,444,232** • Capital - $31,200 • **TOTAL - $7,475,432**

(2) Technology

The following table illustrates the project team's current understanding of the technology in use in the two Communication Centers:

Technology	Sarpy County	Douglas County	Notes
CAD	Motorola PremierOne (P1) 8 positions	Motorola P1; 11 Positions	CAD hosted by Douglas 911, Sarpy 911 is a remote user off Douglas. Brand new (July 23rd) upgrade of the P1 3.2 version. Washington County is a remote user on the P1 CAD.
Radio System	800 MHz Simulcast 3600 Baud 7.11 CORE 3 Towers, 10 Channels 'Mixed Mode" system SmartX switch; 1800 Subscribers	800 MHz Simulcast 9600 Baud Astro25, 7.11 CORE with 7 sites, 20 Channels; also Washington Co. 3 sites 5 chan.; Pottawattamie County, IA 7 sites 10 chan. ; OPPD (utility) houses	Douglas ties to multiple additional systems including Omaha Public Power District (OPPD). OPPD maintains CORE and 11 individual sites as part of System/Interlocal agreement

Technology	Sarpy County	Douglas County	Notes
		Astro CORE 13 individual sites	
Radio Consoles	Motorola Gold Elite, 8 positions. Tentative plan to upgrade to Motorola MCC7500 consoles in near future.	Motorola Gold Elite 11 Positions	Gold elite has an end of life of 2018 (won't be supported after that) Backup Center = 8 Gold Elite and 4 MCC7500 positions
Regional Microwave System	Regional 600 Megabit (dual polarized) IP based system - Ring design with multiple paths to other critical locations	Regional 600 Megabit (dual polarized) IP based system - Ring design with multiple paths to critical locations	Douglas Co. oversees MW; OPPD maintains MW See diagrams for radio and MW system (p. 15).
911 Phone System	Intrado Viper Switch and Power 911/Power MIS all positions	Intrado/Positron Power 911, Power MIS	CenturyLink maintains systems; delivers 911 traffic from tandem (CO) in Pottawattamie County, IA
911 Trunks	15 CAMA (5 landline; 8 wireless; 2 VoIP); 6 admin; 9, 7-digit emerg.; 22 ringdowns; 9 private	# CAMA data Link to IA 28 CAMA Trunks (2 Routes under river to IA CO	Douglas Currently can share traffic load between Pottawattamie County, IA and Washington Co. (Washington County is slave off Douglas Viper) *
Law RMS	Motorola InfoTrac	Law (OPD, No RMS)	State offers ImageTrend Motorola Infotrac used by Sarpy
Recording	NICE recording system-per channel, phone line and position	NICE recording system - Per channel, phone line and position	
Mobile	Motorola Astro 25 HPD system, 3 sites with Premier MDC; 120 MDCs in operation. 19.2Kbs system. Many departments also use wireless vendor connectivity too. Sarpy County deploys Netmotion.	Motorola Astro 25 HPD system, sites= 3 Douglas; 2 Washington; 1 Gretna (Sarpy); 4 Pottawattamie County, IA - Netmotion used in Douglas Co. for session continuity	Systems shares some radio sites but is operated independent of Voice system - Motorola Premier MDC products in Douglas and Sarpy [OPD uses FATPOT mobile data system]
GIS	Sarpy GIS and Public Safety IS uses ESRI and updates to shared GIS server in Douglas County	Arcinfo Server (ESRI)	Master GIS server for CAD resides in Douglas. All entities upload GIS data to server (including Sarpy) Street Centerline are merged (Douglas, Cities, Sarpy etc.)
Mapping	Pictometry used in Sarpy County along with CAD map		Mapping is integrated with CAD however; available cartography requires logging into a separate program.

Technology	Sarpy County	Douglas County	Notes
Fire Station Alerting	Direct Radio/paging tone based system over 800 System for paid fire departments with specific talk groups at each station.	RF based Motorola MOSCAD system. CAD output drives MOSCAD server. Uses UHF Frequency opens path to Trunked radio audio at specific station	Douglas system is 7-8 years old. not well supported by Motorola Vol stations use Voice (Minitor) -see paging
AVL	Motorola over HPD mobile system	Motorola over HPD mobile system	
Paging	Sarpy Owned UHF paging (Minitor pagers) 6 sites simulcast paging Codespere- Text paging to smart phone devices, 500 users,	Vol. stations use Voice (Minitors)	UHF system maintained by Sarpy Sarpy Codespere usually used for secondary paging not primary incident. Includes National Weather Alert Monitoring System
EMD	PRO Q/A cards	Using Pro-Q/A cards not electronic	
Fire RMS	Zoll RMS	Zoll fire RMS fed by CAD	EPCR (Zoll) for patient care reporting/ Zoll billing
Emergency Power	Liebert UPS and Generator	APC Symmetra battery UPS on generator	
Weather Monitoring	National Weather Alert Monitoring System		National Weather Alert Monitoring System
Back-up Facility	Backup center at 1819 Farnam was established by Douglas, Washington and Sarpy Counties.		Douglas County and Pottawattamie County in Iowa. Backup center established in the Omaha City-County Building at 1819 Farnam St.

*Routing paths are redundant for backup of centers, involves Douglas, Pottawattamie County, Sarpy. Telephone C.O. in Council Bluffs IA and in Omaha

As shown above, there are many similarities in the technology in use in the centers today. The following sections provide detail on each of the major systems:

(2.1) Computer Aided Dispatch (CAD)

Sarpy County (Sarpy) Computer aided Dispatch (CAD) is hosted by Douglas County 911. Sarpy 911 is a remote user of the Douglas County (Douglas) Motorola, PremierOne CAD. There are eight (8) positions at Sarpy and 11 Positions at Douglas.

Douglas also supports the CAD function at the 911 back-up facility. The system underwent a major upgrade on July 23, 2013.

(2.2) Radio Systems

Sarpy County operates an 800 MHz Simulcast ASTRO 25 Motorola radio system. The radio infrastructure is comprised of a 3600 baud trunking system (single simulcast cell) with 10 channels at each of their three (3) sites (Bellevue, Courthouse and KPTM TV). The system provides the capability for "Mixed Mode" analog and digital communication. Sarpy has a three-location Microwave network and supports a 4.9 GHz point-to-point system for local connectivity. Additionally, the system is linked, on the regional Microwave system, to Douglas County. Sarpy operates as a Digital / analog " Mixed Mode" system. There are approximately 1,800 subscribers on the Sarpy system. The system is primarily maintained by Sarpy County 911 Communications personnel.

Douglas County is operating on the Omaha Regional Interoperability Network (ORION), which is operated in conjunction with the Omaha Public Power District (OPPD). The primary Douglas County portion of the system is a seven (7) site, 20 channel, Motorola Astro25, P25 (Phase 1) digital simulcast radio system. The Douglas system interconnects via regional microwave and some fiber to multiple additional systems including Omaha Public Power District (OPPD); Washington County; Regional 911 Backup facility at 1819 Farnam, Omaha; Pottawattamie County radio system; and Sarpy County.

OPPD maintains the Astro 25 Core (central intelligence and interface) and 11 individual sites as part of a System/Interlocal agreement.

(2.3) Radio Consoles

Sarpy has eight (8) fully functional dispatch positions in the communications center. Of those, six (6) are used on a daily basis and the other two are located in the supervisor's office and in another office. These two positions are used for special events or special operations. The radio positions are Motorola Gold Elite consoles.

Douglas County has 11 radio dispatch positions. The positions are operated from their individual Motorola Gold Elite radio Central Electronics Bank (CEB). Motorola has announced an "end of life" for the Motorola Gold Elite. This affects both Douglas and Sarpy. It will no longer be supported by Motorola in the year 2018.

(2.4) Regional Microwave/Communication System

The region has a 600 Megabit (dual polarized at 300 Mb each) Alcatel Internet Protocol (IP) microwave system, in a highly resilient ring design. The system extends to multiple counties in the region and connects to 911 centers at Sarpy, Douglas, Pottawattamie, and Washington Counties as well as many other locations.

(2.5) 911 Phone System

Both Sarpy and Douglas Counties' 911 Centers use Intrado Power911 call talking positions running of VIPER switches. CenturyLink, the local phone company maintains the system's hardware. Multiple admin lines, ringdown and private lines also appear on the positions. Both the Sarpy and Douglas systems include Power MIS, for reporting.

(2.6) Law Enforcement Records Management System (RMS)

Sarpy law agencies use Motorola's Infotrac RMS. Omaha PD uses a manual system.

(2.7) Fire Records Management System (RMS)

Fire agencies primarily use Zoll Records Management Systems, which are fed by CAD information. Emergency Medical Services also use Electronic Patient Care Reports (EPCR), a Zoll product, for patient care reporting and Zoll billing. The State also offers ImageTrend Records Management System, statewide.

(2.8) Recording of the Centers

Both Douglas and Sarpy Centers record 911 and non-emergency phone lines, radio channels and positions with NICE brand recording equipment.

(2.9) Mobile Data Systems

Sarpy County uses a Motorola Astro 25 High Performance Data (HPD) system using three (3) radio sites. The HPD system operates at 19.2Kbs. The Mobile Data Computers (MDC) use Motorola's Premier MDC Client. There are approximately 120 MDCs in operation. Many departments also use wireless vendor connectivity in conjunction with the system.

Douglas County uses a Motorola Astro 25 HPD system with three (3) sites in Douglas, two (2) in Washington County one (1) at Gretna (Sarpy), and four (4) in Pottawattamie County, IA. Douglas County uses Netmotion for data session continuity between sites and other wireless data services. Douglas also uses the Motorola Premier client.

Both Sarpy and Douglas Systems share some two-way radio sites but are operated independent of the voice. Omaha Police Department uses a FatPot Mobile Data system that, we understand, is still being implemented.

(2.10) GIS Mapping Systems

Both Sarpy and Douglas County use the master GIS server that resides in Douglas and is co-located with the CAD system. All entities upload GIS data to server (including Sarpy) and the street centerline information is merged (Douglas, Omaha, Sarpy, etc.). Sarpy GIS provides Sarpy ESRI information to Douglas for this purpose. As a part of mapping, cartography information is not interfaced to the CAD system.

(2.11) Fire Station Alerting Systems

Sarpy County's fire station alerting system is a direct radio paging, tone based system over the 800 MHz radio system for the paid fire departments. UHF paging system is owned and maintained by Sarpy and used to page volunteer fire departments. Douglas County is also radio based and uses a Motorola MOSCAD system. For Douglas, CAD output drives MOSCAD server and performs the appropriate page to the stations. The Douglas system uses the paging UHF frequency and also opens a path to the trunked radio audio at the specific station(s) that were paged. As mentioned in the Paging section, volunteer station's personnel use Minitor pages as their primary station callout.

(2.12) Automatic Vehicle Location (AVL)

Both Sarpy and Douglas acquire AVL information with a Trimble AVL system, which is transmitted over the existing HPD data system.

(2.13) Paging Systems

A separate "stand alone", six (6) site, simulcast UHF radio paging system is maintained and operated by Sarpy County radio personnel. The pagers on the system are Motorola Minitor pagers, primarily used by volunteer fire. Additionally, Sarpy County uses a Short Message Service (SMS) product to send text messages to various groups

and individuals with smart phone devices. The SMS system is used for secondary paging, not primary incident paging. The SMS product also includes messages via the National Weather Alert Monitoring System. There are about 500 users on the radio paging system. Douglas operates and uses a similar system with Volunteer Fire using Minitor pagers for paging and incident alerting.

(2.14) Emergency Back-Up Power

Both Douglas and Sarpy have emergency power backup systems. Sarpy uses a Liebert Uninterruptible Power System (UPS) and a diesel powered Generator. Douglas has an APC brand, "Symmetra" battery UPS, also on a generator.

(2.15) Back-Up Facility for Emergency Communications

A 911 Emergency backup center was established in the Omaha City-County Building at 1819 Farnam St. Omaha, NE. The Center supports an emergency backup and special event function for the 911 centers at Pottawattamie County, Iowa as well as Douglas, Sarpy and Washington counties in Nebraska. The positions are comprised of a combination of Gold Elite and MCC7500 radio consoles with three (3) Counties on the ORION system and Sarpy using their own radio system. Intrado Power 911 call talking workstations are used by all Counties in the back-up facility.

Sarpy, Douglas and Washington Counties use the Douglas County Motorola CAD system. Pottawattamie County uses a Tritech CAD system.

(3) Agency Workload

The following table illustrates the annual workload, related to 911 calls, based on 2012 data provided to the project team:

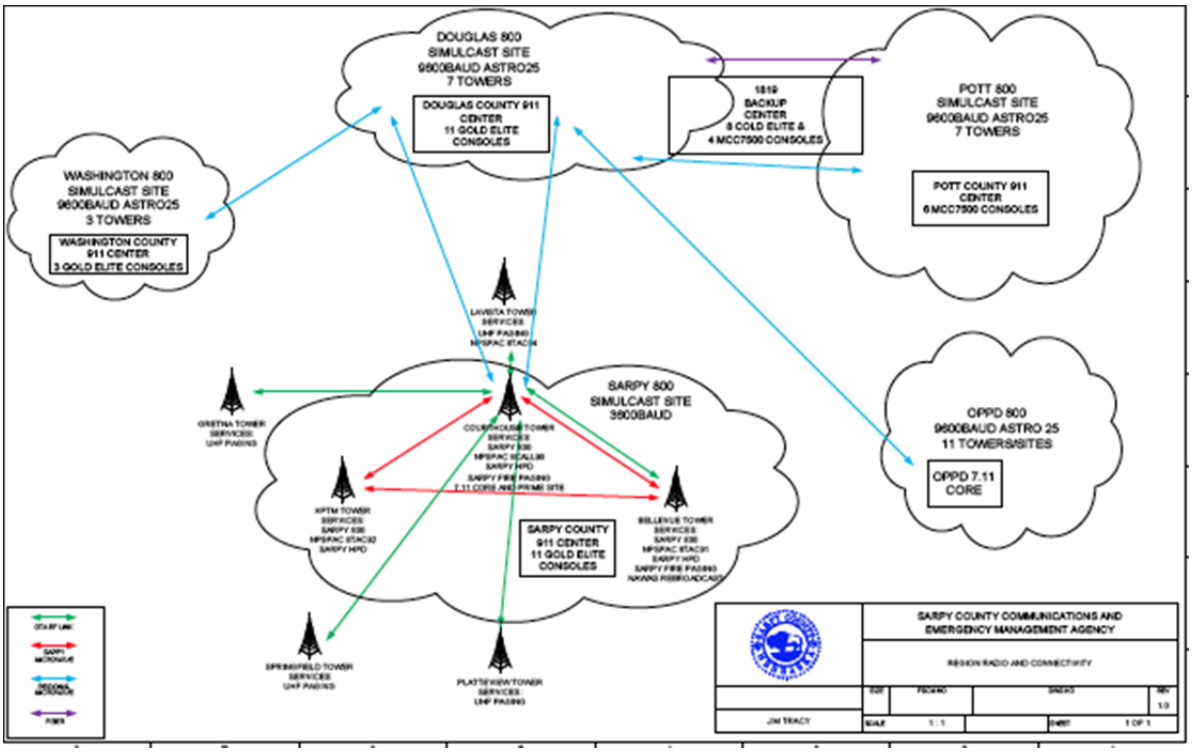
Agency	9-1-1 Call Volume	Percent of Total
	387,259	87.9%

Douglas County		
Sarpy County	53,190	12.1%
Total	**440,449**	**100%**

The Sarpy County Communications personnel also perform ancillary duties for the agencies they provide service to. The following table illustrates the number of these activities provided in 2012:

Activity	Count
Vacation Watch Forms Entered	499
Tow Vehicles Entered	2,216
Burn Permits Entered	790
911 Comments on Warrants	6,789
CARE Checks	7,642
CARE Juvenile Transports	599
Sarpy County Sheriff Transports	611
NCIC Queries Sent	123,867
NCIC Responses Received	494,338

Diagram of the Radio Systems



3. ANALYSIS OF SARPY COUNTY OPERATIONS

This chapter of the report provides analysis and recommendations regarding the current operations of the Sarpy County Emergency Communications Center.

The first section, which follows, examines various issues related to the management and oversight of operations in the Department.

1. OPERATIONAL MANAGEMENT IN SARPY COUNTY IS GENERALLY BASED ON EFFECTIVE APPLICATION OF POLICIES, PROCEDURES AND APPROACHES.

The project team examined a number of issues to understand the way in which the Communications function is managed, overseen, budgeted for, and operates. Each of these key management issues is examined in this section.

(1) The Governance of the Communications Center Has Not Generated a Strong Focus on Customer Service.

The Emergency Communications functions much like a stand-alone department in Sarpy County and is separated from other County functions. There are mechanisms in place, which make the governance and management of the Department more complicated without having resulted in a strong customer service focus. A summary of the current situation follows:

- The Department's Director reports to the County Manager. This includes the establishment of budget, approval of expenditures, appointment to the position, performance review and so on.
- The five-person County Board has historically focused on large projects (CAD / RMS, radio system) and budget review, but does not get involved with broad policy making, priority setting, performance measurement or daily operations.
- There is a "Governance Committee" from the five cities served by the Center which provides input regarding fire and police operations and the 911 operations and policies.
- The Fire and Police Departments have direct contact to the Communications Center Director for day to day communication on issues, policy concerns, personnel matters, etc. are to be addressed.

The project team reviewed each of these aspects, which structure the management of the Department and reached the following findings:

- The client agencies provide "revenue" to the Department but have little input into budget, staffing or other cost drivers for the Emergency Communications Center.

- The Governance Committee has never been utilized as a venue for dealing with establishment of operational priorities, developing performance objectives, reviewing budget priorities, exercising cost control and other factors. More emphasis should be placed on increasing the level of interaction and collaboration between the Communications Center and user agencies on critical issues.

Recommendation: The Governance Committee should be utilized more effectively as a forum to discuss key policy and budgetary issues between Sarpy County Communications and user agencies.

(2) The Sarpy County Communications Dispatch Function Does Not Appear to Be Achieving National Standard Performance in the Dispatch of Critical or Life Threatening Calls for Service.

The Matrix Consulting Group obtained a detailed database describing the workload handled by the Communications Center dispatch staff. With this dataset, we were able to evaluate the Department's performance against a series of national standards. These standards, derived from NFPA, CFAI, and CALEA, include the following:

- Maintain detailed dispatch protocols, which describe the processes by which, emergency and non-emergency calls for service are to be handled by the call taker and dispatchers. This should include the following basic elements:

  - How is the phone to be answered.

  - How much information should be collected before an emergency or life threatening call can be sent for dispatch.

  - What the call taker is to do with the caller in terms of collecting additional information, passing that on to the responding units, canceling responding units, upgrading the nature of the call, etc.

- Presence of time targets for handling calls for service within the center. A typical standard, supported by a number of national standard setting entities, would result in the dispatch of emergency or life threatening calls for service in less than one (1) minute, 90% of the time. This is defined as the time elapsed between answering the call (or first keystroke) and the time at which the units are dispatched.

- Presence of a focused quality assurance program that enables the Communications Center to achieve the following goals:

  - Evaluate the center's performance in achieving dispatch processing time objectives. For example, all calls originally set up as "In Progress Emergency", "Just Occurred Emergency" or "Urgent" would be identified if the dispatch processing time exceeds one minute.

  - Assess the staff's performance in terms of following dispatch policies and procedures. This will include listening to calls after the fact to ensure that the proper questions were asked and that proper actions were taken by the staff in the center. This is often done by listening to all calls handled by a single staff person for a four hour period.

  - Evaluate staff performance for handling specific call types. This might include structure fires, domestic violence, life threatening EMS calls, etc. as a way of ensuring that policies are being followed.

  - Identify areas in which policy needs to be modified to better match current practices or to better match the desires of the customer agencies.

The project team first evaluated the procedures used in the Communications Center. The following points provide a summary of our findings:

- Currently only EMD calls are reviewed for performance and to that extent the review only focuses on adherence to the EMD protocols.

- There is no program in place for quality assurance reviews of critical police or fire calls. Calls are only reviewed if there is a complaint filed against a dispatcher.

- Current established goals for high priority calls include dispatching within 90 seconds 90% of the time according to interviews.

- Current established goals for all 911 calls include answering all 911 calls in 10 seconds or less 90% of the time.

The following table illustrates the performance of the call center for answering 911 calls in 2012.

911 Call Answering Times (2012)

Month	# Calls	% 10 sec / less
January	4,013	92.57%
February	3,794	90.03%
March	4,592	88.26%
April	4,211	89.97%
May	4,786	89.64%
June	5,037	88.83%
July	5,027	90.89%
August	4,841	90.11%
September	4,676	91.45%
October	4,476	91.91%
November	4,087	92.15%
December	4,121	93.18%
Total	**53,661**	**90.75%**

As shown above, the Communications Center had an overall performance of 90.75% of incoming 911 calls answered in 10 seconds or less in 2012. This is within the established performance guidelines for the Center and meets industry best practices. The month with the lowest performance was June where 88.83% of 911 calls were answered in less than 10 seconds, it is important to note that June was also with month with the highest call volume to the Center.

In terms of call processing time, the Center did not effectively capture data to allow the processing of calls to be analyzed until May 2012. The data also presented information related to performance in time ranges that did not allow analysis regarding the ability to meet the stated 90-second goal 90% of the time. The following table illustrates the performance for processing 911 calls from May – December 2012.

911 Call Processing May – December 2012

Month	# Calls	% 60 sec /	> 60 sec </=	Total % </=

		less	180 sec	180 sec
May	4,786	44.65%	38.11%	82.77%
June	5,037	41.22%	39.47%	80.68%
July	5,027	45.12%	37.58%	82.70%
August	4,841	43.38%	38.44%	81.82%
September	4,676	43.70%	39.22%	82.59%
October	4,476	42.54%	38.78%	81.32%
November	4,087	42.38%	39.81%	82.19%
December	4,121	41.28%	39.87%	81.15%
Total	**37,051**	**42.99%**	**38.91%**	**81.90%**

- Note that the current performance related to processing 911 calls is significantly below the national performance target of one minute or less 90% of the time. As shown above the center is not meeting a call processing time of 1 - 3 minutes at the 90th percentile. While the approach taken to dispatching in Sarpy County may present some challenges to rapidly processing calls, the end result should not be dispatch times longer than the stated goal of 90 seconds 90% of the time.

- While the agency has a stated goal; there is no focus on the part of the management team to ensure critical calls are processed in a timely fashion. As stated earlier, the only calls receiving any time of quality assurance are EMD calls and those are only checked for adherence to protocols, not time performance. This results, ultimately, in delayed responses to emergency calls for service in all aspects of public safety service delivery. This is particularly troubling, since improvement in this area can be made inexpensively and rapidly with management focus.

- The quality control process in the Department, at this time, is largely reactionary. This is in large measure due to the fact that the lead dispatchers have no true supervisory authority. The Director and Assistant Director, who typically are not present in the center to monitor dispatcher performance, conduct the checks and balances and all discipline related to performance. There is no proactive process in place to examine the issues described previously. This should be a key function of the Lead Dispatcher's responsibilities.

The project team recommends that the County and the Communications Center take the following steps to address the issues identified, above:

- Work with the Sheriff, Fire and Police Departments to establish and adopt a dispatch processing performance target. Due to the rural nature of Sarpy County, 60 seconds may not be a practical goal, but achieving a call processing time of 90 seconds or less for 90% of emergency calls for service does seem reasonable.

- To address this issue, Communications Center staff should focus on potential impediments to the application of policies and procedures. The project team found that the policy documents supporting both Fire and Police activities are clear on the need to rapidly obtain basic information in order to facilitate rapid unit deployment. The project team recommends that management and supervisory staff focus on "exception" based analysis, wherein all calls, which take longer than 90 seconds to dispatch, are reviewed.

- As part of this effort, the Communications Center must work closely with the Sheriff, and Fire and Police management to define the terms of the calculation of dispatch processing time. Unfortunately, the project team has found that the national performance target documents are lacking in the definition of the times. While they clearly state that a call should not take more than one minute to process and to dispatch a unit, they are silent on defining when a unit has been dispatched. This is particularly an issue for the Fire Departments, where current processes involve a pre-alert, followed by tones / pagers, followed by a repeated enunciation of the particulars of the call.

- The Communications Center needs to focus on developing a more comprehensive quality assurance / review process. This should be made a management priority, with input and participation from the Lead Dispatchers. The project team also stresses that the Lead Dispatchers should be taking administrative workload associated with day-to-day operations, freeing the Assistant Director to focus on major issues such as performance and quality assurance.

Recommendation: The County should adopt formal performance targets for emergency calls for service of 90 seconds or less for 90% of emergency fire and police calls for service, should focus on quality assurance processes and on improving current performance for call processing.

2. A NUMBER OF ISSUES SHOULD BE ADDRESSED WITH THE OVERALL MANAGEMENT AND OVERSIGHT OF THE COMMUNICATIONS CENTER.

The project team's analysis and a review of the findings from the various surveys and interviews conducted by the project team show that there are several key issues which should be addressed to make the system more effective. These include the following:

- There are no performance standards in place for the level of service expected by the client agencies from the Communications Center.

- There is no set schedule for the review of policies and procedures by the Communications Center or by the client agencies on an annual basis.

- Current interaction between the liaisons, shift commanders and the Communications Center is limited. The project team found that supervisors do not voice concerns to the Lead Dispatchers, but rather all complaints are routed through the Assistant Director, which often leads to lengthy resolution of issues.

- No system is in place to assess the level of satisfaction of customers of the Communications Center.

Recommendation: The Center should focus primarily on addressing the performance and oversight issues identified in this report. Ensure that Lead Dispatchers are given appropriate supervisory authority to serve as supervisors in the Center with responsibility for monitoring dispatcher performance.

3. ANALYSIS OF THE COMMUNICATIONS STAFFING IN SARPY COUNTY.

This section of the report provides analysis of the current staffing levels for the Communications Center in Sarpy County.

(1) Emergency and Non-Emergency Dispatch Services.

The primary function of the Communications Center is to provide emergency public safety dispatch services to the Sarpy County Sheriff, Fire Departments and Police Departments in Sarpy County. Primary workload involves handling community generated calls for services. The tables, on the following page, show the number of community generated calls handled by the Communications Center:

Sarpy County Communications Center
911 Calls Received, 2012

Shift	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Total	Avg./Day
Day Shift	3,846	4,153	4,278	4,490	4,316	4,403	4,253	29,739	81.4
Night Shift	3,812	2,976	3,001	3,101	3,061	5,573	4,173	23,967	64.9
Total	**7,658**	**7,129**	**7,279**	**7,561**	**7,377**	**7,976**	**8,436**	**53,416**	**146.3**
Avg./Day	**147.2**	**137.1**	**140.0**	**145.4**	**141.9**	**153.4**	**162.2**	**146.3**	
Percentage	**14.45%**	**13.57%**	**13.56%**	**14.09%**	**13.75%**	**14.86%**	**15.72%**	**100%**	

The following points highlight the information above:

- The Communications Center received 53,416 911 calls in 2012, for an average of 146.3 calls per day.
- The busiest day of the week was Saturday, averaging 162.2 calls per day.
- The busiest shift was the Friday night shift which handled 5,573 911 calls.

The next table, provides information for all calls (emergency and non-emergency) received by the Communication Center in 2012:

Sarpy County Communications Center
All Calls Received, 2012

Shift	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Total	Avg./ Day
Day Shift	14,561	20,130	20,558	20,561	20,058	20,407	17,362	133,637	366.1
Night Shift	13,339	12,001	11,976	12,205	12,273	12,974	13,851	88,619	242.8
Total	**27,900**	**32,131**	**32,534**	**32,766**	**32,331**	**33,381**	**31,213**	**222,256**	**608.9**
Avg./Day	**536.5**	**617.9**	**625.7**	**630.1**	**621.8**	**641.9**	**600.3**	**608.9**	
Percentage	**12.6%**	**14.5%**	**14.6%**	**14.7%**	**14.5%**	**15.0%**	**14.0%**	**100%**	

The following points highlight the information above:

- The Communications Center received 222,256 calls in 2012, for an average of 608.9 calls per day.
- The busiest day was Friday, when calls averaged 641.9 per day.
- The busiest shift was Wednesday Day Shift, which answered 20,561 telephone calls.

The next section discusses the methodology used by Matrix Consulting Group to evaluate the staffing needs for the Sarpy County Communications Center.

2. DISPATCH STAFFING MODEL

There are several approaches that can be used to assess the staffing needs of a public safety communications center serving individual or regional areas. These approaches include the following:

- Methods which are based on comparisons with other agencies. These methods are inconsistent because the workload, technology and service level requirements vary tremendously among agencies.
- Approaches which are based on staffing a targeted number of "fixed posts" allocated on a functional basis (e.g. call taker, law enforcement radio, fire / rescue radio, etc.). These approaches are unsound because they do not tie staffing to actual workload.

The Matrix Consulting Group used a quantitative process for assessing communications staffing needs based on actual workloads in the existing communications center. The paragraphs below summarize this approach, its assumptions and the time standards used.

To determine the staffing needs of the Communications Center, the project team utilized the Erlang Staffing Model. This model is used to estimate staffing needs and is based on the work of Danish engineer, Agner Erlang. The Erlang model uses workload variables, but the primary driver is related to developing staffing levels based on desired performance, or "response time." In effect, the Erlang Model is a predicted performance model that calculates the probability of a caller's average wait time. One of the primary criticisms of the Erlang model is that it assumes an acceptable "on-hold" time for the caller. While this may initially seem to make the Erlang model impractical for use in an E911 PSAP environment, using national or local policy-driven standards for call answering times eliminates the shortcoming of an assumed hold time. The Erlang model uses calculations to find the amount of time it takes to answer a call based on a certain level of staffing. These times can then be compared to standards to assure performance minimums are achieved. Although the Erlang model has been traditionally

used to estimate staffing needs and performance predictions for non-emergency call center operations, the input values can be manipulated in such a way that the model is well adaptable to a PSAP.

As it relates to standards, according to the National Emergency Number Association (NENA), PSAPs should meet or exceed the minimum standard of 90% of E911 calls answered within ten (10) seconds and 95% of E911 calls answered within twenty (20) seconds. Local and state standards may be different, but these standards should be considered reasonable operating protocols.

The Erlang model uses sophisticated formulae based on probability theory and Poisson Distribution, which will not be replicated in this report. Rather, the table below shows the primary variables used in the model to derive a staffing outcome:

Consolidated Dispatch Center – Erlang Baseline Staffing Model
Based Upon Performance Expectations

Variable	Notes	Result
Average community calls received Per Hour	The average number of telephone calls in any hour based upon Sarpy County 2012 data	25 Calls
Average Call Telephone Call Duration	The average call duration in any hour based upon Sarpy County calculated workloads.	116 seconds
Total Workload Time Related to Processing the Call	The amount of seconds/minutes for total dispatch processing. Note that the project team manipulated the model to allow 3.5 minutes of processing time per telephone call (entry, radio, etc.).	3.5 minutes
Utilization Rate	This pre-existing variable is embedded in the model and, as in the Matrix and APCO-based model, is calculated at 50% work time for available staff.	50% Utilization
Maximum Wait Time for Telephone Call	Using the NENA Standards as a baseline, the Matrix Consulting Group recommends ten (10) seconds as a maximum wait time for any emergency call.	10 seconds
Probability Call Will Be Answered Within Maximum Wait Time	Using NENA Standards as a baseline, the Matrix Consulting Group recommends achieving a 90% probability that any telephone call will be answered within ten (10) seconds.	90% probability
RESULTS		
Average Number of Fixed Post Positions Needed	*The average number of dispatcher staff needed on-site each hour to achieve the listed standards.*	*4.9*
Average Number of Dispatcher Staff Needed per Hour	*Based the calculation of 1,710 net hours available per dispatcher, the average number of positions needed per hour to cover a fixed post.*	*6*

As indicated above, dispatch personnel were available, on average, 82% of the time. Based on this rate, the project team calculated the number of dispatchers needed to ensure twenty-four hour coverage. It also shows the number of shift leaders needed.

Element	Number
Minimum Dispatch Personnel Required Each Shift	5
Fixed Position (NCIC, Warrants, etc.)	1
Number of Shifts	4
Dispatch Personnel Scheduled Subtotal	24
Availability Rate	82%
Dispatch Personnel Required after Leave	7.1
Average Annual Turnover Rate	**13.5%**
Dispatch Personnel Needed /Availability/Turnover (6 per shift minimum)	**32.1**

The following points highlight the information above:

- Based on workload, availability, and turnover 32.1 dispatch personnel are needed to provide twenty-four hour coverage. Currently, there are 33 authorized positions (lead dispatcher, dispatchers), of which, there are five (5) vacancies.

- If we assume that the lead dispatcher would dedicate 25% of an FTE to provide for shift supervisory and administrative tasks required of the position including performing quality assurance, scheduling, and other personnel issues, (this is dedicated time – not time spent on a console covering dispatch shifts), an additional 1.0 FTE's would be required (four shifts with 0.25 FTE per shift). This increases the total number of personnel required to 33.1, making the current authorized staffing of 33 personnel for staffing the center appropriate. This approach assumes that there will be shifts on which the lead dispatcher, senior dispatcher and dispatchers will be working side by side – particularly on the overnight shift where the average staffing required by workload drops to four (4) positions.

In summary, based on the dispatcher staffing model utilized, Sarpy County Communications needs 33 total dispatchers (including lead dispatchers and senior dispatchers) to ensure a minimum staffing level of 5 personnel can be maintained.

It is also important to note that the dispatch center is currently carrying several vacancies. At the time of developing the profile, five (5) dispatcher positions were

vacant, with several personnel in training. This makes coverage of shifts and handling workload very difficult and has required that lead dispatchers utilize the majority of their time working as dispatchers. As a result it is critical that these positions be filled.

Recommendation: Continue to authorize a total of 33 shift positions to the Dispatch Center (4 lead dispatcher, 4 senior dispatchers and 25 dispatchers).

Recommendation: Filling vacancies within the dispatch center should continue to be top priority to ensure effective and efficient operations.

3. ASSESSMENT OF SUPPORT PERSONNEL STAFFING

The project team also evaluated staffing of administrative and non-emergency communications services within the Sarpy County Communications Center. This includes the Telephone Manager position, radio technicians and Communications IT support positions. The first subsection provides an assessment of telephone system management.

(1) Telephone System and Technology Manger

The Telephone Manager has a variety of responsibilities related to administration and support of the County's 9-1-1 telephone system. The following points highlight these responsibilities:

- Coordinates the purchasing process for telecommunications and some emergency management purchases, including consulting with vendors.
- Administers the database for telephone switch, voicemail systems, voice over IP server (VOIP) server and call accounting system.
- Maintains the Master Street Address Guide.
- Generates reports on telephone systems.
- Prepares recordings of 9-1-1 calls and appears in court as needed.

The project team next evaluated telephone system administration staffing needs. The following points should be made concerning the assessment of staffing needs:

- Administration of the telephone system and other communications infrastructure is not necessarily a task oriented. The majority of the Telephone System and Technology Mangers time is spent comparing various service options, developing communications infrastructure needs, and generally ensuring that telephone services meet the needs of the various departments within the County.

- In this respect, the responsibilities of the Telephone System and Technology Manager are marked different than the duties of a Dispatcher. As a result, a formulaic approach to evaluating staffing needs in this area is not appropriate.

- Based on the scope of services coordinated by the Manager, it is reasonable to have someone dedicated to this position.

In summary, the project team believes that utilizing a dedicated staff member to manage the telephone systems and technology is reasonable.

Recommendation: Make no changes to Telephone Systems and Technology Manager staffing.

(2) Information Systems Support

The County has three (3) personnel dedicated to providing IS support. One (1) of these positions is dedicated solely to the Communications Center and is responsible for the data systems in the Center. The other positions assist as required for the installation and maintenance of the CAD software, records management systems, mobile data systems and provide support for the E-911 mapping system. The personnel also coordinate maintenance and upgrading of existing computer systems.

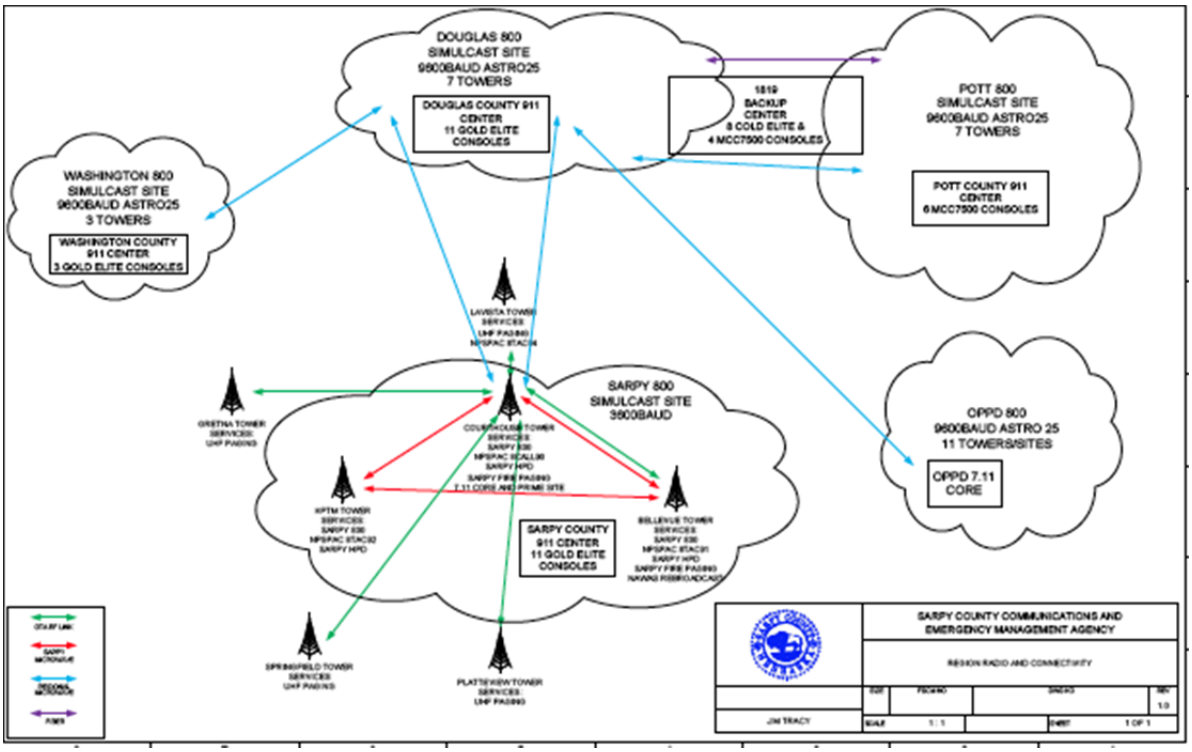
While it is beyond the scope of this study to evaluate the countywide work being conducted by these positions, having a single person dedicated to the Communications Center for the above noted work is appropriate. As a result, the project team believes that this position is justified.

Recommendation: Make no changes to staffing of the IS Support.

(3) Communications Technical Support

The Communications Center currently has two Radio Technician positions to handle maintenance of the radios, HPD, phones and systems of the E-911 center. The diagram, below, illustrates the current radio system configuration in Sarpy County:

Diagram of the Radio Systems



As shown above, the Communications Radio Technicians are responsible for maintaining the 800 MHZ system, which consists of ten (10) channels, 3 towers and 1,800 subscribers. Also included as part of this system are the eight (8) radio consoles located in the Communications Center.

As shown above, the Radio Technicians support 1,800 subscribers throughout the County. In summary, radio support staffing is appropriate given the complexity and volume of workload.

Recommendation: Make no changes to the radio support staffing. The Director should however, ensure that the two positions are cross-trained to provide back-up support when needed.

(4) Administration and Training.

Administratively the Communications Center has a Director, Assistant Director and Administrative and Training Manger. These three positions provide administrative support to the Center.

The Director provides overall managerial oversight of the Center and is responsible for the budget, operations, technologies and organizational issues impacting the Center. The Director is also very active in regional 911 planning and issues related to the State mandates.

The Assistant Director serves as the day-to-day manager of the Communications Center. This position is focused on the operations of the 911 Center and also serves as the agency terminal coordinator. The Assistant Director reviews calls for CAD compliance, handles complaints from subscriber agencies and administers discipline as appropriate and serves as Director in the

absence of the Director. As discussed earlier, the focus of a single person on call review has resulted in only EMD calls being reviewed for quality and performance measures and this responsibility should also be delegated to the lead dispatchers to allow all critical calls to be reviewed for quality and timeliness.

The Administrative and Training Manager develops, schedules and coordinates the training activities for the center. The training is coordinated for both new hires and ongoing continuing education. This position is also responsible for updating the policies and procedures for the Communications Center.

Based on the current size and workload associated with providing administrative support to the Communications Center, the current allocation of these three (3) positions is appropriate.

Recommendation: Continue to staff three (3) administrative positions in the Center.

4. FEASIBLITY OF CONSOLIDATING DISPATCH SERVICES

This chapter of the study provides an analysis of the feasibility of consolidating public safety communications and 9-1-1 call taking with Douglas County. The chapter approaches this analysis in four steps:

- Development of the assumptions and alternatives to be analyzed.
- Analysis of existing workloads to determine staffing needs.
- Summarizing costs of a consolidated public safety communications center.
- Analysis of alternatives for regionalized communications centers.

The following sections address each of these four elements in turn as the project team develops the analysis of whether consolidation is feasible.

1. ASSUMPTIONS UTILIZED IN DEVELOPING ALTERNATIVES

The project team has developed a set of assumptions that were utilized in developing the staffing levels and operating costs associated with several of the alternative consolidated communications center scenarios. The assumptions used in the Status Quo, Virtual Consolidation and Consolidation were developed from information assembled both from the descriptive profile, information provide from the University of Nebraska report as well as numerous conversations to clarify responses.

- Supervisor pay for the dispatch center will be at the S3 pay of Douglas County Supervisors ($76,773).
- Lead Dispatcher pay for the center will be at the S4 pay of Douglas County Lead Dispatchers ($65,104).
- Dispatcher pay for the center will be the current average pay of Douglas County Dispatchers ($53,047).

- Call-taker pay for the center will be the current average pay of Douglas County Call-takers ($45,677).

- The benefit rates applicable to all full time positions in each scenario was assumed to be 40%.

- All positions would be civilian dispatcher positions.

- The project team made the following assumptions about the supervision and management of the center:

  - The Center would be directed and managed by a Dispatch Center Director. This position would be responsible for all operational and financial aspects of the Center, and would be compensated at a 5% premium of the current rate of the Douglas County Center Director, a projected salary of $118,863.

  - The Center would have an Assistant Director to handle the duties currently performed by the Assistant Directors of the two separate centers. This position would be compensated at a 5% premium of the current Douglas County Assistant Director, a projected salary of $75,726.

  - The Center would also have two personnel assigned to quality assurance and training. These positions would be cross-trained to be able to function in both the training and quality assurance roles. The projected salary for these two positions is $65,104.

  - The project team has assumed that the combined center would also require the following support positions:

    - IT/Radio Manager ($89,150).
    - Database Administrator ($71,180).
    - GIS/MSAG Coordinator (65,105).
    - Radio Technicians (2) ($65,105).
    - Computer Technicians / Tape (2) ($50,710).

- The project team evaluated the call distribution by day of week and hour of day for each of the Counties. The first table shows the distribution of calls by day of the week. The second table shows the distribution of calls by hour of the day.

2012 Call Distribution by Day of Week

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
13.56%	13.78%	13.79%	14.12%	15.01%	15.63%	14.11%

2012 Call Distribution by Hour of Day

Hour of Day	Percentage of Calls Received
0000	4.4%
0100	4.2%
0200	3.2%
0300	2.3%
0400	1.7%
0500	1.5%
0600	1.8%
0700	2.6%
0800	3.4%
0900	3.6%
1000	3.8%
1100	4.0%
1200	4.4%
1300	4.6%
1400	4.8%
1500	5.6%
1600	5.9%
1700	6.1%
1800	5.7%
1900	5.3%
2000	5.2%
2100	5.4%
2200	5.4%
2300	5.0%

As shown above, the workload is fairly consistent by day of week for a consolidated center with Friday and Saturday being the busiest days. When distribution by hour of the day is examined there is a considerable drop off in call volume from 0300 – 0600 and call volume peaks from 1500 - 1900.

2. ANALYSIS OF CONSOLIDATED COMMUNICATIONS CENTER WORKLOADS.

The project team performed analyses for consolidating emergency communications between the counties. The following subsections provide the project team's analysis of staffing a consolidated center.

(1) The Project Team's Analytical Approach Is Based on Quantifiable Elements of Communications Workload.

There are several approaches that can be utilized to assess the staffing needs of a public safety communications center serving individual or regional consortia of agencies. Broadly defined, these approaches include:

- Methods which are based on comparisons with other agencies. These methods are flawed because the workload, technology and service level requirements vary tremendously among agencies.

- Approaches, which are based on staffing a targeted number of "fixed posts", allocated on a functional basis (e.g. call taker, law enforcement radio, fire / rescue radio, etc.). These approaches are flawed because they do not tie the staffing to the actual workload.

The project team utilized a quantitative process for assessing communications staffing needs based on actual workloads in the communications centers included in our analysis. The paragraphs below summarize this approach, its assumptions and the time standards utilized.

- The analytical process takes as its starting point the fact that there are relationships among communications center workloads that are relatively constant from one agency to another and in a single agency over time and varying conditions.

- Since most agencies do not track individual work elements of a communications center, such as the number of transmissions, and since virtually no agency consistently measures the time taken for each task type, standards are borrowed from other agencies and checked, where data exists, against workloads handled in the communication centers. These standards were developed by the project team and others utilizing detailed time and motion studies of communications centers nation-wide. These centers incorporated CAD technology, were providing emergency medical dispatch (EMD) and provided service to both law enforcement and fire / rescue agencies.

- For each 911 call for service, the equivalent of 10 minutes of call, self-initiated and administrative related communications workloads are allocated. This includes time estimates of radio, telephone, record check and administrative tasks. This 10.5 minutes is comprised of the following elements:

    - 130 seconds are allocated to process a service request (citizen generated call for service) and transfer to a radio dispatcher. This

standard incorporates the fact that multiple calls can be generated by the same incident and that administrative / business calls are handled by staff in the communications center.

- 350 seconds of total radio transmissions related activity expressed on a per call for service basis -- including call-related and officer / deputy-initiated field workloads and administrative transmissions.

- 30 seconds are allocated for record checks via the teletype -- again this is expressed on a per call for service basis.

- 120 seconds are allocated for other tasks associated with the dispatch center (administrative calls, record-keeping, other activities).

- This time standard is then applied against known or estimated call for service workloads handled by the dispatch center. Call for service counts are distributed on a time of day basis and multiplied by the time standard of 8.9 minutes, described above. This calculation yields total average communications workloads on a time of day and day of week basis.

- Finally, to arrive at the number of dispatch center staff required to handle these workloads, a critical assumption needs to be made regarding the levels of productivity desired. An allowance needs to be made regarding the proportion of time which is desirable to have a dispatcher actually involved in call handling, radio transmission and related workloads. There are several reasons why direct task allocation should not be 100% of available time, including:

  - Dispatch centers which have relatively high utilization levels tend to "burn out" staff leading to high employee turnover and use of sick leave, disability and the like.

  - Communications centers which have relatively high utilization levels experience "queuing" problems in which responses to incoming calls are delayed because of the number of calls or field units handled.

  - Quality begins to suffer because communications staff members are cutting calls and radio transmissions short. This impacts service levels both to field units and to the public.

  The project team has utilized a task-loading factor of 30 minutes of actual call/radio activity per communications staff per hour. The basis behind this assumption is that one-half of a "net" hour should be utilized for direct communications workloads (i.e., after shift exchange, breaks, meals,

miscellaneous personnel/administrative tasks are accomplished and training are subtracted from a "gross" available hour). This 30-minute factor is divided into the amount of hourly workload in the dispatch center.

The next subsection shows how this methodology was applied to the analysis of the workloads in the communications centers in our analysis.

(2) Organization and Staffing Requirements Supporting Consolidation.

The following pages show the staffing requirements by shift for each alternative. The points, which follow, summarize these analyses:

- The analysis summarizes the staffing required by hour of day for each of the consolidated center
- Recall from above that the numbers of calls for service that are utilized in the model were obtained from each of the dispatch centers.
- The project team chose the following 8-hour shifting pattern for the purposes of determining staffing on shifts in the consolidated center. Dayshift 7:00 am – 3:00 pm, afternoon shift 3:00 pm – 11:00 pm and midnights from 11:00 pm – 7:00 am.
- The project team determined the appropriate line staffing for each shift by evaluating the peak and minimum staffing required in each. Recall that the project team's analysis makes an allowance, which says that it is our objective that each communicator work only 50% of each hour. In some cases, we have assumed that they would work slightly more than that to balance the average needs of a particular hour versus overstaffing an entire shift.
- The resulting need on a per shift basis is summarized at the bottom of the exhibit following this discussion. These represent the numbers of positions, which must be filled in order to ensure that the centers are adequately staffed. In order to achieve this figure, allowance must be made for scheduled and planned time off as well as for turnover.
- Note that the staffing on each shift varies according to the workload to be handled at a given time of day.
- Finally it is important to note that the per-shift staffing needs represent the peak average requirements during that shift.

Once these analyses were completed, the project team developed the total staffing requirements for the line operations of the center and developed a cost estimate for these line positions. The exhibits, following this discussion of assumptions, provide summaries of these analyses. The points, which follow, provide a summary of this:

- The project team first adds up the total positions to be staffed for each scenario.

- We then determine the number of personnel required to cover scheduled days off. In this case, we assumed that these civilian communicators would work a variation of a 5-on 2-off 8-hour shift 7-day cycle. Mathematically, this means that each communicator is scheduled to work 71.4% of the time.

- The project team made the assumption that employees' net availability would be approximately 82% of their scheduled time. This factor accounts for vacation, sick time, personal leave, military leave, etc.

- We also made an assumption about the turnover that would be encountered in the center. The factor of 10% was utilized in this analysis.

- The benefit rate has been assumed to be 40% for the agencies in the analysis. This is intended to be a conservative estimate.

- To restate, the project team has assumed that a consolidated emergency communications center will handle only 9-1-1 emergency calls, and the current administrative call load experienced by the Douglas and Sarpy County Communications Centers.

The following table shows the 2012 workload for the two Communication Centers:

Workload	Douglas	Sarpy	Total
9-1-1 Calls	326,653	20,881	**347,534**
Officer Initiated Radio	73,235	86,825	**160,060**
Administrative Calls	73,458	49,723	**123,181**
Total	**473,346**	**157,429**	**630,775**

Using the call distribution figures above, the following table illustrates the workload and related staffing needs for the consolidated center per hour. As shown in the table below, the volume of calls for service vary throughout the day with workload demands requiring 15 to 19 call takers / dispatchers on duty to handle the call volume in a consolidated center.

Consolidated Dispatch Center Staffing Model

Hour	Average Calls for Service Per Hour	Communication Workload (Minutes)	Line Staff Required
0000-0100	61.19	611.9	10.20
0100-0200	58.41	584.1	9.73
0200-0300	44.50	445.0	7.42
0300-0400	31.99	319.9	5.33
0400-0500	23.64	236.4	3.94
0500-0600	20.86	208.6	3.48
0600-0700	25.03	250.3	4.17
0700-0800	36.16	361.6	6.03
0800-0900	47.28	472.8	7.88
0900-1000	50.06	500.6	8.34
1000-1100	52.85	528.5	8.81
1100-1200	55.63	556.3	9.27
1200-1300	61.19	611.9	10.20
1300-1400	63.97	639.7	10.66
1400-1500	66.75	667.5	11.13
1500-1600	77.88	778.8	12.98
1600-1700	82.05	820.5	13.67
1700-1800	84.83	848.3	14.14
1800-1900	79.27	792.7	13.21
1900-2000	73.71	737.1	12.28
2000-2100	72.31	723.1	12.05
2100-2200	75.10	751.0	12.52
2200-2300	75.10	751.0	12.52
2300-0000	69.53	695.3	11.59
Average	**57.89**	**578.9**	**9.65**

2300-0700 max. FTE call takers / dispatchers needed	15.12
0700-1500 maximum FTE call takers / dispatchers needed	14.52
1500-2300 maximum FTE call takers / dispatchers needed	18.45
Subtotal of maximum FTE shift personnel needed	48.09
Each Dispatcher works 5 of 7 days (71.4% Shift Factor)	71.4%
Call takers / dispatchers Needed with Shift Factor	61.84
Assumed Availability Rate for Call takers / dispatchers	82.0%
Call Takers / Dispatchers Needed with Shift Factor and	72.97

Availability Rate	
Turnover Rate	10.0%
Dispatchers Needed with Shift Factor, Availability Rate and Turnover Rate	80.28
Supervisors required to staff all shifts	5.0
TOTAL FTE Personnel Needed	**86**

As the exhibit above illustrates, a consolidated dispatch center results in a total staffing contingent of 86 FTE Dispatch personnel. Again, this staffing contingent does not include the Center management, administrative and support personnel, which are assumed to be staffed positions in the consolidated center.

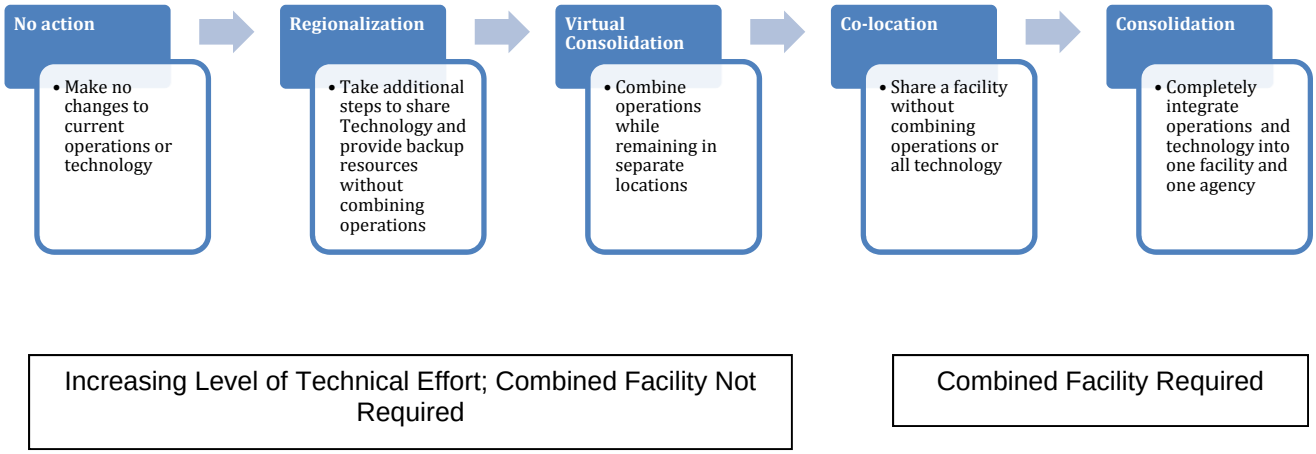
The following table illustrates the breakdown of estimated required shift staffing provided by Douglas County for a Consolidated Communications Center:

Position	# Required
Senior Dispatcher (Supervisor)	3
Lead Dispatcher	3
Specialist	3
Fire Dispatcher	18
Law Dispatcher	38
Call-Taker	21
Total	**86**

As shown above, the numbers provided by Douglas County for staffing the consolidated center are consistent with the workload projections and required staffing needs based on shift, availability and turnover.

3. CONSOLIDATION OPTIONS AVAILABLE TO SARPY AND DOUGLAS COUNTIES.

The following diagram depicts the various options available to the Sarpy County Communications Center regarding possible levels of consolidation. The continuum spans from no action (status quo) to complete physical and operational consolidation, with multiple options in between. Further information on the technology requirements of each option are presented below the diagram.



(1) No Action (Status Quo)

The first option, requiring the least amount of combined effort, is to take no further action toward combining resources, operations or technology and continue separate operations as they are today. Although this requires the least amount of joint effort, it also provides very little additional benefit regarding improving service, sharing data, resources, or potential financial savings from facilities, personnel or further technology integration.

- **Potential Benefits**
  - Little or no additional joint effort required.
  - Each Dispatch Center can move forward with technology purchases without need to consider any additional or outside operational requirements.
- **Potential Risks**
  - Possible purchase and maintenance of multiple disparate systems, moving forward.
  - Possible continued operation and maintenance of similar but separate radio systems.

- Limited data sharing capabilities.
- Limited or no benefit of personnel resource sharing.
- No move toward any substantial improvement of call-processing times.

(2) Regionalization

The second option is regionalization. Sarpy and Douglas Counties have already accomplished quite a bit toward this Option. It could be said that they are primarily operating in a Regionalized mode. This allows the Dispatch Centers to share CAD data, handle one another's overflow 911 calls more seamlessly and work together in a more regional manner without combining operations or sharing a facility. The Sarpy/Douglas situation is fairly unique in that Sarpy County already shares a CAD system with Douglas County. Under this scenario, the two Centers could continue to operate on a shared CAD system while maintaining separate operations. Importantly, if the Centers plan to move past this phase toward any form of consolidation, the existing shared CAD and other systems is a significant benefit for stepping toward virtual consolidation and basically a requirement for full consolidation.

- **Potential Benefits**

  - Each Center can still leverage the existing shared CAD without need to consider any additional technology or outside operational requirements.
  - Enhances communications and data interoperability between Dispatch Centers.
  - May improve call hand-off between Counties.

- **Potential Risks**

  - Lost opportunity to move toward more efficient use of already shared technology.
  - Limited or no benefit of personnel resource sharing.

(3) Virtual Consolidation

The third option is virtual consolidation. This is a consolidation in the sense that the Dispatch Centers can take each other's 911 calls as they come in, enter calls for service in the same CAD system and dispatch each other's units. In this option, however, the Dispatch Centers remain in separate facilities with separate personnel and governance. The policies, procedures and agreements related to the specific operations would need to be clearly defined.

- **Potential Benefits**

  - Ability to share personnel resources.
  - Maintenance of separate command and control or contractual agreement for management of the two centers can be reached.
  - Provides a live backup facility for disaster recovery. The current backup location at 1819 Farnam can be eliminated.
  - Allows the Dispatch Centers to define the extent and limitations of shared operations (example, call takers from either Center can handle 911 calls but the dispatching of Police/Fire units is handled only by their own Center, etc.)
  - Provides a direct pathway to full consolidation, if that is the final goal.

- **Potential Risks**

  - More complex from a technical standpoint in comparison to other options.
  - Does not provide potential cost savings from a shared facility.
  - Requires significant amount of joint training and development of policies and procedures.
  - Complicates the control of personnel and quality of service.
  - Redesign and expense to better integrate radio systems, fire alerting, paging and consoles.

(4) Co-location

The fourth option is co-location. This allows Sarpy and Douglas to operate in the same facility, without having to combine operations or all technology. This is not necessarily the step between virtual and full

consolidation, but it may be in cases where the governance, personnel or other details are still being finalized at the time the Centers move into one shared facility. It is important to note that co-location is not a long-term option recommended by the project team.

- **Potential Benefits**

  – Maintenance of separate command and control.
  – Allows the Dispatch Centers to define the extent and limitations of shared operations (example, call takers from either Center can handle 911 calls but the dispatching of Police/Fire units is handled only by their own Center, etc.)
  – Potential cost savings from a shared facility.

- **Potential Risks**

  – Possible purchase and maintenance of two separate CAD systems and possible requirement for additional technology component (3rd party CAD data sharing product).
  – Limited or no benefit of personnel resource sharing.

5. Full Consolidation

The final option is Full consolidation. This requires a shared Dispatch Center facility and integrates all operations, governance, personnel, technology, etc. into one.

- **Potential Benefits**

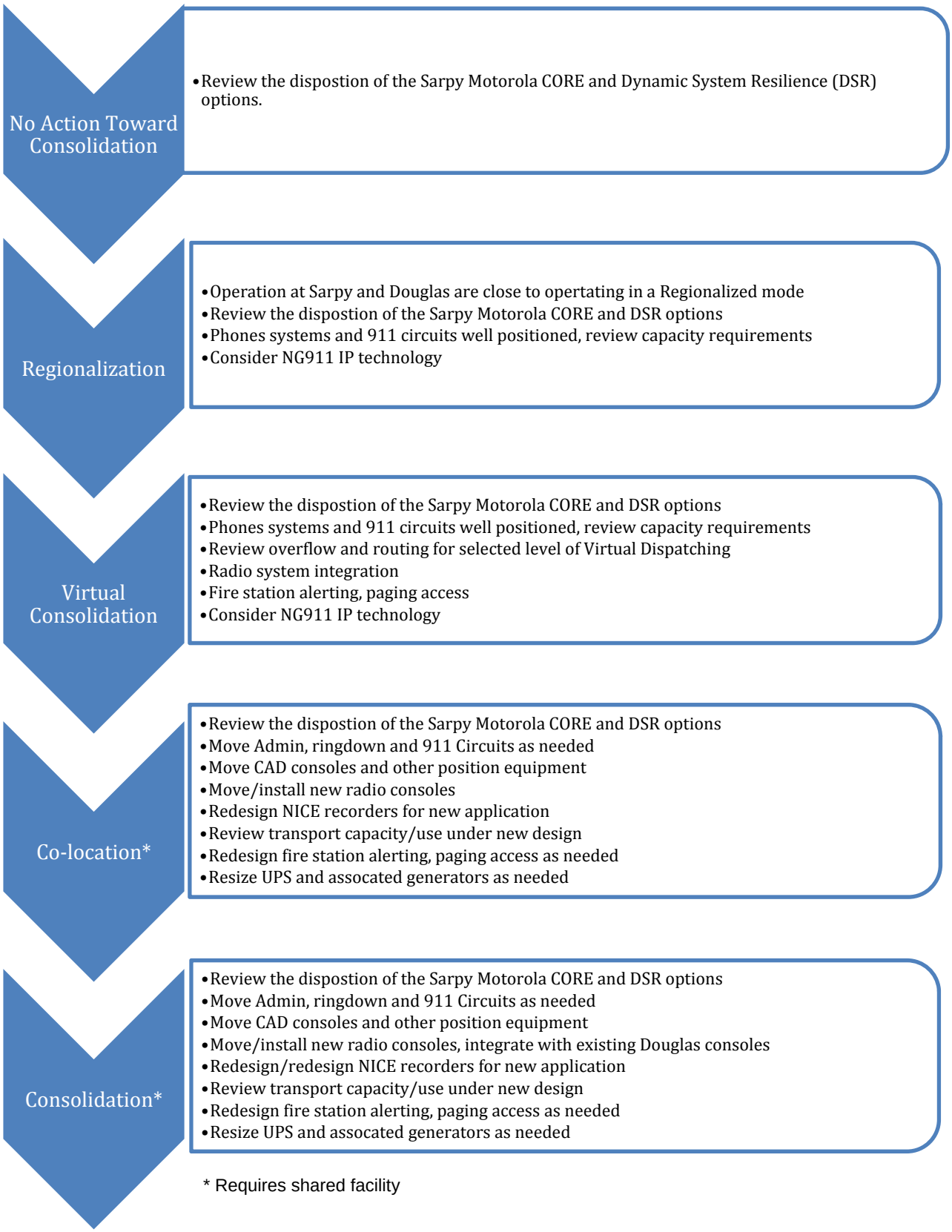
  – Ability to share personnel resources.
  – Potential cost savings from a shared facility.
  – Interoperability between regional agencies at the Dispatch level.
  – Possible improved call-processing time for and elimination of duplication of effort.

- **Potential Risks**

  – Requires significant amount of joint training and development of policies and procedures.
  – Requires a shared facility to be built-out, prepared, etc. and furniture and equipment to be relocated.

6. Technology Requirements for the Consolidation Options

The diagram on the following page indicates the technology requirements for each of the consolidation options mentioned above.


No Action Toward Consolidation
•Review the dispostion of the Sarpy Motorola CORE and Dynamic System Resilience (DSR) options.
Regionalization
•Operation at Sarpy and Douglas are close to opertating in a Regionalized mode
•Review the dispostion of the Sarpy Motorola CORE and DSR options
•Phones systems and 911 circuits well positioned, review capacity requirements
•Consider NG911 IP technology
Virtual Consolidation
•Review the dispostion of the Sarpy Motorola CORE and DSR options
•Phones systems and 911 circuits well positioned, review capacity requirements
•Review overflow and routing for selected level of Virtual Dispatching
•Radio system integration
•Fire station alerting, paging access
•Consider NG911 IP technology
Co-location*
•Review the dispostion of the Sarpy Motorola CORE and DSR options
•Move Admin, ringdown and 911 Circuits as needed
•Move CAD consoles and other position equipment
•Move/install new radio consoles
•Redesign NICE recorders for new application
•Review transport capacity/use under new design
•Redesign fire station alerting, paging access as needed
•Resize UPS and assocated generators as needed
Consolidation*
•Review the dispostion of the Sarpy Motorola CORE and DSR options
•Move Admin, ringdown and 911 Circuits as needed
•Move CAD consoles and other position equipment
•Move/install new radio consoles, integrate with existing Douglas consoles
•Redesign/redesign NICE recorders for new application
•Review transport capacity/use under new design
•Redesign fire station alerting, paging access as needed
•Resize UPS and assocated generators as needed
* Requires shared facility

7. Implementation of Consolidation Options

The options detailed above can be implemented individually, or in a phased approach. Each step essentially builds upon the technology and shared operations implemented in the previous step. The exception to this may be the co-location option, which is not recommended by the project team.

The options may also be viewed as individual configurations and not part of a larger continuum or plan toward full consolidation. The virtual consolidation option may ultimately be the long-term goal of the Communication Centers. In that case they may either move directly to implement that option or follow the steps of options until they reach that configuration, then stop. Additionally, decision points can be built into the implementation plan, to re-evaluate operations and next steps at certain points in the process.

It is important to note, that the option to take no action toward consolidation should still necessitate a decision on the Motorola system Dynamic System Resilience (DSR) or connection of the Sarpy system to the ORION system. Also, the move to NG911 technology is currently being reviewed by the State and the Counties are involved in that review.

(1) Timeline

As stated above, the implementation timeline may vary depending upon the option selected and the method to get there. From a technology standpoint, it is likely the full design and planned move of all position equipment, 911, other telephone lines and ancillary equipment, will take the longest amount of time. Our estimate for this process is approximately one (1) to one and a half (1.5)

years. This timeline does not address the training, development of policies and procedures, operational changes or personnel/governance changes that may also be required.

Recommendation: Sarpy and Douglas County should explore opportunities to consolidate the emergency communication centers either in a virtual or fully consolidated approach.

Recommendation: If no action is taken toward consolidation, Sarpy County should connect to the Douglas County ORION system as a subscriber.

Recommendation: The Counties should continue to work with the State of Nebraska toward implementing the NG911 system as it becomes available.

4. ANALYSIS OF TECHNOLOGY AND INFRASTRUCTURE COSTS.

This section provides an estimate of potential technology costs of the recommended options including Status Quo, Virtual Consolidation and Full (Physical) Consolidation. The costs are represented in a range, as it is not possible to get accurate or actual pricing without a bid or request for quotation process. The estimated prices are based on actual quotes from other similar PSAPs and our experience with numerous similar technology purchases and implementations. These estimated prices are for the purpose of high-level decision-making. Once an overall direction has been determined, the participating agencies should use the bid process, bulk purchases and/or regional pricing contracts to secure the best prices.

The spreadsheet presented at the end of this section represents potential cost ranges (low cost to high cost) for each option including Status Quo, Virtual Consolidation and Full Consolidation. Under most circumstances Status Quo would not require any expenditure. In the case of Sarpy County, we believe that

the integration of the radio system with Douglas County would offer a significant enhancement and should be considered as an objective, regardless of the consolidation option. We have made the assumption that much of the networking and radio console move/programming may be completed with in-house resources, but we have included line items as placeholders for these tasks as they will need to be completed.

Due to the current use of many shared systems, a Sarpy County, Douglas County Virtual or Full Consolidation will require far less cost and effort than many similar sized agencies considering some form of consolidation. Other than some reprograming and/or moving of equipment or interfaces, much of which may be accomplished in-house, areas we believe will incur little and sometimes no cost, include:

- Computer Aided Dispatch (CAD) – shared by both Counties today
- Law RMS interface to CAD – already in use today
- Fire RMS interface to CAD – already in use today
- GIS Mapping – shared by both Counties today
- EMD – same card system used by both Counties today
- Mobile Data – already in use today by both Counties

We also note the following assumptions and possible issues related to the costing as presented in the Cost Estimate Chart:

(1) Recording Systems

Both Sarpy and Douglas Counties utilize the same brand (NICE) voice recording systems. Recently, Sarpy County purchased a new, current

technology, NICE system. Under the Virtual Consolidation option, the recording systems may essentially remain in place, each recording the separate Center's telephone and radio activity. Should radio dispatching occur on a "cross-center" basis, as part of a Virtual Consolidation, radio traffic recording may need to be reviewed. This is a minimal risk, since currently all system channels are recorded at Douglas, and the new Sarpy system would be recording talk groups associated with Sarpy agencies. Positions are recorded as well. The logistics of providing requested incident recordings might be somewhat difficult, requiring searching and compiling recordings from two systems, at two locations if the recording systems are not consolidated.

Under the Full Consolidation option, the new NICE system should be installed at the consolidated location and position, radio, and telephone recording combined into one system. This would likely require some enhancement of the new system to include the combined telephone lines (911 and non-emergency), the combined radio traffic and the additional positions.

(2) Radio Consoles

Recently, Sarpy County purchased twelve (12) new Motorola MCC7500 consoles to replace the existing Motorola Centracom Gold Elite console system and existing 8 console positions. The other four (4) consoles were purchased to be installed at the backup Center at 1819 Farnam.

Under the option for Virtual Consolidation, again, depending upon the level of Consolidation, radio traffic may be interfaced between Centers with a combination of Gold Elite and MCC7500 console equipment. The MCC7500 is

new, utilizes digital communication technology and is directly compatible with the two Counties' radio systems. The Counties and the other owners of Gold Elite systems have received 'End of Life" notification from the vendor. Motorola will only support the system for a few more years.

With Full Consolidation, additional MCC7500 consoles should be purchased to replace the remaining Douglas County radio consoles. Based on greater efficiency, the Full Consolidation option will offer the opportunity to reduce the total number of combined radio positions. Moving to the MCC7500 consoles will provide for consistency across all positions. For the purpose of this cost analysis, we have estimated that the eight (8) Sarpy County consoles will be utilized in a consolidated center, the four (4) new consoles will be left in the backup center and an additional nine (9) consoles will need to be purchased for the consolidated center. This would make a total of 17 consoles available in the consolidated center. It may be possible to further reduce the total number of consoles required for a consolidated center, however, for cost-estimating purposes, we have utilized a more conservative figure.

(3) Radio System

Recently, Sarpy County purchased new base radios for their infrastructure and purchased a large number of new subscriber radios. This purchase positions Sarpy to be able to eventually migrate its system to operate seamlessly with the Douglas system. Should Sarpy and Douglas agree to interconnect the systems, the options to operate under Virtual or under a Full Consolidation may be easier to accomplish.

Changes to the radio systems are not required under any of the options. With today's radio system design, Virtual Consolidation would require remote connectivity for radio operation by the each of the Centers. This would be necessary should the level of Virtual Consolidation include radio dispatching in addition to call taking. Full Consolidation would also require remote system console connectivity at a minimum.

With all options, significant interoperability and other operational benefits may be achieved by the connection of the Sarpy system to the ORION system. However, neither the Dynamic System Resilience (DSR) nor the connection without the DSR option are imperative to accomplish the consolidation options.

(4) 911 Trunks

Full Consolidation would require the repositioning of existing 911 CAMA trunks. The repositioning should involve a full traffic analysis to determine the number of combined 911 trunks required. Full Consolidation also requires additional 911 call routing and "switch over" strategies for the Backup Center at 1819 Farnam.

A redesign of the traffic flow and overflow routing is required for Virtual Consolidation. A full traffic analysis in order to size the number of trunks or bandwidth capacity, based on the approach taken with Virtual Consolidation, should be performed with CenturyLink.

Under both options, we recommend moving to Next Generation (NG) 911 (IP based 911) for much greater ability to dynamically route calls and the ability to provide enhanced resiliency.

(5) 911 Phone system, Non-Emergency and Administration Phone Lines

The 911 phone systems are provided by the same vendor for equipment in both Centers and already well positioned for Virtual Consolidation (again, trunk/transport sizing may need to be revisited based on traffic). Equipment (positions) will need to be moved and reconfigured under Full Consolidation. Virtual Consolidation will require some reconfiguration of the servers and positions at each of the Centers.

Under Full Consolidation, administration and non-emergency phone lines would need to either be moved or, possibly, transported over the existing network. Ringdown phone circuits will also need to be moved.

(6) Fire Station Alerting

As presented previously in the Issues and the Profile documents, Sarpy and Douglas Counties use two separate fire station alerting systems. For the purposes of the Virtual Consolidation, and the Full Consolidation options, the station alerting systems should be redesigned into one system. The use of one system for all Fire and Medical calls will help avoid possible cumbersome station paging, simplify training, and possibly reduce time and errors. Although we recommend one station alerting system to reduce operation and maintenance issues, the two systems may continue to be independently operated and maintained. The systems would need to be redesigned to allow access from a remote location under Virtual Consolidation. With Full Consolidation the Sarpy system would need to be configured to operate from the consolidated location.

Under either consolidation effort, depending upon the method calls are handled between call taking and fire dispatching, separate fire station alerting systems will need to be addressed technically and operationally. A newly designed system should likely be Internet Protocol (IP) based and meet National Fire Protection Association (NFPA) standards.

(7) Radio Paging

Virtual Consolidation may require some additional configuration of paging access to dispatchers without current access. Full Consolidation may require some repositioning of third party equipment, or interfaces with that equipment, not already interfaced to CAD.

(8) Backup Center at 1819 Farnam.

Based on the option selected, we recommend establishing a full review and plan to accommodate an entire consolidated Center at the Farnam location should a consolidated Center need to be evacuated or is rendered unusable.

The review should encompass all dispatch functions including delivery of phone (911 and Non-emergency), CAD, radio, Fire Station alerting, and other functions.

All telephone circuits need to be accessible at 1819 Farnam either by VoIP based transport, forwarding or central office switching.

(9) ESTIMATED COSTS FOR TECHNOLOGY

As mentioned above, the following spreadsheet compares the potential cost ranges for three best options available; including Status Quo, Virtual Consolidation and Full Consolidation.

These estimated costs only address the total cost and do not attempt to assign the cost to a specific agency. Many consolidated PSAPs develop cost sharing models based upon percentage of use (often defined by total number of calls for service per agency or some other metric). This cost breakdown would be determined by the specific governance model developed as part of the consolidation effort as discussed later in this chapter.

Estimated Costs for Technology in Consolidation Options

	Status Quo		Virtual Consolidation		Full Consolidation [1]	
Technology Components	**Low Cost**	**High Cost**	**Low Cost**	**High Cost**	**Low Cost**	**High Cost**
Recording System			$0	$0	$20,000	$30,000
Radio Consoles			$0	$450,000	$350,000	$450,000
Radio System[2]	$190,000	$235,000	$190,000	$235,000	$190,000	$235,000
911 Trunks			$5,000	$10,000	$8,000	$20,000
911 Phone system, Non-emergency and Admin lines			$5,000	$20,000	$12,500	$30,000
Fire Station Alerting			$50,000	$125,000	$50,000	$125,000
Radio Paging[3]						
Backup Center at 1819 Farnam.			$30,000	$100,000	$30,000	$100,000
Possible Microwave/Fiber Transport Network System, Reconfiguration/Components3			$60,000	$120,000	$60,000	$120,000
Radio Console Programming and Configuration[3]						
CAD Terminal Moves/Reconfiguration[3]						
Total Estimated Capital Cost	**$190,000**	**$235,000**	**$340,000**	**$1,060,000**	**$720,500**	**$1,110,000**
Potential Annual Recurring Cost (7% - 10%)	$13,300	$23,500	$23,800	$106,000	$50,435	$111,000

[1] Requires new facility.

[2] Recommend connecting the radio systems (not required)

[3] Equipment moves, programing, etc. may be performed by internal staff

5. SCENARIOS AND RECOMMENDATIONS

Matrix consulting Group developed various scenarios providing a range of options for emergency communication service delivery. We have prepared five-year pro forma budget for each scenario supporting the relative cost analysis. These five-year budgets are presented at the end of this chapter. For comparison purposes, we have utilized the agreed upon capital costs utilized in the that required capital costs and referenced timelines developed by the Technical Finance Committee formed by Sarpy and Douglas Counties. The following summarizes these scenarios:

1. STATUS QUO

In this scenario, Sarpy County will continue the independent delivery of E911 services by making necessary investments in personnel and infrastructure to support a sustained effort. Governance would remain the responsibility of Sarpy County, which provides maximum local control while minimizing opportunities to share services and resources.

Sarpy County would continue to provide both public safety support and ancillary services at the current levels. Sarpy County would continue to provide a physical presence at the County Dispatch Facility 24 hours a day, 7 days a week.

Costs would change over the five-year forecasting horizon to reflect identified necessary capital investments as well as inflationary increases to salaries, supplies and service costs.

2. VIRTUAL CONSOLIDATION

In this scenario, the Counties will use available technology to support application of staff and infrastructure resources across existing service platforms while maintaining

independent operations at each of their respective locations. This is a consolidation in the sense that the Dispatch Centers can take each other's 911 calls as they come in, enter calls for service in the same CAD system and dispatch each other's units. This option has two governance scenarios

- **Scenario 1:** The Dispatch Centers remain in separate facilities with separate personnel and governance.
- **Scenario 2:** The Dispatch Centers remain in separate facilities, but Sarpy County contracts with Douglas County for the administration and operation of the Center in Sarpy County.

The policies, procedures and agreements related to the specific operations would need to be clearly defined. For this purpose in this option, we would recommend using a "coordinating committee" to provide a mechanism for frequent and technical discussions among the Counties.

Given the complexities and continuing developments regarding technology and approaches in this option, we have assumed that staffing remains the same as current levels during the forecast period for Scenario 1 and that Administrative and Support staff are consolidated in Scenario 2, but operational staffing remains the same. There may be opportunities in the future to leverage the technology and information sharing to consider all staffing resources available at the multiple sites as parts of a single operation. As with the Status Quo Scenario, we are assuming that local staff would continue to provide both public safety support and ancillary services at current levels. Local staff would also continue to provide a physical presence at the Sarpy and Douglas County Communications Centers.

3. CONSOLIDATION WITH DOUGLAS COUNTY

In this scenario, the Counties will combine operations and infrastructure to support operations in one location for the benefit of the two Counties. The governance relationship can be organized by governing board or through a contract for services. Since this represents a new effort, the Counties can take advantage of the opportunity to fashion a governance approach that represents both large and small government participants in the consolidated operation.

To address this issue, the project team recommends in this scenario to develop a two-tier approach to govern the consolidated agency, each with important duties and responsibilities to fulfill the mission of a consolidated dispatch agency. The project team believes that the two "committees" developed for this scenario will help to reflect the unique oversight needs of each participating community in the consolidation effort. These committees include:

- **A Board of Directors** composed of the County Administrator (or designee) from each County, a County Board member from each of the participating Counties and a number of at-large representatives from the Operations Council (below), appointed by the Operations Council, and representing all other service recipient jurisdictions. This Board would be involved in:

  - Attending quarterly meetings or as necessary to conduct the business of the consolidated agency;

  - Responsibility to provide the general oversight, governance, policy and legislative direction of the consolidated agency including appointment and termination of the center Director;

  - Overseeing the financial solvency of the organization including financial audits, financial procedures, labor negotiation strategies and approving the annual budget;

  - Approving contracts, agreements, and purchases over a pre-determined dollar amount, to be adjusted and revised over time;

  - Approving additions and modification to personnel rules and procedures and serves as a grievance council, as necessary;

- Other oversight duties and responsibilities, as determined appropriate.

- **An Operations Council** composed of one voting member from each agency served by the consolidated dispatch agency. This Council would be involved in:

  - Attendance at monthly meetings:

  - Provision of regular operational and procedural direction and issues resolution as it relates to the day-to-day operations of the consolidated agency. Provides supervision and annual evaluations to the Director, recommending compensation changes, accolades and/or discipline to the Board of Directors.

  - Oversight of more timely issues impacting the consolidated organization including various operational, technical and communications needs of the respective agencies, purchasing and contract approvals under a pre-determined maximum threshold, and other day-to-day work direction and support as requested by the agency's Director.

  - Performance by certain representatives of labor negotiations on behalf of the agency, as required.

  - Development of an annual budget and annual staffing plan, advising and recommending such to the Board of Directors for its review, consideration, and approval/disapproval.

  - Other general duties and responsibilities, as determined to be appropriate.

In effect, the consolidated dispatch agency would be provided oversight and work direction from two independent, yet interlinked, governing entities with important and discreet duties and responsibilities. The "two committee" structure is not uncommon, and is designed as noted above to help address the important representation concerns certain to be of interest to any participating community. The Board of Directors, with disproportional representation, would have critical general oversight responsibilities whereas the Operations Council, with proportional representation, would be more involved in the day-to-day business of the consolidated agency. The two "committee" structures provide important checks and balances, and through collaborative

governance can help ensure that a consolidated dispatch agency effectively and efficiently serves all citizens of the participating communities.

For organizational support, we are recommending that Sarpy County enter into a contract for services with Douglas County to provide both emergency communications and organizational support services. This will minimize the additional costs associated with the creation of a new governmental entity. This approach supports effective representation of the participating agencies while also providing cost effective and efficient service provision using aggregated staff resources as well as existing support mechanisms (finance and accounting, purchasing, human resources, risk management and legal).

Because of the various staffing requirements for the options shown above, the following tables illustrate the staffing recommendations for each option:

Stand-Alone Operation – Sarpy County

Position	# Recommended	Variance from Current
Director	1	0
Assistant Director	1	0
IS Support	3	0
Telephone & Technology Mgr.	1	0
Radio Technician	2	0
Admin. & Training Mgr.	1	0
Lead Dispatcher	4	0
Senior Dispatcher	4	0
Dispatcher	25	0
Total	**42**	**0**

Virtual Consolidation – Separate (Scenario 1)

Position	# Recommended	Variance from Current
Director	2	0
Assistant Director	2	0
Technical Support	11	0
Admin, Training & Accreditation	3	0
Supervisor (Lead Dispatcher)	7	0
Specialist (Senior Dispatcher)	7	0
Dispatcher	65	0
Call-taker (Operator)	17	0
Total	**114**	**0**

Virtual Consolidation – Contract for Services (Scenario 2)

Position	# Recommended	Variance from Current
Director	1	-1
Assistant Director	1	-1
Technical Support	7	-4
Admin, Training & Accreditation	2	-1
Supervisor (Lead Dispatcher)	10	+3
Senior Dispatcher	0	-7
Specialist	3	0
Dispatcher	65	0
Call-taker	17	0
Total	**106**	**-11**

Full Consolidation – Contract for Services

Position	# Recommended	Variance from Current
Director	1	-1
Assistant Director	1	-1
IT / Radio Manager	1	+1
Database Administrator	1	+1
GIS/MSAG Coordinator	1	+1
Radio Technician	2	-2
Computer Technician / Tape	2	-3
Supervisor	5	-2
Senior Dispatcher	0	-7
Specialist	5	+2
Dispatcher (Police & Fire)	56	-9
Call-taker	21	+4
Total	**96**	**-21**

As shown above, there are varying degrees of savings from the duplication of staffing as the agencies move from a status quo environment to full consolidation. The two scenarios with the greatest staff savings result in Sarpy County contracting with Douglas County for services. This is true in the virtual consolidation scenario where there is the potential to reduce staffing by 11 personnel as compared with current operations and full consolidation where a reduction of 21 positions can be achieved. In either case, the project team recommends reducing the positions to the recommended levels through regular attrition. It is important to note that the project team is recommended staffing the centers with an appropriate level of supervisors to eliminate the need for the Senior Dispatch position to serve as the lead dispatcher in their

absence. For unscheduled vacancies, overtime can be used to fill the supervisor vacancy or the most specialists can serve in an acting capacity.

The following tables illustrate the projected costs of operating the Communications Centers. Table 1 illustrates the projected costs for operating the Sarpy County Communication Center, Table 2 illustrates the projected costs for operating the Douglas County Communication Center, Table 3 illustrates the projected costs of operating in a virtually consolidated environment (Scenario 1), Table 4 illustrates the projected costs of operating in a virtually consolidated environment (Scenario 2) and Table 5 illustrates the projected costs of operating in a fully consolidated environment. The salary and benefit costs for the status quo operations are from currently available budget figures. The salary and benefit costs for a consolidated environment are from the assumptions presented above. Additional capital an infrastructure costs are from the projections presented in the Technical Finance Committee Report and include the following:

- Rent costs for Douglas County are increased by $30,000 and carried forward with a 4% annual increase.
- Personnel costs are projected to increase at 4% per year.
- Sarpy County is projected to incur $271,000 in maintenance costs beginning in FY 15-16.
- Sarpy County is projected to expend $75,000 in remodeling costs in FY 14-15.
- Base station life expectancy for both Counties ends in FY 17-18 resulting in the need to replace 90 base stations at a cost of $40,000 each (60 in Douglas County - $6.4 million) and (30 in Sarpy - $1,884,982).
- Sarpy County expects ongoing service agreement costs to increase by $329,373 in FY 18-19.
- Douglas County plans to expand the existing center in FY 18-19 at an estimated cost of $3.5 million.
- Sarpy County anticipates the need to construct a new Communications Center in FY 18-19 at a cost of $7.5 million. This amount is removed in the fully consolidated option.

Table 1: Sarpy County Stand-Alone Communications Center

Category	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	Total
Personnel	$3,173,125	$3,302,037	$3,512,054	$3,652,536	$3,798,638	$3,950,583	$4,108,606	$4,272,951	$29,770,530
Operating	$201,450	$177,500	$184,600	$462,984	$481,503	$500,763	$850,167	$884,174	$3,743,141
Supplies	$12,000	$11,500	$11,960	$12,438	$12,936	$13,453	$13,992	$14,551	$102,830
Rent	$33,713	$63,000	$65,520	$68,141	$70,866	$73,701	$76,649	$79,715	$531,305
Subtotal	**$3,420,288**	**$3,554,037**	**$3,774,134**	**$4,196,099**	**$4,363,943**	**$4,538,500**	**$5,049,414**	**$5,251,391**	**$34,147,806**
Capital	$229,803	$176,500	$258,560	$190,902	$198,538	$2,051,462	$7,714,739	$223,329	$11,043,833
Grand Total	**$3,650,091**	**$3,730,537**	**$4,032,694**	**$4,387,001**	**$4,562,481**	**$6,589,962**	**$12,764,153**	**$5,474,720**	**$45,191,639**

Table 2: Douglas County Stand-Alone Communications Center

Category	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	Total
Personnel	$5,249,069	$5,459,032	$6,023,591	$6,264,535	$6,515,116	$6,775,721	$7,046,750	$7,328,620	$50,662,434
Operating	$1,850,000	$1,924,000	$2,000,960	$2,080,998	$2,164,238	$2,250,808	$2,340,840	$2,434,474	$17,046,318
Supplies	$14,000	$14,560	$15,142	$15,748	$16,378	$17,033	$17,714	$18,423	$128,998
Rent	$16,000	$46,640	$48,506	$50,446	$52,464	$54,562	$56,745	$59,014	$384,377
Subtotal	**$7,129,069**	**$7,444,232**	**$8,088,199**	**$8,411,727**	**$8,748,196**	**$9,098,124**	**$9,462,049**	**$9,840,531**	**$68,222,127**
Capital	$30,000	$31,200	$32,448	$33,746	$35,096	$6,436,500	$3,537,960	$39,478	$10,176,428
Grand Total	**$7,159,069**	**$7,475,432**	**$8,120,647**	**$8,445,473**	**$8,783,292**	**$15,534,624**	**$13,000,009**	**$9,880,009**	**$78,398,555**

Table 3: Virtual Consolidation Stand-Alone (Scenario 1)

Category	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	Total
Personnel	$8,422,194	$8,761,069	$9,535,645	$9,917,071	$10,313,754	$10,726,304	$11,155,356	$11,601,570	$80,432,963
Operating	$2,051,450	$2,101,500	$2,185,560	$2,543,982	$2,645,742	$2,751,571	$3,191,007	$3,318,648	$20,789,460
Supplies	$26,000	$26,060	$27,102	$28,186	$29,314	$30,487	$31,706	$32,974	$231,830
Rent	$49,713	$109,640	$114,026	$118,587	$123,330	$128,263	$133,394	$138,730	$915,683
Subtotal	**$10,549,357**	**$10,998,269**	**$11,862,333**	**$12,607,826**	**$13,112,140**	**$13,636,625**	**$14,511,463**	**$15,091,922**	**$102,369,936**
Capital	$259,803	$207,700	$291,008	$224,648	$233,634	$8,487,962	$11,252,699	$262,807	$21,220,261
Grand Total	**$10,809,160**	**$11,205,969**	**$12,153,341**	**$12,832,474**	**$13,345,774**	**$22,124,587**	**$25,764,162**	**$15,354,729**	**$123,590,197**

Table 4: Virtual Consolidation Contract (Scenario 2)

Category	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	Total
Personnel	$8,174,726	$8,501,715	$8,841,784	$9,195,455	$9,563,273	$9,945,804	$10,343,636	$10,757,382	$75,323,775
Operating	$2,051,450	$2,101,500	$2,185,560	$2,543,982	$2,645,742	$2,751,571	$3,191,007	$3,318,648	$20,789,460
Supplies	$26,000	$26,060	$27,102	$28,186	$29,314	$30,487	$31,706	$32,974	$231,830
Rent	$49,713	$109,640	$114,026	$118,587	$123,330	$128,263	$133,394	$138,730	$915,683
Subtotal	**$10,301,889**	**$10,738,915**	**$11,168,472**	**$11,886,210**	**$12,361,659**	**$12,856,125**	**$13,699,743**	**$14,247,734**	**$97,260,748**
Capital	$259,803	$207,700	$291,008	$224,648	$233,634	$8,487,962	$11,252,699	$262,807	$21,220,261
Grand Total	**$10,561,692**	**$10,946,615**	**$11,459,480**	**$12,110,858**	**$12,595,293**	**$21,344,087**	**$24,952,442**	**$14,510,541**	**$118,481,009**

Table 5: Fully Consolidated Call Center

Category	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	Total
Personnel	$7,406,949	$7,703,227	$8,011,356	$8,331,810	$8,665,083	$9,011,686	$9,372,153	$9,747,040	$68,249,304
Operating	$2,051,450	$2,101,500	$2,185,560	$2,543,982	$2,645,742	$2,475,889	$2,904,297	$3,349,842	$20,258,262
Supplies	$26,000	$26,060	$27,102	$28,186	$29,314	$31,694	$32,962	$34,280	$235,598
Rent	$49,713	$109,640	$114,026	$118,587	$123,330	$52,488	$54,588	$56,771	$679,143
Subtotal	**$9,534,112**	**$9,940,427**	**$10,338,044**	**$11,022,565**	**$11,463,469**	**$11,571,757**	**$12,364,000**	**$13,187,933**	**$89,422,307**
Capital	$259,803	$207,700	$291,008	$224,648	$233,634	$11,987,962	$252,699	$262,807	$13,720,261
Grand Total	**$9,793,915**	**$10,148,127**	**$10,629,052**	**$11,247,213**	**$11,697,103**	**$23,559,719**	**$12,616,699**	**$13,450,740**	**$103,142,568**

As shown above there are considerable annual savings projected when consolidated operations are considered in a contract with Douglas County. The savings in a virtual center contract (Scenario 2) through FY 19-20 is approximately $5.11 million. In a fully consolidated approach the agencies can expect to save approximately $20.45 million. The larger savings are primarily due to the elimination of approximately $7.5 million in one time construction costs allocated for FY 18-19 to build a new Communications Center in Sarpy County, which will not be required in a fully consolidated approach.

6. EMPLOYEE SURVEY RESULTS

As part of the Emergency Communications study evaluating the current dispatch systems and the feasibility of regionalizing dispatch services with Douglas County, the project team developed and distributed a survey to the employees of the Sarpy County dispatch centers in October 2013. The following **draft** summary provides information regarding this survey instrument.

1. AN ANONYMOUS SURVEY WAS CIRCULATED TO ALL EMPLOYEES OF THE E911 CENTER IN SARPY COUNTY.

An anonymous survey was circulated to obtain staff perspectives regarding a variety of issues concerning the level and quality of service provided by the Sarpy County Dispatch Center. Surveys were distributed to the employees of the dispatch centers. Employees were asked to respond to a series of questions regarding dispatch agency operations and service delivery concerns.

Respondents provided the degree to which they either disagreed or agreed with the statement, given the following options: “Strongly Disagree”, “Disagree”, “Agree”, “Strongly Agree”, and “No Opinion”. For discussion purposes in this document, the project team groups the “Strongly Disagree” and “Disagree” responses into one grouping when reporting general employee responses; the same is true for the “Strongly Agree” and “Agree” responses.

The following tables show the overall breakdown of responses by full-time / part-time employee, employee assignment, and years of service:

Employee	
Full-Time	29
Part-Time	0
Total	**29**

Assignment	
Dispatcher / Call-Taker	12
Supervisor / Manager	12
Support for the Center	5
Total	**29**

Years of Service	
0 – 4 years	9
5 – 10 years	2
10+ years	18
Total	**29**

The sections below summarize the results of the employee survey.

2. MAJORITY OF EMPLOYEES AGREE THAT DISPATCH AGENCY PROVIDES HIGH LEVEL OF SERVICE AND A HIGH WORK MORALE.

Respondents were provided with statements concerning service levels to the community and to the different agencies for which the respondents provide dispatch services, work morale, and the effective operations of the dispatch center. The survey questions in this category and their responses are summarized in the table below:

Statement	Agree	Disagree	Neutral
1. Our dispatch agency provides a high level of service to our public safety partners and the community.	90%	0%	10%
8. Specialization (Call-takers, Police Dispatcher, Fire Dispatchers) would improve our service to the responders and the community.	41%	31%	28%
21. We have a good working relationship with the police / fire / medical agencies for which we dispatch.	48%	34%	17%
25. There is a consistent approach to handling complaints from field units regarding dispatcher performance	28%	38%	34%
26. My work morale is high.	62%	21%	17%
27. We have the proper tools and technology necessary to effectively do our jobs.	48%	31%	21%
28. As necessary, current technologies allow us to interface with other dispatch agencies to effectively dispatch public safety services.	48%	31%	21%

The following points summarize the statistical information provided in the table, above:

- An overwhelming majority of respondents, 90%, agreed with question #1, “Our dispatch agency provides a high level of service to our public safety partners and the community.” None of the respondents disagreed and the remaining 10% were neutral regarding the statement.

- Dispatch employees had a mixed reaction to question #8, “Specialization (Call-takers, Police Dispatcher, Fire Dispatchers) would improve our service to the responders and to the community.” Approximately 41% of respondents agreed, 31% disagreed, and 28% had no opinion. Since respondents believe that within

the current structure of the dispatch agency they are already providing a high level of service, a mixed response pattern for this statement is consistent with the response to the previous statement.

- Nearly a majority of respondents, 48%, agreed with question #21, "We have a good working relationship with the police / fire / medical agencies for which we dispatch." About 34% of respondents actually disagreed and the remaining 17% were neutral.

  – If these responses are filtered by assignment type, it is interesting to note that while 58% of dispatcher / call-taker respondents disagree that there is a good working relationship, the same proportion of supervisory respondents, 58%, agree that there is a good working relationship. This suggests that there is clearly a stark divide in the perception among the dispatchers providing the actual support and the supervisory staff providing oversight to the dispatchers.

- Respondents had a mixed reaction to question #25, "There is a consistent approach to handling complaints from field units regarding dispatcher performance." About 28% of employees agreed, 38% disagreed and 34% remained neutral. Based on the mixed response to the previous statement, a possible reason for a lack of a good working relationship or lack of a higher percentage of agreement regarding that good working relationship could be the lack of consistency in handling complaints from those agencies for which the dispatchers are dispatching.

- A majority of respondents, 62%, agreed with question #26, "My work morale is high." 21% of employees disagreed and 17% remained neutral.

- Approximately 48% of respondents agreed with question #27, "We have the proper tools and technology necessary to effectively do our jobs." Approximately 31% of the respondents disagreed and 21% had no opinion.

  – Similar to question #21 when these responses are broken out by assignment type there are polarizing results, with 58% of dispatchers / call-takers disagreeing with the statement and 58% of supervisory staff agreeing with the statement. Since supervisory staff is most likely responsible for providing the tools and technology to the dispatchers / call-takers it is expected that they would believe that the necessary tools and technology are there, while the dispatchers actually using the technology and tools know whether they are helpful in supporting them to effectively perform their job.

- Respondents had mixed reactions to question #28, "As necessary, current technologies allow us to interface with other dispatch agencies to effectively dispatch public safety services" with about 48% agreeing, 31% disagreeing, and

21% remaining neutral. This response pattern is consistent with the previous statement, suggesting the employees generally are unclear regarding technology and it ability to enable them to effectively do their jobs including dispatching public safety services.

– Following the same logical thought process as the previous statement 58% of dispatchers / call-takers disagreed with the statement and 58% of supervisory staff agreed with the statement.

While the majority of respondents agree that they provide a high level of service and have high work morale, there was mixed reaction regarding dispatch specialization and the effective use of technology and tools in performing dispatch services.

3. RESPONDENTS AGREED THAT THERE IS A STRONG SENSE OF TEAMWORK AND THAT THEY INTEND TO MAKE THEIR CAREER AT THIS DISPATCH AGENCY, BUT THERE WERE MIXED REACTIONS TO EMPLOYEE ACCOUNTABILITY AND DIRECTION FROM MANAGEMENT.

Respondents were asked several series of statements concerning employee salaries, career opportunities, and accountability to management. The responses to the statements are summarized in the table, below:

Statement	Agree	Disagree	Neutral
2. Our entire compensation package (salary and benefits) is fair and equitable compared to most dispatch agencies.	72%	10%	18%
3. I'm intending to make a career at my dispatch agency.	79%	3%	18%
4. Employees are adequately rewarded, monetarily or otherwise, for good performance.	34%	48%	18%
5. Employees are held accountable for poor performance.	34%	48%	18%
6. My direct supervisor spends sufficient time with me to accurately evaluate my work performance.	38%	38%	24%
7. Our manager provides adequate direction and leadership, which motivates me to work well.	31%	45%	24%
22. There is a strong sense of teamwork in the Dispatch Center.	69%	14%	17%
24. Issues that affect me at work are clearly communicated from management in an honest and straightforward way.	34%	45%	21%

The following points summarize the statistical information provided in the table, above:

- A majority of respondents, 72%, agreed with question #2, "Our entire compensation package (salary and benefits) is fair and equitable compared to most dispatch agencies." Only 10% disagreed and 24% were neutral.

- A majority of respondents, 79%, agreed with question #3, "I'm intending to make a career at my dispatch agency." While only 3% disagreed and 18% were neutral.

- Nearly a majority of respondents, 48%, disagreed with question #4, "Employees are adequately rewarded, monetarily or otherwise, for good performance," while 34% agreed and 18% remained neutral. It is interesting to note that while the majority of respondents agreed that the compensation package for the agency was fair in relation to other dispatch agencies, this sentiment did not translate into rewards or bonuses for good performance.

  – If this response is broken out by the assignment of respondents, 75% of respondents who identified themselves as dispatchers / call-takers disagreed with this question #4 compared to 42% of Supervisor respondents.

- Similar to the previous statement about 48% of respondents disagreed with question #5, "Employees are held accountable for poor performance", with 34% agreeing and 18% remaining neutral. Consistency in responses between this and the previous statement reflects that employees understand the questions as many of the statements are directly tied to other statements throughout the survey.

  – Approximately 58% of dispatcher / call-taker respondents disagreed with employees being held accountable for poor performance compared to 42% of supervisory respondents. It is interesting to note that the supervisor respondents had an even split of responses with 42% agreeing, 42% disagreeing, and the remaining 16% having no opinion.

- The same proportion of respondents, 38%, agreed and disagreed with question #6, "My direct supervisor spends sufficient time with me to accurately evaluate my work performance", while the remaining 24% of employees had no opinion. This statement is also closely tied with the previous statement, because if supervisors are not evaluating work performances it is difficult to also hold employees accountable. Therefore, it reinforces consistency in responses throughout the survey.

- Approximately 45% of respondents disagreed with question #7, "Our manager provides adequate direction and leadership which motivates me to work well." 31% of respondents agreed and 24% were neutral.

  – While 67% of dispatcher / call-taker responders disagreed with question #7, nearly half, or 50% of supervisor respondents agreed that their respective manager provides adequate direction and leadership

motivating the respondent to work well. This variance in response is to be expected based on the type of respondent.

- A majority of respondents, 69%, agreed with question #22, "There is a strong sense of teamwork in the Dispatch Center," while 14% disagreed and 17% were neutral. This response suggests that despite respondents being unclear about management and leadership communication there is still a belief that there is a strong sense of teamwork among the dispatchers at the center.

- Respondents had a mixed reaction to question #24, "Issues that effect me at wok are clearly communicated from management in an honest and straightforward way." About 34% of respondents agreed, 45% disagreed, and 21% were neutral.

  – If these responses are broken out by assignment type, a clear majority for question #24 emerges within the dispatcher / call-taker respondents. Approximately 67% of dispatcher / call-taker respondents disagreed with this statement, 25% agreed, and 8% had no opinion.

Generally, respondents agreed that they have an adequate compensation package, are intending to make their career at this dispatch agency, and that there is a strong sense of teamwork, but had mixed responses regarding employee accountability, performance evaluation, and direction and communication from management.

4. RESPONDENTS HAD A MIXED REACTION REGARDING THE DISTRIBUTION OF WORKLOAD AMONG DISPATCHERS, BUT AGREED THAT THE CURRENT 12-HOUR SHIFT SCHEDULE IS BENEFICIAL AND THAT THE AGENCY OVERALL HAS A GOOD WORK ETHIC.

Respondents were asked a series of statements regarding workload levels, including staffing levels, shift lengths, work ethic, and the appropriate use of technology to minimize stress associated with workload. The responses to the statements are summarized in the tables, below:

Statement	Agree	Disagree	Neutral
9. We have adequate staff to effectively perform our jobs.	34%	52%	14%
10. The current 12-hour shift is beneficial to my family and me.	62%	7%	31%
11. I am open to the idea of incorporating a shift schedule other than 12-hours.	31%	41%	28%
29. Workload is equitably distributed among individual dispatch workstations.	45%	28%	27%
30. Staff rotational practices result in equitable workload in my agency.	52%	10%	38%

31. Our agency's work ethic is good.	66%	23%	14%
32. Field units appropriately utilize MDT's to minimize radio traffic.	28%	45%	28%

33. Please select one of the following choices to describe your current workload:	**% of Responses**
I am always busy and can never catch up.	4%
I have the right balance of work and time available.	23%
I am often busy but can generally keep up.	50%
I could handle more work given the available time	23%

The following points summarize the statistical information provided in the table, above:

- A slight majority of respondents, 52%, disagreed with question #9, "We have adequate staff to effectively perform our jobs." Approximately 34% agreed and 14% were neutral.

- A majority of respondents, 62%, agreed with question #10, "The current 12-hour shift is beneficial to me and my family." Only 7% disagreed and the remaining 31% had no onion either way.

- Respondents had a mixed reaction to question #11, "I am open to the idea of incorporating a shift schedule other than 12-hours." Almost 41% of employees disagreed, 31% agreed, and 28% were neutral regarding the issue. Considering that the majority of respondents stated that the 12-hour shift is beneficial for them and their respective families, it was expected that the response to this statement would either be the majority of respondents disagree with the statement or that the highest percentage of responses would fall into the disagree category. As this was the case for this statement, it once again reinforces that respondents are being consistent in their responses throughout the survey.

  – Approximately 58% of dispatchers / call-taker respondents disagree with being open to the idea of a shift schedule other than 12-hours. This suggests that the staff working these 12-hour shifts is satisfied with that shift schedule.

- A plurality of respondents, 45%, agreed with question #29, "Workload is equitably distributed among individual dispatch work stations." About 28% disagreed, and 27% were neutral.

  – If these responses are categorized by assignment type, 58% of supervisory staff agree that workload is equitably distributed, compared to nearly half of or 50% of dispatcher / call-taker respondents, who disagree that workload is equitably distributed among the individual dispatch work stations. The opposite responses indicate that that there is some

miscommunication associated with workload between the dispatchers and the supervisors.

- A slight majority of respondents, 52%, agreed with question #30, "Staff rotational practices result in equitable workload in my agency." Only 10% disagreed and 38% had no opinion. It is interesting to note that while respondents generally cannot agree that the workload is equitably distributed they do agree that the staff rotational practices helps distribute that workload much more evenly.

- Two-thirds of respondents, 67%, agreed with question #31, "Our agency's work ethic is good," while 23% disagreed and 14% were neutral.

- Approximately 45% of respondents disagreed with question #32, "Field units appropriately utilize MDT's to minimize radio traffic." The same proportion of respondents, 28%, disagreed and had no opinion regarding the statement. This statement was included in this category, because minimization of radio traffic can be related to minimization of workload. Based on other responses throughout the survey indicating that dispatchers do not have the proper technology to effective and efficiently perform their jobs, it was expected that there would be a mixed reaction to this statement also.

- For question #33, nearly half of the respondents, 50%, chose "I am often busy but can generally keep up", while the same proportion of respondents 23% chose having the right balance of work and time available and that they could hand more work given the available time, while only 4% chose that they are always busy and can never catch up.

Overall, a majority of employees agreed with the 12-hour shift schedule, staff rotational practices result in an equitable workload, and that the agency has a good work ethic. However, there was mixed response regarding overall equitable distribution of the workload, appropriate utilization of the MDT's to minimize radio traffic, the idea of switching to non-12 hour shift schedules, and the day-to-day workload.

5. DISPATCH EMPLOYEES AGREED THAT THE AGENCY RECRUITED, RETAINED, AND HAD A STRONG AND CONSISTENT INITIAL TRAINING PROGRAM, BUT DISAGREED THAT SUPERVISORS AND MANAGERS RECEIVED APPROPRIATE TRAINING TO BE EFFECTIVE LEADERS.

Respondents were asked a series of statements regarding dispatch center recruitment techniques, retention of employees, and training provided to employees.

The survey questions in this category and their responses are summarized in the table below:

Statement	Agree	Disagree	Neutral
12. We do a good job recruiting qualified applicants.	52%	17%	31%
13. We take the appropriate steps to hire the best-suited candidates for the agency.	59%	14%	27%
14. Our agency does a good job retaining qualified applicants.	52%	17%	31%
15. The agency provides staff with a strong and consistent initial training program so they are prepared to do their jobs.	76%	10%	14%
16. The new approach to the initial training program will produce high quality employees for the agency.	76%	3%	21%
17. The agency provides adequate in-service and continuous training.	45%	38%	17%
18. Center supervisors and managers receive the appropriate training to be effective leaders.	21%	52%	27%

The following points summarize the statistical information provided in the table, above:

- A slight majority of respondents, 52% agreed with question #12, "We do a good job recruiting qualified applicants." About 17% disagreed and the remaining 31% were neutral.

- A majority of the respondents, 59% agreed with question #13, "We take the appropriate steps to hire the best suited candidates for the agency." While 14% of respondents disagreed, 27% chose to remain neutral. The response to this statement suggests that respondents believe that of the qualified applicants recruited only the best suited are actually hired for the agency.

- A slight majority of respondents, 52% agreed with question #14, "Our agency does a good job retaining qualified applicants." Approximately 17% disagreed and 31% were neutral.

- A majority of respondents, 76%, agreed with question #15, "The agency provides staff with a strong and consistent initial training program so they are prepared to do their jobs." Only 10% disagreed and 14% had no opinion.

- A majority of respondents, 76%, agreed with question #16, "The new approach to the initial training program will produce high quality employees for the agency." Only 3% disagreed and 21% remained neutral.

- Respondents had a mixed reaction to question #17, "The agency provides adequate in-service and continuous training," Approximately 45% of employees agreed, 38% disagreed, and 17% were neutral. The response pattern for this statement deviates from the other statements in this category, meaning that while

respondents agree that the initial training is helpful in establishing quality employees, there is no clear consensus regarding continuous or in-service training.

– The majority of dispatcher / call-taker respondents, 58%, disagreed that continuous and in-service training is adequate, while 67% of supervisory respondents agreed that in-service and continuous training is adequate. This is again one of several instances throughout the survey in which dispatchers and supervisors have had opposing opinions regarding the same statement.

- A slight majority of respondents, 52%, disagreed with question #18, "Center supervisors and managers receive the appropriate training to be effective leaders," About 21% of employees agreed while 27% neither agreed nor disagreed. Based on responses provided in the section related to communication from supervisors and management it was anticipated that to maintain consistency the respondents would disagree with this statement.

In summary, respondents agreed that the dispatch agency recruited and retained qualified dispatch applicants along with providing a strong and consistent initial training program, but disagreed that supervisors and managers received the appropriate training to be effective leaders. There was no clear majority regarding the adequate nature of continuous and in-service training for dispatchers.

6. THE MAJORITY OF RESPONDENTS DISAGREED THAT THE IMPLEMENTATION OF NEW TECHNOLOGY AND PRACTICES WAS WELL THOUGHT OUT AND EXECTUED.

Dispatch employees were asked to respond to several statements related to implement of technology, practices and procedures. The survey questions in this category and their responses are summarized in the table below:

Statement	Agree	Disagree	Neutral
19. Implementation of new technology is well thought out and executed.	14%	66%	20%
20. Implementation of new practices / procedures are well thought out and executed.	17%	62%	21%
23. Current Quality Assurance practices are consistent and ensure improved performance.	28%	41%	31%

The following points summarize the statistical information provided in the table, above:

- Approximately two-thirds of all respondents, 66%, disagreed with question #19, "Implementation of new technology is well thought out and executed." About 14% agreed and 20% were neutral. Since in earlier sections of the survey respondents expressed concern regarding the efficient and effective use of technology, it reflects consistency that there is disagreement about the implementation of any new technology.

- A majority of respondents, 62%, disagreed with question #20, "Implementation of new practices / procedures are well thought out and executed," while 17% agreed and 21% had no opinion. A possible reason for the dissatisfaction associated with management and supervisory communication could be related to the lack of well thought out implementation of any new policies or practices.

- Respondents had a mixed reaction to question #23, "Current Quality Assurance practices are consistent and ensure improved performance." 41% of respondents disagreed, 28% agreed, and 31% remained neutral.

Overall, respondents disagreed with the effective implementation of new technology or practices and procedures and had no clear majority regarding whether Quality Assurance practices were consistent and ensured improved performance by the dispatchers.

7. EMPLOYEES STATED THE #1 CONCERN TO BE COMPENSATION PACKAGES AND RELATED ISSUES.

In question #34, respondents were provided with fifteen choices or primary concerns associated with the consolidation of the different centers, of which they were forced to pick only five choices and rank them 1-5 with #1 being their primary concern, and #5 being the fifth-most concern that outweighs all the other concerns that were left blank. The following table summarizes the survey responses for the question:

Primary Concerns	#1	#2	#3	#4	#5
Difficulty addressing the various compensation packages and related issues.	21%	8%	4%	8%	8%
Difficulty addressing how employee seniority will be handled.	4%	21%	17%	4%	4%
Difficulty addressing collective bargaining issues.	4%	13%	21%	0%	8%

Difficulty integrating various technologies used by the E911 centers.	4%	0%	0%	8%	8%
Difficulty integrating and standardizing Standard Operating Practices and Policies & Procedures for joint dispatch operations.	4%	4%	13%	8%	21%
Difficulty blending the two operating cultures.	17%	4%	8%	17%	8%
Difficulty providing cross training to all staff such that they could equally serve both Counties E911 customers.	8%	4%	13%	13%	0%
Difficulty developing a good organizational structure that will meet our collective needs (e.g., number of supervisors, number of dispatchers, etc.).	4%	13%	8%	25%	8%
Difficulty in convincing law enforcement agencies that shared services is beneficial.	4%	4%	0%	4%	4%
Difficult in convincing fire / medical agencies that shared services is beneficial.	0%	0%	0%	4%	0%
Difficult in convincing the political representatives of our communities that sharing services is beneficial.	0%	0%	0%	0%	4%
Difficulty in convincing the communities we service that sharing services is beneficial.	13%	4%	4%	0%	0%
Difficulty in developing a dispatch operations cost-sharing plan that will be perceived as fair by all E911 customers.	0%	17%	0%	8%	8%
Difficulty in giving up the actual or perceived advantages of remaining an independent agency.	17%	8%	13%	0%	17%

The following points summarize the statistical information provided in the table on the previous page and above for the top 5 concerns overall:

- Approximately, 21% of the respondents stated that their primary concern is "Difficulty addressing the various compensation packages and related issues." About 8% of employees ranked this as their second most, fourth most, and fifth most concern, while only 4% ranked it as their third most primary concern.

- 21% of respondents chose "Difficulty addressing how employee seniority will be handled" as their second most primary concern. It is interesting to note that the majority of respondents to the survey, 62%, have been working at the agency for more than 10 years; therefore it makes sense that they would be concerned about employee seniority. Only 4% of respondents ranked it as the first, fourth, and fifth most primary concern, while 17% chose it as the third most primary concern.

- About 21% of respondents marked their third most concern as "Difficulty addressing collective bargaining issues." Only 4% of respondents chose this as their primary (or first most) concern, 13% as their second most concern, none as their fourth most concern, and 8% as their fifth most concern.

- For the fourth-most concern, a quarter of respondents, 25%, chose, "Difficulty developing a good organizational structure that will meet our collective needs (e.g., number of supervisors, number of dispatchers, etc.)." Only 4% chose it as their primary concern, 13% as secondary, and 8% marked it as their third and fifth-most concern. Based on the fact that the first three concerns had to do with

staffing compensation and staffing organization, it would be expected that this would be a major concern for the respondents also.

- Approximately 21% of respondents chose "Difficulty integrating and standardizing Standard Operating Practices and Policies and Procedures for joint dispatch operations" as their fifth-most concern. Only 4% ranked it as their primary and secondary concern, while 13% chose it as their tertiary concern, and 8% marked it as their fourth-most concern. Similar to the previous statement, based on the ranking of the other concerns it was expected that this would be a concern for the respondents.

The primary concern regarding consolidation revolves around compensation, followed by employee seniority, collective bargaining issues, organizational structure, and the integration of the operating practices and procedures.

8. NARRATIVE SURVEY RESPONSES

In addition to the survey's forced choice questions, respondents were asked to provide narrative responses to two open-ended questions (#35 - #36). The responses to the questions were grouped and summarized by the project team.

(1) What do you believe is the greatest advantage to any sharing of services, merger or consolidation? What is the largest disadvantage?

Those who chose to answer the open-ended questions wrote that the greatest advantage to consolidation would be potential for cost savings and access to updated technology. Some of the common themes are summarized below:

- Greatest advantage of consolidation:
  - None
  - Cost savings
  - Access to new / updated technology
  - Increased quality of service

Most respondents believed that there was no advantage to consolidation of dispatch centers and that if consolidation were to occur some potential advantages

could be related to cost-savings, sharing of technology, which would all lead to better service for the community.

Nearly all of the respondents stated that the greatest disadvantage of any shared service, merger, or consolidation would be the decrease in customer service not only to the local citizens but also to the agencies for which they provide dispatch services. Very few respondents stated that another disadvantage would be learning completely different set of policies and procedures.

(2) What would be the single highest priority to address in a shared services or consolidation plan?

The general consensus of respondents for this question had to do with addressing compensation and staff seniority issues. The comments are summarized below.

- Highest priority issue to address:
  - Compensation packages
  - Staff seniority
  - Job Security
  - Operating Standards
  - Organizational Structure
  - Management / Executive communication with staff

Respondents believe the most important issue to address would be to ensure that compensation packages and staff seniority are handled appropriately. Additionally, the majority of respondents felt that the next priority should be ensuring that there is job security and that there is open communication between management and executives with staff regarding any shared service or consolidation in each step of the process. Respondents also stated that it would be important to ensure that the highest level of operating standards are put into place and a clear and effective organizational structure is established for the new shared service or consolidated dispatch center.

7. DISPATCH CUSTOMER SURVEY RESULTS

As part of the Sarpy County Emergency Communications Study, the project team developed and distributed a survey to the "users" of the communication services, i.e. Sheriff Department, Police Department, and the Career and Volunteer Fire Departments in October 2013. The following **draft** summary provides information regarding this survey instrument.

9. AN ANONYMOUS SURVEY WAS CIRCULATED TO ALL USERS OF COMMUNICATION SERVICES.

An anonymous survey was circulated to obtain staff perspectives regarding a variety of issues concerning the feasibility of consolidating the 911 / dispatch centers. Surveys were distributed to the Sheriff, Police, and Fire departments of Sarpy and Douglas County. These "users" of the communication services were asked to respond to a series of questions regarding current communication systems and their views towards changes to the dispatch centers.

Respondents provided the degree to which they either disagreed or agreed with the statement, given the following options: "Strongly Disagree", "Disagree", "Agree", "Strongly Agree", and "Neutral". For discussion purposes in this document, the project team groups the "Strongly Disagree" and "Disagree" responses into one grouping when reporting general employee responses; the same is true for the "Strongly Agree" and "Agree" responses.

The table on the following page shows the overall breakdown of responses by agency.

Agency	
Sheriff Department	56
Police Department	92
Fire Department - Career	0
Fire Department - Volunteer	2
Total	150

The sections below summarize the results of the employee survey.

10. THE MAJORITY OF USERS AGREED THAT DISPATCH PROVIDES A HIGH QUALITY OF SERVICES TO CITIZENS AND PERSONNEL.

Respondents were provided with statements concerning the level of service provided to the citizens and county personnel. The survey questions in this category and their responses are summarized in the table below:

Statement	Agree	Disagree	Neutral
1. Dispatch provides a high quality service to our citizens.	73%	4%	23%
2. Dispatch provides a high quality service to our personnel.	64%	11%	25%
3. Dispatch provides a consistent level of service (day-to-day, shift-by-shift).	35%	32%	33%

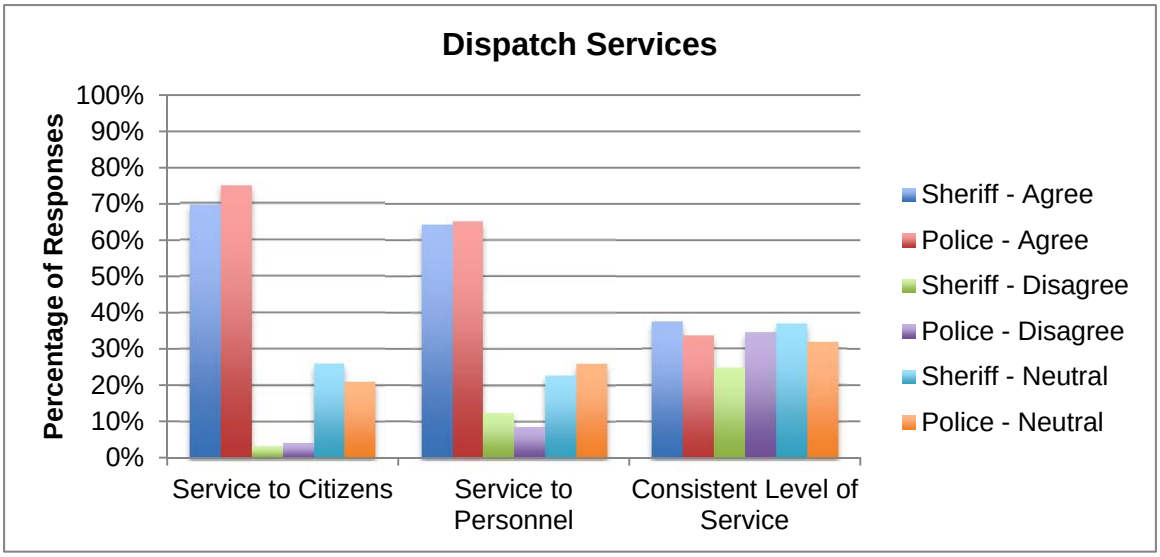
The following points summarize the statistical information provided in the table, above:

- A majority of respondents, 73%, agreed with question #1, “Dispatch provides a high quality service to our citizens.” Only 4% disagreed and 23% remained neutral.

- A majority of respondents, 64%, agreed with question #2, “Dispatch provides a high quality service to our personnel.” Approximately 11% of the respondents disagreed and 25% had no opinion.

- Respondents had mixed reactions to question #3, “Dispatch provides a consistent level of service (day-to-day, shift-by-shift).” A third of respondents, 33% remained neutral, while 35% agreed, and 32% disagreed.

The chart on the following page provides a visual representation of the responses related to dispatch services broken out by the user agency:



Due to the lack of responses by the Fire department, the chart above separates the responses by Sheriff and Police Department. The chart above reiterates that even when the responses are broken out by the type of agency, the responses closely mirror that of the overall responses. It is interesting to note that while the Police Department users agree at a higher percentage with the level of service provided to citizens and personnel, in regards to consistent level of service it is actually the Sheriff's department that agrees at a higher percentage.

In summary, while the majority of respondents agree that dispatch provides a high quality service to the citizens to the respective personnel, there was mixed reactions regarding the level of consistency in providing that service.

11. GENERALLY USERS BELIEVED THAT THE APPROPRIATE NUBMER AND TYPES OF UNITS ARE DISPATCHED AND THAT PERSONNEL ARE RESPONSIVE, BUT THERE WAS MIXED REACTION REGARDING EFFICIENT AND EFFECTIVE PROCESSING OF DISPATCHING UNITS.

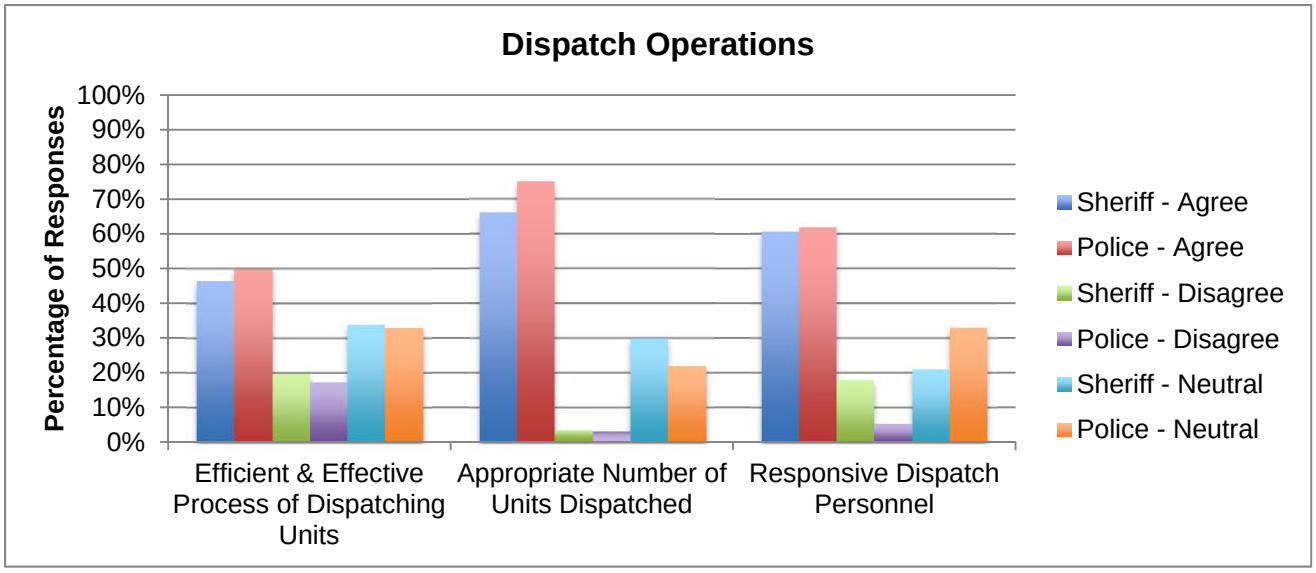
Respondents were asked a series of statements concerning the efficiency and process of dispatch operations. The responses to the statements are summarized in the table, below:

Statement	Agree	Disagree	Neutral
4. The current process of dispatching emergency units is efficient and effective.	48%	19%	33%
5. The number and types of units dispatched to calls are appropriate.	71%	3%	26%
6. Dispatch personnel are responsive when I need additional information.	61%	10%	29%

The following points summarize the statistical information provided in the table, above:

- Nearly a majority of respondents, 48%, agreed with question #4, "The current process of dispatching emergency units is efficient and effective." Approximately 19% of disagreed and 33% were neutral.
- A majority of respondents, 71%, agreed with question #5, "The number and types of units dispatched to calls are appropriate." Only 3% of respondents disagreed and 26% are neutral.
- A majority of respondents, 61%, agreed with question #6, "Dispatch personnel are responsive when I need additional information," while 10% disagreed, and 29% were neutral.

These responses associated with efficient and effective dispatch operations were filtered by the type of user of dispatch service and are visually represented on the following chart:



As the chart on the previous page indicates even when responses are filtered by the type of agency there is no clear majority regarding the efficient and effective processing of dispatch units. It is interesting to note that a higher proportion of Police respondents agreed with the question categories comparative to Sheriff respondents. Including that nearly a half or 50% of Police respondents agreed that the process of dispatching units is efficient and effective. Additionally, a significantly lower proportion of Police users disagreed with the responsiveness of Dispatch personnel compared to Sheriff personnel.

Overall, the users had mixed reactions regarding the process of dispatching emergency units, but agreed that the appropriate numbers of units are dispatched and that dispatch personnel are responsive when additional information is needed.

12. USERS OF DISPATCH SERVICES HAD MIXED REACTIONS REGARDING THE EFFECTIVE USE OF DISPATCH TECHNOLOGY IN SUPPORT OF FIELD OPERATIONS.

The users of dispatch services were asked several statements concerning the level of knowledge and training of dispatch personnel regarding the user agency's policies and procedures and whether the technology used by the dispatch services provided adequate support for field personnel. The responses to the statements are summarized in the table, below:

Statement	Agree	Disagree	Neutral
7. The dispatch center personnel follow the appropriate policies and procedures for my agency.	69%	3%	28%
8. The Dispatch personnel are adequately trained to meet our needs.	61%	9%	30%
9. The CAD / RMS system provides effective support for field operations.	47%	18%	35%

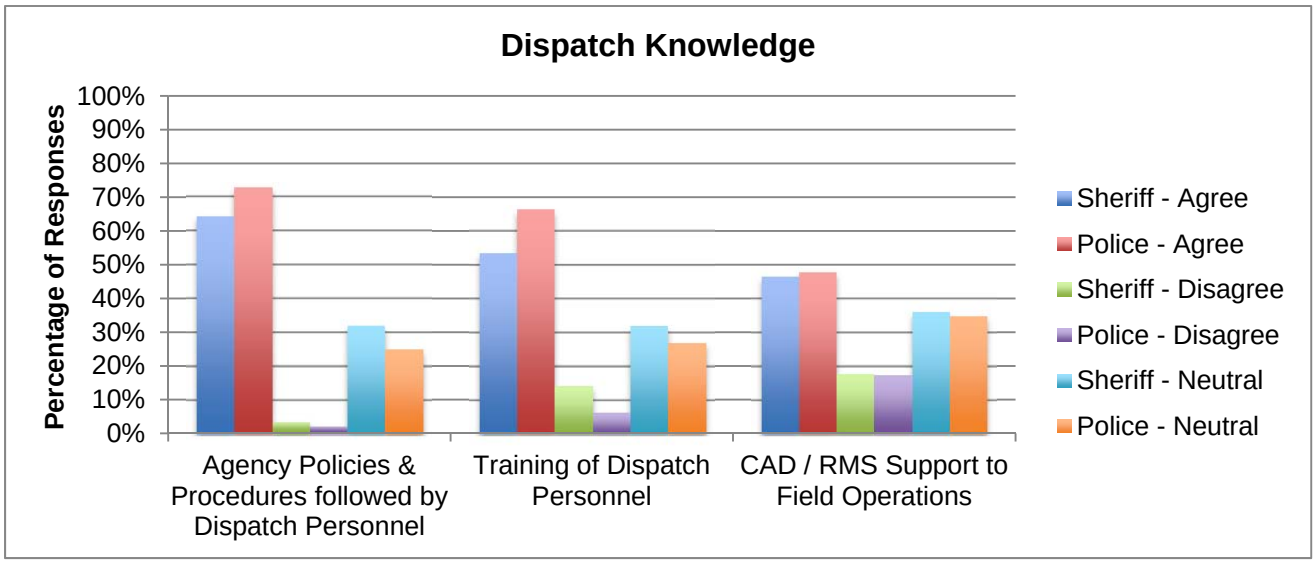
The following points summarize the statistical information provided in the table, above:

- A majority of respondents, 69%, agreed with question #7, "The dispatch center personnel follow the appropriate policies and procedures for my agency." Only 3% of users disagreed and 28% had no opinion. This suggests that generally speaking users of the dispatch service believe that the dispatch personnel are aware of and follow the necessary policies and procedures relevant for their respective agency.

- A majority of respondents, 61%, agreed with question #8, "The Dispatch personnel are adequately trained to meet our needs." Only 9% of respondents disagreed and 30% remained neutral. Based on the response to the previous statement it was expected that the response pattern for this statement would also closely follow that of the previous statement. It is interesting to note the lower overall percentage of agreement, which could be because even if dispatch personnel follow the policies and procedures it does not qualify the level at which those policies and procedures are followed or whether if that is what the users of the service need.

- Users of the dispatch service had a mixed reaction to question #9, "The CAD / RMS system provides effective support for field operations." Approximately 47% of respondents agreed, 18% disagreed, and 35% had no opinion. This suggests that while dispatch personnel provide effective support to the users in operations that same support is not received by the technology used by the dispatch personnel.

The following chart provides a visual representation of the responses related to the training of dispatch personnel especially in relation to agency policies and procedures and the effective use of CAD / RMS in field support:



The chart on the previous page indicates that similar to other sections in the survey, a higher proportion of the Police users compared to Sheriff users agree with the statements regarding the knowledge of dispatch personnel in relation to agency policies and procedures, training, and of the CAD / RMS Technology. However, even when these responses are categorized by user type there is no clear consensus on the support provided to Field Operations by the CAD / RMS software.

In summary, respondents generally agreed that dispatch personnel follow policies and procedures relevant to their agency and also provide users with the support that they need, but there was no clear majority, regarding whether the CAD / RMS system provided effective support to their respective field personnel.

13. THERE WAS NO CLEAR MAJORITY AMONG RESPONDENTS REGARDING THE RESOLUTION OF ISSUES / PROBLEMS BETWEEN DISPATCH PERSONNEL AND FIELD PERSONNEL.

The users of dispatch services were asked several statements concerning the relationship between dispatch personnel and field personnel. The responses to the statements are summarized in the table, below:

Statement	Agree	Disagree	Neutral
10. The process for resolving issues between Dispatch personnel and field reporters is clear.	35%	25%	40%
11. When problems arise between Dispatch personnel and field responders they are resolved quickly.	30%	23%	47%
12. Dispatch supervisors are available and responsive to my needs.	43%	13%	44%

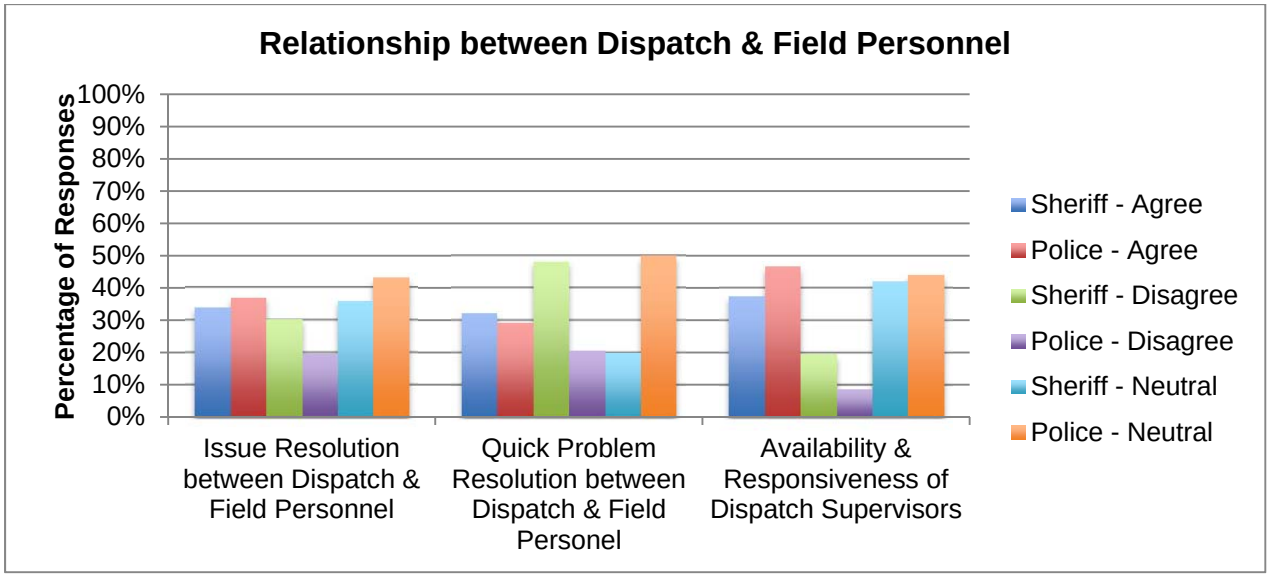
The following points summarize the statistical information provided in the table, above:

- A quarter of the users of dispatch services, 25%, agreed with question #10, “The process for resolving issues between Dispatch personnel and field reporter is clear.” Approximately 35% of respondents agreed and 40% remained neutral regarding this statement.

- Nearly a majority of respondents, 47%, remained neutral regarding question #11, "When problems arise between Dispatch personnel and field responders they are resolved quickly." About 30% of respondents agreed and 23% disagreed. Based on the response to the previous statement it was expected that the response pattern for this statement would also closely follow that of the previous statement.

- Respondents had a mixed reaction to question #12, "Dispatch supervisors are available and responsive to my needs." While 44% of respondents agreed, 13% disagreed, and 44% had no opinion.

The following chart categorizes Sheriff and Police responses regarding the relationship between dispatch and field personnel:



As the chart above shows that even when responses are filtered by the type of user there is no clear majority in any of the categories. It is also interesting to note that nearly half of Police users, or 50%, were neutral regarding quick problem resolution between dispatch and field personnel, while almost 48% of sheriff users disagreed with that same statement. This is the largest variation among responses between the two agencies. This suggests that there is a great difference in perception between the two agencies and their respective interactions with dispatch personnel.

Overall, the users of the dispatch service did not have a clear majority regarding the resolution of issues / problems between dispatch personnel and field personnel. This same response pattern was also true for the interaction between dispatch supervisors and users of the dispatch services.

14. THE USERS OF DISPATCH SERVICES HAD MIXED REACTIONS REGARDING THE LEVEL OF IMPROVEMENT ASSOCIATED WITH CONSOLIDATING DISPATCH SERVICES WITH THE COUNTY.

The users of dispatch services were asked two statements concerning dispatch consolidation. The responses to the statements are summarized in the table, below:

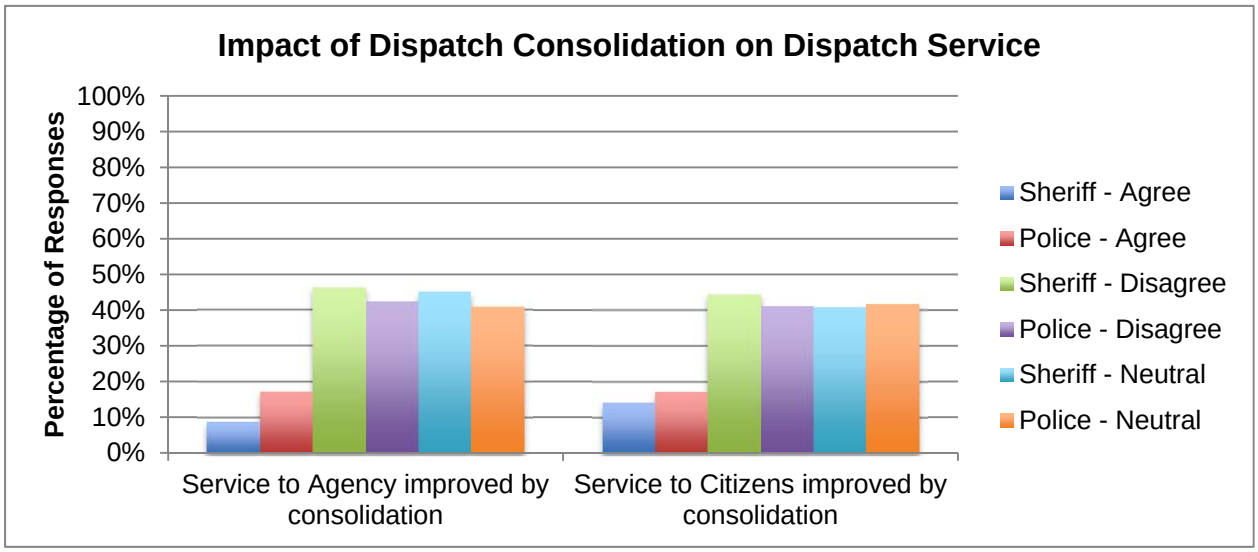
Statement	Agree	Disagree	Neutral
13. Consolidating dispatch services with Douglas County will improve service to my agency.	14%	44%	42%
14. Consolidating dispatch services with Douglas County will improve services to the citizens.	17%	43%	40%

The following points summarize the statistical information provided in the table, above:

- Approximately 44% of users disagreed with question #13, “Consolidating dispatch services with Douglas County will improve service to my agency.” About 14% agreed and 42% chose to remain neutral. The majority of responses being neutral and disagree suggest that there is clearly a mixed reaction to the concept of dispatch consolidation and in what manners or through what avenues it will improve service to the users of the dispatch service.

- 40% of respondents remained neutral regarding question #14, “Consolidating dispatch services with Douglas county will improve services to the citizens.” About 17% agreed and the remaining 43% disagreed. Based on the response to the previous statement it was expected that the response pattern for this statement would also closely mirror that statement.

The chart on the following page represents the perception of users of the dispatch services regarding the impact of dispatch consolidation on the level of dispatch service provided to citizens and their respective agencies:



The chart above suggests that even when response are broken out by Sheriff and Police department there is still no clear majority regarding the impact of dispatch consolidation with Douglas County on the service levels associated with dispatch. It is interesting to note that this is one of the few portions of the survey in which the percentage difference between the responses among the agencies is small.

In summary, respondents seem to have a mixed reaction regarding the concept of County consolidation and its impact on the users of the services and the local citizens.

15. NARRATIVE SURVEY RESPONSES

In addition to the survey's forced choice questions, respondents were asked to provide narrative responses to two open-ended questions. The responses to the questions were grouped and summarized by the project team.

(3) What are the most significant strengths of the dispatch center now?

Those who chose to answer the open-ended questions wrote that the most significant strength of the dispatch center is the knowledge of the dispatch personnel

regarding the area, the agencies, and the citizens. Some of the common themes are summarized below:

- Strengths of current dispatch center:
  - Knowledge of dispatch personnel
  - Interaction between Dispatchers and Field Personnel
  - Experienced and well-trained dispatch personnel
  - Quality of dispatch service
  - Responsiveness of dispatch personnel

The majority of respondents stated that the fact that local dispatchers were hired at the dispatch center added to the knowledge base of the dispatch personnel in responding adequately and appropriately to citizens and the local law enforcement agencies. Additionally, the familiarity and ease of interaction between dispatchers and field personnel led to improved and effective dispatch service.

(4) What are the most important improvement opportunities in the dispatch center now?

The general consensus of respondents for this question had to do with the lack of consistency among the dispatch staff. The comments are summarized below.

- Improvement opportunities of current dispatch center:
  - Consistency (day vs. night shift)
  - Increase dispatch staffing
  - None
  - Faster dispatching of units
  - Increase training of dispatch staff
  - Update CAD / RMS software

Respondents believed the greatest improvement opportunity of the dispatch center lay in increasing the level of consistency among the dispatchers. Users expressed that there was a clear difference in the service level between day and night shift dispatchers and that perhaps additional staffing and additional training of dispatch personnel could help increase consistency in the level of service provided by the dispatchers. Many

respondents also stated that they are happy with the current operations and service level of the dispatch center and did not identify any opportunities for improvement. Respondents also suggested that possible improvements could be related to software and effective use of dispatch technology.

8. COMPARATIVE SURVEY RESULTS

This chapter of the report provides the results of the comparative survey of other consolidated dispatch centers.

1. INTRODUCTION

As part of our study for the counties of Sarpy and Douglas, Nebraska, our project team has developed a comparative survey of consolidated 911 dispatch functions across the country. While not intending to provide any recommendations, the comparative survey is designed to further inform the study and its empirical findings, as well as the overall discussion on the subject. The information contained in the following sections has been ascertained by the project team through a combination of independent research and contacts made with outside agencies. Ten consolidated dispatch agencies have been selected for the survey in addition to the Sarpy County and Douglas County dispatch organizations. These agencies, while comparable, provide a diverse array of formats for 911 communications consolidation.

The following table lists the agencies selected for the comparative survey, displaying their most recent population figure and total land area covered:

County	Population	Area (sq. mi)
Placer County, CA	361,682	1,407.01
Shawnee County, KS	178,991	544.02
Jackson County, OR	206,412	2,783.55
Washoe County, NV	429,908	6,302.37
Calhoun County, MI	135,099	706.23
Portland, OR	759,256	431.30
Montgomery County, TX	485,047	1,041.74
Berrien County, MI	145,214	567.75

County	Population	Area (sq. mi)
Charleston County, SC	365,162	916.09
Broward County, FL	1,815,137	1,209.79
Bayside, WI	65,107	24.69
Sarpy-Douglas Subtotal	697,118	567.45
Sarpy County, NE	*165,853*	*238.99*
Douglas County, NE	*531,265*	*328.46*
Average	***423,523***	***1,219.25***
Median	***361,682***	***636.99***

- Although population totals for each dispatch region range from 65,107 to 1,815,137, the group's overall average is much closer to the combined figure for Sarpy and Douglas counties

- The average service area for the group, 1,1219.25 sq. mi, should not considered to be representative of the group, having been skewed significantly by an extreme outlier.

- Sarpy and Douglas counties is comparable to the majority of agencies in the group, evidenced by the median of the group (636.99 sq. mi), which lies within 75 sq. mi of the Sarpy-Douglas figure.

The next section describes the agencies surveyed in terms of how they are organized as an entity of government.

2. BACKGROUND

Before a comparison can be made regarding the workload and staffing levels of the agencies surveyed, it is necessary to further examine the backgrounds of each organization. As many of the survey's consolidated dispatch centers have been the product of agreements between numerous local government agencies, their scope of operations, organization, and service level expectations vary significantly between each agency. In order to provide additional context, the following section provides some of this background information.

(1) Agency Summary

The table below lists the names given to the consolidated dispatch organizations of each location included in the survey– excluding Sarpy and Douglas counties, as dispatch is not consolidated:

County	Years of Operation	# of Agencies Served	Governance Model
Jackson County, OR	4	21	Agreement establishing ECSO set up two governing bodies, the Executive Officers Board and the ECSO Intergovernmental Council, both
Washoe County, NV	1	7	Division within the City of Reno's Technology Services Department
Calhoun County, MI	5	6	Interlocal agreement forming the Calhoun County Consolidated Dispatch Authority, and additionally providing for the nine-member Technical Advisory Committee
Portland, OR	Not Answered	23	Intergovernmental agreement administered by commissioner + various governing boards (User Board + Finance Committee + Advisory Board)
Berrien County, MI	8	49	County 911 District plan as registered with the State of Michigan under public acts.
	27	3	
Broward County, FL	0.17	21	Broward County directly administers the organization.
Bayside, WI	2	8	Contract for service.
Average	**6.15**	**16.71**	
Median	**3**	**8**	

- Most of the responding agencies have been in operation for two years or less, suggesting a recent trend towards dispatch consolidation.
- The newest 911 communications organization, which serves Broward County, is not fully operational at this time. As a result, their data will be missing throughout much of the comparative survey.
- As demonstrated by the table above, regional dispatch centers are used to consolidate anywhere from a few agencies, to as many as 49, as in Berrien County, Michigan.

(2) Budget

The next table compiles the total budgeted expenditures for each dispatch agency in FY2013; however, if no budget information was available to the project team, the most recently published figure is listed instead:

County	Population	FY2013 Total Budgeted Expenditures	Funding Per Capita
Placer County, CA	361,682	$2,902,802	$8.03
Shawnee County, KS	178,991	$2,000,000	$11.17
Jackson County, OR	206,412	$5,950,850	$28.83
Washoe County, NV	429,908	$5,755,257	$13.39
Calhoun County, MI	135,099	$3,587,870	$26.56
Portland, OR	759,256	$19,301,003	$25.42
Berrien County, MI	145,214	*(Combined budget excludes 2/3 of Niles PD PSAP personnel and facility expenses)*	
	11,599		
Charleston County, SC	365,162	$1,810,331	$4.96
Broward County, FL	1,815,137		
Bayside, WI	65,107	$1,900,000	$29.18
Sarpy-Douglas Subtotal	697,118	$9,241,631	$13.26
Sarpy County, NE	*165,853*	*$3,730,537*	*$22.49*
Douglas County, NE	*531,265*	*$5,511,094*	*$10.37*
Average	***435,056***		***$17.87***
Median	***361,682***		***$13.39***

- As illustrated in the table above, the dispatch centers included in the comparative survey range extensively in scale, with operating budgets ranging from under $2,000,000 to nearly ten times that number.

- Despite their significant differences in size, the funding that each organization receives *per capita* is largely the same across the group.

Notably, the combined figure for Sarpy Douglas counties ranks as the lowest within the group.

3. WORKLOAD

Our project team has gathered a variety of data, displayed in the table below, relating to the workload of emergency communications personnel within the surveyed jurisdictions. When possible, call totals are differentiated by the type of service that they correspond to.

County	Fire / Rescue	EMS	Police	Total CFS	Total 911 Call Volume
Placer County, CA			61,573		75,718
Shawnee County, KS				251,000	102,000
Jackson County, OR					100,000
Washoe County, NV		30,894	184,014		160,525
Calhoun County, MI				134,901	111,395
Portland, OR					446,638
Montgomery County, TX				395,488	148,015
Berrien County, MI	4,267	8,854	114,478	114,676	90,664
	284	1,014	15,243	15,315	9,208
Charleston County, SC	44,421	47,196	387,592	479,209	221,320
Bayside, WI	900	3020	56,000	68,020	110,000
Sarpy-Douglas Subtotal					440,449
Sarpy County, NE					*53,190*
Douglas County, NE					*387,259*
Average	***12,468***	***18,196***	***151,465***	***201,268***	***188,022***
Median	***2,584***	***8,854***	***114,478***	***124,789***	***111,395***

- Sarpy and Douglas counties combine for the second-highest rate of 911 calls per 1,000 citizens out of the 13 agencies included in the comparison.
- None of the agencies are directly responsible for dispatching for public works personnel, or for an any other non-public safety/EMS service.

4. STAFFING

The following section provides a comparative analysis of the detailed staffing levels for the dispatch organizations surveyed, separating operations functions from support services.

(1) Operations

The table below compiles the most recent staffing figures for operations positions within each agency, distinguishing between dispatch personnel, leads, shift supervisors, and any other relevant miscellaneous positions:

County	Dispatchers & Call Takers	Leads	Shift Supervisors	Other	Operations Total
Placer County, CA	18		8		***26***
Shawnee County, KS	45		6		***45***
Jackson County, OR	35	4	3		***42***
Washoe County, NV	45		8		***53***
Calhoun County, MI	27		4		***31***
Portland, OR	107		11	1 EC Supervisor + 2 EC Support Specialist	***121***
Montgomery County, TX	44		4		***48***
Berrien County, MI	24		6	3.5	***33.5***
	7		N/A	N/A	***7***
Bayside, WI	16		3		***19***
Sarpy-Douglas Subtotal	92	4	3	3 Dispatcher Trainer / Lead Trainer	***102***
Sarpy County, NE	*32*	*4*		*3 Dispatcher Trainer / Lead Trainer*	*39*
Douglas County, NE	*60*		*3*		*63*
Average	***41.5***	***–***	***5.9***	***–***	***48.0***
Median	***31.0***	***–***	***5.0***	***–***	***42.0***

- In order to simplify the comparison, dispatcher and call taker position totals have been combined in the table above, including those labeled as telecommunicators or 911 operators.

- It is evident that direct supervision varies among consolidated dispatch agencies, as not every dispatch organization employs lead dispatchers.

- The ratio of shift supervisors to dispatcher personnel (including call takers and lead positions) ranges from only 4:1 in Berrien County, Michigan to as many as 32:1 for the aggregated Sarpy and Douglas figure.

  – The next highest was far lower than this– Jackson county's direct supervision ratio is only 13.

  – Compared with Jackson County, supervisors in the aggregated Sarpy and Douglas county agencies are responsible for nearly 2.5 as many dispatchers per each position.

(2) Support Services

Our project team has also compiled a matrix of staffing for various support functions, organized by category. The table below displays this information, as well as the total number of support staff for each agency:

County	Mgt.	Admin.	QA / Training	IT	HR / Finance	*Total*
Placer County, CA	1 Mgr. + 2 Supv.					***3***
Jackson County, OR	1 Dir. + 1 Operations Mgr.	1 Admin. Asst.	1 QA / Training Mgr. + 1 Performance Mgr. + 1 Training Supv.	1 IT Mgr. + 1 MSAG GEO File Coord. + 1 GIS Tech. MSAG Coord.	1 HR / Finance Mgr.	***10***
Washoe County, NV	1 Mgr. + 1 Asst. Mgr.					***2***
Calhoun County, MI	1 Exec. Dir. + 1 Dpty. Dir.			1 CAD Administrator		***3***
Portland, OR	1 EC Program Mgr. + 1 Emergency Mgt. Program Mgr.	1 Admin. Supv. I + 1 Time-keeping Spec. + 2 Office Supt. Spec. III	1 EC Training & Dev. Mgr. + 1 Training & Dev. Analyst		1 Sr. Financial Analyst	***15***
Montgomery County, TX	1 Comm. Supv. + 1 Lt.					
Berrien County, MI				1 911 Data Tech.		
Bayside, WI	1 Operations Manager					
Sarpy-Douglas Subtotal						***19***
Sarpy County, NE	1 Dir. + 1 Asst. Dir.		1 Admin. & Training Mgr. + *3 Dispatcher Trainer / Lead Trainer (Re-post)*	1 Telephone Sys. & Tech. Mgr. + 3 IS Supt. Staff + 2 Radio Tech.		*12*
Douglas County, NE	1 Chief of Comm. + 1 Operations Mgr.	1 Office and Accreditation Mgr.	1 Training & Admin. Coord.	1 Technical Support Manager + 1 Radio Technician + 1 Technical Support Specialist		*7*

- Many of the agencies surveyed receive certain support functions, such as information technology and finance from one of their constituent local government agencies– a distinction that is not reflected in the table above.

- While not included in the table, Portland's consolidated dispatch agency contains a number of business analyst positions within its organizational structure.

The following table shows the shift schedules in use by the consolidated agencies surveyed.

County	Shift Schedule	Administrative Structure
Calhoun County, MI	12 Hour Shifts	Dispatch personnel work one 8 hour day during each 14 day work cycle
Portland, OR	Combination of 10 and 12 Hour Shifts	
Berrien County, MI		
	N/A	Niles PD
Charleston County, SC	12 Hour Shifts	
Bayside, WI	8 Hour Shifts	Three shifts: 7A-3P; 3P-11P; 11P-7A. Rotations are 5 days on, 2 days off, 4 days on

As shown above, the agencies use a variety of 8, 10 and 12 hour shifts with 12 hour shifts being the most common. The next table illustrates the training programs in use by the dispatch centers.

5. QUALITY ASSURANCE AND TRAINING FUNCTIONS

County	New Employee	Dispatch Cert.	In-Service Training
Portland, OR	2-3 academies per year		
Berrien County, MI	3 months one-on-one with CTO	Michigan-mandated 40 hours within first 18 months, another 40 hours within 2 years	24 hours every 2 years
Charleston County, SC	40-hour NAED Emergency Telecommunicator course		

6. CONCLUSION

The development of a comparative survey of consolidated dispatch organizations has been informative to the study for a number of reasons. Foremost, the diversity of the agencies included in the survey, specifically in terms of each organization's structure, community size, and workload, reveals that no universal model exists for regional dispatch consolidation. Instead, the comparative survey has found that a diversity of regions in terms of size and composition have consolidated. The survey demonstrates that extensive variation exists in the consolidated dispatch organizations themselves. Finally, the information adds to the overall discussion on the subject by providing a comparative context from which to consider consolidated dispatch services.