

DeKalb County Communications (DCCC) PSAP Operations Report



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EXECUTIVE SUMMARY

Purpose of this Report

The DeKalb County Communication Center (DCCC) engaged PSAP Concepts & Solutions LLC. (“PCS”) to conduct a study in order to review the operational status of the PSAP, review the cost effectiveness and joint agency participation in the PSAP, and to facilitate a balanced evaluation of the PSAP’s staffing to ensure that the appropriate number of employees are available and properly trained to provide the level of communications required to serve all the participating agencies and the people of DeKalb County that rely on the PSAP’s services.

PCS wishes to sincerely thank the DeKalb County Sheriff, the City of Sycamore Police and Fire Departments, the DCCC telecommunications staff and DCCC Commander, along with all the DCCC PSAP public safety users for the excellent cooperation that we received while conducting this study.

All involved are to be commended for providing significant information and data, while responding quickly to questions and interviews conducted by the PCS staff.

Study Methodology

The approach used by PCS in completing the tasks for the DCCC study required a collection of statistical data, review of documents, interviews with stakeholders and key staff members, supplemented by on-site observation of the facility, dispatch operations, processes, and procedures.

PCS collected information on a variety of operational areas essential to providing quality emergency communications services and compared, where warranted, these practices to national industry standards. PCS utilized the outcomes of the interviews, data collection and analysis, and operational practices evaluation to develop this study and the findings therein.

Report Format

The assessment components represented in this report are grouped by functional core components: Organization, Facilities and Technologies, and Financial and Staffing Practices. Each of these components is of seminal importance to evaluating the organizational and operational strength and efficiency of the DCCC operation.

In addition, PCS compared assessment observations with applicable industry standards of best practice from industry accredited associations and commissions including the:

- National Emergency Number Association (NENA)
- Associated Public Safety Communications Officials (APCO)
- National Fire Protection Association (NFPA)
- Commission on Fire Accreditation International (CFAI)
- Commission on Accreditation for Law Enforcement Agencies (CALEA)

The criteria for the standards of best practice were developed nationally over the last thirty years and include generally accepted practices within the 9-1-1 public safety communications industry.

Each assessment area provides the reader with general information about that element, as well as specific observations and analysis of any significant issues or conditions that are pertinent to expansion considerations. Observations were supplemented by data collected as part of the survey and the stakeholder interview process.

Culminating this process PCS provides relevant findings, conclusions, and recommendations to address identified issues and concerns in this report.

Summary of Findings

PCS identified and has made several recommendations on areas that could be considered upgrades to the PSAP's infrastructure and several cost models that could change the funding breakdown for the user agencies. These suggestions are detailed in the various sections throughout the report.

The report addresses quality, retention, and consideration of any warranted or potential operational enhancements or changes in the key DCCC call center core functions. These include consideration of equipment and systems, required services, and operational impacts.

Further, comments are provided for consideration in establishing options that span operational considerations, governance, funding arrangements, staffing and other factors.

Study Basis:

A study of this type is centered on certain core tasks, data collection and review, interviews with stakeholders, and direct observation of dispatch operations, processes and procedures, and facilities. The resultant information compiled represents a variety of topics essential to providing quality emergency communications services.

The goal during the study was to develop a partnership over the course of the project. This relationship affords PCS the opportunity to work together to determine available changes or enhancements that could ultimately provide the agency with a more efficient and effective emergency communications operation. The basic principle is to focus efforts and resources in a logical and responsible manner, based on the true needs and expectations of the agency.

PCS compares operational observations with industry standards of best practice. These come from a variety of industry sources including the:

- National Emergency Number Association (NENA)
- Associated Public Safety Communications Officials (APCO)
- National Fire Protection Association (NFPA)
- Commission on Fire Accreditation International (CFAI)
- Commission on Accreditation for Law Enforcement Agencies (CALEA)

PCS worked to ensure the various services maximize their potential and develop all the options in the decision-making process. Once this relationship is established, the process of gathering information begins, learning as much as possible about the organization, its membership, constituency, and the services provided.

Upon completion of the evaluation and data analysis, PCS defines expansion options issuing a written draft report. The report includes a discussion of elements reviewed, observations made, and subsequent findings. After receiving comments on the draft document, PCS completed the appropriate revisions and finalized the report.

Dispatch Operations:

Call answering and dispatch operations, the primary service provided by DCCC, are vital and directly affect service levels, response times, and delivery of police, fire, and medical services. In general, the call taking and dispatch functions of a communication center operation are dependent on the following fundamental components:

- Organizational Governance / Management
- Facilities and Technologies
- Operational Practices

These components are critical to and have a direct impact on the organizational and operational efficiencies in determining the strength of the DCCC operation. The assessment components listed in Figure 1 are baseline elements required for a fully integrated 9-1-1 dispatch operation supporting the DCCC stakeholders, management, staff agency participants and the public.

The assessment components listed address standards of compliance and best practices.

Figure 1: Assessment Components

DCCC ASSESSMENT COMPONENTS		
ORGANIZATIONAL	FACILITIES AND TECHNOLOGIES	OPERATIONAL PRACTICES
Organizational Structure Services Provided Staffing/Personnel Practices Workload Performance Requirements Ancillary Responsibilities	Building and Facilities Telephone Equipment Radio Systems CAD System Mobile Data Computers Emergency Power Ancillary Systems	Operational Policies Best Practices
Operating Costs		

The following sections of the report contain observations, findings, and recommendations for each assessment component. These assessments ultimately provide a baseline view of the state of DCCC today, providing areas that are acceptable or could be considered to be in need of improvement or further enhancement. The assessment describes observations and findings of current operating conditions as they pertain to operations, technologies, and practices.

SECTION 1: ORGANIZATIONAL ASSESSMENT

The assessment evaluates functional elements dictating business management on a daily basis. This section reviews the existing DCCC organizational components and the infrastructure for their operational support.

ORGANIZATIONAL DATA									
Assessment	DCCC (DeKalb County Communication Center)								
Organizational Structure	Governance By The DeKalb County Sheriff Along With IGA's With The Cities of Sycamore And Genoa								
Mission, Goals, and Objectives	In accordance with the Mission of the De Kalb County Sheriff's Office, the Communications Division will provide effective, diligent and professional service, without prejudice, to those we serve in their time of need								
Agencies Provided Service	Police Agencies: (10) Cortland, DeKalb County Sheriff, Genoa, Hinckley, Kingston, Kirkland, Malta, Somonauk, Sycamore, Waterman Fire/EMS Agencies: (12) Cortland, Genoa-Kingston, Hinckley, Kirkland, Leland, Lee, Malta, Paw Paw, Shabonna, Somonauk, Sycamore, Waterman								
Services Provided	9-1-1 Call Taking & Processing Fire/Medical Dispatching Law Enforcement Dispatching LEADs Entries (Wants, Warrants) Outdoor Warning Siren Activations Calling Out Key Officials (ie; Coroner)								
Staffing	21 – Deputy Telecommunicators 4 – Sergeant Shift Supervisors 1 – Lieutenant of Communications (Division Commander)								
Labor	Metropolitan Alliance Of Police (MAP)								
Work Schedule	8 Hour Shifts 40 Hour Week								
Salary Steps	<table border="0"> <thead> <tr> <th><u>Position</u></th> <th><u>Salary Range</u></th> </tr> </thead> <tbody> <tr> <td>Deputy Telecommunicator -</td> <td>\$43,643 - \$60,715</td> </tr> <tr> <td>Shift Supervisor -</td> <td>\$65,728 - \$69,638</td> </tr> <tr> <td>Division Commander -</td> <td>\$80,122 - \$92,269</td> </tr> </tbody> </table>	<u>Position</u>	<u>Salary Range</u>	Deputy Telecommunicator -	\$43,643 - \$60,715	Shift Supervisor -	\$65,728 - \$69,638	Division Commander -	\$80,122 - \$92,269
<u>Position</u>	<u>Salary Range</u>								
Deputy Telecommunicator -	\$43,643 - \$60,715								
Shift Supervisor -	\$65,728 - \$69,638								
Division Commander -	\$80,122 - \$92,269								
Performance Requirements	ICC Part 725, NFPA 1221, IDPH EMD Licensing, Powerphone EMD Certification, APCO & NENA Best Practices								
Personnel Practices	Job Descriptions, Hiring Process, Employee Retention, Employee Job Evaluations, Personnel Handbook Available								
Operating Costs	FY 2011/2012 - Expenditure Requirements: \$2,763,500								

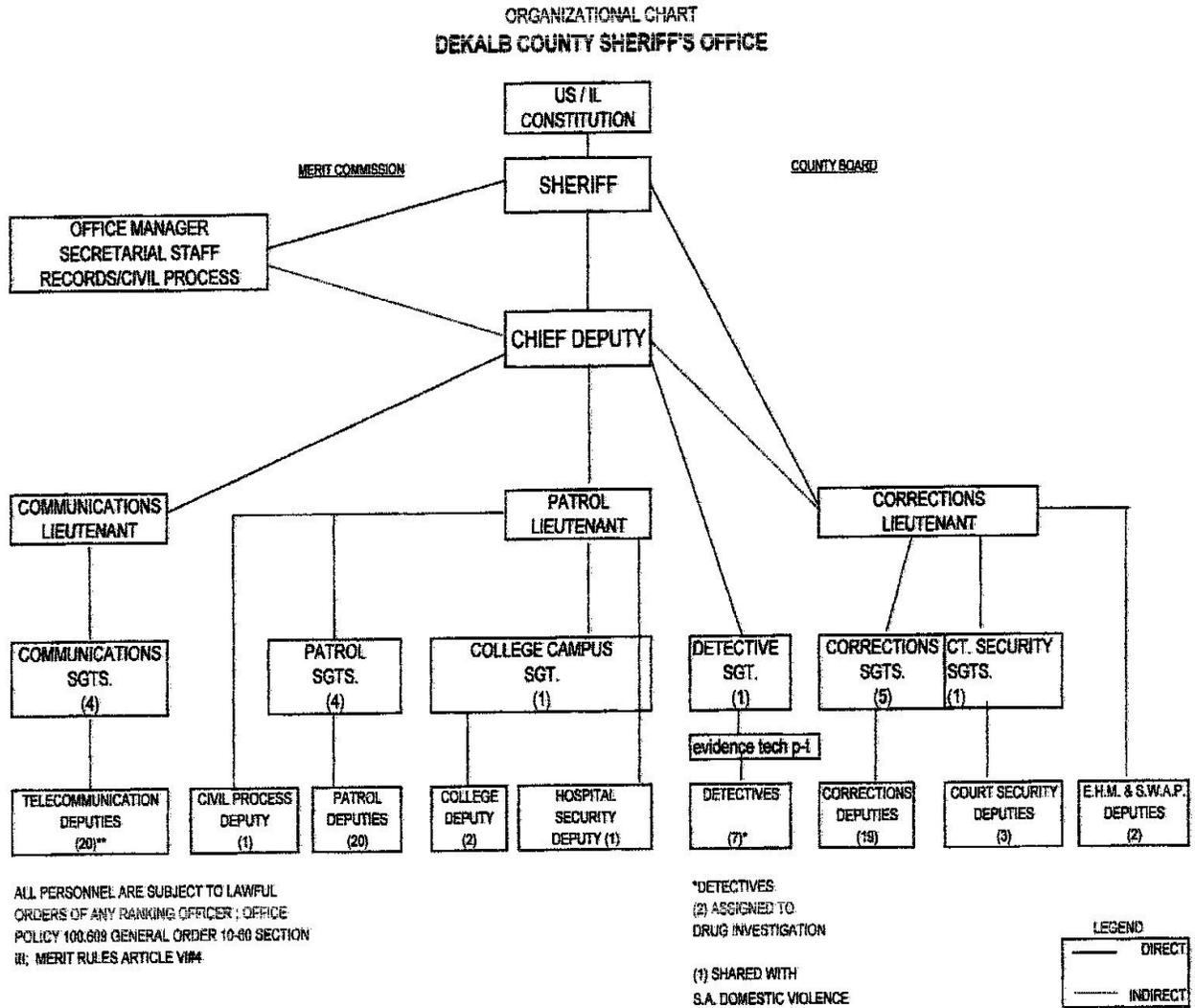
The agency assessment components of the DCCC are the baseline elements for a fully integrated 9-1-1/dispatch operation and address standards of compliance and best practices. PCS compares observations with industry standards of “best practice” assuring the delivery of communications efficiently and effectively. Best practice focuses on effective and efficient actions to assure 9-1-1 dispatch operations meet expected goals.

A strong well defined and understood governance model and chain of command structure greatly enhances the effectiveness of an agency. This is an important aspect of supporting a mission critical operation.

The DCCC Division Commander (Lieutenant) reporting to the chief deputy and the sheriff is responsible for the management and direction of all activities of DCCC, including planning, organizing, directing personnel, budgeting, technical operations, training, and administration of agency policies and procedures. The chart in Figure 2 illustrates the organizational structure of the sheriff’s office which includes the communication center.

The following represents the Organizational Structure of the De Kalb County Sheriff Communication Center (DCCC):

Figure 2: Organizational Chart



REVISED MAY 2013

Best Practice:

An organizational structure requires design and implementation with the Agency's organizational mission in mind. The PSAP cannot expect to function efficiently and effectively without a good foundation under which to operate.

1.1.1 Intergovernmental Agreement (IGA)

In 2002 and 2003 the DCCC established intergovernmental contractual service agreements with the City of Sycamore, City Of Genoa, and Genoa Kingston Fire Protection District. These contractual service agreements are for five (5) year terms with an automatic renewal for another five years thereafter. Quitting the agreement requires one (1) year advanced notice. Further, these agreements specify the responsibilities of the county, the cities, and the fire district along with including the manner in which the cost of providing this service is to be determined. The cost of providing the service is to be determined at least 180 days prior to July 1st each year in order to give all users the opportunity to budget for the next year of operations.

The agreements also set aside the requirements to establish a "user group committee" that includes representatives from all the participating police and fire departments served by the DCCC along with the DCCC division commander. The role of the "users group committee" is to allow all the users an advisory role with respect to PSAP operations. Copies of the agreements can be found in the Appendix of the study.

1.1.2 Mission Statement

The PSAP has its own mission statement that gives its employees a sense of direction on what they are working toward.

DCCC Mission Statement:

In accordance with the Mission of the De Kalb County Sheriff's Office, the Communications Division will provide effective, diligent, and professional service, without prejudice, to those we serve in their time of need.

1.1.3 Services Provided

DCCC is a 9-1-1 primary Public Safety Answering Point (PSAP) where 9-1-1 calls from landline, wireless, and VoIP devices are directly routed and dispatched for police, fire, and EMS for 22 agencies into parts of Kane, LaSalle, and Lee Counties as well as DeKalb County

The size and population covered by DCCC for communication services is estimated to be 634 square miles with a population of 104,700 (2010 census). The county has grown a substantial 18.2% since the 2000 census.

In addition to the primary services of 9-1-1 call taking and emergency services dispatch, DCCC provides important additional services for its participating agencies. These include making entries and inquiries into the state (LEADS) and federal (NCIC) criminal justice databases, maintaining the storage of all warrants and body attachments, activating some community outdoor warning sirens, and the answering of some administrative and non-emergency calls.

1.1.4. Organizational Structure

The DCCC Division Commander is responsible for the management and direction of all activities within the DCCC, including planning, organizing, directing personnel, budgeting, technical operations, training, and administration of agency policies and procedures. Figure 2 illustrates the organizational structure of DCCC and its relationship to sheriff's department. The IGA's in place also allow for a Police Advisory Board and a Fire Advisory Board which is comprised of representatives from the police and fire departments served by the communication center and the dispatch staff.

1.1.5 Communication Center Workload

Communications center workload activity and performance standards determine the required staffing levels for a mission critical operation twenty four hours a day, seven days a week. The workload of dispatch operations, in conjunction with the standards of performance, determines the FTE (full-time equivalents) staffing requirements. The following list of measurable units of activities defines the primary considerations for staffing workload.

Telephone Call Answering (emergency & non- emergency)

- 03 ... 9-1-1 Trunks

- 01 ... 10-Digit Emergency Lines

- 20 ... 10 Digit Administrative Lines

- 02 ... Ringtown Lines

Radio Dispatch

- Fire / Rescue

- Medical

- Law Enforcement

Data Entry Requirements

- Maintain Warrant And Body Attachments

- LEADS/NCIC entries

Ancillary duties or services

- Some Outdoor Public Warning Sirens

- MABAS (Mutual Aid Fire Dispatch Duties)

- Some Public Works / Highway Department Call-Outs

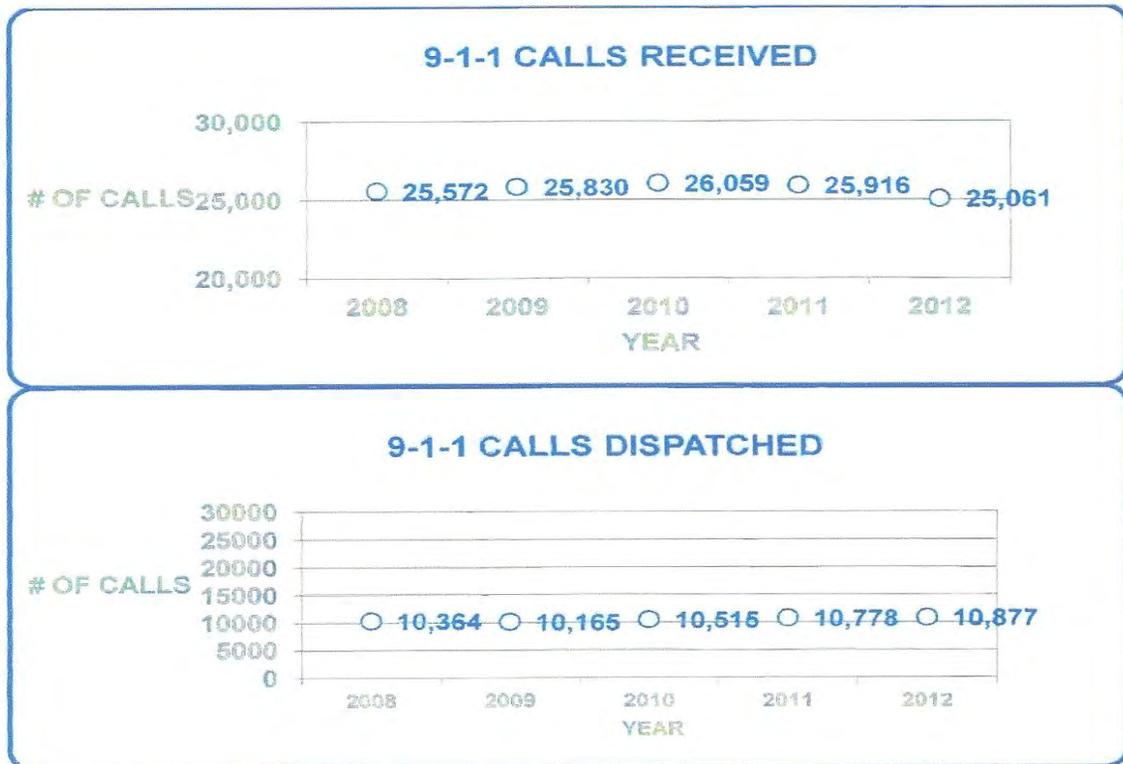
- Monitoring CCTV For In-House Security

Call Answering Telephone Workload

For purposes of evaluating the call answering workload PCS obtained statistical data for the year 2012. It was estimated by staff that during the year approximately 300,000 telephone calls were handled in the communications center. During this period 25,061 9-1-1 calls were received, with approximately 85% of those 9-1-1 calls originating from a wireless phone. Nationally, 9-1-1 calls from wireless phones range from 50-70% of all calls - DCCC is above the national average – which is only expected to increase as more consumers turn to wireless devices as their primary mode of communication.

In today's wireless world it is not uncommon to receive multiple calls from wireless phones reporting the same incident – however these calls must be handled and in the event the caller is unfamiliar with the area and does not know their location or calling from within a building processing these calls typically take longer than a standard call from a wireline phone. Of the 25,061 calls received, 10,877 were dispatched to the user participating agencies.

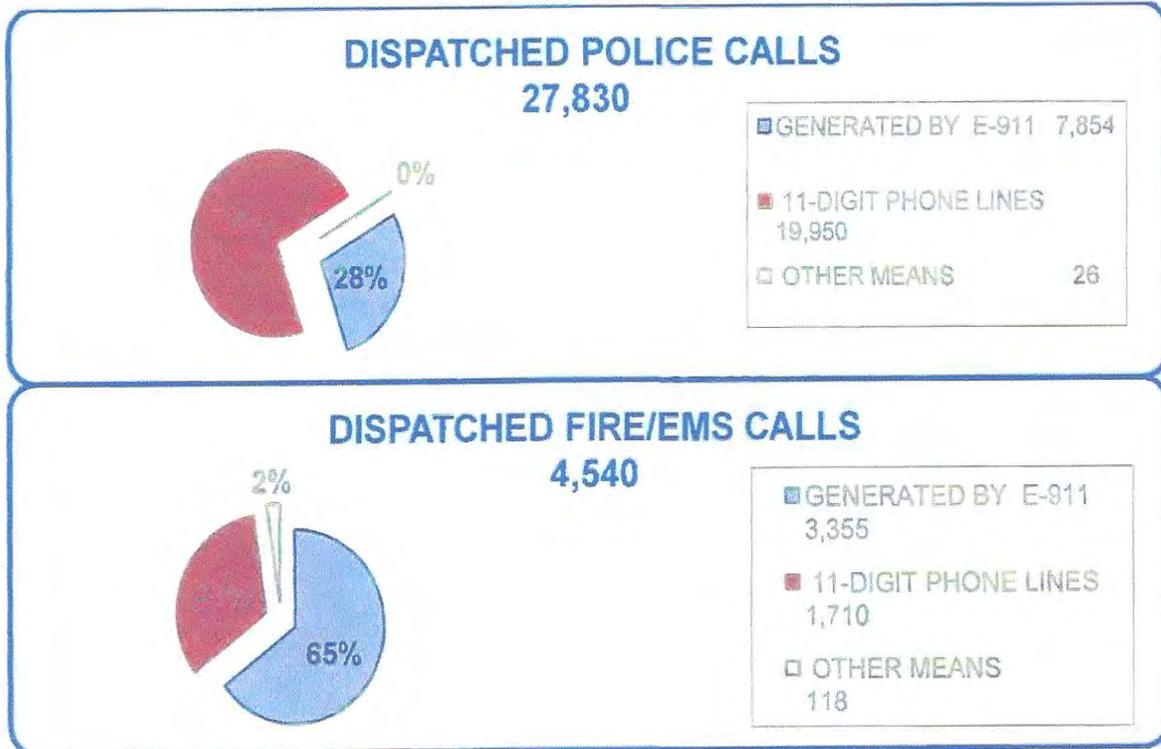
Figure 3: 9-1-1 Calls Received



Calls of Service: Law Enforcement Related Workload

The Law enforcement workload is generated both through officer-initiated incidents and public “calls for service”. In the year 2012 there were 27,830 police calls dispatched by DCCC with an additional 5,097 events that were officer initiated.

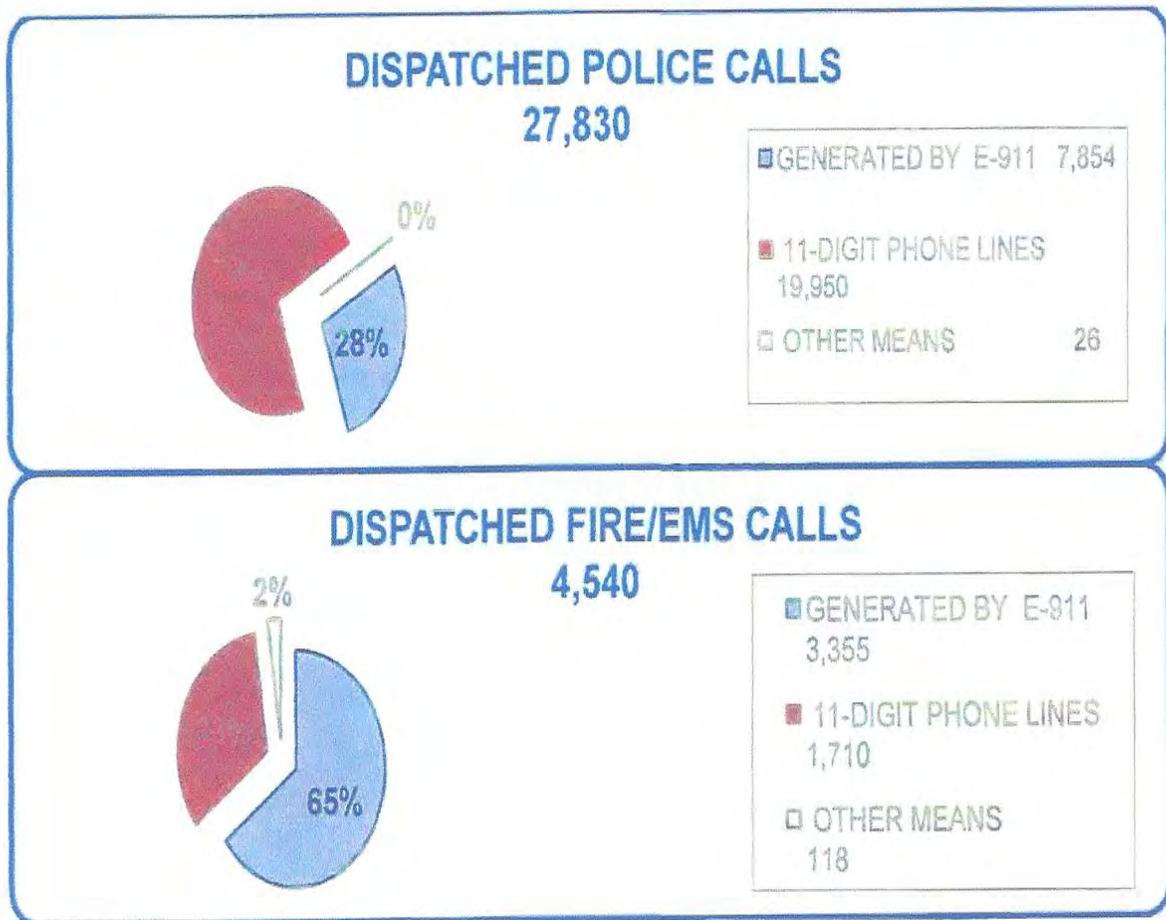
Figure 4: Police / Fire / EMS Calls Dispatched In 2012



DCCC staff handled the tasks associated with the dispatch of fire service units resulting from public “calls for service”. These calls for service for example result from structure fires, to vehicle fires, to field fires, along with automatic fire alarms and carbon monoxide alarms.

The fire service related workload is generated through public “calls for service”. During the year 2012 DCCC handled 4,540 calls for service – 65% generated by 9-1-1 calls, 2% generated by 10 digit telephone calls, and 33% generated by other means.

Figure 5: Dispatched Police, Fire, EMS Calls In 2012



Data Entry Workload

Data entry represents a core element that DCCC telecommunicators must routinely provide in the dispatch of emergency services and in response to requests from field officers. Two areas of particular importance, both due to the nature of the data entry and its duration, are related to data entry

associated with the Law Enforcement Data Entry System (LEADS) and the National Crime Information Center (NCIC).

For the calendar year of 2012 DCCC staff completed 2,287 warrant and body attachment entries. The average time spent on the lifetime of a warrant is estimated to be between 45 to 60 minutes. Over the course of a year this represents approximately 1,715 hours to 2,287 hours of work effort, which over the course of a year, represents enough time to be equivalent to one full time employee (1 FTE). Consideration to relocate this work to records or jail personnel in the sheriff's department could reduce costs to the communications division where there are many users not involved with the warrant service law enforcement activity of the sheriff's office.

1.1.6 Staffing

Communications personnel (telecommunicators) serve a vital communications link with police, fire, and medical units, and are an integral part of the public safety team. Telecommunications personnel must process calls quickly and accurately, and are required to perform multiple tasks simultaneously under pressure. The DCCC authorization for staff personnel is currently allocated at 25 full time equivalents (FTE) - with management included the allocation is 26 FTE. Included in this report is additional detail regarding the staffing study and related considerations conducted as part of this project.

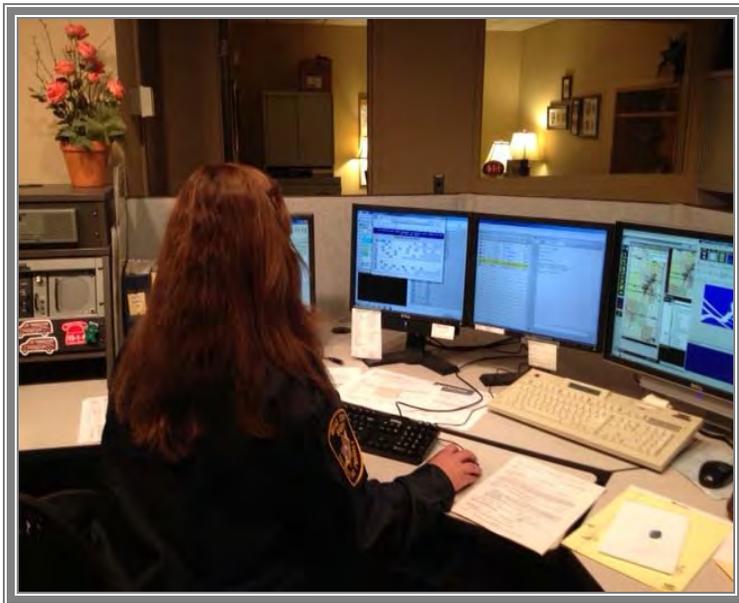
Telecommunicators	Shift Supervisors	Commander
21	4	1

The chart, provided in the previous section, illustrates the DCCC chain of command. Telecommunications personnel are currently contract employees represented by the Metropolitan Alliance of Police (MAP), a recognized union labor organization.

DCCC shift staffing is based upon three shifts – Day, Evening, and Midnight. Each shift has a minimum number of positions as noted in the table below:

0700-1500	Day Shift	4 to 5 positions
1500–2300	Evening Shift	4 to 5 positions
2300-0700	Midnight Shift	4 positions

Single DCCC Workstation Position



1.1.7 Work Schedules

The DCCC staff is assigned to eight-hour shifts on a 5-2 schedule (rotation using five days working, two days off). This staffing plan assures achievement of the minimum staffing requirements described in the previous section.

1.1.8 DCCC Turnover Rate

The industry turnover (attrition) rate is a significant challenge nationally for many public safety communication centers, thus influencing operational efficiencies and personnel morale. Turnover is inevitable and continues to be an ongoing management concern nationwide.

Employee turnover affects the agency assessment staffing component. Information collected in studies completed for APCO Project RETAINS reveal that the strongest and best predictor of a high retention rate is having all authorized positions filled.³ APCO's Effective Practices Guide, *Staffing and Retention in Public Safety Communication Centers*, is a resource designed to address staffing and retention.⁴

The turnover rate or attrition represents the ratio of the number of workers replaced in a given time period, to the average number of workers. The retention of employees and the vacancy rate influences the number of staff required for position staffing.

DCCC provided statistical information for the previous year (2012) indicating the total number of employees at the highest staffing level, any new hires failing to complete probation, and any experienced employees who left for any reason.

The retention rate calculation is the total number of staff that leaves employment in a given year, divided by the total number of employees that year.

For purposes of calculating DCCC's turnover rate, PCS utilized the annual data. The statistical information provided a previous year turnover rate of 7% leaving a retention rate of 93% for DCCC. While PCS does not have a regional retention rate for comparison, the retention rate is very high for DCCC compared to the national average retention rate of from 79 to 81 percent. This is a very positive reflection on the DCCC operation.

Extensive further details are available in the staffing study found in Section 4 of this report.

³ APCO Project RETAINS, *Responsive Efforts to Assure Integral Needs in Staffing, Staffing and Retention in Public Safety Communication Centers, Effective Practices Guide, Staffing Workbook*, August 2005.

⁴ The Denver Research Institute, on behalf of Project RETAINS, identified the national average retention rate for public safety communications centers is 83%. This is a 17% turnover. The average size of the centers providing data is 18 employees. Larger centers had an average retention rate of 85%.

1.2 DCCC Operations Overview

The Operational Overview section of this report provides and describes the work practices and procedures found within the DCCC communications center. DCCC provides a dedicated dispatch position for fire and EMS with other positions carrying out call taking and police dispatch. PCS utilizes the terms telecommunicator and call taker/dispatcher interchangeably throughout the document unless otherwise specified.

PCS describes the DCCC operation as a “two stage dispatch” meaning that a 9-1-1 telephone call is answered by a 9-1-1 call taker and then sent to a telecommunicator for the dispatch of that call for service.

De Kalb County Communication Center Floor



The De Kalb County Communications Center has seven (7) fully functional redundant work station console positions. Six (6) Motorola Gold Elite are considered main consoles and one (1) Zetron is considered a back-up console.

1.2.1 Call Taking

The DCCC center provides call answering including Enhanced landline 9-1-1, wireline trunks, wireless (cellular) phase II, and VOIP (voice over internet protocol) 9-1-1 calls. The system also supports multiple ten digit lines administrative and non-emergency lines.

When a call is answered, the customer premise equipment (“CPE”) displays the ANI/ALI (automatic number identification / automatic location identification) data on the Northern Telecomm screen. The ANI/ALI information from the telephone is transferred via a direct interface to the OSSI (“CAD”) screen with the caller’s name, location, originating telephone number of the call and other related information. Foreign language callers are conferenced with a “language line service” for appropriate translation services.

The telephone system and mapping system is owned, funded, and maintained by the DeKalb County Emergency System Telephone Board (ETSB) where funds are generated from 9-1-1 surcharges from county telephone customers.

The initiation of an incident in the CAD system activates the mapping functions allowing the viewing of the caller’s derived location on the mapping display.

A Phase II wireless call includes location coordination data (latitude / longitude), which the OSSI CAD extracts from the Northern Telecomm CPE converting the coordinates to a mapped address in the GIS display. It should be noted that some older cellular telephones calling 9-1-1 do not have this technology available and therefore are unable to pass the caller’s latitude/longitude, however this is becoming less frequent as older less sophisticated cell phones are being replaced with more sophisticated cell phones that have this capability.

Generating A Call For Service Job Ticket:

For law enforcement related calls, the call taker enters the incident type code and the location of the incident if reported different from the ANI/ALI display. Validation of the location entry is completed by the CAD system with the CAD identifying the correct jurisdiction and units available for dispatch.

The same would occur if a fire or emergency medical event were reported, the CAD would provide the correct apparatus and medic units to respond to that call for service for the appropriate fire department having jurisdiction for the address where the event is taking place. Medical calls for service require the call taker to utilize the Powerphone Emergency Medical Dispatch System. In addition to the information required for general call taking, (location, call back number, etc.) the call taker also obtains additional key answers to questions from the caller regarding type of medical problem or injury, age, level of consciousness, and status of breathing.

1.2.2 Fire/ Emergency Medical Service (EMD) Dispatch

Fire and EMS calls can require more tasks and monitoring due to a variety of factors and interagency coordination. DCCC fire/EMS calls can range from a reported major structure fire, to helping a senior citizen that has fallen and needs help getting up, to reports of carbon monoxide alarms, to checking for water or gas leaks, water damage, or other reports. In all cases dispatch personnel must also notify the jurisdictional police agency of the fire/EMD activity.

The following provides an overview of a fire/EMS call dispatch:

- Upon completion of getting call taking information, a call taker is responsible to see that the incident is sent to dispatch. The CAD system displays a list of responding equipment available for the dispatcher. The dispatcher must manually select and initiate the station select call (paging) tone(s) and announce the event. In the case of a structural alarm or other major incident, this may include selecting multiple jurisdictions and or station tones.
- Initial dispatch and fire department paging tones occur on the VHF county-wide main fire dispatch channel.
- Responding units communicate on the main fire channel, however the units at the dispatched event can later switch over to one or more of six available fire ground frequencies. DCCC cannot transmit on these fire ground frequencies as they are exclusively for fire ground on scene communications. Further communications with the DCCC are completed on the main county fire dispatch frequency or on the IFERN (Interagency Fire Emergency Radio Network) during incidents when operating under MABAS (Mutual Aid Box Alarm System) procedures.

- Major alarm incidents require DCCC personnel to notify fire command of the elapsed time from the time of the start of the incident. This notification procedure is a safety and risk mitigation practice for the fire departments. DCCC, having a dedicated fire dispatcher during fire incidents, allows for dedicated monitoring isolating a dispatcher from working on other unrelated dispatch functions and other distractions.
- The MABAS (Mutual Aid Box Alarm System) is a mutual aid response system consisting of fire departments from northern Illinois and southern Wisconsin. A MABAS alarm occurs when a fire district or city exhausts, or is close to exhausting, its own resources on a significant fire, medical, or other emergency event. The MABAS system is geographically divided into regions that are called divisions; DCCC and its respective fire departments are in MABAS Division 6. The DCCC is the primary communication center for Division 6 with the City of De Kalb being the secondary dispatch (or back-up) dispatch center. The City of DeKalb Communication Center functions in a back-up (secondary) mode should the DCCC be unable to handle a MABAS incident. The DCCC handles an estimated 25 to 30 MABAS incidents a year. DCCC performs MABAS dispatch services without any additional compensation.
- Generally, the primary fire department initiating a MABAS alarm will notify DCCC on the local dispatch frequency providing the incident address, box number, and the level of the alarm. A DCCC dispatcher will then tone out (page) the MABAS alarm on the IFERN frequency and dispatch all the additional outside agencies and equipment that are due for the response as well as page on the local channel for those agencies they dispatch for. If a specific piece of equipment is not available to respond, DCCC must find a similar piece of equipment from the next level of the alarm to go in its place. Should an outside dispatch center call DCCC for a MABAS response, DCCC would dispatch the alarm over the IFERN frequency for mutual aid and dispatch any of its local agencies that were due on the local dispatch.
- DCCC personnel are responsible to notify the jurisdictional police agency of the fire/medical response calls in their area.

Mobile Data Communication:

In addition to voice dispatch CAD law enforcement dispatches are sent to agency mobile data computers (MDC's) in Sycamore and Cortland. These are the only two DCCC law enforcement agencies that have mobile data terminals at this time. None of the fire departments served by DCCC have mobile data computers at this time, hence rely strictly on voice communications.

The police units could use MDC's for status changes, commenting, and disposing of calls for service, however most agencies use voice communications primarily for this functionality. Generally when MDC's are utilized by law enforcement the amount of overall voice radio traffic is reduced by approximately 20% to 25%. This method of operation can greatly reduce the amount of radio traffic on channels that are reaching their saturation point. Since only two DCCC police agencies have MDC's and none of the DCCC fire departments have this equipment at this time, DCCC is not seeing that percentage of reduction in radio traffic.

1.2.3 Law Enforcement (Police) Dispatching

As noted in the call-taking section, the normal procedure is for the telecommunicator taking the telephone call to initiate a police CAD incident and complete the radio dispatch, track, assist, and generally provide dispatch management for the entire call.

For those agencies with MDC's there is a direct interface between the CAD and the MDC's. DCCC can simultaneously dispatch police calls for service via voice over radio channels and through the MDC system thereby allowing an officer to receive both a voice dispatch over the radio and a text message on their MDC.

Interagency Radio Communication:

In the event of a significant police event, such as an armed robbery or other significant felony, the law enforcement agencies utilize ISPERN (Illinois State Police Emergency Radio Network) to notify all the law enforcement agencies in the area of the incident in addition to using their local police radio frequency. ISPERN also provides a common radio channel for law enforcement interoperability between police agencies that do not normally operate on the same radio frequency. Dispatching of emergency incidents that fit the ISPERN criterion are flash broadcast over ISPERN and are dispatched by the Illinois State Police in Elgin.

ISPERN can also be used by police officers in vehicle pursuits or any other emergencies when an officer is outside the coverage range of his local police radio frequency. DCCC telecommunicators cannot transmit on ISPERN but can receive and monitor these broadcasts from their console positions. The telecommunicators are also in contact with the state police dispatchers via telephone or point to point radio (155.370 MHz) should a field unit be unable to make a timely notification or are otherwise engaged in an emergency situation.

In addition to ISPERN (155.475 MHz) for law enforcement and IFERN (Interagency Fire Emergency Radio Network) (154.265 MHz) for the fire service, there is also a frequency utilized known as IREACH (Illinois Radio Emergency Assistance Channel) (155.055 MHz). This channel provides a mutual aid interoperability capability link for all public services. EMS personnel utilize radio frequencies known as MERCI (Medical Emergency Radio Communication of Illinois) (155.340 MHz & 155.400 MHz) that allows them direct contact with area hospitals from their medical mobile units. This channel also allows for interoperability between ambulances and hospitals in the area and throughout the entire State of Illinois. The local hospital in De Kalb County is Kishwaukee Hospital.

Radio interoperability within the county is very good due to the fact that so many police agencies in the county either use the sheriff's radio channel routinely or have access to the sheriff's radio channel in addition to having the common interoperability channels such as ISPERN. The same holds true for fire/EMS as most fire departments in the county either operate on the county's fire network or have access to it in addition to having the common interoperability channels such as IFERN.

1.2.4 Ancillary Duties & Services

As referenced previously DCCC personnel are responsible for data entry of law enforcement wants, warrants, and locate information for its police agencies into the Statewide Law Enforcement Agency Data System (LEADs) and the National Crime Information Center data system (NCIC).

1.3 Personnel Practices

The review of personnel practices for DCCC includes position descriptions, recruitment, and hiring process. Personnel practices at DCCC support best practices in this area.

1.3.1 Position Descriptions

Position descriptions are available for the following positions:

- Commander (Rank - Lt.)
- Shift Supervisor (Rank - Sgt.)
- Telecommunicator (Rank - Deputy)

The position descriptions detail the requirements of the position including:

- Job Summary and Distinguishing Features of the Work
- Essential Job Functions
- Important Job Functions
- Requirement to Perform other Duties as Assigned
- Material and Equipment Used
- Minimum Qualifications Required
- Education, Experience, Licenses, and Certifications
- Knowledge, Skills, and Abilities

1.3.2 Hiring Process

DCCC actively manages and is involved in all phases of the hiring process. DCCC recruits potential employees both internally and externally. Advertisements for positions utilize the local news media and through professional organizations such as NENA and APCO.

DCCC utilizes a multi-step hiring process:

- 1) The position is advertised locally and sometimes professionally with APCO and NENA professional organizations
- 2) A written test is administered
- 3) Applicants are tested utilizing CritiCall Pre-Employment Testing
- 4) A typing proficiency test is administered
- 5) Eligible candidates are interviewed
- 6) Background checks are completed
- 7) Psychological Testing Process

Sheriff's Merit Commission Makes Eligibility List:

PCS noted that DCCC does not conduct a physical exam for communication candidates. It is recommended that checking the overall health of the potential employee that must work various stress filled shifts (including those for expected and unexpected overtime). At a minimum vision and auditory hearing testing is highly recommended.

1.4 Financial: Operating Budget

A strong financial foundation is a cornerstone of an effective emergency communications center's operation requiring close management to properly forecast future budgetary needs. DCCC operates on a Fiscal Year (January 1st to December 31st). Primary revenue receipts are from the De Kalb County ETSB, outside contractual user service fees, and fees paid by De Kalb County. Advanced budgeting can be a challenge but is needed at DCCC as many of the user agencies have fiscal year budgets that start at different times during the year.

The DCCC staff determines the budget requirements within the expenditure guidelines established by the sheriff. Upon submission of the proposed fiscal year budget, the sheriff is responsible for the adoption of the fiscal year budget. The DCCC division commander is responsible to manage revenue and expenditures within the approved budget.

Figure 6 DCCC Approved Budgets 2009-2013

DCCC Approved Budgets 2009-2013 Budget Revenue Summary	
Year 2009	\$ 2,350,200
Year 2010	\$ 2,461,900
Year 2011	\$ 2,448,000
Year 2012	\$ 2,593,100
Year 2013	\$ 2,763,500
+17% Over The Past Five Years	

SECTION 2: FACILITIES AND TECHNOLOGIES

2.1 Facilities

The DCCC communication center is located on ground level of the De Kalb County Sheriff's Office located at 150 W. Main Street in the City of Sycamore.

The total area of the building occupied by DCCC in the sheriff's office is approximately 1,863 square feet and is being used as follows:

<u>Area:</u>	<u>Approximate SF</u>
Division Commander's Office	262
Equipment Room	70
Communications Center Floor	1,034
Server Room (All Radio/Network Infrastructure)	270
Break Room	227

DCCC's facility design, space utilization, security, power supplies, and facility maintenance is functional at this time, however, PCS noted that the PSAP is somewhat landlocked where it is currently located. Additional space could include some extensive remodeling (including the removal of walls and restrooms). PCS understands as a jail build out is being planned on the second floor for 2014-2015 that some thought has been given to future space requirements for communications. PCS recommends that the PSAP should continue to plan for the future should more space may be available. The space available today is nearing capacity.

2.1.1 Power Equipment

Located on the east side of the building outdoors is a Caterpillar diesel generator capable of operating all the mission critical equipment located in the communication center. In addition a UPS system is located in the equipment room capable of operating all mission critical equipment during the interval where normal commercial power has failed and the emergency generator has taken over the load. Once the generator comes on-line the UPS switches off and allows the generator to provide emergency power for the duration of the power outage.

Fuel on hand (tank immediately below the generator) allows for several days of operation. DCCC relies on the county building maintenance department to service and fuel the generator. PCS recommends that the PSAP also take an active role in maintaining this mission critical equipment. PCS recommends that while the county maintenance department is doing a good job, this equipment can be easily overlooked and is just too important to the operation of the communication center, therefore it deserves a double check by designated PSAP personnel. Further, a procedure should be available in the PSAP stating who to call 24 X 7 to refuel the generator should it be required. DCCC staff advised the emergency generator is tested under load on a weekly basis for one hour as required by NFPA and ISO standards.

Using high fencing and barbed wire, PCS noted that the security surrounding the generator is exceptionally well done to prevent unauthorized personnel from being able to tamper with this equipment.

DCCC Caterpillar Diesel Powered Emergency Generator



DCCC Best UPS Battery Back-Up System



2.2 Technology

Communications personnel are required to process calls quickly and accurately, and are required to perform several tasks simultaneously under pressure. The communications center management is responsible to assure that technological components are in place to support communications personnel and the public safety responders they serve. Technological components (equipment, systems, networks, platforms) are key vital elements to an efficient and effective dispatch organization.

DCCC also provides an internal network which is utilized to provide information access, email, operating policies, Internet, and other applications utilized in the day to day operation.

2.2.1 Two-Way Radio: Radio/Consoles/Workstations

DCCC utilizes Motorola Gold Elite Consoles with Watson Dispatch Furniture for radio dispatching to field units. These console work station positions provide telecommunicators with the ability to answer telephone calls and to transmit and receive on all the radio frequencies used in the communication center. The six (6) Motorola Gold Elite are considered the main consoles with back-up provided by a single Zetron console. DCCC realizes that the Gold Elite radio consoles are nearing end of life obsolesce which Motorola has planned for December 2018 (see letter of cancellation from Motorola in Appendix D). Budgetary planning including a capital replacement plan should wisely be included in future DCCC budgets to replace all the console equipment. The cost to replace the six (6) main consoles with new electronics and furniture (if furniture is needed) could cost as much as \$350,000.

DCCC Operations Floor With Motorola Gold Elite And Zetron Consoles Mounted In Watson Dispatch Furniture



2.2.2 Telephone System (CPE)

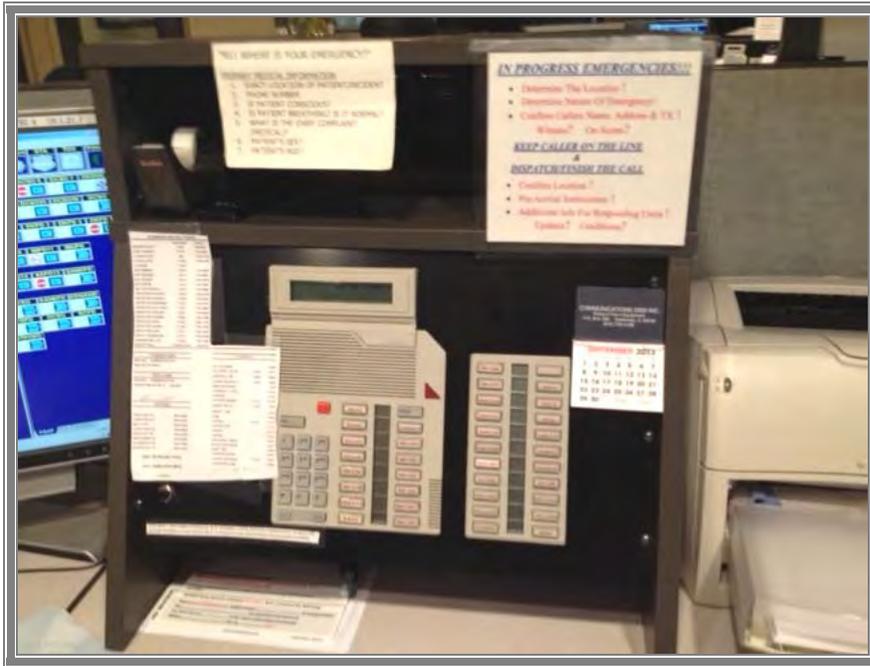
The “telephone system” or customer premises equipment (“CPE”) is generically referred to as the equipment used to receive incoming calls via 9-1-1 or ten digit numbers. DCCC utilizes Northern Telecomm Meridian CPE to receive incoming 9-1-1 trunks and handle incoming and outgoing 10-digit lines. Wireline and wireless trunks are segregated. The primary phone company providing the 9-1-1 service in De Kalb County is Frontier Telephone Company.

The Northern Telecomm CPE currently is operating with the following capacity capabilities:

- 03 9-1-1 Trunks (Wireline & Wireless Combined)
- 01 Non-Emergency Lines
- 20 Administrative Lines
- 02 Ringdown Lines

26 Lines Total

DCCC Northern Telecomm Meridian Telephone



The Northern Telecomm 9-1-1 screen has a direct interface to the OSSI CAD display and mapping screen. DCCC has Phase II 9-1-1 service where ANI/ALI (automatic number identification / automatic location identification) information is sent to CAD to initiate the mapping screen of the call for service. In the case of a wireless call, GIS software converts the latitude and longitude coming from the telephone to a physical location on a map showing the caller's location. Cellular telephones without location technology (Phase 1 9-1-1 service) may only display the location of the cellular tower that was accessed by the wireless caller and not the caller's location. The current telephone system does not provide call records for the PSAP which makes statistical reporting and analysis very difficult. It was noted that the telephone equipment is nearing capacity with almost no room to add more lines. PCS understands that the ETSB is planning telephone CPE replacement approximately in the year 2016. PCS agrees and recommends that this older equipment be replaced and a good MIS package also be purchased as a part of that purchase. Also, DCCC telecommunicators expressed to PCS an interest in adding Caller ID on the 10 digit lines that would help them better identify callers on these in-coming lines.

2.2.3 Communications Recording

The center utilizes a NICE digital voice recorder. The voice recorder allows simultaneous recall, monitor, and playback by multiple users from various locations at remote workstations as well as providing the logging of all phone lines and radio frequencies. The recorder provides the flexibility and capability for searches of calls by channel name, time and date, duration, dialed number, or ANI ID. The policy of DCCC is to hold recordings for a period of 90 days which is within the guidelines set forth by the Illinois Commerce Commission in their Part 725 Rules. The NICE recorder in use is six (6) years old. It has just 3 unused channels available for future expansion, so it is nearing capacity. PCS recommends that DCCC may want to replace this equipment in 2016 when the new telephone system is installed. Recorders of the future will need to record text messages, photos, and video in addition to voice when NG9-1-1 is installed. The NICE recorder is owned, funded, and maintained by the DeKalb County Emergency Telephone System Board using county 9-1-1 surcharge funds.

2.2.4 Computer Aided Dispatch

DCCC relies on OSSI to provide and maintain the PSAP's CAD system.

OSSI CAD interfaces include:

- Northern Telecomm Telephone
- LEADs /NCIC (State & Federal CJIS)
- MDC's (Mobile Data Computers)

DCCC does not interface the push-to-talk (PTT) radio and emergency button features into CAD.

The CAD system does not have a direct interface with the fire select call tone (paging) functions of the Gold Elite console or Zetron console. The dispatcher must review the recommended units for the responding agency(s) from CAD, then manually select and activate the correct station tones.

The state of the art applications (software programs) resident in and available for the OSSI CAD reflect the increasing needs of today's police and fire departments. It requires a substantial operational knowledge and understanding of modern dispatch and reporting methods and a technical understanding of CAD dispatch and reporting software.

The CAD system provides address verification and the creation of an incident or ticket for the call. The call taker/dispatcher is responsible to enter the correct coding for the call (incident type code), dependent upon whether it is a law enforcement call or a fire/medical incident. Based on the call type code, CAD recommends the appropriate units based on the location of the call. For law enforcement related calls, if the patrol unit assigned to the area is busy or out of service, the dispatcher either holds the call or manually substitutes an available patrol unit based on the operating policy. If the call requires a second unit, the dispatcher manually enters the second unit assignment to the call.

The dispatcher verbally broadcasts the call information; updates the incident record for units that are responding, and status of the units assigned to the call. CAD sends the call for service work ticket via MDC out to the respective units that are so equipped. CAD time-stamps each entry with an audit trail that indicates person updating the record, as well as the date and time of the activity.

PCS understands that the OSSI CAD system was originally installed in 1999 and that DCCC is currently waiting to install some new upgraded software which promises to bring new features and make the CAD more modern.

2.2.5 Back-up Operations

The City of De Kalb PSAP located at the DeKalb Police Department provides backup to DCCC. In the event of an emergency situation requiring the transfer of 9-1-1 call routing from the DCCC to the De Kalb City PSAP, a switching of telephone lines occurs from a transfer switch located at the DCCC consoles. The DCCC also has a mobile communication center that can be used for back-up communications in the event the main dispatch center goes out of service.

The State of Illinois Commerce Commission² (ICC), the regulating body for 9-1-1 systems in Illinois, requires a back-up operation for a PSAP/dispatch center. The DCCC back-up plan is on file with the DeKalb County ETSB and the Illinois Commerce Commission. DCCC operates its 9-1-1 telephone system under the certification and authority granted by the ICC to the DeKalb County ETSB.

² ICC General Order, Part 725.505 (I), contains the regulations for back-operations.

SECTION 3: DCCC FINANCES

3.1 Funding Analysis

PSC conducted an analysis of the current budget and funding mechanism for the DCCC. In addition, PCS also developed a number of possible funding alternatives in order to present the DCCC possible options, and to stimulate conversations, so that its members may discuss this issue further.

The purpose of this funding study was to first determine if the current budget was “typical” of a 9-1-1 PSAP and dispatch center, second to give a historic perspective of costs for its members for the last five years, and third to present some possible alternatives to the current funding method. In order to accomplish these three tasks, PCS gathered data, made observations, and used its vast experience and industry best practices to evaluate the budget and funding methodology, and develop a number of examples of alternatives to the current funding method.

PCS reviewed the budget and funding documents provide by the DCCC and the DeKalb County ETSB staff. Those documents provided included:

- DeKalb County ETSB General Fund Profit & Loss Budget vs. Actual 2013
- ETSB 9-1-1 Wireless Fund Wireless Fund Profit & Loss DeKalb County ETSB General Fund Profit & Loss Budget Budget vs. Actual 2013
- ETSB 9-1-1 Capital Funds Capital Fund Profit & Loss Budget vs. Actual 2013
- DeKalb County ETSB 9-1-1 Board Capital Fund FY 2013 Budget Administrative Recommendation (FY2011, 2012, and 2013)
- DeKalb County ETSB 9-1-1 Board Wireless Fund FY 2013 Budget Administrative Recommendation (FY2011, 2012, and 2013)
- DeKalb County ETSB 9-1-1 Board General Fund FY 2013 Budget Administrative Recommendation (FY2011, 2012, and 2013)
- DeKalb County Government Budget for the Sheriff’s Communications Department (FY 2009 – FY2013)

While the DeKalb County ETSB could only provide three years of data, it was clear from the budget documentation from the Sheriff's Communications Department that the contributions from the ETSB to the Sheriff's Department has remained the same at \$169,000 for the last five years. In addition, the budget documents provided data for the last five years that included the charges paid by the members of the DCCC for services rendered.

It is important to note that the yearly budget process for DCCC is somewhat complicated by the fact that the County has a January 1st budget year start date while the municipalities have a start date later in that year. Therefore, the DCCC budget documents include two columns: one labeled the "Board Adopted" and the other labeled "Actual". The Board Adopted column is an estimate of what costs will be for the County in order for the County/Sheriff Department to complete their budget process while the Actual column is actually what everyone pays once the prior year's CAD events are tallied. Since the CAD events for the prior year are not known when the Sheriff puts his budget together he has to estimate those numbers.

PCS used the "Adopted" column for its analysis process as it provided the most recent five year dollar amounts instead of what was actually paid by all entities as the differences between the two columns do not vary much and seem to be a wash over the three year period those figures were available. There are years where some pay more than anticipated and other years where some pay less, but the differences are insignificant at this point.

The following is a summary of those charges as well as the percent change from one year to the next and total percent change for that 5-year period. (The following dollar amounts are from the "Board Adopted" column for each of the last five years):

	2009	% Change	2010	% Change	2011	% Change	2012	% Change	2013	% Change in 5-yrs
Revenues										
Police Communications	\$115,000	0.87%	\$116,000	5.17%	\$122,000	1.64%	\$124,000	6.45%	\$132,000	14.78%
Contracts (E911)	\$169,000	0.00%	\$169,000	0.00%	\$169,000	0.00%	\$169,000	0.00%	\$169,000	0.00%
Contract Genoa	\$173,000	1.16%	\$175,000	4.57%	\$183,000	-0.55%	\$182,000	6.04%	\$193,000	11.56%
Contract Sycamore	\$585,000	1.71%	\$595,000	4.71%	\$623,000	-0.48%	\$620,000	5.81%	\$656,000	12.14%
Total Non-Sheriff Revenues	\$1,042,000	1.25%	\$1,055,000	3.98%	\$1,097,000	-0.18%	\$1,095,000	5.02%	\$1,150,000	10.36%
Sheriff Revenues	\$1,308,200	7.54%	\$1,406,900	-3.97%	\$1,351,000	10.89%	\$1,498,100	7.70%	\$1,613,500	23.34%
Expenditures	\$2,350,200	4.75%	\$2,461,900	-0.56%	\$2,448,000	5.93%	\$2,593,100	6.57%	\$2,763,500	17.59%

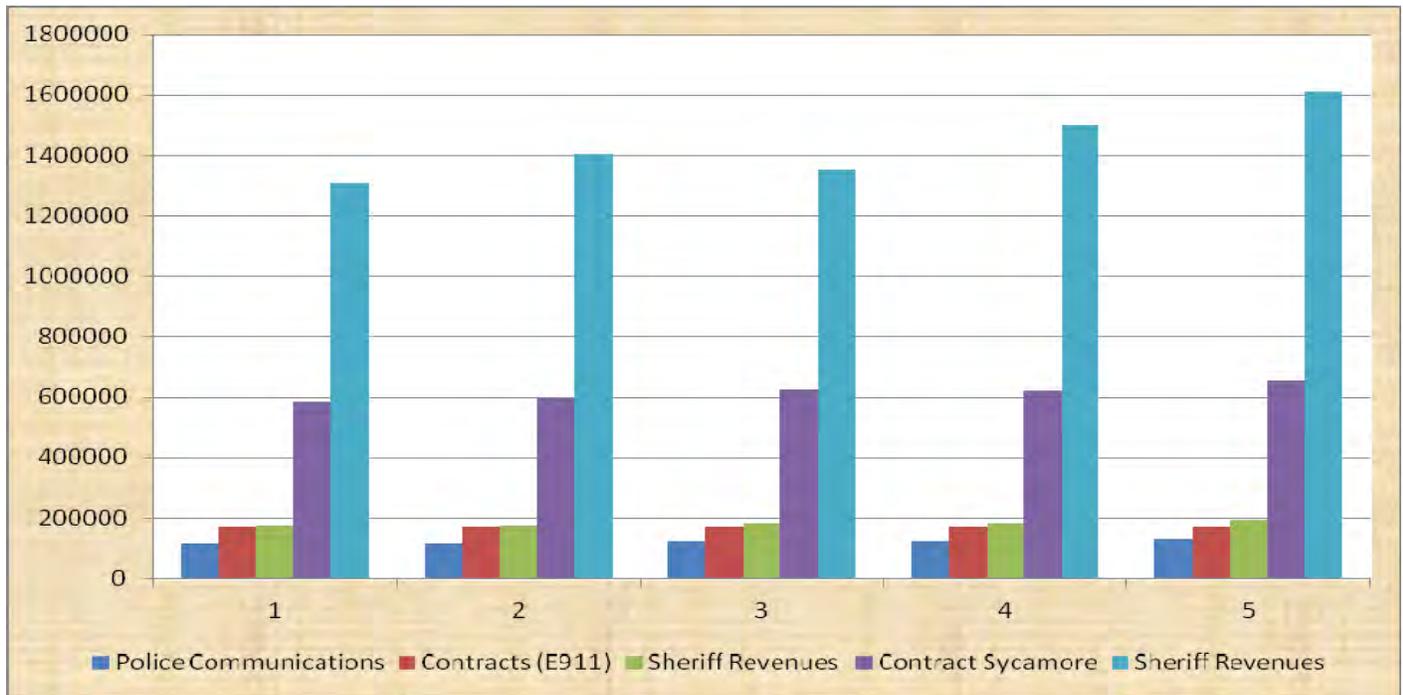
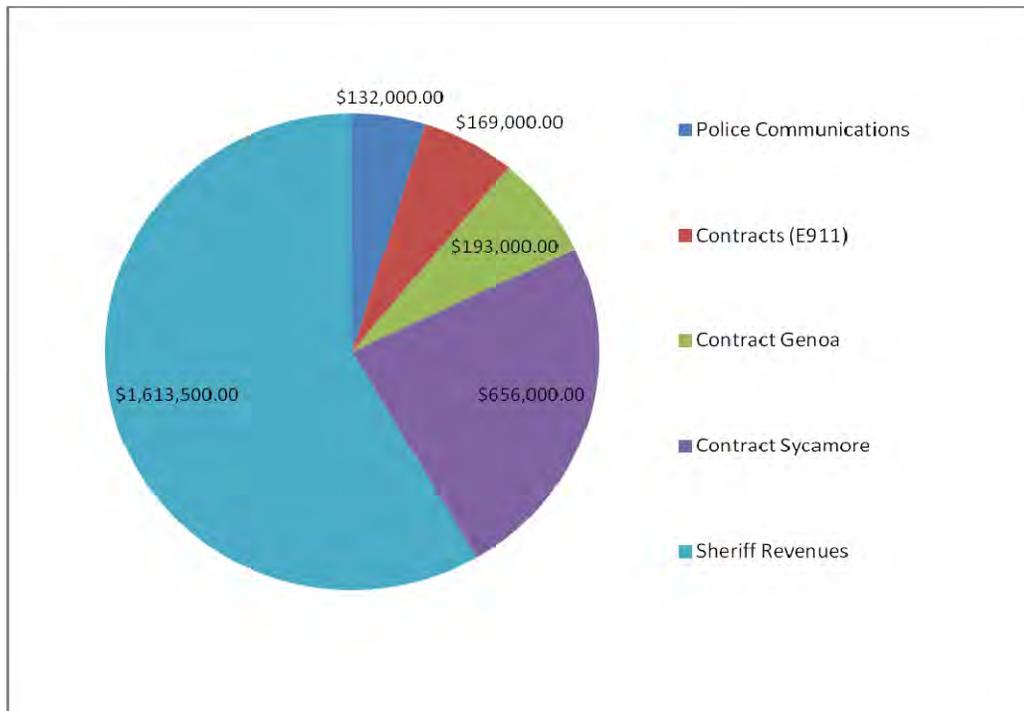


Exhibit A

This chart contains the 2013 revenue from all sources.



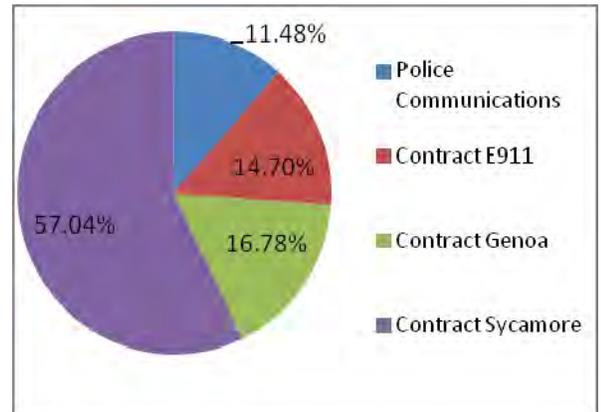
In the Sheriff's Department budget there is a line item entitled "Police Communications". This category includes contributions provided to the County from municipalities other than the two larger municipalities; the Cities of Genoa and Sycamore. Based on documents provided to PCS from the DCCC, a Base Fee schedule was established in 2003 for the municipalities. Two categories were established; one for municipalities with populations under 3,500, and one for municipalities with a population over 3,500.

Since the DCCC members are interested in their cost to provide dispatch services there are a number of ways at looking at these costs. The next page contains Exhibit B which graphically represents the differences between the costs of its members with and without including the Sheriff's Department contributions. Both methods show the dollar amounts and percentages for FY2013.

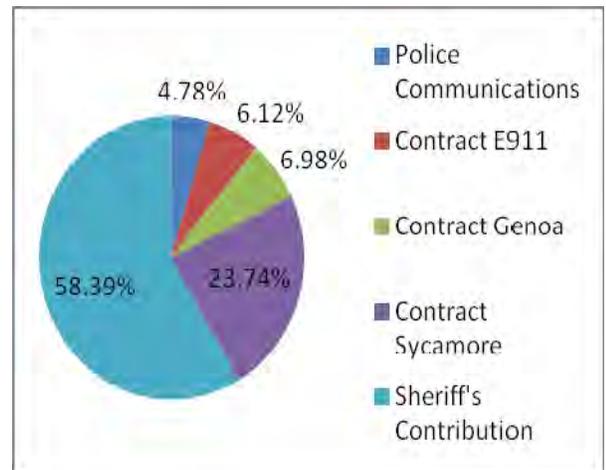
Exhibit B

Current 2013 data:

Revenues other than from Sheriff		Percent
\$1,150,000		
\$132,000	Police Communications	11.48%
\$169,000	Contract E911	14.70%
\$193,000	Contract Genoa	16.78%
\$656,000	Contract Sycamore	57.04%
	Total	100.00%



Budget with revenues from all		Percent
\$2,763,500		
\$132,000	Police Communications	4.78%
\$169,000	Contract E911	6.12%
\$193,000	Contract Genoa	6.98%
\$656,000	Contract Sycamore	23.74%
\$1,613,500	Sheriff's Contribution	58.39%
	Total	100.00%



In 2003, the Sheriff's Department established a funding formula for the smaller police agencies that were going to be added to the Sheriff's dispatch frequency as opposed to the Cities of Genoa and Sycamore who would have their own dispatch frequency and dedicated dispatcher. For municipalities with populations less than 3,500 their costs are based on their percentage of CAD events divided into operational costs of 20% (1/5th) of the combined communications center, while those with populations greater than 3,500 are based on their percentage of the overall communications center costs correlated to their CAD usage percentage by the law enforcement agency. See Attachment A "Dispatch Costs BASE FEE" at the end of this section of the report.

The Sheriff's Department provided another document entitled "Telecommunications 2013 Communication Service Fee (See Attachment B) that identifies the 2013 costs for all the municipalities with populations less than 3,500, and they are identified in the other budget documents under the category titled "Police Communications". Even though different criteria is used in establishing costs, the dollar amounts in the category of "Police Communications" in the DCCC budget did closely match the percent increase paid over the last 5-years by the Cities of Genoa and Sycamore. The under 3,500 population municipalities had a five year increase of 14.78% while the City of Genoa had a 11.56% increase and the City of Sycamore had a 12.14% increase.

On the previous page, Exhibit B showed the percent of contributions for the 2013 budget, first with contributions from everyone but the Sheriff's Department then with the Sheriff's Department included. Of the non-Sheriff agencies, the City of Sycamore has the largest contribution of 57.04% and is reflective of its percentage of CAD events for law enforcement activity only. Overall the City of Sycamore paid 23.74% of the 2013 costs.

According to the documents provided to PCS from the DCCC, it appears the number of 9-1-1 calls received has stayed relatively the same for the previous five years at around 25,500 to 26,000, while the number of 9-1-1 calls dispatched has increased just 5% over that same time period. While the percentage of wireless 9-1-1 calls received is 85% and is higher than the national average of approximately 70%, as reported by the FCC, an unknown number of these wireless calls are being transferred to other PSAPs which could account for that higher percentage.

Since these costs are based on law enforcement activity only, it appears the workload associated with fire and EMS calls for service are not being considered for budgeting purposes. In the contract with the Genoa/Kingston Fire Protection District, a cost was established in 2003, but PCS was not able to determine the basis for that particular dollar amount. It is unclear how fire and EMS activity is accounted for in the budgeting process, and while it is common for such activity to be less in number than law enforcement activity, it

usually is more labor intensive per call for service. Therefore, fire/EMS activity should be accounted for if the members of the DCCC want the budget to better reflect the actual costs of providing all services.

Nationally PSAPs find their budgets are driven more by personnel costs than by any other factor and the DCCC budget is no exception to that rule. Staffing a 24x7 operation is expensive, especially when the organization cannot preplan and schedule for most major events, weather situations, and other unplanned activities. Like most PSAPs, work load and the expectation of services demanded by the citizens and public safety responders impact these costs.

PCS did not find anything out of the ordinary while reviewing the DCCC budget, but did notice two issues that could be further explored. First was the fact that the dispatch personnel are classified as police personnel. This is not the norm in most PSAPs as it is more typical for dispatch personnel to be civilians. This could contribute to the fact that personnel costs amount to a little more than 90% of the DCCC budget for 2013. Police personnel typically cost more than civilian personnel because of the costs associated with such things as retirement programs, uniforms, and the fact that police personnel can usually retire earlier than those that are classified as civilians. Historically back in the 20th century sworn police personnel were used by many cities and counties to provide dispatch services, however due to the cost and the need for more sworn personnel to perform police duties in the field it is rare today to find police personnel in the dispatch center. DeKalb County seems to be unique in that dispatch personnel do not have police powers, but are as classified with police associated ranks.

The DCCC PSAP personnel are covered under the SLEP (Sheriff's Law Enforcement Personnel) retirement program which allows for personnel to retire at age 55 with a minimum of 10 years of service, and requires higher contributions towards enrollment. IMRF (Illinois Municipal Retirement Fund), which is the program most PSAP personnel in the State of Illinois belong to, have a retirement option at 55 but only after 35 years of employment. There have been some recent changes in the IMRF program that modifies the requirements for retirement, but the fact is the contributions into the two retirement programs are different, and police personnel generally have a higher contribution rate, thereby making them more expensive to employ.

With respect to the number of employees whose assignment it is to answer and process 9-1-1 calls and to dispatch and support public safety responders, PCS used two national acceptable methods (NENA STAFF and APCO RETAINS) for determining staffing levels. That data analysis showed that DCCC is staffed appropriately; it is presented elsewhere in this study. Obviously if DCCC was to change their staffing levels that would have a direct impact on the level of service being provided and on the size of the budget and costs for its members.

PCS completed a wage survey of several PSAPs in the market area surrounding DeKalb County. DeKalb County PSAP personnel are represented by the Metropolitan Alliance of Police (MAP) labor union and are nearing the end of their current labor contract. Most of the neighboring PSAPs in the surrounding counties are also represented by the same labor union. The recent survey showed that DeKalb County dispatch personnel are paid competitive wages that are slightly above the average local market wage. PCS found that the telecommunicator average wage for DCCC was slightly higher than 50% of those other centers.

On the other hand, the position for shift supervisor for the DCCC was the highest of all the comparisons for both starting and top pay. All of the surrounding PSAPs are staffed by civilian personnel.

The turn-over rate for dispatch personnel at DCCC is on average a very low 7.9%. This is much lower than the average national dispatcher turn-over rate of from 17% to 20%. This low attrition rate allows for more seasoned, experienced, personnel in the communication center which usually provides for better public safety services with less errors.

The second issue regarding the budget was the fact that PCS was unable to identify some of the costs normally associated with the cost to operate a PSAP.

The DCCC budget does not include operational items such as utilities, building equipment maintenance, and janitorial services, etc. These items are not separately accounted for. This fact contributes to some budget inaccuracies because the PSAP is located inside the Sheriff's Department and is not a separate facility, therefore the "true" cost is missing from the budget document and is apparently being absorbed by the Sheriff's Department. In addition to these operational items, the county is also providing the space in the Sheriff's building for the DCCC rent free.

PSC found that over five years the expenditures for DCCC vary from a -0.56% one year to the largest increase of 6.57%, from the 2012 to 2013 budget. This represents an average annual increase of 4.17% and a total increase of 17.59% for the last five years. Since personnel costs contribute to approximately 90% of the budget, the increase in COLA for personnel in 2013 and small increase to the number of paid time off hours can account for some of that increase. COLA has increased slightly for the last 5-years from just 2% for 2009 to a 3% for the first 6-months and an additional 1.5% for the second 6-months in 2013.

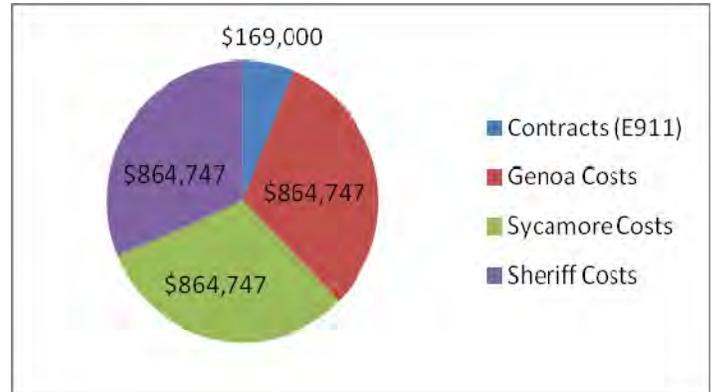
While the trend for the last 5-years has been general increases to the operating costs for the members of DCCC, the one exception to this is the amount of dollars contributed by the ETSB over this time frame. While the five year costs for members increased between 10.36% and 23.34%, the contribution from the ETSB was the same every year at \$169,000 annually.

The DeKalb County ETSB is experiencing what all 9-1-1 systems in the country have, in that land line phones are being replaced with wireless devices. Because the surcharge for land line devices is \$.85 (actual \$.82) and wireless is \$.75 (actual \$.58), this shift in consumer preferences is resulting in a continuing trend of less 9-1-1 surcharges available to ETSBs. In addition, PCS realizes that the ETSB has other costs than those of the DCCC, but if this trend continues the members of the DCCC will be bearing all the increases to operating costs in the future and this is something to be aware of and plan for.

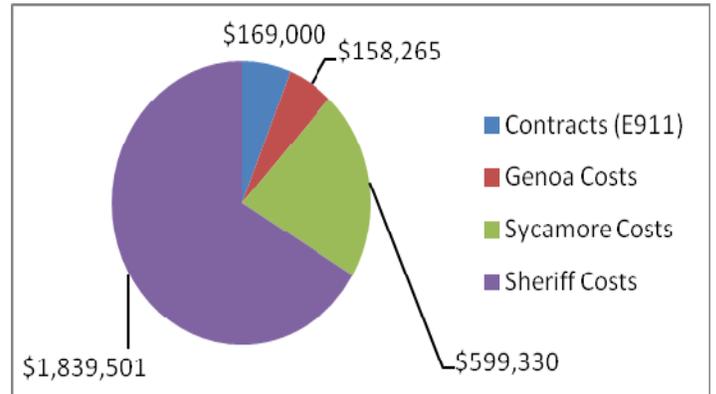
In order to show the members of DCCC what potential impact there might be if the funding methodology is changed, PCS has developed three alternatives using two different criteria in order to stimulate conversations regarding funding alternatives. The first three alternatives include the "Police Contract" agencies in with the Sheriff's department amounts, while the last three alternatives have those agencies as a separate line item. In all of the examples, PCS left the ETSB contribution as a fixed amount of \$169,000, as we are not aware of any support to increase this amount at this time. PCS listed a number of possible options and some examples. The following pages also contain graphic representations of those contributions.

Budget Alternatives in this section include the Police Contracts dollar amount into the Sheriff's category.

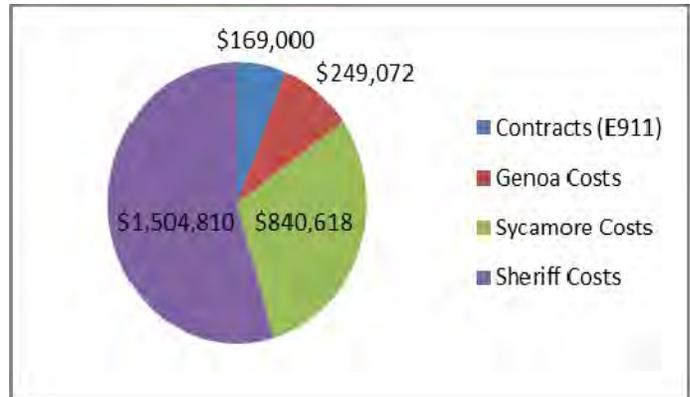
Budget Amount		Percent based on: <u>Equal Share</u>	
\$2,763,500			
\$2,594,500	Minus fixed amount if any		
Fixed Amt.	Contracts (E911)	\$169,000	
33.33%	Genoa Costs	\$864,747	
33.33%	Sycamore Costs	\$864,747	
33.33%	Sheriff Costs	\$864,747	
		Total	\$2,763,241



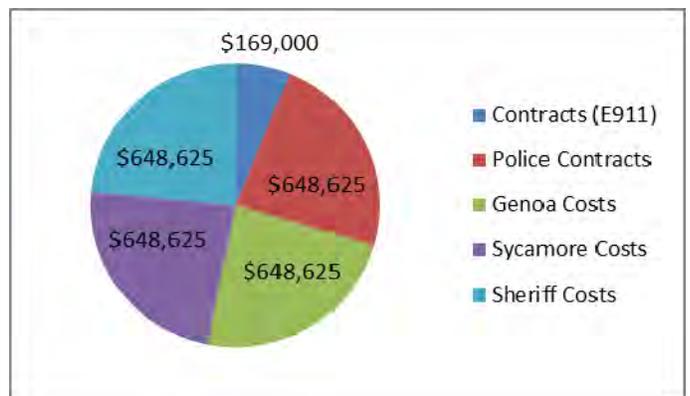
Budget Amount		Percent based on: <u>% of CAD Events</u>	
\$2,763,500			
\$2,594,500	Minus fixed amount if any		
Fixed Amt.	Contracts (E911)	\$169,000	
6.10%	Genoa Costs	\$158,265	
23.10%	Sycamore Costs	\$599,330	
70.90%	Sheriff Costs	\$1,839,501	
		Total	\$2,766,095



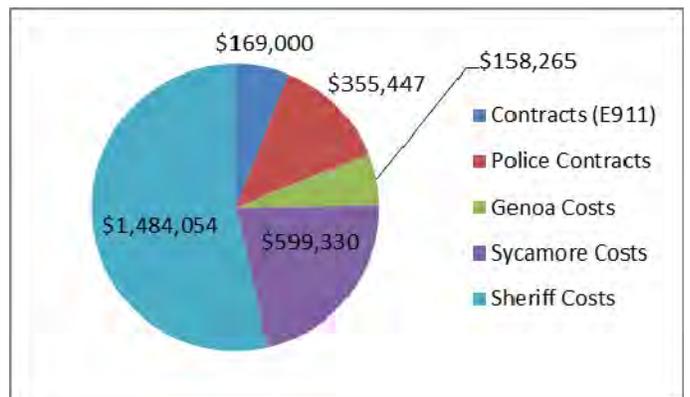
Amount	*Updated 2.11.14	
\$2,763,500	Percent based on:	% of Population
	Minus fixed amount if any	
\$2,594,500	Contracts (E911)	\$169,000
Fixed Amt.	Genoa Costs	\$249,072
9.60%	Sycamore Costs	\$840,618
32.40%	Sheriff Costs	\$1,504,810
58.00%	Total	\$2,763,500
100.00%		



Budget Amount		
\$2,763,500	Percent based on:	Equal Share
	Minus fixed amount if any	
\$2,594,500	Contracts (E911)	\$169,000
Fixed Amt.	Police Contracts	\$648,625
25.00%	Genoa Costs	\$648,625
25.00%	Sycamore Costs	\$648,625
25.00%	Sheriff Costs	\$648,625
	Total	\$2,763,500



Budget Amount		
\$2,763,500	Percent based on:	% of CAD Events
	Minus fixed amount if any	
\$2,594,500	Contracts (E911)	\$169,000
Fixed Amt.	Police Contracts	\$355,447
14%	Genoa Costs	\$158,265
6.10%	Sycamore Costs	\$599,330
23.10%	Sheriff Costs	\$1,484,054
57.20%	Total	\$2,766,095



*Updated Population Figures From The DeKalb County Administrator's Office
See Appendix E

In Summary:

There are any number of methods that PSAPs use to fund their operations and each system needs to decide for themselves which method best meets their needs.

PCS did find that because the DCCC employees are being compensated at a rate slightly higher than average, and that they are classified as sworn as opposed to civilian, personnel costs may be a little higher when making a side-by-side comparison with neighboring PSAPs, but the DCCC is also saving some dollars in their operational budget because the PSAP is part of the Sheriff's facility and therefore members are avoiding costs normally associated with maintaining a separate facility of their own.

When calculating the costs for its members, DCCC may want to consider the workload associated in fire and EMS calls, especially when you take into the account the time it takes to provide 9-1-1 pre-arrival medical instructions and the extra work being performed for the fire departments under the MABAS (Mutual Aid Box Alarm System) mutual aid plan.

The DCCC members may want to consider using something other than the last year CAD events to calculate user costs because of the differences in timing of budget preparation between the County and municipalities. Perhaps a rolling three years history of years, prior to the year budget preparation begins, will allow a more streamlined approach to budget preparation.

In reviewing the three Memorandum of Agreements provided by DCCC, PCS found some items that the members and the County may want to address in the future. While all the contracts have language regarding "the opportunity to renegotiate annual fees based on an equitable distribution of costs to all

contractual participants” once any additional communities join the PSAP, only the agreement with the City of Sycamore has language that allows for a method to “dispute” the fee adjustment. Under Section 3. 2. “Dispute Resolution”, language provides for an ad hoc committee to hear and make final judgment on that issue.

Secondly, all contracts have language regarding a “Users Committee” and who from their city/department will be able to join other representatives from other participating fire and police agencies. One agreement specifies that the committee is to be chaired by the DeKalb County PSAP Administrator, and the committee will serve in an advisory role to the Administrator, while the other two state that the committee will serve in an advisory role with respect to PSAP operations.

PCS understands this committee has not met or is functional at this point, but certainly would recommend that users of any PSAP operation have a method of working with the PSAP management in establishing SOPs, guidelines, and performance standards, and to act as a “sounding board” for issues that may arise from time to time. Each member of such an arrangement should have a method of working with their counter parts in a cooperative environment like that exists in DeKalb County.

SECTION 4: STAFFING

4.1 Staffing Analysis

PCS utilized a tool, developed by the National Emergency Number Association (“NENA - The 9-1-1 Association”) in the evaluation of two areas of DCCC: The Staffing Study of telecommunicator personnel required in reference to a Workload Formula which utilizes incoming and outgoing phone calls from 9-1-1 and other call origination sources (i.e., Administrative 7/10 digit calls), actual dispatches and inquiries into NCIC/LEADS measured against the average number of available work hours for telecommunicators needed to handle the work, and the Staffing Study of telecommunicator personnel required in reference to a Coverage Formula which utilizes the number of console positions desired by management to be staffed based on available work hours as well as attrition.

The purpose of the staffing study was to determine whether the current staffing is adequate for the current work load with regard to the expectation of services being provided to citizens and public safety responders.

Utilization of the NENA staffing model required input from the DCCC, in the form of collection of survey data and discussion with management.

With respect to the number of DCCC employees whose primary assignment is to answer and process 9-1-1 calls and to dispatch and support public safety responders, the data collected was utilized to determine the following:

Authorized staffing strength for full time personnel (Full Time Equivalent - FTE1):

- Actual staffing strength for full time personnel
- Number of days per year an employee is scheduled to work
- Average annual vacation/holiday/sick leave actually taken per employee
- Average annual personal leave actually taken per employee
- Average annual training time actually taken per employee
- Average annual military, FMLA, Comp time leave actually taken per employee
- Meal and Break time allocated
- Average annual leave for other activities (meetings, special assignment, etc.)
- Minutes per hour employees are busy attending to other ancillary activities or duties other than 9-1-1 call handling and/or dispatching activities (Records, LEADS Processing, other.)

Additionally, using the survey data, the study measured the attrition rate of the agency and to determine the following:

- The number of Employees at the highest staffing level for past three years
- The number of new hires that failed to complete the probationary period in the past three years
- The number of experienced employees that left for any reason over the past three years

The staffing instrument also incorporated the following:

- Incoming Call Volume, by shift, for each of the following classifications
 - 9-1-1 Wireline Calls
 - 9-1-1 Wireless Calls
 - Abandoned 9-1-1 Calls
 - 9-1-1 VoIP Calls
 - 7/10 digit emergency and administrative calls
 - Outbound Call Volume
 - Average time to process a 9-1-1 call
 - Average time to process a 7/10 digit call

¹ FTE = Full Time Equivalent as determined by the normal amount of working hours in a calendar year calculated at 2080 hours.

- Busiest hour of the day
 - Busiest day of the week
 - Average Duration (time) of the following type of dispatches
 - Law Enforcement
 - Fire and Rescue
 - Emergency Medical Services (EMS) (not segregated – part of fire/rescue)
- The annual total of the following Calls for Service 2 per shift:
 - Law Enforcement
 - Fire/ Rescue
 - Emergency Medical Service (not segregated – part of Fire/Rescue)
 - The annual volume of LEADS³/NCIC⁴ inquiries per shift

The DCCC was also asked to determine the optimum number of simultaneous incidents for each telecommunicator working a console position in the following: law enforcement, fire/rescue. It is important to note at this time, that the data used in staffing tool is based on several general assumptions:

- Incoming phone call volumes from wireline 9-1-1, wireless 9-1-1, VoIP and seven/ten digit telephone lines do not directly correlate to the number of actual dispatches that result from these phone calls but are events that must be processed by a telecommunicator. Only empirical and quantifiable data which could be validated by the DCCC would be used in the staffing tool. This area could not be validated for all information sought by PCS due to reporting limitations in the DCCC support systems and required extrapolating data in some cases, where noted.
- Telecommunicators process multiple actions and support functions on different types of dispatch and perform support functions in addition to actual dispatch services. The function of law enforcement dispatch and the duration of actions required by the telecommunicator to support caller needs vary from the function of caller needs and fire dispatch. As such, the duration of actions that may be required by the telecommunicator to support the related call processing and dispatch differ by discipline. The same can be said for EMS dispatch as compared to both law enforcement and fire dispatch activities although DCCC cannot distinguish medical calls from those that are re/rescue related due to the limitations of reporting data from DCCC's CAD system.

² Calls for Service for DCCC are any Computer Aided Dispatch event where any public safety personnel do a quantifiable activity (traffic stop, premise check, fire inspection, notification, etc.)

³ LEADS indicates inquiries made to the Law Enforcement Agencies Data System, a division of the Illinois State Police, as a support function for law enforcement related activities concerning Secretary of State information.

⁴ NCIC indicates inquiries made to the National Crime Information Center, a division of the FBI, as a support function for law enforcement related activities concerning criminal history and warrant information.

Although there are different actions to be taken for each discipline common actions remain; the telecommunicator must work or be available to provide support functions on the response from public safety personnel from call inception through completion / disposition.

- The processing of NCIC/LEADS inquiries, such as license plate registration, title searches, criminal histories, warrants and stolen vehicles, as well as the confirmation of the validity of responses are time consuming actions required by telecommunicators that are not readily apparent to uninformed or civilian persons. Furthermore, DCCC personnel routinely make record entries into the LEADS system during their workday.
- The process of providing support functions - such as notification of key holders, responding to fire and burglar alarms, and other functions are not easily quantifiable but, nonetheless, are time consuming actions taken every day by telecommunicators. Since the actions are not readily quantifiable, they are not used in Staffing formulas, however these requirements are influencing factors that should be taken into consideration by PSAP management as they establish adequate staffing levels.

As stated previously, the staffing tool requires summary information on the average call duration⁵ for police, fire and EMS type calls. The formula seeks specific information from the previous year's communication center data captured by the agency for which the staffing study is being provided. For optimum results it is critical to use data that is empirical and accurate. The average call duration data of each of the three disciplines is directly correlated with the results determined by the staffing tool. Based on data provided by the DCCC:

- The average call duration time, for a DCCC telecommunicator to process an incoming call for a law enforcement dispatch action, from the time the call is answered to the time it is disposed of is twenty-six (26) minutes.
- The average call duration time for a DCCC telecommunicator to process an incoming call for a fire/rescue dispatch action, from the time the call is answered to the time it is disposed of is sixty-four (64) minutes. This average time also includes EMS related calls as they could not be separated by DCCC as a separate and distinct activity for this study.

⁵ Call Duration refers to the time from when the incoming phone call is answered by the telecommunicator until the time the public safety unit assigned to the call has completed the actions required in the field (it normally does not take into account prisoner processing time, follow up or investigative time, repacking fire engine hose, etc.)

- The average call duration time it takes for a DCCC telecommunicator to process an incoming call for an EMS dispatch action, from the time the call is answered to the time the EMS unit is at the hospital is unknown in this study. DCCC advised PCS that EMS related calls could not be separated from fire/rescue calls. This is unfortunate since many EMS related calls require an extended period of time to process, especially the time it takes to provide EMD instructions to callers, until the time the call is disposed.
- The average processing time, for a DCCC telecommunicator to process a LEADS/NCIC inquiry is one and one-half (1.5) minutes.

Attrition

Attrition, the turnover rate of communications center staff, is an ongoing challenge to PSAPs across the nation. To maintain adequate staffing, consideration must be given to the prevailing turnover or attrition rate.

Attrition rate considers not only the loss of trained employees from the workforce but also the time required to take a new employee from the time of hire to when they can function on their own. If the attrition rate is high, there are less hours of coverage in the center compared to if the attrition rate is low.

Utilizing data provided by the DCCC the staffing algorithm yielded a rate of attrition of 7.9% which is considered low by industry averages. Based on the national problem of retention of experienced telecommunicators, it normal to see attrition rates of 20% or higher.

A low attrition level is something to be proud of in this day and age when retaining experienced personnel is difficult, and may be a reflection of the pay scale and benefits afforded to DCCC personnel as well as economic factors such as the current job market and economy. Factors that normally affect high attrition rates in PSAPs are friction among employees, poor leadership, and understaffing of personnel - leading to overload, and, burnout and little opportunity to attend training or perform other activities away from the console during their shift. From our collection of data, interviews and site visits, these factors do not appear to exist in the DCCC.

Further, the low attrition rate indicates that telecommunicator turnover is low; so one would expect telecommunicator" burnout" at DCCC to also be low, an important factor in keeping employees.

Utilization

Utilization is a numerical representation of the percentage of time telecommunicators are performing their duties as telecommunicators divided by the time they are on duty.

The staffing tool, utilizing data provided by the DCCC, calculated the utilization of telecommunicator personnel and yielded a sixty-six (66.6%) percent utilization rate. This percentage indicates that telecommunicators are performing their primary duties as telecommunicators 66.6% of the time, an average of a little over five (5) hours per eight (8) hour shift. From past experience, many centers report a seventy-five to eighty (75-80%) percent or more utilization rate. It is interesting to note at this juncture, that the DCCC telecommunicators process a large amount of LEADS/NCIC transactions on each shift. During the information gathering phase of this study DCCC management estimated that 15 minutes out of each hour the telecommunicator is working in dispatch they are performing “non-dispatch” tasks which include making and validating LEADS/NCIC entries as well as other support duties.

Additionally, it is important to understand the correlation between the utilization and attrition rate. Normally, when the utilization rate is high (80 – 100%), the attrition rate is usually also high, meaning that personnel are “burned out” and often leave the employer for that reason. But in the case of DCCC the attrition rate is low while the utilization rate is also less than PCS has experienced in other centers such that DCCC personnel do not experience the normal burnout that some PSAPs experience. This is reflected in the low rate of turnover in DCCC.

In today’s dispatch environment low turnover this is a good thing, with many centers working at below staff authorization levels. High turnover increases operational costs for PSAPs given the cost in recruiting new applicants, testing potential applicants and the extended time required to train new personnel to fully assume their job responsibilities. In Rave Mobile’s 2012 National Survey of PSAPs⁶ it was reported that the national vacancy rate for telecommunicator positions is 9.4%.

In research conducted and reported by Zbikowski⁷ in 2007 he found a direct correlation between a high utilization rate and the resulting high attrition (burnout) rate. In both private and public sectors, best practices suggest that the agent utilization rate should be proactively managed to control expenses. Since labor cost and replacement represents the largest element of most PSAP’s if the utilization rate is high, the cost per call is relatively low, since fewer telecommunicators are needed to cover the workload.

⁶ Rave Mobility “Smart911 First Annual National PSAP Survey 2012”, Framinington, Ma

⁷ Zbikowski, Eric. (April 2007). The Essential Call Center Key Performance Indicators. Call Center Magazine. International Customer Management Institute.

Conversely when the utilization rate is low, the cost per call is increased .since more telecommunicators are needed to cover the workload. While minimizing costs favorably affects the bottom line, as utilization rates approach 80 – 90 percent the PSAP may see higher turnover rates, which will directly impact overall costs.

The data provided by DCCC Communications were used in two separate algorithms to determine the recommended number of telecommunicator personnel required for the primary functions of call processing and dispatching. First, calculations are made of personnel required to meet the needs of DCCC based on current Workload handled by the center and the average call duration, taking into account attrition and utilization rates aforementioned. Secondly, calculations were made of the number of personnel necessary to provide sufficient Coverage, based on normal console staffing requirements, taking into consideration attrition and utilization rates as aforementioned.

Algorithm for Staffing by “Workload Formula”

The "Workload Formula" algorithm data inputs require twelve-month historic data - typically derived through equipment or system reports or other sources. The DCCC was able to provide data on some workload amounts (law enforcement and fire/rescue *calls for service*) for the past twelve month period. Unfortunately some workload amounts reported by Frontier Communications to DCCC and subsequently to PCS (for incoming 7/10 digit calls and outgoing 7/10 digits calls) were only available for a one month period requiring PCS to extrapolate a yearly total that may not accurately reflect the actual annualized data. Seldom do PSAPs experience incoming and outgoing call volume workloads each month that do not vary. Utilizing annualized data based on a one month sample is less than desirable, however that was all that was available to the study.

Furthermore, while the number of incoming 9-1-1 calls could be determined for the year using the Computer Aided Dispatch system, the actual number of wireline versus wireless 9-1-1 calls received could not be determined. Thus the number of incoming wireline and wireless 9-1-1 calls were also estimated for the year by DCCC due to the fact that the Computer Aided Dispatch system that cannot differentiate between the types of incoming 9-1-1 calls.

PCS inquired to DCCC if they could provide the incoming phone call statistics from their Northern Telecom Meridian 9-1-1 or PBX phone system but were advised that the both systems are central office based (Frontier Telephone Company) and that the DCCC does not have a Management Information System 8 (MIS) agreement with Frontier to acquire such information. A special request was made to Frontier and statistics for a one month period were collected. These statistics were analyzed for this report, however, they may not be truly accurate due to the very short one (1) month collection period.

"Workload" is defined as including both incoming and outgoing phone calls, 9-1-1, and Administrative calls (7/10 digit calls), that must be answered and processed by the telecommunicator and the actual calls for service that are dispatched.

DCCC reported the following incoming and outgoing phone statistics to PCS:

Type of Incoming Phone Call	Annual Volume ⁸
Wireline 9-1-1	2,424
Wireless 9-1-1 (both Phase I & II)	22,800
Voice Over Internet Protocol(VoIP) 9-1-1	562
10 Digit Incoming (from PBX)	28,776
10 Digit Outgoing (using PBX)	60,670
TOTAL	115,232

- It is important to note at this point that PCS experienced several concerns while examining the incoming 9-1-1 phone totals as reported to PCS by DCCC against the dispatched incidents as reported for the same time period. It is important to note at this juncture that the source of incoming 9-1-1 calls as reported to PCS by DCCC and utilized in the staffing algorithm(s) was derived from the DCCC's CAD system and not from the DCCC phone system.
- While the CAD system was able to provide a summary number of 9-1-1 calls received in the time period, other call related statistics - such as the Class of Service⁹ and the ESN¹⁰ of the incoming 9-1-1 call could not be provided. Such information could assist both PCS and the agency in further determining the work load of the center especially ESN where the origins of the incoming 9-1-1 call may be determined.
- The total number of incoming wireline 9-1-1 calls were reported as 2,424 while incoming wireless 9-1-1 were reported as 22,800.

⁸ Annual = Time period of June 1, 2012 through May 31, 2013

⁹ Class of Service is a four digit code that identifies the source of the incoming 9-1-1 call to the PSAP, for example a Class of Service code that is RESD indicates the call is from a Residence Phone, while BUSN indicates the call is from a Business Phone. VoIP indicates an incoming 9-1-1 call is from a VoIP Phone and WRLS indicates a Wireless Phase I call.

¹⁰ ESN stands for Emergency Service Number and is a three digit numeric code indicating the origin of the call and the response agencies for police, fire and EMS for that designated area. Normally geographic areas have different ESN if different response agencies are responsible for response in that area. The ESN is also used in legacy 9-1-1 systems for routing the 9-1-1 call to the correct PSAP.

In a 2012 survey of PSAPs nationwide by Rave Mobile¹¹ the distribution percentages of incoming 9-1-1 calls was reported as 60.6% from wireless devices versus 24.5% from wireline devices. The Federal Communications Commission reported that 70% of incoming 9-1-1 calls originate from wireless devices. However, DCCC is reporting that over 90% of their incoming calls originate from wireless devices. Furthermore, DCCC was not able to distinguish the type of incoming wireless 9-1-1 call meaning that they could not provide definitive information on the number of Phase I¹² versus Phase II¹³ wireless 9-1-1 calls they receive annually. It is normally accepted that Phase I wireless 9-1-1 calls, where no location information (coordinate data) is supplied to the PSAP, takes a longer time to process for the telecommunicator as more time is needed to determine and verify the location of the caller.

- The total incoming 9-1-1 calls reported to PCS from wireline 9-1-1, wireless 9-1-1 and VoIP 9-1-1 were 25,786 while the actual dispatched incidents as reported to PCS were 87,484.

PCS experience has shown that normally there are a higher number of incoming 9-1-1 calls being received than actual dispatched incidents but the reverse was reported by DCCC¹⁴. PCS would expect to see two or three the number of incoming 9-1-1 calls to the center as the number of actual dispatched incidents. For example, most centers PCS would expect to see that 25,000 incoming 9-1-1 calls would result in between 8,250 – 12,250 actual dispatched events.

When this issue was identified to management at the DCCC, PCS was advised that every CAD event is captured by their system and all CAD events are numbered and categorized by the source of where the call's originated. The source codes for creation of a CAD event are: 9-1-1; 7/10 digit phone lines; walk-in complaints or self-initiated by field personnel (traffic stops, premise checks, etc.).

¹¹ Rave Mobile "Smart911 First Annual National PSAP Survey 2012" Farmington, Ma

¹² Phase I wireless indicates an incoming wireless 9-1-1 call where location coordinate data is not delivered to the PSAP.

¹³ Phase II indicates a wireless 9-1-1 call where caller location coordinate data is provided to the PSAP within the accuracy rules in place by the FCC for the carrier based location technology.

¹⁴ With the advent of wireless 9-1-1, most PSAPs experience many more incoming wireless calls about incidents (especially traffic incidents) as compared to the actual number of dispatched incidents that result from those wireless calls. (For example: it is not unusual to receive ten wireless calls about the same traffic accident that results in one actual dispatch) Additionally, in this case DCCC is reporting that 90% of their incoming 9-1-1 calls are from wireless devices, yet their percentage of incoming 9-1-1 calls to actual dispatched incidents is reversed from the norm, even when subtracting the number of self-initiated calls for service.

While checking the CAD summary totals for the study period, PCS determined that of the total 87,484 "calls for service", 49,799 were "self- initiated" by field personnel, 24,800 resulted from incoming 10 digit phone numbers and 22 were from walk- in traffic. Based on further analysis this means that of the 25,786 incoming 9-1-1 calls received by DCCC, actually only 12,863 actual calls for service were generated from this source, a figure within what PCS would expect.

More importantly, while the staffing study usually only considers those calls processed and created by center personnel during the call handling and dispatch process itself, in this case due to the large volume of self- initiated calls for service and ten- digit phone calls (inbound and outbound) it is prudent to include them into the staffing study as even self-initiated and ten- digit phone calls require a level of telecommunicator processing and intervention, to some degree.

When discussing workload it is interesting to note the reverse correlation of incoming wireline 9-1-1 calls to actual dispatches compared to incoming wireless 9-1-1 calls and actual dispatches.

Traditionally, the number of incoming wireline 9-1-1 calls received by a center was nearly the same as the number of actual dispatches to public safety personnel that resulted. Normally the victim called on wireline 9-1-1 and/or maybe a neighbor might make the 9-1-1 call resulting in one dispatch. However, with the advent of wireless 9-1-1, there is little correlation between the number of incoming wireless 9-1-1 calls and the number of actual dispatches.

Due to the wide consumer use of wireless devices it is not uncommon for a 9-1-1 center to receive multiple wireless 9-1-1 calls for the same incident that results in only one actual dispatch, yet requires the telecommunicator to process each wireless 9-1-1 individually. .

It is also interesting to note that traditionally wireline 9-1-1 provided location information that was accurate 99% of the time permitting the telecommunicator to simply verify the address with the caller to effectuate an accurate and timely dispatch. However, location challenges are present with wireless 9-1-1 (where, if Phase II coordinate data is not available, only the tower site address would be delivered) and in VoIP based 9-1-1 calls which require the subscriber to register their location which may not be accurate if the computer has been moved from the previous subscriber location¹⁵. Additionally, although the FCC has adopted location accuracy requirements for wireless service

¹⁵ VoIP is a form of 9-1-1 phone access using Internet Protocol from a computer and is subject to a multitude of issues including the mobility of the computer device (nomadic) that may affect the location of the device if the subscriber information has not been updated.

providers even Wireless Phase II 9-1-1 calls can provide questionable accuracy depending on the location technology used by the wireless carrier (triangulation¹⁶ or GPS¹⁷ or assisted GPS¹⁸). In every 9-1-1 call received (wireline, wireless and/or VoIP), the actual location must be determined and validated by the telecommunicator. Due to the nature of wireless 9-1-1 and VoIP 9-1-1 technologies the burden of location determination and validation is squarely placed in the hands of the telecommunicator which can expand call processing time exponentially. Location of any incoming call is of paramount importance in dispatching units accurately, timely and efficiently. Both of the aforementioned play a role in the algorithm when using workload to determine staffing strength requirements. Additionally, when the Workload Formula and algorithm are used, the formula uses the agency variables (vacation and benefit time, training time, time used for ancillary functions, etc.) which effect the actual utilization of telecommunicator personnel. As stated previously, utilization refers to the number of actual hours a telecommunicator is actually performing their duties in a dispatch function divided by the number of hours they are at work. Using the Workload Formula to determine staffing, there is a direct correlation between benefit times provided by:

- Federal or State statute, such as FMLA or Military Leave,
- the agency, such as training time or through collective bargaining agreements, such as vacation time, sick time, or other benefit related time and the time that is actually available for performing the primary task of the telecommunicator .

These factors are considered as well as the workload the communications center is able and required to process. The Workload formula uses the average actual time taken by the employees along with the number of employees required to meet dispatch center volumes of work load to arrive at the staffing requirements result.

The results from the Workload formula are based on maximum utilization of agency personnel, taking into account the average of actual benefit time taken by telecommunicators measured against the statistical data provided for both incoming and outgoing phone call volume using a report category labeled Call Taker¹⁹ as well as the actual dispatch of police units versus fire units and NCIC/LEADS inquiries/entries as performed by DCCC telecommunicators which are quantifiable.

¹⁶ Triangulation refers to location determination where at least three cell towers are accessible by the wireless device. Triangulation is usually less accurate than GPS location.

¹⁷ GPS refers to Geographical Positioning System a satellite based location determination technology where the wireless device must be able to access satellite signals, problematic inside buildings.

¹⁸ Assisted GPS refers to a hybrid using both triangulation to make a quick location determination and then waiting for GPS to make a more accurate determination

¹⁹ Call Taker refers to a person that answers incoming phone calls only and does not actually dispatch to the public safety units. The tool utilizes the term to determine the number of personnel needed if they only processed the phone calls DeKalb Communications receives.

Workload Formula Results

The workload formula examines the workload based on separate functions being performed within the center:

- The Call Taker workload formula measures both the number of phone calls being received and processed, and the number of phone calls being made to and by the center, the average call duration time against the attrition rate and utilization rate.
- The Law Enforcement workload formula measures the number of Law Enforcement Calls for Service dispatched by the center, the average call duration time against the attrition and utilization rate.
- The Fire/Rescue workload formula measures the number of Fire/Rescue Calls for Service dispatched by the center, the average call duration time against the attrition and utilization rate.
- The EMS workload formula measures the number of EMS Calls for Service dispatched by the center, the average call duration time against the attrition and utilization rate. *(Not used in this study as it could not be determined by DCCC but was included within the workload as reported in the Fire/Rescue discipline above.)*

The NCIC/LEADS workload formula measures the number of NCIC/LEADS inquiries and responses processed by the center, the estimated duration of the inquiry against the attrition and utilization rate.

The Workload Formula components are identified in the summary sheets for the individual disciplines and results, summarized below, are contained in Appendix B.

- Page 1 (Call Taker - 8 FTE),
- Page 2 (Law Enforcement Telecommunicator - 4 FTE),
- Page 3 (Fire Telecommunicator - 3 FTE),
- Page 4 (NCIC/LEADS Telecommunicator - 1 (FTE)

Based on the data, and workload factors provided by the DCCC, the model indicates that sixteen (16) Full Time Equivalent telecommunicators are needed to staff the DCCC.

It is common for such activity to be less in number than law enforcement activity, it usually is more labor intensive per call for service. Therefore,

Fire/EMS activity of FTE's for that discipline may be less than one full time equivalent or a fraction of a full time equivalent requiring the number to be rounded up or down to a whole number.

- For instance in the NCIC/LEADS activity, for the period of time from 2300 to 0700, that activity requires less time to process than a Law Enforcement Call for Service (1.5 minutes in duration versus 26 minutes). Due to low volume, low processing time, low attrition rate and high utilization rate, the algorithm determined that only .24 FTE are required for that amount of workload. Nevertheless, the PSAP would have to staff at least one person in that time period, regardless of what the workload formula recommended, simply to have someone available to handle NCIC/LEADS inquiries that need to be made or to process those received at the DCCC.

Algorithm for Staffing by "Coverage Formula"

Evaluating staffing requirements solely based on an examination of workload cannot replace common sense. As the caution stated previously, in some instances the data used in the workload formula produce a result of less than one FTE (telecommunicator) being required. However, in reality the situation may require one or more persons. In all cases the Coverage Formula should be considered as an additional tool in determining or evaluating staffing requirements.

- The Coverage Formula reflects the number of consoles that management believes needs to be staffed, at a minimum level, to take into account the potential for higher current call volumes than those indicated in the historical data provided.

It is nearly impossible to predict day-to-day fluctuations in call volume since most workload produced in public safety communication centers comes from sources outside of the control of the agencies serving the population. As such historical data can be useful in examining trends, but are difficult to apply to staffing on a day-to-day or shift-to-shift basis.

Other factors may exist that require center management to staff certain positions based on agency or national standards. For instance, if the fire agencies are trying to lower their ISO20 ratings for fire dispatch, a dedicated fire position may be required. If the workload formula indicates that less than one telecommunicator is needed based on call or dispatch load, the staffing of a position may still be required to satisfy the ISO requirement, which would be reflected using the Coverage formula.

²⁰ ISO = Insurance Services Office is a recognized fire rating system used by insurance companies to determine policy rates.

Additionally, at the DCCC many support functions are provided that cannot be readily quantified and could not be considered in the workload staffing tool. Ancillary duties performed by telecommunicators must be considered by management when making staffing decisions, such as fire alarm processing, notification of utilities and key holders, processing incoming administrative calls where messages need to be taken or calls need to be transferred, MABAS alarm issues, non-calls for service events for member agencies or other non-emergency support functions such as LEADS/NCIC entries and validations.

Furthermore, an increase in workload can be the result of many interrelated factors that could impact the frequency of public safety dispatch activities over that experienced historically, such as a disaster occurring where high call volume and high dispatch workload could exist for an extended period of time, that would reflect a disproportionate amount of calls over the course of week, month or year as compared to other periods of time so consideration of results obtained using the *coverage formula* are useful in this exercise.

DCCC reported the following for their minimum staffing in the center:

Function	Days Mon – Fri	Days Sat - Sun	Afternoons Everyday	Midnights Sun – Thur	Midnights Fri - Sat
Call Taker	1	1	1	1	1
PD Dispatcher	2	2	2	2	2
FD/EMS Dispatcher	1	0	1	1	1
Supervisor	1	1 - Fire	1	0	1
TOTALS	5	4	5	4	5

Coverage Formula Results

The Coverage Formula components are identified in the summary sheets for the individual disciplines and results are contained in Appendix B:

- Page 6 (Telecommunicator Coverage) 24 FTE)

Based on the data provided the model indicates that twenty-four (24) telecommunicators are needed to fill the console positions expected to be staffed on each shift at DCCC. Both Volume and Coverage Formula results have validity when considering the complex nature of determining staffing in a mission critical environment. Obviously one result is more objective (Volume) and one is more subjective (Coverage) but both should be considered as tools to help management determine adequate and desired staffing levels.

On that basis, PCS utilized both results and calculated the median between the Workload (16) and Coverage formula (24), which indicated that twenty (20) telecommunicators are needed in the DCCC to meet the emergency call-taking and dispatch functions and to meet the coverage desired by the management of DCCC.

Add information about other non-quantifiable services provided, such as non-emergency calls, alarm processing, MABAS alarms, utility and key holder notifications, taking messages and transferring calls, other function and dedicated agency radio positions, to avoid monitoring disparate radio frequencies and missing mission critical radio traffic of public safety personnel must be considered.

It is important to keep in mind that staffing studies are not an exact science in and of themselves, but they are a useful tool for management to facilitate the determination of adequate staff levels.

Supervisor Coverage Results

Additionally, the Coverage Formula also assesses the coverage required for supervisory personnel, whose primary responsibility is provide control of subordinate's actions and to provide leadership for management at the shift level, not necessarily to augment the dispatch workload of the shift. While it is understood that in times when demand for dispatch services is high, shift supervisors may lend a hand, the formula is designed to measure the coverage needed to provide good first level supervision and adequate management control.

According to calculations for Supervisor staffing levels to meet management expectations of Coverage or to meet NFPA21 122122 standards, the summary sheet and the results are contained in Appendix B,

- Page A7 (Supervisor Coverage) 6 FTE)

Based on data, the model indicates that six (6) supervisors are needed to provide adequate supervision for the shifts at DCCC in both the workload and coverage formulas.

Since DCCC used their supervisors to cover some dispatch functions within the center, notably during certain shifts, the total complement of telecommunicators and supervisors needed to staff the center, using the median number between the Volume Formula and the Coverage Formula of twenty (20) plus six (6) supervisors, is twenty-six (26).

²¹ NFPA = National Fire Protection Association

²² NFPA 1221 is an ANSI (American National Standards Institute) adopted standard dealing with Public Safety communications and dispatch standards.

Next Generation 9-1-1 (" NG9-1-1") Staffing Considerations:

Next Generation²³ 9-1-1 is in its early development and deployment stages – as such the operational impacts and related staffing impacts will be further defined and better understood as the migration to Next Generation 9-1-1 technologies advance, operational data becomes available and staffing standards are developed or modified.

The core drivers for the dispatch of emergency services will not fundamentally change (i.e., 9-1-1 calls from wireline, VoIP, and wireless devices) however, with the advent of Next Generation 9-1-1 additional call capabilities will be possible (i.e., text to 9-1-1, multimedia including streaming video, etc.) and additional functionalities (access to inquire into ancillary subscriber data and/or third-party databases) will be available to facilitate dispatch and will, most assuredly, affect the processing time needed by center staff and subsequently the staffing needs of the NG 9-1-1 center.

NG9-1-1 will herald many new capabilities designed to further facilitate emergency services dispatch in an IP driven consumer technology world where increasingly households are moving to a "wireless only" environment. This will require attention to future training needs, policy and procedure development, and other related activities to properly prepare for and utilize all of the functionality that NG9-1-1 capabilities will represent.

Through discussions presently underway by the two major public safety communications associations, NENA and APCO, it is generally accepted that the full implementation of NG9-1-1 will result in measureable impacts on current staffing needs. The staffing required will be dependent to some degree by the enhanced level of information gathering implemented by the dispatch center that NG9-1-1 promises and the methods employed to disseminate that information to field response personnel. This means that if systems are employed that take information and pass it on to field personnel in an automated manner that dispatch staffing may not be impacted to a great degree, however information received at the dispatch center that requires telecommunicator intervention before being relayed to field personnel may result in staffing impacts.

²³ Next Generation 9-1-1 refers to 9-1-1 delivered to PSAPs via a public safety grade, high speed broadband network using Internet Protocol.

4.2 Compensation

WAGE COMPARISON

PSAP AGENCY	De Kalb County DCCC	Kane County Kane Comm	Ogle County Sheriff	Kendall County Ken-Comm	Tri-Com St. Charles	Seecom Crysal Lake
PSAP POSITION						
Telecommunicator	\$40,643 - \$60,715	\$34,820 - \$60,773	\$35,248 - \$58,411	\$37,294 - \$53,102	\$43,737 - \$61,746	\$43,000 - \$57,480
Shift Supervisor	\$65,728 - \$69,638	\$37,220 - \$64,373	\$38,848 - \$62,011	\$60,216	\$54,101 - \$76,380	\$54,669 - \$67,080
Deputy Director	N/A	\$70,000 - \$70,000	N/A	\$71,000 - \$71,000	\$72,477 - \$103,210	\$71,000 - \$82,000
Director - Manager In Charge	\$80,122 - \$92,269	\$92,000	Not Given	\$96,202	\$85,546 - \$121,780	\$103,000
Average Start-Telecommunicator	\$39,124					
Average Top-Telecommunicator	\$58,705					
Average Start - Shift Supervisor	\$50,113					
Average Top - Shift Supervisor	\$66,617					
Average Start - Director	\$82,834					
Average Top - Director	\$101,050					

SECTION 5: CONCLUSIONS and RECOMMENDATIONS

This observation section summarizes the assessment components providing PCS observations in the areas of Organizational, Facilities, Technologies, and Operational Practices.

PCS identifies both the areas observed that could be enhanced and those areas which meet or exceed the standards of best practice.

5.1 ORGANIZATIONAL ASSESSMENT OBSERVATIONS

The organizational structure of DCCC has been well established and operating over the past ten years, providing the ability for management oversight, owner agency involvement, with input from the contract agencies provided service.

Specific vision and goals are not fully delineated in written policy for DCCC, which could provide a more specific direction to the DCCC staff. This can be corrected by documenting specific goals and then monitoring those goals are being achieved.

Agency users interviewed for the study overall seemed pleased with the service they receive from the dispatch center giving the center an average to better than average rating. They do have concerns that the center stay current with technology and dispatching techniques, stay open to change, and to give consideration to the users to have some input into the operations of the center. Such representation and input could be divided into two groups; an executive group (sheriff, police, fire chiefs), and an operational group made up of field police, fire, and PSAP personnel. However, the number one main concern PCS heard was about the cost of operations. Many departments have extremely small budgets and cannot afford to pay more than they are now for communication services. Some agencies simply cannot afford to pay anything at all for communication services; hence they rely on the De Kalb County ETSB to cover the cost of communication services. All the users that participated in the study seem to agree that a fair way to establish PSAP costs be established and maintained so that some agencies are not subsidizing others.

(1) DCCC should have a specific, published, set of performance standards for the staff that outlined call answer times or dispatch processing times.

(2) DCCC should create a "Strategic Plan" for the PSAP for both the short term (1 to 5 years) and the long term (5 years +) . This plan would serve as a foundational guide for the future and greatly assist with the budgeting process.

(3) Data storage for historical reporting and trend analysis is important. It was noted that some data that is usually available at a communication center was not being kept, such as the number of telephone calls that are received by line.

(4) The DCCC average hour workload and average call answering time is comparable and considered acceptable in comparison with similar public safety agencies.

(5) There is not a functional CAD paging interface for fire department responses which would add further efficiency to the dispatch process. It is recommended that OSSI be contacted to evaluate the viability and cost of developing an interface between the CAD system and the DCCC fire departments paging encoder. They may already have this software available.

(6) There is not a single selective call paging alert tone installed that can alert all the radios (pagers) in all the fire departments dispatched by DCCC at the same time. When a major fire is being dispatched precious time can be saved by toning out all the fire departments due at once instead of toning out each individual department one by one. When a message of general interest (ie; a weather alert broadcast) is required it can be completed in much less time if all stations and fire personnel can be alerted at once. While at one time technology was not conducive to this of paging, today's technology can easily accommodate this method of paging. Adding this feature could be a joint effort between DCCC and the fire departments they dispatch.

(6) DCCC is not utilizing AVL (automatic vehicle location) with its field units at this time. In law enforcement officer safety would be enhanced knowing geographical where each unit is located. In addition to furthering officer safety, using AVL could assist telecommunicators in sending the closest available unit to emergency calls as well as provide additional safety of knowing a units' location in the need of emergency assistance. PCS understands that some units are equipped with AVL hardware, but the greater majority of units do not include AVL at this time. This functionality appears to be a ways down the road t this time.

(7) DCCC does not have an internet WEB site of its own. PCS noted that DCCC does appear on the sheriff's WEB site and that some information on the call center is available on that site. Having a WEB site of its own DCCC could use the WEB site as an important public relations communication tool. In addition to providing public information about the center (such as for educational purposes on topics such as when to call 9-1-1), it can also be helpful with recruiting new employees or even honoring present employees.

(8) DCCC conducts a professional, thorough, and well organized recruitment and hiring process. PCS would recommend, however, that DCCC utilize a physical exam in its hiring process minimally for at least vision and hearing A staffing analysis for the DCCC can be found in Section 4 of this report. This analysis shows employee turn-over rate at DCCC is very low. It is commendable that the DCCC turn-over rate is just 7.0% which is considerably below the national averages of 17.0 %+ turnover.

DCCC obviously does a better than average job retaining its employees. It appears that DCCC does not have a shortage in obtaining qualified workforce applicants as is the case found by many communication centers across the nation.

(9) PCS recommends that DCCC consider more public safety communication education for their staff by encouraging participation in NENA's ENP (Emergency Number Professional) Program and or APCO's RPL (Registered Public Safety Leader) Program. These programs promote a standard of competence for PSAP personnel that is recognized and accepted by the 9-1-1 profession, government agencies, the business community, and the general public. Allows for an awareness of current issues and developments in the 9-1-1 profession. Provides formal recognition of individuals for professional achievement. Encourages professional growth and enhances the self-esteem of the telecommunicator staff.

(10) Lastly, PCS recommends that DCCC consider the CALEA (Commission on Accreditation for Law Enforcement) Public Safety Communications Center Accreditation Program. This program provides a communications center, or the communications unit of a public safety agency, with a process to systemically review and internally assess its operations and procedures. The CALEA Communication Accreditation Award has become the primary method for a communications agency to voluntarily demonstrate its commitment to excellence.

5.2 FACILITY / TECHNOLOGIES OBSERVATIONS

- DCCC's facility design within the sheriff's department has good space utilization, security, and adequate power supplies. It was noted that there isn't much additional space available, therefore expansion could be limited in the future. The current space within the facility provides a very professional work environment.
- The facility design reflects NFPA 1221 standards. The building is equipped with a fire sprinkler system and is alarmed for fire protection. The alarm is monitored in the communication center.
- Traffic flow pattern and access to the dispatch center and staff offices is secure and functional with access only through electronic locks.

- The facility is equipped with a CCTV (closed circuit television) facility monitoring system
- The center has the electrical and equipment rooms organized in a logical fashion for their purposes to each other. This also minimizes cable and electrical runs. The equipment rooms are crowded, however, with not a lot of space to add additional equipment. This space will require updating in the future.
- The DCCC center has state-of-the art radio work stations and console furniture, however the console work stations are getting close to end of life (2018). The brand and functionality of the radio console controls and workstation furniture is top of the line.
- All radio systems utilized by DCCC and their respective public safety agencies are VHF (150-174 MHz). Reportedly, agencies do not experience major problems with radio reception, but there may be some areas in the county that have some marginal radio coverage. Work is now in progress to improve on radio coverage using mobile repeaters. Interoperability within the county is very good. Please see the Appendix C at the end of this study for DCCC operating radio frequencies.
- DCCC completed a move to narrow-band emissions which was required by the FCC for January 1, 2013. This requirement involved all radio channels below 470 MHz. DCCC staff reported that since the move to narrowband there are some geographical areas within the county that have marginal radio coverage. At this time the sheriff's department is actively working on improving radio coverage utilizing mobile repeaters. It was noted that some public safety agencies in De Kalb County have moved, or plan to move, to the State of Illinois Star-Com 21 System in the 700-800 MHz radio spectrum. PCS recommends that all agencies in the county participate together on future radio plans in order to assure of continued interoperability.
- DCCC does not utilize radio ANI (ID unit displays (ie: Motorola MDC1200) on the radio system or the PTT/Radio Emergency Button interface capabilities. Use of this system would help the dispatcher identify units easier and enhance safety for field personnel.

DCCC utilizes Northern Telcomm Meridian 9-1-1 telephone equipment. The system is nearing end of life with expectations that it will be replaced in the next few years (2016). It is recommended that the replacement CPE be capable of NG9-1-1 (Next Generation 9-1-1) and that it contain its own MIS (management information system) so that telephone call statistics will be easier to obtain in the future. A request that PCS heard from several of the telecommunicators was that the new system should also be capable of Caller ID With Name on the 10 digit lines.

- The NICE™ digital voice recorder is top of the line recording equipment that offers a great deal of flexibility including MIS (management Information system) records. It offers many levels of searches and has long term storage capabilities. An emergency services CAD system must assure the ability to provide a functional operation assuring efficient processing of emergency calls. The recorder is six years old and is nearing expansion capacity. It would be recommended that the recorder be upgraded or replaced when NG9-1-1 is installed so that the device will have the new capabilities it will need for NG 9-1-1 (ie: storing text messages, storing pictures, and storing videos).
- The OSSI CAD system installed at DCCC offers state-of-the-art computer aided dispatch for a modern dispatch center. It is recommended that DCCC pursue upgrading the system software so it can be “state of the art”.
- DCCC does not use a synchronized clock device to keep all of the dispatch equipment time synchronized. It is highly recommended that when the new NG9-1-1 telephone system is purchased that a synchronized clock also be purchased and used to drive the time on the telephone CPE, the telephone MIS system, the CAD system, the master logging recorder, the instant replay recorders, and optionally on the radio console clocks. Records will be much more accurate if the clock driving the time on all of these devices is synchronized, and it will also match the time of the surrounding PSAPs utilizing a synchronized clock (will provide an accurate time when used in such cases where multiple PSAPs are involved in an incident such as when 9-1-1 calls are transferred from PSAP to PSAP).

APPENDIX A

MEMORANDUM OF AGREEMENT

Regarding the Consolidation of Dispatching Services in DeKalb County

This Memorandum of Agreement ("Agreement") is entered into this 14th day of Feb, 2003, by and between the Genoa/Kingston Fire Protection District, and the County of DeKalb ("County").

PREAMBLE

WHEREAS, the County of DeKalb hereafter called the County and the Genoa/Kingston Fire Protection District hereafter called the Fire District agree that there is a public benefit in consolidating Public Safety Dispatching in DeKalb County; and

WHEREAS, the County of DeKalb and the Fire District have considered the economic and operational feasibility of consolidating the Fire District with Sheriff's Dispatch have developed this Memorandum of Agreement; and

NOW, THEREFORE, in consideration of the mutual agreements contained herein and for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, it is agreed as follows:

SECTION 1. Incorporation of Preamble.

The Preamble to this Agreement is hereby declared to set forth the findings of the parties and is incorporated herein as if fully set forth in this Section 1.

SECTION 2. Responsibilities of the Parties.

1. General Considerations.

- a. The County of DeKalb's obligation under this agreement shall be to receive telephonic or other messages intended by the sender to be received by the Genoa/Kingston Fire Department and/or Genoa Rescue Squad, and to communicate by means of and in the manner consistent with standard operating procedures of the DeKalb County Sheriff's Communication Center such messages to the appropriate agency. The Genoa/Kingston Fire Department and/or Genoa Rescue Squad will be responsible to acknowledge and respond to those messages transmitted by the Communications Center. The County of DeKalb shall perform its obligations under the agreement in a professional manner, consistent with typical police dispatching protocols. Such services shall be maintained on a seven-day per week, 24-hour per day basis, and the County of DeKalb shall take all necessary measures to maintain dispatching equipment and services in a state of readiness.
- b. The employees in the consolidated dispatch center shall be hired by the County Sheriff in accordance with the rules of the County Merit Commission.

- c. The contract amount for the Fire District after the initial year will be based on a determination of staff needs, operating costs, capital investments, and depreciation.
 - d. Increases in the cost of services extended by the County to the Fire District will go into effect on July 1, of each year. Such increase shall be announced in writing along with an explanation of their merit no less than 180 days in advance of their implementation.
 - e. Other communities may eventually sign a contract for dispatching services with the DeKalb County Communication Center. Costs will be negotiated with each community. At such time as any other community agrees to contract for dispatching services, the Fire District shall have the opportunity to renegotiate annual fees based on an equitable distribution of costs to all contractual participants.
 - f. One representative from the Genoa Fire Department and one from the Genoa Rescue Squad may join representatives from other participating fire and police agencies served by the Sheriff's communication center, in a "USERS Committee" chaired by the DeKalb County PSAP Administrator and will serve in an advisory role to the Administrator.
2. **Contract cost.**
 - a. For the period of July 1, 2003 through June 30, 2004, the annual fee for dispatching or services for the Fire District will be \$22,000.00.

SECTION 3. Other Considerations.

1. **Term.** This Agreement shall be for an initial term of five (5) years, effective as of July 1st, 2003. This Agreement shall automatically renew for additional five (5) year terms after the initial term. Either party may terminate their participation in the Agreement after notifying the other in writing of their intent to do so at least one (1) year in advance.
2. **Litigation.** The Fire District and County acknowledge that this Agreement is duly authorized and is a binding obligation, enforceable in accordance with its terms and provisions. In the event any person or entity, other than the parties hereto, attempts to enjoin or otherwise challenge the validity of any recital or provision of this Agreement, the Fire District and County that they will not take a position adverse to enforcement of this Agreement. It is further agreed that if the County of DeKalb is unable to provide radio dispatch services at any time during the term of this Agreement due to public emergency or necessity, labor disputes, strikes, boycotts, secondary boycotts, acts of God, or for any other reason including but not restricted to mechanical breakdowns beyond the control and without the fault of the Fire District, the Fire District shall not be liable to the County for any damages that may result.
3. **Amendment.** This Agreement shall not be amended except by a written instrument signed by the parties hereto.

4. **Notices.** All notices and other communications between the parties shall be in writing and shall be sent by (a) a standard overnight carrier; (b) certified U.S. mail return receipt requested; or (c) delivered personally to the parties at the following addresses, or at such addresses specified by the parties by like written notice:

If to District: Genoa/Kingston Fire District
Board of Trustees
Genoa Fire Department 60135

If to County: County of DeKalb
County Administrator
200 N. Main Street
Sycamore, IL 60178

5. **Mutual Assistance and Consents.** The parties agree to use their reasonable efforts to do all things necessary or appropriate to execute this Agreement and to aid and assist each other in carrying out the terms of this Agreement including, without limitation, the enactment by the District of such ordinances and/or resolutions and the taking of other actions as may be necessary to enable the parties to comply with the terms and conditions of this Agreement. In the event any party to this Agreement is required to grant its consent or approval to the other party in connection with any of the terms and provisions of this Agreement, such consent or approval shall not be unreasonably withheld.
6. **Severability.** If any provision of this Agreement or the application thereof to any person or entity is held to be invalid or unenforceable, the remainder of this Agreement and the application of such provision to any other person or entity shall not be affected thereby, and to such end the provisions of this Agreement are agreed to be severable.
7. **Entire Agreement.** This Agreement constitutes the full and entire understanding and agreement between the parties and supercedes all prior agreements, negotiations, drafts, and exhibits thereto and understandings, both written and oral, between the parties.
8. **Binding Effect.** This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns.
9. **The Fire District agrees to hold the County harmless against persons not parties to this Agreement and reimburse the County for any and all such damages, suits, claims, judgments or monies, including, but not limited to, attorney fees and costs of litigation, arising out of the performance or non-performance of the District personnel working under this Agreement.**

10. The County agrees to hold the Fire District harmless against persons not parties to this Agreement and reimburse the Fire District for any and all such damages, suits, claims, judgments or monies, including, but not limited to, attorney fees and costs of litigation, arising out of the performance or non-performance of the County personnel working under this Agreement against such persons not parties to this Agreement.
11. Waiver. Any agreement between the parties to waive any rights or obligations arising under this Agreement shall be valid only if set forth in writing and signed by both parties. Such waiver shall be effective only for the purposes set forth in such writing and shall not affect the rights of the parties regarding any subsequent acts or omissions by the other party which may result in a breach under this Agreement.
12. Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original but all of which shall constitute but one (1) instrument.

IN WITNESS WHEREOF, the parties have executed this Agreement this 26th day of February, 2003.

Genoa/Kingston Fire Protection District

BY: [Signature]
Chairman Board of trustees

ATTEST
[Signature]
Genoa Fire Chief

County of DeKalb

BY: [Signature]
Board Chairman

ATTEST:
[Signature]
County Clerk

MEMORANDUM OF AGREEMENT
Regarding the Consolidation of Dispatching Services in DeKalb County

This Memorandum of Agreement ("Agreement") is entered into this 17th day of December, 2002, by and between the City of Genoa ("City"), and the County of DeKalb.

PREAMBLE

WHEREAS, the County of DeKalb and the City of Genoa agree that there is a public benefit in consolidating Public Safety Communications in DeKalb County; and

WHEREAS, the County of DeKalb and the City of Genoa have considered the economic and operational feasibility of consolidating the Sycamore and Genoa Communications; and

WHEREAS, the County of DeKalb and the City of Genoa have developed a plan ("Memorandum of Agreement") which will allow the County to extend the use of the Sheriff's Communication Center for the purpose of incorporating Genoa Public Safety Communications; and

NOW, THEREFORE, in consideration of the mutual agreements contained herein and for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, it is agreed as follows:

SECTION 1. Incorporation of Preamble.

This Preamble of this Agreement is hereby declared to set forth the findings of the parties and is incorporated herein as if fully set forth in this Section 1.

SECTION 2. Responsibilities of the Parties.

1. General Considerations.

- a. The County of DeKalb's obligation under this agreement shall be to receive telephonic or other messages intended by the sender to be received by the City of Genoa Police Department, and to communicate by means of and in the manner consistent with standard operating procedures of the DeKalb County Sheriff's Communication Center such messages, including but not limited to, requests for a police officer's in person response, accident or stranded motorist report(s), and report(s) of criminal activity to the Genoa Police Department. The Genoa Police Department will be responsible to acknowledge and respond to those messages transmitted by the Communications Center. The County of DeKalb shall perform its obligations under the agreement in a professional manner, consistent with typical police dispatching protocols. Such services shall be maintained on a seven-day per week, 24-hour per day basis, and the County of DeKalb shall

take all necessary measures to maintain dispatching equipment and services in a state of readiness.

- b. The employees in the consolidated dispatch center shall be hired by the County Sheriff in accordance with the rules of the County Merit Commission.
- c. The contract amount for the City after the initial year will be based on a determination of staff needs, operating costs, capital investments, and depreciation.
- d. Adjustments, if any, in the cost of services extended by the County to the City will go into effect on July 1, of each year. Such adjustment shall be announced in writing along with an explanation of their merit no less than 180 days in advance of their implementation.
- e. Other communities may eventually sign a contract for dispatching services with the DeKalb County Communication Center. Costs will be negotiated with each community. At such time as any other community agrees to contract for dispatching services, the City of Genoa shall have the opportunity to renegotiate annual fees based on an equitable distribution of costs to all contractual participants.
- f. One representative from the Genoa Police Department, along with representatives from other participating fire and police agencies serve by the Sheriff's communication center, and the DeKalb County PSAP Administrator shall constitute a "Users Committee" that shall serve an advisory role with respect to PSAP operations.

2. Contract cost.

- a. For the period of July 1, 2003 through June 30, 2004, the annual fee for dispatching of services for the City of Genoa will be \$124,100.00.

SECTION 3. Other Considerations.

1. **Term.** This Agreement shall be for an initial term of five (5) years, effective as of July 1, 2003. This Agreement shall automatically renew for additional five (5) year terms after the initial term. During the term of this Agreement or an extension thereof, either party may terminate their participation in the Agreement after notifying the other in writing of their intent to do so at least one (1) year in advance.
2. **Litigation.** The City and County acknowledge that this Agreement is duly authorized and is a binding obligation, enforceable in accordance with its terms and provisions. In the event any person or entity, other than the parties hereto, attempts to enjoin or otherwise challenge the validity of any recital or provisions of this Agreement, the City and County agree that they will not take a position adverse to enforcement of

this Agreement. It is further agreed that if the County of DeKalb is unable to provide radio dispatch services at any time during the term of this Agreement due to public emergency or necessity, labor disputes, strikes, boycotts, secondary boycotts, acts of God, or for any other reason including but not restricted to mechanical breakdowns beyond the control and without fault of the County of DeKalb, the County shall not be liable to the City for any damages that may result.

3. Breach of Duties. In the event a lawsuit is filed against either of the parties herein for a breach of the duties of the other party as set forth in Section 2 Paragraph 1(a), then any monetary liability arising out of said breach along with costs and expenses, including reasonable attorney's fees, shall be paid by the breaching party.

4. Amendment. This Agreement shall not be amended except by a written instrument signed by the parties hereto.

5. Notices. All notices and other communications between the parties shall be in writing and shall be sent by (a) a standard overnight carrier; (b) certified U.S. mail return receipt requested; or (c) delivered personally to the parties at the following addresses, or at such addresses specified by the parties by like written notice:

If to City: Mayor
City of Genoa
113 N. Genoa St.
Genoa, IL 60135

If to County: County Administrator
County of DeKalb
200 N. Main Street
Sycamore, IL 60178

6. Mutual Assistance and Consents. The parties agree to use their reasonable efforts to do all things necessary or appropriate to execute this Agreement and to aid and assist each other in carrying out the terms of this Agreement including, without limitation, the enactment by the City of such ordinances and/or resolutions and the taking of other actions as may be necessary to enable the parties to comply with the terms and conditions of this Agreement. In the event any part to this Agreement is required to grant its consent or approval to the other party in connection with any of the terms and provisions of this Agreement, such consent or approval shall not be unreasonably withheld.

7. Severability. If any provision of this Agreement or the application thereof to any person or entity is held to be invalid or unenforceable, the remainder of this Agreement and the application of such provision to any other person or entity shall be affected thereby, and to such end the provisions of this Agreement are agreed to be severable.

8. **Entire Agreement.** This Agreement constitutes the full and entire understanding and agreement between the parties and supercedes all prior agreements, negotiations, drafts, and exhibits thereto and understandings, both written and oral, between the parties.
9. **Binding Effect.** This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns.
10. **Waiver.** Any agreement between the parties to waive any rights or obligations arising under this Agreement shall be valid only if set forth in writing and signed by both parties. Such waiver shall be effective only for the purposes set forth in such writing and shall not affect the rights of the parties regarding any subsequent acts or omissions by the other party which may result in a breach under this Agreement.
11. **Counterparts.** This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original but all of which shall constitute but one (1) instrument.

IN WITNESS WHEREOF, the parties have executed this Agreement this 17th day of December, 2002.

City of Genoa

County of DeKalb

By: [Signature]
Mayor

By: [Signature]
Board Chairman

ATTEST:
[Signature]
City Clerk

ATTEST:
[Signature]
County Clerk

MEMORANDUM OF AGREEMENT

Regarding the Consolidation of Dispatching Services in DeKalb County

This Memorandum of Agreement ("Agreement") is entered into this 5 day of Aug, 2002, by and between the City of Sycamore ("City"), an Illinois Home Rule Municipal Corporation, and the County of DeKalb ("County").

PREAMBLE

WHEREAS, the County of DeKalb and the City of Sycamore agree that there is a public benefit in consolidating Public Safety Answering Points (PSAPs) in DeKalb County; and

WHEREAS, the County of DeKalb and the City of Sycamore have considered the economic and operational feasibility of consolidating the Sycamore and DeKalb County PSAPs; and

WHEREAS, the County of DeKalb and the City of Sycamore have developed a plan ("Memorandum of Agreement") which will allow the County to expand the Sheriff's Communication Center for the purpose of incorporating the Sycamore PSAP; and

NOW, THEREFORE, in consideration of the mutual agreements contained herein and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, it is agreed as follows:

SECTION 1. Incorporation of Preamble.

The Preamble to this Agreement is hereby declared to set forth the findings of the parties and is incorporated herein as if fully set forth in this Section 1.

SECTION 2. Responsibilities of the Parties.

1. General Considerations.

- a) The employees in the consolidated dispatch center shall be hired by the County Sheriff in accordance with the rules of the County Merit Commission.
- b) The contract amount for the City after the initial year will be based on a determination of staff needs, operating costs, capital investments, and depreciation.
- c) Increases in the cost of services extended by the County to the City will go into effect on July 1 of each year. Such increases shall be announced in writing along with an explanation of their merit no less than 180 days in advance of their implementation.
- d) Other communities may eventually sign a contract for dispatching services with the DeKalb County communication center. Costs will be negotiated with each community. At such time as any other community agrees to contract for

dispatching services, the City of Sycamore shall have the opportunity to renegotiate annual fees based on an equitable distribution of costs to all contractual participants.

- e) One representative from the Sycamore Police Department, one from the Sycamore Fire Department, representatives from other participating fire and police agencies served by the Sheriff's communication center, and the DeKalb County PSAP Administrator shall constitute a "Users Committee" that shall serve an advisory role with respect to PSAP operations.
2. **The County of DeKalb.**
 - a) The County will honor Sycamore's agreement with Genoa to provide dispatching services through June 30, 2003. During such transitional period, the City may retain any contractual fees it may be due from the City of Genoa or the Genoa-Kingston Fire Protection District.
 - b) The County will afford an opportunity for Sycamore's current telecommunicators to test for the additional positions that will be established in the new consolidated dispatching facility.
 3. **The City of Sycamore.**
 - a) If the City wishes to contract for communication services in advance of July 1, 2003, it agrees to pay the County the monthly cost of \$40,000.
 - b) For the period July 1, 2003 through June 30, 2004, the annual fee for dispatching services for the City will be \$494,000 minus any credit associated with Sycamore's share of E-911 wireless monies.

SECTION 3. Other Considerations

1. **Conditions Precedent.**
 - a) The County Sheriff operates a communication center that is a Public Safety Answering Point. The County will undertake improvements necessary to accommodate the services due to the residents of Sycamore upon the closing of the Sycamore PSAP. The City will pay up to \$75,000 toward the cost of such improvements.
 - b) The City operates a PSAP that it intends to close. Thereafter, the City will purchase dispatching services from the County.
2. **Dispute Resolution.** Disputes regarding the annual fee adjustment shall be settled by an ad hoc panel including the County Board Chair, the County Administrator, the Mayor of Sycamore, the Sycamore City Administrator and an unaffiliated third party selected with the mutual consent of the parties. The parties agree that the judgment of this panel shall be final.
3. **Term.** This Agreement shall be for an initial term of five (5) years, effective as of _____. This Agreement shall automatically renew for additional five (5) year terms after the initial term. Either party may terminate their participation in the

Agreement after notifying the other in writing of their intent to do so at least one (1) year in advance.

4. **Litigation.** The City and County acknowledge that this Agreement is duly authorized and is a binding obligation, enforceable in accordance with its terms and provisions. In the event any person or entity, other than the parties hereto, attempts to enjoin or otherwise challenge the validity of any recital or provision of this Agreement, the City and County that they will not take a position adverse to enforcement of this Agreement. It is further agreed that if the County of DeKalb is unable to provide radio dispatch services at any time during the term of this Agreement due to public emergency or necessity, labor disputes, strikes, boycotts, secondary boycotts, acts of God, or for any other reason including but not restricted to mechanical breakdowns beyond the control and without the fault of the City of Sycamore, the City shall not be liable to the County for any damages that may result.
5. **Amendment.** This Agreement shall not be amended except by a written instrument signed by the parties hereto.
6. **Notices.** All notices and other communications between the parties shall be in writing and shall be sent by (a) a standard overnight carrier; (b) certified U.S. mail return receipt requested; or (c) delivered personally to the parties at the following addresses, or at such addresses specified by the parties by like written notice:

If to City:

City of Sycamore
City Administrator
535 DeKalb Avenue
Sycamore, IL 60178

If to County:

County of DeKalb
County Administrator
200 N. Main Street
Sycamore, IL 60178

7. **Mutual Assistance and Consents.** The parties agree to use their reasonable efforts to do all things necessary or appropriate to execute this Agreement and to aid and assist each other in carrying out the terms of this Agreement including, without limitation, the enactment by the City of such ordinances and/or resolutions and the taking of other actions as may be necessary to enable the parties to comply with the terms and conditions of this Agreement. In the event any party to this Agreement is required to grant its consent or approval to the other party in connection with any of the terms and provisions of this Agreement, such consent or approval shall not be unreasonably withheld.

8. Severability. If any provision of this Agreement or the application thereof to any person or entity is held to be invalid or unenforceable, the remainder of this Agreement and the application of such provision to any other person or entity shall not be affected thereby, and to such end the provisions of this Agreement are agreed to be severable.
9. Entire Agreement. This Agreement constitutes the full and entire understanding and agreement between the parties and supercedes all prior agreements, negotiations, drafts, and exhibits thereto and understandings, both written and oral, between the parties.
10. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns.
11. Waiver. Any agreement between the parties to waive any rights or obligations arising under this Agreement shall be valid only if set forth in writing and signed by both parties. Such waiver shall be effective only for the purposes set forth in such writing and shall not affect the rights of the parties regarding any subsequent acts or omissions by the other party which may result in a breach under this Agreement.
12. Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original but all of which shall constitute but one (1) instrument.

IN WITNESS WHEREOF, the parties have executed this Agreement this 5 day of August, 2002.

City of Sycamore, an Illinois Home Rule Municipal Corporation

BY: *J. H. Sney*
Mayor

ATTEST: *Cary Smith*
City Clerk



County of DeKalb

BY: *Robert H. Richard*
Board Chairman

ATTEST: *Sharon L. Holmes*
County Clerk

dispatchagm

APPENDIX B

Demographics

1. Agency Name: DeKalb County Communications Center

2. Population

2000	2010	2020
88,963	105,150	112,508

Telecommunicator Available Work Hours

(An "employee" for this form is any person whose assignment is to take 9-1-1 calls and/or dispatch responders)

1. Number of Employees **Authorized Employees:**

- a. 26 Full Time Equivalents (FTEs)
- b. 0 Part Time

2. Number of Employees **Actual Employees:**

- a. 25 Full Time Equivalents (FTEs)
- b. 0 Part Time

3. Number of days **per year** an employee is scheduled to work:

- a. 260 Days

4. Number of hours **per day** an employee is scheduled to work (i.e. 8 hours):

- a. 8 Hours

5. Average **annual** vacation and holiday leave per employee:

- a. 88.34 Hours (i.e. 2 wks vac and 10 holidays = 160 hours)

6. Average **annual** sick leave per employee:

- a. 0 Hours

7. Average **annual** personal leave per employee:

- a. 153.25 Hours

8. Average **annual paid** training leave per employee:

- a. 26 Hours

9. Average **annual** military, FMLA leave, etc.:

- a. 29.27 Hours

10. Meal and break time **allotted (not actual taken) each day:**

- a. 1 Hours

11. Average **annual** leave for other activities (meetings, special assignments, etc.):

- a. Hours

Agency Information

Telecommunicator Utilization

1. What is your shift length in hours (i.e., 8 hour):
 - a. 8 Hours
2. Meal and break time **allotted (not actual taken) each day:**
 - a. 60 Minutes
3. On average, how many minutes per hour are the Telecommunicators busy doing activities other than call taking & dispatching?
(This is a subjective question.)

Is there paperwork to file? Are there other duties that they perform besides call taking and dispatching?)

- a. 15 Minutes per hour

Attrition Rate

1. Total number of employees at the highest staffing level for:
 - a. 26 2010
 - b. 25 2011
 - c. 25 2012
2. Number of new hires that failed to complete the probationary/training period:
 - a. 1 2010
 - b. 0 2011
 - c. 2 2012
3. Number of experienced employees that left:
 - a. 1 2010
 - b. 1 2011
 - c. 1 2012

Agency Information

Call Volume			
1. Total 9-1-1 Wireline call volume from:			
a.	572	2400 to 0800 hours	Total Wireline Volume: 2424
b.	885	0800 to 1600 hours	
c.	967	1600 to 2400 hours	
2. Total 9-1-1 Wireless call volume from:			
a.	5381	2300 - 0700	Total Wireless Volume: 22800
b.	8322	0700 - 1500	
c.	9097	1500 - 2300	
3. Total Abandoned call volume from:			
a.	0	2300 - 0700	Total Abandoned Volume: 0
b.	0	0700 - 1500	
c.	0	1500 - 2300	
4. Total VoIP call volume from:			
a.	133	2300 - 0700	Total VoIP Volume: 562
b.	206	0700 - 1500	
c.	223	1500 - 2300	
5. Total 7/10-digit emergency and non-emergency call volume from:			
a.	13954	2300 - 0700	Total 7/10-digit Volume: 60670
b.	21841	0700 - 1500	
c.	24875	1500 - 2300	
6. Total Outbound call volume for:			
a.	6618	2300 - 0700	Total Outbound Volume: 28776
b.	10359	0700 - 1500	
c.	11799	1500 - 2300	
7. Average time to process a priority one 9-1-1 Wireline/Wireless call (from pickup to dispatch):			
a.	2	minutes	
8. Average time to process a seven digit call (from pickup to entry into CAD or Dispatch):			
a.	7	minutes	
9. Busiest hour of the day?			
a.	4:00 PM		
10. Busiest day of the week?			
a.	Friday		

Agency Information

Incident Volume			
1. Average time on a Law Enforcement incident from time of dispatch to time clear of scene?			
a.	26	minutes	
2. Average time on a NCIC Query from time of dispatch receipt to time info provided?			
a.	1.5	minutes	(Provided by Beth after conducting study on herself and staff)
3. Average time on a Fire/Rescue incident from time of dispatch to time clear of scene?			
a.	64	minutes	
4. Average time on an EMS incident from time of dispatch to time at hospital?			
a.	0	minutes	
5. Total number of Law Enforcement Incidents dispatched from:			
a.	19394	2300-0700	Total Law Incident Volume: 82197
b.	30004	0700 - 1500	
c.	32799	1500 - 2300	
6. Total number of NCIC/State/Local Queries from:			
a.	91848	2300 - 0700	Total NCIC Query Volume: 389187
b.	142053	0700 - 1500	
c.	155286	1500 - 2300	
7. Total number of Fire/Rescue Incidents dispatched from:			
a.	893	2300 - 0700	Total Fire/Rescue Incident Volume: 5287
b.	2268	0700 - 1500	
c.	2126	1500 - 2300	
8. Total number of EMS Incidents dispatched from:			
a.	0	2400 to 0800 hours	Total EMS Incident Volume: 0
b.	0	0800 to 1600 hours	
c.	0	1600 to 2400 hours	
9. What is the optimum number of incidents you would like your Dispatcher			
a.	9	Law Dispatcher	
b.	2	Fire/Rescue Dispatcher	
c.	0	EMS Dispatcher	
10. What is the optimum number of NCIC type queries that you would like your			
a.	9	Law Dispatcher	

APPENDIX B**DeKalb County Communication Center**

Current Average Annual Call Volumes	
9-1-1 Wireline Call Volume	2,424
9-1-1 Wireless Call Volume	22,800
Abandoned Call Volume	0
VoIP Call Volume	562
7/10-digit Call Volume	60,670
Outbound Call Volume	28,776
Total Average Call Volume	115,232

Current Average Annual Incident Volumes	
Law Enforcement Incident Volume	82,197
NCIC Query/Entry Volume	389,187
Fire/EMS Incident Volume	5,287
Total Average Incident Volume	476,671

Personnel	Current Number of FTE Employees	Proposed Number of FTEs Using Volume Formula	Proposed Number of FTEs Using Coverage Formula
Management (Director & Deputy Directors)			
Call-takers		9	6
Law Enforcement Dispatchers		4	12
Fire/Rescue Dispatchers		3	6
EMS Dispatchers		0	0
NCIC Dispatchers		1	0
Shift Supervisors		6	6
Training Supervisor			
Training Staff (full time)			
Quality Assurance Supervisor			
Quality Assurance Staff (full time)			
GIS Coordinator			
CAD Administrator			
IT			
9-1-1 Technologist			
9-1-1 System Coordinator			
Administrative Assistant			
Total Personnel	0	22	30

Agency Name: DeKalb County Communications Center

Call Volumes	Agency Volumes	Totals	Total Call Volume by Shift
9-1-1 Wireline			
Call Volume 2400 to 0800 hours	572	572	26,658
9-1-1 Wireline			
Call Volume 0800 to 1600 hours	885	885	41,613
9-1-1 Wireline			
Call Volume 1600 to 2400 hours	967	967	46,961
9-1-1 Wireless			
Call Volume 2400 to 0800 hours	5,381	5,381	
9-1-1 Wireless			
Call Volume 0800 to 1600 hours	8,322	8,322	
9-1-1 Wireless			
Call Volume 1600 to 2400 hours	9,097	9,097	
Abandoned			
Call Volume 2400 to 0800 hours	0	0	
Abandoned			
Call Volume 0800 to 1600 hours	0	0	
Abandoned			
Call Volume 1600 to 2400 hours	0	0	
VoIP			
Call Volume 2400 to 0800 hours	133	133	
VoIP			
Call Volume 0800 to 1600 hours	206	206	
VoIP			
Call Volume 1600 to 2400 hours	223	223	
Non-emerg. & 7/10-digit emergency			
Call Volume 2400 to 0800 hours	13,954	13,954	
Non-emerg. & 7/10-digit emergency			
Call Volume 0800 to 1600 hours	21,841	21,841	
Non-emerg. & 7/10-digit emergency			
Call Volume 1600 to 2400 hours	24,875	24,875	
Outbound			
Call Volume 2400 to 0800 hours	6,618	6,618	
Outbound			
Call Volume 0800 to 1600 hours	10,359	10,359	
Outbound			
Call Volume 1600 to 2400 hours	11,799	11,799	
Total Combined 9-1-1 Wireline, Wireless, Seven-digit & Outbound Call Volume By Agency	115,232	115,232	

Data Worksheet

Incident Volumes	Agency Volumes	Totals	Total Incident Volumes
Law Enforcement Incident Volume 2400 to 0800 hours	19,394	19,394	Total Law Enforcement Incident Volume 82,197
Law Enforcement Incident Volume 0800 to 1600 hours	30,004	30,004	
Law Enforcement Incident Volume 1600 to 2400 hours	32,799	32,799	
NCIC Query Volume 2400 to 0800 hours	91,848	91,848	Total NCIC Query Volume 389,187
NCIC Query Volume 0800 to 1600 hours	142,053	142,053	
NCIC Query Volume 1600 to 2400 hours	155,286	155,286	
Fire/Rescue Incident Volume 2400 to 0800 hours	893	893	Total Fire/Rescue Incident Volume 5,287
Fire/Rescue Incident Volume 0800 to 1600 hours	2,268	2,268	
Fire/Rescue Incident Volume 1600 to 2400 hours	2,126	2,126	
EMS Incident Volume 2400 to 0800 hours	0	0	Total EMS Incident Volume 0
EMS Incident Volume 0800 to 1600 hours	0	0	
EMS Incident Volume 2400 to 0800 hours	0	0	
Total Combined Police, Fire & EMS Incident Volume By Agency	476,671	476,671	

	2	9-1-1 Call Processing Time
+	7	7/10 Digit Call Processing Time
	9	Minutes
/	2	
Combined 9-1-1 & 7/10 Digit Call Processing Time:	4.5	Minutes

Net Work Hours

Agency Name: DeKalb County Communications Center

Calculation of Availability Per Telecommunicator		
A.	2080.00	Total hours for one full time employee
B	88.34	Average Vacation & Holiday Leave (Total Hours)
C	0.00	Average Sick Leave (Total Hours)
D	153.25	Average Personal Leave (Total Hours)
E	26.00	Average Training Leave (Total Hours)
F	29.27	Average Military, FMLA Leave, etc. (Total Hours)
G	0.00	Average other activities (Meetings, light duty, special assignments, etc.)
H	296.86	Subtotal unavailable time = Total B through G
I	1783.14	Subtotal Net Work Hours = A - H
K	222.89	Lunch & break (Total Hours)
L	1560.25	Net Work Hours
	1560.25	Net Work Hours

Days		Hours		Total Annual Hours
260.00	x	8.00	=	2080.00

Days		Hours		Total Lunch Hours
222.89	x	1.00	=	222.89

Telecommunicator Availability

Agency Name: DeKalb County Communications Center

Telecommunicator Utilization		
a	480	Minutes in a shift
b	60	Minutes for meal and breaks
c	420	Available Subtotal(a - b)
d	15	Minutes per hour performing other activites
e	7	Hours (c / 60)
f	105	Minutes per shift performing other activites (d x e)
g	315	Available minutes to work per shift (c - f)
h	0.66	Telecommunicator Utilization Rate

66% **Telecommunicator Utilization Rate**

Attrition Rate**Agency Name:** DeKalb County Communications Center

Calculation of Average Attrition Rate					
	Category	2007	2008	2009	Average
A	Total number of employees at the highest staffing level for that year	26	25	25	25.3
B	Number of new hires that failed to complete the probationary/training period	1	0	2	1.0
C	Number of experienced employees who left for any reason*	1	1	1	1.0
D	Attrition Rate (B+C/A)	7.7%	4.0%	12.0%	7.9%

*Include all experienced employees who left for voluntary or involuntary reasons (e.g. turnover initiated by the employee, rotation, retirement, death, management action, etc.)

FTEs For Calltaker Volume Positions for DeKalb

FTEs for Call Taker Volume Positions		
Position: Call Taker 2300 hours to 0700 hours		
A	26,658	Total Call Volume from 2300 to 0700 hours
B	4.50	Estimated average processing time for this position
C	13.3333333	Hourly Processing Capability (HPC) = 60 / B
D	1999.35	Workload in hours (W) = A / C {calls per hour handled}
Telecommunicator Availability:		
E	1560.25	Available Work Hours
F	66%	Telecommunicator Availability
G	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
H	1.95	FTE base estimate (FTE) = D / G
I	7.9%	Attrition Rate
K	2.11	FTEs required to accommodate attrition

FTEs for Call Taker Volume Positions		
Position: Call Taker 0700 hours to 1500 hours		
A	41,613	Total Call Volume from 0700 to 1500 hours
B	4.50	Estimated average processing time for this position
C	13.3333333	Hourly Processing Capability (HPC) = 60 / B
D	3120.98	Workload in hours (W) = A / C {calls per hour handled}
Telecommunicator Availability:		
E	1560.25	Available Work Hours
F	66%	Telecommunicator Availability
G	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
H	3.05	FTE base estimate (FTE) = D / G
I	7.9%	Attrition Rate
K	3.29	FTEs required to accommodate attrition

FTEs for Call Taker Volume Positions		
Position: Call Taker 1500 hours to 2300 hours		
A	46,961	Total Call Volume from 1500 to 2300 hours
B	4.50	Estimated average processing time for this position
C	13.3333333	Hourly Processing Capability (HPC) = 60 / B
D	3522.08	Workload in hours (W) = A / C {calls per hour handled}
Telecommunicator Availability:		
E	1560.25	Available Work Hours
F	66%	Telecommunicator Availability
G	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
H	3.44	FTE base estimate (FTE) = D / G
I	7.9%	Attrition Rate
K	3.71	FTEs required to accommodate attrition

9 Total Number FTE Call Takers Needed

FTEs For Calltaker Coverage Positions

FTEs for Call Taker Coverage Positions		
Position: Call Taker 2300 hours to 0700 hours		
A	1	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.2475	Available Work Hours
FTEs Needed:		
G	1.9	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	2.0	FTEs required to accommodate turnover
	2	Recommendation

FTEs for Call Taker Coverage Positions		
Position: Call Taker 0700 hours to 1500 hours		
A	1	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	2.0	FTEs required to accommodate turnover
	2	Recommendation

FTEs for Call Taker Coverage Positions		
Position: Call Taker 1500 hours to 2300 hours		
A	1	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
J	2.0	FTEs required to accommodate turnover
	2	Recommendation

6.0 Total Number FTE Call Takers Recommended By Formula

6 Total Number FTE Call Takers Needed

FTEs for Law Dispatcher Volume Positions		
Position: Law Dispatcher 2300 hours to 0700 hours		
A	19,394	Total Law Enforcement Incident Volume from 2300 to 0700 hours
B	9	Number of simultaneous incidents that can be handled by one Dispatcher
C	2154.89	Incident Volume Adjusted (A / B)
D	26	Estimated average processing time for this position
E	2.31	Hourly Processing Capability (HPC) = 60 / D
F	933.79	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	0.91	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	0.98	FTEs required to accommodate attrition

FTEs for Law Dispatcher Volume Positions		
Position: Law Dispatcher 0700 hours to 1500 hours		
A	30,004	Total Law Enforcement Incident Volume from 0700 to 1500 hours
B	9	Number of simultaneous incidents that can be handled by one Dispatcher
C	3333.78	Incident Volume Adjusted (A / B)
D	26	Estimated average processing time for this position
E	2.31	Hourly Processing Capability (HPC) = 60 / D
F	1444.64	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	1.41	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	1.52	FTEs required to accommodate attrition

FTEs for Law Dispatcher Volume Positions		
Position: Law Dispatcher 1500 hours to 2300 hours		
A	32,799	Total Law Enforcement Incident Volume from 1500 to 2300 hours
B	9	Number of simultaneous incidents that can be handled by one Dispatcher
C	3644.33	Incident Volume Adjusted (A / B)
D	26	Estimated average processing time for this position
E	2.31	Hourly Processing Capability (HPC) = 60 / D
F	1579.21	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	1.54	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	1.66	FTEs required to accommodate attrition

4.17 Total Number FTE Law Dispatchers Needed

FTEs For Law Enforcement Dispatch Coverage Positions

FTEs for Law Dispatcher Coverage Positions**Position: Law Dispatcher 2300 to 0700 hours**

A	2	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	5824	Total Hours needing coverage (A x B x C x D)

Telecommunicator Availability:

F	1560.25	Available Work Hours
---	---------	----------------------

FTEs Needed:

G	3.7	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	4.0	FTEs required to accommodate turnover
	4	Recommendation

FTEs for Law Dispatcher Coverage Positions**Position: Law Dispatcher 0700 to 1500 hours**

A	2	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	5824	Total Hours needing coverage (A x B x C x D)

Telecommunicator Availability:

F	1560.25	Available Work Hours
---	---------	----------------------

FTEs Needed:

G	3.7	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	4.0	FTEs required to accommodate turnover
	4	Recommendation

FTEs for Law Dispatcher Coverage Positions**Position: Law Dispatcher 1500 to 2300 hours**

A	2	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	5824	Total Hours needing coverage (A x B x C x D)

Telecommunicator Availability:

F	1560.25	Available Work Hours
---	---------	----------------------

FTEs Needed:

G	3.7	Full Time Equivalent base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	4.0	Full Time Equivalent required to accommodate turnover, prior to any
	4	Recommendation

12.1 Total Number FTE Law Dispatchers Recommended By Formula**12 Total Number FTE Law Dispatchers Needed**

FTEs For Fire Dispatch Volume Positions for DeKalb

FTEs for Fire Dispatcher Volume Positions		
Position: Fire Dispatcher 2300 hours to 0700 hours		
A	893	Total Fire Incident Volume from 2300 hours to 0700 hours
B	2	Number of simultaneous incidents that can be handled by one Dispatcher
C	446.50	Incident Volume Adjusted (A / B)
D	64	Estimated average processing time for this position
E	0.94	Hourly Processing Capability (HPC) = 60 / D
F	476.27	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	0.47	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	0.50	FTEs required to accommodate attrition

FTEs for Fire Dispatcher Volume Positions		
Position: Fire Dispatcher 0700 hours to 1500 hours		
A	2,268	Total Fire Incident Volume from 0700 hours to 1500 hours
B	2	Number of simultaneous incidents that can be handled by one Dispatcher
C	1134.00	Incident Volume Adjusted (A / B)
D	64	Estimated average processing time for this position
E	0.94	Hourly Processing Capability (HPC) = 60 / D
F	1209.60	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	1.18	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	1.27	FTEs required to accommodate attrition

FTEs for Fire Dispatcher Volume Positions		
Position: Fire Dispatcher 1500 hours to 2300 hours		
A	2,126	Total Fire Incident Volume from 1500 hours to 2300 hours
B	2	Number of simultaneous incidents that can be handled by one Dispatcher
C	1063.00	Incident Volume Adjusted (A / B)
D	64	Estimated average processing time for this position
E	0.94	Hourly Processing Capability (HPC) = 60 / D
F	1133.87	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	1.11	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	1.19	FTEs required to accommodate attrition

2.97 Total Number FTE Fire Dispatchers Needed

FTEs For Fire Dispatch Coverage Positions

FTEs for Fire Dispatcher Coverage Positions		
Position:		Fire Dispatcher 2400 to 0800 hours
A	1	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	2.0	FTEs required to accommodate turnover
	2	Recommendation

FTEs for Fire Dispatcher Coverage Positions		
Position:		Fire Dispatcher 0800 to 1600 hours
A	1	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	2.0	FTEs required to accommodate turnover
	2	Recommendation

FTEs for Fire Dispatcher Coverage Positions		
Position:		Fire Dispatcher 1600 to 2400 hours
A	1	Total number of console positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	Full Time Equivalent base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	2.0	Full Time Equivalent required to accommodate turnover, prior to any
	2	Recommendation

6.0 Total Number FTE Fire Dispatchers Recommended By Formula

6 Total Number FTE Fire Dispatchers Needed

FTEs For NCIC Dispatch Volume Positions for DeKalb

FTEs for NCIC Dispatcher Volume Positions		
Position: NCIC Dispatcher 2300 hours to 0700 hours		
A	91,848	Total NCIC Volume from 2300 hours to 0700 hours
B	9	Number of simultaneous incidents that can be handled by one Dispatcher
C	10205.33	Incident Volume Adjusted (A / B)
D	2	Estimated average processing time for this position
E	40.00	Hourly Processing Capability (HPC) = 60 / D
F	255.13	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	0.25	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	0.27	FTEs required to accommodate attrition

FTEs for NCIC Dispatcher Volume Positions		
Position: NCIC Dispatcher 0700 hours to 1500 hours		
A	142,053	Total NCIC Volume from 0700 hours to 1500 hours
B	9	Number of simultaneous incidents that can be handled by one Dispatcher
C	15783.67	Incident Volume Adjusted (A / B)
D	2	Estimated average processing time for this position
E	40.00	Hourly Processing Capability (HPC) = 60 / D
F	394.59	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	0.39	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	0.42	FTEs required to accommodate attrition

FTEs for NCIC Dispatcher Volume Positions		
Position: NCIC Dispatcher 1500 hours to 2300 hours		
A	155,286	Total NCIC Volume from 1500 to 2300 hours
B	9	Number of simultaneous incidents that can be handled by one Dispatcher
C	17254.00	Incident Volume Adjusted (A / B)
D	2	Estimated average processing time for this position
E	40.00	Hourly Processing Capability (HPC) = 60 / D
F	431.35	Workload in hours (W) = C / D {calls per hour handled}
Telecommunicator Availability:		
G	1560.25	Available Work Hours
H	66%	Telecommunicator Availability
I	1023.91	True Availability per Telecommunicator (TA) = E x F
FTEs Needed:		
J	0.42	FTE base estimate (FTE) = D / G
K	7.9%	Attrition Rate
L	0.45	FTEs required to accommodate attrition

1.14 Total Number FTE NCIC Dispatchers Needed

FTEs For Shift Supervisor Coverage Positions for DeKalb

FTEs for Shift Supervisor Coverage Positions		
Position: Shift Supervisor 2300 hours to 0700 hours		
A	1	Total number of Shift Supervisor positions to be covered
B	8	Number of hours per day that need to be covered
C	5	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2080	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.3	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	1.4	FTEs required to accommodate turnover
	2	Recommendation

FTEs for Shift Supervisor Coverage Positions		
Position: Shift Supervisor 0700 hours to 1500 hours		
A	1	Total number of Shift Supervisor positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	FTE base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	2.0	FTEs required to accommodate turnover
	2	Recommendation

FTEs for Shift Supervisor Coverage Positions		
Position: Shift Supervisor 1500 hours to 2300 hours		
A	1	Total number of Shift Supervisor positions to be covered
B	8	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	2912	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1560.25	Available Work Hours
FTEs Needed:		
G	1.9	Full Time Equivalent base estimate (FTE) = E / F
H	7.9%	Attrition Rate
I	3.0	Full Time Equivalent required to accommodate turnover, prior to any
	2	Recommendation

6.0 Total Number FTE Shift Supervisors Recommended By Formula

6 Total Number FTE Shift Supervisors Needed

Appendix C

DeKalb County Radio Channel Listing

DeKalb County Communities:

Cortland

154.8600 / 155.9700 - 141.3 Police

153.4850 / 159.015 - 192.8 Fire Cortland FPD

DeKalb County Sheriff

154.8600 / 155.9700 – 141.3 Sheriff's Dispatch Channel

154.6500 - 141.3 Sheriff's Car To Car Channel

154.7700 - 141.3 Sheriff Tac Channel

Genoa

154.7400 / 155.6700 - 141.3 Police

154.8000 - 141.3 Police Alternate

153.4850 / 159.015 - 192.8 Fire Genoa-Kingston FPD

Hinckley

154.8600 / 155.9700 - 141.3 Police

153.4850 / 159.015 - 192.8 Fire Hinckley FPD

Kingston

154.8600 / 155.9700 - 141.3 Police

153.4850 / 159.015 - 192.8 Fire Genoa-Kingston FPD

Kirkland

154.8600 / 155.9700 - 141.3 Police

153.4850 / 159.015 - 192.8 Fire Kirkland FPD

Leland Fire Protection District

153.4850 / 159.015 - 192.8 Fire Leland FPD

Lee

154.8600 / 155.9700 - 141.3 Police

153.4850 / 159.015 - 192.8 Fire Lee FPD

Malta

154.8600 / 155.9700 - 141.3 Police

153.4850 / 159.015 - 192.8 Fire Malta FPD

Maple Park

154.830 / 159.1500 107.2 Police

154.8600 / 155.9700 - 141.3 Police Link to DeKalb County SO

154.0700 - 110.9 Fire Maple Park FPD (Kane County)

153.4850 / 159.015 – 192.8 Fire Maple Park FPD (DeKalb County)

Shabonna

154.8600 / 155.9700 - 141.3 Police

153.4850 - 192.8 Fire Shabonna FPD

Somonauk

154.8600 / 155.9700 - 141.3 Police

153.4850 - 192.8 Fire Somonauk FPD

Sycamore

155.6400 / 156.030 - 141.3 Police

153.4850 - 192.8 Fire Sycamore FD

154.0700 - D411 Old Fire Dispatch Channel

154.1450 Fire County Alternate

154.2950 - 141.3 EMS Rescue Squad

Waterman

154.8600 / 155.970 - 141.3 Police

153.4850 - 192.8 Fire Waterman FPD

Note:

DeKalb County's 9-1-1 System (DCCC) handles all police and fire radio operations in the county with the exception of the City of DeKalb, Northern Illinois University, and Sandwich. Most small community's police operate on the De Kalb County Sheriff's channels, while the cities of Genoa and Sycamore share their own separate police channel. Most fire operations are on the county fire net. DeKalb County 9-1-1 is also the primary dispatch center for MABAS Division 6 on the IFERN 1, 154.265 / 210.7. The City of De Kalb PSAP is the back-up PSAP for MABAS Division 6 on IFERN 1, 154.265 / 210.7.

APPENDIX D

MOTOROLA CENTRACOM GOLD SERIES PRODUCT FAMILY Intent to Cancel

Product Information:

CENTRACOM GOLD SERIES Product Family Cancellation – All Models & Options

Models & Options Impacted:

- All CENTRACOM Gold Series operator position software, hardware, and accessories
 - Includes the Console Interface Electronics (CIE)
- Central Electronics Bank (CEB)
- Ambassador Electronics Bank (AEB)

Orders for the CENTRACOM GOLD SERIES Product Family will be accepted per the below schedule:

Last Order Date: 9/30/2011

Last Ship Date: 12/31/2011

Last date for CENTRACOM GOLD SERIES Add-on console positions & CEBs for SMARTNET and SmartZone systems was December 2009. Orders for Consoles for these legacy systems will not be accepted.

Replacement Product:

The CENTRACOM GOLD SERIES console has been replaced by the MCC 7500 console product.

Regional Impact:

The CENTRACOM GOLD SERIES Product Family cancellation is effective in ALL regions (North America, Latin America, Asia Pacific, Europe, Middle East, Africa, and Israel) where product models and corresponding hardware options and accessories are sold.

Systems Impact:

The CENTRACOM GOLD SERIES Product Family supports all of the systems listed below. ASTRO 25 and SmartX customers planning to use their CENTRACOM GOLD SERIES systems beyond the cancelation date will need to place all orders for CENTRACOM GOLD SERIES products prior to Last Order Date of 9/31/2011 stated above. The replacement products for each system type are listed below.

- SMARTNET/SmartZone – MCC 7500 console with an ASTRO 25 core can provide a wireline interface for SN/SZ systems via the SmartX site converter. The MCC 5500 console and MIP 5000 console can provide wireless interfaces for these legacy 3600 systems.
- Analog Conventional – The MCC 7500, MCC 5500 and MIP 5000 consoles all support Analog Conventional interfaces.
- Conventional ASTRO 3.0/3.1 - The MCC 5500 console provides a wireline interface to Conventional ASTRO 3.0/3.1 with ACIM signaling to the DIU. The MIP 5000 console provides a wireless interface using control stations to this system. The MCC 7500 console provides a wireline interface to Conventional ASTRO 3.0/3.1 channels via a V.24 link to the channel.
- ASTRO 25 Trunking – MCC 7500 provides wireline connectivity to ASTRO 25 Trunking systems. The MCC 5500 and MIP 5000 consoles can provide wireless interface to ASTRO 25 systems via control stations.

Service Impact:

Commercially reasonable efforts will be made to provide aftermarket product support via the Customer Fulfillment Center for up to 7 years as follows:

Last Ship Date: 12/31/2011

Aftermarket Product Support End Date: 12/31/2018

Contacts:

For CENTRACOM GOLD SERIES product specific implications of this cancellation:

David Burton

david.burton@motorolasolutions.com

847.576.3603

For SMARTNET/SmartZone System implications of this cancellation:

Scott Segin

Scott.Segin@motorolasolutions.com

847.576.9065

For service / support related implications of this cancellation:

Motorola Customer Fulfillment Center

800.422.4210

APPENDIX E

02-07-2014

DEKALB COUNTY GOVERNMENT

Allocation of Sheriff's PSAP Costs Based on 2010 Census

Budget Amount to Allocate	\$2,763,500
Less: E-911 Contract (Fixed)	\$169,000

Net Amount to Allocate	2,594,500
	=====

	Population	Percent	Amount
	-----	-----	-----
Small Towns			
Cortland	4,270	7.9%	205,381
Hinckley	2,070	3.8%	99,577
Kingston	1,164	2.2%	55,989
Kirkland	1,744	3.2%	83,880
Lee	337	0.6%	16,216
Malta	1,164	2.2%	55,989
Maple Park	1,310	2.4%	63,020
Shabbona	925	1.7%	44,496
Somonauk	1,893	3.5%	91,041
Waterman	1,506	2.8%	72,438
	-----	-----	-----
Total Small Towns	16,383	30.4%	788,027
Sheriff (Un-Incorporated Areas)	14,891	27.6%	716,238
	-----	-----	-----
Total Original County PSAP	31,274	58.0%	1,504,265
	-----	-----	-----
Genoa (Police & Fire)	5,186	9.6%	249,435
Sycamore (Police & Fire)	17,481	32.4%	840,826
	-----	-----	-----
Total County PSAP	53,941	100.0%	2,594,526
	=====	=====	=====
Sandwich	7,377		
DeKalb	43,842		

2010 Total County Population	105,160		
	=====		

APPENDIX F

Kane County (Kane Comm) Communication Fees: Year 2012

Upon implementation of the Kane Comm PSAP the primary goal was to establish a subscriber fee model that was both fair and equitable to all agencies receiving emergency dispatching services rendered by Kane County.

Ultimately, that goal was successfully achieved by adopting a formula that utilized a tiered base fee system in correlation with the percentage of total services proportionately attributed to an individual subscriber.

Effective May 2012 subscribers of Kane Comm unanimously selected to adopt a five (5) year 9-1-1 services agreement that would result in an annual increase not to exceed 5%. This alteration allows for long term strategic budgetary planning by providing conservative projections as it relates to the cost of emergency dispatch services in a manner that historically was unprecedented. This modification has proven to be beneficial to both Kane Comm and its subscribers in spite of the challenge of varying fiscal cycles.

The projected subscriber fee allocations outlined are for the purpose of approximate estimation. These totals represent the existing subscriber fee structure of Kane Comm.

2012 Kane Comm Subscriber Fee Allocation

Big Rock Fire Protection District	\$ 7,301.68
Burlington Fire Protection District	\$ 8,523.64
Campton Hills Police Department	\$ 48,139.31
Fox River Fire Protection District	\$ 25,585.89
Fox Valley Park District Police Department	\$ 20,607.55
Gilberts Police Department	\$ 37,865.81
Hampshire Fire Protection District	\$ 25,118.23
Hampshire Police Department	\$ 48,094.05
Kane County Forest Preserve Police Department	\$ 21,754.08
Kane County Sheriff's Office	\$ 325,553.81
Kaneville Fire Protection District	\$ 7,890.03
Maple Park Fire Protection District	\$ 8,508.55
Maple Park Police Department	\$ 8,734.84
Pingree Grove Fire Protection District	\$ 19,506.28
Pingree Grove Police Department	\$ 27,954.38
South Elgin Police Department	\$ 369,363.24
Wayne Police Department	\$ 30,518.98

Tri-Com Central Dispatch FY13-14 Agency Costs

The annual usage fee is calculated as follows: The total amount of the Tri-Com operating budget, less the base fees and revenue, divided among the subscribers according to their respective calls for service (CFS) percentage.

FY13 Budget (May 2013 To April 2014):

\$ 2,519,881	Total Operating Expenses (18 Dispatchers)
\$ 782,070	Less Revenue
\$ 1,737,811	Net Operating Expenses
\$ 302,386	Less Total Base Fees
\$ 1,435,425	Total Share

<u>Subscriber</u>	<u>CFS</u>	<u>*Base Fee</u>	<u>Usage Fee</u>	<u>Annual Dispatch Fee</u>
St. Charles PD	26.74%	\$ 25,198.81	\$ 383,833	\$ 409,032
St. Charles FD	4.52%	\$ 25,198.81	\$ 64,881	\$ 90,080
Batavia PD	21.48%	\$ 15,198.81	\$ 303,329	\$ 333,528
Batavia FD	2.79%	\$ 25,198.81	\$ 40,048	\$ 65,247
Geneva PD	16.6%	\$ 25,198.81	\$ 238,568	\$ 263,766
Geneva FD	2.44%	\$ 25,198.81	\$ 35,024	\$ 60,223
Elburn PD	4.85%	\$ 25,198.81	\$ 69,618	\$ 94,817
Elburn FD	1.55%	\$ 25,198.81	\$ 22,249	\$ 47,448
Tri-City Ambulance	6.97%	\$ 25,198.81	\$ 100,049	\$ 125,248
Sugar Grove PD	8.77%	\$ 25,198.81	\$ 125,887	\$ 151,086
Sugar Grove FD	1.05%	\$ 25,198.81	\$ 15,072	\$ 40,271
North Aurora FD	2.23%	\$ 25,198.81	\$ 32,010	\$ 57,209
Totals:	100.00%	\$302,385.72	\$1, 435,569	\$ 1, 737,955

Start-Up Costs For New Users (One Time Cost – Goes Into Reserve Fund):

Sugar Grove PD	8.77%	\$ 55,248.00
Sugar Grove FD	1.05%	\$ 6,615.00
North Aurora FD	2,23%	\$ 14,048.00

*Base Fee = 1% Of The Annual Overall Operating Budget (All Subscribers Pay The Base Fee Equally)