



Prepared for:

**Cities of Parma, Berea, Brecksville,
Broadview Heights, Brooklyn, Brooklyn
Heights, Brook Park, Garfield Heights,
Independence, Middleburg Heights,
North Royalton, Parma Heights, Seven
Hills, and Valley View**

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**Feasibility Study:
Consolidated
Dispatch Center
for Police, Fire
and EMS Services**



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ABSTRACT: *This report provides an assessment of the feasibility of consolidation of public safety dispatch for 14 communities in Cuyahoga County, Ohio. The report describes the methodology used to assess the feasibility and cites examples of consolidated dispatch centers nationally and in Ohio. The findings are that consolidation of dispatch services among the participating communities would reduce staffing costs by an estimated \$1.6 million annually. Consolidation of services would reduce the duplication of services and redundant capital projects. This in turn would free up money to maintain and replace capital items as their useful lives expire. Capital costs would also be reduced and evenly distributed from year to year for large items. Instead of the duplicate purchase of expensive equipment by several communities, the cost of large capital will be distributed over a larger base of beneficiaries. Centralization will reduce the physical blueprint of dispatch operations which in turn should reduce operating costs such as natural gas, electric and maintenance. Given the proposed investment in high quality equipment, facilities, and staff, the level and quality of service provided by a consolidated dispatch center should exceed those currently being supplied.*

Key Words: *consolidation, regionalization, dispatch, public safety answering point (PSAP) public safety, 9-1-1, police, fire, emergency medical service (EMS), emergency medical dispatch (EMD)*

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EXECUTIVE SUMMARY

This study assessed whether it is feasible to consolidate the dispatch functions of the cities of Berea, Brook Park, Brooklyn, Broadview Heights, Brecksville, Garfield Heights, Independence, Middleburg Heights, North Royalton, Parma, Parma Heights, and Seven Hills, and the villages of Brooklyn Heights, and Valley View. For the purposes of this study, feasibility is defined as legally implementable, technologically and financially viable (less than or equal to existing costs), and would provide service that is equal to or better than current levels. The feasibility was analyzed collectively, not on a community-by-community basis. The PM also looked at interoperability issues relative to its impact on the feasibility of consolidating or regionalizing dispatch functions of the participating communities.

Based on a review of the specific federal laws, state statutes, and municipal ordinances, analysis of current and estimated costs, and an assessment of the impact of new equipment and technology on service levels, the outcomes of the study are as follows.

- ☑ The PM did not identify any legal impediments confronting the creation and implementation of multi-jurisdictional emergency dispatch centers in Ohio statute or in local charters.
- ☑ The staffing analysis showed that a consolidated dispatch could reduce and shift supervisors/senior dispatcher full-time equivalents (FTEs) by 26 as compared to 2008 levels of participating communities.
- ☑ The cost analysis for overall staffing and capital costs of a consolidated dispatch center shows a reduction of \$1.64 million annually as compared to 2008 expenditures.
- ☑ Investment in modern equipment such as an IP-enabled emergency communications network that supports 9-1-1 will facilitate interoperability and system resilience; improve connections between 9-1-1 call centers, provide more robust capacity; and offer flexibility in receiving calls.
- ☑ Capital costs would also be reduced and evenly distributed from year to year for large items. Instead of the duplicate purchase of expensive equipment by several communities, the cost of large capital will be distributed over a larger base of beneficiaries.
- ☑ Centralization will reduce the physical blueprint of dispatch operations which in turn should reduce operating costs such as natural gas, electric and maintenance.
- ☑ Given the proposed investment in high quality equipment, facilities, and staff, the level and quality of service provided by a consolidated dispatch center should exceed those currently being supplied.

- ☑ Dispatching operations, as they are centralized, benefit from economies of scale that make scheduling easier and generally result in a lower cost per call dispatched.

Other findings of the study are as follows.

- ☑ For some cities, call volume does not justify even minimal staffing for dispatch. Four communities experience less than one call per hour that requires dispatching and five have at least one but less than three dispatched calls per hour. Only one community has more than five calls dispatched per hour. Lower call volume among the study participants usually generated a higher cost per call.
- ☑ Most participating communities would benefit from an operational assessment of function currently performed by dispatch staff, particularly if they move forward with consolidation.
- ☑ In addition to the inability to receive text, data and images, calls can be delayed or dropped when analog and digital systems do not mesh. Information on the location of the call can be lost because the digital details cannot be transmitted by the underlying telecommunications infrastructure or understood by the computers at public safety answering points (PSAPs).
- ☑ Consolidation of services would reduce the duplication of services and redundant capital projects. This in turn would free up money to maintain and replace capital items as their useful lives expire.
- ☑ Compensatory time as opposed to cash overtime seems to be the compensation of choice for employees filling scheduling gaps. Overtime is expensive but compensatory time serves only to exacerbate problems in the immediate future and is more expensive over the long term.

While feasibility will ultimately be determined at the individual community level, this study shows that consolidation of the 14 participating communities is feasible. Great emphasis must be placed on the long term costs of capital and the ability of the participating communities to share in this cost. This study was limited in its ability to analyze existing capital costs due to the nature of capital purchases, which vary considerably from one year to the next. In addition, participating communities did not necessarily track all dispatch-related costs separately. Rather, many of these costs are considered part of the police or fire department budget.

Another consideration not captured in this study is the revenues generated through box alarms. This revenue should follow the dispatch function and would, therefore lessen the required contribution of participating communities. Communities may also lessen their contribution if their existing equipment has any trade-in value that may be contributed toward the cost of new equipment.

INTRODUCTION

Across the country, jurisdictions have considered consolidating services in order to realize greater efficiency and cost effectiveness, economies of scale, and in the case of emergency dispatch, to provide a higher level of inter-agency coordination and service. Entities expect better service in terms of faster response times and fewer errors due to standardized call handling and dispatch protocols. Consolidation contributes to improved service levels through enhanced coordination and interoperability, better training and certification opportunities for dispatchers, and improved and consistent communications equipment and technology. The feasibility of a consolidated dispatch center will be assessed based on whether it is legal, financially viable (less than or equal to existing costs), and would provide service that is equal to or better than current levels.

The cities of Berea, Brook Park, Brooklyn, Broadview Heights, Brecksville, Garfield Heights, Independence, Middleburg Heights, North Royalton, Parma, Parma Heights, and Seven Hills, and the villages of Brooklyn Heights, Linndale, and Valley View applied for and received funds from the Ohio Department of Development through the Local Government Services and Regional Collaboration Grant Program for the purpose of assessing the feasibility of creating a regional dispatch center for police, fire, and emergency medical services (EMS) among these communities. These communities engaged the Center for Public Management (PM) of the Maxine Goodman Levin College of Urban Affairs at Cleveland State University to conduct this feasibility study. Due to lack of data, the PM was unable to include the village of Linndale in this analysis.

The communities (outlined in a red, dashed line in Figure 1) involved in this study are located in Cuyahoga County, Ohio and comprise a geographic area of 133 square miles. These communities have a combined population of 271,342, which represents 30 percent of the county's population. Seven Hills, Brooklyn Heights, and Valley View pay other communities to provide dispatch services. The other 11 communities in the study area provide their own dispatch services.

communities. The report consists of the following sections: Executive Summary, Introduction, Background, Regional Collaboration, Legal Authority for Consolidated Dispatch Centers in Ohio, Assessing Level of Service, Assessing Cost Effectiveness, Interoperability, Next Steps, and Appendices. The appendices include dispatch center profiles, a glossary of terms, references, sample intergovernmental agreements, building site layout and construction cost estimate, sample dispatch staff schedule, calculation of work hours per year for dispatchers, an amortization table and quote on equipment.

Research Methodology

The PM analyzed service level data (i.e., call volume), staffing, employment benefits and financial data, combined with interoperability issues and governance issues. To ensure study participants were kept apprised of progress and provided the opportunity for input, each community appointed a representative to serve on an advisory committee, which met several times during course of the study.

The analysis is based on data obtained from the participating communities and supplemented with data obtained from three discussion/focus groups with an advisory committee for the project, phone interviews with advisory committee members and representatives of profiled communities, and peer questionnaires, as well as a review of internet-based research and professional journals.

Using questionnaires, the PM project team worked with each jurisdiction's police, fire and EMS departments to collect and assemble data relative to their current organizational structures including staffing and governance, budgets and financial resources, capital and equipment, and operations and performance.

The PM project team conducted research to identify potential models implemented in Ohio and other states where public safety dispatch functions of multiple communities were consolidated. This included a review of the literature and resources of trade groups and organizations to identify models of consolidation. In addition, the research included phone interviews with the staff or leadership of the consolidated dispatch centers to determine their overall experiences including challenges, successes and the efficiencies resulting from regionalization. Staff also identified examples of legislation authorizing these consolidations.

Governance, Leadership and Structure

Several potential leadership structures for a regionalized dispatch center are presented in the next steps section based on the outcome of the research and analysis. This includes a review of other consolidated dispatch centers, an analysis of leadership

and governance structures within the dispatch functions of participating communities, and a review of legal parameters.

Through internet research and discussions with public safety officials, consolidated communications or dispatch centers were identified. The centers were contacted for phone or in-person interviews to explore issues such as governance, operations, and finance.

The existing leadership and organizational structure, and the staffing and personnel of the fire, police and EMS departments within each jurisdiction are profiled based on responses to the questionnaire.

Community charters (where applicable) and pertinent sections of the Ohio Revised Code and Ohio Constitution were reviewed to ascertain whether there are any legal obstacles to overcome or prohibitions to consolidating dispatch functions or services among participating communities.

Finance, Cost Issues, Operations, and Staffing

Data from the questionnaire were analyzed to conduct a fiscal analysis of the jurisdictions to determine the impact of consolidation on municipal treasuries. The PM project team also used this data to develop a profile of existing police, fire, and EMS dispatch center personnel, staffing and service levels, as they relate to existing and projected needs.

In addition to the questionnaire, discussion groups of advisory committee members were conducted. The topics of these meetings included governance, organizational structure, staffing levels, salaries and other issues raised by representatives of the participating communities.

In setting a service and staffing level, the PM looked to professional organizations for standards. Other than the National Emergency Number Association (NENA) standards that 90 percent of all 9-1-1 calls arriving at a public safety answering point (PSAP) should be answered within 10 seconds during the busiest time of day and 95 percent of all calls to 9-1-1 should be answered within 20 seconds, there was limited guidance related to service level. Among the communities profiled in the section of this report titled, "Consolidated Dispatch Centers," staffing methodology varied by dispatch center. The Association of Public Safety Communication Officials International (APCO) has a staffing model; however, it assumes rotating shifts among employees. Since the advisory group for the project expressed concern over frequent shift changes, The PM did not use this model. To get a sense of realistic and reasonable workloads for dispatchers, staff identified various communities against which the communities in the study could be benchmarked.

BACKGROUND

Often, what propels the idea of multi-jurisdictional collaboration is a crisis of some variety.^{1, 2} In other cases, the motivation may simply be the desire to lower the cost or improve the quality of service. According to the National Emergency Number Association (NENA), the impetus to consolidate dispatch services can be driven by budget shortfalls, declining quality of services, escalating personnel costs, staffing shortages, difficulty implementing new technologies, and increased workloads for dispatchers.³ A desire to foster collaboration between politically fragmented jurisdictions could be added to this list.

While many communities are seeking ways to meet the needs of residents more cost effectively, there is pressure from the federal level to achieve greater efficiencies and improve service of public safety services in particular. The Department of Homeland Security has placed a priority on the interoperability of computer aided dispatch (CAD) systems, which the department credits with reducing response time, increasing personnel efficiency, and increasing vehicle efficiency.⁴

Further encouraging communities to look at dispatch center consolidation, is Congress' passage of three major bills supporting improvements in the handling of 9-1-1 emergency calls. The most recent of these—the NET 911 Improvement Act of 2008 (P.L. 110-283)—requires the preparation of a National Plan for migrating to an IP-enabled emergency network.⁵

The Department of Homeland Security has placed a priority on the interoperability of Computer Aided Dispatch systems, which can reduce response time, increase personnel efficiency, and increase vehicle efficiency.

The current 9-1-1 system is based on three-decade old telephone technology. Next Generation 9-1-1 initiative will establish the foundation for public emergency communications services in a wireless mobile society.

A major challenge to emergency communications is that the nation's current 9-1-1 system is designed around telephone technology, which operates almost exclusively

¹ Centers for Regional Excellence [CRE]. 2007. Regional Collaboration—Best Practices.

² O'Connor, B., Hudson, B. 2006. Seven Steps to Considering Dispatch Consolidation. Emergency Number Professional, the official publication of the National Emergency Number Association [NENA].

³ O'Connor, B., Hudson, B.

⁴ Department of Homeland Security [DHS]. 2008. Computer-Aided Dispatch Interoperability Projects: Documentation of Regional Efforts.

⁵ Moore, Linda K. (2009). Emergency Communications: The Future of 911. Congressional Research Service Report for Congress.

on analog technology; although there have been some adaptations for teletypewriter (TTY).^{6,7,8,9} This telephone technology cannot handle the text, data, images, and video that are increasingly common in personal communications and critical to future transportation safety and mobility advances. As a result of these limitations, the system technology does not meet many citizens' expectations in terms of capabilities.¹⁰ For example, at the time of the shootings at Virginia Tech University, some bystanders sent texts to 9-1-1. Since the outdated 9-1-1 system was unable to receive text messages, they did not reach emergency officials. In addition to the inability to receive text, data and images; calls can be delayed or dropped when analog and digital systems do not mesh. Information on the location of a call can be lost because the digital details cannot be transmitted by the underlying telecommunications infrastructure or understood by the computers at Public Safety Answering Points (PSAPs).¹¹

The Next Generation 9-1-1 (NG 9-1-1) initiative will establish the foundation for public emergency communications services in a wireless mobile society.¹² With the NG 9-1-1 on the horizon, future technology costs for public safety dispatch may increase beyond the financial reach of many individual communities.

In order to keep pace with the rapidly advancing technology available to the public, the U.S. Department of Transportation has a research and development project called the Next Generation 9-1-1 Initiative. The project, funded by the Intelligent Transportation System (ITS) Joint Program Office (JPO), aims to define the architecture of an emergency response system that, in addition to voice, can also receive other data such as text messages, images and videos.¹³ Next Generation 9-1-1 (NG9-1-1) is based on Internet Protocol (IP) technology. According to a report by the Congressional Research Service, "an IP-enabled emergency communications network that supports 9-1-1 will facilitate

An IP-enabled communications network...will facilitate interoperability and system resilience; improve connections between 9-1-1 call centers, provide more robust capacity; and offer flexibility in receiving calls.

⁶ *Next Generation 9-1-1 frequently asked questions*, RITA Intelligent Transportation Systems . Retrieved from http://www.its.dot.gov/ng911/ng911_faq.htm

⁷ RITA

⁸ Moore , Linda K. 2009. Emergency Communications: The Future of 911. Congressional Research Service. Report RL34755. Retrieved from www.crs.gov on 11 Nov. 2009

⁹ Moore, Linda K. (2009).

¹⁰ *Next Generation 9-1-1 frequently asked questions*

¹¹ Moore, Linda K. (2009).

¹² Research and Innovative Technology Administration (RITA), U.S. Department of Transportation (US DOT), 1200 New Jersey Avenue, SE • Washington, DC.

¹³ RITA

interoperability and system resilience; improve connections between 9-1-1 call centers, provide more robust capacity; and offer flexibility in receiving calls.”¹⁴

Roger Hixon, technical issues director for NENA, says that NG9-1-1 is software-based or database-controlled and therefore can be accessed from anywhere with a password or ID. In the case of an emergency that requires calls to be rerouted to another center, today's technology dictates that the PSAP manager call the telephone company to reroute calls. According to Hixon, this can take up to 20 minutes, “with NG9-1-1 you simply log in at your terminal and make the change...This can be done in 35-40 seconds.”¹⁵

Editor of DISPATCH Magazine On-Line Gary Allan¹⁶ says this technology is not likely to become standard in the near future. “We’re at the bleeding edge of that technology,” he says. “It’s not a common technology. If you want to prepare down the line 20 years, you can find vendors who will put that in for you.”¹⁷

However, more communities are beginning to make the switch to an IP based system. In 2007, Vermont installed an IP based 9-1-1 telecommunications system in two data centers. All incoming 9-1-1 calls first go to those two data centers. The calls are then converted into voice over internet protocol (VoIP). The data centers then route the calls to one of eight public safety answering points (PSAPs) around the state. In the case of an emergency, calls can easily be rerouted to a nearby PSAP. If that does not work, the call then rolls to the third tier, according to Jim Lipinski, information technology (IT) manager for the state of Vermont.¹⁸ Lipinski says switching to an IP network has enabled Vermont to reduce the number of PSAPs by two because the network ensures that a call to 9-1-1 will be answered. If Vermont were to share an IP network with another state, Lipinski says the number of PSAPs could be further reduced.¹⁹

In Galveston County, Texas all eight PSAPs use IP technology and each PSAP can monitor the 9-1-1 call traffic at the others. The district also has an IP-base mobile PSAP which functions in any location with broadband internet access. Dispatchers log in at their position and begin taking 9-1-1 calls.²⁰ Alabama’s Limestone County has

¹⁴ Moore, L. (2008). Emergency communications: the future of 911. *CRS Report for Congress*, Retrieved from <http://www.fas.org/sgp/crs/misc/RL34755.pdf>

¹⁵ Hixon, Roger. telephone interview with Caitlin Johnson, 27 October, 2009

¹⁶ According to DISPATCH Magazine On-Line, Allan spent nearly 20 years as a dispatcher with both a fire department and police-fire comm center in California.
http://www.911dispatch.com/db/index.php?option=com_content&task=view&id=21&Itemid=33

¹⁷ Allan, Gary, telephone interview with Caitlin Johnson, 26 October 2009

¹⁸ Raths, D. (2008, August 4). 911 systems upgrade to accept text messages and video. *Emergency Management*, Retrieved from <http://www.emergencymgmt.com/safety/911-Systems-Upgrade-to.html>

¹⁹ Lipinsky, Jim. Telephone interview with Caitlin Johnson, 27 October, 2009

²⁰ National IP Network and NG9-1-1 Progress, National Emergency Number Association
h:\windows\personal\Copy of 20090209_NatIPNtwk_NG911Progress.xls

been IP capable since October 2006.²¹ In 2008, Massachusetts passed a law which makes the state's 9-1-1 in charge of planning a Next Generation 9-1-1 system based on IP technology.²²

²¹ Lipinsky, Jim.

²² Lipinsky, Jim.

REGIONAL COLLABORATION

The Centers for Regional Excellence (CRE) Program suggests the first step in any regional collaborative effort is simply getting stakeholders to talk to each other. Identify the stakeholders and making sure they are involved is an important step. According to CRE,

“Any community or other entity that might be affected by collaborative efforts should be at the table, at least initially... People or organizations that are left out at the beginning may be much harder to bring in at the end. If everyone feels a part of the initiative, public support will be broader.”²³

CRE encourages the parties involved in such discussion, that no matter what happens, “keep talking.” The process of collaboration—and especially a consolidation of services—can be highly politicized and hotly debated. It is important that lines of communication remain open, even if disagreements arise between participants.

Taking inventory or data collection is the next step. For this particular study, it includes assessing the equipment, operations and technology used by the participating jurisdictions. During the data collection process, it is essential that calls for service are counted in the same manner, and that there is an agreement to consistent standards in the areas of quality of service and operations. Technology-related issues include assessing the state and age of the dispatch centers of each jurisdiction, whether upgrades are being considered, and which CAD map sources and interfaces are being used.²⁴ The topography of the area might also be a concern, as radio towers must be able to transmit signals across a broader geography, including valleys and ridges.

Public outreach can be critical to a collaborative process, according to the Centers for Regional Excellence. Keeping the public educated and informed of progress will help to dispel any misunderstanding and depoliticize what has the potential of being the target of debate. Selecting one individual as the media contact person can facilitate the dissemination of information, with an additional person responsible for handling technical questions as they arise.²⁵

Throughout the process, documentation is essential. Having an accurate and thorough paper trail will provide a record of the work that has been completed, discussions that have taken place, and the people who have been involved. The feasibility study will provide one source of record keeping, and will document the

²³ CRE

²⁴ O'Connor & Hudson.

²⁵ CRE

process of determining whether or not a consolidated dispatch facility is a reasonable prospect for the municipalities considering it. At more advanced stages of the process, legal documents and formal inter-jurisdictional cooperative agreements will be necessary.

Consolidated Dispatch Profiles

In order to determine the alternatives for various aspects of a consolidated dispatch center (e.g., governance, structure, finance), and to ensure relevant data were collected and analyzed; the PM identified several consolidated dispatch centers. While there are an estimated 6,121 public safety answering points (PSAPs)²⁶ throughout the country, it is unclear how many serve more than one community. The profiled consolidated dispatch/9-1-1 centers below provide representation of those in Ohio, those that are well established, and those that are beginning the process.

Governance, Leadership, Structure, and Operations

This section discusses organizational, operating, and governing structure of the consolidated dispatch centers examined. It addresses chain of command, staffing, area/communities encompassed, unionization and several other topics.

Lake County, Ohio

The central communications division in Lake County, Ohio, which has been operating for more than 20 years, handles public safety dispatch for 12 police departments and eight fire departments in Lake County. This represents a large portion of the geographic area of the county. The commander of the division reports directly to the sheriff. As the center is a county division, many services including payroll, technology support, maintenance and other administrative and support functions are provided by the county.

There are four shift supervisors who report to an executive supervisor; the executive supervisor reports directly to the commander. There are 22 full-time dispatchers, five part-time dispatchers and three civilian administrative staff. Dispatchers are members of a union. The division is paramilitary in structure with each supervisor having a rank, such as lieutenant, sergeant, etc. The lieutenant, with the assistance of the sergeants, is responsible for the day-to-day oversight of the division including scheduling, training, performance reviews, and disciplinary issues.

²⁶ Dispatch Magazine On-Line, <http://www.9-1-1dispatch.com/info/fact-figures.html>, accessed February 25, 2009.

Although all dispatchers are trained to handle calls for police, fire and EMS, any dispatcher may be assigned to dispatch for fire or police for a specific community or communities on any given day. However, depending on availability of other dispatchers, any available staff members may be called upon to handle any call that comes into the center. Following a recent renovation of the dispatch center's space, the division was considering a move toward a call taker format. When the transition occurs, any dispatcher may be assigned to be a call taker, fire dispatcher or police dispatcher on any given day.

Chagrin Falls, Ohio

The Chagrin Falls dispatch center is housed in the Chagrin Falls police department. The center provides dispatch services for police and/or fire departments for Chagrin Falls Village, Village of Bentleyville, Chagrin Falls Township, Hunting Valley, Moreland Hills, Orange Village, Village of South Russell, and Woodmere Village. The center has a communications committee that meets on capital improvements. This committee meets a minimum of once per year and must approve any proposed capital improvements before requests go to the village council. The committee is comprised of one representative from each community.

There is a staff of six full-time dispatchers, two part-time dispatchers, and a chief dispatcher who, in addition to dispatching, serves as records clerk for the department. Dispatchers report to the chief dispatcher, who reports directly to the chief of police. This center does not use call takers.

Chagrin Falls has a contract with participating communities. These contracts are for an indefinite term (they automatically renew). However, there is a 180-day notice required for cancellation from either party.

Hamilton County, Ohio

The Hamilton County, Ohio consolidated dispatch service is a county run service. It was established in 1949 and now services a population of around 800,000, which includes 36 police departments and 38 fire departments within Hamilton County, as well as the county sheriff's office. Because of potential disputes over which particular community would administer the service, the county took control of the dispatch center. As a result, the center is governed by the county commissioners. The director of the dispatch center reports directly to the county administrator.

Hamilton County, Ohio consolidated dispatch service was established in 1949 and services a population of around 800,000, including 36 police departments and 38 fire departments and the county sheriff's office.

Reporting to the director is an operations manager with nine supervisors directly reporting to them, two or three per shift. The supervisors have 67 dispatchers that report directly to them. These 67 dispatchers are divided among the shifts, with the second shift staffed at the highest levels, varying between 20 and 30 dispatchers.

Charleston County, South Carolina

Following completion of a feasibility study completed in April 2007, Charleston County and several local jurisdictions began the process of developing an agreement to consolidate dispatch functions. Once the consolidation is complete, the Charleston County consolidated 9-1-1 center will serve as the public safety answering point for law enforcement, fire and emergency medical services for all of Charleston County which has 16 towns and cities, unincorporated areas, and various public service districts and fire districts. Also covered will be those portions of the cities of Charleston and North Charleston, which are beyond the limits of Charleston County. Although this center is a county department, a multi-jurisdictional and multi-disciplinary consolidated dispatch board oversees operational protocols and procedures. The director is expected to work closely with the board which has authority for operational protocols. This board also has significant input into the 9-1-1 center's budget and the selection, oversight and evaluation of the center director. The board consists of the county sheriff and EMS director, the police chief and fire chief of each of the large municipalities, two representatives appointed from the fire chiefs association, and one additional law enforcement seat that is filled on a rotating basis among the island communities. There are also two non-voting members; one representing the county administrator, the other a federal agency representative.

The Consolidated Dispatch Board oversees operational protocols and procedures and will have significant input into the budget and oversight and evaluation of the center director.

Each participating entity has signed an intergovernmental agreement that outlines financial responsibilities and funding, governing structure, board representation, equipment ownership, transition issues, hiring and roles of the center director, roles of the consolidated dispatch board, duration of agreement (including withdrawal) and other issues. The agreement required the county to create a department of public safety communications that would operate the center. The county provides services including payroll, facilities maintenance, risk management, legal support, procurement, and employee benefits. The city of Charleston participated in the process but did not sign the intergovernmental agreement by its January 2008 effective date. Recently the city of Charleston requested to join the agreement and an addendum to the agreement which adds Charleston as a participating member is currently under the process of approval by the participating jurisdictions.

This center is led by a director who will oversee a staff of approximately 150 employees. The director is responsible for (1) cooperatively developing strategic and operational plans, policies and procedures, (2) determining personnel and budgetary requirements, (3) acquiring and implementing appropriate technology and equipment, (4) hiring staff members, and (5) establishing a “readiness” program for dispatchers in participating agencies. The position reports directly to the county administrator and is responsible for following county policies and procedures.

Consolidation for Charleston County 9-1-1 began January 2009, when the Charleston County sheriff’s office dispatch operations and the county’s emergency medical services dispatch operations merged under the newly hired consolidated 9-1-1 center director. Other participating agencies are planning to come into the existing consolidated 9-1-1 center prior to full consolidation to take place in a new facility, scheduled to open in late 2012. As per the agreement, efforts are underway to transition current dispatchers at participating agencies to the consolidated 9-1-1 center.^{27 28}

Red River Regional Dispatch Center, North Dakota

Red River regional dispatch center is an independent tax-exempt entity created through a joint powers agreement. The dispatch center is governed by a nine-member board of authority made up of representatives from each of the participating communities. The board includes the Cass County sheriff, the Fargo police chief, the West Fargo police chief, the Fargo fire chief, the F-M Ambulance, the Clay County sheriff, the Moorhead County police chief, the Hawley police chief, and the Moorhead fire chief.

Reporting directly to the board of authority is the director of the center. The members of the dispatch center’s board of authority are responsible for reporting to their own authority boards within their own communities. However, the director of the dispatch center is solely responsible for reporting to the dispatch center’s board of authority. In an interview, the center’s director emphasized the benefits of this direct reporting responsibility which allows for more efficient improvements to the center. For example, the director is insulated from the lengthy political process that would inevitably ensue were he forced to approach the individual town governments for each request.

²⁷ Lambert, Lori. Interview by Daila Shimek on 18 September 2009.

²⁸ Overview of Establishment, Charleston County Consolidated 9-1-1 Center (<http://www.charlestoncounty.org/departments/dispatch/overview.htm>)

Beneath the director in the chain of command are a radio communications coordinator and two network engineers from the city of Fargo's information technology (IT) department, as well as an assistant director. Reporting directly to the assistant director are the shift supervisors. Ideally the center would prefer six or seven shift supervisors, supervising four to five communications operators (dispatchers). However, the center's desire for improved performance has limited the number of current shift supervisors until current communications operators meet the necessary skills to take on that role.

The Red River regional dispatch center is responsible for its own administrative functions. For the purposes of cost savings, the center has elected to outsource most of these administrative functions to a third party.

Unlike county or city operated communications centers, the Red River regional dispatch center is responsible for its own administrative functions. For the purposes of cost savings, the center has elected to outsource most of these administrative functions to a third party.

Stanislaus Regional 9-1-1, California

An emergency dispatch agreement was created in 1996 between the city of Modesto, California and Stanislaus County, California. Upon its expiration in 1999, the two sides entered a joint powers agreement for emergency dispatch services. It was this joint powers agreement that created the current consolidated emergency dispatch agency. The agency is governed by a commission made up of representatives from each of the jurisdictions participating in the consolidated dispatch agreement. The seven member commission includes, per the joint power agreement, one member of the Modesto city council, one member from the county's board of supervisors, the county chief executive officer, the Modesto city manager, two members from the dispatch advisory board, and one member selected to the city council of the city of Ceres.

The agency is governed by a commission made up of representatives from each of the jurisdictions participating in the consolidated dispatch agreement.

Though the dispatch agency is governed by a joint powers agreement, those employed by the dispatch agency are county employees. The chain of command within the center is lead by the center's director. Reporting directly to the director is the deputy director of operations. The deputy director supervises four shift managers, four system engineers, and two application specialists. The four shift managers oversee 40 dispatchers and four call takers. In addition the center employs 10 part-time emergency call takers.

Finance

The following summary represents data obtained online and from representatives of the identified consolidated dispatch centers. This section provides an overview of how the costs are allocated among participating communities and any special financing mechanisms in place.

Lake County, Ohio

The Lake County central communications division enters into three-year contracts with communities. Charges to communities are based on various factors including number of police and breakdown of command, population, and number and type of calls over the previous five years. Annual fees cover maintenance, operating and capital expenses for the center.

Chagrin Falls, Ohio

The Chagrin Falls dispatch center charges participating communities based on their portion of the total number of dispatched calls. The total estimated operating and capital costs for the center are apportioned according to each participating community's percentage of the center total dispatched calls (calls for service) from the previous year. Although both non-emergency and emergency police and fire department calls (depending on the contracted service) come through the center, non-emergency calls are not included among the calls billed.

Total estimated operating and capital costs for the center are apportioned according to each participant's percentage of the center's total calls for service from the previous year.

Hamilton County, Ohio

The current operating expenses and capital improvements for the dispatch center are governed by contractual agreements between the county and each individual community. The contractual agreements establish that capital improvements are the responsibility of the county, while annual operating costs are divided among the communities on a fee-for-service basis. In 2009, each community pays \$14.50 for each call requiring the dispatch of a service. Currently, the center is responsible for dispatch services for most of Hamilton County with the exception of the city of Cincinnati. It has grown to this level through the addition of communities from its inception in 1949. In the

In 2009, each community will pay \$14.50 for each call requiring the dispatch of a service.

acquisition of new communities, the first year of dispatch fees were waived to allow new communities to purchase the necessary radio equipment compatible with the center's technology.

Charleston County, South Carolina

The new fully consolidated center will have an annual operating budget of approximately \$10 million. The intergovernmental agreement (see Appendix D) for the consolidated 9-1-1 center in Charleston County outlines how various funding issues are to be addressed. This agreement distinguishes between capital, transitional and operational costs. It outlines what each of the participating communities will pay for the first through third years and beyond. An overview of funding is presented below.

- Capital costs are funded by Charleston County. These costs include start-up costs associated with building and equipping the 9-1-1 center, land acquisition, designing, constructing, furnishing and equipping the facility, networking, and installing or otherwise providing for other technology and phone infrastructure.
- Transitional costs are also funded by Charleston County. These costs include staffing, training and consultant costs before the center becomes fully operational.
- Operational costs are any costs to operate the new center once it becomes activated with full consolidation of participating agencies. The party responsible for these costs, and the portion for which they are responsible, is apportioned as follows:
 - The first year, each participating jurisdiction will pay Charleston County 100 percent of the costs they would otherwise incur for continuing their own dispatch operations.
 - The second year, each participating jurisdiction will pay Charleston County 50 percent of the costs they would otherwise incur for continuing their own dispatch operations.
 - The third year and beyond, Charleston County will take on the full costs to operate the center. Charleston County council has not officially made the determination as to the source of the additional funding needed.
- County funding currently used for 9-1-1 service provision will be used to fund the center. This includes county wireline and wireless 9-1-1 surcharges that will be used to help fund equipment, software networking/connectivity, logging recorders and mapping for the public safety access points.

The first year, each participating jurisdiction will pay Charleston County 100 percent of the costs they would otherwise incur for continuing their own dispatch operations.

Red River Regional Dispatch Center, North Dakota

The Red River regional dispatch center sought to minimize initial capital costs as much as possible. This included leasing a newly rehabilitated office building, in lieu of purchasing an existing building or constructing a new one. It hopes to eventually purchase its own building, but for purposes of reducing initial start-up costs, it was this approach that was chosen. Additionally it sought to utilize as much of the existing equipment (consoles) as possible. In exchange for contributed equipment, communities received credits toward their portion of the dispatch center's initial start-up costs. Additional communities received similar credits for their contribution of consoles to the back-up facility. Those participating entities not contributing equipment were responsible for their full share of the start-up costs.

In exchange for contributed equipment, communities received credits toward their portion of the dispatch center's initial start-up costs.

Once initial capital cost contributions were established, the annual division of operational costs was established. The center looked at two schools of thought regarding the division of operational costs: population-based and call-based. Red River regional dispatch center considered both options, but ultimately settled on a population-based model. Its research uncovered issues with the call-based models. The dispatch center learned that disputes arise over the definition of a call-for-service. Because of this concern, it chose the population-based cost-division model. The largest population is responsible for 50 percent of the costs, followed by 19 percent, 11 percent, 10.5 percent, and 8.5 percent.

Red River regional dispatch center chose a population-based model for allocating costs among participants.

Stanislaus Regional 9-1-1 Center, California

Stanislaus regional 9-1-1 center utilized grants to subsidize 50 percent of the initial start-up capital costs. For the remainder of the capital costs as well as the annual operational costs, Stanislaus regional 9-1-1 compiled a cost sharing committee to evaluate the most equitable and effective method of dividing the costs. This committee researched and evaluated several cost sharing methods from other consolidated dispatch services around the country. It uncovered five calculations for dividing the costs. The five methods varied in complexity, and the committee finally settled on a simple population model, where each participating entity pays based on its portion of the participating population.

Stanislaus regional 9-1-1 utilized grants to subsidize 50 percent of the initial start-up capital costs.

The committee ultimately decided on the population model for several reasons; these include its fairness and ease of calculation. In addition, it would (1) be based on the widely accepted California department of finance population statistics, (2) easily explain why an agency's costs have increased, (3) automatically shift the cost-share burden to accommodate the demographic changes to the county, (4) make it easier to calculate the city additions to the network, and (5) make it easier to calculate the financial impact to participants if a city withdraws from the network.

At the time of the consolidation the population model was determined to be the best option. However, the funding model is evaluated every three years to ensure that it continues to accommodate the center's needs. Following an evaluation, the committee reconvenes to determine whether changes are needed.

Cooperation and Collaboration

Consolidation of any service will require cooperation and collaboration among the participants. According to Kimball Consulting, public safety consolidation consultants, one of the reasons few consolidation projects reach the planning stage is because of political/ institutional resistance to change.²⁹ Some communities collaborated on projects prior to the consolidation of the dispatch functions. This served as a "warm up" to the consolidation itself.

One of the reasons few consolidation projects reach the planning stage is because of political/ institutional resistance to change.

In the instance of the Chagrin Falls dispatch center, an example of cooperation and collaboration is the Valley Enforcement Group. The members of this group, Chagrin Falls and 13 other communities, provide specialized services such as special weapons

²⁹ Your Guide through the Consolidation Maze. Kimball Consulting. Ebensburg, PA.

and tactics (SWAT) and other special units. This group's membership parallels the Valley Council of Governments which, among other things, makes group purchases such as radios, mobile equipment, etc.

LEGAL AUTHORITY FOR CONSOLIDATED DISPATCH CENTERS IN OHIO

In the review of literature, interviews with operators of multi-community dispatch centers, and a focus group of individuals responsible for participating community dispatch centers, several considerations were identified as important in consolidating dispatch functions: legal, financial, service levels and interoperability/technology. This section provides an overview of the legal authority to consolidate dispatch centers in Ohio.

Legal authority for participation by any or all of the municipalities in any of the potential governance structures discussed under the heading “Next Steps” would have to derive from the same source: Section 3 of Article XVIII of the Ohio Constitution, which confers on every municipality in the state, the authority to exercise all powers of local self-government. Those powers may be exercised pursuant to, and in accordance with, a municipal charter adopted under Section 7 of Article XVIII; but adoption of a charter is not a prerequisite to or condition of the exercise of such power. The city of Parma and the village of Valley View are the only municipalities covered by this study that have not adopted a charter.

Among the municipal powers of local self-government is the authority to provide for the dispatching of public safety personnel and the authority to enter into contracts with other public and private entities, as determined by the municipality to be necessary or desirable for carrying out municipal functions. Certain constitutional limitations on the power to enter into and carry out such contracts apply to all municipalities. In the case of municipalities governed by a charter, the charter may contain additional procedural or substantive limitations or requirements that must be observed by the respective municipalities.

By legislation, the Ohio General Assembly has provided for the power of political subdivisions by agreement, to create various kinds of special districts having authority to carry out specified governmental functions, and in some cases, having the ability (with voter approval) to levy certain taxes or to incur debt (or both), in order to provide for the financing and operation of the special district. A review of Ohio statutes does not disclose any statutory authority for a group of municipalities by agreement to establish a special district with the authority to levy taxes or to incur debt for the purpose of providing a consolidated dispatch system to serve the participating municipalities. That being the case, the options that are available to the potential participants in this case would involve contractual arrangements, including one that would include Cuyahoga County, pursuant to Section 307.15 of the Revised Code. A council of governments established under Chapter 167 of the Revised Code is essentially a contractual arrangement as well.

A constitutional limitation that would be applicable to each of the three potential government structures that would entail contracts for shared services is found in Sections 2 and 12 of Article XII of the Ohio Constitution. This would in effect require an annual appropriation of money by each of the participating municipalities' legislative authority for that year under the cooperative agreement. An agreement for shared dispatch services could be multi-year in nature, but each participant's financial obligation for payment of ongoing operational costs would be limited by this annual appropriation requirement. Such multi-year agreements would be "continuing contracts" under Section 5705.41 of the Revised Code, which requires the fiscal officer of a municipality to certify with respect to every contract providing for the expenditure of money that the amount required to meet the obligations for the municipality under the contract is in the treasury of the municipality or in the process of collection to an appropriate account. In the case of a continuing contract, that initial certification can be limited to the current year's obligation.

None of the charters of the potential participants contains a limitation or prohibition on the ability of the municipality to enter into and carry out a cooperative agreement for shared dispatch services. Each charter does, however, contain procedural requirements that must be observed with respect to the municipal legislative action for authorization to enter into such an agreement. Such legislative action in the case of each of the municipalities having a charter would be subject to a possible referendum election by the voters of that municipality and could not take effect until such time as the period permitted for the filing of a referendum petition expires without such a petition having been filed, or the legislation is approved by the voters if a referendum petition is filed.

Some of the charters also provide that legislation authorizing an agreement for the joint exercise of municipal powers may not be enacted under suspension of the rules requiring multiple readings (usually three) of the proposed legislation before a vote can be taken on its enactment. Both the referendum and readings requirements can delay the effectiveness of a participant's ability to enter into the cooperative agreement, so it would be necessary to account for such potential delays in the planning for and implementation of a cooperative agreement. For the protection of the interests of all of the participants, it would be advisable for each participant to be required to furnish (for the benefit of the others), and a complete record of that municipality's proceedings with respect to the authorization of the cooperative agreement. It would also be advisable for each participant to provide an opinion of counsel for the municipality as to the regularity of those proceedings and the validity and enforceability of the municipality's obligations under the agreement.

There does not appear to be authority for one of the participating municipalities to incur debt other than for the payment of that municipality's share of the cost of

permanent improvements such as land, buildings and equipment that would be needed for the dispatch system. That being the case, the cooperative agreement would have to make provision for each of the participants to provide for payment of its respective share of the cost of any such permanent improvements to the municipality that would be responsible for the construction and acquisition of those permanent improvements.

ASSESSING LEVEL OF SERVICE

Advancements in technology, adequate training, and staffing levels most directly affect service levels. Given proposed staffing levels and investments in training and technology, services levels in a consolidated dispatch should exceed those currently provided individually by the communities participating in this study.

The purpose of this section of the report is to assess whether the level of service (quality and quantity) provided by a consolidated dispatch center would meet or exceed existing dispatch services. This section also develops estimates of staffing levels need to meet or exceed the collective call volume of the study participants.

Within this report, the concept of quality is based primarily on the ability of callers to obtain the services required, and the ability of dispatchers to communicate with the caller, police, fire, and EMS. With regard to quantity, it is assumed that a consolidated dispatch center offering wages at the higher end of the range (as compared to those currently provided by communities participating in the study) would attract the highest caliber of employee. High quality employees, combined with advanced technology in equipment, and investment in employee training, should lead to an increase in productivity.

The equipment and technology proposed for this dispatch center would be strategic. Purchases would enable communities to transition to Next Generation 9-1-1 (NG9-1-1). NG9-1-1 is based on Internet Protocol (IP) technology. According to a report by the Congressional Research Service, “an IP-enabled emergency communications network that supports 9-1-1 will facilitate interoperability and system resilience, improve connections between 9-1-1 call centers, provide more robust capacity, and offer flexibility in receiving calls.”³⁰

NG9-1-1 has both software-based (geographic information systems) and database control mechanisms that enable access from anywhere with a password or ID. In the case of an emergency that requires calls to be rerouted to another center, most of today’s technology dictates that the PSAP manager call the telephone company to reroute calls, which can take up to 20 minutes. With NG9-1-1, you log and make the change in 35-40 seconds.”³¹

Adequate staffing levels and proper training will help ensure calls are handled within a reasonable time and appropriate public safety personnel are dispatched quickly and to the correct location.

³⁰ Moore, L. (2008). Emergency communications: the future of 911. *Congressional Research Service Report for Congress*, Retrieved from <http://www.fas.org/sgp/crs/misc/RL34755.pdf>

³¹ Roger Hixon, telephone interview with Caitlin Johnson, 27 October, 2009

The general consensus of the advisory group of public safety officials from participating communities was that in order for them to consider participating in a consolidated center, the center would need to maintain or improve its existing levels of service at an equal or lesser cost. The purpose of this section of the study is to discuss the findings of the literature review in terms of equipment, technology and staffing, and to provide a cost analysis of centralizing dispatch operations.

Staffing Levels

Defining adequate service levels and the resulting staffing levels were a challenge. In setting a service level, The PM looked to professional organizations for standards. Other than the National Emergency Number Association (NENA) standards that 90 percent of all 9-1-1 calls arriving at a public safety answering point (PSAP) should be answered within 10 seconds during the busiest time of day and 95 percent of all calls to 9-1-1 should be answered within 20 seconds, there was limited guidance related to staffing.³² Among the communities profiled in the section of this report titled, "Regional Collaboration," staffing methodology varied by dispatch center. APCO has a staffing model; however, it assumes rotating shifts among employees. Since the advisory group for the project expressed concern over frequent shift changes, the PM did not use this model for the final analysis. Instead, the PM used Shift Schedules software, S-10-200, version 7.13 and Template Scheduler-100 version 6.12. To get a sense of a realistic and reasonable workload for dispatchers, the PM identified various communities against which the communities in the study could be benchmarked.

Before proceeding with the staffing analysis, it is important to explain some basic assumptions.

Assumptions

For each staff position that a municipality wants to fill for a 24-hour per day, seven days per week (24/7) shift, it will need to hire approximately five full time equivalents (FTEs).³³ The math underlying this assumption is outlined in Appendix G. When using software to schedule the estimated number of employees per shift, it produced a similar ratio.

³² National Emergency Number Association (NENA). "Call Answering Standard/Model Recommendation," Document 56-005, June 10, 2006.

³³ Ratio of total number of paid hours (part time, full time, contracted) during a period by the number of working hours in that period or a measurement equal to one staff person working a full-time work schedule for one year.

To present a conservative picture of staffing needs, the PM assumed the leave and work hours as indicated in Table 1 through Table 3. In addition, in using the scheduling software to estimate staffing needs, as many as three dispatchers per shift were scheduled for vacation at the same time. This helps present a scenario in which a larger number of hours would be required from part-time workers.

Table 1: Dispatcher and senior dispatcher/shift supervisor shifts

Shift	On duty	Paid Hours
1st	8.5	8.0
2nd	8.5	8.0
3rd	8.5	8.0

NOTE: This assumes 0.5 hour unpaid lunch.

Table 2: Vacation accrual rates

Shift	Vacation	
	# of dispatchers - 3 weeks off	# of dispatchers - 4 weeks off
1st	17	2
2nd	19	0
3rd	17	0

NOTE: Senior dispatchers/shift supervisors and senior-level managers are assumed to be earning four weeks vacation.

Table 3: Leave and training

Paid time off and training	3 weeks vacation	4 weeks vacation
Vacation	120	160
Sick (7 days)	56	56
Holidays (12 days)	96	96
Training	16	16
Total	288	328
Hours worked	1,792	1,752

Current Staffing

The figures in Table 4 show the 2008 dispatch average staffing levels by shift, as reported by each community. It also shows existing FTEs and total staffing.

Table 4: 2008 FTE and staffing levels

Community/dispatch center	Total part-time and full-time dispatchers on staff in 2008	Total dispatch staff FTEs (PT/FT)	Average positions/shift
Berea	8.0	6.1	1.50
Brecksville	7.0	6.0	1.50
Broadview Heights/Seven Hills	7.0	7.0	1.83
Brook Park	9.0	9.0	2.00
Brooklyn	6.0	6.0	2.00
Brooklyn Heights	2.0	1.8	0.47
Garfield Heights	11.0	9.0	2.00
Independence	11.0	9.5	2.50
Middleburg Heights	7.0	7.0	1.67
North Royalton	10.0	8.8	1.86
Parma	17.0	17.0	3.33
Parma Heights	9.0	6.5	2.00
Valley View	3.0	2.3	0.63
Total	107.0	96.0	23.29

Note: Staffing FTEs include clerks that provide backup for dispatch. Garfield Heights and Independence dispatchers are on 12-hour shifts.

Specific staffing data and compensation for each of the cities, where available, are provided in Appendix A. This narrative summarizes that data in general terms and discusses their implications.

Given the need to “do more with less,” there is pressure to maintain or reduce existing staffing levels. Assuming the staff per shift appropriately reflects each community’s needs; the communities using only full-time dispatchers appear to be understaffed. In the remaining communities, part-time staff is used to cover gaps in the schedule that cannot be filled by full-time employees. As demonstrated in Appendix G, unless there are five FTE’s for each staff position, gaps in scheduling are unavoidable. This would result in shifts that are understaffed or not staffed at all.

Unless there are five FTE’s for each (24/7) staff position, gaps in scheduling are unavoidable.

When such gaps occur, the community faces several options; none of which are ideal:

- Leave the shift understaffed or understaffed
- Staff the shift with dispatch personnel on overtime
 - In the form of cash overtime

- In the form of time off in lieu of cash compensation or compensatory time also known as comp time
- Staff the shift with personnel other than dispatch personnel on regular pay or overtime pay
 - Lower cost staff that may not be properly trained as a dispatcher
 - Higher cost staff that is trained as dispatcher or has sufficient knowledge of dispatching
 - Higher cost staff that is not trained as a dispatcher and possess insufficient knowledge of dispatching

Data collected from municipalities indicate that most gaps in schedules are not being filled using cash overtime. The cash overtime data (Table 9) are low relative to staff shortages. This means that (1) understaffed shifts remain understaffed, (2) are being covered with personnel other than dispatchers or (3) dispatchers are electing to take compensatory time in lieu of cash overtime. Data suggest that the last of these possibilities is most likely. In the long run, this option proves the most costly.

If a shift goes uncovered, service levels are compromised. If the shift is filled with personnel other than dispatchers, service levels are not compromised as severely but operations are not as efficient as possible. Payment of overtime to dispatch personnel is expensive but maintains normal service levels as long as the cumulative effect of overtime does not compromise the ability of the workforce to maintain appropriate service levels or the financial capability of the municipality to maintain its financial health in general and that of its safety forces in particular.

Compensatory time paid to personnel to fill an eight-hour shift, creates a 12-hour liability; essentially it widens any gap between staffing requirements and available staff. If a municipality is already understaffed, using compensatory time only exacerbates the situation. Again, the data point to a use of compensatory time in lieu of cash for dispatchers.

Compensatory time paid to personnel to fill an eight-hour shift, creates a 12-hour liability; it essentially widens any gap between staffing requirements and available staff.

Having emphasized the importance of maintaining adequate staffing levels, the next section discusses the procedures and outcome of the staffing analysis.

Workload and Staffing Analysis

It is important to note that the breakdown of staffing in Table 7 is used for the purpose of assessing staffing needs and developing overall staffing estimates. These figures are also used to determine the overall staffing needs and serve as a foundation for the financial calculations in Table 14. The staffing estimates developed in this section were reviewed and approved by the advisory group of public safety representatives of the participating communities.

Although dispatch staff may be assigned to serve as a call taker, fire dispatcher or police dispatcher for a given shift, all dispatchers will be cross trained and expected to serve in one of these capacities at any given time. If call volume demands additional fire dispatchers, other on duty staff will be called upon to handle fire calls until such time that incoming calls permit them to return to their original assignment. In essence, all 13 dispatchers are available, as needed, to any community participating in the dispatch center and for any dispatch purpose. Senior dispatchers or shift supervisors (two per shift) would also be trained and equipped to dispatch calls.

To determine an appropriate number of dispatchers per shift, the PM used the average dispatcher workload (total calls per dispatcher) of benchmark communities.³⁴ This was used in lieu of current community data because the majority of participating communities have dispatchers that serve in other capacities (e.g., jail matron, clerk of courts) in addition to their dispatch duties. If dispatchers are able to take on other duties beyond answering calls and related dispatch duties, the number of calls received in a given time period will not reflect their full capacity to handle incoming calls and related dispatch duties. The average workload for dispatchers in the benchmark communities was eight calls handled per FTE per hour. This figure was applied to the total number of calls reported by each community for 2008 (see Table 5) to estimate the number of FTEs needed by each community. Fractions of FTEs were combined among communities into whole numbers to come up with the total number of dispatchers required per shift as shown in Table 6.

Table 5: 2008 dispatched calls by community

Community/dispatch center	Dispatched calls 2008	Estimated total calls 2008
Berea	31,356	94,068
Brecksville	16,626	49,879
Broadview Heights/Seven Hills	7,882	23,646
Brook Park	24,664	73,991
Brooklyn	13,257	39,771
Brooklyn Heights	6,179	18,537

³⁴ Ammons, David N. (2001). *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards*. Thousand Oaks, CA: Sage.

Community/dispatch center	Dispatched calls 2008	Estimated total calls 2008
Garfield Heights	25,186	75,558
Independence	35,620	106,860
Middleburg Heights	6,078	18,234
North Royalton	38,085	114,254
Parma	70,356	211,068
Parma Heights	15,011	45,034
Valley View	7,188	21,564
Total	297,488	798,397

NOTE: Berea's figures represent the total actual calls, not estimated. Total calls were calculated based on the assumption that dispatched/emergency calls are one-third of total calls.

Table 6: Dispatcher staffing per shift

Community/dispatch center	Dispatchers/ call takers
Berea	3
Independence	
Brecksville	1
Broadview Heights/Seven Hills	
Brook Park	2
Brooklyn	
Brooklyn Heights	
Middleburg Heights	2
North Royalton	
Parma	3
Garfield Heights	2
Parma Heights	
Valley View	
Total per shift	13

Estimates for dispatchers were further adjusted based on dispatched call volume; fewer dispatchers were assigned to third shifts as well as all shifts on Sunday. Staffing levels for supervisors were determined by applying the median ratio of staff to supervisors (7:1) as taken from a survey of 53 dispatch centers across the United States.³⁵ Total projected staffing needs by shift are displayed in Table 7. Based on this schedule, for dispatchers, 106,496 dispatcher hours are needed. For senior dispatchers/shift supervisors, 17,472 hours are needed. These are achieved through the use of a combination of full-time and part-time employees. Full-time dispatchers account for 98,480 hours, part-time dispatchers 9,480 hours, and 192 hours available

³⁵ Kimball & Associates, Inc. (August 2003). PSAP Staffing Guidelines Report as Commissioned by NENA SWAT Operations Team.

for overtime. In the actual scheduling, there were no more than 15 dispatchers on duty at one time.

Table 7: Proposed staff on duty per shift

Shift and position	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 st shift-Dispatcher	12	13	13	13	13	13	13
2 nd shift- Dispatcher	12	13	13	13	13	13	13
3 rd shift- Dispatcher	10	11	11	11	11	11	11
1 st shift-Senior dispatcher/shift supervisor	2	2	2	2	2	2	2
2 nd shift- Senior dispatcher/shift supervisor	2	2	2	2	2	2	2
3 rd shift- Senior dispatcher/shift supervisor	2	2	2	2	2	2	2
1 st shift-Manager		1	1	1	1	1	
1 st , 2 nd , or 3 rd shift-Assistant Manager		1	1	1	1	1	

The per shift dispatcher staffing estimates in Table 7 were used in a staffing model³⁶ to project the total number of full-time employees needed for each category of employee. Employee scheduling software³⁷ was used to determine the number of part-time employees and the number of hours each would be needed. Both the staffing and scheduling model are designed for shift work. The scheduling software allowed for development of a one-year schedule that accounted time off for vacation and sick leave, as well as training. In determining total staffing needs, each full-time dispatcher was scheduled for three weeks vacation (four employees were given four weeks), seven sick days, 12 paid holidays and two training days. Full-time employees maintained the same shift and days off throughout the year. Part-time employees were generally given the same shift. In cases where there was a shift change, there was a minimum of one day off between shift change and in most cases at least two days off. The overall staffing needs are shown in Table 8.

Table 8: Total proposed staffing

Position	Total	Position	Total
1 st shift dispatchers	19	Office Manager (1 st shift only)	1
2 nd shift dispatchers	19	Information technology specialist (1 st shift only)	1
3 rd shift dispatchers	17	Assistant Manager	1
Part-time dispatchers	13	Manager	1
1 st shift senior dispatchers/shift supervisors	2		
2 nd shift senior dispatchers/shift supervisors	2		
3 rd shift senior dispatchers/shift supervisors	2		
Part-time senior dispatchers/shift supervisors	7		
Total dispatcher and supervisor FTEs	70	Total staff FTEs	85

³⁶ Shift Schedules, S-10-200, ver. 7.13

³⁷ Shift Schedules, Template Scheduler-100 ver. 6.12

Based on above staffing estimates, a consolidated dispatch center would require 26.5 fewer FTEs overall and 36 fewer dispatch FTEs than currently staffed in all participating communities. However, there would be almost six additional FTEs serving in a senior dispatcher or shift supervisor capacity. As a result of removing the dispatch function from a community, supervisors who are currently overseeing, scheduling, and evaluating dispatchers would have more time available for other activities. A monetary value can be placed on this opportunity cost and is estimated in Table 9.

Consolidation of dispatch functions would yield an overall reduction of approximately 26.5 FTEs and 36 fewer dispatch FTEs.

ASSESSING COST EFFECTIVENESS

One of the factors considered in evaluating the feasibility of consolidating dispatch functions of participants is whether the expenditure for a consolidated dispatch center is more cost effective than performing the function themselves. For the purposes of this study, an assessment of cost effectiveness will consider both the cost to provide the service as well as the quality or level of the service received. In other words, will the participating communities receive equal or better service at an equal or lower cost?

The analysis that follows projects a reduction in staffing (including benefits and overtime) and capital costs of \$1.64 million over 2008 costs reported by communities. This study does not provide an estimate of non-staff operating expenses (e.g., electric, gas, etc). Given the nature of these types of operating expenses, they are likely to be cost-neutral (or there will be a reduction) as compared to each community's current operating expenses for providing dispatch services. Centralization will reduce the physical blueprint of dispatch operations, which in turn should reduce operating costs such as natural gas, electric and maintenance. Given the assumption (as evidenced by the estimated costs) that the dispatch facility would have high quality equipment, facilities, and staff, the services provided by a consolidated dispatch center should exceed those currently being supplied.

This purpose of this section is to provide estimates of overall staffing and capital costs and provide a breakdown of the estimated cost for each participant. It is important to note that there are various methodologies for distributing these costs. Ultimately, participants in consolidation processes select a methodology they determine to be the most fair and equitable. If participants choose a different distribution method, the allocation of costs will differ from that provided in this report.

The analysis projects a reduction of \$1.64 million in capital and staffing.

Staffing Costs

To provide a benchmark against which the staffing cost estimates can be compared, Table 9 shows 2008 staffing costs (as reported by participating communities).

Table 9: 2008 staffing costs

Community/ dispatch center	2008 dispatcher costs-all shifts	2008 overtime (OT)	2008 dispatcher training costs	2008 supervisor costs	Total 2008 dispatcher and supervisor costs
Berea	\$388,928	\$7,749	\$1,000	\$10,261	\$407,938
Brecksville	\$361,893	\$33,070	\$190		\$395,153
Broadview Hts./ Seven Hills	\$381,686	\$12,000			\$393,686
Brook Park	\$488,171	\$9,696		\$54,737	\$552,604
Brooklyn	\$350,093				\$350,093
Brooklyn Heights	\$97,675	\$8,563	\$1,116	\$16,366	\$123,720
Garfield Heights	\$974,836	\$75,545		\$42,517	\$1,092,898
Independence	\$770,371	\$46,730			\$817,101
Middleburg Heights	\$365,416			\$19,380	\$384,796
North Royalton	\$511,027	\$21,134	\$1,870	\$30,165	\$564,196
Parma	\$1,113,237	\$54,448	\$6,280	\$75,149	\$1,249,114
Parma Heights	\$379,610	\$18,013		\$6,573	\$404,196
Valley View	\$129,409	\$11,345	\$1,479	\$21,684	\$163,917
Total	\$6,312,352	\$298,293	\$11,935	\$276,832	\$6,899,412

NOTE: Current costs in Table 9 do not include costs related to use of compensatory time and may not reflect all communities overtime costs. Supervisor costs were calculated by multiplying the hourly rate by 2080 hours, and by the percentage of time supervising/ overseeing the dispatch function. Brooklyn Heights and Valley View's actual costs in 2008 were contracted with Cuyahoga Heights at \$120,000 and \$133,000 respectively. Costs above were determined by prorating Cuyahoga Heights' 2008 actual costs according to each community's total number of calls dispatched.

In order to calculate the total estimated staffing costs for a consolidated dispatch center, the PM used the staffing figures shown in Table 8 and multiplied them by low, median and high hourly rates (Table 10) for the various positions. The low, median, average and high figures for dispatchers are based on answers submitted by participating communities. The low, median and high figures for the supervisor and manager are based on data from www.payscale.com. Low figure is at the 25th percentile; high is at the 90th percentile. The fringe benefit rate used for these figures is 35 percent. This is the international city/county manager's association (ICMA) average fringe benefit rate for police/fire.

Table 10: Estimated hourly rate including fringe benefits

Position	Hourly rate		
	Low	Median	High
Dispatchers/call takers	\$19.27	\$31.39	\$34.95
Senior dispatcher/ shift supervisor	\$21.95	\$26.91	\$36.83
Assistant center manager	\$25.97	\$30.41	\$41.11

Position	Hourly rate		
Dispatch center manager	\$28.85	\$33.79	\$45.68
Office manager	\$13.65	\$15.61	\$20.14
Technology support specialist	\$19.67	\$21.74	\$36.58

By using the low, median and high figures, there is a range from which the staffing budget can be estimated. Part time staff costs include vacation at a rate of .0577 hours per hour worked. Part-time workers were scheduled a total of 9,480 hours, averaging one to two days per week. With this schedule, an additional 192 hours were available for overtime. This was calculated at time and one-half for a total of 288 hours. It is important to note that “work rules” including how many dispatchers are permitted to take vacation at the same time will greatly affect the number of employees needed. The staffing scenario for this analysis allowed three dispatchers per shift to be off at the same time. In addition, if the minimum threshold for part-time workers is two days per week. The number of part-time workers would drop to 10 and the number of hours available for overtime would increase to 1,536. The total staffing costs for each type of employee are derived by applying the formulas below.

- Full time employees:
Hourly rate x 2,080 hours x Number of FTEs in that category
- Part time employees:
Hourly rate x Actual part-time hours scheduled
- Overtime:
Hourly rate x hours available for overtime x 1.5 (overtime rate)

Table 11 includes costs for all dispatchers, supervisors, and managers, as well as an office manager and technology support specialist.

Table 11: Projected annual wage costs by community

Community/ dispatch center	% of total	Low	Median	High
Berea	10.5%	\$333,161	\$507,255	\$631,475
Brecksville	5.6%	\$176,658	\$268,971	\$334,839
Broadview Heights/Seven Hills	2.6%	\$83,749	\$127,512	\$158,738
Brook Park	8.3%	\$262,054	\$398,990	\$496,698
Brooklyn	4.5%	\$140,857	\$214,462	\$266,981
Brooklyn Heights	2.1%	\$65,653	\$99,960	\$124,438
Garfield Heights	8.5%	\$267,604	\$407,441	\$507,218
Independence	12.0%	\$378,467	\$576,235	\$717,348
Middleburg Heights	2.0%	\$64,579	\$98,326	\$122,404
North Royalton	12.8%	\$404,656	\$616,109	\$766,986
Parma	23.6%	\$747,541	\$1,138,170	\$1,416,892
Parma Heights	5.0%	\$159,498	\$242,843	\$302,312

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Community/ dispatch center	% of total	Low	Median	High
Valley View	2.4%	\$76,373	\$116,282	\$144,758
Total		\$3,160,850	\$4,812,558	\$5,991,088

Since the majority of participants indicated that dispatchers perform tasks unrelated to dispatching and documenting calls, these communities will need to consider the costs to continue to provide these functions. Based on data provided by participating communities, Table 12 provides an estimate of the cost for each community to continue to provide services such as jail matron, clerk of courts, records clerk, and a number of other functions currently provided by dispatchers. This table also indicates the FTE each community estimated it would take to provide this function. Given the cost to provide the non-dispatch function and the actual workload in FTEs, communities may need to rethink how they provide these services, particularly those related to jails.

Table 12: Costs and FTEs to provide non-dispatch functions

Community/ dispatch center	FTEs required per shift for non-dispatch duties	Coverage hours needed per year to staff position	Shifts needed	Hourly rate	Fringe benefit rate	Total cost including fringe benefits
Berea	0.40	10,400	3	\$12.50	39.0%	\$180,700
Brecksville	0.20	10,400	3	\$18.68	29.5%	\$251,554
Broadview Heights/Seven Hills	0.03					NA
Brook Park	0.25	10,400	3	\$23.08	29.0%	\$309,600
Brooklyn	0.05					NA
Brooklyn Heights	0.15	2,080	1	\$23.00	42.5%	\$68,172
Garfield Heights	0.10	6,656	1 or 3	\$22.99	26.0%	\$192,807
Independence	0.05					NA
Middleburg Heights	0.80					NA
North Royalton	0.20	10,400	3	\$18.08	61.0%	\$302,648
Parma	0.10					NA
Parma Heights	0.02	2,080	1	\$32.46	68.4%	\$67,523
Valley View	0.15	2,080	1	\$23.00	42.5%	\$68,172

NOTE: Garfield Heights needs coverage one shift Monday through Friday and three shifts on weekends. NA indicates that data was not available or not applicable.

Non-Staff Operating and Capital Costs

With operating³⁸ and capital³⁹ costs, less specific analyses are required. If facilities and capital equipment can be consolidated and duplicate facilities and equipment reduced or eliminated, costs can be spread over a larger base and everyone benefits. Better equipment can be maintained and replaced on a timely basis. Data in Table 13 show that Parma is the only city that made a significant investment in capital over the past year. This is not unusual as capital expenditures are cyclical. However, the amounts spent by every other city except Parma Heights and North Royalton seem small (\$5,000 per year or less). In times of financial stress, capital expenditures, operation and maintenance costs are deferred first with precedence given to more immediate expenses and obligations. The data in Table 13 and seem to suggest that this is the case.

Consolidation of services would reduce the duplication of services and redundant capital projects. This in turn would free up money to maintain and replace capital items as their useful lives expire. Capital costs will also be reduced and evenly distributed from year to year for large items. Instead of the duplicate purchase of expensive equipment by several communities, the cost of large capital will be distributed over a larger base of beneficiaries. Consolidation allows capital expenditures to be financed spreading the cost out evenly over 10, 15, 20, or 30 years, rather than capital expenditures dominating a municipality's budget in random years.

There are a number costs associated with running a dispatch communications center. These can include utilities (electric, gas); telephone; reverse 9-1-1; overhead, fixed costs, maintenance agreements for generators, universal power supplies, and software; general office supplies and many others. Table 13 indicates the 2008 operating costs as provided by participating communities. These cost figures may not be comprehensive since many cost are tracked as part of the police or fire department budget, rather than as an expense of the dispatch center or function. As a result, liability insurance and operating and maintenance were not included in the total cost figures for 2008.

³⁸ These are ongoing, day-to-day expenses or costs. For the purposes of this report, non-staff operating costs refer to gas, water, sewer, phone, offices supplies and similar expenses.

³⁹ Capital costs refer to the cost to purchase fixed (non-consumable) assets with a useful life of several years.

Table 13: Operating and capital costs reported for 2008

Community/ dispatch center	Capital	Liability insurance	Operating and maintenance costs	Total
Berea	\$2,000			\$2,000
Brecksville				
Broadview Heights/Seven Hills				
Brook Park	\$5,000	\$3,200		\$8,200
Brooklyn				
Brooklyn Heights	\$3,555			\$3,555
Garfield Heights				
Independence				
Middleburg Heights				
North Royalton	\$23,117		\$134,419	\$157,536
Parma	\$950,000		\$17,910	\$967,910
Parma Heights	\$68,900	\$5,701	\$16,945	\$91,546
Valley View	\$4,710			\$4,710
Total	\$1,057,282	\$8,901	\$169,274	\$1,235,456

NOTE: Blank cells reflect that data was either not available or not provided by that community.

This study does not provide an estimate of non-staff operating expenses such as gas, water, electric, sewer, phone, etc. Given the nature of these types of operating expenses, they are likely to be cost-neutral (or there will be a reduction) as compared to each community's current operating expenses for providing dispatch services.

If a consolidated dispatch center were formed, it would require furniture and equipment. These costs are addressed in the section below. It is important to note that some capital costs may be eligible for grants, particularly from the U.S. Department of Justice, Justice Assistance Grant. Additional suggestions are provided in the Next Steps section.

Furniture and Dispatch Center Equipment

Through discussions with public safety professionals, the PM was able to develop or obtain lists of capital equipment necessary for operating a dispatch center. A detailed breakdown and price quote are provided in Appendix I. A brief list is provided below.

- Call takers – telephone, four central processing units or CPUs, two CAD monitors, one phone monitor, one mapping monitor, a chair, and console
- Dispatchers and shift supervisors/senior dispatchers - telephone, four CPUs, two CAD monitors, one phone monitor, one mapping monitor, a radio system monitor, control boxes, a chair, and console

- Management and administrative staff - telephone, one CPU, one monitor, a chair, and a desk

If the consolidated dispatch center chose to use call takers, the equipment would be reduced because they would not require a radio system monitor and the console would likely be less expensive. Based on the costs incurred by the Lake County communications center, the cost would be approximately \$21,800 per position or station versus the cost of dispatcher equipment and furniture at \$28,800. A dispatcher, however, will not only dispatch, but may be required to answer and screen incoming calls. A dispatcher's work space would need to include the same equipment as a call taker, with the addition of a radio system monitor, control boxes and a different type of console. A shift supervisor/senior dispatcher will be able to monitor or assist in the activities of call takers and dispatchers. If needed, a supervisor will also answer calls or dispatch. Consequently, a shift supervisor's equipment will be the same as that of a dispatcher. Table 14 provides a breakdown of the quantity needed for the equipment described above.

Table 14: Staff equipment and furniture

Position	Units needed
Dispatch	18
Shift supervisors	2
Office manager	1
Technology support specialist	1
Manager/assistant mgr.	2
Total	

In addition to the above costs, there are additional capital expenditures that will be required. A general list is below; however a complete listing and price quote are in Appendix I. The cost estimate for a new building is based on the footprint shown in Figure 2. This was prepared by Dan Kulchytsky, AIA, with the city of Parma. A cost breakdown for the building is provided in Appendix E.

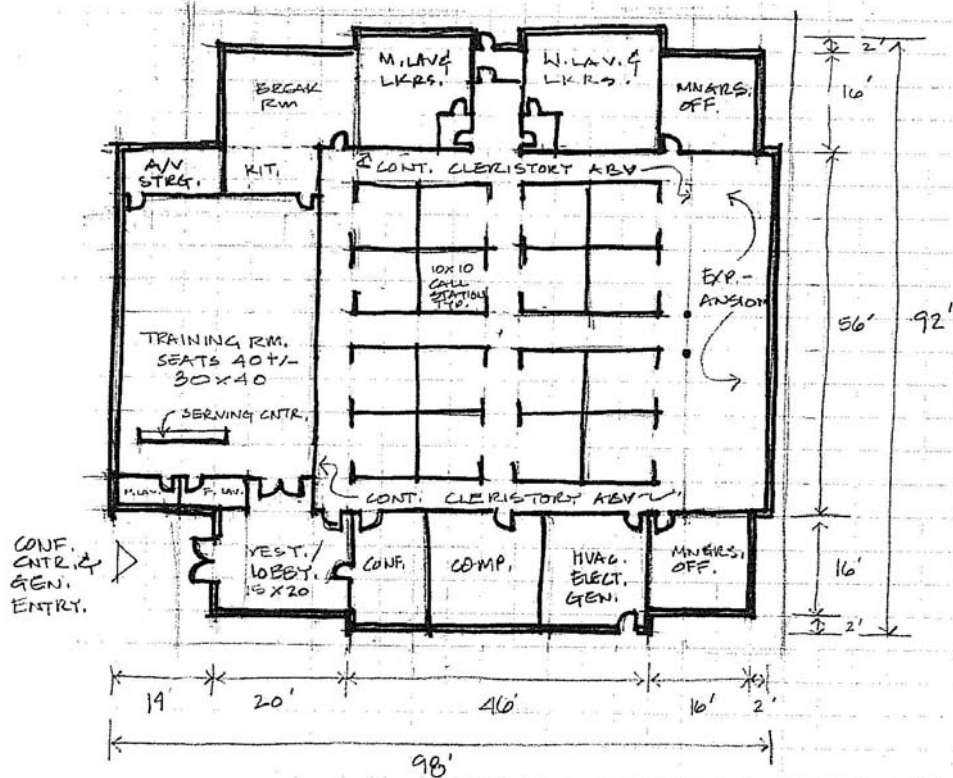
The capital expenditures (listed below), which total approximately \$6.8 million, would be secured with payments spread out evenly over 20 years (for an annual payment of \$321,944) and among several communities rather than one. The capital purchases, which would be financed and paid for collectively, include patches or equipment that will enable each community to continue using its existing radio equipment to communicate with dispatchers at a consolidated dispatch center. The costs to hard wire from Parma's system and Brook Park's system to the tower by microwave link are also included in these costs. The dispatch center could also

These capital purchases would enable each community, using its existing radio equipment, to access dispatchers

address this need using a T1 line. A microwave link would incur an upfront cost of approximately \$70,000; each T1 line would have a monthly fee of approximately \$300 to \$1,832 depending on speed.

- 120' tower
- New console electronics and installation
- New console furniture and installation
- New base station radio equipment and installation
- Computer aided dispatch (CAD) software
- Records management system (RMS)
- Fire alerting system
- CAD system and RMS
- Dispatch monitors and CPUs
- Digital channel logger
- Administrative and managerial equipment and furniture
- Backup generator
- Indirect lighting
- Sound absorbing wall covering
- Universal power supply
- Microwave link
- Carpeting
- Building

Consolidated Dispatch Center Feasibility Study



$$9016 \text{ SF} - (448 + 152 + 64) = 8352 \text{ SF}$$

3/31/09
REGIONAL CALL CENTER
PLAN SKETCH
CITY OF PARMA

PARKING:
13 STAFF/EMPL.
2 VISITORS
34 CONF. CENTER
54

PREPARED BY DAN KULCHYTSKY, AIA - BUILDING DEPT

Figure 2: Plan Sketch of Consolidated Dispatch Center

Assuming a 5.9 percent interest rate⁴⁰ and 20-year financing, the annual payment for the items above would be \$321,944, as demonstrated by the amortization table in Appendix H. The estimated distribution of capital costs are in Table 15. These are based on one-half the cost being distributed equally. The distribution of the other half is based on anticipated demand (number of calls dispatched in 2008). It is assumed that if the consolidated dispatch center does not receive a grant for capitals costs, that a bond would be used to finance the capital equipment and building. Payments are typically made twice annually.

Table 15: Allocation of capital and equipment costs

Community/ dispatch center	Annual share
Berea	\$28,465
Brecksville	\$20,495
Broadview Heights/Seven Hills	\$27,261
Brook Park	\$24,844
Brooklyn	\$18,671
Brooklyn Heights	\$14,841
Garfield Heights	\$25,126
Independence	\$30,772
Middleburg Heights	\$14,787
North Royalton	\$32,106
Parma	\$49,568
Parma Heights	\$19,621
Valley View	\$15,387
Total	\$321,944

The next table (Table 16) outlines the total estimated annual commitment of each community participating in this study. This table shows the total annual capital and staff costs as estimated for each community. Since the majority of communities participating in this study have unionized dispatchers, the PM assumed the most experienced dispatchers would be the most qualified and therefore hired. As a result, the staff costs were calculated based on the highest hourly rate from Table 10.

Table 16: Total estimated staff and capital costs by community

Community/ dispatch center	Staff costs	Capital costs	Total
Berea	\$631,475	\$28,465	\$659,940
Brecksville	\$334,839	\$20,495	\$355,334
Broadview Heights/Seven Hills	\$158,738	\$27,261	\$185,999
Brook Park	\$496,698	\$24,844	\$521,541
Brooklyn	\$266,981	\$18,671	\$285,653
Brooklyn Heights	\$124,438	\$14,841	\$139,280
Garfield Heights	\$507,218	\$25,126	\$532,344

⁴⁰ Revenue bond rates, high (2009). Retrieved November 24, 2009 from www.bondbuyer.com.

**Consolidated Dispatch Center
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Community/ dispatch center	Staff costs	Capital costs	Total
Independence	\$717,348	\$30,772	\$748,120
Middleburg Heights	\$122,404	\$14,787	\$137,191
North Royalton	\$766,986	\$32,106	\$799,092
Parma	\$1,416,892	\$49,568	\$1,466,460
Parma Heights	\$302,312	\$19,621	\$321,933
Valley View	\$144,758	\$15,387	\$160,146
Total	\$5,991,088	\$321,944	\$6,313,032

The final table (Table 17) provides a comparison of the reported 2008 expenditures on capital and staffing to the estimated costs of a consolidated dispatch center for staffing and capital. This demonstrates an overall savings among the dispatch centers of \$1.64 million.

Table 17: 2008 capital and staffing costs vs. estimated payment for consolidated dispatch

Community/ dispatch center	Total 2008	Estimated payment for consolidated dispatch
Berea	\$409,937	\$659,940
Brecksville	\$395,153	\$355,334
Broadview Heights/Seven Hills	\$393,686	\$185,999
Brook Park	\$557,604	\$521,541
Brooklyn	\$350,093	\$285,653
Brooklyn Heights	\$127,275	\$139,280
Garfield Heights	\$1,092,898	\$532,344
Independence	\$817,100	\$748,120
Middleburg Heights	\$384,796	\$137,191
North Royalton	\$587,313	\$799,092
Parma	\$2,199,114	\$1,466,460
Parma Heights	\$473,096	\$321,933
Valley View	\$168,626	\$160,146
Total	\$7,956,692	\$6,313,032

NOTE: Brooklyn Heights and Valley View's costs above were determined by prorating Cuyahoga Heights' 2008 actual costs according to each community's total number of calls dispatched.

There could be several reasons that a few communities are not projected to derive a savings with a consolidated dispatch including:

- The community's 2008 costs may not reflect costs related to use of compensatory time or overtime
- There were no or limited capital expenditures in 2008
- Wages and benefits are lower than used in the projected cost analysis

- Dispatchers are efficient and are utilized effectively in their jobs.

In weighing the projected costs of a consolidated dispatch against a community's expenditures in 2008, it is important to consider that future capital needs could be substantial. The incremental cost of capital as part of a consolidated system is likely to be less than paying for a smaller system individually.

INTEROPERABILITY

A concern raised by the study's advisory committee is interoperability and how a consolidated dispatch center might address this. There are several communities using Brook Park's or Parma's radio system; others are the sole users of their systems. In terms of the impact of interoperability on the feasibility of a consolidated dispatch center, it is possible, although not ideal, to operate a consolidated center without resolving interoperability issues.

According to the State Interoperability Executive Committees (SIEC), interoperability is the ability for different public safety and government agencies to communicate via radio frequency links across discipline and jurisdictional lines in order to exchange critical information in times of emergency events, disasters, and planned mutual events. There are various types of situations in which interoperable communications are required. There are three distinct types of interoperability discussed in literature: day-to-day, mutual aid, and task force. Task force interoperability will not be discussed, as it is beyond the scope of this study.

Day-to-day interoperability involves coordination during routine public safety operations. Interoperability is required, for example, when any police agency joins in a vehicle pursuit of a suspect after the chase has moved outside their jurisdiction. Once other agencies become involved, its personnel should be able to communicate directly with their local counterparts in real time.

Mutual aid and disaster response/coordination interoperability involves a requested joint and immediate response to major incidents that exceed the resources of the requesting agency. It requires tactical communications among numerous groups of public safety personnel. Airplane crashes civil disturbances, terrorist attacks and bombings, forest fires, earthquakes, and hurricanes are all examples of mutual aid events.⁴¹

Inability to communicate with other public safety organizations can exist for several reasons:

- "Most radio manufacturers only produce single band radios (VHF low, VHF high, UHF and 800 MHz). So, agencies operating a VHF low frequency system are usually only able to communicate with another agency using radios in the same range providing common frequencies that have been pre-programmed in the radios."⁴²

⁴¹ Categories of Interoperability. (2001, October 8). PSWN; Washington State SIEC Best Practices Guide.

⁴² Reyes, Eddie. (2006, April 20). Basic public safety communications and interoperability. Retrieved November 2, 2009 from <http://www.policeone.com/>

- Even agencies on the same frequency range cannot communicate because some radio manufacturers are not compatible with others.
- Lack of formal training on how to use a bridging device, or gateway (these can connect disparate radio systems operating in the same frequency range).
- Agencies do not use common terminology. Radio codes mean different things to different communities.⁴³

A component of the dispatch consolidation process will require that a short-term and long-term strategy be developed for addressing interoperability issues among disparate radio systems of participating communities. One of the short-term components should include the use of “plain English” among participating public safety agencies. Other short-term solutions may be having a cache of radios available at the scene of a mutual aid event, using a console patch, or using gateways (i.e., ACU-1000). A long term goal may be to transition all participants onto the same system.

⁴³ Reyes, Eddie

NEXT STEPS

Earlier sections of this document assessed the feasibility of establishing a consolidated dispatch center; however, the cost figures included provide only a general figure, enough to make only an initial determination of the general feasibility of such an endeavor. The communities choosing to move forward with the consolidation may choose a different method to allocate costs among participants. If this is the case, the outcome may affect which communities choose to participate.

Because of the differences between all entities participating in this study, the PM recommends that while all interested entities commit to consolidation at the onset, the implementation be somewhat incremental. In other words, as soon as a suitable facility is ready and equipped, participating communities' dispatch centers should gradually be phased into the facility. It seems reasonable that the full consolidation could occur in 12 to 24 months after the initial consolidation. The rationale for recommending the phased approach is based not only on the differences in operations, but also because of the differences in training between the various participants.

A phased approach should more adequately allow for the dispatch personnel to absorb the new training and procedures. There is a concern that if all dispatch centers are consolidated at one time, it will be extremely stressful and challenging for those involved. A more incremental approach would be easier to manage.

Based on the research conducted for this study, the project team identified a number of steps that are required as the participants move toward implementation.⁴⁴ Among the most important steps in this action plan are

- Commitment to Consolidate - As quickly as possible, each of the involved governmental bodies should adopt resolutions committing them to the dispatch consolidation process.
- Form an implementation working group – This group would meet on a regular basis to ensure the consolidation is moving forward and will make recommendations on how the organization will be equipped, governed, structured, and financed, and where it will be housed. The implementation working group should address or make recommendations in the following areas:

Financial

- Identify funding options. Determine how it will be funded.

⁴⁴ Dispatch Magazine Online. "Communications Center Plans," Retrieved September 17, 2009 from http://www.911dispatch.com/centers/cc_plans.html

- Develop a budget including operating and capital costs for the consolidated communications center.
- Apply for available grants.
- Determine financial arrangements/obligations for each participant.
- Determine how capital improvements will be financed. If this will be done through the sale of bonds, identify who has the ability to finance capital improvements through the sale of bonds (e.g., the port authority) and what revenue source will be used to payoff the bonds.

Legal

- Draft an Intergovernmental Agreement or Contract - As soon as the involved entities have committed to the consolidation project, legal counsel for the entities should prepare the intergovernmental agreement or contract and present it for adoption. This should outline financial, governance, and organizational/structural details.

Organizational/structural

- Select a governance structure.
- Establish a leadership/organizational structure.
- Recruit and hire an Emergency Communications Center Director - Effective leadership will be extremely critical in the establishment of the consolidated dispatch center. There will be much work to be done to prepare for the start-up of operations.
- Determine what services will be provided. For example, will the center provide emergency medical dispatch?
- Develop of standard operating procedures.
- Determine positions needed and respective duties.
- Determine skills and compensation levels and benefits.
- Initiate union relations.
- Recruit, hire, and train staff.

Facilities and equipment

- Determine specific needs of the communities participating in the dispatch center or select a communications consultant to handle this task. Complete a detailed needs assessment of the radio system for all participating entities.
- Determine the suitability of various locations available for use for the new consolidated emergency communications center. Acquire or construct a facility as appropriate for the group's needs.
- Begin the procurement process for new 911 CPE, a new CAD system, radio consoles, and specialty furniture in a timely manner to allow the installation as soon as the new dispatch facility is substantially completed.

Implementation Working Group

The role of the working group to make recommendations on how the organization will be governed, structured, and financed. The group should consist of a representative of each participating entity. Depending on the governance structure selected, the working group may have a continuing role in the organization after it is operational.

Financial

The implementation working group will need to develop an operating (including staffing) budget based on the data collected from participating entities. It will also need to develop a capital budget based on estimates from communications systems and PSAP equipment suppliers or consultants.

Once the participants are satisfied that the cost estimates accurately reflect the anticipated operating, staffing and capital costs for the consolidated dispatch center, the implementation working group will need to determine the financial arrangements (e.g. bonds for major capital purchases) and how the various costs will be divided among participants.

The implementation working group should investigate whether there are any grants available to help pay for equipment, particularly if it addresses interoperability issues. If grants are available, the group may consider applying for these grants. While there is no assurance that the grant programs below will continue to be funded, there are sources that were previously available to fund communications-related purchases:

- The Office of Justice Programs has offered the Edward Byrne Memorial Competitive Grant Program Funding offered funding to create and retain jobs as well as support law enforcement agencies with civilian crime analysts, dispatchers, and community service officers. These grants help state and local communities improve the capacity of local justice systems and may be used for national efforts such as training and technical assistance. Applicants may be national, regional, state, or local public and private entities, including for-profit (commercial) and nonprofit organizations, faith-based and community organizations, institutions of higher education, tribal jurisdictions, and units of local government that support the functioning of the criminal justice system.
- The U.S. Department of Justice, Office of Justice Programs, National Institute of Justice (NIJ) has a program “Public-Private Partnerships to Evaluate Communications Technology.” Through this program, the participating communities would form a public-private partnership with a

private vendor that would allow for the objective evaluation of the implementation, deployment and functionality of a vendor's technology solution in an operational environment. These partnerships give public safety agencies access to cutting edge technologies at little to no cost. The NIJ works to broker partnership between the public and private agencies and vendors; conducts operational evaluations of technology and potential technology solutions to determine whether the technology meets the public safety needs and requirements; and provides technology support, advice, assistance, and oversight to public safety agencies involved the partnership.

- The National Highway Traffic Safety Administration (NHTSA) and the National Telecommunications and Information Administration (NTIA), part of the U.S. Department of Transportation and Department of Commerce respectively, announced that more than \$40 million in grants were awarded to states and U.S. territories to help improve their 9-1-1 services. This grant money was awarded to help 9-1-1 call centers improve their 9-1-1 capabilities.

Legal

There are a number of legal issues which will need to be addressed. Some of these issues are discussed in other sections. One of these is a union contract. The other is an intergovernmental agreement. The group will need to develop an intergovernmental agreement or contract which outlines financial, governance, and organizational/structural details. Appendix D includes examples of intergovernmental agreements from other dispatch centers.

Organizational/Structural

Establishing the governing structure of the communications center is a one of the first critical steps toward consolidation of dispatch functions. There are several available options for governance, which vary in complexity and strength. The governance decision should incorporate consideration for community representation, the legal strength of the agreement, the required duration of the relationship, the ability to secure financing, and the extent of the body's governing authority.

Decisions must also be made regarding the management structure of the center itself. This includes defining the center's management responsibilities as well as the center's chain of command, such as the number of positions, people filling each of

those positions, and their respective duties necessary to efficiently and effectively achieve the objectives of the center.

In addition to the staff dedicated to providing 9-1-1 emergency assistance, the center will also require administrative support. During this phase of the project it will be necessary to make a determination as to the necessary clerical, administrative and support staff.

When addressing staffing costs, levels, and duties, union employment contracts must be referenced. Almost all of the dispatch centers within the participating communities employ union workers. This can complicate or slow the consolidation process, requiring that union involvement and negotiations begin early.

Selection of a governance structure

This section will discuss the advantages and disadvantages of various types of structures under which a consolidated dispatch center could operate for these jurisdictions. The PM focused on the following models:

- One operated by a municipal government that contracts with participating communities; either as a department or a separate enterprise.
- One operated by a county government that contracts with participating communities; either as a department or a separate enterprise.
- One operated by a council of governments.

In evaluating and selecting a governance structure, the participating communities will need to find a structure that would allow them to perform day-to-day operations including the purchase of capital equipment, staffing, scheduling, dispatching and managing these activities, as well as long-term planning. Given the cost for major capital equipment, they will likely need to be able to finance these purchases. While the aforementioned structures allow for day-to-day management and governance of a dispatch center, not all have the authority to finance debt as a group.

Table 18 highlights characteristics of the governing structures.

Table 18: Potential government structures

Governing Structures	Level of complexity ↔		
	Simple		Complex
	Joint Operating Agreement (JOA)	Contract with County	Council of Governments (COG)
Set-up Requirements	<ul style="list-style-type: none"> • Good contractual arrangement • Contract to be reviewed periodically • Create contract with rules and regulations • Charters must allow agreement 	<ul style="list-style-type: none"> • Develop contract • Determination of what would need to be changed • Charters must allow outsourcing of services to county 	<ul style="list-style-type: none"> • ORC governs establishment of COG
Advantages	<ul style="list-style-type: none"> • Minimum structural governance • Contribute own staff and current equipment • Simplicity of structure 	<ul style="list-style-type: none"> • Simple, easily understood • No new expenditures for capital 	<ul style="list-style-type: none"> • Could take on other functions • Flexible structure that could expand over time
Disadvantages	<ul style="list-style-type: none"> • Simplicity of structure 	<ul style="list-style-type: none"> • Need someone with the ability to oversee administration of contract • Need county buy-in • Political concerns 	<ul style="list-style-type: none"> • Governed by ORC • Complexities of structure

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Joint Operating Agreement

When one group assists another group for a common goal, they may work together under a joint operating agreement (JOA). JOAs are frequently used in the newspaper, health care, and the gas and oil industries. For example, two newspapers published in the same geographic area may combine business operations while maintaining separate news operations or participating hospitals may retain separate boards of directors, but turn over management functions to a separate entity.

This type of arrangement allows the participants to retain some aspect of their original organization, whether it is their mission statement, or the ability to use the resources of the organization as they choose. In a business model, all parties share in the financial risks of the joint operation and gain the potential for an increased market presence and thus, increased profits. In the case of government entities, the gain is different in that there are no profits, but rather cost savings derived and shared by participants.

⁴⁵ Keller, Lawrence. Interview by Daila Shimek and Ryan Foster on 10 September 2009.

There are aspects to forming a JOA that should be considered. With a JOA, no predetermined structure or governing body is required by state statute; as a result, the participants have the flexibility to establish one that suits their needs when they formulate a contract or agreement. A disadvantage to this type of arrangement is that regardless of the length of the contract or agreement, the funding from any community is subject to annual appropriation. Consequently, this type of agreement can come apart with a change of administration. Another challenge to this type of arrangement would be financing capital items.

A solid contract can be critical to the success of the consolidation. The contract or agreement must address entry (taking on additional members who may want to join later), especially if the dispatch center is successful, and withdrawal. The withdrawal procedures may contain some type of penalty provision, as exit can be costly to the remaining communities that would be left with excess capacity and a disproportionate share of capital expenses. The agreement should also state what happens if the agreement is terminated, including the disposition of capital assets and personnel. The contract should also discuss what role individual communities will play in decisions such as policies and procedures, allocation of costs to participating communities, capital purchases, etc.

Contract with County

A contractual arrangement with the county would have many of the same characteristics as a joint operating agreement. However, the county has the ability to finance the capital items more easily because of the broader economic base. This type of arrangement would likely result in participating entities having less control over how the center is operated. In addition, the participating communities might need to wait until the transition to the new county government is complete.

Council of Governments

Across the country, Councils of Government (COGs) are typically multi-county in nature. In Ohio, however, COGs are established between local governments as well. ORC Chapter 167 explains the process for creating a Regional Council of Governments (COG) and the powers vested in the council. The ORC requires the regional council of governments to adopt by-laws. These must designate the officers of the council and the method of their selection, create a governing board that may act for the council as provided in the by-laws, and provide for the conduct of its business.⁴⁶

This type of governing structure has several of the characteristics that would be important for a dispatch center: the ability to purchase or lease or otherwise provide for

⁴⁶ ORC §167.04

supplies, materials, equipment, and facilities; the ability to determine how operations would be funded; the ability to receive grants; the ability to enter into contracts with political subdivisions to perform or receive services; and the ability to employ staff.⁴⁷

COGs also have the ability to issue securities for the purposes of acquiring equipment and (acquiring or constructing) a facility;⁴⁸ however, the ORC notes that securities issued by councils of government are special obligation securities, not general obligation. These securities do not constitute debt backed by the full faith and credit of the state, the issuing qualifying council, the members of the issuing qualifying council, or any political subdivision of the state. In other words, the debt would have to be secured by a revenue source. Money raised through taxation may not be obligated or pledged for the payment on these securities. Money received by the COG cannot be considered money raised by taxation.⁴⁹ For practical purposes, this means that member communities would need to sign a contract with the COG for the length of time that the securities are issued. Additional restrictions on securities issued by COGs are outlined in ORC §9.98 Bond financing definitions, §9.981 (Applicability), §9.982 (Bond proceedings), §9.983 (Costs, expenses and fees), and §133.20 (Maximum maturity).

Although there are a few limitations in the ORC, a COG has a fair amount of flexibility in its structure. This enables the COG to be democratic in its governance. A democratic process will allow participating communities to have a say in finances, policies and procedures, and other issues. This will be important in enticing participation. A COG agreement should outline membership, funding sources, organizational structure, and withdrawal from the COG. In the absence of these issues being addressed in the COG agreement, the ORC provides for membership of and withdrawal from the COG.

If a COG is chosen, the implementation working group will need to determine the composition of the policy making group or the board of directors. It will also need to determine what powers of the board. These may include having the authority to enter into larger contracts (typically any contract under a certain dollar amount is left to the discretion of the chief administrator); acquiring, holding and disposing of property; approving the annual budget and expenditures; hiring dispatch center management staff (hiring of dispatch and administrative staff is typically done by the chief administrator); adopting and revising bylaws for its operation and the operation of user group advisory committees.

⁴⁷ ORC §§167.05, 167.06, 167.08

⁴⁸ ORC §167.101

⁴⁹ ORC §167102

Other Issues

The following section was taken from *Dispatch Magazine Online's* article on communications center plans, with some additional considerations provided by the PM. While written in a general context, the steps are relevant to the dispatch consolidation being considered by the participating communities. The steps are not necessarily in sequence; some activities may occur simultaneously.

Personnel

- 1) Determine number of positions and their duties - Staffing should be multi-level and include specialists for each type of job function, as follows:
 - Public Safety Dispatcher - These personnel handle the basic telephone and radio duties for receiving and dispatching incidents.
 - Supervising Dispatcher - These personnel supervise the basic level dispatchers and make second-level decisions regarding dispatching and staffing.
 - Shift Supervisor or Senior Dispatcher - These personnel provide administration of dispatching personnel, including staffing, training, discipline and advancement.
 - Technology Systems Specialist - This person has specific talents in working with computer systems, mapping and geographic data files, radio and telephones and is responsible for maintaining the center's computer, radio and telephone systems. This position may not be required unless the dispatch communications center is a stand-alone organization.
 - Office Manager - This person would be responsible for human resource and bookkeeping functions as well as general office management. This position may not be required unless the dispatch communications center is a stand-alone organization.
 - Assistant Manager - This person administers the recruiting, selection, hiring, training, evaluations and promotional processes. This person could also be the liaison to EMS agencies.
 - Center Manager - This person has overall administrative responsibility for the center's operation.
- 2) Begin recruiting and hiring - There are two options for finding, selecting and hiring personnel to staff the consolidated center. Some consideration should be given to personnel who might lose their jobs because positions are eliminated from consolidation. Consideration should be given to incorporating devices specifically designed to test dispatchers into the evaluation process.

- Existing Personnel - Establish a process for accepting applications from existing communications centers, then select personnel from that group. Positions not filled from within the current ranks would be advertised outside.
 - New Personnel - Accept applications from any interested person with the required level of experience.
- 3) Provide training - Personnel selected for hiring should already have the required skills to perform basic dispatching. This is especially true for management and supervisory personnel who would be involved in the center's start-up. Initial training should include operation of the center's telephone, radio and computer system. If pre-arrival medical instructions are to be implemented, training classes should be given to all new dispatchers.
- 4) Determine Compensation - The pay scales for all positions will generally be based on current dispatcher pay rates. That is, supervisory- and management-level position pay rates could be percentage increments over the dispatchers' base pay. Other options could include researching these salary levels of area dispatch centers.

Besides having several pay steps based on length of service, some dispatcher contracts include premium pay for working the evening and night shifts. There may also be premium pay for dispatchers who conduct training, act in a supervisory capacity or perform higher level duties (e.g., senior dispatchers or shift supervisors), and work holidays. Other compensation issues include what would be included in benefit packages.

It is also important to keep in mind that ORC §9.44A addresses prior public service credited in computing vacation leave.

(A) Except as otherwise provided in this section, a person employed, other than as an elective officer, by the state or any political subdivision of the state, earning vacation credits currently, is entitled to have the employee's prior service with any of these employers counted as service with the state or any political subdivision of the state, for the purpose of computing the amount of the employee's vacation leave. The anniversary date of employment for the purpose of computing the amount of the employee's vacation leave, unless deferred pursuant to the appropriate law, ordinance, or regulation, is the anniversary date of such prior service.

- 5) Initiate Union Relations – Consideration should be given as to how the new employees might be represented. If personnel are hired from existing communications centers, thought should be given as to how current contracts will be transferred or otherwise honored. In particular, issues such as salary, and

how seniority and leave might be carried over to the new center will be important. Since the majority of communities participating in this study have unionized dispatchers, this will be an important topic to be addressed. Some of these issues will be affected by the type of organizational/governing structure chosen.

Policies and Procedures

As the working group develops policies and procedures for a new dispatch center, it should not only consider policies and procedures of participating agencies, but it should also consider guidance provided in NENA's "Communications Center/PSAP Daily Personnel Operations Model Recommendation." The working group should:

- 1) Develop Internal Policies and Procedures - The communications center should be governed by rules and regulations, taken from existing department communications centers and revised to handle a consolidated center. The rules and regulations should take into account any existing employee union agreements.
- 2) Develop Dispatching Policies and Procedures - The dispatching policies and procedures for the communications center should be drawn from each individual department. They should be simplified and consolidated where possible with the agreement of the participating agencies.
- 3) Consider Accreditation - The agency should consider whether or not it will pursue accreditation by the Commission on Accreditation of Law Enforcement Agencies (CALEA).

Warrants

The handling of warrants was an area of concern expressed by the advisory committee of this study. The PM recommends further exploration on how this might be addressed. For example, in Scott County, Iowa, the clerk of court agreed to initially accept faxes of the return of service of a warrant. The participants in the consolidated dispatch center agreed that the original warrant would be housed at the combined dispatch center. When a person was arrested on a warrant, a copy of the warrant was faxed to the jail for service on the subject. The original was sent via courier to the courthouse and delivered to the clerk of court. The implementation working group could explore the feasibility of a similar central records management arrangement. While some of this function may be provided by dispatchers, additional clerical staff may be required. Consideration should be given to this in developing job descriptions.

Facilities and Equipment

The advisory group will need to determine specific needs of the communities participating in the dispatch center, as well as the best options in terms of facility location. Given the importance and technical nature of the communications equipment (both telephone and radio), the group may want to select a communications consultant or specialist to handle this task. Another component of the dispatch consolidation process will require that short-term and long-term strategies be developed for addressing interoperability issues among disparate radio systems of participating communities.

This section provides an overview of the decisions that need to be made with regard to site selection and systems, as well as considerations in making these decisions. Consideration should also be given to the guidelines in the National Fire Protection Association (NFPA) 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.

Site Selection

While the participating entities may work with an architect or site selection consultant, consideration should be given to the following regarding the selection of a site for the dispatch center.

- 1) Determine Facility/Site - There are three options for sites:
 - a) Existing Site and Building - Use an existing site and building and adapt it for use as a consolidated center. It is unlikely that any existing communications center in study area would have the necessary space, security and support systems for a consolidated center.
 - b) Existing Site and New Building - Use an existing site but build a new center. There may be existing sites within the study area that meet the necessary requirements and which are currently owned by a government entity. This alternative would eliminate the cost and administrative process of purchasing land. However, there may be a tendency to compromise on site requirements to save money.
 - c) New Site and New Building - Acquire a new site and build a new center. This alternative would allow complete flexibility in choosing the most acceptable site.
- 2) Location and Access - The communications center site should, to the greatest extent possible, meet the following basic requirements:

- a) **Appropriate Size** - The site should be large enough to accommodate the main communications center building, for a separate structure housing an emergency generator, and underground fuel storage. It should also allow an area for parking employee cars, special vehicles (mobile emergency operations centers, if relevant), and other vehicles and temporary structures required during a disaster (tents, shelters, helicopter landing zone, etc.). The property should be large enough to allow a sufficient set-back from structures on adjacent property that might present a collapse, fire or other hazard.
 - b) **Safety** - The site should be free from potential hazards, such as overhead power transmission lines, freeway overpasses, trees, flooding from creeks or streams, earthquake faults, brush fires, vehicle off-road accidents, underground pipelines, etc.
 - c) **Access** - The site should be centrally located so it is reasonably accessible to all communities. It should be adjacent to one or more major freeways or state highways. The roads leading to the center should be free of major potential obstructions in time of earthquake or other natural disaster, including over/underpasses, overhead power lines, and street light supports.
 - d) **Communications** - The site should have current or easily-installed access to communications links, including the public telephone system, existing county and municipal radio links, microwave towers, etc. The site should not be obscured by hills so that future communications wireless links can be installed. Site consideration should be given to the ease of accessing multiple communication links to insure redundancy.
 - e) **Future Growth** - The site should be sized and arranged to allow future additions to the building for more fire or law enforcement agencies.
- 3) **Utilities** - The center should have easily installed access to the existing public telephone system, water lines, power lines, and a sanitary sewer.

The utilities should be arranged to enter the building in a place and method that will not create a hazard during any natural disaster or the failure of any utility supporting structure.

Consideration should be given to providing dual (or more) paths for electrical and telephone links to the center, from multiple sub-stations or central offices.

Utilities should enter the building and be otherwise arranged to prevent any water leak or electrical incident from physically affecting the building. That is, a water

main break, electrical short or fire would not impinge upon the building or any of its critical systems.

The building's critical electrical needs should be supplied through an uninterruptible power supply (UPS), which is capable of providing enough power to keep those functions operating for 15 minutes.

The building's critical and necessary electrical needs should be supplemented with a generator powered by an appropriate fuel (propane, natural gas, diesel, etc.), which is capable of providing power for at least eight hours. The fuel tank should be located in an area so as not to endanger the building or dispatch area if a leak or other dangerous situation occurs and in an area easily accessible by a fuel truck under all weather conditions.

- 4) **Parking** - The site should be large enough to accommodate everyday employee parking, storage of specialized communications units (such as emergency operations center (EOC) vans), and staging of mutual aid support units during a multi-agency incident.
- 5) **Furnishings and Furniture** - The furniture should take into consideration durability, safety, ergonomics and appearance. The arrangement of the furniture in the office area should emphasize functionality, ease of communications and mirror the natural contacts that may be necessary between the various job positions.

The arrangement of furniture in the communications center area should take into consideration:

- Necessity to communicate visually and verbally between dispatchers
 - Isolation of noise between adjacent positions
 - Adjacency to paper files or other reference sources
 - Adjacency to dispatching equipment
 - Glare from window or other openings
 - Communications center area traffic patterns
 - Other building traffic patterns
- 6) **Security** - The following security features should be considered:
 - a) **Site** - The site should be fenced to prevent unauthorized persons from approaching the building. The fence should be sufficiently distant from the building that objects cannot be thrown near or onto the building.

The building and landscape design should not create any hiding or blind spots where persons or vehicles are obscured from anyone inside the building, or by the building video surveillance system.

The exterior of the building should be surveilled by one or more video cameras showing at least the fence gate and exterior doors of the building.

There should be no signs visible from the street indicating the building's use as a communications center.

Consideration should be given to constructing an earthen berm between the building and any adjacent public street, to prevent persons from firing any projectile at the building, either from a moving vehicle or from a remote location.

There should be sufficient lighting around the building exterior to allow viewing of unauthorized persons on the site and at the building doors.

There should be sufficient clearance from the building and any adjacent structures capable of radiating or spreading fire, from trees that might fall or spread fire, or any other structure that could cause damage to the center. Any associated antenna towers or structures should be located at a safe distance from the center building, so collapse of any structure would not strike the communications building.

- b) Building - Access to the building should be controlled by a computer-controlled, keyless security system. The system should allow immediate, on-site changes to the list of authorized users, including activation, deactivation and password/number changes. The system should record all access activity, along with the date, time, user and door ID.

All openings in the exterior wall should not face directly into working areas of the building, unless they are protected from projectile damage or puncture.

Consideration should be given to protecting any exposure (window, door, fan opening, etc.) from fires in adjacent buildings, brush or trees. Metal fire shutters, sprinklers or other appropriate protection should be provided if such exposures exist.

The public entryway should be designed to provide physical protection for the receptionist and to prevent visitors from entering or leaving the reception area without authorization.

- c) Interior - The interior doors to the communications center area, the computer room, telephone equipment room and other sensitive areas should be protected by a keyless access system. The security system should allow an alarm to be sounded at a remote location during certain periods, when a specific person enters the room, or when other conditions are met.
- d) Computer System - All computer systems used in the building should be housed in secure areas not accessible to the public. All programs running dispatch-related programs shall be protected by a system of user names and passwords. The password system shall allow the system manager to designate how often passwords must be changed by individual users and their format (length, if letters and numbers required, etc.).

The vendors of all computer systems shall document all usernames and passwords either built into the software or added for the access of vendor support personnel. The system and application software that uses passwords shall allow sufficient access for management to determine what usernames and passwords have been issued for each system and application.

All computer links leading out of the building should terminate at a secure location (firehouse, other communications center, etc.). Consideration should be given to requiring all modem links to the computers system to be activated only upon request (trouble-shooting by CAD support, etc.), and then only for the duration of the work performed. At other times, the modem is physically unplugged from the telephone line.

- e) Fire/Other - The communications center shall at least meet all applicable fire code requirements for the jurisdiction in which the center is built. Consideration should be given to meeting the requirements of the national Uniform Fire Code. The communications center shall meet all applicable building codes for the city in which the center is built. Consideration should be given to meeting applicable standards for fire alarm centers promulgated by the National Fire Protection Association (NFPA 1221).

Wall coverings, furnishings and carpet shall be of a type and design to minimize their fire danger and their generation of products of combustion.

The computer areas of the center shall be protected by a fixed Halon sprinkler system.

The electrical system of the center shall be arranged to allow shutting off the power to the smallest possible area of the building. The dispatch area of the

building shall be served by at least two circuit breakers to allow selective control of the power in case of emergency or maintenance.

- 7) **Building Layout** - The building should be arranged so that the dispatching area is not adjacent to any exterior wall of the building unless the structure (walls, windows, etc.) are sufficiently reinforced to protect against outside threats (rocks, bullets, vehicle entry, etc.).

The building should contain the following areas: reception area for outside visitors, administrative offices, employee locker room, break room, conference/meeting room, training room, dispatch area, storage rooms, computer room, and emergency operations room.

The dispatching area, supervisors' office, and training room should be arranged so they are as close as possible to the computer room, so that cabling runs are minimized.

The bathrooms, break and other areas that have plumbing should be arranged so there is no possibility that spills, leaks or other water problems could flood or damage the dispatching area or computer room, including floor drains, scuppers or other features.

The training room should be located so that it may be used for live dispatching or as an EOC during extraordinary incidents.

Consideration should be given to the placement of the dispatch area, computer room and electrical service to minimize the routing of cables and power lines. Consideration should also be given to how cables and wires should be routed into the dispatch area, via a raised floor, raceways or overhead.

- 8) **Consoles and Chairs Ergonomics** - The consoles, chairs and other furniture shall be ergonomically designed, to lessen the chance of repetitive stress injuries. This should include chairs that are fully adjustable for height, back angle and height, and armrest height; consoles adjustable for height (from sitting down to standing up); keyboard rests adjustable for height, angle and distance from the console.

The consoles should be designed to allow easy access to all controls without reaching beyond an average arm's length. Terminals and other video displays should be placed an equal distance from the focal point of the console, and that distance should be according to any national standards or available studies. The video terminals should be arranged to allow their horizontal adjustment closer and further away from the dispatcher.

- 9) Lighting - Center lighting circuitry should be arranged to prevent a lighting failure to any large area of the building.

Lighting in all areas of the building shall conform to any national standard levels for office areas.

There should be overall and individual console lighting in the dispatching area. The console lighting should be individually controllable at each console. Overall lighting should be arranged to minimize glare on video display terminals.

Consideration should be given to the placement of terminals and windows to reduce the amount of glare on the video terminals, or bright window light directly behind the video terminals.

- 10) Air Conditioning - The building air conditioning system should be arranged to provide a sufficient flow of fresh air—not re circulated—to the dispatch area, to filter the air to remove possible contaminants including pollen, mold, dust and mildew, and to reduce drafts on employees. Temperature control should be available to authorized personnel, but the range should be limited so it always provides sufficient cooling for electronic equipment in the building.

Consideration should be given to installing an electronic filtering system for that portion of the air conditioning system that serves the dispatch area, in order to further filter contaminants from the air. Consideration should be given to a positive pressure air system that keeps outside contaminants out.

- 11) Sound Control - The dispatch area should have some method of sound control for reducing the volume of noise, echoes and other unwanted artifacts. Methods include acoustic tiles, carpets, wall curtains or other coverings.

Systems

There are a variety of systems that will need to be a part of the dispatch communications center. This section provides an overview of the systems and considerations related to the systems.

- 1) Telephone - The entire building should be served by an independent private branch exchange (PBX) system located in a secure area of the building and powered independently, or by a telephone company-provided switch (Centrex, etc.) located at a central office.

If appropriate, the emergency and non-emergency lines terminating in the dispatch area should be routed to an automatic call distributor (ACD) to expedite

the routing of incoming calls to the next available call taker or dispatcher. The ACD should provide a user-definable recording to callers explaining: 1) their call has been answered and is being held in the order received; 2) that if they have an emergency, they should hang up and dial 9-1-1; and 3) alternate contact telephone numbers.

If appropriate, the non-emergency telephone lines terminating in the dispatch area should be routed to an automated attendant, which allows the caller to self-route their call based on a series of voice prompts. The system should provide a user-definable recording that allows the agency to select the routing (units, departments, voice mail, etc.) and the option (press 1, press 2, etc.).

The telephone PBX, ACD and automated attendant systems should provide a selection of printed management reports to allow review of their proper and efficient operation. The ACD system should allow real-time monitoring to insure prompt answering of incoming calls, and an interface to display devices that can show the number of calls being held on which incoming telephone lines.

The PBX system should allow: calls to be put on hold, calls to be forwarded to another number, calls to be conferenced between at least the caller and two other telephones, speed dial of at least 50 numbers, voice mail, and voice mail retrieval from outside phones. Optional features include call parking and pick-up, transfer or forward on no-answer, call waiting, and caller ID for interior calls.

- a) The 9-1-1 System - The center should be considered the primary public safety answering point (PSAP) for each jurisdiction's 9-1-1 calls.

The 9-1-1 equipment at the consolidated dispatch center should be arranged to allow one-button transfer of emergency calls to a backup location. The consolidated dispatch center should also have a list of seven-digit numbers that can be used to reach the backup location if the one-button transfer feature is inoperative.

The 9-1-1 system should allow the addition of Phase I and II wireless E9-1-1 features, including the display of electronic maps. Consideration should also be given to the requirements of NG-9-1-1.

The 9-1-1 system should allow a method of transferring incoming calls to a pre-designated alternate PSAP. Procedures should also be developed to allow an authorized person to semi-permanently transfer 9-1-1 calls to an alternate location in case of communications center evacuation for an extended period.

- b) Internal - The consolidated center should have an internal communications system that allows quick and easy access to any dispatching position—telephones, intercom or public address. This system would be critical to meet one of the center's primary objectives—improved coordination during large incidents.

There should be an internal telephone system linking all offices and rooms in the building. The training room should be equipped with extra connections for live dispatching or as an EOC during large emergencies.

- c) Public Telephone - The center should be served by the public telephone system. The system should allow direct dialing to specific offices. To minimize the possibility of a disruption, consideration should be given to having dual, independent paths to the center and service from two telephone company central offices.

The system should allow on-site changing of numbers and features. It should also allow:

- no-answer forwarding
 - user-selectable forwarding
 - voice mail
- d) Telephone System - The consolidated center should be added to any county or regional telephone system to allow direct communications with any county public safety agency. Consideration should be given to having dual, independent paths into the system, possibly using two methods (microwave, wired, etc.).
- e) Other - The emergency and non-emergency telephone lines terminating in the dispatch area, and all appropriate radio channels should be recorded continuously by a logging recorder system that allows archiving of the media (digital tape, CD-ROM, DVD, etc.). The logging recorder system should allow authorized persons to find, play, listen to and re-record for any selection of time on another media, console, phone line or radio channel. The system should allow playback of several channels/lines at once, to allow a compilation of several conversations and transmissions.

Each position used for answering telephone calls for service from the public should be equipped with an instant playback logging recorder device, with at least a 30-minute total call capacity. The device should allow immediate playback of the last call, and quick access to previous calls within the 30-minute capacity window, all without the dispatcher leaving the console. This

instant playback feature may be provided as part of the 24-hour logging recorder system, or as a separate recorder system.

- f) Back-Up - The 9-1-1 and seven-digit public telephone numbers for the communications center should be immediately accessible from a point outside the building, in case the building cannot be occupied (natural gas leak or other contamination). This can be arranged either by terminating the lines at an outside junction box to allow connection of back-up phones (stand-alone set-up or mobile communications van), or by terminating lines at a separate building on the site.

The 9-1-1, and optionally the 7-digit public telephone numbers, should have the capability of being re-routed (within no more than 30 minutes) to another location; either another location with sufficient phones to accommodate the dispatch operation (firehouse, precinct station, school, etc.) or to another communications center willing to handle the center's calls during the evacuation.

There should be a written evacuation plan that sets out the specific steps for supervisors to take if an evacuation is required. The plan should include a list of equipment, supplies, maps, lists and other items to remove from the communications center, how to re-route telephone lines (names and telephone numbers), which methods will be used to transport dispatchers to an alternate site, and the procedures for re-occupying the center.

There should be at least one wireless telephone available to the on-duty supervisor at all times to use in case of any communications emergency at the center.

2) Computers

- a) CAD - The computer-aided dispatch (CAD) computer should have all the call entry, dispatching and status tracking features, plus the following:
- Multiple-jurisdiction capability -- The software must support multiple jurisdictions, both in dispatching and in incident reporting. Each agency must have the ability to establish the agency to handle each type of incident (police, fire EMS), type of unit to respond for each agency (canine, HAZMAT, single-officer, paramedic, etc.), and how many units to respond.
 - Fire move-ups, cover-ins, mutual aid-- The software must allow fire units to move to other fire stations and assume their response district, both within a jurisdiction and across jurisdiction boundaries.
 - Fire station printers -- The software should support automatic printing of incident information at fire stations.

- Fire station paging -- The software should support automatic radio paging of fire stations during incident dispatch, using the codes of the chosen radio paging encoder.
 - EMS capability – For any fire departments operating ambulances as fire units.
 - Units operating as fire-only or medical-only —Fire units frequently change their status from fire-medical to either fire-only or medical-only, depending upon equipment or personnel changes. CAD must be able to recognize the status changes and recommend units accordingly.
 - The capability to consolidate street, intersection and commonplace names from existing CAD geographic data files. Communities in the consolidated dispatch with CAD may have spent considerable time and effort to insure the accuracy of their geographic data files, including freeways, places without street numbers, parks, and commonplace names. These files should be combined to create the base geographic data files for consolidated CAD.
- b) CAD Back-Up - The CAD network should be accessible when needed from an alternate location, preferably the same location where re-routed telephone lines are accessible. The alternate location should not have live CAD access unless the location is secure and the terminals are protected by username/password security.
- c) Pre-Arrival Instructions - The communications center should have computerized Emergency Medical Dispatch (EMD) with pre-arrival instructions (PAI), either within the CAD program itself or on a stand-alone computer accessible at every terminal.
- d) Fire and EMS Incident Reporting - Determine how CAD incident data will be used to help generate reports or provide required data:
- e) Word Processing - The center should have personal computer word processing software available for all management and supervisory personnel to create memos, letters, reports and analysis.
- f) GIS - The center should have a geographic information system (GIS), either integrated into the CAD software or as a separate program running on a personal computer (PC). The GIS would be used to maintain the CAD geofile and for incident analysis by individual jurisdictions.
- g) Other - The critical date/time functions of the dispatch area should be obtained from a master clock system that is synchronized from a universal standard (GPS,

WWV⁵⁰, Internet, etc.). These systems include the logging recorder, CAD, trunked radio and telephone systems.

Where appropriate, consideration should be given to the installation of a weather radar system or other method of monitoring the weather conditions in real time (cable TV channel, etc.). Likewise, consideration should be given to installation of a NOAA weather radio.

3) Radio

- a) Transmit - There must be sufficient transmitter sites to cover the entire consolidated area.
- b) Receive - There must be sufficient remote receiver sites to allow reception from portable radios throughout the consolidated area, under all circumstances likely to be encountered by field personnel (inside buildings, in underground transit tunnels, etc.).
- c) Links - The transmitter and receiver sites should be linked to the communications center by two or more methods that insure that no single interruption of service renders a large geographic area without radio service. For example, key transmitter sites can be linked by microwave, and backed up by telephone lines. Key receiver sites might be linked by telephone lines backed up by radio links.

Construction and security considerations at the remote radio sites should follow the same guidelines as for the communications center.

The links should allow the transmission of radio, telephone and mobile data.

- d) Consoles - There should be sufficient consoles for each staffed dispatch position. Consider having two consoles available in a separate area for training, as well as two consoles available in the dispatch center for special events and multi-agency incidents. The dispatch area should have a supervisory area that has a physical view of the dispatch area, and access to all computer and radio systems, building alarms, and video surveillance systems.

All consoles should be designed and equipped identically, to allow control and operation of any radio channel and jurisdiction from any console. Each console should have two headset jacks that allow operation of radio and telephones, to

⁵⁰ WWV is the call sign of the National Institute of Standards and Technology's (NIST) shortwave radio station located in Fort Collins, Colorado, United States.

provide back-up access, dual-dispatcher operation at a console, and side-by-side training or observation by a supervisor.

- e) Channel Patches - The radio system should allow patching, or interconnection, to other VHF, UHF and 800 MHz radio systems used by public safety agencies with the consolidated area. The radio system should allow an authorized person to disable the repeater on any channel.
- f) Mobile Data Terminals - The radio system should be capable of supporting a mobile data terminal system. Consideration should be given to existing systems and how they might be expanded to accommodate the consolidated area, rather than building a new system.
- g) Mobile Status Terminals - The radio system should be capable of supporting a mobile status terminal system. Consideration should be given to existing systems and how they might be expanded to accommodate the consolidated area, rather than building a new system.
- h) Video - The radio receiver sites and site-to-center links should be designed with the capability of transmitting live video, for use in handling major incidents.
- i) Data - The radio receiver sites and site-to-center links should be designed with the capability of transmitting digital data, for use in handling major incidents.
- j) Teletype - The facility should be arranged to allow reception of teletype information from state and national sources which transmit weather, natural disaster and national warning information. The link should also handle inquiries and responses from law enforcement databases at the local, county, state and federal level.
- k) Paging
 - Fire Stations - The radio system should be capable of supporting a fire station radio alerting system. Consideration should be given to existing alerting systems and how they might be expanded to accommodate the consolidated area. The system should provide sufficient individual codes to allow individually alerting each fire station handled by the communications center, with future expansion. The system should allow sufficient command codes to handle opening gates or doors, turning on lights, sounding an alert device, or activating other equipment individually.
 - Personnel - The radio system should be capable of supporting a personnel paging system. Consideration should be given to existing systems and how they might be expanded to accommodate the consolidated area.

If in-house paging does not provide sufficient geographic coverage, then a contract paging service should be employed to provide paging services.

Besides individual pager numbers, the paging system or service should allow group paging, by entering a single number or telephone number, whereby several pagers would be activated at once.

- I) Phone Patch - Consideration should be given to installing the capability to patch a designated or any radio channel into the PBX telephone system, to allow field units to make a telephone call using their radio.

APPENDICES

Appendix A.	Dispatch Center Profiles
Appendix B.	Glossary of Terms
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Appendix A: Dispatch Center Profiles

Dispatch Center Profile: Berea

Staffing	
<i>No. of dispatchers (part time & full time)</i>	8
<i>Total dispatch staff FTEs</i>	6.14
<i>Percentage of time spent on dispatch duties</i>	60%
<i>Total staff performing supervisory duties (supervisor)</i>	1
<i>Supervisor FTEs¹</i>	.10
<i>Total supervisor and dispatcher FTEs</i>	3.78
<i>Dispatchers scheduled per day</i>	4.50

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$31.16
<i>Average supervisor hourly rate with benefits</i>	\$49.33
<i>Annual labor costs-dispatch</i>	\$396,676
<i>Annual labor costs-supervisor¹</i>	\$10,261
<i>Supervisor and dispatcher annual labor costs</i>	\$406,937
<i>Overtime</i>	\$7,749
<i>Dispatcher costs per call</i>	\$12.65

Calls	
<i>Total calls dispatched per year</i>	31,356
<i>Calls dispatched per 8 hour shift</i>	29
<i>Calls per 2007 (estimated) population</i>	1.76
<i>Calls per establishment (2005)</i>	68
<i>Calls per employment (reflects daytime population, 2005)</i>	4

Other	
<i>Average leave(hours) used per employee per year²</i>	223
<i>Estimated 2007 population³</i>	17,816
<i>Square miles</i>	5.46
<i>2007 population density (in 1,000s) per square mile</i>	3.26

NOTE: ¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs. ² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Brecksville

Staffing	
<i>No. of dispatchers (part time & full time)</i>	7
<i>Total dispatch staff FTEs</i>	6.00
<i>Percentage of time spent on dispatch duties</i>	80%
<i>Total staff performing supervisory duties (supervisor)</i>	NA
<i>Supervisor FTEs¹</i>	NA
<i>Total supervisor and dispatcher FTEs</i>	4.80
<i>Dispatchers scheduled per day</i>	4.50

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 24.38
<i>Average supervisor hourly rate with benefits</i>	NA
<i>Annual labor costs-dispatch</i>	\$394,963
<i>Annual labor costs-supervisor¹</i>	NA
<i>Supervisor and dispatcher annual labor costs</i>	\$394,963
<i>Overtime</i>	\$33,070
<i>Dispatcher costs per call</i>	\$ 23.76

Calls	
<i>Total calls dispatched per year</i>	16,626
<i>Calls dispatched per 8 hour shift</i>	15
<i>Calls per 2007 (estimated) population</i>	1.28
<i>Calls per establishment (2005)</i>	18
<i>Calls per employment (reflects daytime population, 2005)</i>	1

Other	
<i>Average leave(hours) used per employee per year²</i>	299
<i>Estimated 2007 population³</i>	12,957
<i>Square miles</i>	19.61
<i>2007 population density (in 1,000s) per square mile</i>	.66

NOTE:

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville.

Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Broadview Heights/Seven Hills

Staffing	
<i>No. of dispatchers (part time & full time)</i>	7
<i>Total dispatch staff FTEs</i>	7.00
<i>Percentage of time spent on dispatch duties</i>	97%
<i>Total staff performing supervisory duties (supervisor)</i>	NA
<i>Supervisor FTEs¹</i>	NA
<i>Total supervisor and dispatcher FTEs</i>	6.79
<i>Dispatchers scheduled per day</i>	5.50

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 32.19
<i>Average supervisor hourly rate with benefits</i>	NA
<i>Annual labor costs-dispatch</i>	\$393,686
<i>Annual labor costs-supervisor¹</i>	NA
<i>Supervisor and dispatcher annual labor costs</i>	\$393,686
<i>Overtime</i>	\$12,000
<i>Dispatcher costs per call</i>	\$ 49.95

Calls	
<i>Total calls dispatched per year</i>	7,882
<i>Calls dispatched per 8 hour shift</i>	7
<i>Calls per 2007 (estimated) population</i>	.21
<i>Calls per establishment (2005)</i>	12
<i>Calls per employment (reflects daytime population, 2005)</i>	1

Other	
<i>Average leave(hours) used per employee per year²</i>	
<i>Estimated 2007 population³</i>	36,782
<i>Square miles</i>	18.07
<i>2007 population density (in 1,000s) per square mile</i>	2.04

NOTE:

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville.

Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Brook Park

Staffing	
<i>No. of dispatchers (part time & full time)</i>	9
<i>Total dispatch staff FTEs</i>	9.00
<i>Percentage of time spent on dispatch duties</i>	75%
<i>Total staff performing supervisory duties (supervisor)</i>	3
<i>Supervisor FTEs¹</i>	.60
<i>Total supervisor and dispatcher FTEs</i>	7.35
<i>Dispatchers scheduled per day</i>	6.00

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 31.68
<i>Average supervisor hourly rate with benefits</i>	\$ 43.86
<i>Annual labor costs-dispatch</i>	\$497,867
<i>Annual labor costs-supervisor¹</i>	\$54,737
<i>Supervisor and dispatcher annual labor costs</i>	\$552,604
<i>Overtime</i>	\$9,696
<i>Dispatcher costs per call</i>	\$ 20.19

Calls	
<i>Total calls dispatched per year</i>	24,664
<i>Calls dispatched per 8 hour shift</i>	23
<i>Calls per 2007 (estimated) population</i>	2.11
<i>Calls per establishment (2005)</i>	52
<i>Calls per employment (reflects daytime population, 2005)</i>	2

Other	
<i>Average leave(hours) used per employee per year²</i>	212
<i>Estimated 2007 population³</i>	11,694
<i>Square miles</i>	7.54
<i>2007 population density (in 1,000s) per square mile</i>	1.55

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Brooklyn

Staffing	
<i>No. of dispatchers (part time & full time)</i>	6
<i>Total dispatch staff FTEs</i>	6.00
<i>Percentage of time spent on dispatch duties</i>	95%
<i>Total staff performing supervisory duties (supervisor)</i>	1
<i>Supervisor FTEs¹</i>	.95
<i>Total supervisor and dispatcher FTEs</i>	6.65
<i>Dispatchers scheduled per day</i>	6.00

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 25.06
<i>Average supervisor hourly rate with benefits</i>	NA
<i>Annual labor costs-dispatch</i>	\$350,093
<i>Annual labor costs-supervisor¹</i>	NA
<i>Supervisor and dispatcher annual labor costs</i>	\$350,093
<i>Overtime</i>	NA
<i>Dispatcher costs per call</i>	\$ 26.41

Calls	
<i>Total calls dispatched per year</i>	13,257
<i>Calls dispatched per 8 hour shift</i>	12
<i>Calls per 2007 (estimated) population</i>	.45
<i>Calls per establishment (2005)</i>	41
<i>Calls per employment (reflects daytime population, 2005)</i>	1

Other	
<i>Average leave(hours) used per employee per year²</i>	388
<i>Estimated 2007 population³</i>	29,373
<i>Square miles</i>	4.28
<i>2007 population density (in 1,000s) per square mile</i>	6.86

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Brooklyn Heights

Staffing	
<i>No. of dispatchers (part time & full time)</i>	2
<i>Total dispatch staff FTEs</i>	1.75
<i>Percentage of time spent on dispatch duties</i>	85%
<i>Total staff performing supervisory duties (supervisor)</i>	1
<i>Supervisor FTEs¹</i>	.01
<i>Total supervisor and dispatcher FTEs</i>	1.50
<i>Dispatchers scheduled per day</i>	1.42

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 33.20
<i>Average supervisor hourly rate with benefits</i>	\$ 34.95
<i>Annual labor costs-dispatch</i>	\$106,238
<i>Annual labor costs-supervisor¹</i>	\$16,366
<i>Supervisor and dispatcher annual labor costs</i>	\$122,604
<i>Overtime</i>	\$8,563
<i>Dispatcher costs per call</i>	\$ 17.19

Calls	
<i>Total calls dispatched per year</i>	6,179
<i>Calls dispatched per 8 hour shift</i>	6
<i>Calls per 2007 (estimated) population</i>	.41
<i>Calls per establishment (2005)</i>	31
<i>Calls per employment (reflects daytime population, 2005)</i>	1

Other	
<i>Average leave(hours) used per employee per year²</i>	249
<i>Estimated 2007 population³</i>	15,054
<i>Square miles</i>	1.77
<i>2007 population density (in 1,000s) per square mile</i>	8.51

NOTE: Brooklyn Heights and Valley View include two people at 32 hours per week.

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville.

Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Garfield Heights

Staffing	
<i>No. of dispatchers (part time & full time)</i>	11
<i>Total dispatch staff FTEs</i>	9.00
<i>Percentage of time spent on dispatch duties</i>	90%
<i>Total staff performing supervisory duties (supervisor)</i>	2
<i>Supervisor FTEs¹</i>	.20
<i>Total supervisor and dispatcher FTEs</i>	8.30
<i>Dispatchers scheduled per day</i>	3.60

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 22.99
<i>Average supervisor hourly rate with benefits</i>	\$ 68.14
<i>Annual labor costs-dispatch</i>	\$1,050,381
<i>Annual labor costs-supervisor¹</i>	\$42,517
<i>Supervisor and dispatcher annual labor costs</i>	\$1,092,898
<i>Overtime</i>	\$75,545
<i>Dispatcher costs per call</i>	\$ 41.71

Calls	
<i>Total calls dispatched per year</i>	25,186
<i>Calls dispatched per 8 hour shift</i>	23
<i>Calls per 2007 (estimated) population</i>	.90
<i>Calls per establishment (2005)</i>	48
<i>Calls per employment (reflects daytime population, 2005)</i>	2

Other	
<i>Average leave(hours) used per employee per year²</i>	248
<i>Estimated 2007 population³</i>	28,058
<i>Square miles</i>	7.23
<i>2007 population density (in 1,000s) per square mile</i>	3.88

NOTE: Garfield Heights FTE figure includes two records clerks that provide backup; clerks not included in number of dispatchers. Independence and Garfield Heights have two 12-hour shifts

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Independence

Staffing	
<i>No. of dispatchers (part time & full time)</i>	11
<i>Total dispatch staff FTEs</i>	9.50
<i>Percentage of time spent on dispatch duties</i>	95%
<i>Total staff performing supervisory duties (supervisor)</i>	1
<i>Supervisor FTEs¹</i>	.95
<i>Total supervisor and dispatcher FTEs</i>	9.98
<i>Dispatchers scheduled per day</i>	4.13

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$20.89
<i>Average supervisor hourly rate with benefits</i>	NA
<i>Annual labor costs-dispatch</i>	\$817,100
<i>Annual labor costs-supervisor¹</i>	NA
<i>Supervisor and dispatcher annual labor costs</i>	\$817,100
<i>Overtime</i>	\$46,730
<i>Dispatcher costs per call</i>	\$ 22.94

Calls	
<i>Total calls dispatched per year</i>	35,620
<i>Calls dispatched per 8 hour shift</i>	33
<i>Calls per 2007 (estimated) population</i>	395.78
<i>Calls per establishment (2005)</i>	44
<i>Calls per employment (reflects daytime population, 2005)</i>	2

Other	
<i>Average leave(hours) used per employee per year²</i>	NA
<i>Estimated 2007 population³</i>	90
<i>Square miles</i>	9.59
<i>2007 population density (in 1,000s) per square mile</i>	.01

NOTE: Independence and Garfield Heights have two 12-hour shifts

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville.

Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Middleburg Heights

Staffing	
<i>No. of dispatchers (part time & full time)</i>	7
<i>Total dispatch staff FTEs</i>	7.00
<i>Percentage of time spent on dispatch duties</i>	20%
<i>Total staff performing supervisory duties (supervisor)</i>	2
<i>Supervisor FTEs¹</i>	.50
<i>Total supervisor and dispatcher FTEs</i>	1.90
<i>Dispatchers scheduled per day</i>	5.00

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 19.27
<i>Average supervisor hourly rate with benefits</i>	\$ 37.27
<i>Annual labor costs-dispatch</i>	\$365,416
<i>Annual labor costs-supervisor¹</i>	\$19,380
<i>Supervisor and dispatcher annual labor costs</i>	\$384,796
<i>Overtime</i>	NA
<i>Dispatcher costs per call</i>	\$ 60.12

Calls	
<i>Total calls dispatched per year</i>	6,078
<i>Calls dispatched per 8 hour shift</i>	6
<i>Calls per 2007 (estimated) population</i>	.08
<i>Calls per establishment (2005)</i>	8
<i>Calls per employment (reflects daytime population, 2005)</i>	

Other	
<i>Average leave(hours) used per employee per year²</i>	200
<i>Estimated 2007 population³</i>	78,785
<i>Square miles</i>	8.07
<i>2007 population density (in 1,000s) per square mile</i>	9.76

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: North Royalton

Staffing	
<i>No. of dispatchers (part time & full time)</i>	10
<i>Total dispatch staff FTEs</i>	8.80
<i>Percentage of time spent on dispatch duties</i>	80%
<i>Total staff performing supervisory duties (supervisor)</i>	2
<i>Supervisor FTEs¹</i>	.50
<i>Total supervisor and dispatcher FTEs</i>	7.54
<i>Dispatchers scheduled per day</i>	5.57

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 31.39
<i>Average supervisor hourly rate with benefits</i>	\$ 58.01
<i>Annual labor costs-dispatch</i>	\$532,161
<i>Annual labor costs-supervisor¹</i>	\$30,165
<i>Supervisor and dispatcher annual labor costs</i>	\$562,326
<i>Overtime</i>	\$21,134
<i>Dispatcher costs per call</i>	\$ 13.97

Calls	
<i>Total calls dispatched per year</i>	38,085
<i>Calls dispatched per 8 hour shift</i>	35
<i>Calls per 2007 (estimated) population</i>	3.62
<i>Calls per establishment (2005)</i>	52
<i>Calls per employment (reflects daytime population, 2005)</i>	5

Other	
<i>Average leave(hours) used per employee per year²</i>	NA
<i>Estimated 2007 population³</i>	10,530
<i>Square miles</i>	21.29
<i>2007 population density (in 1,000s) per square mile</i>	.49

NOTE: N. Royalton includes three part time per as needed at 16 to 32 hours per week.

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville.

Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Parma

Staffing	
<i>No. of dispatchers (part time & full time)</i>	17
<i>Total dispatch staff FTEs</i>	17.00
<i>Percentage of time spent on dispatch duties</i>	90%
<i>Total staff performing supervisory duties (supervisor)</i>	1
<i>Supervisor FTEs¹</i>	.25
<i>Total supervisor and dispatcher FTEs</i>	15.55
<i>Dispatchers scheduled per day</i>	9.90

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 33.62
<i>Average supervisor hourly rate with benefits</i>	\$ 36.13
<i>Annual labor costs-dispatch</i>	\$1,167,685
<i>Annual labor costs-supervisor¹</i>	\$75,149
<i>Supervisor and dispatcher annual labor costs</i>	\$1,242,834
<i>Overtime</i>	\$54,448
<i>Dispatcher costs per call</i>	\$ 16.60

Calls	
<i>Total calls dispatched per year</i>	70,356
<i>Calls dispatched per 8 hour shift</i>	64
<i>Calls per 2007 (estimated) population</i>	3.52
<i>Calls per establishment (2005)</i>	48
<i>Calls per employment (reflects daytime population, 2005)</i>	2

Other	
<i>Average leave(hours) used per employee per year²</i>	396
<i>Estimated 2007 population³</i>	19,976
<i>Square miles</i>	19.96
<i>2007 population density (in 1,000s) per square mile</i>	1.00

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Parma Heights

Staffing	
<i>No. of dispatchers (part time & full time)</i>	9
<i>Total dispatch staff FTEs</i>	6.50
<i>Percentage of time spent on dispatch duties</i>	99%
<i>Total staff performing supervisory duties (supervisor)</i>	4
<i>Supervisor FTEs¹</i>	.08
<i>Total supervisor and dispatcher FTEs</i>	6.48
<i>Dispatchers scheduled per day</i>	5.91

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 32.46
<i>Average supervisor hourly rate with benefits</i>	\$ 52.67
<i>Annual labor costs-dispatch</i>	\$397,623
<i>Annual labor costs-supervisor¹</i>	\$6,573
<i>Supervisor and dispatcher annual labor costs</i>	\$404,196
<i>Overtime</i>	\$18,013
<i>Dispatcher costs per call</i>	\$ 26.49

Calls	
<i>Total calls dispatched per year</i>	15,011
<i>Calls dispatched per 8 hour shift</i>	14
<i>Calls per 2007 (estimated) population</i>	7.38
<i>Calls per establishment (2005)</i>	41
<i>Calls per employment (reflects daytime population, 2005)</i>	4

Other	
<i>Average leave(hours) used per employee per year²</i>	211
<i>Estimated 2007 population³</i>	2,034
<i>Square miles</i>	4.20
<i>2007 population density (in 1,000s) per square mile</i>	.48

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville. Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Dispatch Center Profile: Valley View

Staffing	
<i>No. of dispatchers (part time & full time)</i>	3
<i>Total dispatch staff FTEs</i>	2.32
<i>Percentage of time spent on dispatch duties</i>	85%
<i>Total staff performing supervisory duties (supervisor)</i>	1
<i>Supervisor FTEs¹</i>	.02
<i>Total supervisor and dispatcher FTEs</i>	1.99
<i>Dispatchers scheduled per day</i>	1.88

Labor Costs and Hourly Rates	
<i>Average dispatcher hourly rate with benefits</i>	\$ 33.20
<i>Average supervisor hourly rate with benefits</i>	\$ 34.95
<i>Annual labor costs-dispatch</i>	\$140,754
<i>Annual labor costs-supervisor¹</i>	\$21,684
<i>Supervisor and dispatcher annual labor costs</i>	\$162,437
<i>Overtime</i>	\$11,345
<i>Dispatcher costs per call</i>	\$ 19.58

Calls	
<i>Total calls dispatched per year</i>	7,188
<i>Calls dispatched per 8 hour shift</i>	7
<i>Calls per 2007 (estimated) population</i>	4.91
<i>Calls per establishment (2005)</i>	22
<i>Calls per employment (reflects daytime population, 2005)</i>	1

Other	
<i>Average leave(hours) used per employee per year²</i>	249
<i>Estimated 2007 population³</i>	1,463
<i>Square miles</i>	5.63
<i>2007 population density (in 1,000s) per square mile</i>	.26

NOTE: Brooklyn Heights and Valley View include two people at 32 hours per week.

¹ Supervisor FTEs have been adjusted based on the percentage of time on dispatch. Total salary costs for supervisors were adjusted based on FTEs.

² Figure includes sick and vacation time. The type of leave included is unclear for Middleburg Heights and Brecksville.

Compensatory time usage is included in figures for Brooklyn and Parma.

³ Source: Table 4 Annual Estimates of the Population for Incorporated Places in Ohio, Listed Alphabetically April 1, 2000 to July 1, 2007 (SUB-EST2007-04-39). Population Division, U.S. Census Bureau. Release Date July 10, 2008.

Appendix B: Glossary of Terms

CAD – Computer Aided Dispatch

Clear - A radio transmitting without encryption.

Comm. Center - The Communications center and staff.

Control Stations - Refers to a base station radio that resides at a facility, or mobile command vehicle.

CRIS - Cuyahoga Regional Information System is a computer based criminal justice information system designed for use by Criminal Justice Agencies in and around Cuyahoga County. CRIS operates a computer system that contains a communications network and central repository of criminal justice data. It provides access to statewide and national information centers concerning vehicles, stolen property, wanted/missing persons and criminal records, links criminal justice data throughout the area, and provides a readily accessible source of standardized information on agency activity, custody status, and the judicial process.

Digital ID - The six digit id that is unique to each radio.

Emergency - An activation of the radio or MCT emergency button that results in an emergency incident in the ODNR CAD.

Encryption - Random algorithm program that makes law enforcement transmissions unreadable by a non-encrypted radio or scanner when the encryption function is activated.

FRS - Fixed Repeater System. A stationary repeater accessible to both commissioned and non-commissioned employees through their portable radio.

Feature Set - A pre-determined configuration of the radio that controls access to private call, and other enhancements and parameters established.

Field User - Any employee, volunteer or agreement holder using radios or mobile data for law enforcement, administrative, maintenance, education, research or incident command purposes, with the exception of the Communications Center.

Foreign System - A MARCS compatible system and talkgroups that belong to another agency that may be compatible with ODNR radios and data transmitting devices.

LEADS - Law Enforcement Automated Data System is a statewide computerized network which provides computerized data and communications for criminal justice agencies within the state of Ohio.

NCIC - National Crime Information Center is a nationwide computerized information system-established as a service to all local, state and federal criminal justice agencies.

NIBRS - National Incident Based Reporting System

NIMS - National Incident Management System.

MARCS - Multi Agency Radio Communications System

MCT - Mobile Computer Terminal.

OIBRS - Ohio Incident Based Reporting System

Secure - A radio transmitting encrypted

Talkgroups - A radio channel designed to be used by a specific group of field users and the communications center.

Talkgroup, Agency Specific -Talkgroups designated to be used by a specific agency, or organizational unit. Agency Specific talkgroups can not be accessed by another agency.

Talkgroup, Interoperable -Talkgroups designated for use by all participating MARCS users, or users having access to interoperable talkgroups channels.

Transportable Communications System (TCS) – A vehicle capable of coordinating communications between multiple users and agencies. The TCS may also possess equipment, which allows it to operate as a stand-alone trunked radio site.

Trunked Radio System - A radio system allowing multiple users to access different channels on one tower site at the same time.

VRS - Vehicular Repeater System that is installed in all vehicles with mobile data. VRS is not installed in Vessels. VRS may also be installed a facilities as a fixed unit accessible through a tower site at the facility.

Appendix C: References

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Appendix D: Sample Intergovernmental Agreements

INTERLOCAL COOPERATION AGREEMENT FOR BIDDEFORD-SACO PUBLIC SAFETY ANSWERING POINT (Draft of 06-21-06)

Pursuant to the provisions of 30-A M. R. S. A. , Chapter 115, this Inter-local Cooperation Agreement (Agreement) is made and entered into as of the day of September __, 2006, by and between the cities of Biddeford and Saco, Maine, for the provision of Public Safety Answering Point (PSAP) and E-9-1-1 services for the City of Saco.

WHEREAS, Maine law permits municipalities and political subdivisions to enter into inter-local cooperation agreements to make the most efficient use of their powers and to cooperate with other municipalities or political subdivisions on a basis of mutual advantage, in order to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population and other factors influencing the needs and development of Maine communities; and

WHEREAS, M. R. S. A. §2926 Emergency Services Communication Bureau (ESCB) (2A) goal, to the extent possible, the Bureau shall establish a total of between 16 and 24 public service answering points. 625 Emergency Services Communication Bureau Chapter 1, Standards for Establishing a Statewide Enhanced 9-1-1 System §4(2)(c) Consolidation. Any municipal PSAP existing as of July 1, 2005 . . . must file a plan with ESCB no later than July 1, 2006 describing how it plans to consolidate with another entity . . . no later than October 15, 2007 ; and,

WHEREAS, the cities of Biddeford and Saco have enjoyed a long history of cooperation; and,

WHEREAS, the city councils of Biddeford and Saco have reviewed the information available on this subject and have determined that it is in the best interest of their constituencies to participate in a consolidated PSAP center for the cities of Biddeford and Saco, and that an appropriate agreement be created to facilitate the terms of this relationship, and,

NOW, THEREFORE, pursuant to the authority granted by 30-A M. R. S. A. , Chapter 115, and every other legal authority, and in consideration of the following mutual covenants and conditions set forth herein, the parties hereby agree as follows:

Section 1. Statement of Purpose

The City of Biddeford Public Safety Communications Center will provide the following PSAP services to the City of Saco:

1. E 9-1-1 call transfer.

2. Emergency Medical Dispatching (EMD) will be provided by the City of Biddeford Public Safety Communications Center only if, due to the nature of the emergency, the call cannot be safely transferred to the City of Saco Dispatch, and Biddeford's Public Safety Communications person has already started EMD protocols. Otherwise, EMD calls will be transferred to, and handled by the Saco Dispatch personnel.)

3. The City of Saco will provide all other dispatch services for the City of Saco.

Section 2. Operation and Costs

1. The PSAP Center shall be under the direct control and supervision of the Biddeford Police Department.

2. The PSAP shall comply with all pertinent ESCB rules, regulations and guidelines concerning operation of a PSAP Center and E 9-1-1 system and call-transfer services for other agencies.

3. The cost of the operation of the PSAP Center, its systems, personnel & equipment, shall be born by the City of Biddeford.

4. The City of Saco agrees to pay a fee of \$1. 00 per capita, based upon the most recent census information available from the U. S. Census Bureau. This fee may be changed with one year's notice.

5. The agencies represented in this agreement recognize that the complexities involved in multi-agency emergency dispatching will require continuous review and improvement. On occasion, problems or concerns between agencies or disciplines will occur. First line supervisors assigned to those agencies, departments, or organizations experiencing those concerns shall work to resolve such issues at their level whenever practical. Should the issue rise to the level of the Communications Director, the Director shall have the authority to resolve the issue on behalf of the communities.

Section 3. Dispatch Procedures

1. The Biddeford PSAP Center shall provide E 9-1-1 call-transfers for the City of Saco. Emergency Medical Dispatching services will be provided by the City of Biddeford, only under those circumstances when it is more prudent to handle the call at the answering point. Otherwise, the EMD call will be transferred to the City of Saco for processing.

2. E 9-1-1 and other emergency calls received for the City of Saco shall be transferred as quickly and efficiently as possible, and within the guidelines established by the ESCB.

3. Nothing in this agreement is intended to supplant or supersede any other agreement made by or between the cities of Biddeford and Saco, nor is it intended to preclude

either community from requesting assistance from the other pursuant to any existing agreement between the communities.

4. All citizens requesting the non-emergency services of a specific municipal police or fire agency shall be directed to the appropriate municipal dispatch center to be processed.

5. The Biddeford PSAP Center shall provide call-transfer and EMD functions commencing .

Section 4. Effective Date

The conditions and procedures outlined in this Agreement shall be in full force and effect on October 15, 2007

Section 4. Term

Either party may terminate this agreement with six months written notice to the other party, unless a shorter period is agreed to by the parties.

Section 4. Agreements

The signatures of the following shall effectuate compliance with the terms and conditions of this Agreement .

Section 5. Report to City of Saco

The City of Biddeford shall submit a report of Saco PSAP activities to the City of Saco at least on a quarterly basis.

Richard Michaud
City of Saco

John Bubier
City of Biddeford

Date

Date

INTERGOVERNMENTAL AGREEMENT
CHARLESTON COUNTY CONSOLIDATED 9-1-1 CENTER
12/31/07

This Agreement, effective as of January 22, 2008, made and first entered into by and among the undersigned governmental jurisdictions to include Charleston County, City of North Charleston, Town of Mt. Pleasant, City of the Isle of Palms, City of Folly Beach, the St. Johns Fire Department, St. Andrews PSD Fire Department, and the James Island PSD Fire Department.

WITNESSETH:

WHEREAS, jurisdictional entities within Charleston County formed the Charleston County Consolidated Dispatch Committee, including multi-jurisdictional representation from law enforcement, fire and EMS entities within Charleston County; as well as a County Administration representative and a federal agency representative; and this committee has been exploring the benefits of consolidating public safety communications within Charleston County; and

WHEREAS, a Countywide Emergency Communications Services Consolidated Feasibility Study was completed in April, 2007, based upon a scope of work developed by the Consolidated Dispatch Committee and paid for by a Homeland Security grant and seven jurisdictions; and

WHEREAS, the Feasibility Study found that the current emergency call processing is inefficient, potentially detrimental, involving 5 Public Safety Answering Points (PSAPs), 1 Secondary PSAP, and 4 Dispatch-only centers, and that 9-1-1 emergency calls frequently have built-in delays involving transfers to other centers; and

WHEREAS, the jurisdictions and residents of Charleston County would benefit in terms of life safety and efficiency of service from a consolidated 9-1-1 Public Safety Answering Point (PSAP) providing services to Charleston County and the municipalities and fire protection departments within Charleston County; and

WHEREAS, the undersigned governmental jurisdictions wish to agree to the establishment and maintenance of a consolidated Public Safety Answering Point (PSAP), to be hereafter known as "Charleston County Consolidated 9-1-1 Center"; and

WHEREAS, the establishment of such PSAP will provide improved police, fire and emergency medical service communications within the boundaries of the participating jurisdictions (the "Consolidated Service Area"), together with such other jurisdictions as may hereafter contract with the undersigned for communications services; and

WHEREAS, the establishment and maintenance of such PSAP will be of substantial benefit to the citizens of the undersigned governmental jurisdictions and the public in general;

NOW THEREFORE, as an exercise of the police power and authority granted by the Constitution and laws of the State of South Carolina, and in consideration of the mutual terms, covenants and conditions set forth herein, it is hereby agreed and covenanted among the undersigned as follows:

1. 0 PURPOSE: This Intergovernmental Agreement to establish the Charleston County Consolidated 9-1-1 Center contains the following organizational objectives:

1. 1 To promote the health, safety and general welfare of the citizens throughout Charleston County. To that end, the parties wish to continually improve procedural efficiency and technical capabilities of emergency call-taking, emergency call processing, and all emergency response communications.

1. 2 To save lives by improved call processing time which reduces response times to emergency incidents.

1. 3. To improve safety to emergency responders.

1. 4 To effectively receive calls for routine and emergency assistance, based on structured call intake protocols, and coordinate response resources to those calls for service based on the needs of the caller and the direction of field response agencies.

1. 5 To provide all participating agencies with a single contact point for the notification of emergencies and receipt of emergency assistance requests, and for the control of coordinated dispatch for law enforcement, fire and EMS.

1. 6 To bring about increased efficiencies and coordination of communications and emergency response services, including the use of the National Incident Management System and the National Response Plan. These communications improvements are intended to impact emergency response for all types of scenarios that are generally broken into three categories:

A) Emergencies that occur daily in the community: those “typical” crimes, fires, and medical emergencies.

B) Local, small scale disasters, such as a school bus accident.

C) Large scale and/or national level disasters, such as terrorist attacks or natural disasters.

1. 7 To provide the public and field response agencies with highly trained, certified and/or credentialed 9-1-1 employees who strive to provide the best service possible to all parties involved.

1. 8. To set the goals of 1) meeting NFPA's 1221 standards, 2) meeting National Emergency Medical Dispatch (EMD) standards for Accreditation and attaining this accreditation, and 3) meeting CALEA's Standards for Public Safety Communications Agencies and attaining CALEA accreditation.

1. 9 To provide funding to ensure the appropriate level of service to all parties involved as defined by user agencies by establishing funding mechanisms and defining the budget process for the center.

1. 10 To provide for operational oversight from a "Consolidated Dispatch Board" of emergency response leaders.

1. 11 To ensure accountability to the field response agencies by creating User Groups which provide feedback to the Consolidated Dispatch Board.

1. 12 To provide a mechanism for the addition or withdrawal of parties to the Agreement.

1. 13 To establish an alternate center to serve as a backup, overflow and training site, and as a secondary location where emergency dispatchers will function in the event that they need to evacuate the primary Consolidated 9-1-1 Center.

2. 0 DEFINITIONS: As used in this Agreement the following words and phrases shall have the meanings indicated unless the context clearly requires otherwise:

2. 1 "PSAP" (Public Safety Answering Point) shall mean the facility housing the equipment and personnel that provide 9-1-1 call answering, processing and dispatching services.

2. 2 "9-1-1 Services" shall mean those services and equipment to answer 9-1-1 calls on a 24-hours-per-day basis.

2. 3 "Other Services" shall mean services related to emergency service or jurisdictional communications provision, such as administrative call-taking.

2. 4 "County" shall mean Charleston County.

2. 5 "E9-1-1" (Enhanced 9-1-1) shall mean the emergency communications system which connects the public to emergency response.

2. 6 "Participants" shall mean the parties to this Agreement and such other entities as become parties in the future.

2. 7 "Charleston County Consolidated 9-1-1 Center" shall mean collectively the parties to this Agreement in their capacity as providers and/or receivers of 9-1-1 services; or, as the context may require, the system of providing such services; or the facility housing the countywide 9-1-1 operations.

2. 8 "Consolidated Dispatch Board" shall mean the multi-jurisdictional Board of Law Enforcement, Fire and EMS leaders established to guide the establishment and operations of the Center.

3. 0 COUNTY TO ESTABLISH A DEPARTMENT OF PUBLIC SAFETY COMMUNICATIONS: The parties agree that Charleston County, through operational funding as established in Section 9, will establish and maintain a Department of Public Safety Communications which will operate the Charleston County Consolidated 9-1-1 Center. Charleston County will provide the backbone structure to provide important and necessary services such as payroll, employee benefits, facilities maintenance, budget/finance, legal, risk management and procurement. This arrangement provides significant cost efficiencies since the infrastructure and capabilities are in place to provide the administrative and support services to a department serving countywide needs. The Center Director and all employees of the Center will be County employees, subject to all County personnel policies and procedures.

4. 0 PROGRAMMING AND CONSTRUCTION OF FACILITY: Charleston County will purchase, lease, or otherwise obtain the use of an existing facility or build a new facility for the purpose of locating and establishing the Consolidated 9-1-1 Center, at the County's expense. Other uses of the land and the building to be used for the Consolidated 9-1-1 Center may also be considered. Construction or renovation of a consolidated dispatch facility and other related capital costs not covered by 9-1-1 fees will be based upon appropriations made at County Council's discretion.

The Consolidated 9-1-1 Center will include at least the following: (1) dispatch area, (2) Director and supervisor administrative offices, technology specialist offices, clerical and reception office space, (3) radio/recording/CAD/9-1-1 technology equipment rooms, (4) storage for inventory, supplies and records, (5) locker room, (6) bathroom/shower facilities, (7) kitchen, (8) lunch/break room, (9) training area, and (10) multi-purpose classroom/conference room.

Charleston County agrees that the existing Joint Communications Center located at the County Public Services Building or other suitable facilities will be available as a backup

center in the event that the Consolidated 9-1-1 Center employees must evacuate the primary Consolidated 9-1-1 Center. This will not preclude the County from utilizing this space for other purposes, with the understanding that the space must be secured, maintained, accessible and activated as needed under the primary purpose and use as the Consolidated 9-1-1 Center's alternate/back-up/overflow site. This site may also be used for Consolidated Dispatch training purposes.

5.0 TRANSITION ISSUES: The parties agree to cooperate in the many complex aspects of transitioning into the Consolidated 9-1-1 Center. Transition elements include, but are not limited to the following:

5.1 There will be continued involvement of the Consolidated Dispatch Board in all phases of the establishment of the Center.

5.2 All reasonable attempts will be made to hire a Director during the facility programming phase, subject to the funding agreement as indicated in Section 9. The hiring of the Director shall involve the Board, as indicated in Section 6.

5.3 Hiring of employees:

A) EMS and Sheriff's Office dispatch employees who meet qualifications standards, at the time of cutover, will be transferred to the new Consolidated 9-1-1 Center. Supervisory and other specialty positions will be filled by the Center Director.

B) Subject to the conditions below, the Center Director will hire dispatchers that meet the qualifications standards adopted by the Board, from emergency communications centers of the parties to this agreement. A readiness program to assist current dispatchers to meet qualifications standards will be made available during the establishment phase of the facility. (Readiness training and funding responsibilities as referred to in Sections 9.3 and 9.4.)

C) Dispatchers must meet the minimum qualifications established for the position, unless they have been hired less than six months before cutover to the Consolidated 9-1-1 Center, in which case they will have a period of six months from cutover to meet the minimum qualifications. All new hire employees will be subject to the County's standard probationary period and all other Charleston County employment policies and procedures.

D) It is the intent of this Agreement that the hiring of dispatch staff at participating agencies will take place, subject to the pay scales established for the Consolidated 9-1-1 Center, and with existing longevity and position level taken into consideration, among other things. Criteria which may render a participating dispatch center employee ineligible for County employment at the Consolidated 9-1-1 Center include, but are not limited to, the following:

- Convicted felon or other significant information found on a criminal records check
- The employee has been determined “not eligible for re-hire” as a Charleston County employee
- Inability to pass a drug test
- Inability to pass a basic literacy exam
- Education level which is not equivalent to a high school diploma or higher

5. 4 Individual municipal and agency needs and requests regarding other services such as non-public safety administrative call-taking or other non-emergency communications functions will be determined early in the planning stage and will have specific protocols, training and technology needs established and well-defined. Funding for other services will be as indicated in Section 9.

5. 5 Costs for the transition period prior to moving into the Consolidated 9-1-1 Center will be handled as indicated in Section 9.

5. 6 A transition plan will be developed by Charleston County working closely with the Consolidated Dispatch Board. Charleston County will establish a transitional budget and be responsible for managing this budget and paying transitional expenses, including but not limited to staffing of Director and other positions identified as needed prior to cutover, dispatcher training course fees (see 5. 7 below) and consultant planning assistance. Some transitional funding may come from other participating jurisdictions, and 9-1-1 and grant money will be used wherever possible.

5. 7 The staff time (including necessary overtime) involved in the initial Consolidated Dispatch related training of dispatchers hired or anticipated to be hired by the Consolidated 9-1-1 Center Director, will be borne by the participating Centers where they are working prior to the cutover date. Dispatcher training course fees will be borne by Charleston County during the six months prior to cutover to the consolidated 9-1-1 Center. However, fees for supervisory/QA/trainer courses will be paid by Charleston County only when employees have been selected for supervisory/QA/trainer positions by the Consolidated 9-1-1 Center Director.

6. 0 CONSOLIDATED DISPATCH BOARD: With the execution of this Agreement, the existing “Consolidated Dispatch Committee” will be disbanded and the “Consolidated Dispatch Board” will be established as follows:

6. 1 Membership:

Charleston County:	2 (Sheriff & EMS Director)
North Charleston:	2 (Police Chief & Fire Chief)
Mount Pleasant:	2 (Police Chief & Fire Chief)

Isle of Palms/Sullivan's Island/Folly Beach: 1 (Police Chief) One appointee to serve on the Board through cutover to the Consolidated 9-1-1 Center. Following this, these municipalities will appoint a police chief from one of the other two jurisdictions and rotate these appointments every 3 years.

Charleston County Fire Chiefs Association: 2 Representatives selected by the Association. These appointees must not be from one of the jurisdictions listed above. The two fire chiefs appointed by the Chiefs Association, who have served on the Consolidated Dispatch Committee, will serve on the Board through cutover to the Consolidated 9-1-1 Center. Following this, the Chiefs Association will make new fire chief appointments every 3 years.

Non-Voting Member: County Administrator Designee (to serve as Liaison to County Administration and Secretary to the Board).

Non-Voting Member (Advisor): Federal Agency representative selected by majority vote of the Board based upon nomination by the Chair or another Board member.

6.2 Responsibility and Authority: The Consolidated Dispatch Board shall have the responsibility to:

A) elect a Chairperson from its members by a majority vote of the Board. The Chairperson will serve a two-year term and may be re-elected for subsequent terms. The Chairperson will have the authority and responsibility:

- a. to preside at regular and special meetings of the Board;
- b. to appoint a member of the Board to act as Chairperson in his/her absence. This appointment may be made on a case-by-case basis or for a designated period of time, not to exceed three consecutive meetings;
- c. to call special meetings as appropriate;
- d. to appoint committees as appropriate;
- e. to represent the Board or appoint another member or the 9-1-1 Center Director to represent the Board at various jurisdictional meetings where consolidated dispatch is on the agenda;
- f. to provide the County Administrator with performance reviews of the Center Director and make written recommendations regarding his or her performance, utilizing the County Personnel Policies & Procedures, as may be amended from time to time, and with significant input from Board members.

B) establish, together with the Director, the mission and goals of the Charleston County Consolidated 9-1-1 Center;

- C) work together with the County Administrator to develop an appropriate Director job description and criteria for employment. The Consolidated Dispatch Board will interview qualified applicants and select a candidate (or candidates) for whom a written recommendation will be provided to the County Administrator;
- D) establish operational protocols, policies and procedures for the Consolidated 9-1-1 Center with the assistance of the Director;
- E) consider and resolve questions, issues and disputes presented to the Board by the User Groups or parties to this Agreement;
- F) work with the Director to submit to the County Administrator a recommended budget for the Consolidated 9-1-1 Center by no later than December 15 of each year for the following fiscal year beginning July 1;
- G) provide advocacy for both capital and operational needs of the Center, and work toward funding efficiencies and grant opportunities;
- H) annually adopt a long-range comprehensive plan as described in Section 8, Item J;

6.3 Meetings of the Board:

- A) Any member of the Consolidated Dispatch Board may designate a representative to attend meetings in the member's place. The designee must be from the same jurisdiction and the member will ensure that the designee is knowledgeable and prepared. While so designated, the representative shall assume all rights and responsibilities of a full member. However, members themselves are expected to attend the majority of meetings. If a member misses 3 out of 12 meetings during a calendar year, a letter of concern will be written to the member, with copies to the Governing Body and Administrative Head of the jurisdiction.
- B) Regularly scheduled meetings of the Consolidated Dispatch Board shall be held monthly at such time and place as determined by mutual agreement. Special meetings may be called by the Chairman as appropriate.
- C) A quorum shall be necessary to convene a meeting. Five members shall constitute a quorum. All motions presented for approval shall require majority vote in order to move forward. Additional procedural rules for Board meetings will be established by the Board within the first 90 days of the Board's existence.
- D) The Consolidated Dispatch Board will be a public body subject to the South Carolina Freedom of Information Act.

7.0 USER GROUPS: Two User Groups will be established for the purpose of providing the opportunity for all user agencies to have input into the operations of the Consolidated 9-1-1 Center. There will be a Law Enforcement User Group and a separate Fire/EMS/Rescue/Emergency Management User Group. Membership in each group will include the Chief (or designee) of each agency which utilizes the Consolidated Center for Emergency Communications. These groups will meet at least quarterly and provide written feedback to the Consolidated Dispatch Board regarding any concerns, problems, or recommendations related to operational protocols or any other aspects of the Center's performance to meet their needs.

User Group recommendations relative to service levels, staffing levels, performance standards, operational procedures and protocols or systems shall be made to the Consolidated 9-1-1 Center Director no later than August 15 of each year in order to be considered for implementation in the next budget year.

8.0 CENTER DIRECTOR: The Charleston County Consolidated 9-1-1 Center will be managed, operated and supervised by a Center Director, who will be a Charleston County employee subject to the County's personnel policies and other employee regulations. The hire/fire/evaluation of the Center Director shall occur as outlined in Section 6.2.

8.1) Responsibility and Authority of the Center Director:

A) The Center Director shall be the administrative head of the Charleston County Consolidated 9-1-1 Center and will be responsible for handling administration and personnel matters within the framework of Charleston County regulations and personnel policies.

B) The Center Director shall be responsible for following operational policies and protocols established by the Consolidated Dispatch Board as outlined in Section 6.2, Item D.

C) The Director will prepare a proposed budget for Board approval and will assist the Board in submitting to the County Administrator a recommended budget for the Consolidated 9-1-1 Center by no later than December 15 of each year for the following fiscal year beginning July 1.

D) The Center Director will be responsible for managing the Center within the approved annual budget.

E) The Center Director will work closely with the County 9-1-1 Coordination staff regarding equipment, training, and other issues for which 9-1-1 funds can be utilized to maintain the best available technology and training to best serve citizens.

F) The Center Director will be responsible for all activities of the Consolidated 9-1-1 Center, including but not limited to oversight of call-taking, dispatching, records (custodian), recording, staffing, training, and security.

G) The Center Director shall establish and utilize performance standards for employees. The Director shall actively and continually consider and evaluate all means and opportunities toward the enhancement of operational effectiveness of emergency communications for the benefit of the public and emergency response agencies.

H) The Center Director shall review and evaluate proposals from User Committees for changes to service levels, performance standards, and/or operational procedures. The Director will prepare a written report on such proposals to include, at a minimum, implementation costs, benefits and liabilities, and will provide a recommendation. Such reports and recommendations will be forwarded to the Consolidated Dispatch Board for review. Final decisions will be made by the Board on all changes in service levels, performance standards and operational procedures, contingent upon available funding for implementation. However, in order to meet the need for procedural changes in a dynamic deployment situation, the Director will be given authority to alter the procedures during critical circumstances.

I) The Center Director will participate in a non-voting capacity in meetings of the Consolidated Dispatch Board and the User Groups. Should it be necessary for the Center Director to miss a meeting, he/she will have a designee present.

J) The Center Director will develop appropriate long-range plans, including strategic capital improvements, staffing, technology, and other matters. A comprehensive long-range plan will be developed and updated yearly. This plan will be presented to the Consolidated Dispatch Board on a yearly basis at a date and time determined by the Board. Each year the Board and Director will reach consensus on the plan, and the Board will take action to adopt the plan.

9.0 FUNDING:

9.1 Capital: Capital costs will include start-up costs associated with building & equipping 9-1-1 center, to include such things as land acquisition, programming, designing and constructing the facility, computer Aided Dispatch (CAD) for multi-jurisdictional use, dispatch Center furnishings & equipment not funded through 9-1-1 surcharge, in-building circuitry, grounding, HVAC (heating ventilation and air conditioning), electrical, cable pathways, cabling for radio, CAD, 9-1-1 equipment (CPE), local area network (LAN) and future networks, systems networking & connection needs (9-1-1 & other phone lines, radio, CAD, NCIC) to the primary PSAP, and the

alternate/backup PSAP, with built-in redundancy. (Municipal and/or departmental connections will also be needed in support of email access, department/municipal systems and information access)

Charleston County will provide funding for Capital costs as authorized by Charleston County Council. County Council's Capital Improvement Plan includes \$15 Million for Consolidated Dispatch, subject to final appropriations by County Council.

9. 2 Transitional: Transitional costs will involve staffing and consultant costs before Center becomes fully operational, to include initial personnel costs to hire the Director and other staff, training and equipping staff, consultant planning services, and training of dispatchers who will be moving from participating jurisdictions to the Consolidated 9-1-1 Center.

9. 3 Transitional costs funded by Charleston County: The County's projected Transitional costs are estimated at approximately \$1. 7 million over three fiscal years, primarily to cover early hiring of high level staff and consultant expenses. These expenses will be borne by Charleston County, subject to budget approval by Charleston County Council. During the six months prior to cutover date, the County will pay dispatcher training/certification fees for those dispatchers at participating centers who are hired or anticipated to be hired by the Consolidated 9-1-1 Center.

9. 4 Transitional costs funded by participating Jurisdictions: Personnel staff time (including necessary overtime) involved in the initial Consolidated 9-1-1 Center related training of dispatchers who are hired or anticipated to be hired by the Consolidated 9-1-1 Center, will be borne by the participating dispatch agencies where they are employed prior to the cutover date. This will facilitate dispatchers at participating agencies being employed by the Consolidated 9-1-1 Center, while allowing them to remain at their current respective agencies until cutover date.

9. 5 Operational: Operational costs involve costs to operate once Center becomes activated, including salaries, benefits, support staff, training and employee specific equipment and supplies (uniforms, headsets, etc.), systems maintenance and support costs, facility maintenance, utilities, other indirect costs (factored in projections at 10%), and capital replacement fund to provide future funding toward capital improvement plans such as lifecycle replacement of systems and equipment, NG9-1-1 upgrades and building renovations.

9. 6 Operational costs, projected at approximately \$10. 5 million in FY12 (first possible year of Consolidated 9-1-1 Center Operations), increasing annually at a rate of 4% per year as shown on Attachment A, are to be handled through Charleston County taking on all operational costs on an incremental basis, as follows:

A. First year of Consolidated Dispatch operations (potentially FY-12): Participating jurisdictions will pay 100% of their “status quo” costs (costs they would otherwise incur for continuing their own dispatch operations). Attachment A includes each jurisdiction’s future projected “status quo” costs. For the first operational year of the Consolidated 9-1-1 Center, each jurisdiction will pay Charleston County an amount equal to their status quo costs as shown on this chart (given by fiscal year). If the first year of consolidated dispatch operations is FY-12, then the jurisdictions will pay the full status quo amount indicated for FY-12.

B. Second year of Consolidated Dispatch operations (potentially FY-13): Participating jurisdictions will pay approximately 50% of their “status quo” costs. Attachment A will be used and each jurisdiction will pay Charleston County an amount equal to 50% of their status quo costs as shown on this chart (given by fiscal year). If the second year of consolidated dispatch operations is FY-13, the jurisdictions will pay 50% of the full status quo amount indicated for FY-13.

C. Third year and beyond: Charleston County will take on the full costs of Consolidated Dispatch.

9. 7 Operational Funding as it relates to areas outside of Charleston County: Special financial arrangements will be worked out between Charleston County and those entities which have areas outside of Charleston County which are within their jurisdiction, to ensure that these citizens being served by the center are paying a portion of costs.

9. 8 Existing Funding (funding currently used for 9-1-1 service provision and expected to continue): Wireline and wireless 9-1-1 surcharges currently fund countywide 9-1-1 equipment, call counting software, networking/connectivity, logging recorders and mapping for the PSAPs. Uses for 9-1-1 funding may expand in the future, per legislative changes. Charleston County will make use of 9-1-1 funds wherever possible.

9. 9 Radio System funding: The countywide radio system funding structure is not expected to change with the advent of consolidation. The Consolidated Center will be responsible for operational costs associated with connectivity to the County’s Radio system and the maintenance costs of radio dispatch consoles.

9. 10 Grant Funding: Applicable grants will be sought in order to assist in funding Charleston County’s Consolidated Dispatch Center.

9. 11 Other Services Funding: Funding of desired other services, such as municipal administrative call-taking or other non-emergency functions, will be identified by participating jurisdictions early in the planning stage. The participating agency requesting other services will reach a separate agreement with Charleston County

related to the compensation for other services, following review and recommendation by the Consolidated Dispatch Board.

10.0 EQUIPMENT: Equipment and furnishings for the 9-1-1 Center shall be purchased in the County's name and be the property of Charleston County. The purchase and maintenance of all equipment necessary to receive calls, radio transmissions, and data at the locations (or vehicles) of participating jurisdictions will be the responsibility of the jurisdictions. The parties may engage in cooperative purchasing activities, including but not limited to use of SC State Contracts.

Charleston County and the participating jurisdictions will cooperate together and with local, state and federal agencies in order to maximize interoperability and economies of scale, grant-funding, and other means to reduce costs for equipment and operations. The Center Director, working with the Board, will develop uniform standards for a multi-jurisdictional Computer Aided Dispatch (CAD) system with expandable ports for multiple interfaces such as Records Management System (RMS), Fire Reporting, EMS Reporting and message switching for MDTs or other data-sharing interfaces. Each jurisdiction will be responsible for purchasing and maintaining its own records/data management module and related CAD interface. Access to internal CAD information via the internet may also be an option, and will be funded by each participating jurisdiction. All participating jurisdictions, including those jurisdictions electing not to purchase separate modules and interfaces, will have access to their jurisdiction's call counts and calls for service CAD data upon request to the Center.

11.0 DURATION OF AGREEMENT - WITHDRAWAL: The initial duration of this Agreement shall be for a period of five (5) years from the date hereof, and thereafter shall be automatically extended for consecutive two (2) year periods unless terminated by the parties. In the event that any party desires to withdraw from this Agreement, said party must give 12 months' advance written notice to the other parties, and the withdrawal shall take effect only as of the beginning of the succeeding fiscal year of the County, unless otherwise agreed between the parties. (By way of example and not in limitation, if notice is delivered later than the end of business June 30 of a given year, the Agreement shall continue until the end of the following fiscal year. Notice delivered June 30, 2007, equals withdrawal June 30, 2008. Notice given July 1, 2007, or later, equals withdrawal June 30, 2009.)

12.0 ADMISSION OF NEW JURISDICTIONS: Additional jurisdictions may become participants by written addendum to this Agreement, with the approval of the majority of participating governing bodies, upon recommendation by the Consolidated Dispatch Board, with terms and conditions as agreed upon.

13.0 MEDIATION: Any controversy between the members with regard to the

application or interpretation of this Agreement shall be submitted to the Consolidated Dispatch Board for resolution. If the Board's action does not resolve the controversy, it may be submitted for mediation. Upon failure of mediation, each party reserves all rights and remedies otherwise available under South Carolina law.

14. 0 RESPONSIBILITY FOR LOSS: Each participating jurisdiction agrees to be responsible and assume the risk of liability for its own wrongful and/or negligent acts or omissions, or those of its officers, agents, or employees to the extent that liability exists.

15. 0 SEVERABILITY: Should any part of the Agreement be determined by a court of competent jurisdiction to be invalid, illegal or against public policy, said offending section shall be void and of no effect, and shall not render any other section herein, nor this Agreement as a whole, invalid. Those rights and obligations under this Agreement, which by their nature should survive, shall remain in effect after termination, suspension or expiration hereof.

16. 0 EXECUTION: This Agreement, or amendments hereto, shall be executed on behalf of each participating jurisdiction by its duly authorized representative and pursuant to an appropriate motion, resolution or ordinance of each participating jurisdiction. This Agreement, or any amendment thereto, shall be deemed adopted upon the date of execution by the last so authorized representative.

17. 0 SIGNATURES: Each party to this Agreement shall sign a signature page to constitute valid execution.

18. 0 ENTIRE AGREEMENT: This document encompasses the entire Agreement of the members. No understanding or amendment, addendum, or addition to this Agreement shall be effective unless made in writing and signed by all members.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals
this _____ day of _____, 200__.

FOR CHARLESTON COUNTY:

WITNESSES

_____+

_____ (Seal)
McRoy Canterbury, Jr. , Administrator

WITNESSES

_____ (Seal)
J. Al Cannon, Jr. , Sheriff

(V12/31/07)

Consolidated Dispatch Center Feasibility Study

ATTACHMENT A
Charleston County Consolidation Study
Operational Planning and Transition
Cost Summary

Operations Costs - Status Quo - Do Nothing													
	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	Total On-going Operations Costs Fiscal Years 12-19	Total Fiscal Years 09-19
Total All Costs	\$10,059,540	\$10,461,922	\$10,880,399	\$11,315,615	\$11,768,239	\$12,238,969	\$12,728,528	\$13,237,669	\$13,767,176	\$14,317,863	\$14,890,577	\$104,264,635	\$135,666,496
9-1-1 Funded Recurring Costs	\$855,713	\$889,941	\$925,539	\$962,560	\$1,001,063	\$1,041,105	\$1,082,750	\$1,126,060	\$1,171,102	\$1,217,946	\$1,266,664	\$8,869,250	\$11,540,443
City of Charleston	\$1,459,128	\$1,517,493	\$1,578,193	\$1,641,321	\$1,706,973	\$1,775,252	\$1,846,262	\$1,920,113	\$1,996,917	\$2,076,794	\$2,159,866	\$15,123,496	\$19,678,313
Isle of Palms	\$409,564	\$425,947	\$442,985	\$460,704	\$479,132	\$498,297	\$518,229	\$538,958	\$560,517	\$582,937	\$606,255	\$4,245,030	\$5,523,525
Mount Pleasant	\$1,390,531	\$1,435,752	\$1,493,182	\$1,552,909	\$1,615,026	\$1,679,627	\$1,746,812	\$1,816,684	\$1,889,352	\$1,964,926	\$2,043,523	\$14,308,859	\$18,618,323
North Charleston	\$1,243,296	\$1,293,028	\$1,344,749	\$1,398,539	\$1,454,480	\$1,512,660	\$1,573,166	\$1,636,093	\$1,701,536	\$1,769,598	\$1,840,382	\$12,886,453	\$16,767,525
Charleston County Sheriff's Department	\$1,944,045	\$2,021,807	\$2,102,690	\$2,186,787	\$2,274,258	\$2,365,228	\$2,459,838	\$2,558,231	\$2,660,560	\$2,766,983	\$2,877,662	\$20,149,547	\$26,218,079
Charleston County EMS	\$1,867,769	\$1,942,501	\$2,020,201	\$2,101,009	\$2,185,049	\$2,272,451	\$2,363,349	\$2,457,883	\$2,556,198	\$2,658,446	\$2,764,784	\$19,359,169	\$25,189,659
Folly Beach	\$235,859	\$245,293	\$255,105	\$265,309	\$275,921	\$286,958	\$298,436	\$310,374	\$322,789	\$335,700	\$349,128	\$2,095,488	\$2,831,745
James Island	\$205,601	\$213,825	\$222,378	\$231,273	\$240,524	\$250,145	\$260,151	\$270,557	\$281,379	\$292,634	\$304,340	\$2,131,003	\$2,772,807
St. Andrews	\$121,554	\$126,417	\$131,473	\$136,732	\$142,201	\$147,890	\$153,805	\$159,957	\$166,356	\$173,010	\$179,930	\$1,259,881	\$1,639,325
St. John's Island	\$336,460	\$349,919	\$363,915	\$378,472	\$393,611	\$409,355	\$425,730	\$442,759	\$460,469	\$478,888	\$498,043	\$3,487,327	\$4,537,622

Charleston County Consolidation													
Planning & Transition				Operations Costs								Total On-going Operations Costs Fiscal Years 12-19	
	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	Total All	
Consolidated Center Costs	\$135,132	\$230,677	\$586,101	\$10,450,315	\$10,866,328	\$11,303,061	\$11,755,183	\$12,225,390	\$12,714,406	\$13,222,982	\$13,751,902	\$96,291,566	\$139,697,425
9-1-1 Surcharge Funded Costs				\$517,272									
Operational Costs Funded by Participants				\$9,833,043									
Consulting Assistance	\$155,880	\$220,076	\$225,816										\$601,772
County & Municipal Costs	\$10,059,540	\$10,461,922	\$10,880,399										\$31,401,861
Difference Between "Do Nothing" Operations Costs vs. Consolidation Operations Costs	NA	NA	NA	\$865,300	\$899,912	\$935,908	\$973,345	\$1,012,278	\$1,052,770	\$1,094,880	\$1,138,676	\$7,973,068	-\$4,030,929

1 of 1

L. Robert Kimball and Associates (08/28/07)

Figure 3: Charleston County Cost Summary

Consolidated Dispatch Center Feasibility Study

Regional Call Center
Estimate of Project Cost
City of Parma

9/9/2009

No.	Description	Notes	Quant./Units	Cost per Unit	Total Cost
1.0	Construction Costs				
1.1	Building	1	8,500	\$235	\$1,997,500
1.2	Parking	2	54	\$7,500	\$405,000
1.3	Post Construction BMPs	3			\$40,000
1.4	Subtotal - Construction Costs				\$2,442,500
2.0	Non-construction Costs				
2.1	Architectural and Engineering Fees	4	10%		\$244,250
2.2	Contingency	5	17%		\$415,225
2.3	Land Acquisition	6	1.50	\$275,000	\$412,500
2.4	Subtotal - Non-construction Costs				\$1,071,975
3.0	Total				\$3,514,475

Notes:

- 1 Cost reflects: a secure building with reinforced concrete masonry structure and a brick veneer at the exterior perimeter walls, select interior walls of reinforced concrete masonry and gypsum wallboard, remaining interior walls shall be steel stud and gypsum wallboard, reinforced security doors at the exterior perimeter, heavy duty hollow metal doors with heavy duty hollow metal frames on the interior, ballistic glazing in reinforced frames (limited to clerestories), standing seam metal roof over formed metal decking over metal trusses over a reinforced ceiling / roof substructure, interior finishes, fire alarm, fire suppression systems, mechanical, electrical and plumbing.
Cost is based on an I-2 (Institutional) facility similar to a secure penitentiary of Type 1A construction as defined in the Ohio Building Code. The cost is from the Square Foot Construction Costs table used by most Building Departments and adjusted for 2011 construction costs (a 5% increase per year).
- 2 Cost reflects: asphalt paving with concrete curbs, parking lot security measures (fencing, bollards, etc.), 10 linear feet of 5 foot wide sidewalk for each space shown, site utilities, an allowance for a retention basin, landscaping, site signage and a dumpster enclosure.
Cost is based on a similar project in the Greater Cleveland area with adjustments for security measures and 2011 construction costs (a 5% increase per year).
- 3 Best Management Practices (BMPs) as required by the Ohio EPA to properly pretreated, retain and manage the storm water runoff from the site.
- 4 Architectural and Engineering fees may range from 7% to 14%.
- 5 Contingency is for: construction cost overruns and change orders, printing, permits, postage, shipping, special systems (generators, communication wiring, clean agent suppression systems, alarm systems, etc.), unknown/unique site conditions, etc.
5% of the contingency has been allocated to construction cost overruns and change orders and the remaining 12% is for the remaining contingency items.
- 6 Land acquisition includes all costs associated with the purchase of 1.5 acres of premium land.

Prepared by Dan Kulchitsky, AIA - City of Parma Building Department

Figure 5: Construction Cost Breakdown and Notes

Center for Public Management	122
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Center for Public Management	123
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Center for Public Management
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Center for Public Management
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Center for Public Management	127
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Consolidated Dispatch Center Feasibility Study

Group	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp
Employee	Emp#22	Emp#23	Emp#24	Emp#25	Emp#26	Emp#27	Emp#28	Emp#29	Emp#30	Emp#31	Emp#32	Emp#33	Emp#34
16-Oct-06	1stDisp	1stDisp			1stDisp								
17-Oct-06	1stDisp	1stDisp	1stDisp										
18-Oct-06	1stDisp	1stDisp	1stDisp	1stDisp									
19-Oct-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp								
20-Oct-06		1stDisp	1stDisp	1stDisp	1stDisp	1stDisp							
21-Oct-06			1stDisp	1stDisp	1stDisp	1stDisp							
22-Oct-06	1stDisp			1stDisp	1stDisp					2ndDisp	2ndDisp		
23-Oct-06	1stDisp	1stDisp	1stDisp							2ndDisp	2ndDisp	2ndDisp	2ndDisp
24-Oct-06	1stDisp	1stDisp	1stDisp							2ndDisp	2ndDisp	2ndDisp	2ndDisp
25-Oct-06	1stDisp	1stDisp	1stDisp	1stDisp								2ndDisp	2ndDisp
26-Oct-06	1stDisp	1stDisp	1stDisp	Sick	1stDisp				1stDisp	2ndDisp			
27-Oct-06		1stDisp	1stDisp	1stDisp	1stDisp	1stDisp							
28-Oct-06			1stDisp	1stDisp	1stDisp	1stDisp							
29-Oct-06	1stDisp			1stDisp	1stDisp	1stDisp							
30-Oct-06	1stDisp	1stDisp	1stDisp										
31-Oct-06	1stDisp	1stDisp	1stDisp										
1-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp									
2-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp								
3-Nov-06		1stDisp	1stDisp	1stDisp	1stDisp			1stDisp					
4-Nov-06			1stDisp	1stDisp	1stDisp	1stDisp		1stDisp					
5-Nov-06	1stDisp			1stDisp	1stDisp	1stDisp							
6-Nov-06	1stDisp	1stDisp	1stDisp										
7-Nov-06	1stDisp	1stDisp	1stDisp										
8-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp									
9-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp				1stDisp				2ndDisp
10-Nov-06		Sick	1stDisp	1stDisp	1stDisp				1stDisp				
11-Nov-06			1stDisp	1stDisp	1stDisp	1stDisp				1stDisp			
12-Nov-06	Sick			1stDisp	1stDisp	1stDisp	1stDisp					2ndDisp	
13-Nov-06	1stDisp	1stDisp	1stDisp								2ndDisp	2ndDisp	
14-Nov-06	1stDisp	1stDisp	Sick					1stDisp	1stDisp		2ndDisp	2ndDisp	
15-Nov-06	1stDisp	1stDisp	Sick	1stDisp				1stDisp					2ndDisp
16-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp	Sick								
17-Nov-06		1stDisp	1stDisp	1stDisp	1stDisp								
18-Nov-06			1stDisp	1stDisp	1stDisp	1stDisp				1stDisp			
19-Nov-06	1stDisp			Sick	1stDisp	1stDisp				1stDisp			
20-Nov-06	1stDisp	1stDisp	1stDisp										
21-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp									
22-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp				1stDisp			2ndDisp	2ndDisp
23-Nov-06	1stDisp	Sick	1stDisp	1stDisp	1stDisp			1stDisp					
24-Nov-06		1stDisp	1stDisp	1stDisp	1stDisp				1stDisp				
25-Nov-06			1stDisp	1stDisp	1stDisp	1stDisp				1stDisp			
26-Nov-06	1stDisp			1stDisp	1stDisp	1stDisp							
27-Nov-06	1stDisp	1stDisp	1stDisp					1stDisp	1stDisp		2ndDisp		
28-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp					1stDisp			
29-Nov-06		1stDisp	1stDisp	1stDisp	1stDisp								
30-Nov-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp								
1-Dec-06		1stDisp	1stDisp	1stDisp	1stDisp								
2-Dec-06			1stDisp	1stDisp	1stDisp	1stDisp							
3-Dec-06	1stDisp			1stDisp	1stDisp	1stDisp	1stDisp					2ndDisp	
4-Dec-06	Sick	Sick								1stDisp			
5-Dec-06	1stDisp	1stDisp	1stDisp										
6-Dec-06	1stDisp	1stDisp	1stDisp	1stDisp							2ndDisp	2ndDisp	2ndDisp
7-Dec-06	1stDisp	1stDisp	1stDisp	1stDisp	1stDisp							2ndDisp	
8-Dec-06		1stDisp	1stDisp	1stDisp	1stDisp								
9-Dec-06			1stDisp	1stDisp	1stDisp	1stDisp							
10-Dec-06	1stDisp			1stDisp	1stDisp	1stDisp							
11-Dec-06	1stDisp	1stDisp	1stDisp										
12-Dec-06	1stDisp	1stDisp	1stDisp	1stDisp									2ndDisp
13-Dec-06	1stDisp	1stDisp	1stDisp	1stDisp	Sick			1stDisp	1stDisp	1stDisp			
14-Dec-06	1stDisp	1stDisp	1stDisp	1stDisp	Sick	1stDisp							
15-Dec-06		1stDisp	1stDisp	1stDisp	1stDisp	1stDisp					2ndDisp		
16-Dec-06			1stDisp	1stDisp	1stDisp	1stDisp							
17-Dec-06	1stDisp			1stDisp	1stDisp	1stDisp							
18-Dec-06	1stDisp	1stDisp	1stDisp										
19-Dec-06	1stDisp	1stDisp	1stDisp										
20-Dec-06	1stDisp	1stDisp	1stDisp	1stDisp				1stDisp		1stDisp	1stDisp		
21-Dec-06	1stDisp	1stDisp	1stDisp	Sick	Sick	1stDisp			1stDisp	1stDisp	1stDisp		
22-Dec-06		1stDisp	1stDisp	1stDisp	1stDisp	1stDisp							
23-Dec-06			1stDisp	1stDisp	1stDisp	1stDisp							
24-Dec-06	1stDisp	Vacation		Sick	Vacation		1stDisp	1stDisp	1stDisp			1stDisp	1stDisp
25-Dec-06	1stDisp	Vacation	1stDisp		Vacation		1stDisp	1stDisp	1stDisp			1stDisp	1stDisp
26-Dec-06	Sick	Vacation	1stDisp		Vacation		1stDisp	1stDisp	1stDisp	2ndDisp	2ndDisp	2ndDisp	1stDisp
27-Dec-06	1stDisp	Vacation	1stDisp	1stDisp	Vacation					2ndDisp	2ndDisp	2ndDisp	1stDisp
28-Dec-06	1stDisp	Vacation	1stDisp	1stDisp	Vacation		1stDisp	1stDisp	1stDisp	2ndDisp	2ndDisp	2ndDisp	1stDisp
29-Dec-06			1stDisp	1stDisp				1stDisp	1stDisp	2ndDisp	2ndDisp	2ndDisp	1stDisp
30-Dec-06			1stDisp	1stDisp				1stDisp	1stDisp				1stDisp

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Consolidated Dispatch Center Feasibility Study

Group:	2ndDisp	2ndDisp	2ndDisp	2ndDisp	2ndDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
Employee:	Emp#40	Emp#49	Emp#5	Emp#50	Emp#51	Emp#52	Emp#53	Emp#54	Emp#55	Emp#56	Emp#57	Emp#58	Emp#59	Emp#60
12-Jul-06	2ndDisp	2ndDisp	2ndDisp	Vacation	Sick		3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick		Vacation	3rdDisp
13-Jul-06	2ndDisp	2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp		Vacation	3rdDisp
14-Jul-06					2ndDisp									
15-Jul-06			2ndDisp		2ndDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp		
16-Jul-06	Vacation			2ndDisp	Vacation		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	Vacation
17-Jul-06	Vacation	2ndDisp			Vacation		3rdDisp	3rdDisp	3rdDisp			Sick		Vacation
18-Jul-06	Vacation	2ndDisp	2ndDisp		Vacation		3rdDisp	3rdDisp	3rdDisp			Sick	Sick	Vacation
19-Jul-06	Vacation	2ndDisp	2ndDisp	2ndDisp	Vacation		3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	Vacation
20-Jul-06														
21-Jul-06			2ndDisp											
22-Jul-06			2ndDisp											
23-Jul-06	2ndDisp	Vacation		2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
24-Jul-06		2ndDisp	Vacation		2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
25-Jul-06		2ndDisp	Vacation	2ndDisp			3rdDisp	3rdDisp	3rdDisp			Sick	Sick	3rdDisp
26-Jul-06		2ndDisp	Vacation	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	Sick			Sick	3rdDisp
27-Jul-06		2ndDisp	Vacation	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
28-Jul-06														
29-Jul-06			2ndDisp		2ndDisp									
30-Jul-06	2ndDisp		Vacation	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick
31-Jul-06		2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
1-Aug-06		2ndDisp	2ndDisp	Vacation			3rdDisp	3rdDisp	Sick			3rdDisp	3rdDisp	3rdDisp
2-Aug-06		2ndDisp	2ndDisp	Vacation	Sick		3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp
3-Aug-06		2ndDisp	2ndDisp	Vacation	2ndDisp	Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp
4-Aug-06														
5-Aug-06														
6-Aug-06	2ndDisp			Vacation	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
7-Aug-06		2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
8-Aug-06		2ndDisp	2ndDisp	Vacation			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
9-Aug-06		2ndDisp	2ndDisp	Vacation			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
10-Aug-06		2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp				3rdDisp
11-Aug-06		2ndDisp	2ndDisp				3rdDisp	3rdDisp	3rdDisp	3rdDisp				
12-Aug-06														
13-Aug-06	Vacation			2ndDisp	Vacation		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
14-Aug-06	Vacation	2ndDisp			Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
15-Aug-06	Vacation	2ndDisp	2ndDisp		Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
16-Aug-06	Vacation	2ndDisp	2ndDisp	2ndDisp	Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
17-Aug-06	Vacation	2ndDisp	2ndDisp	2ndDisp	Vacation		3rdDisp	3rdDisp	3rdDisp	3rdDisp				3rdDisp
18-Aug-06														
19-Aug-06														
20-Aug-06	2ndDisp	Vacation		2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp
21-Aug-06		2ndDisp	Vacation		2ndDisp		3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
22-Aug-06		2ndDisp	Vacation	2ndDisp			3rdDisp	Sick	3rdDisp			3rdDisp	3rdDisp	3rdDisp
23-Aug-06		2ndDisp	Vacation	Sick	2ndDisp		3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp
24-Aug-06		2ndDisp	Vacation	2ndDisp	Sick	2ndDisp	3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp
25-Aug-06														
26-Aug-06														
27-Aug-06	2ndDisp		Vacation	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
28-Aug-06		2ndDisp	2ndDisp	Vacation			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
29-Aug-06		2ndDisp	2ndDisp	Vacation			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
30-Aug-06		2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			Sick	3rdDisp
31-Aug-06		2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp				Sick
1-Sep-06														
2-Sep-06														
3-Sep-06	2ndDisp		Vacation	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
4-Sep-06		2ndDisp	2ndDisp		2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
5-Sep-06		2ndDisp	2ndDisp	2ndDisp	Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
6-Sep-06		2ndDisp	2ndDisp	2ndDisp	Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
7-Sep-06		2ndDisp	2ndDisp	Vacation	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			Sick	3rdDisp
8-Sep-06														
9-Sep-06														
10-Sep-06	2ndDisp		2ndDisp	Vacation			3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
11-Sep-06		2ndDisp			Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
12-Sep-06		Sick	2ndDisp	2ndDisp	Vacation		3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
13-Sep-06		2ndDisp	Sick	2ndDisp	2ndDisp		3rdDisp	Sick	3rdDisp			3rdDisp	3rdDisp	3rdDisp
14-Sep-06		2ndDisp	Sick	2ndDisp	Vacation		3rdDisp	Sick	3rdDisp	3rdDisp			3rdDisp	3rdDisp
15-Sep-06														
16-Sep-06														
17-Sep-06	2ndDisp		2ndDisp	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
18-Sep-06		2ndDisp	2ndDisp		2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
19-Sep-06		2ndDisp	2ndDisp	2ndDisp			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
20-Sep-06		2ndDisp	2ndDisp	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
21-Sep-06		2ndDisp	2ndDisp	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
22-Sep-06														
23-Sep-06														
24-Sep-06														
25-Sep-06	2ndDisp		2ndDisp	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
26-Sep-06		2ndDisp	2ndDisp	2ndDisp			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
27-Sep-06		2ndDisp	2ndDisp	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
28-Sep-06		2ndDisp	2ndDisp	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
29-Sep-06														
30-Sep-06														
1-Oct-06	2ndDisp		2ndDisp	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
2-Oct-06		2ndDisp	2ndDisp		2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
3-Oct-06		2ndDisp	2ndDisp	2ndDisp			3rdDisp	3rdDisp	3rdDisp			3rdDisp	Sick	3rdDisp
4-Oct-06		Sick	2ndDisp	2ndDisp	2ndDisp		3rdDisp	Sick	3rdDisp			3rdDisp	Sick	3rdDisp
5-Oct-06		2ndDisp	Sick	2ndDisp	2ndDisp		3rdDisp	Sick	3rdDisp	3rdDisp				3rdDisp
6-Oct-06														
7-Oct-06														
8-Oct-06	2ndDisp		2ndDisp	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
9-Oct-06		2ndDisp	2ndDisp		2ndDisp		3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
10-Oct-06		2ndDisp	2ndDisp	2ndDisp			3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
11-Oct-06		2ndDisp	2ndDisp	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
12-Oct-06		2ndDisp	2ndDisp	2ndDisp	2ndDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
13-Oct-06														
14-Oct-06														
15-Oct-06	2ndDisp		2ndDisp	2ndDisp	2ndDisp		3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp

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Consolidated Dispatch Center Feasibility Study

Group:	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
Employee:	Emp#100	Emp#101	Emp#102	Emp#103	Emp#104	Emp#105	Emp#106	Emp#107
1-Jan-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
2-Jan-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
3-Jan-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
4-Jan-06	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
5-Jan-06	3rdDisp	Sick	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
6-Jan-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
7-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
8-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
9-Jan-06	Sick			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
10-Jan-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
11-Jan-06	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
12-Jan-06	Sick	3rdDisp	3rdDisp	3rdDisp		Sick	3rdDisp	3rdDisp
13-Jan-06	Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
14-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
15-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
16-Jan-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
17-Jan-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
18-Jan-06	3rdDisp	Sick	Sick			3rdDisp	3rdDisp	3rdDisp
19-Jan-06	Sick	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
20-Jan-06	Sick	Training	3rdDisp	3rdDisp	3rdDisp			3rdDisp
21-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
22-Jan-06		3rdDisp	3rdDisp	Sick	3rdDisp	3rdDisp	3rdDisp	
23-Jan-06	Training			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
24-Jan-06	3rdDisp	Sick			3rdDisp	3rdDisp	3rdDisp	3rdDisp
25-Jan-06	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp	3rdDisp
26-Jan-06	3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp
27-Jan-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick			3rdDisp
28-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
29-Jan-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
30-Jan-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick
31-Jan-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
1-Feb-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
2-Feb-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
3-Feb-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
4-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
5-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
6-Feb-06	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
7-Feb-06	3rdDisp	Sick			3rdDisp	3rdDisp	3rdDisp	3rdDisp
8-Feb-06	3rdDisp	Sick	3rdDisp			Sick	3rdDisp	3rdDisp
9-Feb-06	Sick	Sick	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
10-Feb-06	3rdDisp	3rdDisp	Sick	3rdDisp	3rdDisp			3rdDisp
11-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
12-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
13-Feb-06	Sick			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
14-Feb-06	Sick	Sick			3rdDisp	3rdDisp	3rdDisp	3rdDisp
15-Feb-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
16-Feb-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
17-Feb-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick			3rdDisp
18-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
19-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
20-Feb-06	Sick			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
21-Feb-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
22-Feb-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
23-Feb-06	3rdDisp	3rdDisp	Sick	3rdDisp		3rdDisp	3rdDisp	3rdDisp
24-Feb-06	3rdDisp	3rdDisp	Sick	3rdDisp	3rdDisp			3rdDisp
25-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
26-Feb-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
27-Feb-06	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
28-Feb-06	3rdDisp	3rdDisp			Sick	Sick	Sick	3rdDisp
1-Mar-06	3rdDisp	3rdDisp	Sick			Sick	3rdDisp	3rdDisp
2-Mar-06	3rdDisp	3rdDisp	Sick			Sick	3rdDisp	Sick
3-Mar-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			Sick
4-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
5-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick	
6-Mar-06	Sick			3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick
7-Mar-06	3rdDisp	Sick			Sick	3rdDisp	3rdDisp	3rdDisp
8-Mar-06	3rdDisp	3rdDisp	Sick			3rdDisp	3rdDisp	3rdDisp
9-Mar-06	3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	Sick	3rdDisp
10-Mar-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			Sick
11-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
12-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
13-Mar-06	3rdDisp			3rdDisp	Sick	3rdDisp	3rdDisp	3rdDisp
14-Mar-06	3rdDisp	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp
15-Mar-06	3rdDisp	3rdDisp	Sick			3rdDisp	3rdDisp	3rdDisp
16-Mar-06	3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp			3rdDisp
17-Mar-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp				3rdDisp
18-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
19-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
20-Mar-06	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
21-Mar-06	3rdDisp	3rdDisp			Sick	Sick	3rdDisp	3rdDisp
22-Mar-06	3rdDisp	3rdDisp	Sick			Sick	3rdDisp	3rdDisp
23-Mar-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
24-Mar-06	3rdDisp	3rdDisp	Sick	3rdDisp	3rdDisp			3rdDisp
25-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
26-Mar-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp	
27-Mar-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp
28-Mar-06	Sick	3rdDisp			3rdDisp	3rdDisp	3rdDisp	Sick
29-Mar-06	3rdDisp	Sick	Sick			3rdDisp	3rdDisp	3rdDisp
30-Mar-06	3rdDisp	3rdDisp	3rdDisp	Sick		3rdDisp	3rdDisp	3rdDisp
31-Mar-06	3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp			3rdDisp
1-Apr-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
2-Apr-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
3-Apr-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
4-Apr-06	3rdDisp	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp
5-Apr-06	3rdDisp	3rdDisp	3rdDisp			Sick	3rdDisp	3rdDisp
6-Apr-06	3rdDisp	3rdDisp	Sick	3rdDisp		Sick	Sick	3rdDisp

Center for Public Management	138
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Center for Public Management	139
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Consolidated Dispatch Center Feasibility Study

Group:	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
Employee:	Emp#100	Emp#101	Emp#102	Emp#103	Emp#104	Emp#105	Emp#106	Emp#107
16-Oct-06	3rdDisp							3rdDisp
17-Oct-06	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
18-Oct-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
19-Oct-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
20-Oct-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
21-Oct-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp		
22-Oct-06			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
23-Oct-06	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
24-Oct-06	3rdDisp	3rdDisp			Sick	3rdDisp	3rdDisp	3rdDisp
25-Oct-06	3rdDisp	3rdDisp	3rdDisp			Sick	3rdDisp	3rdDisp
26-Oct-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
27-Oct-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
28-Oct-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
29-Oct-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
30-Oct-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
31-Oct-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
1-Nov-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
2-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
3-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
4-Nov-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
5-Nov-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
6-Nov-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
7-Nov-06	3rdDisp	3rdDisp			3rdDisp	Training	Training	Training
8-Nov-06	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp
9-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp	3rdDisp
10-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
11-Nov-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
12-Nov-06			Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
13-Nov-06	3rdDisp		Training	Training	Training	3rdDisp	3rdDisp	3rdDisp
14-Nov-06	Training	Training		Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
15-Nov-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
16-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		Sick	3rdDisp	3rdDisp
17-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
18-Nov-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
19-Nov-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
20-Nov-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
21-Nov-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
22-Nov-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
23-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
24-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
25-Nov-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
26-Nov-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
27-Nov-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
28-Nov-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
29-Nov-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
30-Nov-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
1-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
2-Dec-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
3-Dec-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick
4-Dec-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
5-Dec-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
6-Dec-06	3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp	3rdDisp	3rdDisp	3rdDisp
7-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	Sick	3rdDisp	3rdDisp	3rdDisp
8-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
9-Dec-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
10-Dec-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
11-Dec-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
12-Dec-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
13-Dec-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
14-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp
15-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
16-Dec-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
17-Dec-06			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
18-Dec-06	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp
19-Dec-06	3rdDisp	3rdDisp			3rdDisp	3rdDisp	3rdDisp	3rdDisp
20-Dec-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
21-Dec-06	3rdDisp	3rdDisp	3rdDisp		3rdDisp	3rdDisp	3rdDisp	3rdDisp
22-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			3rdDisp
23-Dec-06		3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp	
24-Dec-06			3rdDisp	3rdDisp	Vacation	3rdDisp	3rdDisp	
25-Dec-06	3rdDisp			3rdDisp	Vacation	3rdDisp	3rdDisp	Sick
26-Dec-06	3rdDisp	3rdDisp			Vacation	3rdDisp	3rdDisp	3rdDisp
27-Dec-06	3rdDisp	3rdDisp	3rdDisp		Vacation	3rdDisp	3rdDisp	3rdDisp
28-Dec-06	3rdDisp	3rdDisp	3rdDisp	Sick	Vacation	3rdDisp	3rdDisp	3rdDisp
29-Dec-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp				3rdDisp
30-Dec-06		3rdDisp	3rdDisp	3rdDisp		3rdDisp		

Consolidated Dispatch Center Feasibility Study

Group: Employee	3rdDisp Emp#68	PTDisp Emp#69	PTDisp Emp#7	PTDisp Emp#70	PTDisp Emp#71	PTDisp Emp#72	PTDisp Emp#73	PTDisp Emp#74
1-Jan-06	1stDisp							
2-Jan-06								
3-Jan-06	3rdDisp							
4-Jan-06	3rdDisp							
5-Jan-06	3rdDisp	2ndDisp	2ndDisp					
6-Jan-06	3rdDisp							
7-Jan-06	3rdDisp							
8-Jan-06		2ndDisp	2ndDisp					
9-Jan-06								
10-Jan-06	3rdDisp	2ndDisp	2ndDisp	2ndDisp	2ndDisp	2ndDisp		
11-Jan-06	3rdDisp							
12-Jan-06	3rdDisp							
13-Jan-06	3rdDisp	2ndDisp	2ndDisp	2ndDisp	2ndDisp			
14-Jan-06	3rdDisp							
15-Jan-06								
16-Jan-06								
17-Jan-06	Sick			3rdDisp	3rdDisp	3rdDisp		
18-Jan-06	3rdDisp							
19-Jan-06	3rdDisp							
20-Jan-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp		3rdDisp		
21-Jan-06	3rdDisp							
22-Jan-06		3rdDisp	3rdDisp	2ndDisp	2ndDisp			
23-Jan-06		3rdDisp	3rdDisp					
24-Jan-06	3rdDisp					3rdDisp		
25-Jan-06	3rdDisp							
26-Jan-06	3rdDisp	2ndDisp		2ndDisp	2ndDisp	2ndDisp		
27-Jan-06	3rdDisp							
28-Jan-06	3rdDisp							
29-Jan-06		2ndDisp		2ndDisp	2ndDisp	2ndDisp		
30-Jan-06								
31-Jan-06	3rdDisp	2ndDisp	2ndDisp	2ndDisp	2ndDisp	2ndDisp		
1-Feb-06	3rdDisp							
2-Feb-06	3rdDisp							
3-Feb-06	3rdDisp	2ndDisp		2ndDisp	2ndDisp			
4-Feb-06	3rdDisp							
5-Feb-06		2ndDisp		2ndDisp	2ndDisp	2ndDisp		
6-Feb-06								
7-Feb-06	3rdDisp			2ndDisp				
8-Feb-06	3rdDisp							
9-Feb-06	3rdDisp							
10-Feb-06	3rdDisp							
11-Feb-06	Sick	3rdDisp			1stDisp			
12-Feb-06	Sick		3rdDisp	2ndDisp	1stDisp	3rdDisp		
13-Feb-06			3rdDisp	3rdDisp				
14-Feb-06	3rdDisp	3rdDisp	3rdDisp					
15-Feb-06	3rdDisp							
16-Feb-06	3rdDisp							
17-Feb-06	3rdDisp							
18-Feb-06	3rdDisp							
19-Feb-06		3rdDisp		3rdDisp				
20-Feb-06								
21-Feb-06	Training	3rdDisp	3rdDisp	3rdDisp	3rdDisp			
22-Feb-06	3rdDisp							
23-Feb-06	3rdDisp							
24-Feb-06	3rdDisp							
25-Feb-06	3rdDisp	3rdDisp	3rdDisp	3rdDisp	3rdDisp			
26-Feb-06								
27-Feb-06								
28-Feb-06	3rdDisp		3rdDisp					
1-Mar-06	3rdDisp		3rdDisp					
2-Mar-06	3rdDisp		3rdDisp					
3-Mar-06	3rdDisp							
4-Mar-06	3rdDisp					1stDisp	1stDisp	
5-Mar-06		3rdDisp		2ndDisp	3rdDisp			
6-Mar-06			3rdDisp	3rdDisp	3rdDisp	1stDisp		
7-Mar-06	Sick	3rdDisp	3rdDisp					
8-Mar-06	Sick		3rdDisp					
9-Mar-06	3rdDisp		3rdDisp					
10-Mar-06	3rdDisp							
11-Mar-06	3rdDisp							
12-Mar-06								
13-Mar-06								
14-Mar-06	Sick	3rdDisp		3rdDisp	3rdDisp	3rdDisp		
15-Mar-06	Sick							
16-Mar-06	Sick							
17-Mar-06	Sick							
18-Mar-06	3rdDisp	2ndDisp						
19-Mar-06								
20-Mar-06								
21-Mar-06	3rdDisp							
22-Mar-06	3rdDisp	3rdDisp						
23-Mar-06	3rdDisp							
24-Mar-06	3rdDisp							
25-Mar-06	3rdDisp							
26-Mar-06		3rdDisp		2ndDisp	2ndDisp	1stDisp		
27-Mar-06		3rdDisp	3rdDisp					
28-Mar-06	3rdDisp	3rdDisp	3rdDisp	2ndDisp	2ndDisp			
29-Mar-06	3rdDisp	3rdDisp	3rdDisp					
30-Mar-06	3rdDisp	3rdDisp	3rdDisp					
31-Mar-06	3rdDisp							
1-Apr-06	3rdDisp			2ndDisp				
2-Apr-06								
3-Apr-06								
4-Apr-06	3rdDisp							
5-Apr-06	3rdDisp							
6-Apr-06	3rdDisp		3rdDisp					

Consolidated Dispatch Center Feasibility Study

Group: Employee	3rdDisp Emp#69	PTDisp Emp#7	PTDisp Emp#70	PTDisp Emp#71	PTDisp Emp#72	PTDisp Emp#73	PTDisp Emp#74
7-Apr-06	3rdDisp						
8-Apr-06	3rdDisp						
9-Apr-06	3rdDisp						
10-Apr-06							
11-Apr-06	Sick						
12-Apr-06	3rdDisp						
13-Apr-06	3rdDisp						
14-Apr-06	3rdDisp						
15-Apr-06	3rdDisp						
16-Apr-06	3rdDisp						
17-Apr-06		3rdDisp			1stDisp		
18-Apr-06	3rdDisp	3rdDisp			1stDisp	1stDisp	
19-Apr-06	3rdDisp	3rdDisp	3rdDisp		1stDisp		
20-Apr-06	Sick	3rdDisp	3rdDisp	3rdDisp	1stDisp		
21-Apr-06	3rdDisp						
22-Apr-06	3rdDisp	3rdDisp	2ndDisp	2ndDisp	1stDisp	1stDisp	
23-Apr-06	3rdDisp	3rdDisp			1stDisp		
24-Apr-06							
25-Apr-06	3rdDisp						
26-Apr-06	3rdDisp						
27-Apr-06	3rdDisp	3rdDisp					
28-Apr-06	3rdDisp						
29-Apr-06	3rdDisp	3rdDisp	2ndDisp				
30-Apr-06	3rdDisp	3rdDisp					
1-May-06							
2-May-06	3rdDisp						
3-May-06	3rdDisp						
4-May-06	3rdDisp	3rdDisp					
5-May-06	3rdDisp						
6-May-06	3rdDisp	3rdDisp	2ndDisp	3rdDisp	1stDisp	2ndDisp	
7-May-06	3rdDisp	3rdDisp					
8-May-06	3rdDisp	3rdDisp	2ndDisp		1stDisp		
9-May-06	3rdDisp	3rdDisp		3rdDisp	1stDisp		
10-May-06	3rdDisp	3rdDisp					
11-May-06	3rdDisp	3rdDisp		3rdDisp			
12-May-06	3rdDisp	3rdDisp					
13-May-06	3rdDisp	3rdDisp	2ndDisp	3rdDisp	1stDisp		
14-May-06	3rdDisp	3rdDisp					
15-May-06		3rdDisp					
16-May-06	3rdDisp	3rdDisp					
17-May-06	3rdDisp						
18-May-06	3rdDisp						
19-May-06	3rdDisp	3rdDisp					
20-May-06	3rdDisp	3rdDisp	2ndDisp		1stDisp		
21-May-06	3rdDisp	3rdDisp					
22-May-06							
23-May-06	3rdDisp				1stDisp	1stDisp	
24-May-06	3rdDisp						
25-May-06	3rdDisp				1stDisp		
26-May-06	3rdDisp	3rdDisp			1stDisp	1stDisp	
27-May-06	3rdDisp	3rdDisp	3rdDisp				
28-May-06	3rdDisp	3rdDisp	2ndDisp		1stDisp		
29-May-06	3rdDisp	3rdDisp		3rdDisp			
30-May-06	3rdDisp	3rdDisp		3rdDisp			
31-May-06	3rdDisp	3rdDisp		3rdDisp	3rdDisp		
1-Jun-06	3rdDisp	3rdDisp		2ndDisp	3rdDisp		
2-Jun-06	3rdDisp						
3-Jun-06	3rdDisp	3rdDisp	2ndDisp		1stDisp	1stDisp	
4-Jun-06	Vacation	3rdDisp			1stDisp	1stDisp	
5-Jun-06	Vacation	3rdDisp					
6-Jun-06	Vacation		3rdDisp				
7-Jun-06	Vacation	3rdDisp	3rdDisp				
8-Jun-06	Vacation	3rdDisp	3rdDisp				
9-Jun-06		3rdDisp	3rdDisp	3rdDisp			
10-Jun-06	3rdDisp	3rdDisp	2ndDisp	3rdDisp	1stDisp	1stDisp	
11-Jun-06	3rdDisp	3rdDisp					
12-Jun-06							
13-Jun-06	3rdDisp		3rdDisp				
14-Jun-06	3rdDisp						
15-Jun-06	3rdDisp						
16-Jun-06	3rdDisp	3rdDisp	3rdDisp	1stDisp			
17-Jun-06	3rdDisp	3rdDisp	3rdDisp	1stDisp	3rdDisp	2ndDisp	
18-Jun-06	Sick	3rdDisp			3rdDisp	2ndDisp	
19-Jun-06			3rdDisp				
20-Jun-06	3rdDisp				1stDisp	2ndDisp	
21-Jun-06	3rdDisp						
22-Jun-06	3rdDisp			1stDisp	1stDisp	1stDisp	
23-Jun-06	3rdDisp		3rdDisp				
24-Jun-06	3rdDisp	3rdDisp	3rdDisp	1stDisp	3rdDisp	1stDisp	2ndDisp
25-Jun-06	3rdDisp	3rdDisp		1stDisp	3rdDisp	1stDisp	
26-Jun-06		3rdDisp					
27-Jun-06	3rdDisp						
28-Jun-06	3rdDisp						
29-Jun-06	3rdDisp						
30-Jun-06	3rdDisp	3rdDisp					
1-Jul-06	3rdDisp	3rdDisp	3rdDisp		2ndDisp		
2-Jul-06		3rdDisp	3rdDisp				
3-Jul-06			3rdDisp				
4-Jul-06	3rdDisp		3rdDisp				
5-Jul-06	3rdDisp						
6-Jul-06	3rdDisp						
7-Jul-06	3rdDisp		3rdDisp				
8-Jul-06	3rdDisp	3rdDisp	3rdDisp	1stDisp	2ndDisp	2ndDisp	
9-Jul-06	Vacation				3rdDisp	2ndDisp	2ndDisp
10-Jul-06	Vacation	3rdDisp			2ndDisp		
11-Jul-06	Vacation	3rdDisp	3rdDisp		2ndDisp		

Consolidated Dispatch Center Feasibility Study

Group:	3rdDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp
Employee:	Emp#68	Emp#69	Emp#7	Emp#70	Emp#71	Emp#72	Emp#73	Emp#74
12-Jul-06	Vacation							
13-Jul-06	Vacation							
14-Jul-06				1stDisp	3rdDisp			
15-Jul-06		3rdDisp	3rdDisp		3rdDisp	2ndDisp	1stDisp	
16-Jul-06		3rdDisp		1stDisp				
17-Jul-06		3rdDisp						
18-Jul-06	3rdDisp	3rdDisp	3rdDisp					
19-Jul-06	3rdDisp							
20-Jul-06	3rdDisp		3rdDisp					
21-Jul-06		3rdDisp						
22-Jul-06	3rdDisp	3rdDisp			2ndDisp	2ndDisp		
23-Jul-06				1stDisp				
24-Jul-06		3rdDisp						
25-Jul-06	3rdDisp		3rdDisp					
26-Jul-06	3rdDisp		3rdDisp					
27-Jul-06	3rdDisp							
28-Jul-06		3rdDisp						
29-Jul-06	3rdDisp		3rdDisp	1stDisp	3rdDisp	1stDisp	2ndDisp	
30-Jul-06	Vacation		3rdDisp					
31-Jul-06	Vacation	3rdDisp	3rdDisp					
1-Aug-06	Vacation	3rdDisp		1stDisp	3rdDisp			
2-Aug-06	Vacation				3rdDisp			
3-Aug-06	Vacation		3rdDisp					
4-Aug-06		3rdDisp			3rdDisp			
5-Aug-06		3rdDisp	3rdDisp		3rdDisp		2ndDisp	
6-Aug-06						1stDisp		
7-Aug-06								
8-Aug-06	3rdDisp							
9-Aug-06	3rdDisp	3rdDisp						
10-Aug-06	3rdDisp							
11-Aug-06		3rdDisp						
12-Aug-06	3rdDisp	3rdDisp	3rdDisp	1stDisp				
13-Aug-06		3rdDisp						
14-Aug-06			3rdDisp					
15-Aug-06	3rdDisp							
16-Aug-06	3rdDisp							
17-Aug-06	3rdDisp							
18-Aug-06	3rdDisp							
19-Aug-06	3rdDisp		3rdDisp					
20-Aug-06		3rdDisp			3rdDisp			
21-Aug-06	3rdDisp	3rdDisp	3rdDisp					
22-Aug-06	3rdDisp	3rdDisp	3rdDisp	2ndDisp		2ndDisp		
23-Aug-06	Sick	3rdDisp	3rdDisp	2ndDisp				
24-Aug-06	3rdDisp			2ndDisp				
25-Aug-06	3rdDisp	3rdDisp						
26-Aug-06	3rdDisp		3rdDisp	2ndDisp		2ndDisp		
27-Aug-06								
28-Aug-06								
29-Aug-06	3rdDisp							
30-Aug-06	3rdDisp							
31-Aug-06	3rdDisp							
1-Sep-06	3rdDisp							
2-Sep-06	3rdDisp		3rdDisp					
3-Sep-06								
4-Sep-06	3rdDisp							
5-Sep-06	3rdDisp							
6-Sep-06	3rdDisp							
7-Sep-06	3rdDisp							
8-Sep-06	3rdDisp							
9-Sep-06	3rdDisp							
10-Sep-06		3rdDisp		2ndDisp				
11-Sep-06	3rdDisp	3rdDisp	3rdDisp					
12-Sep-06	3rdDisp		3rdDisp					
13-Sep-06	3rdDisp	3rdDisp	3rdDisp					
14-Sep-06	Sick	3rdDisp	3rdDisp		3rdDisp			
15-Sep-06	3rdDisp							
16-Sep-06	3rdDisp			1stDisp				
17-Sep-06								
18-Sep-06								
19-Sep-06	Sick							
20-Sep-06	Sick							
21-Sep-06	Sick							
22-Sep-06	Sick							
23-Sep-06	3rdDisp							
24-Sep-06								
25-Sep-06								
26-Sep-06	3rdDisp							
27-Sep-06	3rdDisp							
28-Sep-06	3rdDisp							
29-Sep-06	3rdDisp							
30-Sep-06	3rdDisp		3rdDisp	2ndDisp				
1-Oct-06		3rdDisp						
2-Oct-06	3rdDisp		3rdDisp					
3-Oct-06	3rdDisp							
4-Oct-06	3rdDisp	3rdDisp						
5-Oct-06	3rdDisp	3rdDisp						
6-Oct-06	Sick		3rdDisp					
7-Oct-06	3rdDisp							
8-Oct-06								
9-Oct-06								
10-Oct-06	3rdDisp							
11-Oct-06	3rdDisp							
12-Oct-06	3rdDisp							
13-Oct-06	Sick							
14-Oct-06	3rdDisp							
15-Oct-06								

Consolidated Dispatch Center Feasibility Study

Group:	3rdDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp	PTDisp
Employee:	Emp#68	Emp#69	Emp#7	Emp#70	Emp#71	Emp#72	Emp#73	Emp#74
16-Oct-06	3rdDisp							
17-Oct-06	3rdDisp							
18-Oct-06	3rdDisp							
19-Oct-06	3rdDisp							
20-Oct-06	3rdDisp							
21-Oct-06	3rdDisp							
22-Oct-06	3rdDisp							
23-Oct-06	3rdDisp							
24-Oct-06	3rdDisp							
25-Oct-06	3rdDisp							
26-Oct-06	3rdDisp		3rdDisp					
27-Oct-06	3rdDisp							
28-Oct-06	3rdDisp							
29-Oct-06	3rdDisp							
30-Oct-06	3rdDisp							
31-Oct-06	3rdDisp							
1-Nov-06	3rdDisp							
2-Nov-06	3rdDisp							
3-Nov-06	3rdDisp							
4-Nov-06	3rdDisp							
5-Nov-06	3rdDisp							
6-Nov-06	Training	3rdDisp	3rdDisp					
7-Nov-06	3rdDisp							
8-Nov-06	3rdDisp							
9-Nov-06	3rdDisp							
10-Nov-06	3rdDisp							
11-Nov-06	3rdDisp							
12-Nov-06	Sick							
13-Nov-06	3rdDisp	3rdDisp	3rdDisp					
14-Nov-06	3rdDisp	3rdDisp	3rdDisp					
15-Nov-06	3rdDisp							
16-Nov-06	3rdDisp							
17-Nov-06	3rdDisp							
18-Nov-06	3rdDisp							
19-Nov-06	3rdDisp							
20-Nov-06	3rdDisp							
21-Nov-06	3rdDisp							
22-Nov-06	3rdDisp							
23-Nov-06	3rdDisp							
24-Nov-06	3rdDisp							
25-Nov-06	3rdDisp		3rdDisp					
26-Nov-06	3rdDisp							
27-Nov-06	3rdDisp							
28-Nov-06	3rdDisp							
29-Nov-06	3rdDisp							
30-Nov-06	3rdDisp							
1-Dec-06	3rdDisp							
2-Dec-06	3rdDisp							
3-Dec-06	3rdDisp							
4-Dec-06	Sick		2ndDisp	1stDisp				
5-Dec-06	3rdDisp							
6-Dec-06	3rdDisp							
7-Dec-06	3rdDisp							
8-Dec-06	3rdDisp							
9-Dec-06	3rdDisp							
10-Dec-06	3rdDisp							
11-Dec-06	3rdDisp							
12-Dec-06	3rdDisp							
13-Dec-06	3rdDisp							
14-Dec-06	3rdDisp							
15-Dec-06	3rdDisp							
16-Dec-06	3rdDisp	3rdDisp						
17-Dec-06	3rdDisp							
18-Dec-06	3rdDisp							
19-Dec-06	3rdDisp							
20-Dec-06	3rdDisp							
21-Dec-06	3rdDisp							
22-Dec-06	3rdDisp							
23-Dec-06	3rdDisp							
24-Dec-06	3rdDisp	3rdDisp	3rdDisp	1stDisp	2ndDisp	2ndDisp		
25-Dec-06	3rdDisp	3rdDisp	3rdDisp	1stDisp	2ndDisp	2ndDisp	3rdDisp	3rdDisp
26-Dec-06	Sick	3rdDisp	3rdDisp		2ndDisp		3rdDisp	
27-Dec-06	3rdDisp							
28-Dec-06	3rdDisp	3rdDisp		1stDisp	2ndDisp			
29-Dec-06	3rdDisp		3rdDisp	1stDisp				
30-Dec-06	3rdDisp	3rdDisp	3rdDisp		2ndDisp	2ndDisp	2ndDisp	

Appendix G: Hours of Work per Year per Dispatcher

Table 19: Calculation of hours available per dispatcher

Days in year	365
Less Days Off:	
Weekends (i.e., 2 days per 52 weeks)	104
Paid Holidays Off	11
Vacation	15
Personal Days off	0
Training	2
Sick	7
Total Days off per Year	139
Days available to work	226
If work eight hours per day	8
Hours available to work	1,808
Staffing Ratio* (Hours in Year/Hours Available)	4.85

*Staffing Ratio - How many persons must be hired to keep on position staffed 24 hours per day, seven days per week, year-round. It is calculated by dividing the number of hours in a year by the number of hours a call taker is available to work at a position.

Appendix H: Amortization Table

Loan Amortization Schedule- building construction & equipment

Enter values	
Loan amount	\$7,502,172.93
Annual interest rate	5.90 %
Loan period in years	20
Number of payments per year	2
Start date of loan	6/1/2010
Optional extra payments	\$ -

Loan summary	
Scheduled payment	\$321,943.75
Scheduled number of payments	40
Actual number of payments	40
Total early payments	\$0.00
Total interest	\$5,375,577.13

Pmt No.	Payment Date	Beginning Balance	Scheduled Payment	Extra Payment	Total Payment	Principal	Interest
1	12/1/2010	\$7,502,172.93	\$321,943.75	\$0.00	\$321,943.75	\$100,629.65	\$221,314.10
2	6/1/2011	7,401,543.28	321,943.75	-	321,943.75	103,598.22	218,345.53
3	12/1/2011	7,297,945.06	321,943.75	-	321,943.75	106,654.37	215,289.38
4	6/1/2012	7,191,290.68	321,943.75	-	321,943.75	109,800.68	212,143.08
5	12/1/2012	7,081,490.01	321,943.75	-	321,943.75	113,039.80	208,903.96
6	6/1/2013	6,968,450.21	321,943.75	-	321,943.75	116,374.47	205,569.28
7	12/1/2013	6,852,075.74	321,943.75	-	321,943.75	119,807.52	202,136.23
8	6/1/2014	6,732,268.22	321,943.75	-	321,943.75	123,341.84	198,601.91
9	12/1/2014	6,608,926.39	321,943.75	-	321,943.75	126,980.42	194,963.33
10	6/1/2015	6,481,945.96	321,943.75	-	321,943.75	130,726.35	191,217.41
11	12/1/2015	6,351,219.62	321,943.75	-	321,943.75	134,582.77	187,360.98
12	6/1/2016	6,216,636.84	321,943.75	-	321,943.75	138,552.96	183,390.79
13	12/1/2016	6,078,083.88	321,943.75	-	321,943.75	142,640.28	179,303.47
14	6/1/2017	5,935,443.60	321,943.75	-	321,943.75	146,848.17	175,095.59
15	12/1/2017	5,788,595.44	321,943.75	-	321,943.75	151,180.19	170,763.57
16	6/1/2018	5,637,415.25	321,943.75	-	321,943.75	155,640.00	166,303.75
17	12/1/2018	5,481,775.25	321,943.75	-	321,943.75	160,231.38	161,712.37
18	6/1/2019	5,321,543.87	321,943.75	-	321,943.75	164,958.21	156,985.54
19	12/1/2019	5,156,585.66	321,943.75	-	321,943.75	169,824.47	152,119.28
20	6/1/2020	4,986,761.19	321,943.75	-	321,943.75	174,834.30	147,109.45
21	12/1/2020	4,811,926.89	321,943.75	-	321,943.75	179,991.91	141,951.84
22	6/1/2021	4,631,934.98	321,943.75	-	321,943.75	185,301.67	136,642.08
23	12/1/2021	4,446,633.31	321,943.75	-	321,943.75	190,768.07	131,175.68
24	6/1/2022	4,255,865.24	321,943.75	-	321,943.75	196,395.73	125,548.02
25	12/1/2022	4,059,469.52	321,943.75	-	321,943.75	202,189.40	119,754.35

Consolidated Dispatch Center Feasibility Study

Loan Amortization Schedule- building construction & equipment

Enter values	
Loan amount	\$7,502,172.93
Annual interest rate	5.90 %
Loan period in years	20
Number of payments per year	2
Start date of loan	6/1/2010
Optional extra payments	\$ -

Loan summary	
Scheduled payment	\$321,943.75
Scheduled number of payments	40
Actual number of payments	40
Total early payments	\$0.00
Total interest	\$5,375,577.13

Pmt No.	Payment Date	Beginning Balance	Scheduled Payment	Extra Payment	Total Payment	Principal	Interest
26	6/1/2023	3,857,280.11	321,943.75	-	321,943.75	208,153.99	113,789.76
27	12/1/2023	3,649,126.13	321,943.75	-	321,943.75	214,294.53	107,649.22
28	6/1/2024	3,434,831.60	321,943.75	-	321,943.75	220,616.22	101,327.53
29	12/1/2024	3,214,215.38	321,943.75	-	321,943.75	227,124.40	94,819.35
30	6/1/2025	2,987,090.98	321,943.75	-	321,943.75	233,824.57	88,119.18
31	12/1/2025	2,753,266.41	321,943.75	-	321,943.75	240,722.39	81,221.36
32	6/1/2026	2,512,544.02	321,943.75	-	321,943.75	247,823.70	74,120.05
33	12/1/2026	2,264,720.32	321,943.75	-	321,943.75	255,134.50	66,809.25
34	6/1/2027	2,009,585.81	321,943.75	-	321,943.75	262,660.97	59,282.78
35	12/1/2027	1,746,924.84	321,943.75	-	321,943.75	270,409.47	51,534.28
36	6/1/2028	1,476,515.38	321,943.75	-	321,943.75	278,386.55	43,557.20
37	12/1/2028	1,198,128.83	321,943.75	-	321,943.75	286,598.95	35,344.80
38	6/1/2029	911,529.88	321,943.75	-	321,943.75	295,053.62	26,890.13
39	12/1/2029	616,476.26	321,943.75	-	321,943.75	303,757.70	18,186.05
40	6/1/2030	312,718.55	321,943.75	-	312,718.55	303,493.36	9,225.20

Appendix I: Equipment Cost Estimate

**Consolidated Dispatch Center
Feasibility Study**

Quote #	Qty	Make	Model	Description	Cost	Total
120' Tower						
15910	1	CENTRAL	SSV120-17572	120' Self Supporting Tower-Cst-Am	\$21,214.00	\$21,214.00
15910	9	CENTRAL	BM84	7' Side Arm For 48" Guyed Tower	\$733.00	\$6,597.00
15910	8		CRANE-RENT-140	65t Crane Rent	\$210.00	\$1,680.00
15910	45		FOUNDATION-2	Foundation Per Yd	\$425.00	\$19,125.00
15910	9		GRND-ROD	Galvanized Steel Ground Rods	\$9.98	\$89.82
15910	150		#2-COPPER	#2 Ga Tinned Copper Gnd Wire/Ft	\$3.25	\$487.50
15910	9		CADWELD-ONE	One Shot Cadweld	\$11.17	\$100.53
15910	6		CADWELD-CHARGE	Powder Charge For Cadweld	\$4.50	\$27.00
15910	3	BLUEWAVE	BME139IN1HO	138-174mhz 8.5dbd Nm 1/2w	\$1,500.00	\$4,500.00
15910	450	TIMES	LMR-1200	7/8" Low Loss Antenna Cable	\$6.10	\$2,745.00
15910	6	ANDREWS	204989-2	Ground Kit For 7/8 Inch Hardline	\$37.22	\$223.32
15910	3	ANDREWS	19256B	7/8" Hoisting Grip	\$43.50	\$130.50
15910	10	CARTWRIG	SH U78	10pc Snap In 7/8 Cable Clamps	\$38.33	\$383.30
15910	1		HDW-5	Misc. Hardware Sealants & Tape	\$1,500.00	\$1,500.00
15910	6	TIMES	EZ-1200-NFC	Lmr 1200 N Female Connector	\$65.00	\$390.00
15910	3	POLYPHAS	ISB50LN	50 Ohm N Con Lightning Protector	\$68.95	\$206.85
15910	1	MTS	ST-1023	6-HOLE STANDARD ENTRY HOLE 2x3	\$250.00	\$250.00
15910	3	MTS	SC-78-1	1 Hole 7/8"Cushion	\$10.00	\$30.00
15910	1		CONTINGENCY	Contingency Fee	\$15,000.00	\$15,000.00

**Consolidated Dispatch Center
Feasibility Study**

Quote #	Qty	Make	Model	Description	Cost	Total
15910	3	BLUEWAVE	BME404FN1H0	403-512 Mhz 5.5 Dbd Nm 1/2w	\$605.00	\$1,815.00
15910	3	COMPRD	799-70HD	Enclosed Dipole Array, (9) Offset – HD Version 806-960mhz	\$2,095.00	\$6,285.00
15910	1200	TIMES	LMR-600	Low Loss Cable 1/2"	\$2.35	\$2,820.00
15910	6	TIMES	EZ-600-NF	N Female For Lmr-600	\$21.00	\$126.00
15910	1		LABOR	Labor	\$12,000.00	\$12,000.00
15910	1		SHIPPING	Shipping	\$2,950.00	\$2,950.00
Total - 120' Tower						\$100,675.82
New Console Electronics and Installation						
15911	20	TELEX	302052050	12 Line C Soft Basic Console	\$11,288.00	\$225,760.00
15911	20	TELEX	302057002	Upgrade To 19" Lcd Monitor	\$93.75	\$1,875.00
15911	0	TELEX	302057003	Upgrade To 19" Touch Screen Lcd Monitor	\$1,046.88	OPTION
15911	20		CUST-AUD-PAN	Custom Audio Panel For Telex Consoles Dual Speaker Upgrade	\$800.00	\$16,000.00
15911	20	TELEX	GNM-18	Gooseneck 18 Inch Microphone	\$229.00	\$4,580.00
15911	1	TELEX	MD-MS	Desk Microphone	\$179.00	\$179.00
15911	15	TELEX	IP223	Ip Remote Panel Dual Port Ethernet	\$2,021.00	\$30,315.00
15911	2	TELEX	NEO-10	Io Input 10 Output Network Interface	\$1,995.00	\$3,990.00
15911	2		CUST-I/O-PNL	Custom 19" Rack Mount I/O Interface Panel 10 In 10 Out For Neo10	\$295.00	\$590.00

**Consolidated Dispatch Center
Feasibility Study**

Quote #	Qty	Make	Model	Description	Cost	Total
15911	4	NETGEAR	GS724TNA	24 Port Gigabit Smart Switch W/ 2 Fiber Ports	\$425.00	\$1,700.00
15911	50		PROG-SYS	Custom System Programming Per Hour	\$95.00	\$4,750.00
15911	2	ASTRON	SRM-30M-2	Dual 25a Power Supply With Meters	\$496.66	\$993.32
15911	1		HDWE 1	Misc. Hardware, Wire And Conn.	\$400.00	\$400.00
15911	10		BATT5	Power Distribution Panel	\$175.00	\$1,750.00
15911	20	PLANTRON	CA12CD	Wireless Headset Amplifier	\$539.00	\$10,780.00
15911	50	PLANTRON	H51	Supra Mono Headset Top	\$79.17	\$3,958.50
15911	20		TEL-5006	Tel Handset/Headset/Recorder Int	\$265.00	\$5,300.00
15911	10		DC-LT-102	Dual Line Off Hook Control Box Includes Sensors	\$150.00	\$1,500.00
15911	10		RACK-SHELF-3.5	3.5"X19" Rack Shelf	\$49.58	\$495.80
15911	20		RCBJ1900513BK	3 Ru 19" Metal Cabinet	\$159.00	\$3,180.00
15911	2		RACK-19"	EQUIPMENT RACK 7'H X 19"	\$250.00	\$500.00
15911	20	ZETRON	950-9102	Footswitch For Ptt Or Monitor	\$95.00	\$1,900.00
15911	1		FIELD SERVICE	Field Service Coverage 1st Year	\$8,000.00	\$8,000.00
15911	1		CONTINGENCY	Contingency Fee	\$45,000.00	\$45,000.00
15911	1		LABOR	Labor	\$20,000.00	\$20,000.00
15911	1		SHIPPING	Shipping	\$1,200.00	\$1,200.00
Total - New Console Electronics and Installation						\$394,696.62

**Consolidated Dispatch Center
Feasibility Study**

Quote #	Qty	Make	Model	Description	Cost	Total
Zetron Fire Alerting System						
15912	23	BLUEWAVE	BM450G5502N1	450-470mhz 6.5dbd 2rg213 Nm	\$162.00	\$3,726.00
15912	24	TAIT	T2010-543-T00	UHF Wb/Nb70 MHZ 4 CH., 4 CH. 25 WATTS	\$450.00	\$10,800.00
15912	2300	ANTENEX	LMR400	Lmr 400 Low Loss Cable, Per Ft.	\$1.25	\$2,875.00
15912	24	POLYPHAS	IS-B50HU-C1	PI Polyphaser	\$74.38	\$1,785.12
15912	48	RFI	RFN-1006-3I	N Male Crimp For 9913 & Lmr400	\$7.65	\$367.20
15912	23	ZETRON	901-9200	Model 6 Station Transponder. Station Status Plus 3 Vehicles.	\$3,740.00	\$86,020.00
15912	6	ZETRON	901-9230	Model # 26 Status Control Panel	\$3,100.00	\$18,600.00
15912	23	ZETRON	950-9242	Handset For Model #6	\$285.00	\$6,555.00
15912	24		HDWE	Misc Hardware Connectors & Wire	\$45.00	\$1,080.00
15912	1	TELEX	IP-223	Voice Over Ip 2 Ch Radio Term Ethernet	\$2,021.00	\$2,021.00
15912	1	BLUEWAVE	BME404FN1H0	403-512 Mhz 5.5 Dbd Nm 1/2w	\$576.00	\$576.00
15912	23	DURA COM	DTB12	Battery Backed Pwr. Sup. 12v 7a	\$187.00	\$4,301.00
15912	3	POLYPHAS	IS-PSP-120	Lightning Protector 120 Volt Ac	\$75.00	\$225.00
15912	1		CONTINGENCY	Contingency Fee	\$25,000.00	\$25,000.00
15912	1		LABOR	Labor	\$38,000.00	\$38,000.00
15912	1		SHIPPING	Shipping	\$120.00	\$120.00
Total - Zetron Fire Alerting System						\$202,051.32

**Consolidated Dispatch Center
Feasibility Study**

Quote #	Qty	Make	Model	Description	Cost	Total
New Base Station Radio Equipment and Installation						
15914	14	KENWOOD	TK-5710BK-SC	136-174 Mhz Dig Rf Deck 50w Sts	\$1,314.75	\$13,804.87
15914	2	KENWOOD	TK-5810BK2-SC	400-470 Mhz 5-45 Watt 50 Zones/512 Channels Digital Mobile (Rf Deck Only)	\$1,314.75	\$2,629.50
15914	1	KENWOOD	TK-5710HBK-SC	136-174 Mhz Dig Rf Deck 110w Sts	\$1,680.00	\$1,680.00
15914	16	KENWOOD	10BMD-SC	Dash Mount Basic Medium Pwr Control Package Sts	\$467.25	\$7,476.00
15914	1	KENWOOD	10BHD-SC	Basic Head Hi Power Dash Mount, Tk-5710/5810 Sts.	\$488.25	\$488.25
15914	17	KENWOOD	L-990-SC	Programming (Tx/Rx Check And Tested)	\$93.75	\$1,593.75
15914	11	JOHNSON	5477-11-23	Dash Mount 35 Watt Mobile Configured For The Ohio Marcs System With Accessory Cable Sts Pricing	\$2,850.18	\$31,351.98
15914	11	JOHNSON	597-2002-251	53sl Interface Cable	\$190.00	\$2,090.00
15914	2	TAIT	S8B2-J0B3-00C0	Single Vhf 100w 255 Ch Rack Mt	\$7,440.00	\$14,880.00
15914	1		8000	8 Ch Digital Control Module	\$755.00	\$755.00
15914	0	TAIT	S9BJ-J0B3-00P0	A0b0 148-174mhz 100w Dig Rept. P25 Capable	\$9,450.00	OPTION
15914	0	TAIT	TBAS050	P25 Common Air Interface	\$4,500.00	OPTION
15914	1	ANTENEX	FG8063	Fiber Glass 3db Antenna 800 Mhz	\$144.70	\$144.70
15914	1	BLUEWAVE	BME404CN1HO	2.5 Dbd Nm 1/2w 403- 512mhz	\$305.00	\$305.00

**Consolidated Dispatch Center
Feasibility Study**

Quote #	Qty	Make	Model	Description	Cost	Total
15914	6	BLUEWAVE	BME139CN1HO	138-174mhz 2.5dbd Nm 1/2 W	\$335.00	\$2,010.00
15914	1	BLUEWAVE	BME139IN1HO	138-174mhz 8.5dbd Nm 1/2w	\$1,500.00	\$1,500.00
15914	1	TX RX	72-37-08627-E	Custom Preselector	\$30.00	\$30.00
15914	960	ANTENEX	LMR400	Lmr 400 Low Loss Cable, Per Ft.	\$1.25	\$1,200.00
15914	13	MTS	GK-S400T	Grounding Kit For Lmr-400	\$35.00	\$455.00
15914	13	POLYPHAS	IS-B50LN-C2	Lightning Protector	\$77.00	\$1,001.00
15914	17		JPN69913N	6' Lmr400 Jumper N Male	\$25.00	\$425.00
15914	26	RFI	RFN-1006-3I	N Male Crimp For 9913 & Lmr400	\$7.65	\$198.90
15914	10	MCM	RACK-SHELF-1.75	1.75"X19" Rack Shelf	\$44.50	\$445.00
15914	2		RACK-19"	EQUIPMENT RACK 7'H X 19"	\$250.00	\$500.00
15914	1	ASTRON	SRM-30M-2	Dual 25a Power Supply With Meters	\$496.66	\$496.66
15914	1		BATT1	Battery Back Up And Dc Power	\$450.00	\$450.00
15914	1		BATT5	Power Distribution Panel	\$175.00	\$175.00
15914	1		PANEL-PUNCH5	10.5" Panel W/5punch Blocks Mnt.	\$150.00	\$150.00
15914	1		HDWE	Misc Hardware Connectors & Wire	\$450.00	\$450.00
15914	3	MTS	SC-12-4	Cushio W/4 Holes 1/2"	\$10.00	\$30.00
15914	1		POLY-PAN	Polyphaser Rack Mount Panel	\$45.00	\$45.00
15914	3	PRM	BA-400	4" Boot Assy	\$40.00	\$120.00
15914	20	MTS	BH-12	1/2" Butterfly Clamp For Helix	\$3.61	\$72.20
15914	5	HOMACO	TR 10-12	Ladder Rack 12" Wide X 9' 8.5 "L	\$93.66	\$468.30

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Quote #	Qty	Make	Model	Description	Cost	Total
15914	6	HOMACO	P12824OH	Cable Tray Angle Wall Bracket	\$33.70	\$202.20
15914	3	GRAYBAR	11302-001	90 Degree Fitting For Cable Tray	\$14.38	\$43.14
15914	1		FIELD SERVICE	Field Service Coverage 1st Year	\$6,000.00	\$6,000.00
15914	1		CONTINGENCY	Contingency Fee	\$15,000.00	\$15,000.00
15914	1		LABOR	Labor	\$22,000.00	\$22,000.00
15914	1		SHIPPING	Shipping	\$600.00	\$600.00
Total - New Base Station Radio Equipment and Installation						\$131,266.45
Supply & Install New Console Furniture						
15919	140	LIN	TURRET	Console Turret W/Countertop 19"	\$2,000.00	\$280,000.00
15919	10	LIN	RESOURCE-IS	30" Resource Island W\ Drop Panl	\$800.00	\$8,000.00
15919	140	LIN	FORMICA ANTI-STATIC	Upgrade To Antistatic Grade Formica- Per Turret	\$100.00	\$14,000.00
15919	20	LIN	LIFT STATION	Parallel Console Lift Turret	\$2,800.00	\$56,000.00
15919	20		RACK-PNL	19"X5.25 Blank Panel Black	\$30.00	\$600.00
15919	140	HUBBELL	PR0615	6 Outlet Power Strip 19" Rack Mount	\$74.05	\$10,367.00
15919	10		ROTATE-BKCS-48	48' Rotating Bookcase	\$3,800.00	\$38,000.00
15919	20	CONCEPT	3144	6 Leg Mid Back Dispatch Chair	\$1,900.00	\$38,000.00
15919	1		HDWE	Misc Hardware Connectors & Wire	\$4,000.00	\$4,000.00
15919	1		CONTINGENCY	Contingency Fee	\$60,000.00	\$60,000.00
15919	1		LABOR	Labor	\$20,000.00	\$20,000.00

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Quote #	Qty	Make	Model	Description	Cost	Total
15919	1		SHIPPING	Shipping	\$200.00	\$200.00
Total - Supply & Install New Console Furniture						\$529,167.00
Digital Channel Logger						
15922	1	EVENTIDE	VR725	4 Slot Digital Recorder 1 Dvd	\$7,995.00	\$7,995.00
15922	0	EVENTIDE	105183-002	8 Ch Analog Card For Vr615 -725-778	\$2,995.00	OPTION
15922	1	EVENTIDE	101004	Call Browser Software For Window	\$995.00	\$995.00
15922	1	EVENTIDE	324356	Set Of Rack Slides For Vr725	\$360.00	\$360.00
15922	0	EVENTIDE	VR725-FPM	Front Panel Active Touchscreen	\$1,295.00	OPTION
15922	1	EVENTIDE	1144-000	Voice Over Ip Gateway 8 Port	\$4,250.00	\$4,250.00
15922	3	EVENTIDE	324533	Voice Over Ip License Per 8	\$1,150.00	\$3,450.00
15922	1		HDWE	Misc Hardware Connectors & Wire	\$300.00	\$300.00
15922	12		TRAINING-HR	On Site Training Per Hr.	\$75.00	\$900.00
15922	2	EVENTIDE	105183-024	Analog Telephone - 24 Channel Card	\$6,000.00	\$12,000.00
15922	1	EVENTIDE	VR778-3	Upgrade To 1000 Gb-750 Gb Raid	\$2,125.00	\$2,125.00
15922	0	EVENTIDE	725-RP-8	8 Channel Radio Ip Packet License	\$2,150.00	OPTION
15922	1	EVENTIDE	725-RP-16	16 Channel Radio Packet Ip License	\$3,300.00	\$3,300.00
15922	0	EVENTIDE	725-RP-24	24 Channel Radio Ip Packet License	\$4,450.00	OPTION
15922	1		CONTINGENCY	Contingency Fee	\$72,000.00	\$72,000.00

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Quote #	Qty	Make	Model	Description	Cost	Total
15922	1		LABOR	Labor	\$1,200.00	\$1,200.00
15922	1		SHIPPING	Shipping	\$150.00	\$150.00
Total - Digital Channel Logger						\$109,025.00
Grand Total						\$1,466,882.21

