Report on the Consolidated 911 / Dispatch Feasibility Study

CITIES OF HIGHLAND PARK, LAKE BLUFF AND LAKE FOREST, ILLINOIS

FINAL PHASE II REPORT

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The Cities of Highland Park and Lake Forest and the Village of Lake Bluff retained Matrix Consulting Group to conduct an analysis of the feasibility of consolidated dispatch operations between the communities. A summary profile describing the emergency dispatch operations of the agencies was provided as an integrated component in the Phase 1 report for tis project.

The Matrix Consulting Group produced a Phase 1 Report providing both summarized and detailed information on the feasibility of consolidating 9-1-1 and emergency dispatch services and whether cost savings would result considering personnel changes as well as infrastructure requirements. The Phase 1 Report presented preliminary findings of cost savings as well as information on alternative organizational approaches and recommended continuation of Phase 2 of the project. This document presents our more detailed findings in two areas:

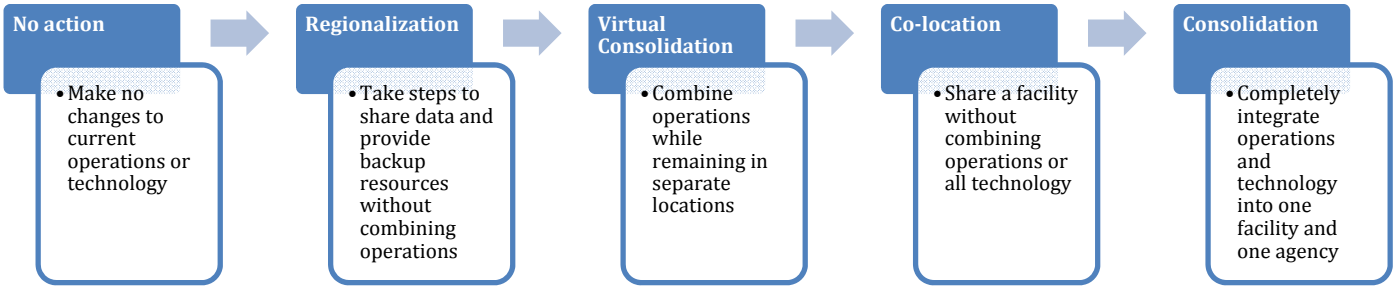
- The change in staffing levels and associated costs under different organizational scenarios; and,
- The infrastructure requirements necessary to support each scenario.

The next section of this Introduction provides the context for this Phase 2 study effort.

Continuum of Dispatch Center Consolidation Options

The following diagram depicts the various options available to the three participating Dispatch Centers regarding possible levels of consolidation. The continuum spans from no action to complete physical and operational consolidation,

with multiple options in between. Further information on the technology requirements of each option is presented in a later section of the report.



This document provides specific recommendations on organizational approach, governance model, staffing levels and infrastructure investments under the following scenarios:

- Status Quo – Continue independent municipal service provision making necessary investments in personnel and infrastructure to support a sustained effort;
- Virtual Consolidation – Use available technology to support application of staff and infrastructure resources across existing service platforms while maintaining independent operations;
- Consolidation of the Group ("Local Site Option") – Combine operations and infrastructure to support operations in one location for the benefit of the three communities; and,
- Consolidation with Others ("Contracting with a Third Party") – Combine operations and infrastructure to support operations in a third-party location for the benefit of the three communities. For this discussion, we are using information provided by the Village of Glenview to provide services to the communities.

To support the continued discussion of alternatives, some elements of the Phase 1 Report are either summarized or reproduced in this report. Some information and assumptions have changed and these have been noted in the report.

The following section is a summary of key findings in the project.

EXECUTIVE SUMMARY

The communities were most interested in determining the feasibility of consolidating 9-1-1 and emergency dispatch services and whether there could be cost savings from a personnel and infrastructure perspective. There was also a desire to explore the opportunity to partner with existing consolidated agencies in the area. The project team was able to collect valid data from each of the communities to assist in the development of this feasibility study.

The following points summarize key findings:

- Cost savings would be realized in several scenarios with a consolidated operation. Annual staffing and operation savings would range between $250,000 and $523,000 including additional staffing to provide ancillary services and excluding required capital costs. The total savings over a five-year period under several consolidation scenarios would range between $3.1 million and $4.85 million, including all staffing and capital costs.

- Opportunities exist for partnering with existing consolidated agencies and two alternatives with the Village of Glenview are presented in the Consolidation with Others Scenario; there may be other alternative service partners in the region as well.

- There are certain “ancillary” duties that dispatch personnel currently perform in their respective agencies. Consolidating dispatch operations in a single Center will result in a loss of the ability to continue to perform these duties (such as public reception, records management, camera monitoring, etc.) if they are not replaced with additional personnel to perform them. To determine the impact of adding staff in the various communities to handle these “ancillary” duties, we have developed additional information on the ancillary tasks supported in current operations and the relative levels of support that would need to be maintained by each organization following a consolidation. In addition to ancillary functions, the three communities will each need to determine what to do to continue prisoner management functions.

- Employees of the dispatch centers were largely opposed to the idea that a shared services or consolidated approach to providing 9-1-1 and dispatch services would improve service in their communities, with 57% believing there would be a negative impact to them personally and service levels may be

reduced. The primary concern was related to compensation and benefit packages.

- The City of Highland Park possesses adequate space to house a consolidated operation with minimal infrastructure needs to accommodate the added positions required to operate in a consolidated format and is presented as the possible home for the Consolidation of the Group Scenario.

- While the cities of Highland Park and Lake Forest utilize the same CAD/RMS system, the Village of Lake Bluff would require significant investment to purchase the New World system or have an interface developed to allow their RMS to work with the existing CAD.

The project team has provided details of the analyses in the body of this report including implementation and operating costs associated with the alternatives.

The following chapter provides organizational and operational background through elements of the Phase 1 Report Descriptive Profile of current operations, staffing, deployment and workload in the communities.

2. ORGANIZATION AND OPERATION OF CURRENT COMMUNICATION SERVICES

This section of the report provides background information and summarizes the current approach to [providing emergency communications services in the region.

1. INTRODUCTION

This chapter of the report provides elements from the Phase 1 Report Descriptive Profile of the Dispatch Centers for the communities of Highland Park, Lake Bluff and Lake Forest. The purpose of the Descriptive Profile is to document the project team's understanding of these Public Safety Answering Points' (PSAP) governance, organization, allocation of staff by unit and function, and principal assigned roles and responsibilities of staff. Data contained in the Profile were developed based on the work conducted by the project team, including:

- Interviews with supervisory and staff positions on location at all PSAPs including managers, supervisors, dispatchers, etc.
- Interviews with numerous executive representatives of the City of Highland Park, The Village of Lake Bluff and the City of Lake Forest.
- Collection of various data describing organization and staffing, workload and service levels as well as costs.
- Documentation of key practices related to work planning and scheduling, policies and procedures, as well as work processes.

The Descriptive Profile does not attempt to recapitulate all organizational and operational facets of the PSAPs, the structure of this Descriptive Profile is as follows:

- Description of staff positions, by classification, and description of appropriate reporting relationships.
- Summary descriptions of key roles and responsibilities of staff. The responsibility descriptions provided in the Descriptive Profile also summarize the team's

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

- Primary operational data describing work characteristics currently collected and associated with each PSAP.

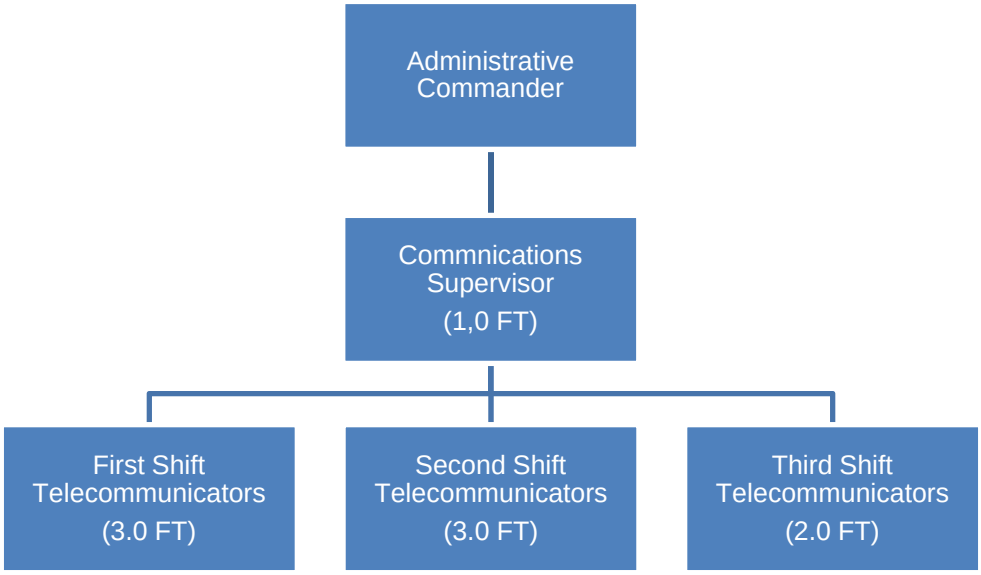
Each agency is described separately.

2. HIGHLAND PARK

The following provides an overview of the organization, staffing and responsibilities of Highland Park Communications Center.

(1) Highland Park Organizational Structure

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



(2) Highland Park Staff Positions

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Deputy Chief of Support Services	1	1	The Deputy Chief of Police, who reports to the Chief of Police, performs organizational oversight of the Communications Unit through the Administrative Commander. The Deputy Chief of Police is an appointed administrative position reporting directly to the Chief of Police. The Deputy Chief of Police directly manages the department, exercising delegated powers in the stead of the chief of police when necessary. In the absence of the Administrative Commander, the position provides day-to-day administrative oversight Communications Supervisor in addition to providing broader feedback relative to budget, operations, technologies, and organizational issues impacting the Communications Unit. ***This position is not included in the staff total for this unit.***
Administrative Commander	1	0	The Administrative Commander reports to the Deputy Chief of Police as head of the Support Services Division. The Communications Supervisor reports directly to the Administrative Commander (or Deputy Chief in the absence of this position.) The Records Unit also reports to the Administrative Commander. ***This position is not included in the staff total for this unit.***
Supervisor	1	1	The Communications Supervisor is responsible for overseeing the day-to-day operations of the Communications Unit including staffing and operation. Position is on-call 24/7. Responsible for the Police Department and Fire Department base radios, mobile radios, portable radios, receiver sites and associated circuits. Serves as system administrator for the Computer Aided Dispatch (CAD), Law Enforcement Records Management System (LERMS), Mobile system, Field Based Reporting and Online Citizen Reporting. Completes all system installations, repairs, maintenance and upgrades. Coordinates 911 Master Street Address Guide (MSAG) and other related 911 functions. Processes requests for radio and phone recordings due to court subpoenas, FOIA requests and investigations. Researches and recommends radio, phone, computer and other public safety technology projects. Responsible for all administrative supervision of Communications Unit including recruitment and hiring, training coordination, shift scheduling, shift and payroll data preparation, and employee evaluations. This position also handles employee recognition and discipline (investigates complaints and makes discipline recommendations).

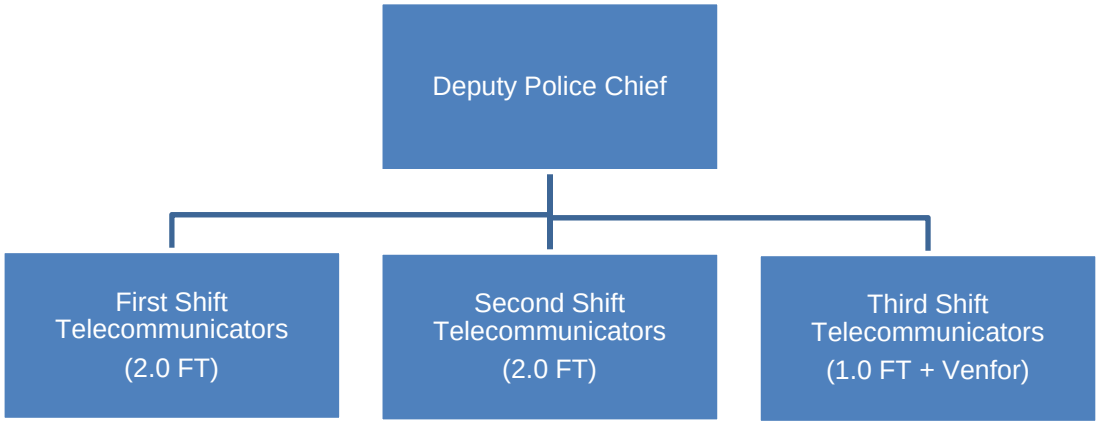
Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Telecommunicator	8 (FT) 2 (PT) 4 (PT)	8 (FT) 2 (PT)	All Telecommunicator positions report directly to Communications Supervisor. Position answers and processes emergency and non-emergency phone calls. Initiates computer aided dispatch (CAD) calls for service. Assigns and dispatches appropriate police, fire, EMS and City units to calls for service and provides Emergency Medical Dispatch (EMD). Monitors the status of beat assignments of each on-duty unit to enable efficient assignment of call and to help assure the safety of personnel. Performs entries and queries into local, state and federal databases. Handles walk-in requests for service. Answers and processes phone calls for other City services after hours, on weekends and on holidays. Routs callers to appropriate voice mail or takes phone messages. Performs routine checks of prisoners in custody. Monitors the alarm board, building security and camera system, train station camera, department of transportation camera system and other similar systems. Telecommunicators are required to obtain the following certifications within 90 days of date of hire in order to successfully complete training: cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), Law Enforcement Agencies Data System (LEADS), Emergency Medical Dispatch (EMD). Telecommunicators also handle bond posts, cash receipts, secured access (key distribution) to building, etc. The Communications Unit dispatches Highland Park Police and Highland Park Fire / EMS. Shift Schedule / Minimum Staffing 7:00 AM – 3:00 PM / 2 Positions 3:00 PM – 11:00 PM / 2 Positions 11:00 PM – 7:00 AM / 1 Position
TOTAL	**13.0**	**11.0**	

3. LAKE BLUFF

The following provides an overview of the organization, staffing and responsibilities of the Lake Bluff Dispatch Center.

(1) Lake Bluff Organizational Structure

The following reflects the authorized staffing levels and organizational structure for Lake Bluff.



(2) Lake Bluff Staff Positions

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Deputy Police Chief	1.0	1.0	The Deputy Police Chief, who reports to the Chief of Police, performs daily operational oversight of the Communications Section. The Deputy Chief performs day-to-day management and supervision of the function, overseeing daily operations, annual budget, hiring, staffing, scheduling, training, resolution of personnel issues, development of special reports, etc. All Civilian Telecommunicator / Record Clerks report to the Deputy Chief. ***This position is not included in the staff total for this unit.***

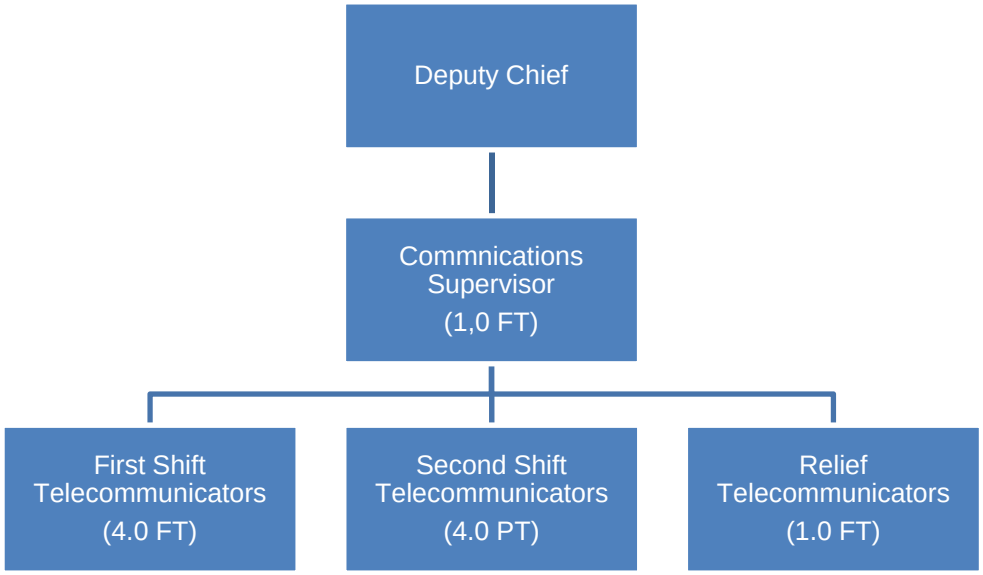
Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Civilian Telecommunicator / Records	6.0	5.0 1.0 (vendor)	Responsible for answering incoming phone calls and radio messages and dispatching patrol units and members of the department and any other emergency units to specific locations where and when appropriate. Answer all requests for service and other business from citizens communicating via phone or in person. Responsible for maintaining all records and logs kept in the dispatching office. Perform secretarial and office administrative work. Specific responsibilities include: answer 9-1-1 and non-emergency telephone lines; answer and direct all administrative phone line calls; handle walk-in traffic and requests; assign emergency calls and calls for service to patrol units; enter data, acknowledge and make inquiries to LEADS / NCIC; obtain tow trucks, ambulances and / or other police assistance for patrol; provide information to citizens on current events and refer them to proper agencies; keep informed on status and locations of police officers; monitor alarms and notify appropriate parties when alarms are activated; monitor security cameras; search and escort prisoners; and, maintain records of all police services provided. Work as records personnel to develop and maintain confidential and complex records and files. Receive information on arrests, accidents and investigations to classify, code and process information. Retrieves and organizes criminal history file information for transmittal to court. Provides copies of police reports to authorized individuals. Compile and type statistical information for reports, including criminal activity reports to Federal and State governments, specific incident activity reports, and general clerical assistance to officers. Prepare all case jackets for court, prosecution, and respond to subpoenas, records checks, and requests for information rom other law enforcement agencies. Also maintain all police related licensing applications, registrations and permits including alarm registrations, solicitor permits, garage sale permits, bike license, etc. Issue fines for violations and coordinate follow-up for enforcement of violations. Maintain all sex offender and violent criminal registrations. Also perform general clerical work supporting Police Chief and Deputy Police Chief. Some of the ancillary duties are assigned to individual dispatchers on a continuing basis. Other tasks are shared. Function dispatches Lake Bluff Police only; Lake Bluff Fire dispatched by Lake Forest. Shift Schedule / Minimum Staffing 6:30 AM – 2:30 PM / 1 Positions 2:30 PM – 10:30 PM / 1 Positions 10:30 PM – 6:30 AM / 0 Position Shift handled under contract by private provider when full time Lake Bluff employee is off.

4. LAKE FOREST

The following provides an overview of the organization, staffing and responsibilities of the Lake Forest Dispatch Center.

(1) Lake Forest Organizational Structure

The following reflects the authorized staffing levels and organizational structure for Lake Forest.



(2) Lake Forest Staff Positions

The following provides an overview of staffing and responsibilities of the Lake Forest Communications Center.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Deputy Chief of Support Services	1,0	1.0	The Division of Police Operations is primarily responsible for direct aid and follow-up services to the public. This includes: patrol, traffic, special events, special operations, warrant service, records, administrative duties, communications and member relations. The Deputy Chief of Patrol Operations, who reports to the Chief of Police, performs organizational oversight of the Communications Center through the Communications Supervisor. In the absence of the Communications Supervisor, the position provides day-to-day administrative oversight of the Communications Center in addition to providing broader feedback relative to budget, operations, technologies, and organizational issues impacting the Communications Center. ***This position is not included in the staff total for this unit.***
Communications Supervisor	1.0	1.0	The Communications Supervisor is responsible for overseeing the day-to-day operations of the Communications Center including staffing and operation. Position is on-call 24/7. Responsible for all administrative supervision of Communications Center including recruitment and hiring, training coordination, shift scheduling, shift and payroll data preparation and employee evaluations. This position also assists with processing requests for any audio and video recordings for internal departmental use, freedom of information requests and investigations.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Communications Operator	8.0	8.0	All Dispatcher positions report directly to the Communications Supervisor. Receive emergency and non-emergency calls from the public and accurately assign their requests to the correct jurisdiction and response from police, fire, EMS, and/or other allied public safety resources. Dispatch appropriate units and resources to police, fire, EMS, and other public safety incidents. Provide communications coordination of public safety resources. Monitor, enter information and retrieve information utilizing computer-aided dispatch (CAD) system for complaint taking, location verification, monitoring status of field units, resource dispatching, record locating, and coordinating public safety incidents for the duration of assigned shift. Transmit and retrieve of information through in-house, local, county, state and federal law enforcement data networks. Accurately record information on a variety of forms, logs, and computer screens as dictated by City of Lake Forest, Lake Forest Police Official Manual and the Lake Forest Communications policies and procedures. Accurately follow established protocols for Emergency Medical Dispatching on all medical emergencies. Monitor police, fire, ISPERN, IFERN, Local Government. Communications operators also assist walk in customers in the absence of records division personnel on such matters as parking ticket payments, accident report requests and issuing handicap placards. Dispatch for: Lake Forest Police Lake Forest Fire/EMS Lake Bluff Fire / EMS Highwood Police Knollwood Fire/EMS Shift Schedule / Minimum Staffing 7:00 AM – 7:00 PM / 2 positions 7:00 PM – 7:00 AM / 2 positions

5. SUMMARY OF OPERATIONS

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

Item	Highland Park	Lake Bluff	Lake Forest
Annual Budget			
	The annual budget (estimated) for Highland Park in FY 2012 is $ 1,239,735 broken down into the following two broad categories: • Personnel $911,923 • Operations $327,812 Cost Per Call • 911 – $83.50 • CFS - $37.58	The annual budget for Lake Bluff in FY 2012 is $466,232 broken down into the following two broad categories: • Personnel - $434,070 • Operations - $32,162 Communications staff members also function as records clerks for the Department; these figures represent consolidated communications / records operation. Cost Per Call • 911 – $283.94 • CFS - $39.70	The annual budget for Lake Forest in FY 2012 is $1,158,117 broken down into the following two broad categories: • Personnel - $897,832 • Operations - $260,285 Cost Per Call • 911 – $133.49 • CFS - $54.09
Technologies in Use			
CAD System	New World Systems	Computer Information Systems	New World Systems
CAD Systems Version	9.0.3033	13.01.03	Next Gen 9.0, CAD .Net 3.1
RMS System	New World Systems	Computer Information Systems	New World Systems
RMS System Version	9.0.3033	13.01.03	Next Gen 9.0, CAD .Net 3.1
Mobile System	New World Systems	Computer Information Systems	New World Systems
Mobile System Version	7.0.0.3033	13.01.03	9.40.422.0 with CAD software version 3.4.198
Field Reporting	New World Systems	Computer Information Systems	New World Systems
Field Reporting Version	7.0.0.3033	13.01.03	Next Gen 9.0, CAD .Net 3.1
RF of Cellular for Data	Cellular	Cellular	Cellular
Cellular Provider	Verizon	Verizon	Verizon
Netmotion in use	Yes	No	No
# of Mobile Devices in Service	30	5	13
9-1-1 Premise Equipment Vendor	Cassidian	Cassidian	Cassidian

Item	Highland Park	Lake Bluff	Lake Forest
9-1-1 Premise Equipment Make/Model	ECS-1000	RescueStar	RescueStar
9-1-1 Premise Equipment Maintenance Vendor	Chicago Communications	Radicom	Chicago Communications
Radio Premise Equipment Vendor	Motorola	Cassidian	Motorola
Radio Premise Equipment Make/Model	Centracom Gold Elite	ComStar	Centracom Gold Elite
Radio Premise Equipment Maintenance Vendor	Chicago Communications	Radicom	Chicago Communications
GIS	MGP	N/A	MGP
Portable Radio	Motorola HT1250	Motorola HT1000/HT750	Motorola
Mobile Radio	Motorola CDM1250	Motorola	Motorola
Cellular Phase 1	Yes	No	Yes
How do you map Cellular Phase 2	CAD, GIS Program & Internet	N/A	CAD, GIS Program and Internet
Outdoor Public Warning System	Yes	Yes	Yes
Outdoor Public Warning System Make/Model	Federal Signal SS2000D w/ Commander Digital System	Federal (push button)	Whelen E8641
Weather Program	WeatherTAP	MobileThreatNet & Davis	Skywarn, Weather.com
EmNet Machine	Yes	Yes	
Reverse Notification System	Global Connect	CodeRed	Global Connect
Calls for Service Workload			

Item	Highland Park	Lake Bluff	Lake Forest
The data represents information abstracted resulting in community-generated calls for service—a primary building block of dispatcher workload—but does not represent all dispatcher workload.	The following represents the calendar 2011 calls for service workload based on information developed and analyzed through data provided by Highland Park: Total Phone Calls: 115,636 Calls for Service: 32,986 9-1-1 Calls: 14,847 2010 data from survey: Total Phone Calls: 116,864 Calls for Service: 33,955 9-1-1 Calls: 15,067	The following represents the calendar 2011 calls for service workload based on information developed and analyzed through data provided by Lake Bluff: Total Phone Calls: 24,918 Calls for Service: 11,744 9-1-1 Calls: 1,642 2010 data from survey: Total Phone Calls: 24,022 Calls for Service: 11,457 9-1-1 Calls: 2,004	The following represents the calendar 2011 calls for service workload based on information developed and analyzed through data provided by Lake Forest: Total Phone Calls: N/A Calls for Service: 21,409 (Total) Lake Forest Police: 15,333 Lake Forest Fire: 3,350 Highwood Police: 1,544 Knollwood Fire: 553 Lake Bluff Fire: 629 9-1-1 Calls: 8,676 2010 data from survey*: Total Phone Calls: 90,220 Calls for Service: 14,775 9-1-1 Calls: N/A
Anticipated Capital Upgrades			
Item	**Highland Park**	**Lake Bluff**	**Lake Forest**
Digital Voice Logging System	Yes $40,000	No	Yes $20, 386
911 /CPU Upgrade	Yes $277,000	Yes $207,000	Yes $320,051
Dispatch Radio Consoles	Yes $375,000	Yes $150,000	Yes $266,410

* Estimated by dispatch center

As shown above, there are numerous similarities in the technology used by the three communities in their dispatch operations. There are several large capital upgrades planned at the existing centers, totaling approximately $1.7 million dollars. A consolidated center would save approximately $800,000 of these costs by not duplicating purchases.

6. REVIEW OF EXISTING POLICIES AND BEST PRACTICES ASSESSMENT

This section of the report shows the project team's assessment of the current policies in place at the dispatch centers and opportunities for improvement.

Each of the agencies is utilizing the Association of Public-Safety Communication Officials (APCO) training program for the training of personnel assigned to the dispatch centers. APCO is viewed as the industry leaders in providing training certification programs to both prepare public safety communicators for service to the community and providing ongoing continuing education.

Policies and procedures for Lake Bluff and Highland Park are guided by the Commission on Accreditation for Law Enforcement Agencies and are current with industry accepted best practices from the standpoint of meeting accredited agency guidelines. Lake Forest updates their policies when they are identified as deficient or requirements related to a policy change. They are currently in the process of updating several policies and are consulting with the Fire Department for needed changes related to their accredited status with the Commission on Fire Accreditation International (CFAI).

The following table illustrates the current performance of the dispatch centers related to current industry best practices.

Standard	Highland Park	Lake Bluff	Lake Forest
Calls are randomly reviewed for quality	Yes / Not Frequent	No	No / Planned to implement
High priority Calls are dispatch in 60 seconds 90% of the time	90% of high priority fire calls dispatched in 63 seconds 90% of high priority police calls dispatched in 72 seconds	Time from call received to dispatch not indicated in CAD	Detailed CAD data not provided for analysis. Summary data only
Emergency lines are answered within 10 seconds 90% of the time	10 seconds or less 90%	Not reported	Not reported

3. ANALYSIS OF CONSOLIDATION ALTERNATIVES

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

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

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

1. ASSUMPTIONS UTILIZED IN DEVELOPING ALTERNATIVES

The project team has developed a set of assumptions that were utilized in developing the staffing levels and operating costs associated with several of the alternative consolidated communications center scenarios. The assumptions supporting the fourth alternative, Consolidation with Others, are approximately the same but were developed independently by the Village of Glenview in its updated proposal for services. The assumptions used in the Status Quo, Virtual Consolidation and Consolidation with the Group were developed from information assembled both from the descriptive profile survey as well as numerous conversations to clarify responses.

- Dispatch line personnel costs were assumed to be Step 5 of the actual salaries paid to Dispatchers in the City of Highland Park, $54,221. Part-time personnel were calculated at a rate of $23.05 per hour.
- The benefit rates applicable to all full time positions in each scenario was assumed to be 35%.

- All positions would be civilian dispatcher positions.

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

  - The Center would have a shift supervisor assigned to each shift. The supervisor compensation would be factored at the average mid-range of the current supervisor pay in the region, currently compensated at $75,591.

  - The Center would be directed and managed by a Dispatch Center Manager. This position would be responsible for all operational and financial aspects of the Center, and would be compensated at a 15% premium of the current rate of the Highland Park Dispatch Center Supervisor, a projected salary of $88,153.

  - The project team has assumed that each agency would contract for support of radios, computers, etc., and would contract for back-office assistance (payroll, personnel, accounts payable, etc.). A percentage estimate of these costs is included in the total operating expenses assumption of 28% of total operating budget for each scenario.

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

2011 Call Distribution by Day of Week

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
14.10%	15.50%	14.90%	15.10%	15.20%	13.50%	11.60%

2011 Call Distribution by Hour of Day

Hour of Day	Percentage of Calls Received
0000	2.1%
0100	1.6%
0200	1.4%
0300	1.3%
0400	1.4%
0500	1.4%
0600	2.0%
0700	3.8%
0800	5.4%
0900	5.5%
1000	6.0%
1100	6.3%
1200	6.2%
1300	6.4%
1400	6.3%
1500	6.7%
1600	6.2%
1700	5.6%
1800	5.3%
1900	4.7%
2000	4.2%
2100	4.1%
2200	3.6%
2300	2.6%

This workload data is included in the analysis of the various scenarios.

2. ANALYSIS OF CONSOLIDATED COMMUNICATIONS CENTER WORKLOADS.

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

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

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

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

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

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

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

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

- For each call for service, the equivalent of 8.9 minutes of call, self-initiated and administrative related communications workloads are allocated. This includes time estimates of radio, telephone, record check and administrative tasks. This 8.9 minutes is comprised of the following elements:

    - 130 seconds are allocated to process a service request (citizen generated call for service) and transfer to a radio dispatcher. This standard incorporates the fact that multiple calls can be generated by the same incident and that administrative / business calls are handled by staff in the communications center.

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

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

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

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

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

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

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

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

  The project team has utilized a task-loading factor of 30 minutes of actual call/radio activity per communications staff per hour. The basis behind this assumption is that one-half of a "net" hour should be utilized for direct communications workloads (i.e., after shift exchange, breaks, meals, miscellaneous personnel/administrative tasks are accomplished and training are subtracted from a "gross" available hour). This 30-minute factor is divided into the amount of hourly workload in the dispatch center.

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

(2) Organization and Staffing Requirements Supporting Consolidation.

The following pages show the staffing requirements by shift for each alternative.

The points, which follow, summarize these analyses:

- The analysis summarizes the staffing required by hour of day for each of the consolidated center

- Recall from above that the numbers of calls for service that are utilized in the model were obtained from each of the dispatch centers.

- The project team chose the following 8-hour shifting pattern for the purposes of determining staffing on shifts in the consolidated center. Dayshift 7:00 am – 3:00 pm, afternoon shift 3:00 pm – 11:00 pm and midnights from 11:00 pm – 7:00 am.

- The project team determined the appropriate line staffing for each shift by evaluating the peak and minimum staffing required in each. Recall that the project team's analysis makes an allowance, which says that it is our objective that each communicator work only 50% of each hour. In some cases, we have assumed that they would work slightly more than that to balance the average needs of a particular hour versus overstaffing an entire shift.

- The resulting need on a per shift basis is summarized at the bottom of the exhibit following this discussion. These represent the numbers of positions, which must be filled in order to ensure that the centers are adequately staffed. In order to achieve this figure, allowance must be made for scheduled and planned time off as well as for turnover.

- Note that the staffing on each shift varies according to the workload to be handled at a given time of day.

- Also note that the project team assumed that the absolute minimum staffing per shift in any of the alternatives would be two positions. This was done for the following reasons:

  - To ensure that concurrent incidents could be handled.

  - To ensure that a single position could be dedicated to a high priority call without eliminating the ability of the center to handle routine business.

  - To provide dispatchers with on-duty relief without having to call in a sworn position from the field to cover the dispatch position.

- Finally it is important to note that the per-shift staffing needs represent the peak average requirements during that shift.

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

- The project team first adds up the total positions to be staffed for each scenario.
- We then determine the number of personnel required to cover scheduled days off. In this case, we assumed that these civilian communicators would work a variation of a 5-on 2-off 8-hour shift 7-day cycle. Mathematically, this means that each communicator is scheduled to work 71.4% of the time.
- The project team made the assumption that employees' net availability would be approximately 90% of their scheduled time. This factor accounts for vacation, sick time, personal leave, military leave, etc.
- We also made an assumption about the turnover that would be encountered in the center. The factor of 10% was utilized in this analysis.
- The benefit rate has been assumed to be 35% for the agencies in the analysis. This is intended to be a conservative estimate.
- The Center will require a Manager. The salary for this position is assumed to be the current pay rate for the Highland Park dispatch supervisor, who essentially is functioning as the manager of that dispatch center. The total for this position is assumed to be $88,153.
- To restate, the project team has assumed that a consolidated emergency communications center will handle only 9-1-1 emergency calls, and not, for instance, the business-related calls that typically come into a station on 7-digit lines. These calls, currently handled by dispatch personnel at the local police stations in most cases, will continue to come into these stations after the dispatching function is transferred to the consolidated center. Accordingly, the project team has assumed that administrative positions will be hired to handle the ancillary duties currently performed by Dispatchers at each of the communities. (For a complete listing of these ancillary duties as reported by the survey respondents, see the Profile in chapter one of this document).

As shown in the table below, the volume of calls for service vary throughout the day with workload demands requiring 0.70 to 3.44 dispatchers on duty to handle the call volume in a consolidated center.

Consolidated Dispatch Center Staffing Model

Hour	Average Calls for Service Per Hour	Communication Workload (Minutes)	Line Staff Required
0000-0100	3.81	33.91	1.13
0100-0200	2.90	25.81	0.86
0200-0300	2.54	22.61	0.75
0300-0400	2.36	21.00	0.70
0400-0500	2.54	22.61	0.75
0500-0600	2.54	22.61	0.75
0600-0700	3.62	32.22	1.07
0700-0800	6.89	61.32	2.04
0800-0900	9.78	87.04	2.90
0900-1000	9.97	88.73	2.96
1000-1100	10.87	96.74	3.22
1100-1200	11.42	101.64	3.39
1200-1300	11.23	99.95	3.33
1300-1400	11.60	103.24	3.44
1400-1500	11.42	101.64	3.39
1500-1600	12.14	108.05	3.60
1600-1700	11.23	99.95	3.33
1700-1800	10.15	90.34	3.01
1800-1900	9.60	85.44	2.85
1900-2000	8.52	75.83	2.53
2000-2100	7.61	67.73	2.26
2100-2200	7.43	66.13	2.20
2200-2300	6.52	58.03	1.93
2300-0000	4.71	41.92	1.40
TOTAL	**181.40**	**1,614.49**	

2300-0700 max. FTE dispatchers needed (2.0 is minimum level)	2.00
0700-1500 maximum FTE dispatchers needed	3.44
1500-2300 maximum FTE dispatchers needed	3.60
Subtotal of maximum FTE dispatchers needed	9.04
Each Dispatcher works 5 of 7 days (71.4% Shift Factor)	71.4%
Dispatchers Needed with Shift Factor	12.66
Assumed Availability Rate for Dispatchers	90.0%
Dispatchers Needed with Shift Factor and Availability Rate	14.07
Turnover Rate	10.0%
Dispatchers Needed with Shift Factor, Availability Rate and Turnover Rate	15.63
TOTAL FTE Personnel Needed	**16.00**

As the exhibit above illustrates, a consolidated dispatch center results in a total staffing contingent of 16 FTE Dispatch personnel. Again, this staffing contingent does not include the Center Manager, which is assumed to be a staffed position in the consolidated center. Further, it does not reflect the need for the administrative positions handling the vacated ancillary duties currently handled by Dispatchers in each of the communities in the analysis.

(3) Supporting Existing Ancillary Duties.

The existing Dispatch functions in the respective communities each provides additional, or ancillary, services to the community. Because of he relatively low call volumes, the dispatch staffing decision is driven more by position coverage than by service demand. This has provided each community, to varying degrees, with the ability to assign additional tasks to Dispatch staff members to make better use of their time between their dispatch duties.

It is clear from a number of interviews during the course of the project that there is some concern that removal of dispatch personnel from local police stations will leave a void in the participating agencies capacities to accomplish ancillary duties currently performed by Dispatchers, and will also not provide a “safe haven” for local residents wishing to make immediate personal contact with law enforcement personnel. While the Phase 1 Report had assumed retaining 2 positions in each of the communities consolidating services with the third, Matrix Consulting Group developed a survey tool to solicit more detailed information from the communities to better understand and address the issue of ancillary services.

Our approach was to estimate the relative level of effort on ancillary tasks from two perspectives. In the first perspective, we estimated the amount of time available for ancillary duties as the difference between current staffing resources and the total staff time required under the consolidated dispatch model as applied to each individual community. The following table walks through the derivation of the estimated time available for ancillary duties in each dispatch operation.

	Highland Park	Lake Forest	Lake Bluff	Total
Current Staffing (FTE)	8.5	7.0	5.5	21.0
Total Required per Model	7.2	4.7	2.6	14.5
Balance for Other Duties	1.3	2.3	2.9	6.5
Actual Hours Available	1,600	1,600	1,600	
Ancillary Duty Availability	2,091	3,647	4,650	10,389

A staffing model was developed for each community to determine the absolute need for staff time (expressed as FTE) to service the existing level of calls for service. The difference between the current staffing resources and the model results provided a balance of staff time available for other duties. Applying the derived FTE time available to the estimated 1,600 hours of actual service provided by each full-time position provided an estimate of he hours available (in total) for other duties.

The second perspective was developed from information provided by the respective dispatch managers and their staff members regarding their estimation of time spent on a variety of ancillary tasks throughout the year. Because none of the organizations maintains detailed time reporting of staff effort, this task required a

considerable degree of estimation and provided a result best used to understand the relative demand for services among the ancillary duties.

The table that follows identifies the ancillary duties between those that are "Dispatch Related", "Public Safety Support" and "City / Village Support". The relative share of total effort on each ancillary duty was applied to the derived Ancillary Duty Availability from the previous table to present an estimate of the staff hours supporting each duty.

The "Dispatch Related" duties are expected to be a responsibility of any third party that provides the dispatch service in a consolidation scenario. For this reason, we developed a second total removing the Dispatch Related time. Applying the estimated hours available per FTE for actual work (1,600 hours) yielded an estimate of the FTE each community would need to retain in order to provide a similar level of ancillary services.

	% of Total Effort			Ancillary Time			
Ancillary Duties	**Highland Park**	**Lake Forest**	**Lake Bluff**	**Highland Park**	**Lake Forest**	**Lake Bluff**	**Total**
Dispatch Related							
LEADS Entries	5.51%	1.53%	8.49%	115.2	55.7	394.6	565.5
Monitor Alarm Board	2.99%	0.77%	0.00%	62.5	27.9	0.0	90.4
Monitor Weather Warnings	3.74%	0.46%	0.30%	78.1	16.8	14.0	108.9
LEADS Agency Coordinator	4.48%	0.61%	0.00%	93.8	22.3	0.0	116.1
Monitor LEADS	0.00%	0.61%	0.00%	0.0	22.3	0.0	22.3
Public Safety Support							
Non-Emergency Police Calls	42.53%	21.13%	6.49%	889.3	770.6	301.9	1,961.8
Walk-in Complaint Processing	1.99%	14.57%	0.06%	41.7	531.6	3.0	576.3
Process Bonds	1.74%	1.29%	3.99%	36.5	46.9	185.3	268.7
Prisoner Checks	2.99%	0.61%	0.12%	62.5	22.3	5.4	90.2
Matron Services	3.74%	0.06%	0.01%	78.1	2.0	0.6	80.7
UCR Reporting	0.00%	1.06%	0.60%	0.0	38.7	28.1	66.8
Traffic Ticket / Citation Entry	0.00%	4.43%	7.71%	0.0	161.6	358.7	520.3
Ticket / Citation Record Processing	0.00%	6.87%	8.49%	0.0	250.5	394.6	645.1
Ticket / Citation Notices	0.00%	9.07%	1.16%	0.0	330.9	53.8	384.7
Administration Assistance	1.56%	6.26%	9.06%	32.6	228.2	421.5	682.3
Special Teams Paging	0.34%	0.00%	0.00%	7.2	0.0	0.0	7.2
Misc Functions & Q/A	3.18%	0.00%	0.00%	66.4	0.0	0.0	66.4

Ancillary Duties	% of Total Effort			Ancillary Time			
	Highland Park	Lake Forest	Lake Bluff	Highland Park	Lake Forest	Lake Bluff	Total
Bulletin/report running	0.00%	0.37%	0.00%	0.0	13.4	0.0	13.4
Non-Dispatched Alarms (notify FDs)	0.00%	0.53%	0.00%	0.0	19.4	0.0	19.4
Records Functions	0.00%	0.00%	38.57%	0.0	0.0	1,793.6	1,793.6
City / Village Support							
Other City / Village Calls	14.94%	12.29%	3.99%	312.5	448.4	185.3	946.2
Monitor Building Security	5.92%	6.12%	4.18%	123.7	223.4	194.3	541.4
Annual Alarm Registrations	0.00%	0.89%	3.56%	0.0	32.6	165.6	198.2
Building Reception	4.36%	8.16%	1.90%	91.1	297.8	88.2	477.1
Solicitation Letters / Permits	0.00%	0.02%	1.06%	0.0	0.6	49.3	49.9
Good Conduct Letters	0.00%	0.01%	0.26%	0.0	0.2	12.3	12.5
Daily Alarm work/registration	0.00%	2.29%	0.00%	0.0	83.4	0.0	83.4
TOTAL				**2,091.2**	**3,647.5**	**4,650.1**	**10,388.8**
TOTAL (Less Dispatch Related)				**1,741.6**	**3,502.5**	**4,241.5**	
FTE Available Hours				**1,600.0**	**1,600.0**	**1,600.0**	
FTE Impact				**1.1**	**2.2**	**2.7**	

The analysis indicates that Highland Park would require an additional 1.1 FTE to provide the ancillary duties not provided by another party, Lake Forest would require 2.2 FTE staff members and Lake Bluff would require 2.7 FTE to continue the ancillary services. The derived FTE Impact became an additional factor in the total cost summary presented later in this report.

(4) Supporting Public Safety Related Services.

The existing Dispatch function in the respective community provides additional services that directly support the public safety function. These services include providing physical presence / monitoring building security, monitoring prisoner holding areas, and providing LEADS inquiry and update services. Each of these service areas would be impacted through consolidation of emergency communication services and the changed staffing allocations that would result.

A key consideration of the communities is the perceived public benefit of maintaining a 24 hour physical presence in the Police Department through the existing communications staff members. However, these staff are not trained or prepared to respond to an emergency situation and can only call for assistance from sworn officers on duty. The same benefit can be provided through communication directly with the consolidated communication center through dedicated phone lines or emergency call boxes. These can be located in many more locations throughout the community at far less cost than the coverage provided by staff at the single station location.

Monitoring building security is currently handled via access to motion detectors, door alarms and video feeds. Another party at a remote site can monitor the same building security data with the same effectiveness and speed of response by a sworn officer.

Monitoring prisoner holding areas poses a larger logistical issue. While infrequent, the need to hold an individual beyond initial case development and booking will exist in each community. Consolidating communications operations in one community and the loss of resources currently available to provide this minimal video / audio monitoring will require development of an alternative. In the rare case of felonies, booking would be handled in existing local facilities before the officer transfers the prisoner to the Lake County Jail. In the relatively infrequent cases requiring a physical hold for a period of time overnight, the communities can staff and use one facility to support the others. Consolidated operations in Highland Park could use the existing holding facilities while either contracting with Highland Park directly for this service or with another entity operating out of the Highland Park facility.

Conducting LEADS inquiries to support officers in the field and making LEADS updates are currently handled by the existing communications staff members. With consolidation, these services would continue with the consolidated operation provided the system inquiries and updates as part of the service. Existing databases tracking local contacts can be continued and aggregated to provide better local intelligence to responding officers.

The following section develops additional detailed information on technology and infrastructure issues associated with possible service reorganization and consolidation.

3. ANALYSIS OF TECHNOLOGY AND INFRASTRUCTURE ISSUES.

The Phase 1 Report provided summary information on a range of technology issues and their potential impacts to reorganization and consolidation of services. We present a more detailed and rigorous discussion of technology issues in this section of the report in order to identify these important issues and their impacts on the consolidation decision.

(1) Existing Technology

The following chart identifies the specific technologies and vendors / manufacturers used by each of the three Dispatch Centers.

	City of Highland Park	City of Lake Forest	Village of Lake Bluff	Notes
CAD	New World Systems MSP version	New World Systems Enterprise Edition	Computer Information System (CIS)	LEADS connection to State at all 3
Radio System	P.D. – East Shore Radio Network (ESRN); Motorola VHF conventional Fire – Shared VHF with mobile repeaters in apparatus	P.D. – ESRN Motorola VHF; Fire – Shared VHF conventional, analog	P.D. – ESRN Motorola VHF	

	City of Highland Park	City of Lake Forest	Village of Lake Bluff	Notes
Radio Consoles	Motorola Centracom Gold Elite	Motorola Centracom Gold Elite	CML (now owned by Cassidian)	
911 Phone System	Cassidian Sentinel ECS 1000	Cassidian Rescue Star	Cassidian	
911 Trunks	5 landline, 2 wireless; phase 2 compliant	9; phase 2 compliant	3 landline, 1 wireless	
RMS	Fire – Firehouse; P.D. – New World Systems; Cop Logic interface	Fire and P.D. – New World Systems	Computer Information System (CIS)	Livescan interface at all 3
Recording	Eventide for phones and radio	NICE Systems for phones and radio	Revcord for phones and radio	
Mobile	Panasonic Toughbooks; New World Systems mobile and field reporting; Net Motion	Panasonic Toughbooks for Fire and P.D.; New World Systems mobile and field reporting	Panasonic Toughbooks; currently using Illinois Alerts system but moving to CIS mobile data; Verizon air cards	
GIS	Consortium (Municipal GIS Partners – MGP)	Consortium (Municipal GIS Partners – MGP)	Lake Forest Fire maintains shape file; data comes from County	
Mapping	Component of CAD	Component of CAD	Component of CAD	
Fire Station Alerting	WestNet First In with CAD interface; alphanumeric pagers with no CAD interface	All Fire radio traffic over speakers at both stations	N/A	
Paging	Some alpha-numeric pagers for P.D., no CAD interface	Some alpha-numeric pagers for Fire, no CAD interface; E-dispatch for text page on smart phones	No paging system	
EMD	National Academy cards	APCO pre-arrival cards	N/A	
Fire RMS	New World Systems	Firehouse (no CAD interface)	N/A	
Emergency Alerting System	Code Red reverse 911; standalone tornado warning	Walen weather warning system; Code Red reverse 911	Code Red reverse 911	
Weather Monitoring	Weather TAP web-based	Critical Reach	Capricorn II; EM Net	

	City of Highland Park	City of Lake Forest	Village of Lake Bluff	Notes
Back-up Facility	Deerfield; EOC in separate P.D. facility	Deerfield; Lake County; EOC at West Fire Station, backup console at Knollwood Fire Station	Lake Forest is the designated backup facility for 911/radio	
Cameras / Monitoring	Direct-connect alarms; 3 Metro commuter train stations; internal P.D. building alarms; jail monitoring	Direct-connect alarms; City camera systems (schools, City buildings); building access; jail monitoring	Building security; jail monitoring	

Some of the existing equipment is shared between the three PSAPs and their user agencies, such as the Police radio system (ESRN) and the Fire VHF radio system. The majority of the equipment is different across all three PSAPs, or in some cases, shared between Highland Park and Lake Forest but different in Lake Bluff.

(1.1) Computer Aided Dispatch (CAD) Systems

The three Dispatch Centers utilize different CAD systems today. Highland Park uses the MSP version of New World Systems. Lake Forest uses the Enterprise Edition of New World Systems, which is the newer and more robust product of New World Systems, however, the two are not directly compatible. Lake Bluff uses Computer Information Systems (CIS). At this time, there is no method in place to share CAD data, on a real time basis between the Centers. All of the Centers have a data connection to the Law Enforcement Agencies Data System (LEADS) for the State of Illinois. All Centers have access to LEADS through an interface with the CAD systems and a standalone LEADS terminal at each Center.

Lake Forest still has the previous CAD, Sun Guard, installed on every Dispatch workstation for historical research purposes. Additionally, one of the agencies Lake Forest dispatches for, Highwood Police Department, is still using the previous CAD

system so the calls for service and other data for that agency are still entered directly into the Sun Guard CAD system.

Lake Bluff is planning to upgrade their CIS CAD server next year due to its age.

(1.2) 911 Phone Systems

All of the Dispatch Centers use the same vendor (Cassidian) for their 911 phone systems; however, they utilize three different models of that vendor's product. In this configuration, each PSAP receives their own 911 calls via discreet 911 trunks to their facility. Under normal circumstances, they are not able to view or answer the 911 calls for other PSAPs. The 911 trunks are set up for rollover capability to backup centers in the event the primary PSAP is overwhelmed with 911 calls and cannot answer them in a reasonable time period.

The Cassidian phone systems currently in place are capable of Enhanced 911 (E911), which displays the caller's phone number and location with the call. For landline callers, the location is based upon the address listed in the subscriber database from the phone company. The location of wireless callers is based upon GPS or triangulation, depending upon the phone's capabilities and the information provided by the wireless carrier.

None of the existing phone systems are capable of Next Generation 911 (NG911) technology. In an NG911 environment, 911 calls are delivered (along with callback number and location information) over a secure, Internet Protocol (IP) network rather than via discreet 911 trunks to each PSAP. Further information on NG911 technology can be found in the next section, Technology Upgrades.

(1.3) Radio Systems

The Police Departments included in the study (Highland Park, Lake Forest, Lake Bluff) are currently operating on the same radio system, the East Shore Radio Network (ESRN). The Fire Departments operate on their own conventional VHF radio frequencies. They have the capability of communicating with one another on the shared frequencies through the Interagency Fire Emergency Radio Network (IFERN), through the Mutual Aid Box Alarm System (MABAS).

In the Dispatch Centers, the radio consoles are Motorola Centracomm Gold Elite in both Highland Park and Lake Forest, and Cassidian (formerly CML) in Lake Bluff. One shared VHF radio frequency is assigned regionally for dispatch-to-dispatch communications. Although the Lake Bluff radio consoles are not the same as the other two agencies, the consoles are able to operate on any frequency with which it is properly interfaced.

(1.4) Radio Communications

The radio systems deployed in the participating agencies are outlined in this section. The ESRN is a conventional VHF (Very High Frequency) radio system, comprised of sites in the South of the County and in the North. The users have experienced radio coverage issues, especially within the City of Highland Park and especially affecting portable (hand-held) radios.

The East Shore Radio Network (ESRN) is used by the following agencies:

- Highland Park Police Department
- Lake Forest Police Department
- Lake Bluff Police Department

- Highwood Police Department
- Deerfield Police Department
- Bannockburn Police Department

The Lake County Sheriff's Office is currently using a separate radio system, a Harris EDACS (Enhanced Digital Access Communications System), trunked, analog 800 MHz system. This system has received end-of-life notification. They are possibly looking to move to a regional system (potentially Starcom21).

Starcom21 is a statewide Motorola trunked, P25 700/800 MHz radio system used by numerous Public Safety agencies across the State. Some Law Enforcement agencies in the Chicago area (including Chicago Police and Fire Departments) use a UHF T-Band radio system.

The Highland Park Fire Department is using a VHF system with mobile repeaters in the apparatus. The Fire agencies in the rest of Lake County have a shared conventional analog VHF system; the Fire agencies in the region have the ability to communicate on each other's VHF frequencies.

(1.5) Radio Coverage Issues

The radio coverage issues identified by some of the users of the ESRN should be addressed regardless of any changes to dispatch operations or technologies. The addition or replacement of a radio site to improve coverage may cost approximately $50,000 to $75,000 for 2 radios, to include installation, licensing, antennas and necessary cabling and equipment. This cost assumes a building or shelter is already in place and available for use. There may be a recurring cost for rack space / site rental, which is highly dependent upon the site and the agreement.

(1.6) Highland Park Records

The Highland Park Police Records Division uses the New World Systems (MSP Version) Records Management System (RMS). All personnel within the Police Department have the ability to access the RMS information. The data they have access to is determined by permissions. The following is a list of the RMS functions available today, as indicated by Highland Park Police Records personnel:

- Accidents (hand-written by Officers and submitted to Records)
- Alarm management (billing, false alarm notifications)
- Arrests
- Bookings (acts as in-house jail module)
- Case management (for Investigators)
- Cases
- Persons
- Incidents
- Property
- Evidence
- Vehicles
- Tickets / citations (hand-written by Officers and submitted to Records)
- Traffic, verbal, administrative, warnings
- Training
- Warrants
- Demographic / profiling
- Personnel (capabilities)
- Data analysis / mapping
- UCR reporting (crime mapping from UCR posted monthly to website)
- Businesses
- Guns
- CAD activity and alerts
- Field Investigations

Highland Park Police Department also uses a 3rd party on-line reporting system, Cop Logic. A Patrol Supervisor reviews the reports submitted via citizens. The system also accepts vacant house notifications from citizens, which get emailed to Dispatch.

The Highland Park RMS has an interface to ICase, which allows the arrests and cases to be submitted to the State and the FBI.

Highland Park Police Department uses Cardinal Ticket Track for parking tickets. This is a standalone system, with no interface to RMS. Scheduling is also completed via a separate method (Excel spreadsheet) with no interface to RMS.

(1.7) Lake Forest Records

The Lake Forest Police Records Division uses the New World Systems (Enterprise Edition) Records Management System (RMS). Lake Forest Fire Department also uses the New World Systems RMS for Fire records. The following is a list of some of the functionality of the Lake Forest RMS system:

- Municipal Offense System (MOS) ticket writing system
- Merge (transfer cases from mobiles to RMS)
- Mobile (field report writing, CAD activity)
- Accident reports (drawings completed by hand and scanned into RMS)
- Tickets (hard copy filled out in field and entered by Records)
- Alarm billing
- Property
- Evidence
- Booking
- Persons
- Arrests
- Training

Lake Forest RMS includes an interface with Livescan, which includes a booking component. Lake Forest Dispatch handles record keeping and LEADS entry for both Lake Forest and Highwood Police Departments.

Lake Forest Records Division still accesses the previous RMS system, Crimes, for background checks and related historical data. A separate system, Municipal

Systems, Inc. (MSI) holds administrative hearing tickets (including dog tickets and parking tickets).

(1.8) Lake Bluff Records

The Lake Bluff records system is an integrated component of their CAD system, Computer Information System (CIS). The Dispatch personnel enter records data into the CIS system. A designated Dispatcher handles uniform Crime Reporting (UCR), field reporting and report approval process part of CIS records system. All tickets and citations are hand entered by Dispatch into CIS. A separate system, Case-L, is used for evidence/property and is managed by the Police Sergeants.

(2) Technology Upgrades

This section of the document identifies the technology in place today at the three PSAPs that may be in need of upgrade, replacement or modification. Discussions and cost estimates related to consolidation or regionalization options are included in the next section and are not necessarily addressed in this section.

(2.1) Lake Forest CAD System

The Lake Forest Dispatch Center is currently using the Enterprise Edition of the New World Systems CAD. They have experienced and identified significant issues since the implementation of this system in 2010. They have documented a significant amount of time required for system maintenance, especially with the more robust GIS component. Additionally, some of the system functionality is not in operation or not operating to expectation. Some of the issues may be related to certain software components being behind on regular system updates. At the time of our interviews, this system was not meeting the needs or expectations of the Lake Forest Police

Department. The Lake Forest Police Department is currently working with the system vendor to identify and resolve the outstanding issues and stabilize the system. In follow-up communications with representatives of the Lake Forest Dispatch Center, we were informed that “most functionality that was once "broken" has been repaired and is currently performing to expectation, and the number of outstanding warranty issues and open items have been reduced to just a handful with most scheduled to be resolved in an upcoming release.”

The next step will be to conduct refresher training for the end users, now that the system is operating at its full capability. The options available to Lake Forest are to continue working with the CAD vendor to resolve the outstanding issues, to move back to the previous CAD system, or to replace the New World Systems CAD with a different version or different system altogether.

(2.2) Recording Systems

Lake Forest Police Department is using the Nice recording system for both phone and radio. The system is reaching end of life and will need to be upgraded or replaced. The Highland Park Dispatch Center is also planning to replace their Eventide recording system in 2014.

(2.3) 911 Phone Systems

The Highland Park Dispatch Center is planning to replace their Cassidian phone system in 2014. They plan to go out to RFP for this system. Glenview Dispatch currently has the Cassidian Patriot 911 system. Highland Park has considered sharing the Glenview system and operating as server B of that shared system. The Cassidian

Patriot system can be purchased as NG911 capable. Many of the systems available today allow for connectivity to 911 trunks or a NG911 IP network.

(2.4) Next Generation 911

The Dispatch Centers in the study are currently operating in an Enhanced 911 (E911) environment. The 911 calls are delivered to each Public Safety Answering Point (PSAP) via discreet 911 trunks. Along with the call, the PSAPs receive the phone number of the caller (ANI) and the location of the caller (ALI). With Next Generation 911 (NG911), the 911 calls would be delivered to the PSAPs via a secure, Internet-Protocol (IP) network. Ideally, all of the PSAPs in the region would be part of this network. The network allows for on the fly routing of 911 calls to the appropriate PSAP based on location and on availability of call takers at that PSAP. It also allows the calls to be rerouted in the event of a PSAP connection failure or the need to abandon a PSAP.

The flexibility of the network is one of the prime advantages of NG911. There are other potential benefits to the technology, including:

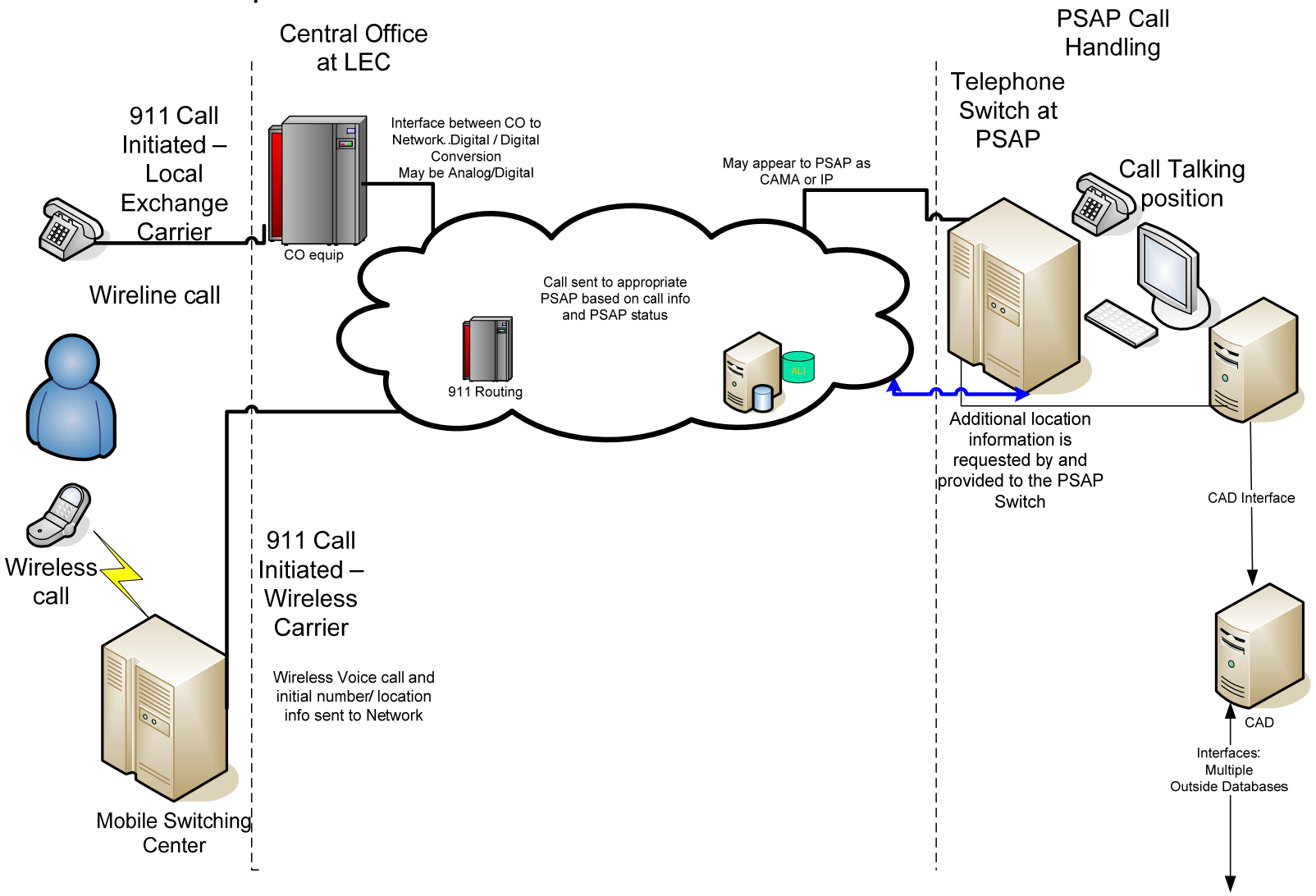
- Enhanced caller location and call routing information
- Remove limitation of discreet 911 trunks to PSAP; calls can be accessed anywhere the network and security settings allow
- Text messages to 911
- Potential ability for callers to send picture and/or video files to the PSAP
- Capability to use the same IP network to send other related data between PSAPs in the future

Along with the potential benefits of NG911 are some possible challenges. Many of the challenges are related to the operational aspect of receiving the additional information and media formats. Some of the possible challenges of NG911 include:

- Operational impact of accepting text messages to 911
  - Training requirements
  - Issues with understanding text message vernacular and acronyms
  - Possible increase in call volume with text messages making it easier for citizens to contact the Dispatch Center
  - Need to determine level of urgency in answering 911 text messages vs. 911 calls
- Requirement for new 911 phone system equipment in many cases
- Operational impact of receiving pictures/video
  - Could be time consuming if Dispatchers are expected to review media
  - Does it create liability if the Dispatchers receive data and do not have time to review it or miss something relevant in the picture/video?
- Storage requirements of additional media

It is our understanding that the City of Chicago announced plans to move toward a NG911 environment. If nearby agencies begin accepting 911 text messages and media, it may create an expectation by visitors and residents that all PSAPs in the area provide the same ability. The following diagram is a general depiction of an NG911 network. Specifics may be different between actual PSAPs and networks.

Generic NG911 Network Depiction



(3) 911 Funding and Legislative Issues

Legislative wording for various 911 funding mechanisms differ greatly from state to state. We have found that some legislation wording may inadvertently restrict the funding of Next Generation 911 service delivery. This issue is usually due to the reference to discreet circuits, such as Centex, leased lines and CAMA trunks for providing 911 services. Next Generation 911 utilizes data circuits to carry Internet Protocol based VoIP and associated call data. This matter was addressed in Nevada and likely other States by legal review of the older legislation and modifying the wording to include current technology. We recommend that current Illinois and related local legislation, related to 911 surcharges and taxes, be reviewed by legal counsel for its applicability to current technology.

There is also Federal legislation that may impact PSAP funding and/or operations. The Next Generation 9-1-1 Advancement Act of 2012 (the Act), which is part of the HR3630 legislation, directly relates to 911 grant funding.

The Act provides a one-time appropriation of $115 million Nationwide for NG911 implementation, operation and training. The funding is available to State or local entities and requires a 40% match from the receiving entity. The applicant must certify that the 911 funds were only expended for purposes designated by State legislation “for a period of 180 days immediately preceding the date of application and continuing through the period of time during which the funds from the grant are available to the applicant.”

(3.1) Need for a State-wide 911 Coordinator

One of the requirements of the Act for applicants to receive grant funding is that their State must have "designated a single officer or governmental body of the entity to serve as the coordinator of implementation of 9-1-1 services, except that such designation need not vest such coordinator with direct legal authority to implement 9-1-1 services, E9-1-1 services, or Next Generation 9-1-1 services or to manage emergency communications operations."

(3.2) 911 Liability Protection

The Act extends liability protection to providers of NG911 service by stating in section 6506:

> *"(a) IMMUNITY.--a provider or user of Next Generation 9-1-1 service, a public safety answering point, and the officers, directors employees, vendors, agents and authorizing government entity (if any) of such provider, user , or public safety answering point, shall have immunity and protection from liability under Federal and State law to the extent provided in subsection (b) with respect to—*
>
> *(1) the release of subscriber information related to emergency calls or emergency services;*
> *(2) the use or provision of 9-1-1 services, E9-1-1 services, or Next Generation 9-1-1 services; and*
> *(3) other matters related to 9-1-1 services."*

(3.3) Do Not Call Registry for PSAPs

Section 6507 of the Act creates a special Do-Not-Call registry for PSAPs. This allows the PSAP managers to *"register the telephone numbers of all 9-1-1 trunks and other lines used for the provision of emergency services to the public or for communications between public safety agencies"*, which prohibits the use of automatic dialing or "robocall" equipment to call these lines. The Act also prohibits the dissemination of registered numbers and provides an enforcement policy for violations.

(4) Technology Impacts Associated with Consolidation

In this section of the report, we provide additional information on the various consolidation alternatives and technology impacts that they present.

(4.1) No Action

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

Potential Benefits

- Little or no joint effort required.
- Each Dispatch Center can continue to operate on their own CAD, 911 phone system and other technology which best suits their individual needs.

Potential Risks

- Continued maintenance of three separate CAD systems, phone systems (none of which are currently NG911 capable) and other technology.
- Limited data sharing capabilities.
- Limited or no benefit of personnel resource sharing.
- Duplication of efforts across 3 PSAPs.

(4.2) Regionalization

The second option is regionalization. This allows the Dispatch Centers to share CAD data, handle one another's overflow 911 calls more seamlessly and work together

in a more regional manner without combining operations or sharing a facility. This option allows the Dispatch Centers to:

1. Remain on separate CAD systems and use a 3rd party CAD data sharing product, if desired

2. The Centers may chose to operate on a shared CAD system while maintaining separate operations.

Importantly, if the Centers plan to move past this phase toward any form of consolidation, this would be a good point to implement a shared CAD system, which will be a significant benefit for virtual consolidation and a requirement for physical consolidation.

Potential Benefits

- Each Dispatch Center can continue to operate on their own CAD, 911 phone system and other technology which best suits their individual needs.
- Provides the *option* to implement a shared CAD system or to implement CAD data sharing technology.
- Enhances communications and data interoperability between Dispatch Centers.
- May improve call hand-off between PSAPs.

Potential Risks

- Purchase and maintenance of separate CAD systems or requirement for additional technology component (3rd party CAD data sharing product).
- Limited or no benefit of personnel resource sharing.

(4.3) Virtual Consolidation

The third option is virtual consolidation. This is a consolidation in the sense that the Dispatch Centers can take each other's 911 calls as they come in, enter calls for service in the same CAD system and dispatch each other's units. In this option, however, the Dispatch Centers remain in separate facilities with separate personnel and

governance. The policies, procedures and agreements related to the specific operations would need to be clearly defined.

Potential Benefits

- Ability to share personnel resources.
- Maintenance of separate command and control.
- Provides an additional backup facility for disaster recovery.
- Allows the Dispatch Centers to define the extent and limitations of shared operations (for example, call takers from either Center can handle 911 calls but the dispatching of Police/Fire units is handled only by their own Center, etc.).
- Provides a direct pathway to physical consolidation, if that is the final goal.

Potential Risks

- Fairly complicated from a technical standpoint in comparison to other options (for example, network connectivity needs to be in place to share CAD, fire station alerting, etc.).
- Does not provide potential cost savings from a shared facility.
- Requires significant amount of joint training and development of policies and procedures.
- Complicates the control of personnel and quality of service.

The virtual consolidation model has recently become a more viable opportunity, due to the technology and networking options available today. Many PSAPs across the Country are considering some form of consolidation or data sharing, including virtual consolidation. Virtual consolidation is often considered in areas where the participating agencies do not have funds for the building costs of consolidation, there are political barriers to consolidation or they simply want to keep a "local" aspect to their dispatch services. Some examples of agencies considering or implementing virtual consolidation in the Midwest include:

- Stevens, Pope and Grant Counties, Minnesota – These three PSAPs are planning to implement virtual consolidation this summer. They estimated the project to cost $750,000 and to generate a savings of approximately $500,000 by sharing equipment costs. Per the Minnesota Department of Public Safety, about 30 Counties in MN are studying virtual consolidation (http://9-1-1.com/wordpress/2012/03/22/3-sheriffs-try-virtual-consolidation-of-dispatchers/)

- Alcona and Alpena County, Michigan – In 2010, the two Counties approved plans to implement a virtual consolidation of the two PSAPs (http://www.thealpenanews.com/page/content.detail/id/509125.html)

- Franklin County Sheriff's Office, Missouri – This County is researching the possibility of developing a virtual PSAP to include four Counties in the region, and to potentially make the virtual consolidation available to other jurisdictions in the area.

The three references listed above are a small sampling of agencies researching this consolidation option. We encourage the agencies participating in this study to reach out to the PSAPs implementing virtual consolidation for more detailed information on their experiences with benefits and challenges of this model.

(4.4) Co-location

The fourth option is co-location. This allows the Dispatch Centers to operate in the same facility, without having to combine operations or all technology. This is not necessarily the step between virtual and physical consolidation, but it may be in cases where the governance, personnel or other details are still being finalized at the time the Centers move into one shared facility.

Potential Benefits

- Maintenance of separate command and control.

- Allows the Dispatch Centers to define the extent and limitations of shared operations (example, call takers from either Center can handle 911 calls but the dispatching of Police/Fire units is handled only by their own Center, etc.).

- Potential cost savings from a shared facility.

Potential Risks

- Possible purchase and maintenance of separate CAD systems and possible requirement for additional technology component (3rd party CAD data sharing product to enhance regionalization).
- Limited or no benefit of personnel resource sharing.
- Possibly limited data sharing (depending upon the extent of technology sharing).

Consolidation

The final option is consolidation. This requires a shared Dispatch Center facility (possibly Highland Park Dispatch or another location) and integrates all operations, governance, personnel, technology, etc. into one center.

Potential Benefits

- Ability to share personnel resources.
- Potential cost savings from a shared facility.
- Potential cost savings from shared technology.
- Interoperability between Police and Fire at the Dispatch level.

Potential Risks

- Requires significant amount of joint training and development of policies and procedures.
- Limits individual agency command and control.
- May limit backup facility options for disaster recovery.

(5) Technology Requirements for Consolidation Options

The following section indicates the technology requirements for each of the consolidation options mentioned above.

(5.1) No Action

Taking no action toward consolidation or regionalization requires no shared technology upgrades. It does leave each PSAP to make the necessary technology upgrades and maintenance within their own facility. Some of the technology upgrades identified by the participating PSAPs and planned for future implementation include:

- Lake Forest CAD/RMS improvements and training (working with New World Systems to identify and address remaining system issues and re-train users on enhanced system functionality)
- Recording system replacements planned in 2014 for both Highland Park and Lake Forest Dispatch Centers
- Highland Park PSAP has plans to replace their Cassidian 911 phone system or join the Glenview Dispatch 911 phone system as a second server on the system.
- At some point in the future, all 3 PSAPs may want to replace their existing 911 phone systems with NG911 capable system(s) in order to operate on IP network(s) for 911 call delivery and to accept text messages and other media via 911.
- Lake Bluff indicated plans to replace the CIS CAD server due to its age.

(5.2) Regionalization

The following may enhance the concept of regionalization, or sharing data without consolidating resources or technology:

- Acquire 1 shared CAD system ***or*** purchase and implement CAD data sharing technology.
- Consider purchasing a NG911 capable phone system for each PSAP (or shared among the 3 PSAPs) and joining an IP network (ESInet) for NG911 call distribution when available in the region.

(5.3) Virtual Consolidation

Virtual consolidation requires the technology to be shared as in a physical consolidation but also requires sharing data across diverse locations. A virtual consolidation may require the following:

- Acquire 1 shared CAD system ***or*** purchase and implement CAD data sharing technology (shared CAD is highly recommended for this option).
- Purchase a NG911 capable phone system for each PSAP (or shared among the 3 PSAPs) and join an IP network (ESInet) for NG911 call distribution when available in the region. This will allow each PSAP to configure their phone system to see and answer the 911 calls coming in for other PSAPs.
- Ensure each of the radio consoles are operational with all of the radio frequencies used by all of the participating agencies.
- Ideally, all participating PSAPs would use 1 shared radio and phone recording system with access to all PSAPs. Many of the recording systems available today can be accessed over the Internet via secure login.
- Fire station alerting systems for the two PSAPs currently dispatching Fire agencies should be made available to all participating PSAPs (through network connectivity) if all PSAPs will be dispatching Fire apparatus for all Fire Departments.
- Network connectivity between PSAPs for access to CAD servers, 911 phone system servers, NG911 phone calls, fire station alerting, paging systems, access to radio systems, etc. must be established with appropriate security settings and routing capabilities.

(5.4) Co-Location

The co-location option does not actually require any specific technology changes, other than to move the existing technology and connectivity to the new location. In order to enhance regionalization and data sharing capabilities, however, the technology upgrades listed under Regionalization above would be appropriate.

(5.5) Consolidation

Full consolidation requires a complete combining of technology and connectivity into one facility. At a minimum, the following technology systems would need to be shared and/or purchased (keeping in mind that existing systems can become primary and limit the need to purchase all new systems):

- 1 CAD system, with possible interfaces to other Police or Fire records management systems.
- 1 911-phone system (preferably a NG911 capable phone system if a new purchase is made).
- 1 type of radio console with all of the necessary frequencies programmed and the necessary connections made to base stations or radio system networks.
- 1 recording system for phones and radio.
- Ideally 1 weather information system.
- 1 shared fire station alerting system for all participating Fire agencies *or* connectivity to multiple fire station alerting systems.
- If the severe weather alerting systems, tornado sirens, and CodeRed reverse 911 systems for each agency remain the responsibility of Dispatch, connectivity to these systems for all participating agencies must be established.
- Connectivity to all paging systems for participating agencies must be established at the consolidated Center.
- Connectivity to direct alarm-monitoring systems at all participating PSAPs must be established at the consolidated Center.
- Building access, cameras and jail cell monitoring systems at each PSAP must be re-assigned to other personnel within the agency or (if feasible) the function may be monitored remotely from a consolidated PSAP.

(6) Estimated Technology Costs

This section provides an estimate of potential technology costs of the Regionalization, Virtual consolidation and Consolidation of the Group options presented

earlier in the document. The costs associated with the Status Quo option are considered the existing identified technology upgrades / replacements. The technology costs in the consolidation options are represented in a range, as it is not possible to get actual pricing without a bid or request for quotation process. The estimated prices are based on actual quotes from other similar PSAPs and our experience with numerous similar technology purchases and implementations. These estimated prices are for the purpose of high-level decision-making. Once an overall direction has been determined, the participating agencies should use the bid process, bulk purchases and/or regional pricing contracts to secure the best prices possible on the technology.

The potential resale value of existing equipment is not included in these cost estimates. Much of the cost in the CAD systems, recording systems, 911 phone systems, etc. is represented in the system software and license agreements rather than the hardware. Further, hardware declines in value as it ages, making much of the equipment that cannot be re-used in the new environment by the PSAPs, of relatively little value. We do recommend trying to secure funds from the sale of the old equipment, however, we cannot accurately reflect or guarantee what that amount would be.

The following table shows potential cost ranges for each consolidation option. Two of the options are not included, as they do not require technology purchases – no action and co-location. We have made the assumption that much of the networking and radio console programming can be completed with in-house resources, but we have included line items as placeholders for these tasks as they will need to be completed.

The first spreadsheet assumes new systems and hardware would be purchased for each of the shared system options. Another option, which is presented in the

second spreadsheet, assumes the PSAPs will utilize existing systems and technology to develop shared systems, where possible. This would likely require the purchase of some additional software licenses, and may also require some hardware purchases as well as additional modules or functionality within the shared system.

These estimated cost spreadsheets do not address the specific cost breakdown per participating PSAP. We have included cost sharing allocated by Calls for Service volume in the detailed cost analysis. The actual cost breakdown would be determined by the specific governance model developed as part of the consolidation effort.

(6.1) Estimated Costs for Technology in Consolidation Options

The following table compares the potential cost ranges for three of the consolidation options –. This assumes all new shared systems will be purchased.

	Regionalization		Virtual Consolidation		Consolidation*	
Technology Components	**Low Cost**	**High Cost**	**Low Cost**	**High Cost**	**Low Cost**	**High Cost**
Shared CAD system			$1,000,000	$1,800,000	$1,000,000	$1,800,000
CAD data sharing product (with AVL component)	$300,000	$500,000				
Shared NG911 capable phone system			$600,000	$800,000	$600,000	$800,000
Radio consoles					$250,000	$600,000
Shared radio/phone recording system			$40,000	$80,000	$40,000	$80,000
Possible network hardware components			$50,000	$100,000	$20,000	$40,000
Network configuration (performed by internal IT staff)						
Radio console programming and configuration (performed by internal communications shop)						
Total Est. Capital Cost	**$300,000**	**$500,000**	**$1,690,000**	**$2,780,000**	**$1,910,000**	**$3,320,000**
Potential Annual Recurring Cost (7% - 10%)	$21,000	$50,000	$118,300	$278,000	$133,700	$332,000

* Requires new facility or modifications to existing facility, which are not included in this cost estimate for technology.

The following table compares the cost estimate ranges for Virtual Consolidation and Consolidation, assuming the participating PSAPs will utilize existing CAD, recording and radio console systems, configured to be used as shared systems.

	Virtual Consolidation		Consolidation*	
Technology Components	**Low Cost**	**High Cost**	**Low Cost**	**High Cost**
Shared CAD system components	$100,000	$300,000	$100,000	$300,000
CAD data sharing product (with AVL component)				
Shared NG911 capable phone system	$600,000	$800,000	$600,000	$800,000
Radio consoles (use existing Motorola, add 3 for Lake Bluff)			$00,000	$175,000
Shared radio/phone recording system configuration	$20,000	$30,000	$20,000	$30,000
Possible network hardware components	$50,000	$100,000	$20,000	$40,000
Network configuration (performed by internal IT staff)				
Radio console programming and configuration (performed by internal communications shop)				
Total Estimated Capital Cost	**$770,000**	**$1,230,000**	**$840,000**	**$1,345,000**
Potential Annual Recurring Cost (7% - 10%)	$53,900	$123,000	$58,800	$134,500

* Requires new facility or modifications to existing facility, which are not included in this cost estimate for technology.

As the cost tables indicate, utilizing existing systems where possible can significantly reduce the technology costs. Since the three PSAPs do not have NG911 capable phone systems today, that cost remains in both comparisons and is a significant cost element of the second comparison. In both of the comparisons, the total cost would be shared among the PSAPs participating in the regionalization or consolidation, determined by the governance model and agreement.

4. SCENARIOS AND RECOMMENDATIONS

Matrix consulting Group developed various scenarios providing a range of options for emergency communication service delivery. We have prepared five-year pro forma budget for each scenario supporting the relative cost analysis. These five-year budgets are presented as the Attachment to this report. For comparison purposes, we have assumed that required capital costs are amortized over the five-year forecast period. The following summarizes these scenarios:

1. STATUS QUO

In this scenario, the organizations will continue their independent municipal service provision making necessary investments in personnel and infrastructure to support a sustained effort. Governance would remain the responsibility of the individual governments providing maximum control while minimizing opportunities to share services and resources.

Local staff would continue to provide both public safety support and ancillary services at current levels. Local staff would continue to provide a physical presence at the local Police Department 24 hours a day, 7 days a week.

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

2. VIRTUAL CONSOLIDATION

In this scenario, the communities will use available technology to support application of staff and infrastructure resources across existing service platforms while maintaining independent operations. This is a consolidation in the sense that the

Dispatch Centers can take each other's 911 calls as they come in, enter calls for service in the same CAD system and dispatch each other's units. In this option, however, the Dispatch Centers remain in separate facilities with separate personnel and governance.

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

Given the complexities and continuing developments regarding technology and approaches in this option, we have assumed that staffing remains the same as current levels during the forecast period. There may be opportunities in the future to leverage the technology and information sharing to consider all staffing resources available at the multiple sites as parts of a single operation. As with the Status Quo Scenario, we are assuming that local staff would continue to provide both public safety support and ancillary services at current levels. Local staff would also continue to provide a physical presence at the local Police Department 24 hours a day, 7 days a week.

3. CONSOLIDATION OF THE GROUP

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

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

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

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

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

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

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

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

  - Other oversight duties and responsibilities, as determined appropriate.

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

  - Attendance at monthly meetings:

  - Provision of regular operational and procedural direction and issues resolution as it relates to the day-to-day operations of the consolidated agency. Provides supervision and annual evaluations to the Director,

recommending compensation changes, accolades and/or discipline to the Board of Directors.

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

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

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

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

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

For organizational support, we are recommending that the participating communities, through the Board of Directors, enter into a contract for services with one of the entities to provide both emergency communications and organizational support

services. This will minimize the additional costs associated with the creation of a new governmental entity. This approach supports effective representation of the participants while also providing cost effective and efficient service provision using aggregated staff resources as well as existing support mechanisms (finance and accounting, purchasing, human resources, risk management and legal).

Because aggregated staffing is used in a single facility, the participating communities will be required to decide on the continuation of public safety and ancillary services now provided by their respective local staff members. To support this decision, the project team has developed costs estimates to continue the current level of ancillary services (ranging from 1-3 FTE staff members per community). However, providing these services on every shift each day of the week to support a 24-hour station presence would require additional expense. This scenario assumes additional staff to meet identified ancillary demands but abandoning station presence on every shift in favor of communications capability from the station vestibules to the consolidated communications center for response.

5. CONSOLIDATION WITH OTHERS

In this scenario, the communities combine operations and infrastructure to support operations in a third-party location for the benefit of the three communities. This scenario was developed with specific proposal information provided by the Village of Glenview. The Village of Glenview provides emergency communications services for a growing list of municipalities in the Chicago suburbs and is interested in investigating additional opportunities. The Village of Glenview provides services to other municipalities through formally negotiated and adopted intergovernmental agreements

(IGA). These IGAs stipulate the relative roles and responsibilities, communications, services, performance measurement and reporting, as well as basis for compensation for services provided. As a contractual relationship, the approach provides a degree of service flexibility to the participant with minimal upfront expenditures.

The Village of Glenview developed a proposal to provide emergency communications services on behalf of Highland Park, Lake Forest and Lake Bluff. Using their actual experience and costs, Glenview developed two variants that would provide services to the three communities. In the first (identified as Scenario 4A in the following table), Glenview would provide services under contract to the communities using 11 additional Telecommunicator positions and 1 Supervisor position based in their existing operation in Glenview. A second variant (identified as Scenario 4B in the following table) would provide services in a "hosted" environment with 10 additional Telecommunicator positions and 2 additional Supervisor positions located at the existing facilities in either Lake Forest or Highland Park. The assigned staff in the "remote" Communications Center would be employees of Glenview Communications, supervised and responsible to Glenview Communications.

Glenview uses represented staff members, eligible for full Village benefits (full-time employment). The operation assigns staff members to two, 12-hour shifts to provide coverage throughout the day. All associated operating supplies and services would be included in the contract price. These costs also include salaries (per union contract), projected overtime, "hire back" costs, all employee benefits, and training costs. Glenview also includes costs for an annual software service agreement and an amount for capital replacement. Glenview has estimated potential capital costs associated with

the service provision of approximately $350,000 per agency; these costs would be the responsibility of each agency.

Regardless of physical location of the staff, the services provided by Glenview to the communities would be constrained under the contract to include call taking and dispatch associated with calls received on emergency 10-digit and 9-1-1 lines. The operation fully supports radio communication with both Police and Fire services. The organization also provides some directly related public safety support services including LEADS inquiries and entries as desired by the client. The service would not include ancillary duties such as answering administrative calls, although they do make provisions for taking non-emergency calls after hours on behalf of their client agencies.

The additional capital expenditures would support three additional workstations and include 9-1-1 phone equipment, radio console equipment and associated furniture. There may be additional expenditures associated with required software conversions or upgrades.

A pro forma budget using updated information provided by the Village of Glenview with five-year forecast is included as the Attachment to this report. This information is also summarized in the following Scenario Summary table.

Matrix Consulting Group used the assumptions and cost data described in earlier sections of this report plus updated information to develop cost estimates for operations and capital items for the Status Quo, Virtual Consolidation, and Consolidate with Group (Highland Park) scenarios. The Consolidate with Others Scenario (Glenview proposal) is also presented as two variants. This information is summarized and presented in the table on a following page. Several points are noted:

- When looking at the issue strictly from the perspective of operating costs, the physical consolidation scenarios are preferable (3, 4A, 4B);

- One-time capital costs associated with technology make virtual consolidation and consolidation with the group look relatively less attractive. This dynamic also carries over in terms of total costs;

- Fully supporting current ancillary services would cost the communities approximately $430,000. We assume that under Consolidate with Group (Highland Park Scenario), Highland Park will need to separately fund and staff these services. This impacts the attractiveness of the physical consolidation scenarios;

- Excluding capital expenditures from consideration, the three physical consolidation scenarios produce similar results in terms of cost savings in total to the participants (ranging from $250,000 to $523,000 per year).

- The cost savings expected over a five-year period (incorporating capital costs) mirror the previous point with significant savings produced in each physical consolidation scenario. The largest total savings projected over five years are produced through a contract for service with Village of Glenview (approximately $4.85 million during the period).

Because of the mixed nature of the results, we have framed our recommendations in terms of primary desired outcome for the communities as described below:

Desired Outcome	Recommendation
A. Position organizations for future development	Recommendation A1: Pursue elements of Virtual Consolidation to prepare for future actions as new technology comes on-line. Will support wide range of future choices.
	Recommendation A2: Maintain current staffing levels to continue supporting public safety support and other ancillary services.
	Recommendation A3; Continue existing practices for prisoner management.
	Recommendation A4: Continue existing practices for records management.
B. Pursue operating cost savings while maintaining decision control.	Recommendation B1: Pursue physical consolidation among the three organizations with location at Highland Park. New relationship will allow communities to define service provision approach as they see fit, providing flexibility, control and continuing cost savings following infrastructure and technology investment.
	Recommendation B2: Provide additional staff resources to support desired ancillary services in Highland Park, Lake Forest and Lake Bluff. This will include records management activities where appropriate.

Desired Outcome	Recommendation
	Recommendation B3; Adopt a tiered approach to prisoner management with felonies booked and transferred to Lake County Jail; all others processed in local holding areas pending bond or release. Continue 24-hour practices in Highland Park to handle local prisoner holds (DUI, etc.) for all agencies.
C. Pursue operating cost savings while maintaining flexibility.	Recommendation C1: Pursue physical consolidation with third party to leverage economies of scale for cost savings while limiting capital outlays with intergovernmental agreement. Locate staff in Highland Park to support 24/7 operations at minimal additional cost.
	Recommendation C2: Provide additional staff resources to support desired ancillary services in Highland Park, Lake Forest and Lake Bluff. This will include records management activities where appropriate.
	Recommendation C3; Adopt a tiered approach to prisoner management with felonies booked and transferred to Lake County Jail; all others processed in local holding areas pending bond or release. Continue 24-hour practices in Highland Park to handle local prisoner holds (DUI, etc.) for all agencies. Provide additional holding area monitoring services under contract with Glenview Communications.

ATTACHMENT: COST SUMMARY TABLES

TABLE 1: SCENARIO SUMMARIES

NOTE: The cost estimates in this and following tables reflect revisions to the draft report and are based on updated information and assumptions. However, some costs and assumptions in the text of the Final Report were not updated per agreement of clients and Matrix Consulting Group.

	Scenario 1 Status Quo	Scenario 2 Virtual Consolidation	Scenario 3 Consolidate with Highland Park	Scenario 4A Consolidate Glenview	Scenario 4B Consolidate Glenview at HP
Governance:	Municipal	Municipal and Coordinating Committee	Contract and Dual Boards	Contract	Contract
Location:	Existing sites.	Existing sites.	Highland Park	Glenview	Highland Park
Operating Costs:					
Highland Park	1,239,735	1,239,735	1,000,685	866,377	908,434
Lake Forest	914,133	914,133	581,729	503,652	528,101
Lake Bluff	466,232	466,232	284,650	246,445	258,409
Knollwood Fire	12,633	12,633	51,975	44,999	47,184
Highwood	76,791	76,791	109,713	94,988	99,599
Subtotal	2,709,524	2,709,524	2,028,752	1,756,462	1,841,727
Capital Costs:					
Highland Park	692,000	1,102,417	606,699	663,916	764,539
Lake Forest	467,000	640,869	352,693	385,955	444,451
Lake Bluff	606,847	313,588	172,579	188,854	217,477
Knollwood Fire	0	57,259	31,512	34,484	39,710
Highwood	0	120,867	66,517	72,791	83,823
Subtotal	1,765,847	2,235,000	1,230,000	1,346,000	1,550,000
Total Costs:					
Highland Park	1,931,735	2,342,152	1,607,384	1,530,293	1,672,974
Lake Forest	1,381,133	1,555,002	934,422	889,607	972,552
Lake Bluff	1,073,079	779,820	457,228	435,300	475,886
Knollwood Fire	12,633	69,892	83,487	79,483	86,894

	Scenario 1 Status Quo	Scenario 2 Virtual Consolidation	Scenario 3 Consolidate with Highland Park	Scenario 4A Consolidate Glenview	Scenario 4B Consolidate Glenview at HP
Highwood	76,791	197,658	176,231	167,779	183,422
Subtotal	4,475,371	4,944,524	3,258,752	3,102,462	3,391,727
Support for Ancillary Tasks:					
Highland Park	Included	Included	78,892	78,892	78,892
Lake Forest	Included	Included	157,784	157,784	157,784
Lake Bluff	Included	Included	193,644	193,644	193,644
Knollwood Fire	0	0	0	0	0
Highwood	0	0	0	0	0
Subtotal	0	0	430,320	430,320	430,320
Adjusted Total Costs:					
Highland Park	1,931,735	2,342,152	1,686,276	1,609,185	1,751,866
Lake Forest	1,381,133	1,555,002	1,092,206	1,047,391	1,130,336
Lake Bluff	1,073,079	779,820	650,872	628,944	669,530
Knollwood Fire	12,633	69,892	83,487	79,483	86,894
Highwood	76,791	197,658	176,231	167,779	183,422
Subtotal	4,475,371	4,944,524	3,689,072	3,532,782	3,822,047
Five-Year Total Costs:					
Highland Park	7,229,267	7,639,683	6,380,113	5,537,640	5,875,912
Lake Forest	5,310,927	5,484,796	3,708,960	3,219,203	3,415,852
Lake Bluff	3,077,755	2,784,496	1,814,856	1,575,210	1,671,433
Knollwood Fire	65,349	122,609	331,381	287,623	305,193
Highwood	397,233	518,100	699,505	607,138	644,225
Subtotal	16,080,531	16,549,684	12,934,814	11,226,814	11,912,615
Potential 5-Yr Savings:					
Highland Park	0	(410,417)	849,153	1,691,626	1,353,354
Lake Forest	0	(173,869)	1,601,967	2,091,723	1,895,075
Lake Bluff	0	293,259	1,262,899	1,502,545	1,406,322
Knollwood Fire	0	(57,259)	(266,031)	(222,273)	(239,843)
Highwood	0	(120,867)	(302,272)	(209,904)	(246,992)
Subtotal	0	(469,153)	3,145,716	4,853,717	4,167,916

TABLE 2: Scenario 1 "Status Quo" Five-Year Budget Forecast

Scenario 1:	Status Quo	Factor	2014	2015	2016	2017	2018	Five-Year Total
Expenditures	Personnel	3.00%	2,191,637	2,257,386	2,325,108	2,394,861	2,466,707	11,635,698
	Other Operations	1.70%	517,887	526,691	535,645	544,751	554,012	2,678,985
	Subtotal		2,709,524	2,784,077	2,860,753	2,939,612	3,020,718	14,314,684
	Factor							
	Capital		1,765,847	0	0	0	0	1,765,847
	Total		**4,475,371**	**2,784,077**	**2,860,753**	**2,939,612**	**3,020,718**	**16,080,531**
Allocation	**Operations**							
	Highland Park		1,239,735	1,272,665	1,306,511	1,341,299	1,377,055	6,537,267
	Lake Forest		914,133	940,667	967,981	996,100	1,025,046	4,843,927
	Lake Bluff		466,232	479,801	493,770	508,150	522,955	2,470,908
	Knollwood Fire		12,633	12,848	13,066	13,288	13,514	65,349
	Highwood		76,791	78,096	79,424	80,774	82,147	397,233
			2,709,524	2,784,077	2,860,753	2,939,612	3,020,718	14,314,684
	Capital							
	Highland Park		692,000	0	0	0	0	692,000
	Lake Forest		467,000	0	0	0	0	467,000
	Lake Bluff		606,847	0	0	0	0	606,847
	Knollwood Fire		0	0	0	0	0	0
	Highwood		0	0	0	0	0	0
			1,765,847	0	0	0	0	1,765,847
	Total							
	Highland Park		1,931,735	1,272,665	1,306,511	1,341,299	1,377,055	7,229,267
	Lake Forest		1,381,133	940,667	967,981	996,100	1,025,046	5,310,927
	Lake Bluff		1,073,079	479,801	493,770	508,150	522,955	3,077,755
	Knollwood Fire		12,633	12,848	13,066	13,288	13,514	65,349
	Highwood		76,791	78,096	79,424	80,774	82,147	397,233
			4,475,371	2,784,077	2,860,753	2,939,612	3,020,718	16,080,531

TABLE 3: Scenario 2 "Virtual Consolidation" Five-Year Budget Forecast

Scenario 2:	Virtual Consolidation	Factor	2014	2015	2016	2017	2018	Five-Year Total
Expenditures	Personnel	3.00%	2,191,637	2,257,386	2,325,108	2,394,861	2,466,707	11,635,698
	Other Operations	1.70%	517,887	526,691	535,645	544,751	554,012	2,678,985
	Subtotal		2,709,524	2,784,077	2,860,753	2,939,612	3,020,718	14,314,684
	Factor							
	Capital		2,235,000	0	0	0	0	2,235,000
	Total		**4,944,524**	**2,784,077**	**2,860,753**	**2,939,612**	**3,020,718**	**16,549,684**
Allocation	**Operations**							
	Highland Park		1,239,735	1,272,665	1,306,511	1,341,299	1,377,055	6,537,267
	Lake Forest		914,133	940,667	967,981	996,100	1,025,046	4,843,927
	Lake Bluff		466,232	479,801	493,770	508,150	522,955	2,470,908
	Knollwood Fire		12,633	12,848	13,066	13,288	13,514	65,349
	Highwood		76,791	78,096	79,424	80,774	82,147	397,233
			2,709,524	2,784,077	2,860,753	2,939,612	3,020,718	14,314,684
	Capital							
	Highland Park	49.33%	1,102,417	0	0	0	0	1,102,417
	Lake Forest	28.67%	640,869	0	0	0	0	640,869
	Lake Bluff	14.03%	313,588	0	0	0	0	313,588
	Knollwood Fire	2.56%	57,259	0	0	0	0	57,259
	Highwood	5.41%	120,867	0	0	0	0	120,867
		100.00%	2,235,000	0	0	0	0	2,235,000
	Total							
	Highland Park		2,342,152	1,272,665	1,306,511	1,341,299	1,377,055	7,639,683
	Lake Forest		1,555,002	940,667	967,981	996,100	1,025,046	5,484,796
	Lake Bluff		779,820	479,801	493,770	508,150	522,955	2,784,496
	Knollwood Fire		69,892	12,848	13,066	13,288	13,514	122,609
	Highwood		197,658	78,096	79,424	80,774	82,147	518,100
			4,944,524	2,784,077	2,860,753	2,939,612	3,020,718	16,549,684

TABLE 4: Scenario 3 "Consolidate with Group" (Highland Park) Five-Year Budget Forecast

Scenario 3:	Consolidate at Highland Park	Factor	2014	2015	2016	2017	2018	Five-Year Total
Expenditures	Personnel	3.00%	1,543,456	1,589,760	1,637,453	1,686,576	1,737,174	8,194,420
	Other Operations	1.70%	485,296	493,546	501,936	510,469	519,147	2,510,395
	Subtotal		2,028,752	2,083,306	2,139,389	2,197,046	2,256,321	10,704,814
	Factor							
	Capital		1,230,000	250,000	250,000	250,000	250,000	2,230,000
	Total		**3,258,752**	**2,333,306**	**2,389,389**	**2,447,046**	**2,506,321**	**12,934,814**
Allocation	**Operations**							
	Highland Park	49.33%	1,000,685	1,027,593	1,055,256	1,083,696	1,112,933	5,280,163
	Lake Forest	28.67%	581,729	597,372	613,454	629,986	646,983	3,069,524
	Lake Bluff	14.03%	284,650	292,304	300,173	308,263	316,579	1,501,969
	Knollwood Fire	2.56%	51,975	53,373	54,810	56,287	57,805	274,250
	Highwood	5.41%	109,713	112,664	115,697	118,815	122,020	578,908
		100.00%	2,028,752	2,083,306	2,139,389	2,197,046	2,256,321	10,704,814
	Capital							
	Highland Park	49.33%	606,699	123,313	123,313	123,313	123,313	1,099,950
	Lake Forest	28.67%	352,693	71,686	71,686	71,686	71,686	639,436
	Lake Bluff	14.03%	172,579	35,077	35,077	35,077	35,077	312,886
	Knollwood Fire	2.56%	31,512	6,405	6,405	6,405	6,405	57,131
	Highwood	5.41%	66,517	13,520	13,520	13,520	13,520	120,597
		100.00%	1,230,000	250,000	250,000	250,000	250,000	2,230,000
	Total							
	Highland Park		1,607,384	1,150,906	1,178,569	1,207,008	1,236,246	6,380,113
	Lake Forest		934,422	669,058	685,139	701,672	718,668	3,708,960
	Lake Bluff		457,228	327,381	335,250	343,340	351,656	1,814,856
	Knollwood Fire		83,487	59,778	61,214	62,692	64,210	331,381
	Highwood		176,231	126,183	129,216	132,334	135,540	699,505
			3,258,752	2,333,306	2,389,389	2,447,046	2,506,321	12,934,814

TABLE 5: Scenario 4A "Consolidate with Others" (Glenview Operations) Five-Year Budget Forecast

Scenario 4A:	Consolidate at Glenview	Factor	2014	2015	2016	2017	2018	Five-Year Total
Expenditures	Personnel							
	Other Operations							
	Subtotal		1,756,462	1,855,002	1,967,575	2,112,109	2,189,666	9,880,814
	Capital		1,346,000	0	0	0	0	1,346,000
	Total		**3,102,462**	**1,855,002**	**1,967,575**	**2,112,109**	**2,189,666**	**11,226,814**
Allocation	**Operations**							
	Highland Park	49.33%	866,377	914,982	970,509	1,041,800	1,080,056	4,873,724
	Lake Forest	28.67%	503,652	531,908	564,187	605,631	627,870	2,833,248
	Lake Bluff	14.03%	246,445	260,271	276,066	296,345	307,227	1,386,355
	Knollwood Fire	2.56%	44,999	47,524	50,408	54,111	56,098	253,139
	Highwood	5.41%	94,988	100,317	106,405	114,221	118,416	534,347
		100.00%	1,756,462	1,855,002	1,967,575	2,112,109	2,189,666	9,880,814
	Capital							
	Highland Park	49.33%	663,916	0	0	0	0	663,916
	Lake Forest	28.67%	385,955	0	0	0	0	385,955
	Lake Bluff	14.03%	188,854	0	0	0	0	188,854
	Knollwood Fire	2.56%	34,484	0	0	0	0	34,484
	Highwood	5.41%	72,791	0	0	0	0	72,791
		100.00%	1,346,000	0	0	0	0	1,346,000
	Total							
	Highland Park		1,530,293	914,982	970,509	1,041,800	1,080,056	5,537,640
	Lake Forest		889,607	531,908	564,187	605,631	627,870	3,219,203
	Lake Bluff		435,300	260,271	276,066	296,345	307,227	1,575,210
	Knollwood Fire		79,483	47,524	50,408	54,111	56,098	287,623
	Highwood		167,779	100,317	106,405	114,221	118,416	607,138
			3,102,462	1,855,002	1,967,575	2,112,109	2,189,666	11,226,814

TABLE 6: Scenario 4B "Consolidate with Others" (Highland Park PD) Five-Year Budget Forecast

Scenario 4B:	Consolidate with Others (Highland Park)	Factor	2014	2015	2016	2017	2018	Five-Year Total
Expenditures	Personnel							
	Other Operations							
	Subtotal		1,841,727	1,939,834	2,051,785	2,195,610	2,333,659	10,362,615
	Capital		1,550,000	0	0	0	0	1,550,000
	Total		**3,391,727**	**1,939,834**	**2,051,785**	**2,195,610**	**2,333,659**	**11,912,615**
Allocation	**Operations**							
	Highland Park	49.33%	908,434	956,826	1,012,046	1,082,987	1,151,080	5,111,373
	Lake Forest	28.67%	528,101	556,233	588,334	629,574	669,159	2,971,401
	Lake Bluff	14.03%	258,409	272,174	287,881	308,061	327,431	1,453,956
	Knollwood Fire	2.56%	47,184	49,697	52,565	56,250	59,787	265,483
	Highwood	5.41%	99,599	104,905	110,959	118,737	126,203	560,402
		100.00%	1,841,727	1,939,834	2,051,785	2,195,610	2,333,659	10,362,615
	Capital							
	Highland Park	49.33%	764,539	0	0	0	0	764,539
	Lake Forest	28.67%	444,451	0	0	0	0	444,451
	Lake Bluff	14.03%	217,477	0	0	0	0	217,477
	Knollwood Fire	2.56%	39,710	0	0	0	0	39,710
	Highwood	5.41%	83,823	0	0	0	0	83,823
		100.00%	1,550,000	0	0	0	0	1,550,000
	Total							
	Highland Park		1,672,974	956,826	1,012,046	1,082,987	1,151,080	5,875,912
	Lake Forest		972,552	556,233	588,334	629,574	669,159	3,415,852
	Lake Bluff		475,886	272,174	287,881	308,061	327,431	1,671,433
	Knollwood Fire		86,894	49,697	52,565	56,250	59,787	305,193
	Highwood		183,422	104,905	110,959	118,737	126,203	644,225
			3,391,727	1,939,834	2,051,785	2,195,610	2,333,659	11,912,615