Consolidation Study for Lake County Emergency Telephone System Board (ETSB)

Final Report

This document includes data that shall not be disclosed outside the Lake County and shall not be duplicated, used or disclosed—in whole or in part—for any purpose other than to evaluate this report. This restriction does not limit the entities' right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction is contained in all pages.

April 20, 2017

TABLE OF CONTENTS

Executive Summary 1
Section 1 – Background Information 6
Emergency Telephone System Boards in Lake County 9
Communications Centers Providing Dispatching Services for Lake County 10
Fire Protection Services 13
Section 2 – Focus Group Discussions 15
Overall Summary of Focus Group Sessions 15
Focus Group Process 15
Law Enforcement Discussions 16
Fire and EMS Discussions 23
Common Themes and Governance Discussions 25
Section 3 – Dispatch Center Site Visits 28
Section 4 & 5 – Establishing a Vision for Regionalized Dispatching 38
Summary of Conclusions and Recommendations 38
Workshop for Project Phases 4 & 5 38
Additional Workshop for Elected Officials and Senior Leaders 39
Initial Transition Phase to Achieve Regionalized Public Safety Communications Organization with Multiple Facilities 44
Discussion Regarding Turnover Factors and Overtime 50
Semi-Consolidated Facility and Technology Change Concepts 51
Migration Activities from the Current State to the Semi-Consolidated Scenario 54
Methodology for Estimating Call Taker Staffing Levels in Fully Consolidated and Semi-Consolidated Models 59
Semi-Consolidated - Fully Regionalized Public Safety Communications 65
Organization Staffing Model 65
Fully Consolidated Model - Regionalized Public Safety Communications 74
Organization and Staffing Model 74
Fully Consolidated Facility Concepts 84
Section 6 – Financial Analysis 96
Scope of Consolidation Project and Financial Analysis 96
Current Operations and Financial Summary 98

Detailed Costing of Consolidation Options – Operational 106
Section 7 – Final Presentations [placeholder] 113
Appendix 1 – Focus Group Invitation Letter, Attendees and Agencies Not Represented
Appendix 2 – Presentation Material from the Consolidation Strategies Workshop (November 13, 2015)
Appendix 3 – Presentation Material and Participant Voting from the 9-1-1 and Dispatch Regional Consolidation Strategies Workshop (January 25, 2016)
Appendix 4 – PSAP Chapters
CenCom E9-1-1 Communications Center
Deerfield Communications Center
FoxComm Communications Center
Glenview Public Safety Support Services Communications Centers
Gurnee Communications Center
Lake County Sheriff's Office Communications Center
Lake Zurich Communications Center
Mundelein Communications Center
North Chicago Communications Center
Park City Communications Center
Vernon Hills Communications Center
Countryside Fire Protection District Communications Center
Wauconda Communications Center
Waukegan Communications Center
Winthrop Harbor Communications Center
Zion Communications Center
Appendix 5 – Profiles of Representative Consolidated Dispatch Centers serving similar populations
Appendix 6 – Lake County STARCOMM Users as of December 2016
Appendix 7 – Current Cost Estimations
Appendix 8 – Staffing Model Details
Appendix 9 – MAterial from Phase 6 Finacial Analysis Presentation to LAke County 911 Commission on 3/23/2017
Appendix 10 – Comments received from Lake County 911 Task Force

EXECUTIVE SUMMARY

The provision of 9-1-1 and emergency dispatching services in Lake County has evolved over many years and developed in ways that best met the needs of the times for the populations and agencies being served. Over the years, this has resulted in a fairly complex mix of individual Emergency Telephone System Boards (ETSBs) serving either individual municipalities or groups of municipalities. Areas that didn't form their own ETSBs are served by the Lake County ETSB.

A similar complex mix of emergency communications centers have evolved over time to handle the 9-1-1 calls from the public and dispatch the law enforcement, fire and emergency medical agencies responsible for delivering these services. In some circumstances these communications centers directly align with the jurisdictional area of an ETSB and serve only that jurisdiction, while in other cases the communications centers serve multiple agencies covered by one or more ETSBs. Section 1 of the report provides an overview of the various jurisdictions and agencies involved in providing 9-1-1 services, emergency communications services and public safety response services across Lake County. Tables 3 and 4 in this section provide summarizations of the public safety agencies being dispatched by each of the existing communications centers.

While this approach to providing 9-1-1 and emergency dispatching services has worked effectively for many years, the nature of 9-1-1 technology, and the operational support needs of the public safety response agencies, continue to evolve and increase in operational and technological complexity. This places considerable fiscal pressures on the individual ETSBs and communications centers to meet the continuing need for system upgrades and or replacements.

Concurrently, the law enforcement and fire/medical agencies that provide response services have continued to expand and enhance their automatic and mutual aid strategies so that the best mix of resources can arrive at an incident in the shortest possible time. When these response agencies are served by different communications centers, this increases the operational complexity of 9-1-1 call processing and dispatching, creating operational pressures on the communications centers.

The combination of these circumstances creates an ideal opportunity to explore alternative strategies for meeting the 9-1-1 and emergency dispatching needs of the overall population of Lake County and the multiple individual law enforcement and fire/medical agencies that respond to their needs on a daily basis. This same set of circumstances have been faced in many communities around the country, and many of them have found that the consolidation of communications centers provides mechanisms to leverage capital investments to their best advantage while also streamlining the process of receiving 9-1-1 and emergency calls from the public and getting the proper response agencies dispatched as expeditiously as possible. This report has been developed to explore alternative strategies and to chart a potential path to achieving a more consolidated 9-1-1 and dispatch environment in Lake County.

During the process of developing this report, input and data was collected from a wide variety of sources, including the law enforcement and fire/medical response agencies, the communications centers and the ETSBs. Section 2 of this report provides summarized information collected during a series of focus group sessions that were conducted at the initiation of this project. Appendix 1 provides

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

information on the format for these sessions and listings of the individuals and agencies that attended one or more of the focus group sessions. These sessions included combinations of elected leaders, leaders of the law enforcement and fire/medical response agencies, and leaders from the communications centers. These sessions allowed these representatives to provide the consulting team, and each other, insights on how their organizations operate, the critical needs that each of them must meet for the communities they serve, and their thoughts and opinions on the concept of further consolidation of 9-1-1 and emergency communications. The sessions also gathered insights on key performance characteristics that any further consolidated operations would need to embrace, and the types of governance and operational models that would likely be needed to assure that service levels continued to meet local needs.

Overall, there seems to be a realization in both the law enforcement and fire service community that further consolidation of dispatching operations will likely be a reality in the near-to-long term future. While some of the agencies represented expressed a strong desire to move towards that future vision as quickly as possible, others were reluctant to embrace the concept until forced to do so. This is not unique to this area or these agencies, similar reactions have been seen all across the nation, even as consolidation initiatives move forward successfully. The bottom line take-away from these sessions seems to be that there are more agencies willing to work towards further dispatch consolidation than there are agencies that would prefer to remain independent.

As the focus group sessions wrapped up, the consulting team began a process of collecting detailed operational information and data from each of the communications centers themselves. This included direct on-site interviews, observations and data collection at the communications centers themselves as well as subsequent compilation and analysis of data provided by the centers following the onsite visits. Section 3 of the report provides summarized information from this work and Appendix 4 provides the detailed information collected from each of the communications centers.

Information collected during this process indicates that a total of 233.5 full time equivalent personnel are directly engaged in the management, operations or support of the communications centers in Lake County. These range from communications centers with as few as 5 personnel to centers with up to 37 personnel. Each of these centers operate under their own set of employment policies and practices and/or separately negotiated collective bargaining agreements. The centers also utilize a wide array of technology systems to support their 9-1-1, computer aided dispatch, radio and similar needs, with most of these being procured and managed under separate procurement and contracting processes.

Operationally, all of the communications centers provide essentially the same core services for the agencies they serve; answering and processing calls from the public for emergency services and dispatching law enforcement, fire and emergency medical resources to those incidents. Many also utilize common or similar protocols in handling these responsibilities, and they all work closely with one another to coordinate resources when resources from multiple agencies are needed for larger incidents or incidents in border areas between agencies. This can often require either the transferring of 9-1-1 calls between communications centers or other coordinating activities via radio or phone to get all of the proper communications centers and response agencies engaged in the incident.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

There are also a number of differences in the operations of the centers across Lake County. Some of the centers are embedded within the operational models of their local law enforcement agencies and provide a variety of other services including public lobby services, assistance in jailing/detention processes, and similar duties. For these agencies, the prospect of dispatch consolidation will create the need to establish alternative mechanisms to handle some of the tasks currently assigned to their communications centers. Conversely, some of the communications centers are isolated from these ancillary duties and have their primary focus on emergency call processing and dispatching responsibilities.

While some of the insights and information collected during these processes indicated some level of skepticism or reluctance to consider consolidation strategies, there was also broad recognition that some degree of consolidation would need to occur to meet shifting state legislative requirements. To many of the participants' minds, this then creates a good opportunity to explore consolidation strategies more thoroughly and evaluate alternatives that go well beyond the minimum requirements of legislative changes.

With the information from the focus groups and individual communications center reviews assembled, a series of workshop sessions were held with public safety and elected leaders to review the information and establish a vision for regionalization of 9-1-1 and emergency services dispatching. Section 4 & 5 of the report provide information from each of these processes, and outlines a framework for how Lake County could achieve a fully consolidated 9-1-1 and emergency communications environment over a period of multiple years.

Rather than approaching this as a single large-scale project to implement this new vision, the report outlines a transition strategy (beginning on Page 44) that could be put in motion to achieve a Semi-Consolidated operation through a series of incremental steps that the agencies in Lake County could take to gradually reduce the number of individual ETSBs and communications centers, migrate into regionally shared technology systems to leverage capital investments, and merge the multiple operations into a single governance and organizational structure. This section also provides observations and recommendations on a governance structure that could be considered for this transition, and an organizational and staffing model to support the operations. At the conclusion of these transitions, it is anticipated that operations would be conducted out of 9 remaining communications centers with a total staffing level of 228 personnel.

The staffing models developed for this Semi-Consolidated stage have been developed using a combination of the available statistical data from the current communications centers, the application of industry best practices and call processing standards, and IXP's experience in operating emergency communications centers. The actual conditions present at the time of making these organizational transitions will be the ultimate driver in establishing the appropriate levels of staffing.

For example, if the operational policies for either the Semi-Consolidated for Fully Consolidated organizations can reduce the numbers of inbound 10-digit call volumes lower than the levels utilized in these models, it may be possible to make some reductions in Call Taker staffing levels. Similarly, in the Semi-Consolidated model it may be possible to reduce the overall level of on-duty Supervisors across the 9 facilities during some of the slower late night time periods.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

It is also important to note that the current organization structures for the communications centers in Lake County utilize a significant amount of administrative and organizational support from their parent agency/jurisdiction. This includes functions such as accounting, payroll, human resources, technology support and similar functions. In the stand-alone organizational model utilized in this report, these functions need to be integrated into the overall staffing model as well. The management and support staffing models utilized in this report are adapted from the experiences of other large stand-alone communications center organizations that IXP has worked with previously.

The vision of full consolidation of 9-1-1 and communications services will require an investment in new facilities sized and designed to accommodate the scale of operations needed to support operational needs, and the redundancies in facilities and technology systems to support reliable sustained operations. Beginning on Page 74, the report provides observations and recommendations on the incremental changes to organizational structures, staffing and facilities to allow the organization to move to a fully consolidated stage of operation. At the completion of the move to fully consolidated operations, the overall organizational staffing level could be further reduced to an estimated 192 personnel. Again, the specific call volume and operational models in place at the time of this transition will be the ultimate drivers in determining the proper staffing mix for the organization.

There are a number of benefits that result when emergency communications functions are consolidated. These benefits include:

- Increased ability to handle incidents within a single Dispatch Center, even if they are multi-disciplinary or multi-jurisdictional incidents This improves resource coordination, the timeliness of response and situational awareness, all of which have positive impacts on incident outcome.
- Increased depth of staffing to better accommodate surges in call volumes, or multiple simultaneous major incidents.
- Ability to share investments in more robust facilities and systems than can be accomplished through multiple individual efforts.
- Ability to share long-term technology system lifecycle costs rather than multiple individual investment streams.
- Ability to create built-in redundancy and backup strategies within the regionalized facilities.
- Ability to offer more robust organizational staffing models
- Ability to provide improved and more structured training
- Ability to implement a more stringent Quality Assurance metrics program
- Ability to offer career paths for the personnel that are not possible in smaller Centers.
- Ability to be positioned to adapt to growth without incurring significant additional capital investments.

Achieving these benefits will require investments in leadership, human energy and capital to move the process through the various steps of incremental consolidation, the move to regionalized strategies for technology, governance and operations, and ultimately the creation of purpose-built emergency communications facilities. Section 6 of the report provides a financial analysis that identifies the current costs of emergency communications operations across Lake County, and the estimated costs that could be expected at the semi-consolidated stage of operations and then at the fully consolidated level. In addition to the operational benefits described above, consolidation has the potential to bring long term

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

economic savings to the combined population of Lake County as well. The estimates in this report conclude that once a semi-consolidated organizational/operational model is achieved, an annual savings for operations of $428,000 is possible. This savings can increase to an estimated $2.3 million annually when the fully consolidated model is realized.

From the experience of the IXP and Baker Tilly consulting team, the combination of long-term operational and economic benefits are strong indicators that a consolidation initiative can be successfully undertaken and achieved. While we have seen communities pursue consolidation efforts even if economic benefits weren't possible, or perhaps possible only in the distant future, the consolidations that are most enduring are ones where service level improvements and economic savings are both present. This will be the case for Lake County and, therefore, a successful consolidation is very likely.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SECTION 1 – BACKGROUND INFORMATION

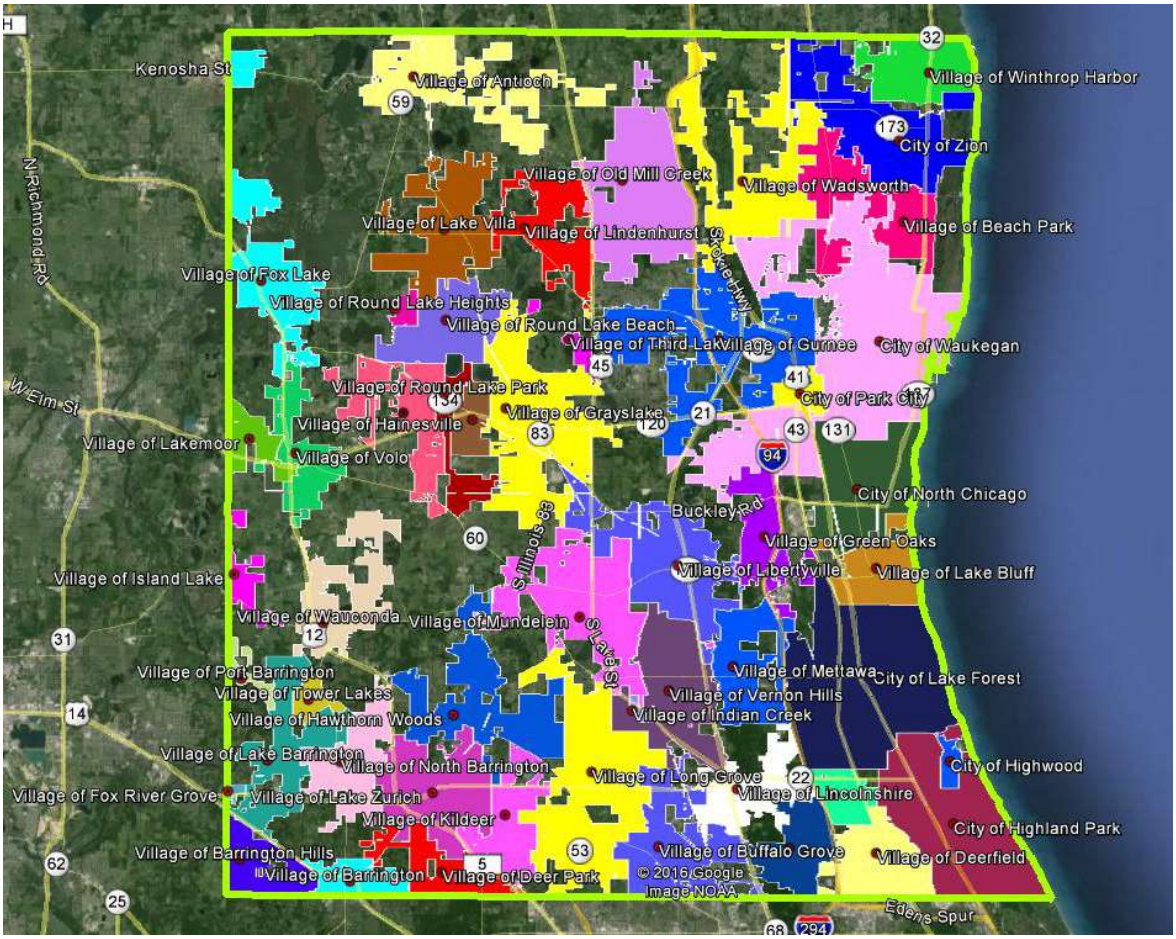
Law Enforcement services, Fire/EMS services, and 9-1-1/communications services in Lake County are provided by a widely diverse group of organizations and operational entities.

In addition to the unincorporated areas of the county, there are 52 separate municipalities in Lake County that either directly provide law enforcement services for their communities or obtain those services from the Sheriff's Office or other law enforcement agencies.

The map below (Figure 1) helps provide an understanding of the boundaries of municipalities in the county. The table that follows (Table 1) provides a listing of each of the municipalities in Lake County and identifies the law enforcement agency that serves them, the population and square mile area of the jurisdiction, the ETSB responsible for providing 9-1-1 services for that jurisdiction and the communications center that dispatches law enforcement services for that jurisdiction.

The maps and tables are based on the ETSBs and communications centers in operation as of the Fall of 2015. Subsequent changes either planned or implemented, through 2016, are not reflected in this report.

Figure 1- Municipalities in Lake County



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 1 - Municipalities in Lake County (including Law Enforcement Agency, Population, Area, ETSB and Dispatch information)

ID	Jurisdiction Name	Law Enforcement Agency	Population Served*	Area in Lake County (Sq.Mi.)	ETSB	Dispatched by
1	City of Highland Park	Highland Park Police	29,871	12.2	Highland Park	Glenview (North)
2	City of Highwood	Highwood Police Depart	5,387	0.7	Highwood	Glenview (North)
3	City of Lake Forest	Lake Forest Police Dept	19,379	17.2	Lake Forest	Glenview (North)
4	City of North Chicago	North Chicago Police Dept	30,395	7.9	North Chicago	North Chicago PD
5	City of Park City	Park City Police Dept	7,440	1.2	Park City	Park City PD
6	City of Waukegan	Waukegan Police Dept	88,915	23.7	Waukegan	Waukegan PD
7	City of Zion	Zion Police Dept	24,264	9.9	Zion	Zion PD
8	Lake County (Unincorporated)	Lake County Sheriff's Office	73,924	136.0	Lake County	LCSO
9	Lake County Forest Preserve	Lake County Forest Preserve			Lake County	LCSO
10	Village of Antioch	Antioch Police Dept	14,411	8.9	Lake County	Cencom E9-1-1
11	Village of Bannockburn	Bannockburn Police Dept	1,583	2.1	Deerfield-Bannockburn	Deerfield PD
12	Village of Barrington	Barrington Police Dept	10,373	2.1	Barrington	Cencom E9-1-1
13	Village of Barrington Hills	Barrington Hills Police Dept	4,209	3.4	Barrington Hills	Quad Com
14	Village of Beach Park	Lake County Sheriff's Office	13,988	7.1	Lake County	LCSO
15	Village of Buffalo Grove (Cook)	Buffalo Grove Police Dept	20,000	7.6	Lake County	Northwest Central
16	Village of Deer Park	Lake County Sheriff's Office	3,200	3.8	Lake County	LCSO
17	Village of Deerfield	Deerfield Police Dept	18,385	5.6	Deerfield-Bannockburn	Deerfield PD
18	Village of Fox Lake	Fox Lake Police	10,578	8.1	Fox Lake	FoxComm
19	Village of Grayslake	Grayslake Police	21,018	9.9	Grayslake	Glenview (South)
20	Village of Green Oaks	Lake County Sheriff's Office	3,866	4.4	Lake County	LCSO
21	Village of Gurnee	Gurnee Police Dept	31,207	13.5	Gurnee	Gurnee PD
22	Village of Hainesville	Grayslake Police	3,597	1.9	Cencomm E911	Glenview (South)
23	Village of Hawthorn Woods	Hawthorn Woods Police Dept	7,875	8.4	Lake County	Lake Zurich PD
24	Village of Indian Creek	Lake County Sheriff's Office	462	0.3	Lake County	LCSO
25	Village of Island Lake	Island Lake Police Dept	8,031	1.6	Lake County	Lake Zurich PD
26	Village of Kildeer	Kildeer Police Dept	3,968	4.7	Lake County	Lake Zurich PD
27	Village of Lake Barrington	Lake County Sheriff's Office	4,973	6.4	Lake County	LCSO
28	Village of Lake Bluff	Lake Bluff Police Dept	5,698	4.1	Lake Bluff	Glenview (North)

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ID	Jurisdiction Name	Law Enforcement Agency	Population Served*	Area in Lake County (Sq.Mi.)	ETSB	Dispatched by
29	Village of Lake Villa	Lake Villa Police Dept	8,825	7.3	Fox Lake	FoxComm
30	Village of Lake Zurich	Lake Zurich Police Dept	20,054	7.2	Lake County	Lake Zurich PD
31	Village of Lakemoor	Lakemoor Police Dept	6,005	2.1	Lake and McHenry	Wauconda
32	Village of Libertyville	Libertyville Police Dept	20,512	8.8	Libertyville	Vernon Hills PD
33	Village of Lincolnshire	Lincolnshire Police Dept	7,292	4.6	Lincolnshire	Vernon Hills PD
34	Village of Lindenhurst	Lindenhurst Police	14,468	4.4	Fox Lake	FoxComm
35	Village of Long Grove	Lake County Sheriff's Office	8,181	12.5	Lake County	LCSO
36	Village of Mettawa	Lake County Sheriff's Office	547	6.0	Lake County	LCSO
37	Village of Mundelein	Mundelein Police Dept	31,562	9.6	Mundelein	Mundelein PD
38	Village of North Barrington	Lake County Sheriff's Office	3,047	5.0	Lake County	LCSO
39	Village of Old Mill Creek	Lake County Sheriff's Office	178	10.9	Lake County	LCSO
40	Village of Port Barrington	Lake County Sheriff's Office	1,517	0.7	Lake County	LCSO
41	Village of Riverwoods	Riverwoods Police Dept	3,660	4.0	Lake County	Deerfield PD
42	Village of Round Lake	Round Lake Police Dept	18,536	5.5	Cencomm E9-1-1	Cencom E9-1-1
43	Village of Round Lake Beach	Round Lake Beach Police Dept	28,012	5.1	Cencomm E9-1-1	Cencom E9-1-1
44	Village of Round Lake Heights	Round Lake Heights Police Dept	2,676	0.6	Cencomm E9-1-1	Cencom E9-1-1
45	Village of Round Lake Park	Round Lake Park Police Dept	7,371	2.3	Cencomm E9-1-1	Cencom E9-1-1
46	Village of Third Lake	Lake County Sheriff's Office	1,182	0.9	Lake County	LCSO
47	Village of Tower Lakes	Tower Lakes Police Dept	1,283	1.0	Lake County	Wauconda
48	Village of Vernon Hills	Vernon Hills Police Dept	25,911	8.0	Vernon Hills	Vernon Hills PD
49	Village of Volo	Lake County Sheriff's Office	2,929	4.0	Lake County	LCSO
50	Village of Wadsworth	Lake County Sheriff's Office	3,815	9.8	Lake County	LCSO
51	Village of Wauconda	Wauconda Police Dept	13,896	6.2	Lake County	Wauconda PD
52	Village of Winthrop Harbor	Winthrop Harbor Police Dept	6,730	4.8	Winthrop Harbor	Winthrop Harbor PD
		Total Population	705,186	444	Total Square Miles	

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Emergency Telephone System Boards in Lake County

9-1-1 services are procured and managed by 21 Emergency Telephone System Boards (ETSBs) or Joint ETSBs (JETSBs). Some of these ETSBs are quite small and serve only a single municipal jurisdiction. Others are larger and serve multiple jurisdictions. The Lake County ETSB is responsible for providing 9-1-1 Services in any of the areas not served by one of the other ETSBs. The map below (Figure 2) helps provide an understanding of the geographic distribution and service areas of these 21 ETSBs. The table (Table 2) provides a listing of each ETSB and the estimated population served by that ETSB. The Northwest Central ETSB (generally considered to be Cook County ETSB) is also shown on the map on the southern edge of Lake County.

Figure 2- Emergency Telephone System Boards (ETSBs) in Lake County

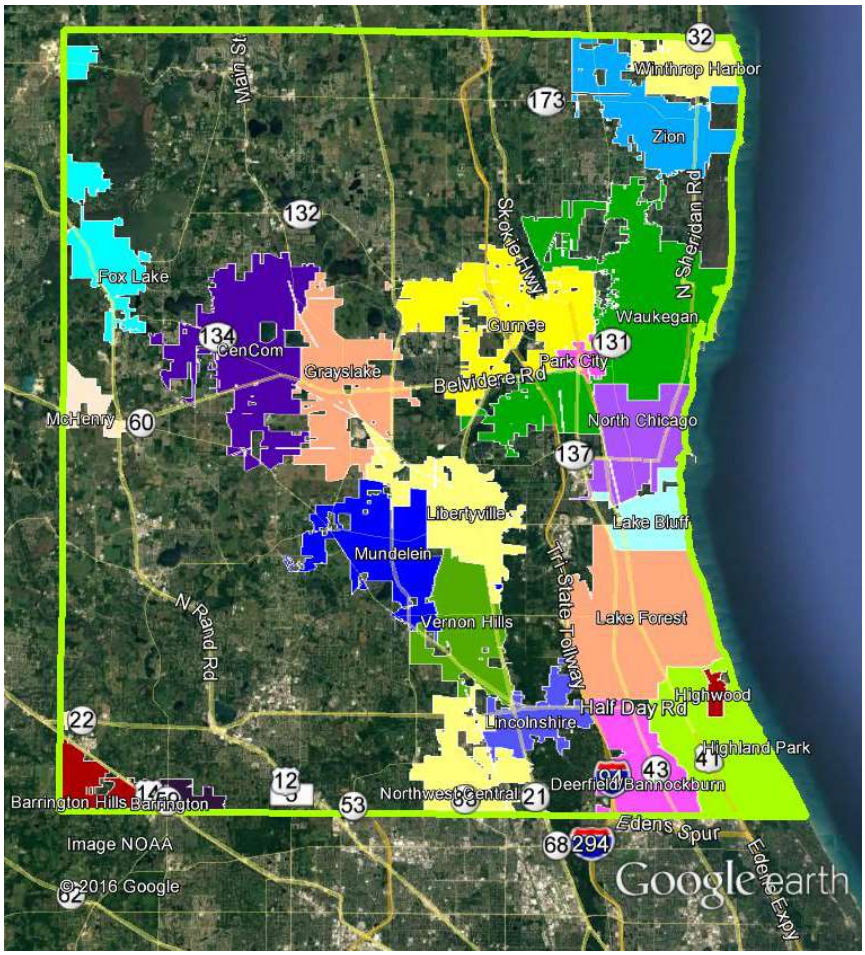


Table 2 - ETSBs in Lake County with Population Served

ETSB Name	Census Population (2014 est
Village of Barrington Hills	4,209
City of Highwood	5,387
Village of Lake Bluff	5,698
Village of Winthrop Harbor	6,730
Village of Lincolnshire	7,292
City of Park City	7,440
Village of Barrington	10,373
City of Lake Forest	19,379
Deerfield-Bannockburn	19,968
Village of Libertyville	20,512
Village of Grayslake	21,018
City of Zion	24,264
Village of Vernon Hills	25,911
City of Highland Park	29,871
City of North Chicago	30,395
Village of Gurnee	31,207
Village of Mundelein	31,562
Village of Fox Lake	33,879
CenCom JETSB	60,192
City of Waukegan	88,915
Lake County	220,984

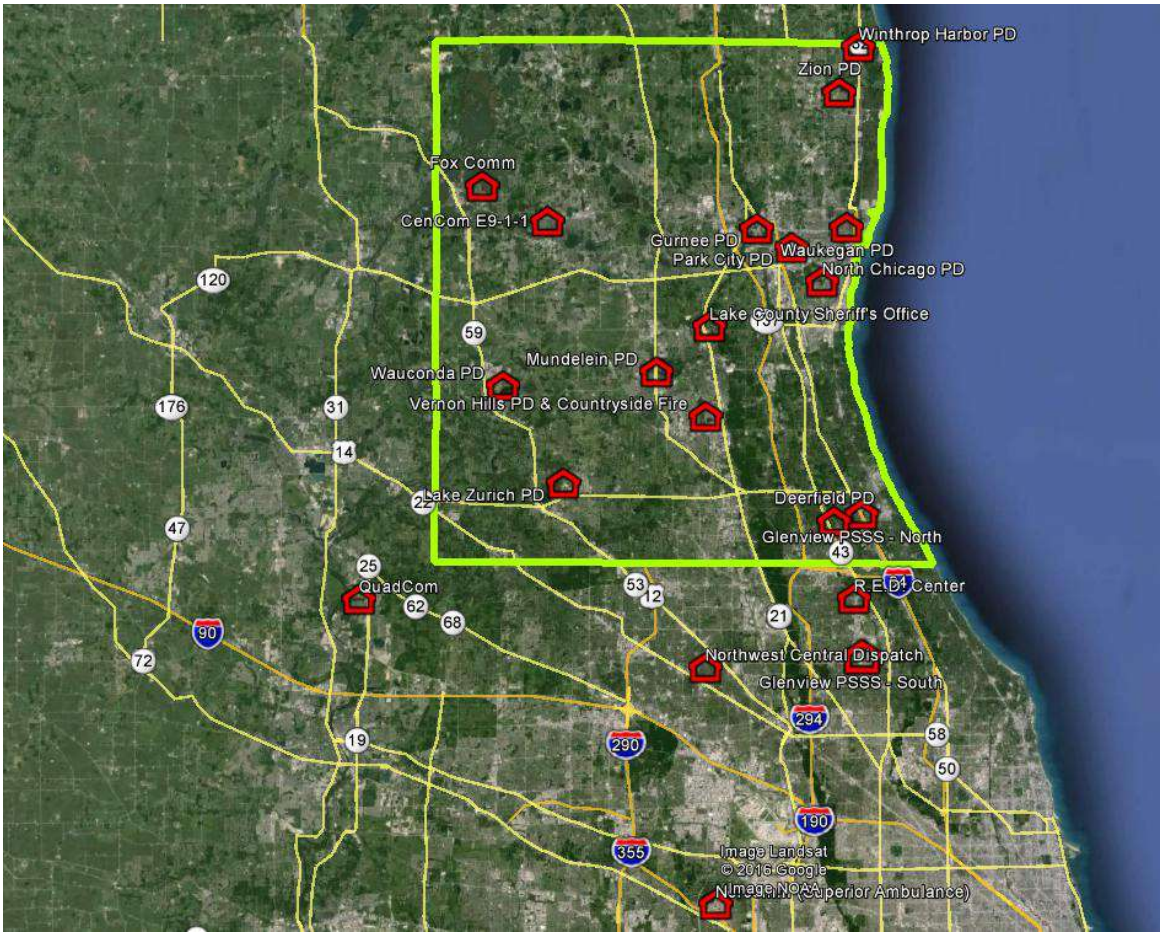
USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Communications Centers Providing Dispatching Services for Lake County

9-1-1 call receiving and emergency services dispatching are provided by a total of 20 communications centers providing either Police, Fire/EMS or combined Police/Fire/EMS dispatching services. Some of these communications centers provide services to a single community, while others provide services to multiple jurisdictions. Five (5) of the communications centers providing dispatching for Lake County agencies are actually located outside of Lake County. Each ETSB does not have a communications center associated with it, and some communications centers are not specifically aligned to any particular ETSB.

The map below (Figure 3) provides some sense of the wide geographic dispersion of the 20 communications centers serving Lake County agencies, including the 5 "non-Lake County" agencies.

Figure 3 - Communications Centers providing dispatching services for Lake County agencies



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The table below (Table 3) lists the jurisdictions and agencies handled by each of the 20 communications centers providing law enforcement dispatching.

Table 3 - Law Enforcement communications centers and the agencies they serve

ID	Dispatched by	Jurisdiction Name	Law Enforcement Agency Name	Law Enforcement Population Served*	ETSB
1	**CenCom E9-1-1**	Village of Barrington	Barrington Police Department	10,373	Barrington
		Village of Round Lake Beach	Round Lake Beach Police Department	28,012	Cencomm E9-1-1
		Village of Round Lake Heights	Round Lake Heights Police Department	2,676	Cencomm E9-1-1
		Village of Round Lake Park	Round Lake Park Police Department	7,371	Cencomm E9-1-1
		Round Lake Park District	Round Lake Park District Police	-	na
		Village of Round Lake	Round Lake Police Department	18,536	Cencomm E9-1-1
		Village of Antioch	Antioch Police Department	14,411	Lake County
			7 Police Departments and Communities	**81,379**	
2	**Deerfield PD**	Village of Bannockburn	Bannockburn Police Department	1,583	Deerfield-Bannockburn
		Village of Riverwoods	Riverwoods Police Department	3,660	Lake County
		Village of Deerfield	Deerfield Police Department	18,385	Deerfield-Bannockburn
			3 Police Departments and Communities	**23,628**	
3	**FoxComm**	Village of Fox Lake	Fox Lake Police	10,578	Fox Lake
		Village of Lake Villa	Lake Villa Police Department	8,825	Fox Lake
		Village of Lindenhurst	Lindenhurst Police	14,468	Fox Lake
			3 Police Departments and Communities	**33,871**	
4	**Glenview (North)**	City of Highland Park	Highland Park Police	29,871	Highland Park
		City of Highwood	Highwood Police Department	5,387	Highwood
		Village of Lake Bluff	Lake Bluff Police Department	5,698	Lake Bluff
		City of Lake Forest	Lake Forest Police Department	19,379	Lake Forest
5	**Glenview (South)**	Village of Hainesville	Grayslake Police	3,597	Cencomm E9-1-1
		Village of Grayslake	Grayslake Police	21,018	Grayslake
			5 Police Departments / 6 Communities	**84,950**	
6	**Gurnee PD**	Village of Gurnee	Gurnee Police Department	31,207	Gurnee
			1 Police Department and Community	**31,207**	
7	**Lake Zurich PD**	Village of Hawthorn Woods	Hawthorn Woods Police Department	7,875	Lake County
		Village of Island Lake	Island Lake Police Department	8,031	Lake County
		Village of Kildeer	Kildeer Police Department	3,968	Lake County
		Village of Lake Zurich	Lake Zurich Police Department	20,054	Lake County
			4 Police Departments and Communities	**39,928**	
8	**LCSO**	Lake County Forest Preserve	Lake County Forest Preserve	-	Lake County
		Lake County (Unincorporated)	Lake County Sheriff's Office	73,924	Lake County
		Village of Beach Park	Lake County Sheriff's Office	13,988	Lake County
		Village of Deer Park	Lake County Sheriff's Office	3,200	Lake County
		Village of Green Oaks	Lake County Sheriff's Office	3,866	Lake County
		Village of Indian Creek	Lake County Sheriff's Office	462	Lake County
		Village of Lake Barrington	Lake County Sheriff's Office	4,973	Lake County
		Village of Long Grove	Lake County Sheriff's Office	8,181	Lake County
		Village of Mettawa	Lake County Sheriff's Office	547	Lake County
		Village of North Barrington	Lake County Sheriff's Office	3,047	Lake County
		Village of Old Mill Creek	Lake County Sheriff's Office	178	Lake County

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

		Village of Port Barrington	Lake County Sheriff's Office and McHenry County Sheriff's Office	1,517	Lake County
		Village of Third Lake	Lake County Sheriff's Office	1,182	Lake County
		Village of Volo	Lake County Sheriff's Office	2,929	Lake County
		Village of Wadsworth	Lake County Sheriff's Office	3,815	Lake County
			2 Police Departments / 13 Communities and Unincorporated Lake County	**121,809**	
9	**Mundelein PD**	Village of Mundelein	Mundelein Police Department	31,562	Mundelein
			1 Police Department and Community	**31,562**	
10	**North Chicago PD**	City of North Chicago	North Chicago Police Department	30,395	North Chicago
			1 Police Department and Community	**30,395**	
11	**Park City PD**	City of Park City	Park City Police Department	7,440	Park City
			1 Police Department and Community	**7,440**	
12	**Vernon Hills PD**	Village of Libertyville	Libertyville Police Department	20,512	Libertyville
		Village of Lincolnshire	Lincolnshire Police Department	7,292	Lincolnshire
		Village of Vernon Hills	Vernon Hills Police Department	25,911	Vernon Hills
			3 Police Departments and Communities	**53,715**	
13	**Wauconda PD**	Village of Lakemoor	Lakemoor Police Department	6,005	Lake and McHenry
		Village of Tower Lakes	Tower Lakes Police Department	1,283	Lake County
		Village of Wauconda	Wauconda Police Department	13,896	Lake County
			3 Police Departments and Communities	**21,184**	
14	**Waukegan PD**	City of Waukegan	Waukegan Police Department	88,915	Waukegan
			1 Police Department and Community	**88,915**	
15	**Winthrop Harbor PD**	Village of Winthrop Harbor	Winthrop Harbor Police Department	6,730	Winthrop Harbor
			1 Police Department and Community	**6,730**	
16	**Zion PD**	City of Zion	Zion Police Department	24,264	Zion
			1 Police Department and Community	**24,264**	
17	**Northwest Central**	Village of Buffalo Grove (Cook)	Buffalo Grove Police Department	41,701	Lake County
			1 Police Department and Community	**41,701**	
18	**QuadCom**	Village of Barrington Hills	Barrington Hills Police Department	4,209	Barrington Hills
19	**Northwest Central**	Village of Palatine (Cook)	Palatine Police Department		Lake County
20	**Wheeling PD**	Village of Wheeling (Cook)	Wheeling Police Department		Wheeling

(Note: With the closing of the Wauconda communications center, Wauconda PD and Tower Lakes PD moved to the Lake Zurich communications center. Lakemoor PD moved to FoxComm)

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Fire Protection Services

Fire protection services in Lake County are more aggregated than law enforcement services, with a total of 30 fire departments or fire protection districts serving the full Lake County footprint. The map below (Figure 4) provides an overview of the fire protection service areas in Lake County. The table on the following pages (Table 4) provides a listing of which agencies are dispatched by each of the 14 communications centers providing Fire/EMS dispatching. As noted previously, with the announced closure of the Wauconda communications center, Wauconda Fire has moved to being dispatched from the Lake Zurich communications center.

Figure 4- Fire protection service areas in Lake County

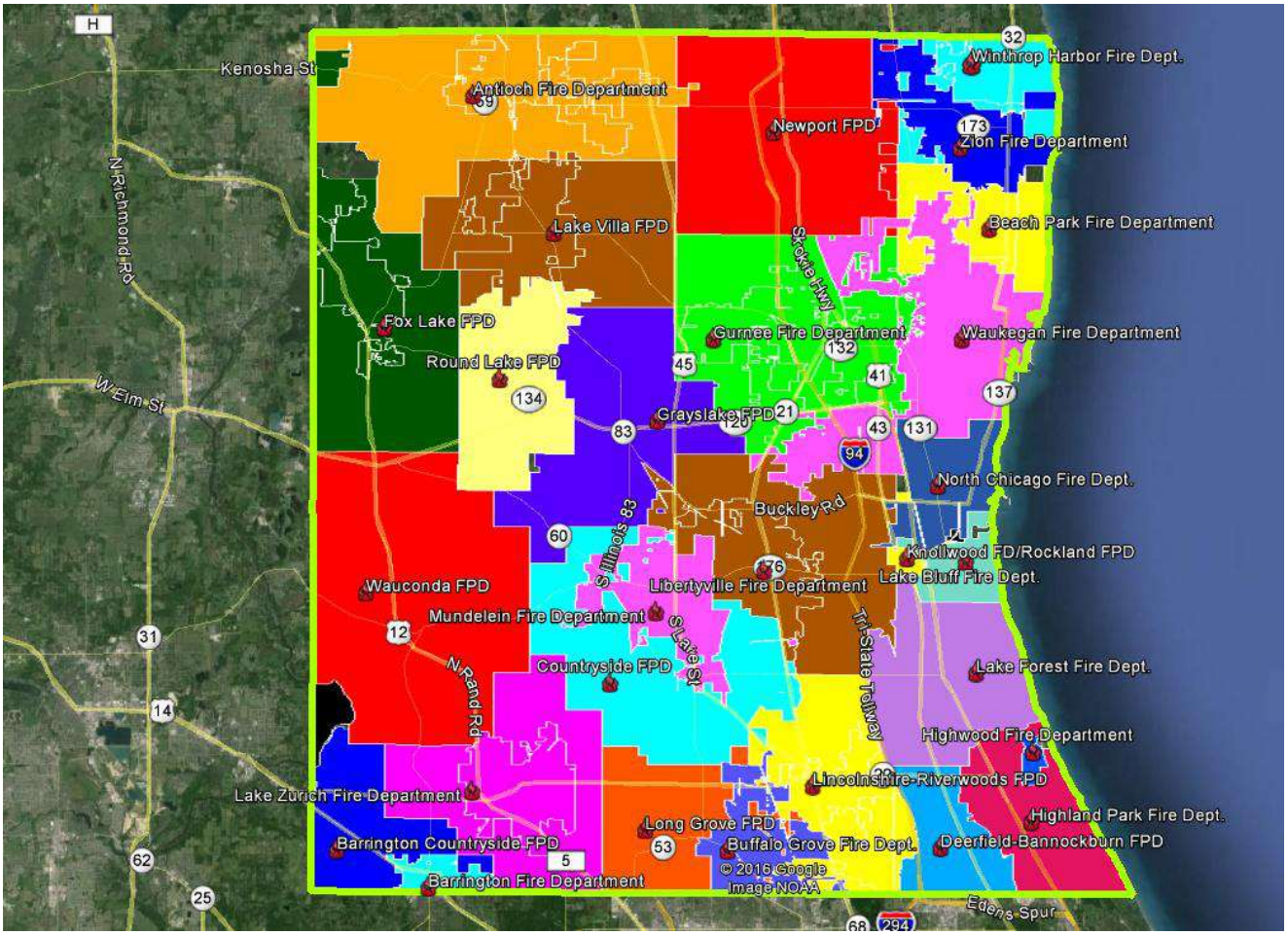


Table 4 – Fire/EMS Communications Centers and the agencies they serve

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 4- Communications Centers providing Fire/EMS dispatching

ID	Dispatched by	Jurisdiction Name	Public Safety Agency Name	ETSB
1	**Cencom E9-1-1**	Village of Barrington	Barrington Fire Department	Barrington
		Village of Antioch	Antioch Fire Department (First FPD)	Lake County
		Barrington Countryside FPD	Barrington Countryside FPD	Lake County
		Greater Round Lake FPD	Greater Round Lake FPD	Lake County
			4 Departments Served	
2	**Countryside FPD**	Countryside FPD	Countryside FPD	Lake County
		Village of Indian Creek	Countryside FPD	Lake County
		Rockland FPD/Knollwood FD	Knollwood Fire Department	Lake County
		Libertyville FPD	Libertyville Fire Department	Lake County
		Village of Green Oaks	Libertyville FPD	Lake County
		Village of Libertyville	Libertyville Fire Department	Libertyville
			3 Departments Served	
3	**FoxComm**	Fox Lake FPD	Fox Lake FPD	Fox Lake
		Grayslake FD	Grayslake FPD	Lake County
		Lake Villa FD	Lake Villa FPD	Lake County
			3 Departments Served	
4	**Glenview**	City of Highland Park	Highland Park Fire Department	Highland Park
		Village of Lake Bluff	Lake Bluff Fire Department	Lake Bluff
		City of Lake Forest	Lake Forest Fire Department	Lake Forest
			3 Departments Served	
5	**Gurnee PD**	Village of Gurnee	Gurnee Fire Department	Gurnee
		Warren/Waukegan FPD	Gurnee Fire Department	Lake County
		Newport FPD	Newport FPD	Lake County
		Village of Old Mill Creek	Newport FPD & Gurnee FD	Lake County
			2 Departments Served	
6	**Lake Zurich PD**	Village of Lake Zurich	Lake Zurich Fire & Rescue Department	Lake County
			1 Departments Served	
7	**Mundelein PD**	Village of Mundelein	Mundelein Fire Department	Mundelein
			1 Departments Served	
8	**Norcomm**	Village of Beach Park	Beach Park Fire Department	Lake County
			1 Departments Served	
9	**North Chicago PD**	City of North Chicago	North Chicago Fire Department	North Chicago
			1 Departments Served	
10	**R.E.D. Center**	Deerfield-Bannockburn FPD	Deerfield-Bannockburn FPD	Deerfield-Bannockburn
		City of Highwood	Highwood Fire Department	Highwood
		Long Grove FPD	Long Grove FPD	Lake County
		Lincolnshire-Riverwoods FPD	Lincolnshire-Riverwoods FPD	Lincolnshire
			4 Departments Served	
11	**Wauconda PD**	Village of Port Barrington	Wauconda FPD	Lake County
		Wauconda FPD	Wauconda FPD	Lake County
			1 Departments Served	
12	**Waukegan PD**	City of Waukegan	Waukegan Fire Department	Waukegan
			1 Departments Served	
13	**Winthrop Harbor PD**	Village of Winthrop Harbor	Winthrop Harbor Fire Department	Winthrop Harbor
			1 Departments Served	
14	**Zion PD**	City of Zion	Zion Fire Department	Zion
			1 Departments Served	

(Note: With the closing of the Wauconda communications center, Wauconda Fire moved to the Lake Zurich communications center.)

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SECTION 2 – FOCUS GROUP DISCUSSIONS

Overall Summary of Focus Group Sessions

Overall, there seems to be a realization in both the law enforcement and fire service community that further consolidation of dispatching operations will likely be a reality in the near-to-long term future. While some of the agencies represented expressed a strong desire to move towards that future vision as quickly as possible, others were reluctant to embrace the concept until forced to do so. This is not unique to this area or these agencies, similar reactions have been seen all across the nation, even as consolidation initiatives move forward successfully.

The bottom line take-away from these sessions seems to be that there are more agencies willing to work towards further dispatch consolidation than there are agencies that would prefer to remain independent.

Focus Group Process

To initiate the process of gathering information about the current public safety operational and dispatch environment in Lake County, a series of eight focus group sessions were scheduled. A copy of the invitation letter that the Lake County ETSB sent out to all the PSAPs and public safety agencies is included in Appendix 1 along with a table that provides names and contact information for individuals that attended one or more of the sessions.

These focus group sessions were attended by a variety of leaders and key representatives from Lake County, cities, villages, Law Enforcement, Fire Protection Districts and dispatch center agencies. In some cases, multiple agencies were represented by one or more personnel from the dispatch center that serves them, while in other cases representatives from both the dispatch center and the agencies served were present. In total, 51 people attended one or more of these sessions and collectively they represented most all of the Law Enforcement and Fire/EMS agencies with service areas inside of Lake County. A complete list of attendees and agencies not in attendance is provided in Appendix 1.

These sessions were structured to be group conversations among the participants and the IXP personnel to allow the IXP team to gain a better understanding of local public safety operations and the input, whether positive or negative, about further consolidation of public safety dispatching within Lake County. Participants were encouraged to be candid in their comments, observations and opinions about consolidation, and this information was captured in notes that did not attribute specific comments to specific individuals or agencies. There were no formal tabulations of participants agreeing or disagreeing with any of the comments made, and every effort was made to capture all input whether provided by a single individual or by multiple individuals or in more than one session. Therefore, this overview of the focus group discussions represents IXP's compiled understandings of all the comments and observations received across all eight of the separate focus group sessions.

Each of the sessions opened with the individuals present providing an overview of the characteristics of their communities and how they approached Law Enforcement services, Fire/EMS services or the process of providing emergency communications services. With jurisdictions having populations ranging in size from less than 2,000 to over 120,000 (the combined service population for the Lake County Sheriff's Office) there was obviously a degree of variation in their circumstances, but most of

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

the variation was scale related rather than scope related. With few exceptions, all of the agencies were providing a similar mix of services and using similar strategies in providing emergency services to their communities, just on a larger scale in the larger communities.

IXP observed that attendees in all of the sessions recognized that the large number of individual municipalities, law enforcement agencies, fire departments and dispatch centers serving the 700,000+ residents of Lake County does create a number of challenges in coordinating the day-to-day delivery of services. These challenges can be even more significant during major or regional emergencies. Individuals representing agencies that are already involved in some degree of dispatch consolidation generally spoke very favorably about how well this process works for them and the ability for the dispatch center to better coordinate the various resources needed for the routine and large-scale emergencies they face. Many also have seasonal surges in populations due to entertainment venues or regional events, and these can present similar challenges.

There was also a general recognition across all of the sessions that some combination of current (or future) legislative changes, coupled with continuing pressure to tighten operational budgets, would likely serve as a catalyst for more 9-1-1 and dispatch consolidation to occur. Many of the participants are either already aware of successful consolidated dispatch operations in the region or across the country, and recognize that these kinds of changes will likely find their way into the Lake County culture in the years ahead.

But with this recognition comes a variety of cautions or concerns about how consolidation might be implemented, and how the down-stream effects of consolidation are dealt with. Some of these were specific to the Law Enforcement domain, some were specific to the Fire/EMS domain, and some were common across all disciplines. Therefore, this summary of the focus group sessions is organized in this manner.

Law Enforcement Discussions

Summary of Law Enforcement Discussions
Overall, there seems to be a recognition that some degree of dispatch consolidation will happen in both the near-term and long-term. The majority of participants felt consolidation was a likely reality over some span of time. There was recognition of some of the benefits that consolidation could bring, but also caution about how it was implemented so that local service level needs could be met. There were also some ‘governance’ concerns, and these will be discussed in a Governance section below. The following are some of the major discussion points and key “take-aways” from the focus group sessions.

We are a very diverse county – Lake County has a wide diversity of community types and local challenges, and each of the police agencies (and their dispatch centers) have adapted to their local settings. Some communities are dominated by rural or residential areas while others have significant commercial and large campus-style companies in their jurisdiction. Some communities have high levels of personal or property crimes while others experience lower crime levels. Some communities have venues or attractions that draw large seasonal population fluctuations while others have more stable population levels. Some are bedroom communities with low daytime populations while others have significant daytime population growth. Some have significant bodies or water or shorelines that bring unique response challenges and responsibilities.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

All of these environments would need to be accommodated in any anticipated consolidation of dispatch operations. Most of the participants acknowledged that they have seen consolidation accomplished successfully elsewhere, and believe if consolidation planning moves forward it will need to carefully engage all of the participating jurisdictions so that their unique needs and characteristics can be well understood and integrated into the policies and procedures of the consolidated communication centers.

Most incidents are local – With few exceptions, law enforcement agencies deal with incidents that occur within their own jurisdiction and do not require them to be assisted by surrounding agencies. Therefore, particularly for the agencies currently operating their own communications center, they want to be sure that the call takers and dispatchers servicing their communities can provide them the level of direct attention they are used to receiving.

As this issue was discussed a bit deeper though, there was also an acknowledgement that many times when multiple or large-scale events occur within these smaller jurisdictions, the dispatch centers really struggle to handle the surge in workload from the combination of increased 9-1-1 calls and increased radio activity from police and fire units. This can sometimes lead to the routine functions supporting other officers on the air suffering to some degree. There seemed to be a consensus of opinion that dispatch consolidation could actually be of significant benefit if it is structured so that the dispatchers working primary and tactical police channels could stay focused on those responsibilities and not get pulled into call receiving or other tasks.

Coordinating multi-jurisdictional events can be challenging – Even though most law enforcement activities are handled by a single jurisdiction, there are a number of circumstances where multiple jurisdictions and/or agencies need to be a part of the response (such as active shooter situations, incidents on the move, large scale emergencies, etc.). Most all of the participants identified this as a challenge, particularly for the small to medium sized communications centers, as they try to simultaneously keep up with the demands of the units already responding to the call, handle additional incoming calls, while also making notifications to neighboring communications centers to get resources moving.

This is not the case for the deployment of larger regional teams or air support services since specific dispatch organizations have been identified for those functions. There was a general level of consensus that the depth of staffing at larger and/or consolidated communications centers, coupled with those centers typically handling a number of agencies that share some degree of geographic similarity, make it much easier for them to manage and coordinate larger scale incidents.

We don't all do business the same way – One of the most common expressions of skepticism about dispatch consolidation is that it will force all agencies to do business the same way. Many agencies are very proud of the personalized and high levels of service they provide their community and they fear they would compromise this by being a part of a consolidated dispatch operation. However, during the discussions, many of the participants already served by consolidated dispatch operations expressed that this isn't really the case. They acknowledged that there did need to be standardization in things like determining call type codes and on-air radio procedures, but when it came to determining the types of

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

calls they would respond to and the levels of resources sent to those calls they were able to do this at the levels they needed to meet the individual community expectations.

The Sheriff's Office has a broad mix of roles – In addition to the law enforcement responsibilities for all of the unincorporated areas in Lake County, the Sheriff's Office is a participant in a number of specialized regional teams such as the Major Crash Assistance Team (MCAT), the Major Crimes Task Force (MCTF) and similar groups. While some of these functions are dispatched out of the Sheriff's Office communications center, others are coordinated out of other communications centers. The Sheriff's Office is also the local law enforcement agency for a number of individual municipalities. All of this places Sheriff Office personnel into routine interactions with all of the local agencies. While these interactions would likely be much easier to coordinate out of a consolidated dispatch model, they will each have to be carefully planned to make sure that long-standing capabilities are not compromised.

Lake County Forest Preserve District brings its own unique challenges – Since the Forest Preserve operates its own law enforcement agency, and since this agency often interacts with several of the local agencies, there are likely good coordination benefits that could come through consolidated dispatching. However, the nature of highly disperse geography that the Forest Preserve officers protect, and the diverse nature of some of the events they face, make them somewhat unique compared to local law enforcement agencies.

Dispatchers do more than 9-1-1 and dispatch – While the staff working in the larger communications centers tend to have their duties and responsibilities more tightly focused on providing emergency call receiving, alarm board monitoring and dispatching functions, the staff in the medium and small communications centers have a wide variety of additional duties. These typically include things like providing 7X24 front counter services for the Police Department (or the full Village); monitoring booking areas and detention facilities; directly supporting the booking or detention process; supporting LEADS, records management and/or report writing functions; processing various local fees & fines; and similar support activities. Each of these were discussed to varying degrees in each group and several observations emerged on a fairly consistent basis.

- 7X24 front counter services – The most common concern with seeing dispatching consolidated is the impact it would have on the police department being "open" on a 7X24 basis. This is mainly the case in the small to medium jurisdictions where a secure lobby area is left open around the clock and the dispatchers can interact with the public through a secure window or augmented with audio/video devices. Even if the agency is large enough to have full time records personnel to handle much of this workload during normal business hours, these positions are not staffed on a 7X24 basis and the dispatchers end up with front window duties in nights and weekends.

  During these focus group discussions (and during the onsite visits to individual dispatch centers), a variety of experiences were recounted where having this live interaction available proved highly valuable to the outcome of the incident. In some of these cases, this 'presence' of a live person on a 7X24 basis was cited as a key reason an agency would not want to consider joining a consolidation of dispatch. However, in some of the discussions, participants commented that their organizations had dealt with this issue successfully through the use of

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

audio/video 'kiosks' at the entries of their facilities. In some cases, this was done because they had joined consolidated dispatch operations and no longer had dispatchers in their facility. In other cases, this was done because the dispatchers were physically located in an area of the building that wasn't adjacent to the lobby. While some participants were willing to acknowledge that this may be a reasonable solution for this issue, others seemed firmly set in their opinion that a 7X24 staffed front counter would still be needed in their community, even if they joined a consolidation of dispatch operations.

- Monitoring booking areas and detention facilities – It is common in the smaller and medium sized agencies for the dispatchers in the communications center to also provide monitoring of sally port areas, booking areas, and detention cells. In some centers this is done on a passive basis with video or audio monitoring, while in others it is an active monitoring role including performing periodic visual checks on detainees. While in some instances there will be an officer present in the detention area if a person is being held, in many others the on-duty dispatchers are the only personnel present to monitor detainees via video. The biggest concern for these law enforcement agencies is how they would deal with their arrest, booking and short-term detention needs if dispatchers couldn't provide the monitoring of detainees.

  As this issue was discussed in each group, there seemed to be a recognition that video monitoring was not an ideal solution, but staffing levels and budget constraints prevent the jurisdiction from always having an officer present if someone is in detention. While monitoring a detention area via video would be possible from a non-colocated dispatch center, many felt that this brought too many risks for them to be comfortable with this.

  It was observed that CenCom's approach of simultaneously consolidating dispatch and detention may be worth considering, at least for medium-scale consolidation strategies. There was some push-back on this concept from others that felt strongly that dispatchers shouldn't be in the detention business at all, and that solutions for detention needed to be found that helped particularly the smaller and more rural agencies get their prisoners booked and held at locations that could be staffed by police or corrections officers so there was no need to rely on dispatchers to monitor detainees.

- Directly supporting the booking or detention process – In a small number of agencies the dispatch staff are sometimes required to take a more active role in the booking or detention process. For example, when booking a female prisoner and having no female law enforcement officer on duty, female dispatchers that are trained as jail matrons will enter the booking area and assist with the booking process and getting the detainee placed into a cell. In some circumstances, agencies are even 'borrowing' a trained dispatcher/matron from a neighboring agency to assist them in booking a female prisoner. There seemed to be a general agreement that this is not an ideal practice but rather one that has arisen through necessity. But it would be an issue that would need to be solved, much like the dispatchers monitoring jail cells, before these smaller and medium sized agencies would be comfortable moving to a consolidated dispatching model.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

- Supporting LEADS, records management and/or report writing functions – Due to their ongoing need to access LEADS records and the periodic need to update these records, dispatch personnel typically support all of the LEADS entry and record maintenance for their agency. Further, since some of this work requires paperwork interactions with officers or other agency personnel, there is a general perception that it needs to remain an in-house process and would be another barrier to dispatch consolidation. However, as this issue was discussed, the agencies that are already in consolidated dispatch operations observed that this has not been a significant issue for them and that the dispatch personnel are still able to support their LEADS needs. The key is working out the work processes and document flows to make sure that all standards of performance are met.

  It was also observed that particularly in some of the smaller agencies, the dispatchers provide direct assistance to officers in their report writing activities, particularly in assembling/printing various database records or related documents so they were available to the officer when they returned to the station. During discussions it was noted by others that this can still be done if dispatch is consolidated, with those files being printed remotely to the station where the officer would be going to do their paperwork.

- Processing various local jurisdictional processes such as fees and fines – In some of the agencies, the dispatchers staffing the lobby window are directly involved in processing cash transactions for various fees and fines established by the jurisdiction. This would obviously be a level of service that would change if dispatch were to be consolidated and this troubles some of the agencies involved in the discussions. Some observed that there probably wasn't really a need for this to be available on a 7X24 basis but others observed that it at least needed to be available for some extended hours and weekends beyond 'normal business hours' because these can be the only times some people have to come in and take care of these transactions. There was a recognition that if dispatch consolidation took place, this would be an issue that didn't have reasonable solutions other than to extend the working hours of other personnel at the police station or other city facility to handle these transactions.

- Other support activities – Many of the participants identified a number of other administrative tasks that are supported by dispatch personnel. Their presence on a 7X24 basis often makes dispatch a catch-all location for miscellaneous tasks that can be accomplished during down-time (or sometimes planned in as a normal part of their duties). Through the discussions it seemed clear that few of these would translate well to a consolidated dispatch environment, so the agencies would need to identify other personnel to accomplish these duties.

Consolidation may create opportunities for new technologies – There was a general recognition that having multiple dispatch operations throughout the county operating on different CAD and RMS system environments creates a combination of interoperability challenges as well as duplicated costs. There is also a lot of 'loyalty' to the CAD/RMS solution used in each community and seeing that change as a result of any consolidations is a big concern for many. But there was also a general recognition that by expanding the use of shared systems there could be increased levels of interagency interoperability, coordination, and collaboration, while also providing an opportunity to share costs and capabilities.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

One of the issues recognized by many of the participants is that as Next Generation 9-1-1 networks become a reality, and there is a higher use of non-traditional paths for the public to access emergency services, there will be a need for significant investments in technology and personnel to deal with the impacts. Where today the interactions with the public are largely confined to voice telephone interactions, in the near future this could also include text messaging, video interactions, and the transmission of additional photo or video information from the person reporting the emergency. There was a general recognition in the discussions that meeting this challenge across multiple dispatch centers, many with significant fiscal constraints, would likely be extremely challenging if not impossible. Consolidated dispatch operations, or at least fully shared technology systems between multiple dispatch centers, could provide a path to economically dealing with these significant changes in how "9-1-1" will be viewed and utilized by the public.

There was also some discussion about how consolidation onto a common CAD environment coupled with the use of Automatic Vehicle Location (AVL) technology could create opportunities for better situational awareness (both in the field and at dispatch) on the locations of available response resources and the potential to consider 'closest available unit' dispatch strategies. While most of the participants agreed that the situational awareness aspect could be useful, there was a difference of perception on the potential benefits of 'closest available unit' dispatch strategies.

Most of the Fire/EMS participants already engage in a high degree of automatic and mutual aid, so the concept of having a 'closest available unit' from a neighboring agency being recommend for an incident response seemed quite normal to them. The reaction from the Law Enforcement participants was slightly different. In general, their comments indicated agreement that this strategy could be useful within their own jurisdictional areas, but there seemed to be less interest in the concept of law enforcement routinely crossing jurisdictional boundaries to handle calls just because they had the closest available unit. Several commented that existing pre-defined protocols for assisting each other during major events work fine.

Several of the Law Enforcement participants also observed that it is not uncommon in the Law Enforcement community for AVL technology to be seen as a 'big-brother' technology and resist having their location tracked in real time. However, concurrent with these comments there were also many who observed that dispatch having real time awareness of an officer's location can bring officer safety benefits as well.

There was also some discussion about other emerging technologies such as video feeds from patrol cars and/or body cameras, or surveillance cameras in strategic locations within the communities. Many agencies currently view these as 'forensic' items to be used after incidents are completed. But across the nation, some agencies are beginning to stream some of these images (or live video) back to their 'command center', which is often the dispatch center. There was fairly universal recognition that this is very challenging in the current setting with so many of the dispatch centers operating with limited staffing levels that could barely keep up with current workload demands. Some centers do have access to local surveillance or traffic cameras, and while they can be very helpful in some circumstances, staffing levels typically prevent them from being actively monitored.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

There was an appreciation that capabilities such as this may have some future value, and that it may be best implemented in larger consolidated dispatch operations where staffing depths might allow the dispatch center to be more actively engaged in supporting the field units if video information were available. During the discussion, it was pointed out that in some consolidated dispatch center settings there was a concurrent deployment in the facility of something like a real-time crime center. This allows these non-dispatch personnel to have access to all the CAD, audio and video information and support the field units as needed without it adding workload on the dispatch staff.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Fire and EMS Discussions

The fire service community in Lake County has a high degree of similarity in the way they respond to and manage incidents. To a certain degree this is because the fire service in general uses a significant amount of automatic and mutual aid response plans in their normal course of business. In addition, the agencies also participate in the Mutual Aid Box Alarm System (MABAS) process for mobilizing large-scale resource pools when needed for significant events. All of this tends to make the fire service much more amenable to regionalization and consolidation of dispatching services.

Summary of the Fire/EMS Discussions
Overall, the Fire/EMS participants seemed supportive of exploring further consolidation of dispatching services. Many of the participants observed that it seemed like a natural extension on the level of cross-jurisdictional support they already provide each other through automatic and mutual aid processes. But this supportive posture towards consolidation was tempered with the observation that if it wasn't coupled with consolidation of law enforcement dispatching as well, there would still be the potential for call transfer processes delaying the speed of dispatching Fire and EMS units, and this is one of the key issues the fire service would like to overcome.

During the focus group discussions, a variety of topics were discussed in the context of consolidation of dispatching services. The following are some of the major discussion points and key "take-aways" from the focus group sessions.

Call transfers causing delays in dispatching need to be eliminated – This was the most commonly mentioned reason for supporting further dispatch consolidation. Call transfers can be required for a number of reasons. For example, a wireless caller may get routed to a different communications center than the one that handles the area they are located in. The initial call taker needs to determine their location and then if necessary transfer that call to the appropriate communications center. Not only can this transfer take time, it can raise the potential for loosing contact with the calling party and requiring a call back. Further, sometimes the initial call receiving location may be the proper location for law enforcement services (such as a call in unincorporated areas) but the call needs to be transferred to the proper Fire/EMS dispatch location to initiate a fire or EMS response.

It is well established in the emergency medical community that the time interval between when the call for help is initially placed and when EMS resources arrive at the side of the patient have significant impact on the outcome for the patient. Even with good Emergency Medical Dispatch (EMD) protocols in place to quickly screen and dispatch units, and then follow-up pre-arrival instructions with the calling party, getting the EMS resources to the patient's side as quickly as possible leads to the best outcomes. Calls having to move between dispatch centers create front-end delays that can't be overcome during the response cycle, no matter how close EMS resources may be to the patient.

Fire alarm boards need to continue to be supported – A significant number of the fire dispatch operations also include the real-time monitoring of fire and security alarm boards for alarms systems in their community. While some jurisdictions have shifted away from this approach and rely on central station alarm monitoring companies to provide this service and notify dispatch when needed, other jurisdictions believe there are too many risks for delays or failures to notify, and want to have that real-time awareness of the alarm at the communications center for the immediate dispatch of resources.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

In some communities, there is also an interest in preserving the revenue stream they get for providing alarm monitoring services. Operating alarm board systems also brings a number of administrative tasks into the communications center including dealing with false and trouble alarms, alarms going out and into service for maintenance, and maintain alarm-holder contact information.

From a consolidated dispatching perspective this would likely become a significant policy for group debate and resolution. While technologically it would be entirely possible to establish alarm monitoring capability for multiple communities within a consolidated dispatch operation, it may create some staffing and cost distribution considerations if all of the agencies don't utilize this approach (i.e. agencies that have shifted to having central station alarm companies handle alarm monitoring). However, in many respects this is similar to the concerns in the Law Enforcement community where they would need to be assured that their local levels of service wouldn't need to be compromised if they joined into a consolidated dispatch operation.

Further dispatch consolidation would improve coordination of multi-jurisdictional responses – Since so many of the medium to large-scale responses in the fire service community involve units from more than one agency, further consolidation of dispatch could significantly decrease the time to get these units rolling while also increasing the level of coordination among those resources and the communications center. The fewer contacts that need to be made with neighboring dispatch centers (or cross dispatching on other agencies' channels) the more it would improve the speed and efficiency of the operation and increase the levels of consistency of information being relayed to responding units.

Further, many of the smaller and even mid-sized communications centers have difficulty quickly ramping staffing levels devoted to fire operations on significant events. Often their workload is also impacted by increased police activity due to the same emergency, and all of this is on top of the normal level of incoming calls for service from the rest of the community. One of the advantages of a consolidated operation would be the ability to staff a fire dispatching function with sufficient depth that it could react to the demands of significant events without detracting from the levels of service offered by the communications center to the other agencies they support.

Technology can provide improved levels of timely responses – There was a fair amount of interest in how technology might also aid in coordinating resources and responses. Some of the participants were willing to envision a future where all apparatus would be AVL equipped and dispatching was done on the basis of the closest available appropriate unit (within some form of geographical bounds and common sense). Others were less interested in this approach and preferred to follow current practices with established response patterns and border jurisdiction assistance as needed. There was clear consensus however that if a regionalized closest available appropriate unit strategy were to be pursued, at whatever level, it would best be accomplished in a common CAD environment and most likely in a consolidated dispatch setting.

There was also a fair amount of interest expressed in establishment of a regional fire station alerting system. Even with multiple communications centers, use of a common fire station alerting system could make the process of dispatching units from multiple agencies much more efficient and timely than current practices.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Depth in fire dispatching may allow further levels of incident support – There was also mixed interest in having a consolidated dispatch center take on a more active or direct role in supporting large scale emergencies and the Incident Command System (ICS). For example, in some operations around the nation the fire dispatch center operates under a variety of standing orders and protocols that allows them to initiate various incident support functions (such as calling back off-duty personnel; dispatching resource units such as comfort, food and fuel; notifications of outside agencies; and similar activities) without having to be directed to do so by the Incident Commander. Some of the fire service attendees expressed an interest in this level of assistance from the communications center while others expressed they would prefer that all actions of this nature be at the direction of the Incident Commander (or command staff of the individual agency) rather than initiated from the communications center.

Common Themes and Governance Discussions

During the focus group sessions, there were a number of issues discussed that were not specific to law enforcement or fire, and instead related to general technology or policy issues and how a consolidated dispatch operation could be organized, how decisions would be made, how costs would be allocated and similar governance related issues. These topics are discussed below.

Regional radio interoperability is good, but it could be better – There was general recognition that the multitude of radio systems (and radio system technologies) can create operational challenges. This is particularly true if further regionalization of dispatch services is considered. While technologically it would be possible to provision a consolidated dispatch facility (or facilities) to be able to operate on any of the existing radio networks, this would come with some significant costs and complexities.

There seems to be a growing recognition, particularly in the law enforcement community, that migration to the Starcom 21 statewide radio system provides a pathway to improved regional interoperability while also allowing local jurisdictions to shed the responsibility for directly operating and maintaining radio systems. Many agencies are finding that with the improved coverage and capacity being added by Lake County, the Starcom 21 system provides a good solution for their long-term radio communications needs. During the discussions it was also noted that commonality in the radio system environment makes it much easier to plan dispatch consolidation strategies so that the right agencies can be grouped with the right dispatchers without the added complexity of a patchwork of radio system coverage areas.

The same is not necessarily the case in the fire service community. Many in the fire service community have reservations about moving operations to trunked radio systems and prefer to keep operations on conventional VHF systems, particularly in a simplex mode of operation on the fire ground, that have proven their reliability over many years of operation. While most of the participants were aware of other fire service agencies that had successfully moved their operations to trunked systems, additional research and conversations would need to occur for this group to be comfortable moving to a trunked system.

This said, if the fire service didn't move to the Starcom 21 environment, it would not prevent consolidation of dispatching activities, it just complicates some of the technology issues. It may also turn out that as more and more of the law enforcement agencies move to the system and local experience

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

is built, there may be more interest in considering this for at least some of the routine communications activities for the fire service community, particularly for non-fire ground and routine dispatch/response communications.

Dispatch centers are the primary activation point for warning sirens – Since the dispatch center is often the only physical location in a jurisdiction that is staffed on a 7X24 basis, they are also responsible for activating warning sirens when needed. Regionalization or consolidation of dispatching would also require that this function be consolidated as well. While this will create some technology challenges, the bigger issues will be in establishing the operational policies and practices so that each community has an ability to determine how and when sirens should be activated in their community.

Control over operational policies and practices needs to be focused at the "Chief's" level – One of the fears of a consolidated dispatch operation is that over time the operational policies and practices of the dispatch center become overly influenced by the dispatch center itself rather than the needs of the individual communities they serve. There was a high level of agreement across all the discussion participants that this can't be allowed to happen if dispatching is consolidated in Lake County, and that the "Chiefs" (or their designated command staff member) need to be the ones that compose the operational policy boards or bodies.

There was also a strong sense that given the large number of agencies that would potentially be involved if dispatch were fully regionalized across the county there would need to be some layering in how all these "Chiefs" came together to formulate operational policies. At a minimum, this would need to include separate bodies that focused on the Law Enforcement and Fire/EMS domains, and perhaps an overarching body that blended those perspectives into the overall organizational operational practices. There was also an underlying tone in all of the discussions that there would need to be careful attention paid to making sure that the voices of the smaller agencies weren't marginalized by the larger agencies.

Top level governance needs to be carefully considered – Finally, there was a variety of feelings related to how the operational level of policy formulation and control would interact with a top-level governance body for the organization as a whole. There is a strong sense that a regionalized dispatch model would need to be implemented as a newly-created stand-alone organization that is 'owned' by the jurisdictions that participate in it. Therefore, this new organization would need a governing body that would take responsibility for the high-level policy and mission oriented aspects of the organization and oversee the appropriation of funds, and administration of budget and audit processes.

Many of the current dispatch operations are in a one-to-one relationship with an Emergency Telephone System Board (ETSB) that administers the collection and distribution of 9-1-1 surcharges received from within the ETSB's boundaries. While often the membership of the ETSB's have a significant amount of overlap with the leadership from the municipality and its police and fire departments, there is a fairly clear demarcation between the role of the ETSB and the role of organizational leadership. The ETSBs tend to stay focused on making prudent decisions on how to spend 9-1-1 revenues and the organizational leadership establish operational policies and practices.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

During the discussions, there were a variety of opinions and speculations expressed about what the future mix of ETSBs might look like if the region moved towards further dispatch consolidation. Since legislative changes now prevent 'paper ETSBs' from existing, there is a realization that consolidation of dispatch would also mean the consolidation of ETSBs. While this would still allow a close interaction between the roles and responsibilities of the consolidated (or 'Joint') ETSB and the consolidated dispatch organization, there was caution expressed by some of the participants that this may evolve over time to the ETSB having undue influence over operational policies and practices.

There was also discussion about the importance of transparency in ETSB processes and funding distributions as ETSBs consolidate along with dispatch centers. This is particularly the case for anything funded outside of the dispatch centers themselves (such as mobile computers or radio equipment) so that all agencies covered by the ETSB have a clear understanding that they are being treated the same.

One idea surfaced during one of the sessions about whether the top-level governing body for the consolidated dispatch organization could also be the governing body for a consolidated ETSB linked to that agency. Basically, this would try to replicate the close relationships already in place in individual villages. This would be an issue needing considerable debate and legal research if regionalization of dispatch moves forward.

How would all this be paid for – Many of the participants expressed that even in today's world, proceeds from 9-1-1 surcharges cover only a fraction of the overall operating costs of running their dispatch operations. Recognizing that large-scale regionalization would require that new facilities and systems be put in place, there seemed to be a high degree of skepticism that a funding mechanism can be found for these capital investments.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SECTION 3 – DISPATCH CENTER SITE VISITS

Below is a summary of the current communications center characteristics. Appendix 4 (PSAP Chapters) contains full details of each of the dispatch center site visits.

Current Staffing Overview

Currently there are an estimated total of 233.5 full time equivalent employees (FTEs) engaged in the management, operation and support of the communications centers in Lake County. Of this total, 220.5 personnel are directly involved in delivering dispatching services in roles such as Supervisors, Lead Telecommunicators, Full Time Telecommunicators or Part Time Telecommunicators. The remaining 13 personnel fill positions such as Director/Manager, Deputy Director/Manager, administrative support, technology support or GIS support roles.

The total raw number of personnel employed in either Full Time or Part Time capacities was 265. Some agencies reported that they are also occasionally using staffing support from a temp staffing agency, but these were not factored into the counts. Two adjustments were made to this raw total count to arrive at the estimated total FTE count directly involved in PSAP operations:

- First, the total personnel count for the dual-facility operation of Glenview Public Safety Support Services was adjusted down by 12 FTE to reflect that their personnel also support non-Lake County agencies.
- The second adjustment was to interpret the total number of Part Time personnel at a 50% actual working level to estimate their equivalent Full Time body count. Two centers reported that Part Time personnel occasionally work over 20 hours per week, and all other respondents agreed that the 50% utilization rate was a reasonable adjustment factor.

As a result of these adjustments, it is estimated that a total of 233.5 FTE personnel are currently being used in some direct role in the operations of the current PSAPs. Of this number, 220.5 FTE are in roles that are directly related to the operational activities of the communications centers themselves (Supervisors, Lead Telecommunicators, Full-Time Telecommunicators or Part-Time Telecommunicators.

The table on the following page (Table 5) provides the information for each of the communications centers for the various job functions identified.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 5 - Current State Personnel Levels across Lake County Communications Centers

	Director or Comm Manager	Deputy Director	Admin	Tech	GIS	Supervisors	Lead TCs	FT TCs	PT TCs	Total Staff
CenCom	1	1	0.5		0.5	4		17	2	26
Countryside Fire	1							7	4	12
Deerfield	1							7	3	11
FoxComm	1					2	2	8	6	19
Glenview (Glenview)	1	1				3		20	10	35
Glenview (Highland Park)						3		9		12
Gurnee	1					2		10	3	16
Lake County Sheriff's Office	1					3	3	30		37
Lake Zurich	1					1		10		12
Mundelein						1		9	1	11
North Chicago						1		9	1	11
Park City								3	2	5
Vernon Hills				1		1	1	14		17
Wauconda										0
Waukegan	1					3	3	13		20
Winthrop Harbor							2	3	3	8
Zion						1		8	4	13
Totals	**9**	**2**	**0.5**	**1**	**0.5**	**25**	**11**	**177**	**39**	**265**
Glenview Adjustments								-12	-19.5	
Revised Totals	**9**	**2**	**0.5**	**1**	**0.5**	**25**	**11**	**165**	**19.5**	**233.5**
	Total personnel in management and support roles				13	Total personnel in direct Dispatch-related roles			220.5	**233.5**

Nine of the current communications centers are covered by Collective Bargaining Agreements (CBAs) while the others operate under personnel policies and procedures established by their local jurisdictions. Eight of the nine CBAs were reviewed for provisions related to consolidation, subcontracting or privatization (Zion did not provide a copy of their CBA).

- CenCom – The Management Rights section of CenCom's agreement with the Metropolitan Alliance of Police, Chapter #591 contains opening language that reads, "Except as specifically limited by the express provisions of this agreement, CenCom retains all traditional rights to manage and direct the affairs of CenCom in all of its various aspects and to manage and direct its employees, including but not limited to the following:…" and then contains the following language "…;to contract out for goods and services other than as those provided by covered employees;…"

- Fox Lake – The Subcontracting section of Fox Lake's agreement with the Illinois Fraternal Order of Police contains the following language: "In the even the Village in the exercise of its sole discretion makes a final decision to subcontract or privatize work which is being performed by members of the bargaining unit at the time the decision is made, the village will provide the employees and the Union sixty (60) calendar days' notice, if possible, and, if not, as much notice as reasonably possible under the circumstances. Upon the Union's request after receiving such

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

notice, the Village and the Union will commence bargaining over the impact and effects of the Village's decision on bargaining unit members.

- Glenview – Appendix C of Glenview's agreement with the Illinois Fraternal Order of Police discusses Effects of Outsourcing. The opening language of this Appendix reads: "In the event the Village of Glenview, in the exercise of its sole discretion makes a final decision to subcontract or privatize work which was being performed by members of the bargaining unit and such decision directly leads to the layoff of full time members of the bargaining unit, the Village of Glenview shall provide the employees with a ninety (90) calendar day notice or pay in lieu of notice." The section goes on to define how layoff and final compensation issues will be handled.

- Lake County Sheriff's Office – The Management Rights section of the agreement with the Illinois Council of Police identifies the specific authorities of the County including section m. which reads "To eliminate, contract (the Employer agrees to negotiate the impact of it decision to contract) and relocate or transfer work to maintain efficiency."

- Lake Zurich – The Management Rights section of Lake Zurich's agreement with the Illinois Fraternal Order of Police contains the following language: "…to subcontract or contract out goods and /or services; to determine whether work and/or services are to be provided by employees covered by this Agreement (including which employees) or by other employees or persons not covered by this Agreement;…"

- North Chicago – The Subcontracting section of North Chicago's agreement with the Illinois Fraternal Order of Police contains the following language: "It is the general policy of the City to continue to utilize its employees to perform work they are qualified to perform. However, the City reserves the right to contract out any work it deems necessary in the exercise of its best judgment and consistent with the City's lawful authority under Illinois statutes." The section also contains language regarding notification and discussion of any effects on bargaining unit employees.

- Vernon Hills – The Subcontracting section of Vernon Hills' agreement with the Illinois Fraternal Order of Police contains the following language: "The Village shall have the right to contract out and/or subcontract work. The terms "contract out" and "subcontract work" shall include assigning bargaining unit work to non-bargaining unit members." The section also contains language regarding how notification and final compensation will be handled.

- Waukegan – The Subcontracting section of Waukegan's agreement with the Service Employees International contains the following language: "It is the general policy of the City to continue to utilize its employees to perform work they are qualified to perform. However, the City reserves the right to contract out any work it deems necessary in the interests of efficiency, economy, and improved work product or emergency". The section also contains language regarding notification and discussion processes.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The following tables provide an overview of some of the other key characteristics of the personnel practices currently in place. For some characteristics the information was either not covered in the CBA or not provided by the agency and "No Data" is noted in these instances. Compensation and benefit information will be covered in the Financial Analysis section of the report.

Table 6 – Summary of Labor Representation, Shift Schedules and Paid Time Off Practices

Summary of Labor Representation, Shift Schedules and Paid Time Off Practices					
	Collective Bargaining Organization (if applicable)	Current Shift Schedules	Holidays and Personal Days Off	Monthly Sick Leave Accrual Rates	Maximum Sick Leave Accrual
CenCom	Metropolitan Alliance of Police, Chapter #591	12 hour	11 days	8 hours	520 hours
Deerfield	Non-Union	8.5 hour	12 days	No Data	No Data
FoxComm	Illinois Fraternal Order of Police	12 hour	13 days	6.67 hours	160 hours
Glenview	Illinois Fraternal Order of Police	12 hour	106 hours	8 hours	1920 hours
Gurnee	Non-Union	12 hour	No Data	No Data	No Data
LCSO	Illinois Council of Police	8.5 hour	13 days	No Data	No Data
Lake Zurich	Illinois Fraternal Order of Police	8 hour	4 days	8 hours	1920 hours
Mundelein	Non-Union	8 hour	No Data	No Data	No Data
North Chicago	Illinois Fraternal Order of Police	8.5 hour	12 days	8 hours	560 hours
Park City	Non-Union	8 hour	No Data	No Data	No Data
Vernon Hills	Illinois Fraternal Order of Police	12 hour	12 days	8 hours	912 hours
Countryside Fire	Non-Union	12 hour	No Data	12 hours	No Data
Waukegan	Service Employees International	8 hour	12 days	8 hours	400 hours
Winthrop Harbor	Non-Union	8 hour	14 days	8 hours	1920 hours
Zion	Not Provided	8 hour	No Data	No Data	No Data

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 7 - Vacation Hours Accrual Rates

Vacation Hours Accrual Rates (by years of service)										
Years of Service	CenCom	Deerfield	Fox Comm	Glenview	Lake Zurich	North Chicago	Vernon Hills	Countryside Fire	Waukegan	Winthrop Harbor
1	80	80	80	80	80	40	80	72	80	40
2	80	80	80	80	80	80	80	144	80	80
3	80	80	80	88	80	80	80	144	80	88
4	120	80	80	96	80	80	80	144	80	96
5	120	120	120	104	80	80	120	144	80	104
6	120	120	120	112	80	80	120	192	80	112
7	120	120	120	120	120	120	120	192	120	120
8	120	120	120	120	120	120	120	192	120	128
9	120	120	120	120	120	120	120	192	120	136
10	160	160	160	120	120	120	160	240	120	144
11	160	160	160	128	128	120	160	240	136	152
12	160	160	160	128	136	120	160	240	136	160
13	160	160	160	160	144	120	160	240	136	168
14	160	160	160	160	152	120	160	240	136	176
15	160	160	200	160	160	160	160	240	160	176
16	160	160	200	160	168	160	160	288	160	176
17	160	160	200	160	176	160	160	288	160	176
18	160	160	200	160	184	160	160	288	160	176
19	200	200	200	168	192	160	160	288	160	176
20	200	200	200	168	200	160	200	288	160	176
21+				176		200				200
22+				208						

Technology Overview

There are a wide variety of technology systems in use in the current communications centers, but there is also an increasing level of commonality as system replacement plans are executed. Each of the key technologies are outlined below:

- 9-1-1 and Telephony – There is a broad mix of systems in use currently, including systems from Airbus DS (formerly Cassidian), West Safety Services (formerly Positron/Intrado), Zetron and Solacom. The new Solacom system implemented by the Lake County ETSB is utilized by the centers they support and may be considered by other centers when they face planned or lifecycle replacements of their current systems.

- CAD/Mobile – 5 of the communications centers currently utilize the EnRoute CAD/Mobile system operated by the Lake County ETSB; 4 of the centers utilize systems from New World; and 2 of the centers utilize VisionAIR. The remaining 4 centers utilize systems from vendors not utilized elsewhere in Lake County.

- Radio Console Systems – Motorola and Zetron systems predominate, and several centers have either already moved or in the process of moving to new Motorola consoles as part of a migration to the StarCom 21 radio network.

- Logging Recording – There is a broad mix of recording systems in use, and several agencies migrating to the StarCom 21 system will be obtaining their radio recording from a new system directly linked to the radio network.

- Fire Alarm Boards – Alarm monitoring systems are in use at 9 of the centers.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The following table provides an overview of the current call receiving and dispatching technology systems in use across the communications centers in Lake County.

Table 8 - Overview of current technology systems

Overview of Key Technology Systems Currently in Use					
	9-1-1 & Telephony	**CAD/Mobile**	**Radio Consoles**	**Logging Recording**	**Fire Alarm Board**
CenCom	Cassidian system targeted for replacement in 2018.	Lake County ETSB EnRoute	Zetron Integrator new in 2009	Eventide new in 2009	Yes
Countyrside Fire	Utilize Vernon Hills Positron system	Lake County ETSB EnRoute	Motorola MCC5500 with no need to change	Utilize Vernon Hills NICE system	Yes
Deerfield	Zetron MAX	New World	Zetron MAX	NICE with planned replacement in near future	No, monitor Village facilities only
FoxComm	Zetron Integrator	Lake County ETSB EnRoute	Zetron MAX	NexLog	Yes
Glenview PSSS	Cassidian system new in 2012	New World	Motorola MCC7500	RevCord new in 2015	No
Gurnee	West/Intrado Viper with Cisco UCM for 10-digit lines	Public Safety Systems Incorporated (PSSI)	Motorola MCC7500	DSS Equature new in 2012	Yes
Lake County Sheriff's Office	Lake County ETSB Solacom System	VisionAir	Motorola MCC7500	NICE currently with a new system for the Starcom P25 radio system	No
Lake Zurich	Lake County ETSB Solacom System	Lake County ETSB EnRoute	Zetron Integrator with added control stations for StarCom access	NICE new in 2010	Yes
Mundelein	Zetron MAX	Lake County ETSB EnRoute	Zetron MAX with added control stations for StarCom access	NICE	Yes
North Chicago	Cassidian new in 2014	VisionAir	CSS Mindshare new in 2013	NICE	Yes
Park City	Legacy Zetron Model 3240	Automated Records Management System (ARMS) new in 2000	Legacy Zetron Model 4010	RevCord new in 2015	City facilities only
Vernon Hills	Positron due for replacement in 2017	New World	Motorola MCC7500	NICE	Yes, handled by Countryside Fire
Wauconda	Closed	Closed	Closed	Closed	Closed
Waukegan	Cassidian new in 2014	New World	Motorola MCC7500	Revcord	Yes
Winthrop Harbor	Legacy Zetron Model 3200	CAPERS	Legacy Zetron Model 4000	Eventide new in 2014	No
Zion	Zetron Integrator	Computer Information Systems (CIS)	Zetron Integrator	Voice Print International (VPI)	No

Even though the focus of this report is the examination of 9-1-1 and dispatch consolidation alternatives, there is a strong nexus between the CAD systems utilized at the communications centers and the Records Management Systems (RMS) utilized by the law enforcement agencies they serve. It is not uncommon to see dispatch consolidations often drive other shared-systems strategies and RMS systems are often the target of these system-sharing relationships. This approach has already been seen in several of the Lake County agencies, and the table below provides an overview of the RMS systems in use and the degree to which they are being utilized through mobile access, whether they are interfaced to

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ILETS/NCIC and whether Field Based Reporting is being used. Some of the communications centers were unable to provide information on their customer agency RMS solutions so these are indicated as Unknown at this time.

Table 9 - Law Enforcement RMS Information

Law Enforcement Records Management System Information				
Law Enforcement Agency	RMS System	RMS Mobile	RMS Linked to ILETS/NCIC	Field Based Reporting
Antioch Police Department	Unknown	Unknown	Unknown	Unknown
Bannockburn Police Department	Unknown	Unknown	Unknown	Unknown
Barrington Police Department	Unknown	Unknown	Unknown	Unknown
Deerfield Police Department	Tyler/New World	Yes	Yes	Yes
Fox Lake Police	TriTech/VisionAIR (w/LCSO)	Yes	Yes	Yes
Grayslake Police	Tyler/New World (w/Glenview)	Yes	Yes	Yes
Gurnee Police Department	Public Safety System Inc. PSSI	Yes	Yes	Yes
Hawthorn Woods Police Department	Tyler/New World (w/Lake Zurich)	Yes	Yes	Yes
Highland Park Police	Tyler/New World (w/Glenview)	Yes	Yes	Yes
Highwood Police Department	Unknown	Unknown	Unknown	Unknown
Island Lake Police Department	Unknown	Unknown	Unknown	Unknown
Kildeer Police Department	Tyler/New World (w/Lake Zurich)	Yes	Yes	Yes
Lake Bluff Police Department	Tyler/New World (w/Glenview)	Yes	Yes	Yes
Lake County Sheriffs Office	TriTech (VisionAIR)	Yes	Yes	Yes
Lake Forest Police Department	Tyler/New World (w/Glenview)	Yes	Yes	Yes
Lake Villa Police Department	VP Law Enforcement Software	Unknown	Unknown	Unknown
Lake Zurich Police Department	Tyler/New World	Yes	Yes	Yes
Lakemoor Police Department	Unknown	Unknown	Unknown	Unknown
Libertyville Police Department	Tyler/New World (w/Vernon Hills)	Yes	Yes	Yes
Lincolnshire Police Department	Tyler/New World (w/Vernon Hills)	Yes	Yes	Yes
Lindenhurst Police	Tyler/New World (w/Lake Zurich)	Yes	Yes	Yes
Mundelein Police Department	CAPERS	Yes	No	Yes
North Chicago Police Department	TriTech (VisionAIR)	Yes	Yes	Yes
Park City Police Department	Automated Records Management System (ARMS)	No	No	No
Riverwoods Police Department	Unknown	Unknown	Unknown	Unknown
Round Lake Beach Police Department	Tyler/New World (w/Lake Zurich)	Yes	Yes	Yes
Round Lake Heights Police Department	Unknown	Unknown	Unknown	Unknown
Round Lake Police Department	Tyler/New World (w/Lake Zurich)	Yes	Yes	Yes
Tower Lakes Police Department	Unknown	Unknown	Unknown	Unknown
Vernon Hills Police Department	Tyler/New World	Yes	Yes	Yes
Wauconda Police Department	Unknown	Unknown	Unknown	Unknown
Waukegan Police Department	Tyler/New World	Yes	Yes	Unknown
Winthrop Harbor Police Department	CAPERS	Yes	Yes	Unknown
Zion Police Department	Computer Information Systems (CIS)	Yes	Yes	Unknown

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Operational Overview

During the communications center site visit process, the operational practices of each of the centers were observed to identify similarities and differences in their operational approach. Operational and training manuals and documents were also reviewed onsite and five of the centers (CenCom, Countryside Fire, FoxComm, Lake Zurich and Vernon Hills) provided electronic or printed copies of this type of material. IXP observed a high degree of commonality in the operational models and training approach across all of the centers, which is not unexpected in an environment like Lake County where there is already a significant level of cross-jurisdictional collaboration through automatic and mutual aid agreements, and taskforces and specialized response teams staffed by multiple agencies. Further, many of the communications centers are already supporting multiple jurisdictions, so their operational models have already adapted to the ability to meet any unique needs of the various agencies they serve.

It was frequently observed that there are a significant number of 9-1-1 calls that need to be transferred or shared with other communications centers to get all the proper resources responding to the event. This occurs either because the primary routing for the call (most often wireless calls) does not end up at the PSAP that handles the jurisdiction where the incident is occurring, or that PSAP doesn't dispatch for all the agencies needed for the response (when both law enforcement and Fire/EMS resources are needed). Transfer or sharing of 9-1-1 calls adds time to call processing which delays dispatching and resource response. Further migration to shared 9-1-1 phone systems can make some of this process easier, but full migration to shared phone and CAD systems could allow calls to be processed and entered for dispatch at the receiving PSAP without the need for a call transfer. Ultimately, migration to fully regionalized dispatch models, where law enforcement and Fire/EMS call receiving and dispatching is handled within a single operational organization, can create an environment where call transfers are extremely rare and only needed when incidents with bordering counties are being handled.

Training of new personnel is a universal need in the communications center environment, and even though the communications centers in Lake County aren't experiencing significant turnover issues, they each have a routine need to train new personnel. Many utilize regional training opportunities whenever possible, but each must go through a process of individually training new personnel on the basics of the business and the specific operational practices of their organization. With small organizational sizes, this is often accomplished in direct one-on-one training settings and on-the-job training techniques, and periods of 6 months or longer are typically being utilized to get a new employee to the point where they can be fully functional in the shift rotation process. If the new employee experiences performance issues during this period that require them to be let go, recruitment processes start over again and it can take a considerable period of time to finally fill any open positions.

As further migrations to shared systems and or consolidations of communications centers takes place, it will be easier to find collaborative mechanisms to conduct various levels of new employee training. Further, in fully regionalized strategies such as discussed in the Semi-Consolidated and Fully-Consolidated Models later in this report, the training function can become a dedicated responsibility of staff specifically assigned to training. In other larger multi-jurisdictional communications centers this has been shown to both expedite the training process as well as improve the overall quality and consistency of the training being delivered. This results in personnel more capable of meeting the needs of the positions when they transition from the training environment to the live operations environment,

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

and allows their designated CTOs to work on skill refinement rather than having to focus on basic skill development.

It was also observed that there are a number of non-dispatch functions that the communications centers and the agencies they serve are addressing through collaboration and/or shared systems. As noted above, there are a number of shared RMS systems already in existence and the sense from interviews is that this trend will likely continue. This trend seems to indicate the future regionalization initiatives such as envisioned in the Semi-Consolidated Model and then into the Fully-Consolidated Model have a reasonable chance of being successful since so many agencies have already demonstrated an ability to successfully utilize shared-system strategies.

There is also considerable interest in finding shared solutions for short-term detention functions of the local law enforcement agencies. As noted in many of the communications center profiles, the communications centers in the smaller agencies play a significant role in the booking and detention process. As further consolidation takes place, shared detention facility models similar to that in place at CenCom may provide opportunities to de-couple communications and detention functions and allow communications consolidations to take place without being coupled to the detention process.

Finally, with the current environment with multiple communications centers utilizing multiple CAD, telephone and logging/recording systems, the process of reconstructing incidents and responding to public disclosure and subpoena requests can take considerable effort. While each communications center is meeting this need currently, the degree of time and effort required seems to be steadily increasing and this is placing pressure on the supervisory and administrative personnel responsible for this work. Further migration to shared systems can make this process somewhat easier to manage, particularly when incidents involve multiple agencies. Further, as fully regionalized models are achieved as discussed later in this report, the use of common systems and specifically dedicated staffing for this function will both improve the quality and efficiency of meeting this need.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Facilities Overview

Many of the current communications centers are sized to meet the current needs of the agencies they support and have no capacity to expand to take on additional customers. Several of the facilities have expansion capability that could allow them to add some additional customers. None of the current facilities have the capability to be expanded to take on a significant regionalization of dispatch services. The table below provides an overview of the current communications center spaces. Their suitability for possible consolidation scenarios is discussed later in the report.

Table 10 - Current Communications Spaces

Facility Name	Comm Room	Office & Support Spaces	Total Estimated Area	Estimated Population Served
CenCom	1,300	1,200	2,500	82,000
Deerfield	550	50	600	24,300
FoxComm	1,450	900	2,350	86,200
Glenview North (Highland Park)	1,100	-	1,100	85,000
Gurnee	1,350	300	1,650	55,000
Lake Zurich	2,300	300	2,600	76,100
LCSO	1,100	1,125	2,225	122,000
Mundelein	800	600	1,400	31,600
North Chicago	400	-	400	29,500
Park City	250	-	250	7,400
Vernon Hills/Countryside Fire	850	1,350	2,200	65,000
Wauconda	650	150	800	21,100
Waukegan	1,150	250	1,400	88,500
Winthrop Harbor	200	-	200	6,800
Zion	450	800	1,250	24,200

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SECTION 4 & 5 – ESTABLISHING A VISION FOR REGIONALIZED DISPATCHING

Summary of Conclusions and Recommendations

The following sections provide detailed information regarding the approach that was taken to gathering and analyzing all of the information necessary to formulate the conclusions and recommendations reached in this report. Because of the size and complexity of the consolidations envisioned by the County it was discussed and agreed that 2 future models would be defined.

The first being a Semi-Consolidated Model where the goal is to achieve regionalization of communications without the need for any significant facility construction. This model would include the establishment of the governance structure as well as the administrative and management positions to effectively run the consolidated environment. The goal of this model would also be to achieve as much overall system integration as possible.

The second model is the Fully Consolidated Model where 2 new facilities are constructed to house Emergency Communications for the entire County. Full system integration is achieved and each facility is equipped to act as the back-up for the other. The Fully Consolidated Model provides further benefits with regard to staffing levels and ongoing capital expenditures.

Annual Operating Expense savings of approximately $428,000 for the Semi-Consolidated Model and $2.3 million for the Fully Consolidated Model, in addition to improved service levels for the communities of Lake County, indicate that the consolidation of the Emergency Communications for Lake County envisioned by County Administration is well worth pursuing.

Workshop for Project Phases 4 & 5

At the conclusion of the site visits to each of the individual communications centers described in Section 3 and in more detail in Appendix 4 (PSAP Chapters), the IXP and Baker Tilly team conducted a workshop for the Law Enforcement, Fire/EMS and Communications Center personnel that participated in Focus Group sessions or the onsite communications center visits. The purpose of this workshop was to review the baseline information collected to date from all of the communications centers and to outline potential future models for consolidation of dispatching services. The information and discussion at this workshop formed the foundation for the conceptual governance, operational, technology and facility models developed as part of Phases 4 and 5 of the project scope of work. The material used in this workshop has been included in Appendix 1 of this report.

During the workshop a number of consolidation advantages were discussed. These included:

- Increased ability to handle incidents within a single Dispatch Center, even if they are multi-disciplinary or multi-jurisdictional incidents This improves resource coordination, the timeliness of response and situational awareness, all of which have positive impacts on incident outcome.
- Increased depth of staffing to better accommodate surges in call volumes, or multiple simultaneous major incidents.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

- Ability to share investments in more robust facilities and systems than can be accomplished through multiple individual efforts.
- Ability to share long-term technology system lifecycle costs rather than multiple individual investment streams.
- Ability to create built-in redundancy and backup strategies within the regionalized facilities.
- Ability to offer more robust organizational staffing models including supervisory, training and quality assurance functions. These not only improve overall quality of services but also offer career paths for the personnel that are not possible in smaller Centers.
- Ability to be positioned to adapt to growth without incurring significant additional capital investments.

Several possible consolidation models were also discussed including a potential end-state model where three newly-constructed regionalized dispatch centers could be operated on a common set of technology systems. This configuration would provide a combination of physical diversity for work locations and technology system infrastructure which would increase the overall resiliency of the dispatch environment to deal with the risk of one of the facilities being disabled by a large scale natural event or human threat. A governance structure could be created to operate these facilities so that all personnel, systems and facilities were operated as a cohesive operational organization.

Also during this workshop, a potential interim consolidation model was discussed where regionalization could begin by consolidating to a smaller number of centers than in operation today while also deploying common shared systems and a regionalized governance and operational model. A further model was also discussed where a focus would be placed on shared systems initiatives so that even if physical consolidations didn't take place there could be a degree of virtual consolidation with multiple communications centers operating on common 9-1-1, CAD/Mobile and radio system infrastructures.

Additional Workshop for Elected Officials and Senior Leaders

Following the large workshop described above, further discussions were conducted with the project leadership team from the Lake County ETSB and Lake County and it was decided that a second workshop was needed but targeted at elected officials and senior leaders from the jurisdictions interested in participating. The material used in this workshop has been included in Appendix 2 of this report.

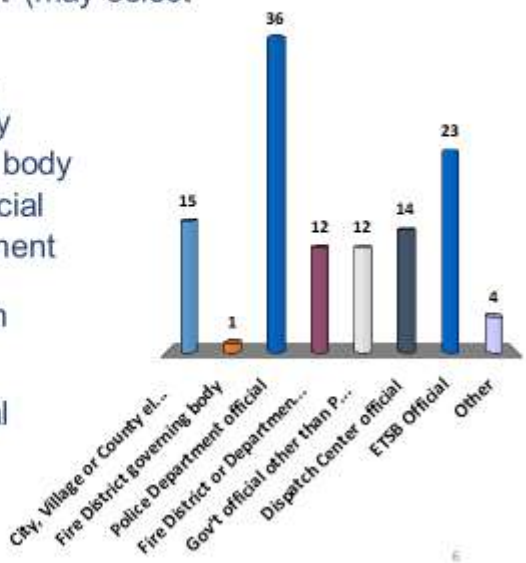
At this workshop, Lake County utilized a voting preference system that allowed tabulation of input from the attendees. Even though the event was targeted for elected officials and senior government leaders, only approximately half of the attendees identified themselves as being elected officials, senior government leaders or ETSB officials. The balance of the attendees identified themselves as representing law enforcement agencies, fire agencies or dispatch centers.

During the workshop, attendees were asked to rank their opinions on a variety of issues such as the desirability of various potential advantages of consolidation, the potential challenges to achieving consolidation, the potential end-state model for the degree of facility consolidation that should be achieved, and the preferred governance model for regionalized communications. The key slides indicating participant preferences are provided below.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

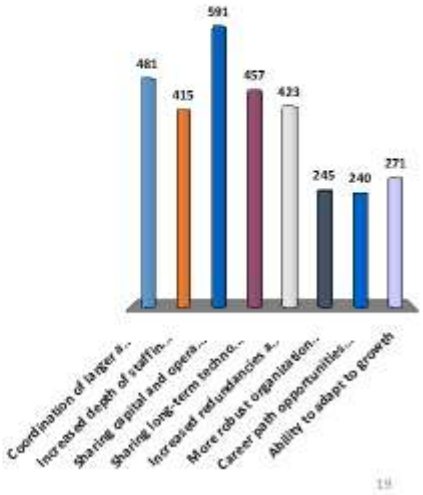
Who is here today?
Please indicate which type of organization you represent (may select more than 1).

A. City, Village or County elected governing body
B. Fire District governing body
C. Police Department official
D. Fire District or Department official
E. Gov't official other than Police or Fire (village managers)
F. Dispatch Center official
G. ETSB Official
H. Other



Please rank the desirability of the various potential advantages from the perspective of your organization (most attractive first).

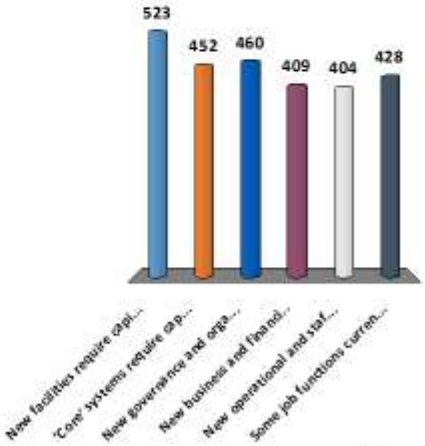
A. Coordination of larger and multi-agency incidents
B. Increased depth of staffing to handle surges
C. Sharing capital and operational costs
D. Sharing long-term technology lifecycle costs
E. Increased redundancies and backup capabilities
F. More robust organizational structure
G. Career path opportunities for personnel
H. Ability to adapt to growth



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Based on what you know so far, please rank the potential challenges (greatest/most challenging first)

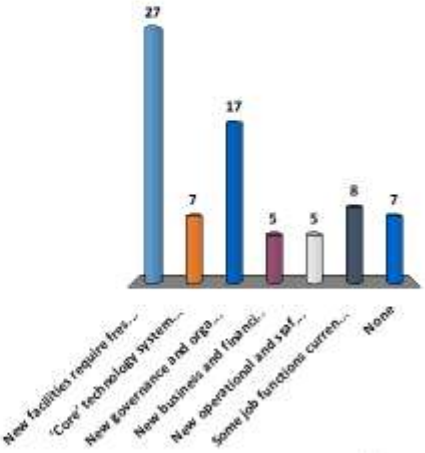
A. New facilities require capital investments
B. 'Core' systems require capital investments
C. New governance and organizational structures are needed
D. New business and financial models are needed
E. New operational and staffing models are needed
F. Some job functions currently done by Dispatch need to shift to other personnel or be done differently



22

Based on what you know so far, please identify a **single** challenge that might discourage you from joining into Regionalized Dispatch.

A. New facilities require fresh capital investments
B. 'Core' technology systems require capital investments
C. New governance and organizational structures needed
D. New business and financial models needed
E. New operational and staffing models needed
F. Some job functions currently done by Dispatch need to be shifted to other personnel or done differently
G. None



23

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Please rank your initial interest, from most preferred to least preferred, in the appropriate level of regionalization of 9-1-1 and Dispatching.

A. Countywide service out of 2 newly constructed redundant dispatch facilities.

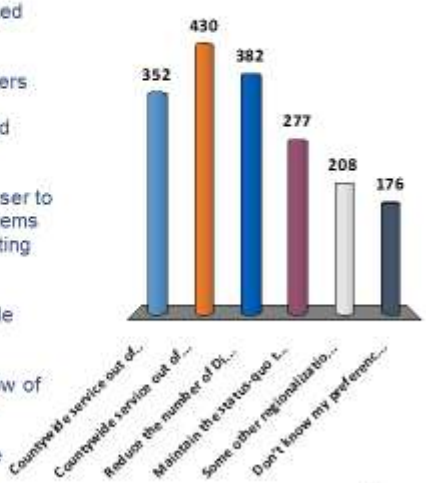
B. Countywide service out of 3-5 dispatch centers that operate on shared systems out of a combination of new and/or existing expanded facilities.

C. Reduce the number of Dispatch Centers closer to 6-8 centers that share most technology systems out of some combination of new and/or existing expanded facilities.

D. Maintain the status-quo to the extent possible under legislative requirements.

E. Some other regionalization strategy you know of or emerging from your group's discussions.

F. Don't know my preference today, need more information and the financial modeling.



33

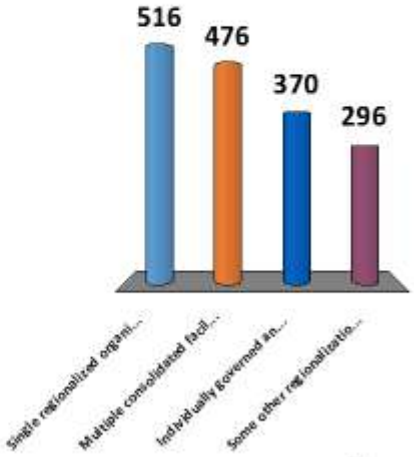
Please rank your initial interest, from most preferred to least preferred, on the governance model you feel should be used for regionalizing 9-1-1 and Dispatching.

A. Single regionalized organization with two redundant facilities, common technology systems and a single governance model.

B. Multiple consolidated facilities with separate governance structures for each operation and intergovernmental agreements for shared system strategies.

C. Individually governed and operated Dispatch Centers.

D. Some other regionalization strategy emerging from your group's discussions.



34

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Following the workshop, further discussions were conducted with the project leadership team from the Lake County ETSB and Lake County. In these discussions the concept of a regionalized dispatch organization operating out of a pair of redundant facilities was discussed. While a three-facility model had been discussed at both workshops, it became clear on further discussion that a two-facility model could provide sufficient redundancy and capability while minimizing the level of capital investment needed in facility construction and technology system costs. This two-facility concept was therefore identified as "Fully Consolidated Model" for the more detailed staffing, technology and facility planning efforts in Phase 6 of the project.

These further discussions also focused on an interim model where physical consolidations would be done to the maximum level capable within the current inventory of facilities and without requiring significant construction or remodeling efforts. These facilities would also be migrated to common systems and operate under a regionalized governance model. IXP was asked to identify the facilities most capable of meeting this need and develop the requirements for this "Semi-Consolidated Model" scenario.

In addition to the staffing, technology and facility planning needed for the Phase 6 financial analysis, IXP was also asked to outline a potential governance model to operate either the Semi-Consolidated or Fully Consolidated scenarios.

Finally, recognizing that it will likely take a number of years to migrate from the current environment to the Semi-Consolidated environment, and then likely even longer to achieve the Fully Consolidated model, IXP was asked to characterize the kinds of interim migration actions that could be taken to move from the current state to the Semi-Consolidated environment.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Initial Transition Phase to Achieve Regionalized Public Safety Communications Organization with Multiple Facilities

The Initial Transition Phase assumes that a single regional communications organization and governance structure is created and transitions to operating a regionalized communications organization out of the smallest number of existing facilities possible. The stated goal for Semi-Consolidated state is to achieve regionalization of communications without the need for any significant facility construction activities. These facilities would also be migrated to common core systems so that they could provide backup and redundancy to each other as needed. This overall migration will likely take some considerable period of time, and there will only be gradual opportunities for operational level staffing reductions as the various shared technology systems are established and the multiple facilities gain efficiencies in supporting the workload of each other.

This section provides observations on the likely governance and organizational structure that would need to be established for both the Semi-Consolidated and Fully Consolidated scenarios. These structures would likely be implemented over a period of time as the organization begins the process of moving towards the Semi-Consolidated mode of operations.

Governance Structure

Governing Board – This Board would be responsible for the overall governance and oversight of the organization and serve as the top policy-making and budget approval body in the organization. The Board would be composed of either elected officials or senior appointed officials representing the variety of organizations served by the consolidated dispatch organization, including cities, villages, fire districts and the county.

Joint Operations Board – This Board would be responsible for the routine oversight of the consolidated dispatch operations and work with the Executive Director of the organization to guide and provide approval of the operational policies and procedures of the organization. This Board would be composed of representatives from the Law Enforcement Operations Advisory Committee and the Fire/EMS Operations Advisory Committee to provide a balanced operational board sized to efficiently conduct their business while representing the diverse mix of law enforcement and fire/EMS agencies served by the organization.

Law Enforcement Operations Advisory Committee – This Committee would be composed of the Chiefs (or their designees) from each of the law enforcement organizations served by the communications center. This Committee would work with the Executive Director and staff of the organization to guide the operational policies and procedures of the organization as they relate to the dispatching and support of law enforcement services.

Fire/EMS Operations Advisory Committee – This Committee would be composed of the Chiefs (or their designees) from each of the fire/EMS organizations served by the communications center. This Committee would work with the Executive Director and staff of the organization to guide the operational policies and procedures of the organization as they related to the dispatching and support of fire and EMS service.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Operational Organization Structure
The organizational structure for the Semi-Consolidated scenario would be the same as for the Fully Consolidated scenario for the management and support staff positions since the Semi-Consolidated scenario assumes that the multi-center operation is still operating as a single agency under a common governance and management structure. The differences will be in the staffing of the communications centers themselves since multiple facilities will be in use rather than the two envisioned in the Fully Consolidated scenario. The organizational structure described below can develop over time as the organization requires.

The recommended organizational structure described in this report is based on a combination of IXP's own experience operating multi-jurisdictional communications centers coupled with years of consulting experience conducted for communications agencies of varying sizes. While staffing level recommendations for the various Call Taker, Dispatcher and Supervisor positions are driven by workload considerations, the staffing mix for the administrative structure of the organization is based on a combination of IXP's experience and observations from two agencies with many similarities to the consolidation under consideration in Lake County.

It is also important to note that the current communications center organizations have a total of only 13 personnel working in management and support roles, with 9 of these in roles center management roles and only 1.5 FTEs in formal tech support roles (see Table 5 on Page 29). Organizational support roles such as accounting, human resources, technology support and similar functions are largely supported by the agencies/jurisdictions themselves and are not reflected in the staffing counts provided for the current communications centers. Stand-alone organizations as envisioned for both the Semi-Consolidated and Fully Consolidated models will need to provide all of these support functions with internal staff, leading to an overall staffing level slightly higher than that reflected in the current organizations.

One of these examples is South Sound 911, an agency that provides countywide 9-1-1 and dispatch consolidation for Pierce County, WA. The agency serves a population of approximately 844,000 and a total of 19 Law Enforcement and 20 Fire/EMS agencies, and they operate with a total combined staff of 226 personnel. The second example, Valley Communications Center in King County, WA serves a total population of 697,000 and a total of 9 Law Enforcement and 12 Fire/EMS agencies, with a total combined staff of 130 personnel. Correlations to these two operations are noted below for many of the recommended positions. *Please see Appendix 5 for further details on these 2 centers.

(Underlined indicates members of the Senior Management Team)

> Executive Director (1) – This position would function as the chief executive officer of the organization and be directly responsible to the Governing Board for the operations of the organization in conformance with the policies and budgets established by that Board. The Executive Director would accomplish this responsibility through delegated responsibilities and authorities to a Senior Management Team composed of subordinate Deputy Directors and functional Managers. A position of this nature is consistently found in large stand-along multi-jurisdictional communications agencies.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Executive Admin Assistant – This position would directly support the Executive Director and provides scheduling, communications, records management and related support functions for the ED and the Senior Management Team. A position of this nature is present in both of the examples and from IXP's experience is typically found in agencies of this size and complexity.

Business Operations Manager/CFO (1) – This position would serve as the chief financial officer of the organization and have functional responsibility for all accounting, human resources and administrative support functions for the organization. This position would report directly to the Executive Director and serve on the Senior Management Team. A position of this nature is present at both South Sound 911 and Valley Communications, and from IXP's experience is typically present in agencies of this size and complexity.

Human Resources Manager (1) – This position would be responsible for managing and operating all of the human resource functions of the organization including recruiting and hiring processes, benefits administration, labor negotiations and payroll administration. This position would report to the Business Operations Manager and would also serve on the Senior Management Team. A position of this nature is present at both South Sound 911 and Valley Communications, and from IXP's experience is typically present in agencies of this size and complexity.

Human Resources Generalist (1) – This position would be responsible for working with and supporting the Human Resources Manager in the execution of all human resource functions of the organization. This position would also provide general administrative support for the Business Operations group as needed. Both South Sound 911 and Valley Communications operate with a combination of an HR Manager and an HR Generalist to support their organizations, and this is a combination IXP has seen in many other agencies of this size.

Lead Accountant (1) – This position would be responsible for maintaining the financial records of the organization and the routine processing of accounts receivable, accounts payable, and payroll processing. This position would report to the Business Operations Manager. South Sound 911 supports their overall finance, accounting and payroll operations with a total of four personnel and Valley Communications covers these functions with two personnel. IXP recommends a combined staffing of three personnel for these functions in the Lake County structure, this position coupled with the Business Operations Manager/CFO above and the Accounting Assistant below.

Accounting Assistant (1) – This position would be responsible for working with and supporting the Lead Accountant in the execution of all financial processes of the organization. This position would also provide general administrative support for the Business Operations group as needed. This position would report to the Lead Accountant. The rationale for this position is discussed above.

Administrative Assistants (1) – This position would provide generalized administrative support for the organization and report to the Business Operations Manager. The position would support the operations of the central management of the organization.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Technology and Facilities Manager (1) – This position would provide managerial and technical oversight for all of the organization's facilities and technology systems. This requires a combination of administrative and hands-on technology management and the establishment of a cohesive technology support team with enough cross-training and depth to provide 24-hour support for all of the organizations facilities and systems. This position would report directly to the Executive Director and be a part of the Senior Management Team. Both South Sound 911 and Valley Communications have a position similar to this in their organizations, and from IXP's experience this type of position is typically present in agencies of this size and complexity. In addition to this Manager position, IXP recommends six additional positions (described below) for a total of seven personnel assigned to these responsibilities. South Sound 911 operates with a total of ten personnel in these types of roles, but they support some radio system functions that would not be a part of the Lake County structure. Valley Communications operates with a total of seven personnel in these types of roles.

Network Administrator (1) – This position would have primary responsibility for all IP and legacy networking to support the entire organization as well is inter- and intra-facility networking, interfaces to external networks and service providers and interfaces to customer agency networks. This position would also support other facility infrastructure technology systems as needed. This position would report to the Technology and Facilities Manager.

CAD System Administrator (1) – This position would have primary responsibility for administering the CAD system and other systems and/or external interfaces related to the CAD/Mobile environment. This position would also support other facility infrastructure technology systems as needed. This position would report to the Technology and Facilities Manager.

GIS/9-1-1 Database Specialist (1) – This position would have primary responsibility for keeping the GIS data utilized by the CAD and 9-1-1 telephone systems up to date and accurately reflecting both the jurisdictional boundaries of the agencies being served and the operational boundaries or zones being used for 9-1-1 call distribution and CAD unit assignments. This position would also support other facility infrastructure technology systems as needed. This position would report to the Technology and Facilities Manager.

System Support Technicians (4) – These positions would provide a variety of technology support functions including supporting desktop workstations utilized in the communications centers and applications installed on user-agency mobile workstations. These personnel would also provide routine monitoring and support for facility technology systems (power systems, communications systems, security systems, etc.) and coordinate vendor support of these systems as needed. These personnel would also support other facility infrastructure technology systems as needed. These personnel would report to the Technology and Facilities Manager.

Standards & Professional Development Manager (1) – This position would provide managerial and functional oversight of the training and quality assurance programs of the organization. This position would report directly to the Executive Director and be a part of the Senior Management Team. Both South Sound 911 and Valley Communications have positions similar to this in their

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

organizations, and from IXP's experience a position of this nature is typically present in agencies of this size and complexity, particularly with the agencies being served are engaged in Law Enforcement of Fire accreditation programs. In addition to this Manager position, IXP recommends three additional personnel (described below) for a total of four personnel to meet these responsibilities. South Sound 911 operates with a total of three personnel in these types of roles and Valley Communications has two personnel in these roles. However, both of these organizations are structured out operate out of a single facility, so the additional position in this recommended mix is based on the need to support training activities at both of the facilities in the Model 1 scenario.

Training Coordinator (1) – This position would be responsible for the overall development and delivery of training for the operational personnel in the organization (Telecommunicators, CTOs, Shift Supervisors and Lead Shift Supervisors). This position would report to the Standards and Professional Development Manager and have a group of Trainers working with them to develop, coordinate and/or deliver operational training for the organization. The Training Coordinator and Trainers would also work closely with the Quality Assurance Analyst to match training content and delivery to achieving identified performance and quality standards.

Trainer (1) – This position would be responsible for the development and delivery of training to the organization's operational personnel. They would work in a combination of office, classroom and communications center settings to best meet the needs of the organization and personnel. This position also works closely with Quality Assurance Analyst and these personnel would report to the Training Coordinator.

Quality Assurance/Quality Improvement Analyst (1) – This position would be responsible for administering the organization's Quality Assurance program and conducting the routine audits and reviews of organizational performance. This would include developing and producing routine reports and dashboards of organizational performance. This position would report to the Standards and Professional Development Manager and coordinate with this Manager, the Training Coordinator and the Trainers to identify changes or updates needed in the training programs of the organization to allow it to meet its operational performance and quality standards.

Communications Center Managers* (These positions are not required in the Fully Consolidated state)– Each of the organization's operational locations would be managed by a Communications Center Manager. These positions would serve as the operational leaders of each of the communications center operations with one assigned to each facility. These personnel would work closely with each other and the Standards and Professional Development personnel to maintain a consistent level of service and performance across all of the facilities operated by the organization. These personnel would report directly to the Executive Director and be a part of the Senior Management Team. While this significantly expands the span of control for the Executive Director during the period of time the organization operates in the Transitional and Semi-Consolidated framework, it helps assure that each of the facility Managers have direct access and coordination with the Executive Director to make sure the entire organization is being operated on a consistent basis.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Shift Supervisors – These positions would be responsible for directly monitoring and managing the operations of the Telecommunicators on each shift. These personnel would report to the Communications Center Managers for their assigned work locations.

Telecommunicator/CTO – These positions would be working Telecommunicator 3 personnel with additional assigned duties and certifications to allow them to take responsibility for the completion of on-the-job training for Telecommunicator 1 or 2 personnel following their formal classroom training for their next level of qualification.

Telecommunicator 3 – These positions represent the highest level of cross-trained Telecommunicators, capable of working in any assigned Call Taker, Police Dispatcher of Fire/EMS Dispatcher position.

Telecommunicator 2 – These positions represent the initial level of cross-trained Telecommunicators, capable of working as both a Call Taker and Police Dispatcher or as both a Call Taker and Fire/EMS Dispatcher.

Telecommunicator 1 – These positions represent the entry level position in the Telecommunicator category. Personnel in this category would include personnel in training and personnel that have completed Call Taker training and are working in the organization as Call Takers.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Discussion Regarding Turnover Factors and Overtime

While it is true that industry-wide turnover rates from 17-19% are not uncommon in communications centers, based on the feedback received from the Lake County communications centers, local experience is not this high. While exact figures were not provided by enough of the comm centers to arrive at a turnover factor that could be used with confidence, it is likely that local experience is far lower than the industry-wide sampling.

In developing the staffing models for the Semi-Consolidated and Fully Consolidated Model it was decided to not include a turnover factor that would further escalate the number of employees in each model. This seemed reasonable for several reasons:

- In the Semi-Consolidated Model the Supervisors are assumed to be able to work operational positions in the communications center, providing extra staffing when needed to meet peak workload demands even with vacant positions.

- It's not possible at this stage of modeling to accurately predict how efficient the dispatching side of operations might become, particularly in the law enforcement community. Where possible current channel-sharing relationships were taken into consideration when thinking about the number of law enforcement dispatch positions that will be needed, but it is quite possible operations could be conducted on fewer channels and therefore require fewer dispatchers, creating some slack in the staffing model even without a turnover factor.

- Finally, the best mechanism to handle budgeting for overtime is always a challenge in public safety communications centers. The need for using overtime to fill positions can be driven by a number of factors, such as having unfilled vacancies, sick leave utilization being higher than planned in the staffing model, extended leaves, or higher than average call volumes during the busier months of the year. While overtime costs driven by unfilled vacancies can typically be covered in the budget through the salary and benefit savings derived from the vacancy, all of the other factors will require some degree of overtime budget to cover their costs when they occur. It is not uncommon to see budgeted overtime (as a percentage of base compensation costs) in the 8% to 10% range, and this seems reasonable for the initial planning assumption for this planning effort.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Semi-Consolidated Facility and Technology Change Concepts

The Semi-Consolidated Model would operate out of a combination of multiple existing facilities that could be reconfigured without significant construction activities to accommodate the additional positions needed to meet the needs of the agencies they would be assigned to serve. After examining each of the existing facilities during the site visit process, it is IXP's opinion that there are nine (9) facilities that meet this need.

1. CenCom – This facility has no room for physical expansion, but the current configuration of working positions in the center would allow it to take on new customers if needed. The current size of their operation make it unlikely that they could be economically integrated into any of the other existing facilities. If no additional agencies are added there would be no need to alter any of the existing systems until such time as regional shared-system decisions are made as part of implementing the Semi-Consolidated scenario. If agencies are added, consideration will need to be given to making incremental 9-1-1, CAD and radio changes to accommodate those new agencies. CenCom is already a user of the shared Lake County ETSB EnRoute CAD system which has proven very adaptable to support agency migrations at FoxComm and Lake Zurich.

2. FoxComm – This facility is already expanding their operation to a total of 8 positions and will be able to accommodate additional customers even after bringing in Lakemoor and Park City. Since the facility is below grade and the building reinforced as part of creating the communications center space, the facility is inherently resistant to storm and related damage. Fox Lake has also identified additional expansion/construction alternative that could increase the size of their facility considerably more, but significant sub-grade construction would be needed to accomplish this. New radio console and logging recorder systems, including control station interfaces to the StarCom trunked radio system, are being implemented to support the current customer growth and to allow additional customers to be added in the future. FoxComm already utilizes the shared Lake County ETSB EnRoute CAD system and is planning a migration to the shared Solacom 9-1-1 system in the future. Further technology changes will likely only need to be incremental until such time as regional system decisions are made as part of the fully regionalized Semi-Consolidated scenario.

3. Glenview's North Facility – This facility has some room for expansion and could potentially absorb customers that are a good geographical and technological fit. The most likely scenario might be for the Deerfield dispatch operation to merge into this facility since they are already New World users and share many geographical boundaries with agencies already dispatched by Glenview. The partner South Facility at Glenview has significant expansion capability. The Glenview facilities already operate on the StarCom trunked radio system so adding StarCom users is easily accomplished from a technological standpoint. Their New World CAD system and Cassidian 9-1-1 phone system have already demonstrated their ability to support multiple agencies and could be incrementally modified as needed to accommodate new customers if needed, particularly agencies already utilizing New World CAD or RMS systems. Significant technology changes would likely not be needed until such time as regional system decisions are made as part of the fully regionalized Semi-Consolidated scenario.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

4. Gurnee – This facility has some room for expansion and could add and reconfigure positions to allow it to serve several additional customers. The most likely scenario might be for the Gurnee facility to pick up servicing neighboring jurisdictions such as Winthrop Harbor, Zion and Park City. Gurnee has expressed a strong interest in expanding their operation to support additional customers, even beyond these neighboring jurisdictions. Recently implemented 9-1-1 phone system and radio console system replacements position the center to add additional customers with incremental changes to these systems. Their PSSI CAD system can be incrementally modified to support additional customers and further significant technology changes would likely not be needed until such time as regional system decisions are made as part of the fully regionalized Semi-Consolidated scenario.

5. Lake County Sheriff's Office – This facility has no room for physical expansion and is anticipated to remain operating as it does today until broader consolidation strategies with new facilities can be realized. The size and nature of the Sheriff's operation make it unlikely that they could be economically integrated into any of the other existing facilities. The current technology systems, including the new radio console system for the StarCom trunked radio system, position the center to sustain operations with very few technology issues until such time as regional system decisions are made as part of the fully regionalized Semi-Consolidated scenario.

6. Lake Zurich – This facility has some room for increasing the number of positions and is already taking on additional customers due to the closure of the Wauconda center. Lake Zurich has also identified a facility expansion/construction strategy that could expand the exterior footprint of the communications center to create even more expansion opportunities. The center already operates on the Lake County ETSB shared EnRoute CAD system and the new Solacom phone system. Their radio console system has been incrementally modified to support StarCom radio system users as needed, so other than incremental changes to support any further new customers, the systems should support operations until such time as regional system decisions are made as part of the fully regionalized Semi-Consolidated scenario.

7. Mundelein – This facility has room for expansion and reconfiguration to allow it to service additional customers. This might be a good location to serve the agencies currently dispatched out of Deerfield if moving them to Glenview's operation isn't practical. Keeping this facility in operation also creates some capacity for backup and/or growth in the Semi-Consolidated scenario if an extended period of time is needed to achieve the Fully Consolidated facilities. The center already has radio console and phone system equipment that will allow it to operate for several years without incurring significant changes other than incremental modifications. Since this facility is already part of the shared Lake County ETSB EnRoute CAD system it is well suited to serve as an expansion or backup resource in the regionalized Semi-Consolidated scenario. Further technology changes should not be needed until such time as regional system decisions are made as part of the fully regionalized Semi-Consolidated scenario.

8. Vernon Hills/Countryside Fire – This facility has room for expansion but it would require some relocation of support staff spaces (which was considered highly feasible in discussions with Vernon Hills personnel – and they expressed a strong interest in expanding their operations to support additional customers). Expanding the Countryside Fire operational space as a part of this

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

growth could provide a good opportunity to provide service to the Lake County fire agencies currently being dispatched out of RED Center. There are some unique technological considerations with this center since the Vernon Hills operation is run on their New World CAD system and the Countryside Fire operation is run on the shared Lake County ETSB EnRoute CAD system. This dual-CAD environment is successfully meeting the needs of each operation and could likely remain in place until regional systems decisions are made for the regionalized Model 2 scenario. The 9-1-1 phone system is due for replacement, so if regional shared-system decisions can be reached in time, it is possible that the system selected for the Semi-Consolidated scenario could be implemented at that time. The center already has radio consoles in place that can support incremental changes if new customers are added, so no further technology changes should be needed until the fully regionalized Semi-Consolidated scenario is implemented.

9. Waukegan – This facility has no space for additional positions, but the current position configuration could allow them to take on some additional work. The most likely scenario seems to be that they could provide services to North Chicago given their geographic proximity and shared borders, but other partnerships are also certainly possible. The center's current telephone, CAD and radio console systems could be incrementally modified to accommodate new customers, and further significant technology changes should not be needed until such time as the fully regionalized Semi-Consolidated scenario is implemented.

With these 9 facilities retained for the operation of the Semi-Consolidated scenario, the following communications centers would be closed:

1. Deerfield – This facility is small with no opportunity for growth, so it is not viable for consideration as one of the facilities to expand to accommodate the Semi-Consolidated scenario.
2. North Chicago – This facility is small with no opportunity for growth, so it is not viable for consideration as one of the facilities to expand to accommodate the Semi-Consolidated scenario.
3. Park City – This facility is very small with no opportunity for growth
4. Wauconda – This facility is now no longer in operation
5. Winthrop Harbor – This facility is very small with no opportunity for growth
6. Zion – This facility is reasonably sized but has limited growth opportunity, so it is not viable for consideration as one of the facilities to expand to accommodate the Semi-Consolidated scenario.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Migration Activities from the Current State to the Semi-Consolidated Scenario

Until the complete organizational structure is put in place, there would likely be a variety of incremental actions that would take place.

- The initial transitionary steps will focus on making the formal decision to move towards the regional model. It is impossible to predict if all agencies will agree to embrace this migration at the same time, so there will likely be a number of incremental consolidations of dispatch centers and ETSBs to meet current State legislative requirements. To the extent possible, these transitions should be done in a collaborative manner with all other agencies interested in moving towards the regional consolidation model so that each incremental change can be moving towards a common goal.

  Based on the 9 facilities identified in the Semi-Consolidated scenario, and the State legislative requirement for ETSBs serving populations of under 25,000 to merge with other ETSB's to get over this population threshold, the following ETSB consolidations would also likely take place concurrent with the migrations of communications center operations:

  1. CenCom's JETSB would likely remain in place as is and only expand if they picked up agencies that had associated ETSBs of their own such as the Barrington ETSB (est. population 10,373)

  2. The Deerfield/Bannockburn ETSB (est. population 19,968) would need to be consolidated with whichever ETSBs are engaged in the communications center that they migrate to. It was initially thought that this ETSB might be a natural candidate for merging into a single Joint ETSB with the Highland Park ETSB (est. population 29,871), Grayslake ETSB (est. population 21,018), Lake Bluff ETSB (est. population 5,698), Lake Forest ETSB (est. population 19,379) and Highwood ETSB (est. population 5,387). However, these other ETSB's have now formed a large Joint ETSB with Glenview, Morton Grove and Niles, all jurisdictions that are part of Glenview's integrated 2-facility dispatch operation. Merging with the new Glenview JETSB may still be a possibility, but it also might be reasonable for Deerfield to consider merging with another ETSB and PSAP operation such as Mundelein, with an ETSB already over the 25,000 threshold (est. population 31,562).

  3. The Fox Lake ETSB would likely remain in place and expand if needed to accommodate any new agencies that have ETSBs associated with them.

  4. The Gurnee ETSB would likely expand into a JETSB to include any additional ETSBs that are associated with any new agencies that join to operate out of the Gurnee facility. It was initially thought that this might include the Park City ETSB (est. population 7,440) and dispatch operation, but they are already on a path to joining the Lake County ETSB and having dispatching performed by FoxComm. Other small ETSBs in Gurnee's vicinity include the Zion ETSB (est. population 24,264) and Winthrop Harbor ETSB (est. population 6,730) or North Chicago (est. population 30,395).

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

5. The Mundelein ETSB (est. population 31,562) would likely remain in place as is unless they integrated Deerfield/Bannockburn into a JETSB.

6. The Vernon Hills ETSB (est. population 25,911) could expand into a JETSB and include the Libertyville ETSB (est. population 20,512) and the Lincolnshire ETSB (est. population 7,292) since they are already partners in the dispatch operation.

7. The Waukegan ETSB (est. population 88,915) could remain as is or expand to include any merged dispatch customers such as North Chicago (est. population 30,395) if they were to merge dispatch with Waukegan rather than Gurnee or others.

8. The Lake County ETSB would also remain in place as is with the Lake County Sheriff's Office and Vernon Hills/Countryside Fire dispatch centers operating under their auspices. As is already underway with Park City, the Lake County ETSB could become a merger partner to other smaller ETSBs that need to take action to meet legislative requirements.

- Working towards agreements on common technology platforms will likely be the next most important body of work to tackle. For example, if the Lake County ETSB's new Solacom 9-1-1 phone system proves itself as a high-quality NG911 transition platform, regional agreement could be reached for each of the communications centers that will continue to operate in the Semi-Consolidated scenario to begin the migration to this platform. Similar work will need to be done to see if agreements can be reached on a common CAD/Mobile environment. If a single-vendor solution can't be agreed to in a reasonable period of time, then it would likely be helpful to at least concentrate on migrations to the smallest number of vendors' systems as possible and work to establish CAD-to-CAD interfaces wherever possible. APCO International's Public Safety Communications Common Incident Types for Data Exchange standard (APCO ANS 2.103.1-2012) and their Public Safety Communications Common Status Codes for Data Exchange standard (APCO ANS 1.116.1-2015) could both provide useful references in the process of either migration to a common CAD environment or in establishing CAD-to-CAD interfaces.

  As mutual agreements begin to form on the selected common technology platforms, work should also commence to identify funding strategies for the procurement and implementation of these systems. This may involve collaborations between both the participating agencies and the ETSBs that support them. It may also be a natural stepping off point for the planning and creation of the new governance model/organization that will ultimately operate the regionalized dispatch organization.

- As planning for the regional organization progresses, details on things like governance/decision-making structure, banking relationships, payroll/benefit strategies, accounting processes, legal representation and the like can be worked out in advance so the organization is ready 'on paper' so that it can be formally created when there is a broad enough level of consensus that it is time for the regional organization to be launched.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

- This would likely also be the point where detailed planning, discussions and negotiations would begin with the various bargaining units that represent the personnel at the communications centers being consolidated. Up to this point, it is likely that each of the communications centers that were identified to continue in the Semi-Consolidated scenario would have individually been dealing with integration of staff from centers that were closing (much like what has been happening as a result of the closure of the Wauconda communications center). But as planning progresses on creation of the common organizational structure for the fully integrated Semi-Consolidated environment, a new collective bargaining relationship will ultimately be needed with the new regional operational entity.

  Even though the current CBAs don't require more than 60-90 days' notice of an intent to alter the body of work, the practical reality is that several months of planning, discussions and negotiations will likely be needed to establish a compensation, benefit and work-rule model for the new organization going forward. While many of the current CBAs have a number of common or very similar characteristics, there are also many differences in things like compensation, compensation progression, leave accrual rates and usage, and supplemental benefits and work rules.

Integrating these differences needs to be accomplished through an inclusive and collaborative process that looks at the entirety of the new organizational structure, the roles and responsibilities of the positions within that structure and the overall mix of compensation, compensation progression, benefit, work-rule and career advancement opportunities created by the new structure. Certainly the current CBAs will provide a starting point for work on many of these issues, but the process needs to broadly examine the entire new organizational reality rather than just combining the most advantageous characteristics of each of the separate agreements, which were shaped over time to address the particular circumstances of their individual organizations rather than a fully regionalized operation with many layers of personnel duties and responsibilities.

- Launching the consolidated operational model would not necessarily trigger a full consolidation of the ETSBs associated with the Semi-Consolidated scenario. Since current state rules preclude any ETSB operating more than two communications centers, it would likely be difficult to move to a single ETSB structure that supported nine operational communications centers. Therefore, it seems likely that the ultimate move to a single ETSB structure for all of Lake County would need to coincide with the migration to the Fully Consolidated operational scenario.

- Once the new organization is fully established and operating in the Semi-Consolidated scenario further attention can be turned to developing the financing models to be used to fund the creation of the Fully Consolidated end-state newly constructed facilities.

This will obviously be a long and often challenging process to move through to successful outcomes. It will require a high degree of political and operational leadership among the participating agencies to keep their focus on the long-term operational and economic benefits that regionalization can bring.

Lake County would not be alone in this pursuit. A recently created organization in Pierce County, Washington (population approximately 844,000) called South Sound 911 is already working on a plan

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

very similar to this. They utilized a combination of their existing 9-1-1 surcharge revenues and a new local option sales tax opportunity to create a funding mechanism to form the new countywide regionalized communications agency; implement a common CAD/Mobile environment; implement a common radio network; and consolidate some of their smaller communications centers into larger existing centers.

They are now working to bring all of the employees from these consolidated centers under the common employment of the new agency, and moving forward with the planning and construction of their end-state newly constructed facilities. They are well along the path to what is characterized here as Semi-Consolidated, and plan to complete the migration to being Fully Consolidated within the next 3 years. Their management has offered to share any of their experiences and lessons learned along the way to assist Lake County achieve a successful outcome.

The Transitional Phase assumes that as physical consolidations take place, personnel from the closing communications centers would shift to positions within the overall organization. This is because it won't be possible to achieve the operational efficiencies of consolidation until all of the common system strategies are put in place and operational procedures are normalized across all of the operational locations. As the Transitional Phase stabilizes operations in the final mix of facilities and on the final mix of common systems, it is likely that personnel count reductions could be achieved that approach the Fully Consolidated efficiency. These reductions could likely be accomplished through attrition as operational efficiencies are realized.

Current Responsibilities at Existing Communications Centers That Would Undergo Some Degree of Change with the Consolidation of Communications

Communications Center	Duties Currently Performed That Would Need Alternative Support Mechanisms with Consolidated Communications
CenCom	• Maintenance and upkeep of the jail facility, Livescan system and cameras, and the operation of sally port and jail entry doors* • Video and audio monitoring of jail areas and logging prisoner checks in CAD*
Deerfield	• 24-hour lobby window support • 24-hour answering of Police business lines • Video and audio monitoring of jail areas and logging prisoner checks in CAD • Female jail matron duties when needed • Monitoring of security alarms at Village facilities
FoxComm	• Video and audio monitoring of jail areas and logging prisoner checks in CAD* • Female jail matron duties when needed • Ordering of prisoner meals • Control of sally port and jail entry doors* • 24-hour answering of Fox Lake PD business lines • After-hours answering of customer Police agency business lines
Glenview PSSS	• Video and audio monitoring of Highland Park jail cells and logging prisoner checks in CAD*
Gurnee	• Lobby window support during hours that Records isn't open* • After-hours answering of Police business lines • Video and audio monitoring of jail areas and logging prisoner checks in CAD* • Female jail matron duties when needed

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Lake County Sheriff's Office	• None noted
Lake Zurich	• Lobby window support during hours that Records isn't open* • Video and audio monitoring of jail areas, physical observation of prisoners through cell door windows, and logging of these checks in CAD* • After-hours call answering for Lake Zurich Public Works
Mundelein	• 24-hour lobby window support* (this includes a broader array of services than observed in other jurisdictions, including: receiving payments for prisoner bonds, traffic & parking citations, fingerprinting and water bills; overseeing exchanges of custody; sale of Metra passes; calling Taxi services)
North Chicago	• None noted
Park City	• 24-hour answering of Police business lines • 24-hour lobby window support
Vernon Hills/Countryside Fire	• After-hours lobby window support, including receipt of payments for prisoner bonds and parking citations * • Female jail matron duties when needed for all three agencies served • 24-hour answering of Vernon Hills Police business lines • After-hours answering of business lines for customer agencies
Waukegan	• Point of contact for sick leave call-in for City Yards
Winthrop Harbor	• After-hours lobby window support (includes receipt of fees and fines, and water bills) • After-hours call answering of Police business lines • Supporting the booking process
Zion	• After-hours lobby support via intercom phone • After-hours call answering of Police business lines
*Could conceivably be retained during semi-consolidated operations since this facility remains in operation, but would need to be handled differently when fully consolidated operations commenced	

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Methodology for Estimating Call Taker Staffing Levels in Fully Consolidated and Semi-Consolidated Models

Estimated staffing levels for supervisory and Telecommunicator personnel were established based on data provided by the current PSAP operations and applying industry best practices. Collecting and normalizing this data proved to be an exceptionally challenging undertaking since there was a very low level of consistency in the types of telephone call volume data that each of the PSAPs was able to provide. Some were only able to provide 9-1-1 call volume data and had no statistics on 10-digit call volumes. Others were able to provide total counts of 10-digit call activity but could not differentiate between incoming and outgoing call volumes. Others provided no data at all or only estimates based on incomplete data from their phone systems or other sources.

However, even with these data inconsistencies, it was possible to collect a fairly consistent understanding of telephone call volumes for calendar year 2014 and 2015 across all of the PSAPs that provided data (very limited data was provided for 2013 and was therefore not utilized), and this information has been used along with 2014 and 2015 population data to establish estimated telephone call volume averages for the county as a whole. (Please see Table 11 below) This information is then used to develop staffing level estimates for the potential future state models identified in this report.

9-1-1 telephone call volume data was the most consistent body of information available. For 2014 there was an average of 0.48 9-1-1 calls per capita across all of the primary PSAPs in Lake County. Data provided for overall 10-digit call volumes indicated a total of 2.1 10-digit calls per capita. It is important to remember that the 10-digit call volumes in the current communications centers include a large volume of traffic that is unrelated to the business of answering and dispatching emergency calls for service. Many of the current communications centers serve as the primary answering point for a number of other non-emergency telephone numbers associated with the law enforcement agencies they support or their municipality as a whole. This is workload that often remains with the agency when consolidated dispatch operations are established, so forward-looking models for call volumes for consolidated operations need to take this into consideration. Data from 2015 indicates a similar pattern, with 9-1-1 calls averaging 0.48 per capita and 10-digit calls averaging 2.1 per capita. The table below provides an overview of the reported data for 2014 and 2015.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 11 - Overview of Reported Data for 2014 & 2015

Telephone Call Volumes on a Per-Capita Basis for PSAPs with Applicable Data						
	2014 Data			2015 Data		
	911	10-Digit	Total Call Volume	911	10-Digit	Total Call Volume
CenCom	0.38	2.21	2.59	0.41	2.68	3.09
Deerfield	0.44	1.07	1.51	0.44	2.15	2.59
FoxComm	0.37	2.40	2.77	0.40	1.55	1.95
Glenview	0.30	1.57	1.87	0.30	1.30	1.60
Gurnee	0.67	1.64	2.31	ND	ND	ND
LCSO	0.17	1.56	1.74	0.65	1.46	2.11
Lake Zurich	ND	ND	ND	0.34	ND	ND
Mundelein	0.53	1.33	1.86	0.29	1.70	1.99
North Chicago	0.44	1.24	1.68	ND	ND	ND
Park City	0.14	ND	ND	ND	ND	ND
Vernon Hills	0.73	2.20	2.93	0.47	2.25	2.72
Wauconda	ND	ND	ND	0.56	ND	ND
Waukegan	0.85	4.68	5.53	0.96	3.71	4.66
Winthrop Harbor	0.45	2.70	3.15	ND	ND	ND
Zion	0.75	2.26	3.01	ND	ND	ND
Composite Averages	**0.48**	**2.07**	**2.58**	**0.48**	**2.10**	**2.59**
Note: ND indicates no data available for this period or statistic						

The mathematical techniques used to estimate staffing levels for Call Taker positions are based on the estimated number of calls arriving over a given hour of activity. To arrive at these values, a series of assumptions have been made based on the annual, monthly and hourly statistics provided by several of the communications centers in Lake County. These assumptions are described below:

- 9-1-1 call volumes are assumed to remain at essentially the same levels as they are today, and a value of 0.50 9-1-1 calls per capita annually has been used in the model. There are two factors that will likely influence the number of 9-1-1 calls being handled in the fully consolidated organization. From IXP's experience, the process of consolidating dispatching services often brings more community focus on the use of 9-1-1 to report emergencies and upticks in 9-1-1 call levels are often seen. Counteracting this will be a reduction in the number of 9-1-1 calls that need to be transferred between PSAPs, which are included in the current data and are not able to be separated out of this data in a reliable manner. Therefore, for the Fully Consolidated scenario, it is estimated that the combined annual 9-1-1 call volume to the two facilities will be approximately 352,593. (705,186 population X 0.50 9-1-1 calls per capita).

- Statistics from several of the agencies indicates that the busier months of the year can bring between 9% and almost 11% of their overall annual call volume, as shown in the table below (this chart utilizes a 'heat map' approach ranging from green for the lower values to red for the higher values to make it easier to spot the busier months of the year). When combined together the busier months of the year can reach 9% or more of the annual total. Since monthly data wasn't available from all of the PSAPs, particularly some of the larger ones, it was decided to

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

use the straight mathematical average of 8.3% of calls arriving in any given month. This will result in estimated staffing levels able to meet average call volumes, with overtime and other shift adjustment strategies needed to provide higher staffing levels during the busier months of the years. With an estimated 352,593 9-1-1 calls per year, the average monthly volume would be 29,265 (352,593 X 0.083).

- As groups decide to proceed with initial consolidations, it will be beneficial to reevaluate these numbers for the respective agencies to ensure they are still representative of their organizations.

Table 12 - Call Volume by Month

	Deerfield	Glenview	LCSO	Lake Zurich	Mundelein	Vernon Hills		Composite
January	7.9%	8.2%	8.2%	9.4%	8.7%	6.7%		8.3%
February	8.6%	7.4%	8.1%	8.9%	7.1%	6.6%		7.7%
March	8.2%	7.8%	7.6%	6.6%	7.7%	6.7%		7.2%
April	8.2%	8.1%	7.6%	7.1%	7.8%	8.0%		7.6%
May	9.0%	8.7%	8.2%	7.7%	9.1%	8.1%		8.3%
June	9.1%	9.1%	8.8%	10.8%	8.4%	8.1%		9.0%
July	8.8%	9.5%	9.4%	8.7%	9.4%	9.6%		9.3%
August	8.4%	9.2%	9.3%	7.6%	8.7%	9.6%		8.8%
September	8.9%	8.6%	8.8%	10.4%	8.4%	9.7%		9.3%
October	8.0%	7.7%	8.0%	8.1%	8.6%	9.2%		8.5%
November	7.2%	7.8%	7.6%	7.3%	8.2%	8.9%		8.0%
December	7.7%	8.0%	8.2%	7.4%	7.9%	8.7%		8.1%

- Few agencies were able to provide day-of-week statistics, but for those that provided this data (LCSO and Vernon Hills are shown in the table below and together serve approximately 27% of the Lake County population) it indicated that approximately 75% of the call volume occurs during the weekday days of Monday through Friday with the remaining 25% occurring over weekends. This is a pattern similar to what IXP has observed in most other emergency communications centers and therefore seems reasonable to use as an indication of the expected weekday and weekend volumes that would be experienced in Lake County. Therefore, the normal monthly weekday 9-1-1 call volumes would be estimated at 21,949 (75% of the 29,265 calculated above) or 1,045 per day (21,949 divided by an average 21 weekdays per month). Weekend monthly 9-1-1 call volumes would be estimated at 7,316 (25% of the 29,265 calculated above, or 813 calls per day (7,316 divided by an average of 9 weekend days per month).

Table 13 - Call Volume by Day

	LCSO	Vernon Hills	Composite		Compiled Volume
Monday	14.6%	13.8%	14.2%		14.2%
Tuesday	14.9%	14.7%	14.8%		29.0%
Wednesday	14.9%	15.6%	15.2%		44.2%
Thursday	15.2%	15.0%	15.1%		59.3%
Friday	15.2%	15.2%	15.2%		**74.6%**
Saturday	13.0%	13.8%	13.4%		88.0%
Sunday	12.2%	11.8%	12.0%		100.0%

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

- As discussed above, for many of the PSAPs their 10-digit call volumes are currently running as high as four times their volume of 9-1-1 calls. This is largely a factor for communications centers providing 10-digit call handling for a number of administrative lines of their parent organization in addition to any designated emergency or high-priority 10-digit lines. While it is certainly possible to continue this process even in a consolidated communications center operation, it is more typical to see consolidated communications centers establish policies, in collaboration with communities, that keep as much of the non-emergency 10-digit traffic as possible at the local agencies themselves. Since only 2 cities provided data for these calculations it will be worthwhile for agencies to evaluate these numbers for the respective agencies to ensure they are also representative of their organizations.

- From IXP's experience, there is no consistent relationship between 9-1-1 and 10-digit call volumes in consolidated communications centers, since local conditions and the size or maturity of the organization can have significant impact on their experience. Several examples are provided for reference:
    - At the previously referenced Valley Communications Center, their 10-digit call volumes are slightly less than half their 9-1-1 volumes (44%). This is a very mature consolidated organization serving a moderately urban-to-suburban area.
    - Similarly, the South Sound 911 organization has a relatively low10-digit call volume ratio that averages about 49% of their 9-1-1 call volumes. Again this is a mature organization serving an urban-to-suburban area.
    - Data from a consolidated center we have worked with that serves a moderately urban area of approximately 200,000 population is experiencing 10-digit volumes at approximately 67% of their 9-1-1 volumes.
    - But data from three different consolidated centers serving a more suburban-to-rural environment have 10-digit call volumes between 1.1 and 3 times their 9-1-1 volumes. *Please see Appendix 5 for further details of these 2 agencies

- IXP recommends that the initial staffing model for the Fully Consolidated Model operation assume that 10-digit call volumes will equal the volume of 9-1-1 calls (a multiplying factor of 1.0). While lower ratios may be achieved as the agency matures, using a lower ratio at the outset may result in staffing levels that are insufficient to maintain call answering performance standards. For the Semi-Consolidated Model, we recommend assuming that 10-digit call volumes will be 1.5times that of the 9-1-1 call volume.

  Therefore, in the Fully Consolidated model, the daily 10-digit call volumes assumed for weekdays would be 1,045 and weekend days would be 813. For the Semi-Consolidated model, the daily 10-digit call volumes assumed for weekdays would be 1,568 and the weekend days would be 1,219.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

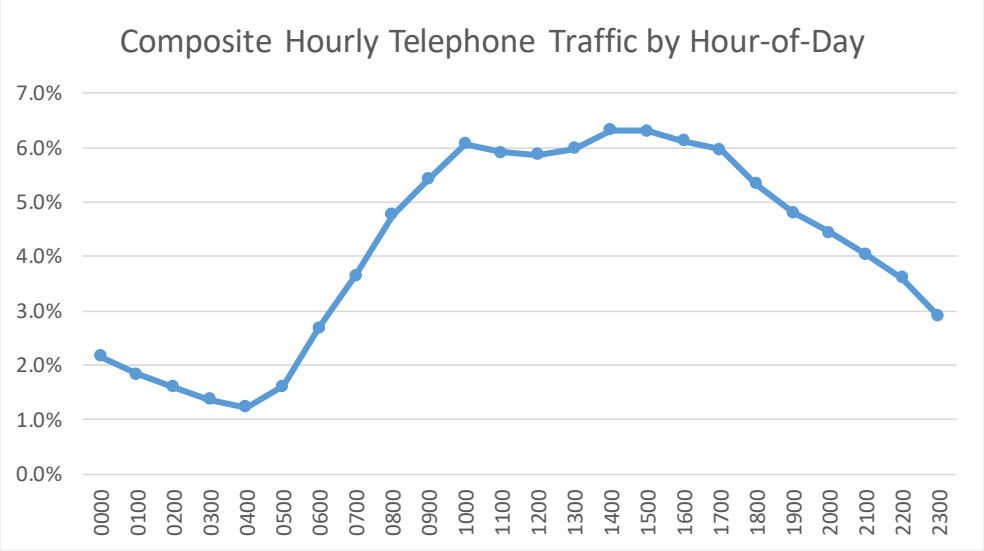
- Telephone call volumes in 9-1-1 communications centers vary considerably across the 24 hours of a normal day. As discussed earlier in the Summary of Staffing Calculations, to effectively manage these volumes, the industry best practice is to "staff to workload" and vary the number of Telecommunicators assigned as call takers throughout the day to match the level of call volumes expected to be experienced during those hours. Several agencies were able to provide telephone call volume data on an hour-of-day basis. This data is summarized in the table and graph below. These four PSAPs provide service to approximately 51% of the countywide population. (Please Tables 3 & 4 for details regarding communities served by each ECC)

Table 14 - Call Volume by Hour

Total Telephone Call Volumes on an Hour-of-Day Basis						
From	**To**	Fox Comm	Glenview	LCSO	Vernon Hills	Composite
0000	0100	1.9%	2.2%	2.4%	2.1%	2.2%
0100	0200	1.8%	1.8%	2.1%	1.7%	1.8%
0200	0300	1.7%	1.5%	1.8%	1.4%	1.6%
0300	0400	1.4%	1.3%	1.5%	1.3%	1.4%
0400	0500	1.3%	1.2%	1.3%	1.1%	1.2%
0500	0600	1.8%	1.3%	1.7%	1.7%	1.6%
0600	0700	3.0%	2.2%	2.8%	2.7%	2.7%
0700	0800	3.3%	3.6%	4.0%	3.7%	3.6%
0800	0900	4.7%	4.7%	4.6%	5.0%	4.8%
0900	1000	5.5%	5.6%	5.1%	5.5%	5.4%
1000	1100	6.2%	6.0%	5.6%	6.5%	6.1%
1100	1200	5.9%	6.0%	5.5%	6.2%	5.9%
1200	1300	5.9%	6.1%	5.5%	5.9%	5.9%
1300	1400	6.0%	6.0%	5.6%	6.3%	6.0%
1400	1500	6.5%	6.3%	5.8%	6.7%	6.3%
1500	1600	6.2%	6.6%	6.1%	6.4%	6.3%
1600	1700	6.4%	6.2%	5.8%	6.0%	6.1%
1700	1800	6.2%	6.0%	6.1%	5.6%	6.0%
1800	1900	4.9%	5.8%	5.6%	5.1%	5.3%
1900	2000	4.6%	5.1%	5.0%	4.5%	4.8%
2000	2100	4.8%	4.3%	4.7%	4.0%	4.4%
2100	2200	3.8%	3.9%	4.3%	4.2%	4.0%
2200	2300	3.1%	3.6%	4.0%	3.7%	3.6%
2300	0000	2.9%	2.7%	3.2%	2.8%	2.9%

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Figure 5 - Call Traffic by Hour



For purposes of estimating overall staffing levels for Telecommunicator personnel, the net available working hours for each position needs to be estimated. This needs to take into consideration the number of hours away from work each individual will have for things like holidays, vacations and sick leave, as well as time away from their positions for things like mandatory break periods and in-service training. The current collective bargaining agreements (CBAs) across Lake County typically identify 12 holiday or personal days off per year, so this value was used for this modeling. Similarly, most of the CBAs have vacation provisions where personnel in the mid-range of the seniority scale are allowed approximately 15 days of vacation time, so this value was also used. Finally, for sick leave, the CBAs typically contained accrual rates of one working shift per month. While specific sick leave utilization data was not available, experience from other communications centers indicates that usage rates of 5 to 8 days per year is not uncommon, and a value of 8 sick days per year was used for the model.

Collectively then, an average employee will likely be away from work for up to 35 days each year, or 7 weeks. Therefore, for the 45 weeks they are at work, we also need to estimate time away from their positons for lunch and break periods and an allowance for annual in-service training. When all of these factors are combined, an average position will have approximately 1,591 net available working hours to actually be working at their assigned position. With each position requiring 8,760 hours to cover the position 24 hours per day throughout the year, the overall coverage ratio for the position is 5.5 personnel per position.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Semi-Consolidated - Fully Regionalized Public Safety Communications Organization Staffing Model

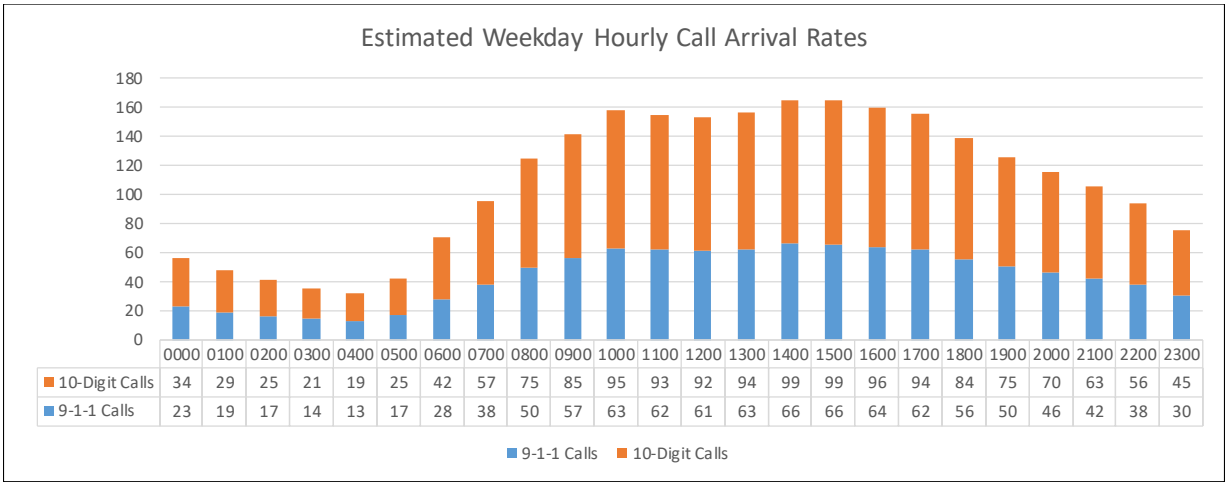
As the organizational transition phase matures and all facilities migrate to operating on common technology systems and common operational models, it is anticipated that the required staffing levels will begin to approach the staffing levels of the Fully Consolidated Model, at least for the operational side of the organization. While the scenarios described for the Fully Consolidated model largely hold true for the Semi-Consolidated state, we have assumed that 10-digit telephone call volumes will not be reduced to the same degree that they will once full consolidation is achieved. If more significant reductions in 10-digit call volumes can be achieved compared to the assumptions in this model, Call Taker staffing levels may be able to be reduced slightly. There will also be the continuing need to staff Supervisory positions at multiple facilities rather than the smaller Supervisory staff needed for the Fully Consolidated Model. Here again, alternative strategies for meeting supervisory needs during the very quiet deep night time periods may allow slight reductions in the Supervisory staffing counts. IXP has based the staffing models on industry best practices, the statistical data available for inclusion in the models, and our experience in operating emergency communications centers. Actual conditions present at the time of making these organizational transitions will be the ultimate driver in establishing the appropriate levels of staffing.

As discussed above, since these operations will still be embedded within existing public safety facilities it does not seem reasonable to assume that they will be able to fully isolate themselves from some of the non-emergency 10-digit traffic that they handle today. Therefore, instead of estimating 10-digit call volumes at levels equal to 9-1-1 call volumes as done in the Fully Consolidated Model, we have assumed that 10-digit call volumes will be 1.5 times that of the 9-1-1 levels.

Call Taker Staffing Estimates

For the Semi-Consolidated model, the weekday average telephone call volumes would be as follows:

Figure 6 – Semi-Consolidated Average Weekday Telephone Call Volumes



	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
10-Digit Calls	34	29	25	21	19	25	42	57	75	85	95	93	92	94	99	99	96	94	84	75	70	63	56	45
9-1-1 Calls	23	19	17	14	13	17	28	38	50	57	63	62	61	63	66	66	64	62	56	50	46	42	38	30

IXP has developed a statistical modeling tool based on industry standard Erlang-C calculation models to allow call answering performance to be evaluated at a variety of call volumes modeled against a variety of staffing levels. This tool allows us to provide estimates of the number of call taker personnel needed

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

to meet the fluctuating call volumes across the normal course of a day. The model also allows examination of two key performance level characteristics, the average wait time that calls would experience and the percentage of calls that would actually experience a wait, across a range of call volume and call taker combinations.

For the quieter hours of 0000 to 0600, with call volumes below 60/hr., (Figures 7 and 8), the combined 9 facilities in the Semi-Consolidated Model would need to have a minimum of 3 personnel assigned call taker responsibilities to handle the combined telephone workload, with dispatch and supervisory personnel handling any surges in call volumes. The tables below allow estimation of call answering performance across multiple call arrival rates and varying call taker staffing levels. By staffing with 3 call takers and having other dispatch and supervisory personnel handle surges, call volume surges to 80 or higher could probably be handled and still achieve average wait times of less than 10 seconds. These types of charts are used through the balance of the call taker staffing models so that average wait times and longest wait times can be visualized for a variety of call volume and staffing levels.

*Figure 7 - **Average Wait Times** for Calls Volumes between 30 and 100 with 3 to 5 Call Takers Available*

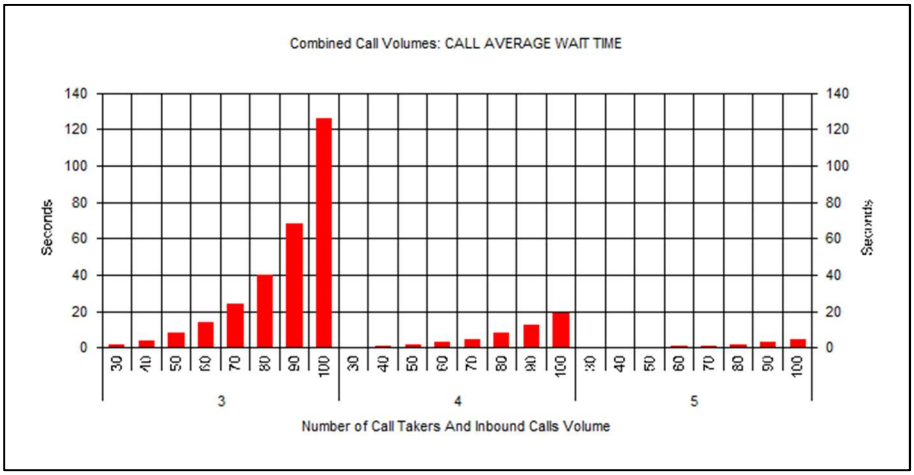
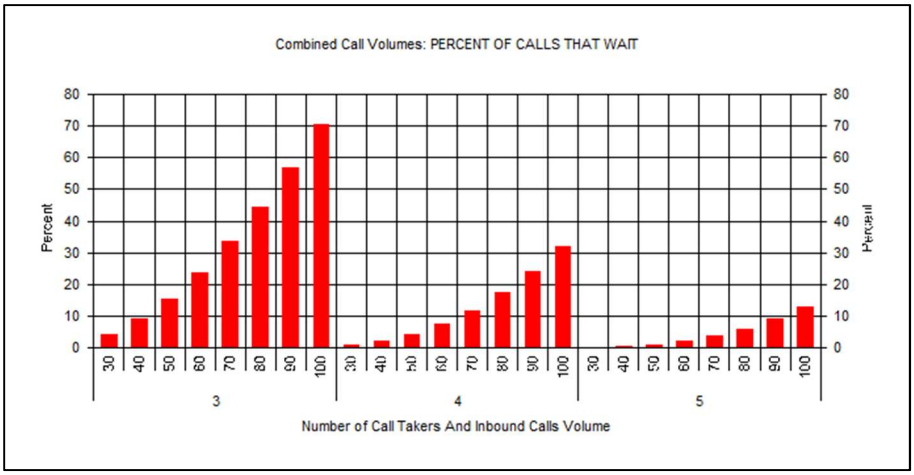


*Figure 8 - **Percent of Calls that Wait** for Call Volumes between 30 and 100 with 3 to 5 Call Takers Available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Then, as the day gets busier (Figures 9 and 10), the numbers of Call Takers will need to be ramped up. By approximately 0800 the total staffing should rise to 7 Call Takers on duty and remain at this level until 2000. It could then drop back to 4 personnel through the balance of the night. During all of these periods, dispatch and supervisory personnel could handle surges in calls when needed to maintain call answering standards.

*Figure 9 - **Average Wait Time** for Calls Volumes between 120 and 180 with 5 to 7 Call Takers available*

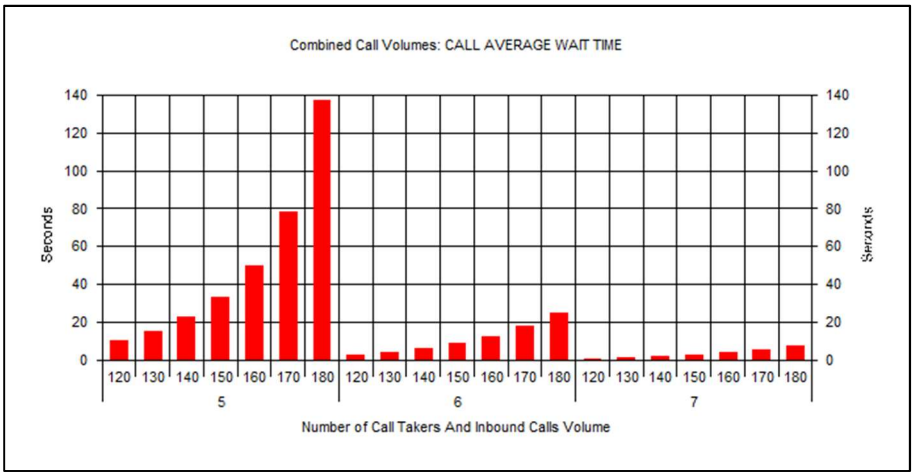
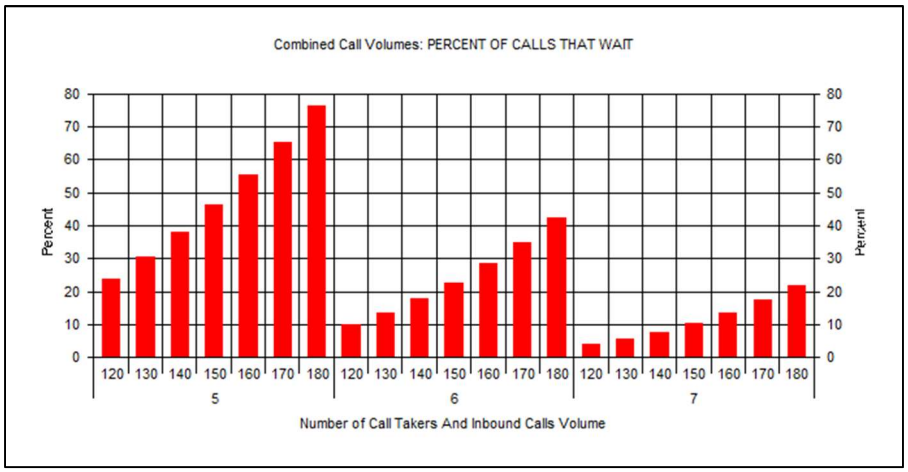


*Figure 10 - **Percentage of Calls that Wait** for Call Volumes between 120 and 180 with 5 to 7 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

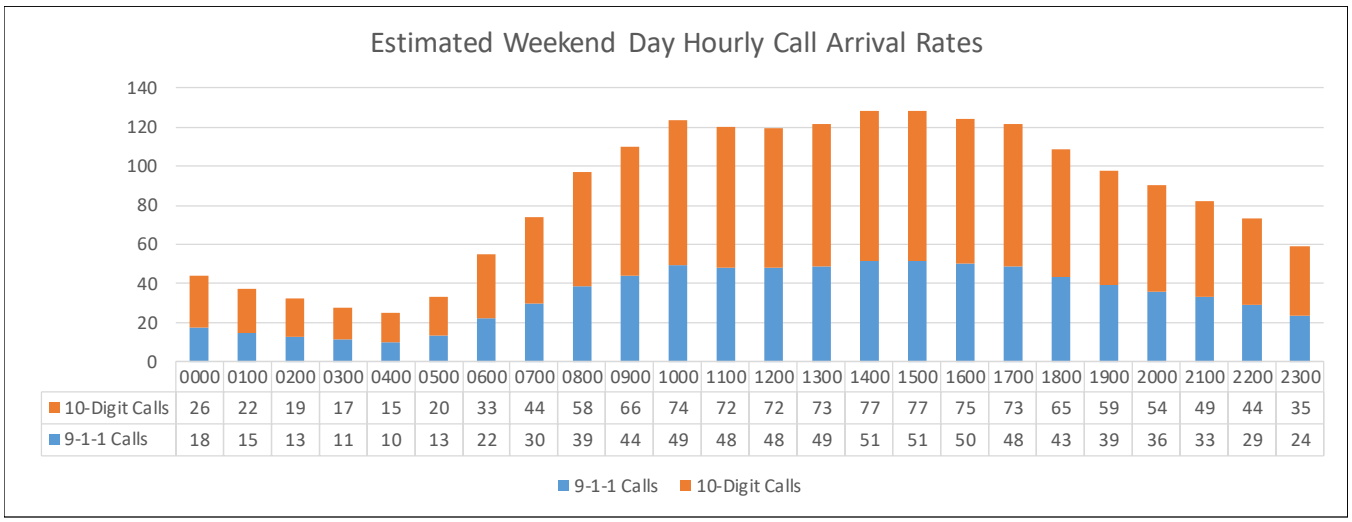
Collectively then, through the normal cycle of a weekday day, the overall level of Call Taker staffing would be as follows:

Estimating Call Taker Staffing Levels for Weekdays			
Time Increment	Hours	Positions	Total Daily Hours Needing Coverage
0000 to 0600	6	3	18
0600 to 0800	2	6	12
0800 to 2000	12	7	84
2000 to 0000	4	4	16
	24		130

With 130 hours of coverage needed daily on weekdays across 52.14 weeks in the year, a total of 33,891 hours of coverage are needed. With 1,591 net available working hours per employee, a total of 21.30 personnel would be needed to cover the weekday call receiving workload.

The weekend environment provides slightly different results. Average hourly call volumes would be as shown in the graph below.

Figure 11 – Semi-Consolidated Average Weekend Day Telephone Call Volumes



	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
10-Digit Calls	26	22	19	17	15	20	33	44	58	66	74	72	72	73	77	77	75	73	65	59	54	49	44	35
9-1-1 Calls	18	15	13	11	10	13	22	30	39	44	49	48	48	49	51	51	50	48	43	39	36	33	29	24

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

For the quieter hours of 0000 to 0600, with call volumes below 50/hr, (Figures 12 and 13), there would need to be 3 personnel assigned to handle call taking. Dispatch and supervisory personnel could handle any surges in call volumes so that call handling standards could still be met.

*Figure 12 - **Average Wait Time** for Call Volumes between 40 and 80 with 3 to 5 Call Takers available*

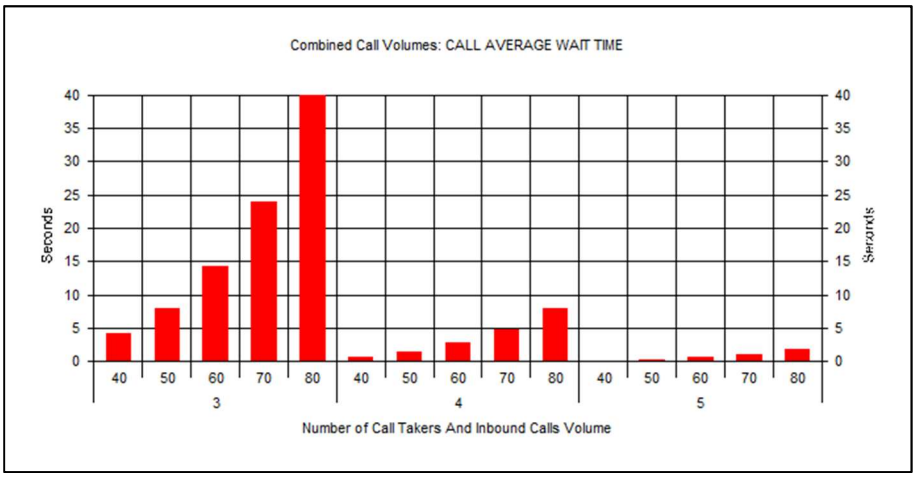
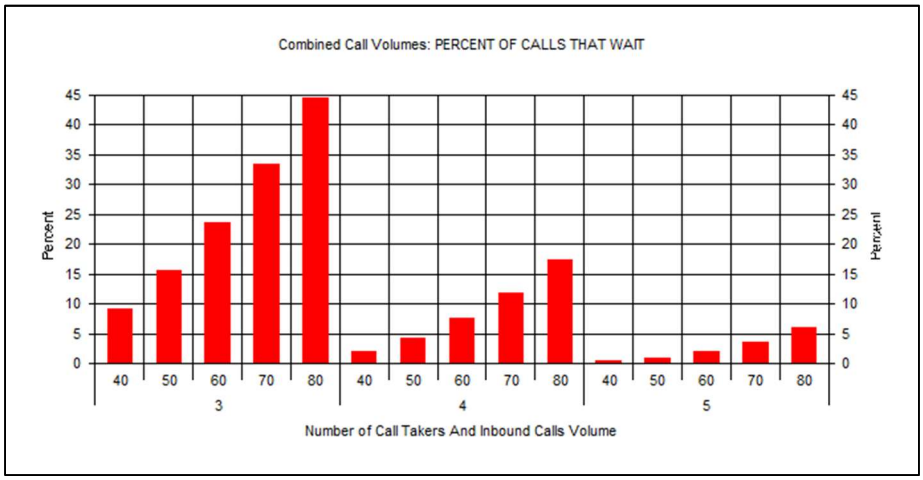


*Figure 13 - **Percent of Calls that Wait** for Call Volumes between 40 and 80 with 3 to 5 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

As the day gets busier (Figures 14 and 15), the numbers of Call Takers will need to be ramped up. By approximately 0900 the total staffing should rise to 6 Call Takers on duty and would need to remain at this level until 1900 when it could drop to 4 until midnight. During all of these periods, dispatch and supervisor personnel could handle surges in calls when needed to maintain call answering standards.

*Figure 14 - **Average Wait Times** for Call Volumes between 80 and 140 with 5 to 7 Call Takers available*

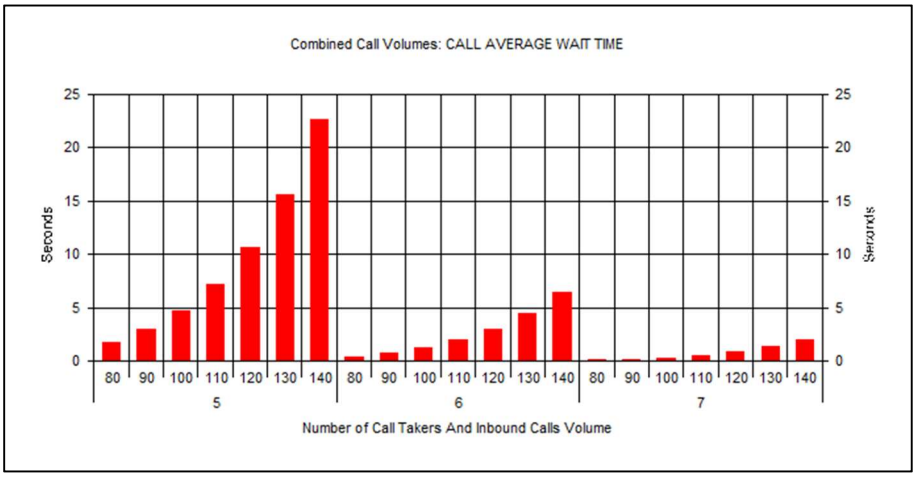
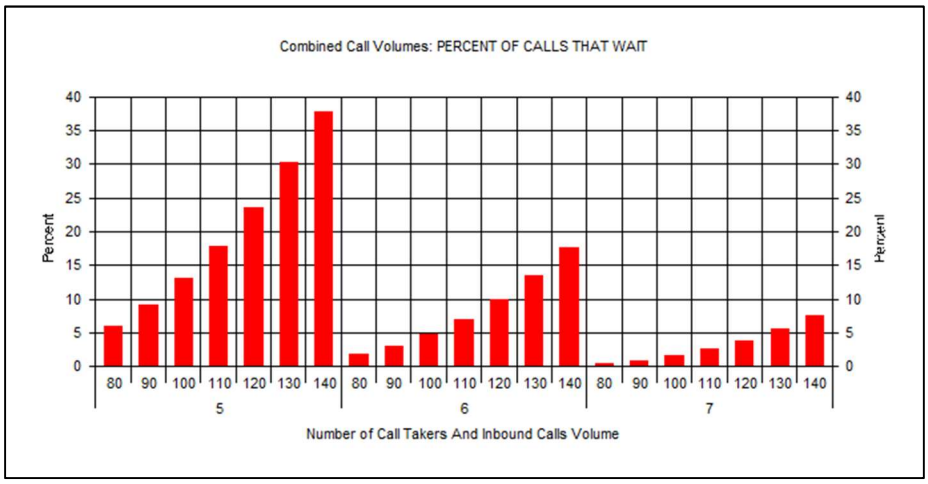


*Figure 15 - **Percent of Calls that Wait** for Call Volumes between 80 and 140 with 5 to 7 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Collectively then, through the normal cycle of a weekend day, the overall level of Call Taker staffing would be as follows.

Estimating Call Taker Staffing Levels for Weekend days			
Time Increment	Hours	Positions	Total Daily Hours Needing Coverage
0000 to 0600	6	3	18
0600 to 0900	3	4	12
0900 to 1900	10	6	60
1900 to 0000	5	4	20
	24		110

With 110 hours of coverage needed daily on weekend days across 52.14 weeks in the year, a total of 11,471 hours of coverage are needed. With 1,591 net available working hours per employee, a total of 7.2 personnel would be needed to cover call taking workload on weekend days.

Therefore, the combined total number of Telecommunicator FTEs needed to handle the expected call taker workloads for the Semi-Consolidated scenario would be 21.3/weekdays + 7.2/weekends = **28.5 call taker personnel**.

Dispatch Staffing Estimates

Estimating staffing levels for law enforcement dispatch positions needs to take into consideration a broad set of characteristics that go beyond the numbers of calls for service being handled by each position. Rather, the coverage levels for dispatch positions need to take into consideration the effective numbers of officers that can be managed on a single channel, the levels of workload those officers handle that needs to flow through their dispatcher, and the ability to group officers from multiple smaller agencies together onto common channels.

In today's environment, on average, there are at least 17 dispatch positions being used on a full-time basis to support law enforcement dispatching. At times during the day this may increase slightly to allow staffing of positions to handle additional secondary communications such as LEADS work and similar ancillary duties. For purposes of both the Semi-Consolidated and the Fully Consolidated scenarios, IXP has assumed that a total of 14 law enforcement dispatch positions would be needed averaged across a normal work year. As with the Call Taker environment, there will likely be hours of the day where the number of law enforcement dispatch positions may drop to fewer than 14 as smaller agencies are further merged onto common channels, while at other periods it may need to increase above this number to handle busy hours of the day. At the same coverage ratio of 5.5 FTEs per position, **this will require a total of 77 Telecommunicators**.

It is more difficult to assess the numbers of Fire/EMS dispatch positions in the current environment since many of the communications centers have their personnel performing a wide variety of Call Taker, LEADS and Fire/EMS dispatch operations. The best estimate available is that there are at least 11 positions involved in Fire/EMS dispatching across the communications centers in Lake County, and an undetermined number in the out-of-jurisdiction communications centers that serve Lake County fire

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

agencies along with their other customers. In considering a Fire/EMS dispatch environment for the two consolidation models, it has been assumed that a total of 8 Fire/EMS dispatch personnel will be able to provide the levels of service needed for the Fire/EMS agencies assigned to each facility as well as cross-support to the other facility when larger or multi-jurisdictional events occur. These personnel would also be responsible for handling Alarm Board workload and backing up call taker workload surges. At the same coverage ratio of 5.5 FTEs per position, **this will require a total of 44 Telecommunicators**.

Supervisor Staffing Estimates
Finally, in a complex multi-jurisdictional and multi-disciplinary communications center, it is extremely important to have adequate supervision on the floor to oversee the activities of the personnel and augment them in call taking or dispatching responsibilities when needed. Therefore, it is recommended that Supervisor personnel be on duty at all times at each of the facilities in the Semi-Consolidated scenario. **Covering these 9 positions will require 49.5 personnel**. Depending on conditions at the time the organization undergoes this transition, it may be possible to derive an alternative strategy for covering Supervisory responsibilities that does not require an on-duty Supervisor at each location during the slower late night hours. If these conditions emerge, it may be possible to reduce the overall number of Supervisors in the staffing model.

Total Staffing in the Semi-Consolidated Model
As discussed above, the actual conditions at the time this transition takes place will influence the final staffing mix needed to meet the call volumes and service level expectations at that time. Based on the data and assumptions used in this model, the total staffing mix for the Semi-Consolidated scenario would be **228 personnel as follows**:

- 28.5 Telecommunicators handling Call Taking workload
- 77 Telecommunicators handling Law Enforcement dispatching workload
- 44 Telecommunicators handling Fire/EMS dispatching workload
- 49.5 Shift Supervisors
- 9 Communications Center Managers
- 20 Management and Support Staff

The tables below provide a graphical view of the organizational structure and estimated personnel levels for each of the identified positions.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 15 – Semi-Consolidated Mature Organizational Structure and Total Personnel Counts

Position Name (* indicates Management Team)	Position Count	Coverage Factor	Employee Count
Executive Director*	1	1	1.0
Executive Admin Assisstant	1	1	1.0
Business Operations Manager/CFO*	1	1	1.0
HR Manager*	1	1	1.0
HR Generalist	1	1	1.0
Lead Accountant	1	1	1.0
Accounting Assistant	1	1	1.0
Administrative Assistant	1	1	1.0
Technology and Facilities Manager*	1	1	1.0
Network Administrator	1	1	1.0
CAD System Administrator	1	1	1.0
GIS/9-1-1 Database Specialist	1	1	1.0
System Support Technicians	4	1	4.0
Standards & Professional Development Manager*	1	1	1.0
Training Coordinator	1	1	1.0
Trainers	1	1	1.0
Quality Assurance/Quality Improvement Analyst	1	1	1.0
Subtotal of Management and Support Personnel			**20.0**
Communications Center Managers*	9	1	9.0
Shift Supervisors	9	5.5	49.5
Telecommunicator/CTO	9	5.5	49.5
Telecommunicator 3	11	5.5	60.5
Telecommunicator 2	4	5.5	22.0
Telecommunicator 1	3.2	5.5	17.6
Subtotal of Operational Personnel			**208.1**
	Total Employee Count		**228.1**

Employee Counts by Functional Responsibility		% of Org
Agency Management and Support Personnel	20.0	9%
Communications Center Managers	9.0	4%
Shift Supervisors	49.5	22%
Telecommunicator/CTO	49.5	22%
Telecommunicator 3	60.5	27%
Telecommunicator 2	22.0	10%
Telecommunicator 1	17.6	8%
	228.1	100%

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Fully Consolidated Model - Regionalized Public Safety Communications Organization and Staffing Model

The Fully Consolidated Model assumes that a single regional governance structure is created to own and operate two redundant communications centers. The Governance and Management/Support staff models would be the same as in the Semi-Consolidated Model, but several changes would occur at the operational level. These are described below.

The first of these changes would be in the operational management approach. Rather than having individual Communications Center Managers at each of the multiple facilities in the Semi-Consolidated Model, there would only be a need for management at the two facilities in the Fully Consolidated model. Since each of these positions would have a larger staff and broader responsibilities than in the Semi-Consolidated model, we have used the title Deputy Director/Operations (DDO) in this narrative.

> Deputy Directors/Operations (2) – These two positions would serve as the operational leaders of the two communications center operations run by the organization, with one assigned to each facility on an annual or similar rotational basis. These positions would report directly to the Executive Director and be a part of the Senior Management Team. South Sound 911 has two personnel in a similar position, however with a single facility operation one is focused on Law Enforcement operations and the other on Fire/EMS operations. Valley Communications operates with a single position of this nature. From IXP's experience, an operations manager type of position is typically present in communications organizations of this size and complexity, and it is recommended that one be placed at each of the operational facilities.

The second change would be at the operational supervision level. With the organization consolidating into two facilities, the level of on-duty staffing and the diversity of responsibilities at these two facilities would be too much for a single Shift Supervisor to handle (as they did in the smaller operations in the multiple facilities in the Semi-Consolidated model). IXP therefore recommends that two supervisory personnel be on duty at each of the facilities, with one designated as the lead.

> Lead Shift Supervisors – These positions would be responsible for the management and operations of each shift of Supervisors and Telecommunicators that deliver the 24-hour a day communications services of the organization. Personnel in these positions would closely coordinate their activities to assure organizational consistency across all shifts and both facilities. One half of these personnel would work at and report to one of the Deputy Directors/Operations at the Headquarters facility and the other half would work at and report to the DDO of the 2nd facility. IXP's recommendation for a position of this nature at each of the operational facilities is based on our experience with the Phoenix Police Department where they have successfully utilized this approach to support dispatch operations conducted out of two separate facilities.
>
> Shift Supervisors – These positions would be responsible for directly monitoring and managing the operations of the Telecommunicators on each shift. These personnel would report to an assigned Lead Shift Supervisor at the facility where they were assigned. The staffing model recommended below is based on the assumption that at least one Lead Shift Supervisor and one Shift Supervisor would be on duty at all times at each facility. With up to 15 positions or more

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

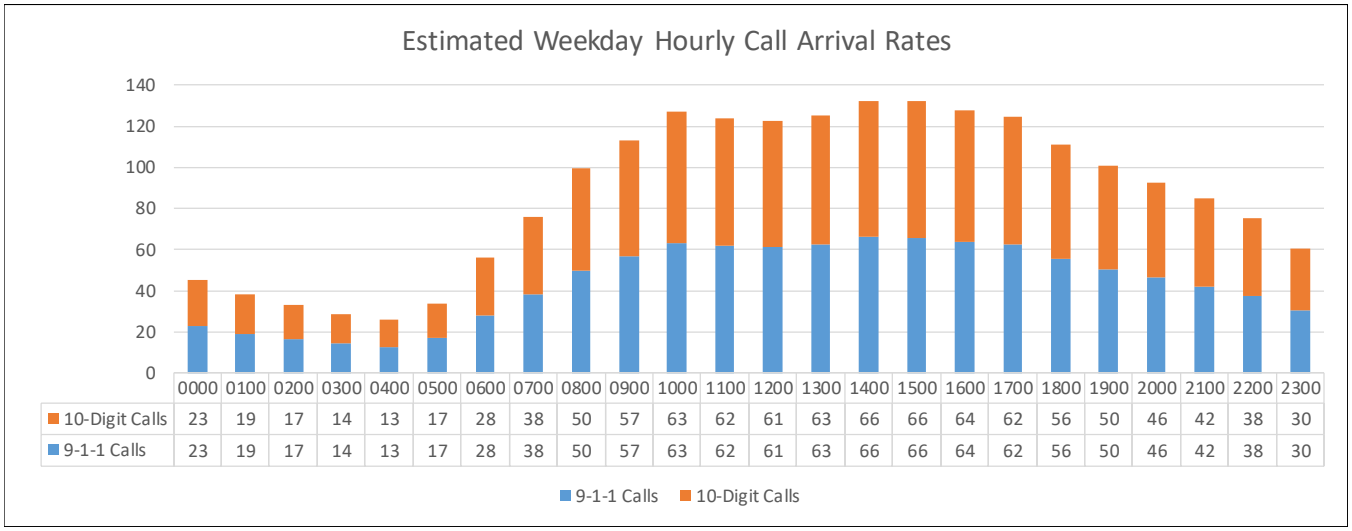
being staffed at each facility, and the diversity of call receiving and dispatching functions underway, a single supervisory position would likely not be able to manage the combined workload of a normal shift.

There would be no changes in the mix of Telecommunicator staff supporting the mix of Call Taking, Law Enforcement Dispatching and Fire/EMS Dispatching other than the overall staffing count being able to be reduced. Estimated staffing levels are discussed below.

Call Taker Staffing Estimates

For the Fully Consolidated model, the weekday average telephone call volumes would be as follows.

Figure 16 - Fully Consolidated Average Weekday Telephone Call Volumes



	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
10-Digit Calls	23	19	17	14	13	17	28	38	50	57	63	62	61	63	66	66	64	62	56	50	46	42	38	30
9-1-1 Calls	23	19	17	14	13	17	28	38	50	57	63	62	61	63	66	66	64	62	56	50	46	42	38	30

First, for the quieter hours of 0000 to 0600 (charts below), when call volumes are expected to remain below 50 per hour, the combined two facilities in the Fully Consolidated scenario should have 3 personnel on duty to handle the combined telephone workload. Surges in call volumes could be accommodated during these hours by having other dispatch personnel (most often in multi-disciplinary communications centers this would be the fire dispatch personnel) handle the increase incoming calls. As call volumes rise between 0600 and 0800 a 4th call taker position should be added to maintain call answering performance.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

*Figure 17 – **Average Wait Times** for Call Volumes between 30 and 80 per hour with 3 to 5 Call Takers available*

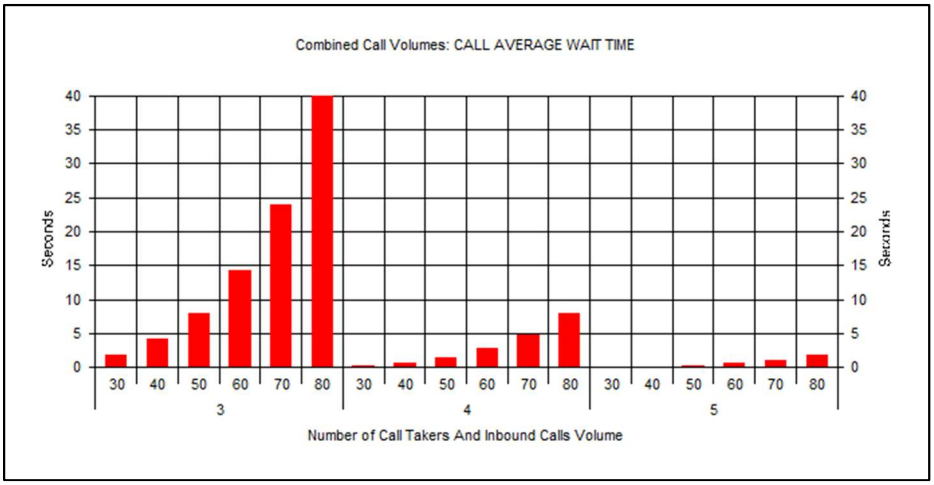
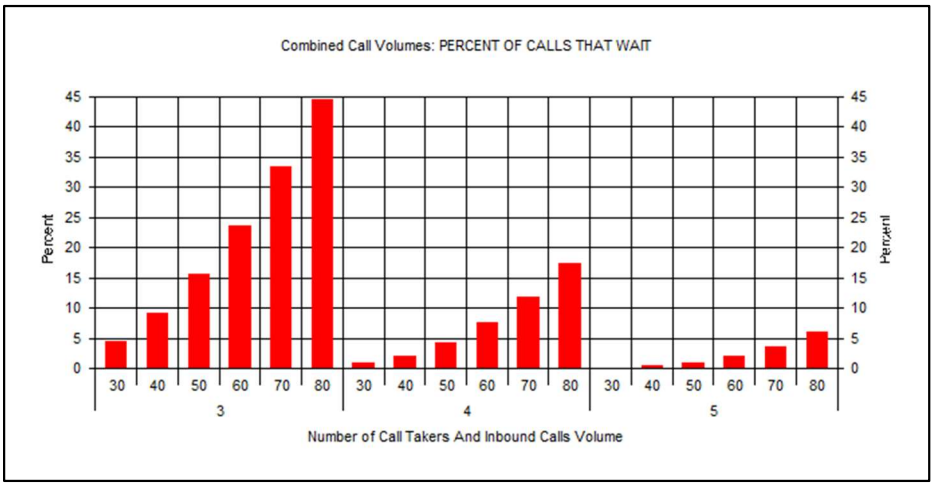


*Figure 18 - **Percent of Calls that Wait** for Call Volumes between 30, and 80 calls per hour with 3 to 5 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

As the day gets busier (charts below), the numbers of call takers will need to be ramped up. By approximately 0900 the total call taker staffing should rise to at least 6 and more advisably 7 personnel. During these busier hours there will be less likelihood that other dispatch personnel will be able to handle surges in call volumes due to their increased workload during the same time period, so adequate staffing of the call taker function is extremely important to maintain average hourly call answering performance. This staffing level should be maintained until approximately 1800 when it could drop to 5 personnel and remain at that level until 0000 when it would return to the 3 on duty level.

*Figure 19 - **Average Wait Time** for Call Volumes between 100 and 170 with 6 to 8 Call Takers available*

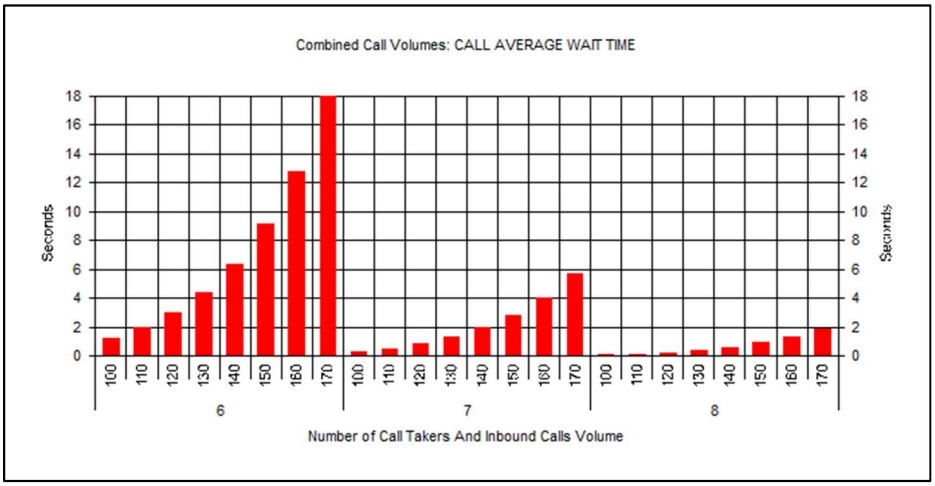
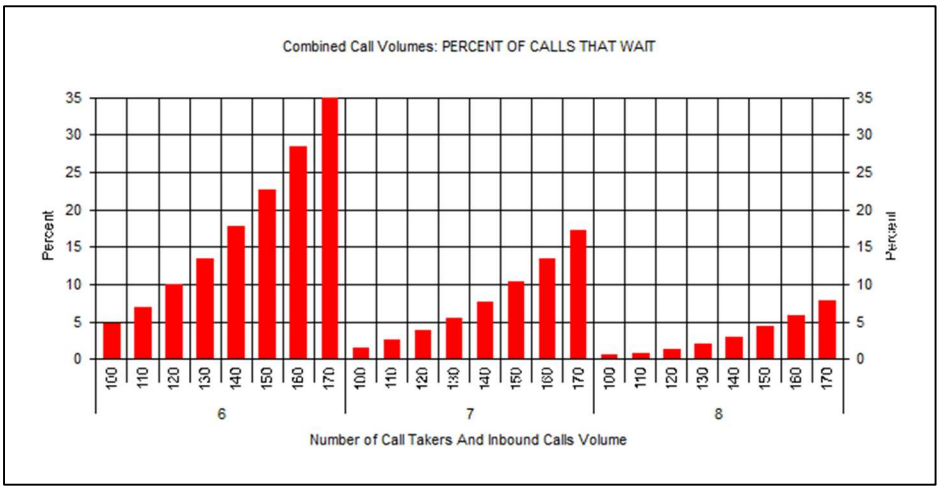


*Figure 20 - **Percent of Calls that Wait** for Call Volumes between 100 and 170 per hour with 6 to 8 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

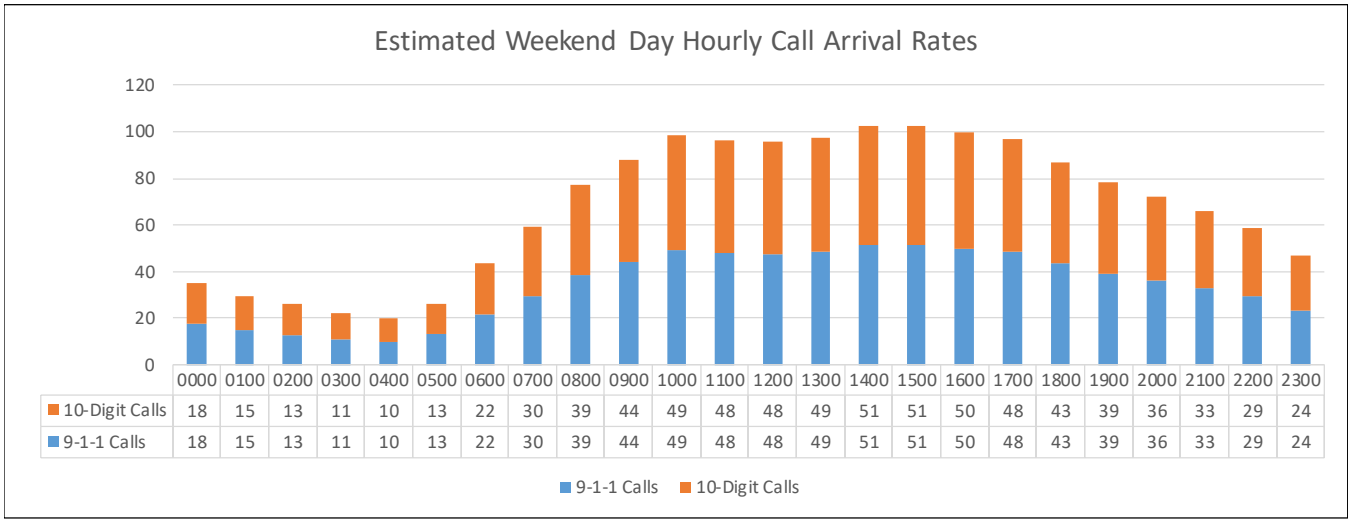
Collectively then, through the normal cycle of a weekday day, the overall level of Call Taker staffing would be as follows:

Estimating Call Taker Staffing Levels for Weekdays			
Time Increment	Hours	Positions	Total Daily Hours Needing Coverage
0000 to 0600	6	3	18
0600 to 0800	2	4	8
0800 to 1800	10	7	70
1800 to 0000	6	5	30
	24		126

With 126 hours of coverage needed daily on weekdays across 52.14 weeks in the year, a total of 32,848 hours of coverage are needed. With 1,591 net available working hours per employee, a total of 20.6 personnel would be needed to cover the weekday call receiving workload.

The weekend environment provides slightly different results. Average hourly call volumes would be as shown in the graph below.

Figure 21 - Model 1 Estimated Weekend Hourly Call Volumes



	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
10-Digit Calls	18	15	13	11	10	13	22	30	39	44	49	48	48	49	51	51	50	48	43	39	36	33	29	24
9-1-1 Calls	18	15	13	11	10	13	22	30	39	44	49	48	48	49	51	51	50	48	43	39	36	33	29	24

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

For the quieter hours of 0000 to 0600 (charts below), the combined two facilities in the Fully Consolidated scenario would need to have 4 personnel on duty to handle the combined telephone workload. This would allow handling of surges of up to 100 calls in an hour with the expected 10 second call answering target, with just over 20% experiencing a wait time at all. Since these hours of the night are typically quite slow for both law enforcement and fire dispatch personnel, it is recommended that Call Taker staffing be set at 3 personnel during these hours and that fire dispatch personnel serve as backup call takers when needed for any surges in call volumes.

*Figure 22 - **Average Wait Times** for Call Volumes between 30 and 60 per hour with 3 to 5 Call Takers available*

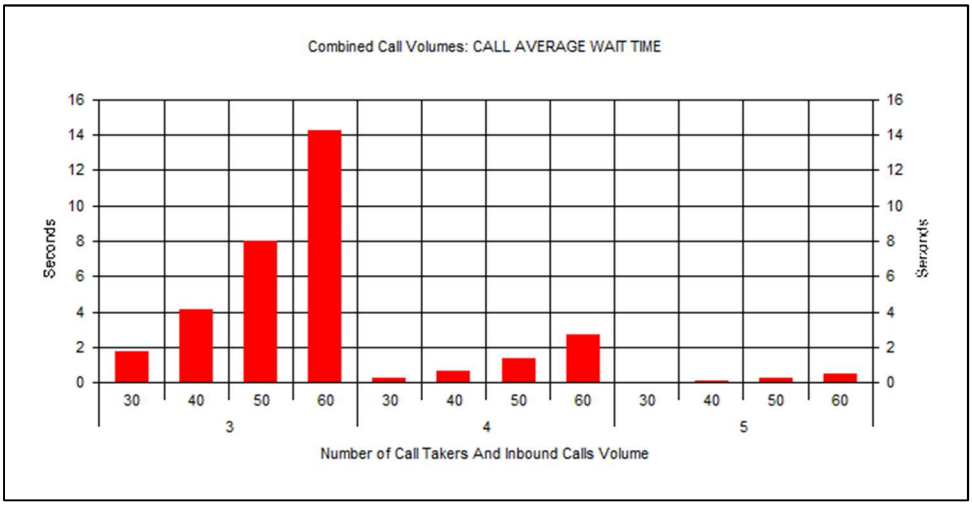
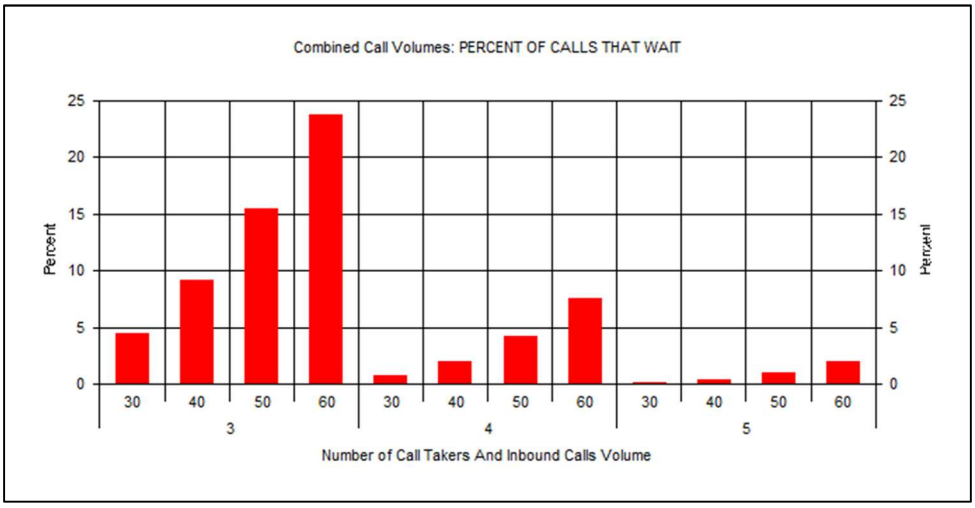


*Figure 23 - **Percent of Calls that Wait** for Call Volumes between 30 and 60 with 3 to 5 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

As the day gets busier (charts below), the numbers of Call Takers will need to be ramped up. By approximately 0900 the total staffing should rise to 5 Call Takers on duty and could remain at this level until about 1900. It could then drop back to 4 personnel until 0000. During all of these periods, Fire/EMS dispatch personnel could handle surges in calls when needed to maintain call answering standards.

*Figure 24 - **Average Wait Time** for Call Volumes between 60 and 120 with 4 to 6 Call Takers available*

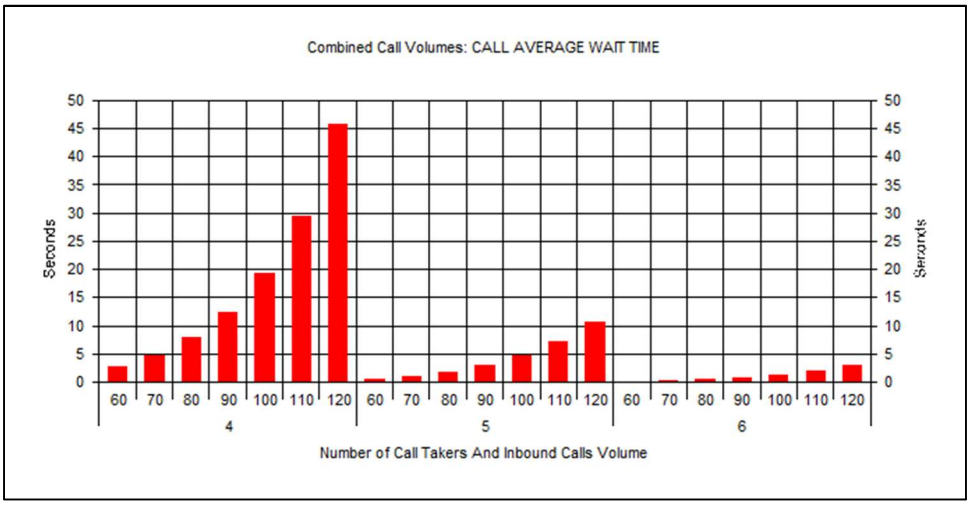
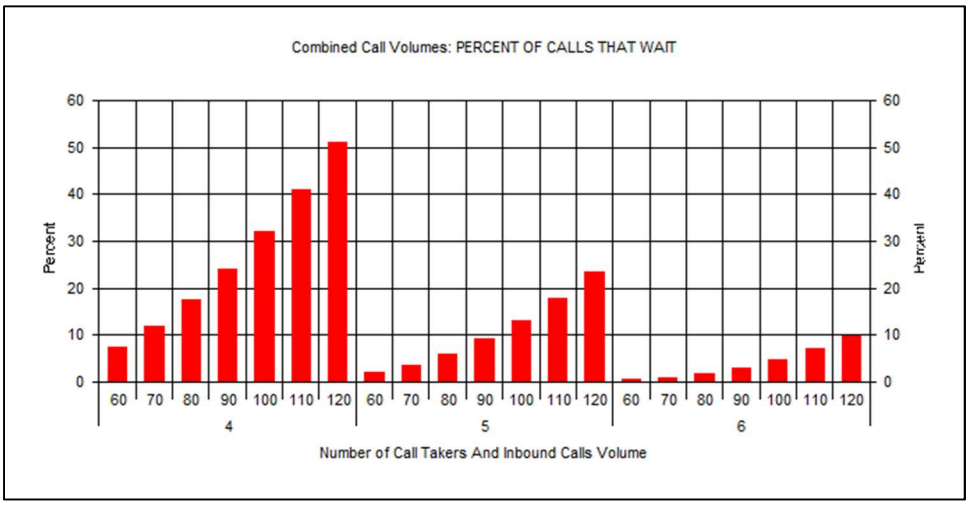


*Figure 25 - **Percent of Calls that Wait** for Call Volumes between 60 and 120 per hour with 4 to 6 Call Takers available*



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Collectively then, through the normal cycle of a weekend day, the overall level of Call Takers staffing would be as follows:

Estimating Call Taker Staffing Levels for Weekend days			
Time Increment	Hours	Positions	Total Daily Hours Needing Coverage
0000 to 0600	6	3	18
0600 to 0900	3	4	12
0900 to 1900	10	5	50
1900 to 0000	5	4	20
	24		100

With 100 hours of coverage needed daily on weekend days across 52.14 weeks in the year, a total of 10,428 hours of coverage are needed. With 1,591 net available working hours per employee, a total of 6.6 personnel would be needed to cover call receiving workload on weekend days.

Therefore, the combined total number of FTEs needed to handle the expected call taker workloads for the Fully Consolidated scenario would be 20.6/weekday + 6.6/weekend = **27.2 call taker personnel**.

Dispatch Staffing Estimates
As discussed above, the staffing estimates for both the Semi-Consolidated and Fully Consolidated organizational models have assumed that a total of 14 Law Enforcement dispatch positions will need to be staffed, (essentially 7 at each facility) would be needed averaged across a normal work year. At the same coverage ratio of 5.5 FTEs per position, **this will require a total of 77 Telecommunicators**.

Similarly, the staffing estimates for both the Semi-Consolidated and Fully Consolidated organizational models have assumed that a total of 8 Fire/EMS dispatch positions will need to be staffed. These personnel would also be responsible for handling Alarm Board workload and backing up call taker workload surges. At the same coverage ratio of 5.5 FTEs per position, **this will require a total of 44 Telecommunicators**.

Supervisor Staffing Estimates
Finally, in a complex multi-jurisdictional and multi-disciplinary communications center, it is extremely important to have adequate supervision on the floor to oversee the activities of the personnel and augment them in call receiving or dispatching responsibilities when needed. With potential staffing levels at either facility rising to as high as 15 or more on duty at any given time, it is recommended that 1 Shift Supervisor position and 1 Lead Shift Supervisor position be staffed at each facility on a consistent basis as well. This will require **22 Supervisory personnel** in the Fully Consolidated staffing model, **a significant reduction from the 49.5 required in the Semi-Consolidated model**.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Total Staffing in the Fully Consolidated Model
As discussed for the Semi-Consolidated model, the actual conditions at the time this transition takes place will influence the final staffing mix needed to meet the call volumes and service level expectations at that time. Based on the data and assumptions used in this model, the total staffing mix for the 2-facility operation in the **Fully Consolidated scenario would be 192.2 personnel as follows**:

- 27.2 Telecommunicators handling Call Taking workload
- 77 Telecommunicators handling Law Enforcement dispatching workload
- 44 Telecommunicators handling Fire/EMS dispatching workload
- 22 Lead and Shift Supervisors
- 2 Deputy Directors/Operations
- 20 Management and Support Staff

The tables below provide a graphical view of the organizational structure and the estimated personnel levels for each of the identified positions.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 16 - Fully Consolidated Org Structure and Total Employee Counts

Position Name (* indicates Management Team)	Position Count	Coverage Factor	Employee Count
Executive Director*	1	1	1.0
Confidential Secretary	1	1	1.0
Business Operations Manager/CFO*	1	1	1.0
HR Manager*	1	1	1.0
HR Generalist	1	1	1.0
Lead Accountant	1	1	1.0
Accounting Assistant	1	1	1.0
Administrative Assistant	1	1	1.0
Technology and Facilities Manager*	1	1	1.0
Network Administrator	1	1	1.0
CAD System Administrator	1	1	1.0
GIS/9-1-1 Database Specialist	1	1	1.0
System Support Technicians	3	1	3.0
Standards & Professional Development Manager*	1	1	1.0
Training Coordinator	1	1	1.0
Trainers	2	1	2.0
Quality Assurance/Quality Improvement Analyst	1	1	1.0
Subtotal of Management and Support Personnel			**20.0**
Deputy Director - Operations - Facility 1*	1	1	1.0
Administrative Assistant	1	1	1.0
Lead Shift Supervisors	1	5.5	5.5
Shift Supervisors	1	5.5	5.5
Telecommunicator/CTO	1	5.5	5.5
Telecommunicator 3	8	5.5	44.0
Telecommunicator 2	3	5.5	16.5
Telecommunicator 1	1.3	5.5	7.2
Deputy Director - Operations - Facility 2*	1	1	1.0
Administrative Assistant	1	1	1.0
Lead Shift Supervisors	1	5.5	5.5
Shift Supervisors	1	5.5	5.5
Telecommunicator/CTO	1	5.5	5.5
Telecommunicator 3	8	5.5	44.0
Telecommunicator 2	3	5.5	16.5
Telecommunicator 1	1.3	5.5	7.0
Subtotal of Operational Personnel			**172.2**
	Total Employee Count		**192.2**

Table 17 - Distribution of Personnel by Type of Position

Employee Counts by Functional Responsibility		% of Org
Agency Management and Support Personnel	20.0	10%
Deputy Directors/Operations and Aas	4.0	2%
Lead Shift Supervisors	11.0	6%
Shift Supervisors	11.0	6%
Telecommunicator/CTO	11.0	6%
Telecommunicator 3	88.0	46%
Telecommunicator 2	33.0	17%
Telecommunicator 1	14.2	7%
	192.2	100%

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Fully Consolidated Facility Concepts

The Fully Consolidated Model would operate out of two facilities that would each be fully functional and routinely staffed for dispatch operations. One facility would serve as a 'headquarters' for the organization and therefore be slightly larger to house various management and support positions. The following tables provide an overall space plan estimate for each facility. These estimates are based on the similarities between what Lake County is anticipating in the Fully Consolidated scenario and detailed space planning work conducted by IXP for South Sound 911 when they were considering a 2-facility model.

For these models, a total of 32 operational positions are included in each facility. These counts were selected to accommodate two fundamental principles:

- The number of positions at each of the facilities needs to be able to accommodate the full operations of the entire organization if the other facility is rendered unusable, even if at slightly decreased position counts
- The facility needs to have some capacity to grow in workload and position count.
- As growth occurs, it should not adversely impact the ability of one facility to back up the other.

The positions in the model include:

- Supervisor Positions – 2 positions are assumed at each facility, with both normally occupied.
- Law Enforcement Dispatch Positions – 9 are assumed at each facility, with 7 normally occupied.
- Fire/EMS Dispatch Positions – 5 are assumed at each facility, with 4 normally occupied.
- Call Taker Positions – 8 are assumed at each facility, with 4 normally occupied in busy hours.
- Training, Special Events and Backup Positions – 8 Dispatch positions are assumed at each facility to be used for structured training programs, extra positions during special events, positions to be used to absorb growth, or as backup positions if the other facility needs to be evacuated.

In normal operations, each facility would be operating with 17 staffed positions, so complete redundancy between facilities would indicate that a total of 34 positions would be needed at each facility. However, it is unlikely that all 4 of the on-duty Supervisors would need to work at operational positions during these periods of 'dual occupancy' so those positions were not duplicated in the assumptions.

In developing the conceptual space plan model for the Fully Consolidated facilities, IXP based the square footage for individual offices on specific information provided by the County. The remaining estimates for individual meeting rooms, work spaces and the like are based on our experiences of having recently concluded a detailed space planning effort with South Sound 911 for the facilities they currently have under development. In that effort, the agency was careful to size individual spaces to accommodate not only how they intended to operate and staff their organization at the outset, but to also allow them to deal with anticipated growth as well as shifting staffing models, where spaces may have to change their intended use one or more times during the life of the facility.

As Lake County approaches detailed planning and design for the Fully Consolidated facilities, it may be found that some of these spaces need to be adjusted either up or down depending on the circumstances in place at the time the facilities are designed.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

While consistent with current planning for modern Emergency Communications Facilities, a number of the spaces identified below in Space Group D – Staff Support Areas are beyond what is currently available as staff support space in existing agencies. This is a subject that can be revisited for value engineering during the Design phase once an A&E firm is engaged.

First, for the headquarters facility:

Table 18 - Fully Consolidated Headquarters Facility

HEADQUARTERS FACILITY SPACE PLAN ESTIMATES						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
A	ADMINISTRATION	8			3,630	
B	INFORMATION SERVICES	6			1,688	
C	COMMUNICATIONS OPERATIONS	91			12,303	
D	STAFF SUPPORT	0			5,050	
E	UTILITIES	0			3,000	
	Main Building Subtotal				25,670	
	Building Gross up @ 10%				2,567	
	Total Staff & Gross Area	**105**			**28,237**	Not accounting for spatial configuration efficiencies during actual design
	Total Site Area Required (SF)				**141,741**	Building + Site
	Total Site Area Required (Acres)				**3.25**	
SPACE GROUP A - Administration						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Public Lobby	0	1	350	350	
2	Lobby Unisex Restroom	0	1	128	128	
3	Administrative Assistant - Front Desk	1	1	150	150	
4	Executive Director's Office	1	1	250	250	
5	Confidential Secretary	1	1	120	120	
6	Business Operations Manager/CFO	1	1	150	150	
7	Human Resources Manager	1	1	150	150	
8	Human Resources Generalist	1	1	100	100	
9	Lead Accountant	1	1	100	100	
10	Accounting Assistant	1	1	100	100	
11	Copy and Office Support Work Room	0	1	200	200	
12	File Room and Storage	0	1	250	250	
13	Guest office/work room	0	1	150	150	
14	Conference Room - 14-16 people	0	1	400	400	
15	Staff Men's Restroom	0	1	128	128	
16	Staff Women's Restroom	0	1	128	128	
17	Coffee Bar area	0	1	50	50	
	Administration Net Area				**2,904**	
	Administration Gross Area				**3,630**	Net area x 1.25
	Projected Staff	**8**				

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SPACE GROUP B - Technology and Facilities Support Team						
1	Technology and Facilities Manager	1	1	150	150	
2	Network Administrator	1	1	100	100	
3	CAD System Administrator	1	1	100	100	
4	GIS/9-1-1 Database Specialist	1	1	100	100	
5	System Support Technicians	2	1	400	400	
6	Work Area and Equipment Staging/Storage	0	1	500	500	
	Information Services Net Area				**1,350**	
	Information Services Gross Area				**1,688**	Net area x 1.25
	Projected Staff	**6**				
SPACE GROUP C - Communications Operations and Technology Spaces						
Space ID	**Description**	**Staff**	**# of Spaces**	**Unit S.F.**	**Area S.F**	**Notes**
1	Deputy Director - Operations	1	1	150	150	
2	Standards and Professional Development Manager	1	1	100	100	
3	Training Coordinator	1	1	100	100	
4	Trainer	1	1	100	100	
5	Quality Assurance/Quality Improvement Analyst	1	1	100	100	
6	Lead and Shift Supervisors Office	5.5	6	40	240	
7	Supervisors Positions	5.5	2	200	400	
8	Call Taker Positions	14.0	8	140	1,120	
9	Dispatch Position	60.5	14	165	2,310	
10	Training, Special Operations and Backup Dispatch Positions	0	8	165	1,320	
11	Training Classroom	0	1	750	750	
12	Supply Storage	0	1	120	120	
13	Women's Comm Room Restroom	0	1	300	300	
14	Men's Com Room Restroom	0	1	300	300	
15	Quiet Room	0	1	81	81	
16	Quiet Room	0	1	81	81	
17	Coffee Bar area	0	1	50	50	
18	File /Copy Work Area	0	1	120	120	
19	Employee Mail Slots	0	1	100	100	
20	Main Technology Systems Room	0	1	1,500	1,500	
21	Radio Equipment Room	0	1	500	500	
	Communications Net Area				**9,842**	
	Communications Gross Area				**12,303**	Net area x 1.25
	Projected Staff	**91**				

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SPACE GROUP D - Staff Support Areas						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Women's Restroom/Showers	0	1	400	400	
2	Men's Restroom/Showers	0	1	400	400	
3	Exercise Gym	0	1	400	400	
4	Men's Locker Room	0	1	400	400	
5	Women's Locker Room	0	1	400	400	
6	Break Room/Kitchen	0	1	800	800	
7	Shelter In Place Storage	0	1	200	200	
8	Shredder Area	0	1	100	100	
9	Building Maintenance Work Area	0	1	200	200	
10	Janitor's Closets	0	2	120	240	
11	Loading Dock & Transition Storage	0	1	500	500	
	Staff Support Net Area				**4,040**	
	Staff Support Gross Area				**5,050**	Net area x 1.25
	Projected Staff	**0**				
SPACE GROUP E - Utilities						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Electrical Room	0	1	600	600	
2	UPS Battery Room	0	1	300	300	
3	Mechanical	0	1	1,200	1,200	
4	Boiler	0	1	200	200	
5	Fire Sprinkler Control Room	0	1	200	200	
	Utilities Net Area				***2,500***	
	Utilities Gross Area				***3,000***	Net area x 1.20
	Projected Staff	**0**				
SITE & PARKING						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Building Footprint				28,237	Assumes single story square footprint concept; does not include vert. circulation
2	Building Stand-off Area		*654*	*75*	49,059	
3	Visitor Parking		*35*	*325*	11,375	
4	Visitor ADA Parking		*2*	*512*	1,024	
5	Staff Parking		*70*	*325*	22,750	
6	Staff ADA Parking		*4*	*512*	2,048	
7	Generators				2,000	
8	Fuel tank				1,000	
9	Radio Transmitter Tower				625	
	Site & Parking Net Area				*118,118*	
	Site & Parking Gross Area (SF)				***141,741***	1.2 multiplier for open space allowance (trail, storm retention, utilities, landscaping, etc.)
	Site & Parking Gross Area (Acres)				***3.25***	

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

For the "second facility" there would be fewer administrative spaces and therefore a slightly smaller overall footprint.

Table 19 - Fully Consolidated Second Facility Space

SECOND FACILITY SPACE PLAN ESTIMATES						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
A	ADMINISTRATION	1			2,293	
B	INFORMATION SERVICES	1			688	
C	COMMUNICATIONS OPERATIONS	87			11,615	
D	STAFF SUPPORT	0			5,050	
E	UTILITIES	0			3,000	
	Main Building Subtotal				22,645	
	Building Gross up @ 10%				2,265	
	Total Staff & Gross Area	**89**			**24,910**	Not accounting for spatial configuration efficiencies during actual design
	Total Site Area Required (SF)				**134,991**	Building + Site
	Total Site Area Required (Acres)				**3.10**	
SPACE GROUP A - Administration						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Public Lobby	0	1	250	250	
2	Lobby Unisex Restroom	0	1	128	128	
3	Administrative Assistant - Front Desk	1	1	150	150	
4	Executive Director's Office	0	0	250	0	
5	Confidential Secretary	0	0	120	0	
6	Business Operations Manager/CFO	0	0	150	0	
7	Human Resources Manager	0	0	150	0	
8	Human Resources Generalist	0	0	100	0	
9	Lead Accountant	0	0	100	0	
10	Accounting Assistant	0	0	100	0	
11	Copy and Office Support Work Room	0	1	200	200	
12	File Room and Storage	0	1	250	250	
13	Guest office/work room	0	1	150	150	
14	Conference Room - 14-16 people	0	1	400	400	
15	Staff Men's Restroom	0	1	128	128	
16	Staff Women's Restroom	0	1	128	128	
17	Coffee Bar area	0	1	50	50	
	Administration Net Area				**1,834**	
	Administration Gross Area				**2,293**	Net area x 1.25
	Projected Staff	**1**				

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SPACE GROUP B - Technology and Facilities Support Team						
1	Technology and Facilities Manager	0	0	150	0	
2	Network Administrator	0	0	100	0	
3	CAD System Administrator	0	0	100	0	
4	GIS/9-1-1 Database Specialist	0	0	100	0	
5	System Support Technicians	1	1	250	250	
6	Work Area and Equipment Staging/Storage	0	1	300	300	
	Information Services Net Area				**550**	
	Information Services Gross Area				**688**	Net area x 1.25
	Projected Staff	**1**				
SPACE GROUP C - Communications Operations and Technology Spaces						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Deputy Director - Operations	1	1	150	150	
2	Standards and Professional Development Manager	0	0	100	0	
3	Training Coordinator	0	0	100	0	
4	Trainer	1	1	100	100	
5	Quality Assurance/Quality Improvement Analyst	0	0	100	0	
6	Lead Shift Supervisors Office	5.5	6	40	240	
7	Supervisors Positions	5.5	2	200	400	
8	Call Taker Positions	13.2	8	140	1,120	
9	Dispatch Position	60.5	14	165	2,310	
10	Training, Special Operations and Backup Dispatch Positions	0	8	165	1,320	
11	Training Classroom	0	1	500	500	
12	Supply Storage	0	1	120	120	
13	Women's Comm Room Restroom	0	1	300	300	
14	Men's Com Room Restroom	0	1	300	300	
15	Quiet Room	0	1	81	81	
16	Quiet Room	0	1	81	81	
17	Coffee Bar area	0	1	50	50	
18	File /Copy Work Area	0	1	120	120	
19	Employee Mail Slots	0	1	100	100	
20	Main Technology Systems Room	0	1	1,200	1,200	
21	Radio Equipment Room	0	1	800	800	
	Communications Net Area				**9,292**	
	Communications Gross Area				**11,615**	Net area x 1.25
	Projected Staff	**87**				

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SPACE GROUP D - Staff Support Areas						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Women's Restroom/Showers	0	1	400	400	
2	Men's Restroom/Showers	0	1	400	400	
3	Exercise Gym	0	1	400	400	
4	Men's Locker Room	0	1	400	400	
5	Women's Locker Room	0	1	400	400	
6	Break Room/Kitchen	0	1	800	800	
7	Shelter In Place Storage	0	1	200	200	
8	Shredder Area	0	1	100	100	
9	Building Maintenance Work Area	0	1	200	200	
10	Janitor's Closets	0	2	120	240	
11	Loading Dock & Transition Storage	0	1	500	500	
	Staff Support Net Area				**4,040**	
	Staff Support Gross Area				**5,050**	Net area x 1.25
	Projected Staff	**0**				

SPACE GROUP E - Utilities						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Electrical Room	0	1	600	600	
2	UPS Battery Room	0	1	300	300	
3	Mechanical	0	1	1,200	1,200	
4	Boiler	0	1	200	200	
5	Fire Sprinkler Control Room	0	1	200	200	
	Utilities Net Area				***2,500***	
	Utilities Gross Area				***3,000***	Net area x 1.20
	Projected Staff	**0**				

SITE & PARKING						
Space ID	Description	Staff	# of Spaces	Unit S.F.	Area S.F	Notes
1	Building Footprint				24,910	Assumes single story square footprint concept; does not include vert. circulation
2	Building Stand-off Area		*623*	*75*	46,761	
3	Visitor Parking		*35*	*325*	11,375	
4	Visitor ADA Parking		*2*	*512*	1,024	
5	Staff Parking		*70*	*325*	22,750	
6	Staff ADA Parking		*4*	*512*	2,048	
7	Generators				2,000	
8	Fuel tank				1,000	
9	Radio Transmitter Tower				625	
	Site & Parking Net Area				*112,493*	
	Site & Parking Gross Area (SF)				***134,991***	1.2 multiplier for open space allowance (trail, storm retention, utilities, landscaping, etc.)
	Site & Parking Gross Area (Acres)				***3.10***	

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Factors Influencing Development and Siting of Consolidated Public Safety Communications Centers

The consolidation of public safety communications centers is being evaluated and implemented all across the country by jurisdictions large and small. This strategy is being pursued for a variety of reasons, and the predominant trends include:

- For smaller organizations the ability to combine their operations can result in deeper staffing levels so that surges in incident volumes are more easily absorbed without decreasing service levels to other events.

- Even larger organizations see opportunities to improve service levels by providing deeper staffing levels or specialized services that aren't possible with smaller single-agency dispatch operations.

- Organizations large and small see benefits of pooling resources to handle ever-increasing costs of operations, particularly the high costs of keeping communications center technology systems up to date and operational. The refreshment and replacement lifecycles on these systems are becoming relatively short, requiring recurring capital reinvestments that are challenging to virtually any jurisdiction, large or small, if they need to face them on their own.

- Many emergency communications centers have been in service for many years and have long ago outgrown their useful capacity. Current codes and standards for public safety communications centers require that new facilities be constructed to higher standards which drives the cost of construction up significantly, making it more efficient for multiple jurisdictions to pool their resources and operate out of consolidated facilities.

- Further, the current codes and standards are making it very difficult to place emergency communications centers into existing structures that weren't built to essential facility standards, increasing the pressure to develop purpose-built facilities on sites that are isolated from natural and man-made hazards.

- New purpose-built facilities are being designed to accommodate multiple lifecycles of their core equipment and technology systems without requiring significant modification to the building.

- Because of the more intense building design and construction requirements, new purpose-built communications centers are being designed with multiple years of growth factored into their planning so that costly expansions are not needed for many years to come.

- As communications centers consolidate into larger organizations, it becomes more challenging to identify partner communications organizations to serve as a backup in the event that the facility needs to be evacuated. Backup operations strategies remain a high priority because even well designed and hardened facilities may need to be evacuated due to environmental or other threats.

- As the trend towards consolidation continues, the industry is also seeing migration to technology systems that can operate from multiple physical infrastructures or in a cloud-based IT

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

architecture. This allows larger consolidated communications centers to use combinations of their primary and backup locations to provide higher reliability for core systems such as 9-1-1 telephony, CAD and logging/recording.

These trends are driven by a body of codes and standards that either regulate or advise the process of designing and constructing an emergency communications center.

International Building Code (IBC) – The International Building Code and its companion suite of Fire, Mechanical and related codes, is the formal controlling authority for design and construction requirements in most jurisdictions. Public safety communications centers are characterized as essential facilities for purposes of these codes, and this brings a variety of minimum structural requirements and construction type constraints into the design equation. All of these result in facility construction costs that are significantly higher than comparably sized general office construction.

National Fire Protection Association Standard #1221 – The Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems (NFPA 1221) is widely accepted as the required standards reference for public safety communications centers. Even if not adopted by ordinance, NFPA Standards typically carry comparable weight to adopted codes, and are typically the standard reference used during insurance rating process for fire protection insurance rates. Chapter 4 of NFPA 1221 contains a number of specific requirements for communications centers, including:

- The requirement for an alternate communications center that is separated geographically to protect against single events rendering both facilities inoperable
- The facility needs to be sized to handle peak workloads rather than just average workloads
- Design and construction techniques that protect from any collapse of adjacent structures, such as communications towers associated with the communications center
- Requirements to locate communications centers above the designated 100 year flood plain
- Enhanced requirements for fire resistive construction techniques and separation from any adjacent occupancy types
- Requirements for fire protection systems including FM200 or similar systems for electronic equipment rooms
- Requirements for mechanical and electrical systems that are separate from those serving other areas of the building
- Requirements for redundant mechanical systems for areas housing critical equipment and redundancies that allow the facility to remain operational with the largest HVAC unit out of service
- Requirements for physical site security including the ability to prevent unauthorized vehicles greater than 82 feet from the structure.
- Requirements for alternate power sources (backup generators) that are capable of supporting the continuous operation of the communications center and all of its systems

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Commission on Accreditation of Law Enforcement Agencies (CALEA) – CALEA standards contain several requirements regarding facility security, backup systems and facilities, and alternate power systems.

National Emergency Number Association (NENA) – NENA has published a number of Standards and Operational Information Documents (OID) that guide the development of public safety communications centers.

- The NENA Public Safety Answering Point Site Selection Criteria document (NENA OID 56-506) provides a number of useful guidelines for planning and locating new emergency communications facilities.

- The NENA PSAP Survivability document (NENA OID 53-503) provides useful guidelines on the configuration and operation of communications centers and systems.

- The APCO-NENA Service Capability Criteria Rating Scale document (APCO-NENA OID 53-505) provides useful guidelines and techniques to evaluate the performance capabilities of emergency communications centers.

Federal Emergency Management Agency (FEMA) – FEMA has published two documents that are commonly referred to during the design and site selection process for emergency communications facilities.

- The Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings document (FEMA 426) provides a large volume of detailed information to assist in the assessment of risks, determining best strategies for site layout and facility design, and observations about protecting against explosive blasts or chemical, biological or radiological threats.

- The Risk Assessment: A How-to Guide to Mitigate Potential Terrorist Attacks document (FEMA 452) provides guidelines, tools and techniques to assist in conducting risk and vulnerability assessments. While originally developed to assist in assessing terrorist attack risks, the document is being revised to include techniques to help assess multi-hazard conditions such as earthquake, flood and high wind hazards.

Other Related Standards – There are a variety of other standards and industry practices that influence the design, operation and security of public safety communications centers such as the Insurance Service Organizations (ISO) Fire Suppression Rating Schedule, the Commission on Fire Accreditation International (CFAI) and the FBI's Criminal Justice Information Services (CJIS). Often the facility related requirements of these organizations are mirrored in the other guiding references listed, but all of them need to be consulted and coordinated in the planning and construction of new facilities for public safety communications centers.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Factors Influencing Site Selection for Newly Constructed Facilities
While a number of detailed site requirements will be driven by the ultimate size and design of the facility, a number of general criteria will factor into the initial selection of candidate sites for detailed evaluation. These include:

- The facilities should be separated by enough distance so as to minimize the potential for a single event to render both of the facilities unable to function. While a large regional weather event may impact multiple facilities, the probability of this occurring can be reduced by separating them as much as practicable, and by designing both facilities to the highest possible storm resistance standards the likelihood of both being rendered unusable could be significantly decreased.

- The selected sites need to be above both the known 100-year flood plain and any areas known to experience seasonal urban flooding that could limit access to, or use of, the facilities. Similarly, the selected parcels would need to be in areas that are reasonably accessible in the event of a flooding.

- The selected sites should be of sufficient size to accommodate reasonable growth of the facility over time while preserving required hazard setbacks from adjacent parcels and land uses.

- The selected sites should be as far removed from known (or reasonably predicted) natural and industrial hazards as practical. This would include areas zoned in such a manner that high-risk industrial occupancies are allowed (whether present currently or not). Reasonable distance from rail lines and pipelines is also an important consideration.

- Ideally the selected sites would be easy to provide redundant and alternatively routed utility services to the building, such as electrical power, telecommunications services and water. Further, locations that are on highly reliable portions of the electrical service grid are preferable to locations isolated on single substations and electrical feeds.

- The facilities will likely require a radio and microwave tower associated with the facility so only parcels without height restrictions due to aviation rules or zoning requirements should be considered. Ideally the location would also be free of significant terrain obstacles limiting the ability to interconnect the facility via microwave to existing critical networks already in operation.

- Ideally the selected parcels would be in a low-crime area and an area where the communications center would be a welcome addition to the business community or neighborhood. This also creates a safer environment for the employees who come and go from work at all hours of the day.

Facility Reliability Considerations

- The prevailing codes and standards for emergency communications facilities provide an excellent framework for the creation of reliable facilities.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

- Beyond code requirements, the siting of the facility is also a significant contributor in creating a setting that is sustainable and reliable. Isolation from environmental and man-made hazards helps assure that external factors have limited impact on the reliability of the facility.

- The configuration of the facility and the placement on the site also contribute to reliability. Guidelines related to the ability of the facility to resist high winds, wind-borne debris or the effects of explosions help design facilities that are more reliable than normal architectural approaches.

- Site selection and facility placement on the site also contribute to the effectiveness of alternate utility services to the facility. Alternate services help decrease the potential for utility interruptions rendering the facility unusable.

- The degree of facility infrastructure redundancy is also a factor in overall facility reliability. Some elements of redundancy are required by various codes or standards, but other logical redundancies, such as how power is conditioned and provisioned to technology equipment, can greatly improve the reliability of the facility.

- However, even with the most hardened and most redundant facility, there will always be the potential for a single event to render the facility unusable. Examples include things like accidental or intentional chemical or biological releases, large natural gas leaks, etc.

- Therefore, no matter how much reliability is designed and built into the facility, it is important to have a viable backup strategy in place, which is directly supported by the concept of actively operating out of redundant facilities.

Technology Reliability Considerations

- Technology systems utilized in public safety communications centers can be designed and implemented with a number of redundancy and fallback strategies to increase their overall reliability and up-time performance.

- Many communications center backup technologies are now moving towards decentralized IT architectures or “cloud” strategies. This creates an opportunity for communications centers to divide up their IT infrastructure between primary and backup locations so that virtually normal operations could be conducted regardless of which facility was being occupied. This strategy directly supports the concept of actively operating out of redundant facilities.

- Even with the most reliable and/or redundant facilities and technologies, overall reliability of the organization’s ability to deliver continuous services will require well scripted backup plans that are practiced on a routine basis.

- This also requires that the agencies being served are also included in the planning and exercises so they know what to expect and how to operate if backup conditions are initiated.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SECTION 6 – FINANCIAL ANALYSIS

Scope of Consolidation Project and Financial Analysis

The objective of the financial analysis phase (Phase 6) of the consolidation study is for the IXP and Baker Tilly team to develop consolidation and shared service financial models to evaluate against the current cost of 911 dispatch operations as collected during the phase 3 onsite visits and subsequent data requests. Specifically, we present the cost implications of the two proposed consolidation models (desired future state) through comparison of revenues, staffing expenses, operational costs, capital (ongoing and site acquisition) and capital avoidance to the current state so as to provide a fiscal analysis of the benefits and costs of the proposed consolidation options.

While this section focusses on the fiscal impacts of consolidation, it is important to keep sight of the fact that both the Semi-Consolidated and the Fully Consolidated models have been structured from a staffing, facility, technological, and operational environment under ideal dispatch conditions. The figures used to develop the models are based upon best practices within the industry. Specifically, this includes a considerably higher level of supervisors than that of the current state, a full-time training coordinator and trainer, human resource and accounting staff sufficient for stand-alone operations, and newly financed capital equipment. The assumptions used for these models have created an opportunity for Lake County dispatch operations to migrate to an ideal public safety answering point environment. Details of the organizational structure and compensation levels can be found in Appendix 8.

This financial analysis identifies the overall financial requirements to be considered in order to create the consolidated models. The estimated future costs are compared to current actual and estimated costs (when actual was not reported) by costing category, and as indicated by the financials of the existing communications centers and ETSBs and comprise the relative cost of 911 services in Lake County.

It is important to note that ongoing capital needs and site acquisition costs for the models were financed and assumed on an annualized basis, to provide an accurate comparison to current capital costs. Since cost avoidance is a significant consideration of any consolidation fiscal impact analysis, our analysis also includes an annualized cost avoidance amount for the models using data drawn from site visits documenting observed 911 systems and related maintenance.

The conclusion of this analysis is that if the current operating structure for providing 911 services in Lake County were to be modified from independent 911 centers and ETSBs to a more consolidated structure the potential savings would range from approximately $427,772 to over $$2,396,000 on an annual basis when compared to existing costs.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Table 20 – Potential Savings by Model

Consolidation Option	Projected Overall Savings
Fully Consolidated	$2,396,020
Semi-Consolidated	$427,772

The most significant impacts on costs as the result of a consolidated operation are the following:

- Decreased staffing expense due to economies of scale in consolidated operations
  - ($2.5M – Fully Consolidated only)
- Avoidable costs for capital equipment and maintenance
  - ($2.3M – Fully Consolidated to $.7M Semi-Consolidated)
- Required investments in site acquisition and development
  - ($3.0M – Fully Consolidated only)

Comparison of Annual Fiscal Impact - Current to Proposed Models

The specific fiscal impact when comparing each model to the current expenditures relative to the subcategories of expenses is highlighted below. Operating expenses will be decreased by $2.396M in a Fully Consolidated model, and there will be a decrease of $.4M if a Semi-Consolidated model is adopted.

This increase for the Semi-Consolidated model is the result of several factors. While the total staffing levels of 228 are similar when comparing the current state to the Semi –Consolidated model, the position requirements vary considerably. As noted earlier in this report, a complex multi-jurisdictional and multi-disciplinary communications center requires an adequate level of supervision to oversee the personnel, call taking, and dispatching activities. Therefore, the shift supervisory FTE requirement for the Semi-Consolidated state is 49.5 compared to the current 25 FTE level. Since supervisors are compensated at a higher level, this increased staffing contributes to the additional staffing expense for the Semi-Consolidated model. In addition, the Semi-Consolidated model factors in a full-time HR manager and generalist, a CFO and two accountants, a full-time training coordinator, and other management and support personnel that are not directly or fully accounted for in the current state as they are shared services with other governmental departments. In other words, the costs exist in the current state, but they are not allocated directly to the dispatch operations.

These models are based on industry best practices. There can certainly be modifications due to local operational policies or adjusted call volumes. Based on the eventual policies adopted by the Governance board, adjustments to the staffing models will surely take place. As an example, it may be decided by the Governance and Operations Boards that the “graveyard” shift does not require a Shift Supervisor at all 9 facilities of the Semi-Consolidated model. This could effectively reduce the FTEs required to fill these positions anywhere from 1.5 for one PSAP to 13.5 if all nine PSAPs adopted the policy. The annual savings associated with this operational decision would therefore range from +/- $150k to $1,350k.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The below table reflects a summary of the overall cost decreases that can be expected from the proposed consolidation models. The table shows the variance in current to proposed costs and are not a summation of the figures in the columns.

Table 21 – Cost Comparison

	Current State	Semi Consolidated	Semi Consolidated Delta	Fully Consolidated	Fully Consolidated Delta
Total Surcharge Revenue	$6,832,833	$6,832,833	N/C	$6,832,833	N/C
Total Operating Expense	$25,419,166	$25,995,591	$576,425	$22,656,038	($2,763,128)
Total Staffing Expense	*$19,858,072*	*$21,464,363*	*$1,606,291*	*$17,367,777*	*($2,490,295)*
Total Annualized Capital Expense	$2,097,948	$1,793,208	($304,740)	$1,887,827	($210,121)
Net Income (cost)	($20,684,281)	($20,256,509)	$427,772	($18,288,261)	$2,396,020

Balance sheet level summaries of these cost savings by Model are presented in the tables located in Appendices 7 and 8.

Current Operations and Financial Summary

Overview of Current Operations

One of the first objectives of the financial analysis phase of this project was to identify the current cost of operations and capital expenses being incurred by the PSAPs and ETSBs in Lake County. As part of the third phase of the consolidation study, IXP gathered financial and budgetary reports from their site visits. Other financial data was subsequently obtained from the 911 filings to the Illinois Commerce Commission (ICC), financial and budgetary reports posted by the Lake County municipalities which summarized the costs of dispatch operations, and subsequent IXP and Baker Tilly data requests.

Overall, the current state involved a geographical fiscal analysis of:

- 16 primary and secondary PSAPs in Lake County in addition to 4 in neighboring counties (See Tables 3 & 4)
- 21 ETSBs in Lake County and 4 in neighboring counties (See Table 2)

Staffing is the most significant cost driver of providing dispatch services. In fact, under the current structure of proving 911 dispatch services, staffing expenses (including benefits) comprised 72% of the total cost of operations.
At the time of IXP's data gathering, Lake County dispatching services involved 235.5 employees broken down within the following categories:

- 11 Directors/Deputy Directors/Center Managers
- 2 Administrative/Technical/GIS positions
- 25 Supervisors
- 197.5 Lead Telecommunicators, Telecommunicators (full-time and part-time)

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

In consideration of the ongoing capital costs and the future capital avoidance factors, the IXP and Baker Tilly team also obtained information regarding the following capital components maintained by the PSAPs in Lake County:

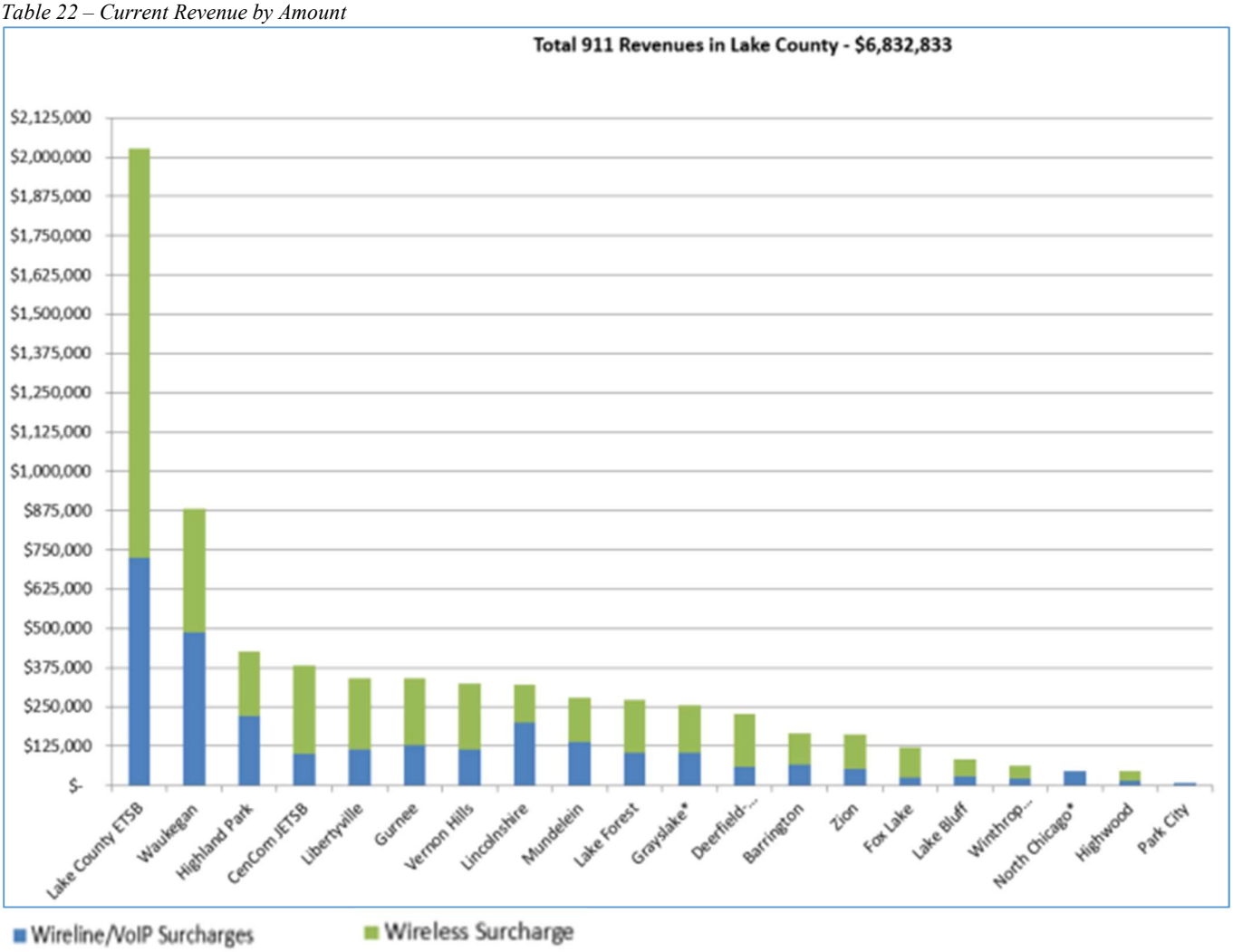
- 11 separate CAD systems from 7 vendors in use
- 13 separate 911 telephony systems of various ages
- Multiple radio systems

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Revenue Analysis

Our financial analysis of the current operations begins with the revenues of the PSAPs and ETSB's. The majority of the revenues are derived from wireline, VoIP, and wireless surcharges. Excluding subsidies from the municipalities' general fund and contractual charges to other districts for dispatch services provided, 97.61% of the revenues collected were from surcharges.
Using the fiscal 2015 ICC filings, 911 revenues derived from surcharges amounted to $6,832,833, broken down by ETSBs in the following manner:

Table 22 – Current Revenue by Amount

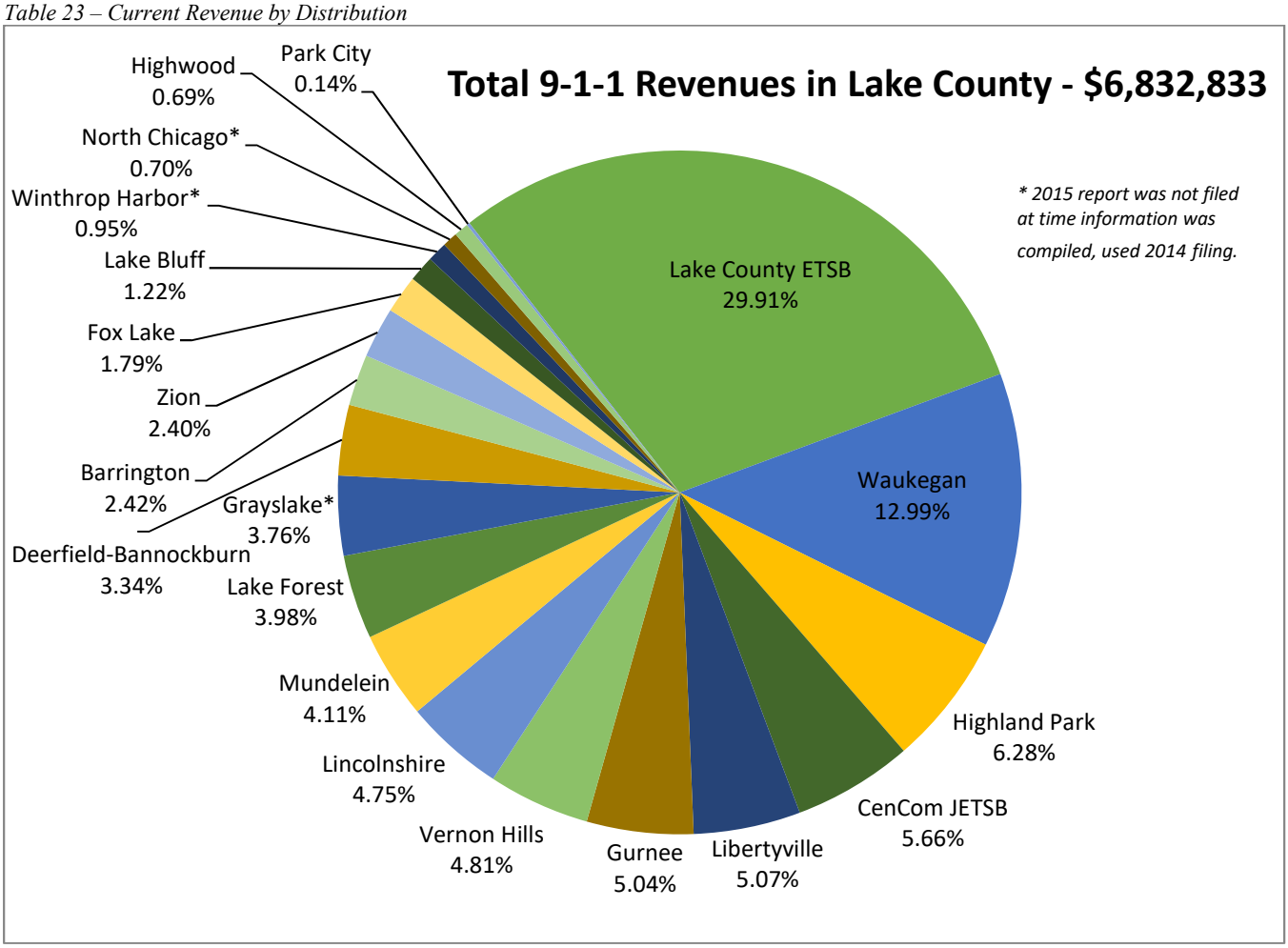


** 2015 report was not filed at time information was compiled, used 2014 filing.*

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

On a percentage basis, the distribution of the 2015 surcharges was the following:

Table 23 – Current Revenue by Distribution



Several assumptions were made when compiling this revenue data for the current state, and projecting them to the Models. Those assumptions included that the ETSB filings are accurate, and that there would not be a significant change in surcharge revenue between the current and future state as the intent of the statutory changes was to make the ETSB's whole.
Other known revenue sources such as alarm calls were not factored into the consolidation study since they are localized resources that would not be transferable to the Models. General fund subsidies were not included since the consolidated models are intended to stand on their own financially. This revenue data does however include amounts from cost allocations charged out to participating districts.

Therefore, under consolidation, revenues are assumed to not change (a zero-dollar fiscal impact) since existing surcharges would simply flow into the newly consolidated structure(s).

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

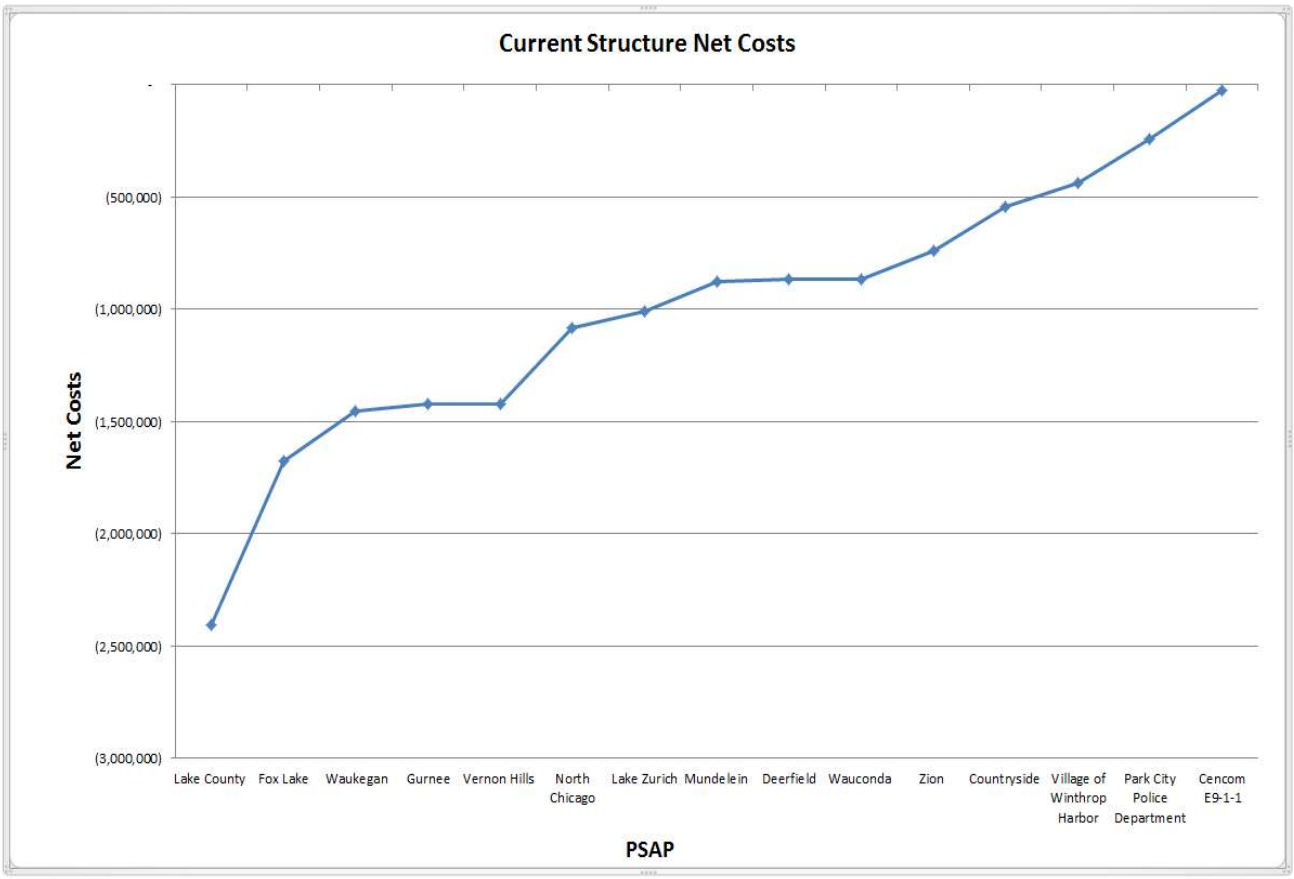
Expense Analysis

Expenses are analyzed within three primary categories, staffing, operations, and capital. To determine these costs under the current state, we again relied upon the financial data gathered during the site visits, 911 filings, information posted on-line, and subsequent data requests obtained after the site visits. The largest cost-driver under the current state is salaries and benefits, comprising 72% of the costs to run dispatch operations for 2015. Operational costs related to CAD and other equipment licensing, maintenance, supplies, professional services, etc. comprised 20%, with the 8% balance coming from ongoing capital costs.

Once we accumulated the current salary, overtime, and benefit costs as reported for 2015, we built in an inflationary factor of 2.5% to increase the figures to estimated 2016 amounts. This was done so as to be more comparable to the amounts presented in the Models which represented 2016 salary data. In addition, we also built in an inflationary factor of 2% for operational costs to once again compare to the 2016 data compiled for both Models. The 2% factor was determined from the CPI Inflation Calculator provided by the Department of Labor, Bureau of Labor Statistics for all goods and services purchased for consumption by urban households.

As with most essential government operations not entirely funded by user charges, governments must fund (subsidize) the operations through the levy or other forms of taxation. An analysis of the net costs to provide dispatch services for each of the PSAPs highlights the level of this subsidization:

Table 24 – Current Net Costs by PSAP



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

As can be seen from the above analysis, the **current net cost to provide the dispatch services is substantial at $15,069,464 in total, prior to the application of any estimated costs or inflationary factors.** Please note: this ***current net cost figure*** is different from the net current cost amount used for comparison purposes (current state to each of the models) which considers the equivalent current net costs incurred relative to a stand-alone 911 operation at which point estimations and an inflationary factor are appropriately applied. Charges to other districts are also factored into this analysis since many of the above PSAPs rely upon this as a major funding source. Under consolidation, these shared costs will be equitably allocated based upon a to-be-determined cost sharing strategy.

Current capital costs were obtained from the same financial and budgetary reports as noted above, as well as the 2015 911 ICC filings. The detail of these capital costs reported a wide variety as to amounts and types of capital incurred for the dispatch centers. This was anticipated based upon the inherent nature of capital expenditures in a dispatch operation. With the large number of PSAPs and ETSBs reporting this data though, the $2.1M in capital costs for the current state appears reasonable based upon two comparable sets of data: It is slightly higher than the $1.8 to $1.9M annual ongoing capital costs estimated for the Models, as financed over 10 years (a typical life-cycle for the major capital categories), and it also approximates the $2.3M annual cost avoidance estimated for the Fully Consolidated model as discussed later in this report.

Fiscal Impact Summary of Consolidation Options

This fiscal analysis examines the two Models and compares the estimated costs to the current state relying upon baseline statistics and key assumptions for each scenario.
A descriptive summary of the two Consolidation Models is presented in the following table:

Table 25 – Consolidation Models Summary

	Semi-Consolidated: A transition stage where the fully consolidated management and organizational structure is put in place with shared systems and operations. This allows staffing reductions that begin to approach the level of efficiency that will ultimately be achieved in the Fully Consolidated model.	**Fully Consolidated:** Single organization and governance structure operating two dispatch centers that each provide redundancy and diversity for the other.
Staffing	228.1 FTEs	192.3 FTEs
Technology Investment	**Replace/Upgrade**: 9-1-1 & Admin Telephony, CAD/RMS/Mobile, Radio, & Other Technology Systems; Network Backbone; Administrative servers, racks, KVM, etc.; **Supplement**: Logging & Recording, Alarm Board & Video Integration systems; Warning Siren Interface; Admin PCs, printers, FAX, Licenses, etc.	**Replace/Upgrade**: 9-1-1 & Admin Telephony, CAD/RMS/Mobile, Logging & Recording, Radio, Alarm Board, Video Integration, & Other Technology Systems; Network Backbone; Warning Siren Interface; Administrative servers, racks, KVM, etc.; Admin PCs, printers, FAX, Licenses, etc.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Facilities	9 of the existing PSAPs Office site	Headquarters facility Second facility
Development	None	Building, Land, Soft Cost and Contingencies

An overall, high-level analysis of cost implications under the two Models, compared to the current state, shows that the annual fiscal impact resulting from consolidation saves $2,396,020 for the Fully Consolidated model and $427,772 under the Semi-Consolidated model.

A summary of the estimated **actual** cumulative operational cost being covered by the jurisdictions and a comparison of the level of cost covered through consolidation as compared to current is as follows:

Table 26 - Operational Costs Summary

	Current State	Semi-Consolidated	Fully Consolidated
Total Expenditures covered by 911 Surcharge Revenues	$6,832,833	$6,832,833	$6,832,833
Total Expenditures covered by Jurisdictional Operating Budgets	$20,684,281	$20,256,509	$18,288,261
Total Operating and Capital Expense	**$27,517,114**	**$27,089,342**	**$25,121,094**

It should be noted that the costs displayed in the above table for the current state include estimations for "soft costs" being incurred by other municipal departments but not allocated to dispatch operations. It also includes inflationary factors to present data consistent with the Modeled costs determined with 2016 data.

The net cost to provide 911 dispatch services (using a similar cost approach as the cost estimation for the consolidation models) is $20,684,281 each year. When compared to the net cost for the two models, it is evident that the Fully Consolidated and the Semi-Consolidated models provide substantial financial benefits to consolidate in addition to the less tangible benefits of improved training, more stringent Quality Assurance metrics, access to a larger staff pool and other benefits associated with a larger organization.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

While there are many cost components to the Models and current state, a quick summary of the impact of consolidation on the key costs when compared to the current state is highlighted below.

Table 27 – Impact of Consolidation Summary

	Semi-Consolidated	Fully Consolidated
Total Compensation Dollar Amount Percentage of Total	 Increase Increase	 Decrease Decrease
Total Operating Expense	Increase	Decrease
Routine Capital Expenditures (currently approximately 7.6% of total annual expenditures)	Decrease	Decrease
Site Acquisition and Development	None	New Facilities

The most significant cost saving factors to be noted as part of the fiscal analysis include the reduction in staffing expenses going from the current state to the Fully Consolidated (almost $2.5M savings) model, as well as the avoidable costs for capital and related maintenance under consolidation. The capital acquisition and maintenance avoidance costs are estimated to be $2.3M each year for the Fully Consolidated, and $700,000 each year for the Semi-Consolidated scenario. It should be noted that the capital costs indicated may be slightly lower than estimated here, given that subsequent to the data gathering phase, STARCOM investments were made by some of the likely consolidated entity participants. The detailed revision to this figure will be made once the exact participants are known as part of the implementation phase of the consolidation effort (see Appendix 6).

The most significant areas experiencing a cost increase under consolidation include the annualized site acquisition and development costs for the Fully Consolidated ($3.0M) model and the staffing expense for Semi-Consolidated scenario.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Detailed Costing of Consolidation Options – Operational

Operational Cost Estimates

As part of our analysis of the current state of costs to provide 911 dispatch services, IXP and Baker Tilly found it necessary to estimate certain operational costs that were not being captured in the financial or budgetary data of the call centers. These types of costs are typically being recorded within other cost categories or departments of the municipalities and are not commonly allocated to the benefitting functions or services of the government, such as dispatch operations. However, the cost modeling requires that all costs necessary to operate a fully functioning dispatch operation be represented. Within the financials of the call centers, the costs budgeted or recorded do not consistently reflect the full cost of operations such as central jurisdictional administration, HR/payroll/accounting, legal services, liability insurance, and similar overhead costs. As such, the true costs of current dispatch operations are more expensive than reported within the call center financial data provided. Therefore, we used a variety of techniques to estimate these types of costs, including:

- External benchmark data when available
- Actual costs reported by other call centers to estimate the same costs for those that did not report
- Known costs for similar services provided at other call centers of similar size

The resulting estimated costs added to the current state operational costs are an additional $648,284. The details of these cost estimates, the basis for the estimates, source of data, rates, and a detailed explanation of each can be found in Appendix 7.

Total Compensation Expense

As noted earlier in this report, staffing comprises the largest component of providing dispatch services. At the time of this study, Lake County dispatch operations involved a total of 228 FTE's. While these figures can and do change on a daily basis, this data was accumulated from our site visits along with subsequent follow-up when conditions were known to change as of fall 2016.

Staffing levels for the Fully Consolidated and the Semi-Consolidated models are set at 192.3 and 228.1 FTEs, respectively. With 35.7 fewer FTE's than the current state, **the Fully Consolidated model is projected to save almost $2.5M each year from reduced staffing,** including benefits and overtime, costs when compared to current compensation levels. The Semi-Consolidated version has a very similar FTE level as the current state. The details of the staffing for the three models can be seen in Appendix 8.

Non-Compensation Operational Expense

While staffing is one component of operations, the other types of operational costs include annual licensing and maintenance fees associated with technology, as well as administrative, office equipment and supplies, insurance, utilities, rents, professional services, and other types of operational costs.
For the current state, many (if not most) call centers reported costs in a wide variety of categories. We determined how to categorize these costs utilizing a crosswalk type of approach so as to report them consistently with the operational costs presented in the models.
For the models, IXP estimated these operational costs by comparing costs from several other large multi-jurisdictional communications center budgets from agencies they have worked with in past. Information was also gained from IXP's own experience in operating several multi-jurisdictional communications centers around the country. Some of these numbers were then augmented by Baker Tilly based on specific local data.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The details of the other operational costs for the models can be seen in Appendix 7.

Capital Expense
For capital costs, as noted earlier, the current state used actual costs reported by the call centers within their financials. This amounted to just over $2M for 2015. Capital costs are specifically restricted to hardware, systems, generators, HVAC, and other capital items that are typically incurred within a 5 to 20-year lifecycle. Maintenance and licensing types of costs associated with capital were not included in this category. Rather, they were included in the operational costs since they are annual support types of costs that would not be capitalized under current accounting standards.

The primary capital items noted for the two Models include technology systems such as 9-1-1 and telephony, CAD/mobile, radio systems, alarm boards, servers, and more. The details of these costs can be seen in Appendix 7.

Since most of these initial capital costs will need to be incurred up-front for consolidation, IXP and Baker Tilly annualized the costs by assuming that they would be financed with a 10-year bond at a rate of 4.0%. Ten years was used since most of the equipment would have a similar life-cycle, and the rate was derived from recent Lake County borrowings. This resulted in an annual finance cost of almost $1.9M for the Fully Consolidated model and almost $1.8M for the Semi-Consolidated scenario. As noted earlier, **the expected benefits of consolidation simply from a capital expense standpoint can be seen with both models when compared to the current state where each dispatch center must purchase their own systems.**

However, there is a capital consideration that needs to be factored into this comparison, capital and maintenance avoidance. See a discussion of this below for further detail.

Site Acquisition and Development Costs
Since the Fully Consolidated model would newly construct two separate dispatch centers, this Model must also include site acquisition and development costs. While this requirement presents a disadvantage from a cost perspective under consolidation, new facilities have many other tangible benefits explained elsewhere in this report. Regardless, it is an additional cost component that needs to be considered.

The primary, or headquarter facility would involve the acquisition of an estimated 3.25 land acres where a 28,237-square foot building would be constructed. The second facility would be built on newly purchased property of 3.10 acres for a 24,910-square foot building. For the estimated cost, the IXP and Baker Tilly team used a $906 per square foot figure. This figure includes not only the cost of construction, but also planning, design, permitting, inspections, commissioning and occupying of both facilities. It also factors in the cost of furniture, fixtures, and non-dispatch related equipment. These "soft costs" were estimated to represent 35% of the cost of construction.

In developing the conceptual space plan model for the Fully Consolidated facilities, IXP based the square footage for individual offices on specific information provided by the County. The remaining estimates for individual meeting rooms, work spaces and the like are based on our experiences of having recently concluded a detailed space planning effort with South Sound 911 for the facilities they currently

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

have under development. In that effort, the agency was careful to size individual spaces to accommodate not only how they intended to operate and staff their organization at the outset, but to also allow them to deal with anticipated growth as well as shifting staffing models, where spaces may have to change their intended use one or more times during the life of the facility.

As Lake County approaches detailed planning and design for the Fully Consolidated facilities, it may be found that some of these spaces need to be adjusted either up or down depending on the circumstances in place at the time the facilities are designed. For example, if the current Lake County space planning standards were applied to these estimates, several office spaces would decrease in size by several square feet per space. Collectively this may result in space reductions that help lower the overall cost of the facility projects. For each 1,000 square feet in space reduction, an estimated $906,000 could be saved in the overall facility construction cost.

Land was estimated at $8 per square foot. The represents just the cost of the land. The price for land can vary significantly depending on its state at the time of purchase. Some parcels already have some degree of civil infrastructure in place or close at hand (water, sewer, power, etc.) so they bring a higher price, while others would require more development just to get the point that they could be built on (and thus a lower price).

Further, the construction cost estimate used above is based on a model where site development costs are assumed to be a part of building the building and not in place in the raw land purchase. But they also assume construction in a suburban type of setting rather than a corn field. So, using a conservative $8/sf for the land makes better sense than the higher end of the range ($12/sf) because the construction cost estimate includes routine site preparation and civil improvements to get to the actual building-of-the building phase. Conversely, going as low as some of the samples found ($4-$6/sf) could require more extensive site development costs and the construction cost estimate might end up being low.

To determine the cost of site acquisition and development, the primary headquarters and the associated land required was estimated to cost $26.7M. The second facility was estimated to cost $23.65M. We financed this total cost of $50.34M over 30 years at a rate of 4.0% for a resulting $2.88M annual finance cost to construct. Thirty years was used as this is a common figure for amortizing the life of a building under current accounting standards. The details of this cost are outlined in Appendix 7 as well as the amortization of the costs. For budgeting purposes, the site acquisition and development costs have been calculated to be $3.0M per year.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Cost Avoidance through Consolidation

As with any consolidation involving a capital outlay, significant consideration has to be given to the amount of capital and related maintenance expense (from that same capital), that can be avoided in future years. As part of our fiscal analysis, we analyzed the major systems (CAD, 9-1-1 telephony, radios, and logging systems) for each of the PSAPs that would close under the Semi-Consolidated scenario, as well as under Fully Consolidated model, for potential cost avoidance over the next 10 years.

Based upon IXP site visits, the systems in place, as well as the age of those systems, was identified or estimated when necessary. Applying a likely replacement timeline to the known or estimated age of the systems, we developed a cost avoidance projection for both the Fully Consolidated model and the Semi-Consolidated model. Based on those projections, the Fully Consolidated model results in an estimated $15.2M savings and the Semi-Consolidated model results in an estimated $4.7M savings through cost avoidance over ten years. Given the future timeframe in which those savings will be incurred, we then determined an inflationary figure of 4.04% (see Appendix 7) to apply to these figures for a resulting equivalent consolidation related future cost avoidance value of $23.1M and $7.0M over ten years for the two models, respectively. While the cost of capital has decreased over the last 4.5 years (using the Department of Labor, Bureau of Labor Statistics CPI), maintenance costs have increased by a larger percentage. As such, we applied a weighted average of the capital and maintenance components and netted the deflationary and inflationary factors to the appropriate relative proportion of costs avoided as seen in Appendix 7.

Applying this inflationary figure within the appropriate weighted cost context, we determined a resulting annual cost avoidance figure of $2.3M for the Fully Consolidated model and $700,000 for the Semi-Consolidated scenario.

Further, we also developed an analysis of potential individual PSAP savings, presented both as a dollar figure, and on a percentage basis. The savings are considerable both as a whole, and for each individual PSAP. For an entity such as Park City, we estimated over a million dollars would be saved over ten years. **Each of the involved municipalities is projected to save at least $500,000 over the ten-year period, and most are projected to save in excess of $1M.** (See Appendix 7 for more detail.)

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Funding Models

Approaches to cost allocation for shared or consolidated services vary significantly and that which works best depends on the maturity of joint service relationships and sophistication of available data from involved entities. Based on experience with multiple clients all across the nation, there is no single communications center cost allocation model that is the "best". What works well in one jurisdictional setting may be totally unacceptable in another setting.

Cost allocation models vary in that some models attempt to integrate multiple variables such as population, calls for service, assessed valuation, and similar metrics. These variable based types of models (calls for service, often end up being both complex to administer and difficult for customer agencies to understand.

A more commonly accepted approach is a workload-based model. Since workload drives staffing levels, and since staffing levels typically are about 80% or more of a communications center operational costs, we often see success when adopting a workload-based model. These are also the easiest to administer and understand.

Options for Cost Allocation of Consolidated Centers

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

A. Method A: Call Volume and Population Formula

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

B. Method B: Equal Share and Population Formula

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

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

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

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

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

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

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

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

An example formula for this approach is as follows:

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

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

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Best Practice Insights on Cost Allocation

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

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

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

Require advance notice of decisions to discontinue membership in the consortium in order to ensure that cost allocations can be revised and communicated in advance of the next annual budget planning process.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

SECTION 7 – FINAL PRESENTATIONS [PLACEHOLDER]

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 1 – FOCUS GROUP INVITATION LETTER, ATTENDEES AND AGENCIES NOT REPRESENTED

Lake County
9-1-1 and Dispatch Consolidation Alternatives Study
Law Enforcement and Fire/EMS Leadership Focus Groups

As you know, the Lake County Emergency Telephone System Board (ETSB) has contracted with IXP Corporation to work with all the public safety answering points (PSAPs) and ETSBs in Lake County to evaluate possible opportunities and alternatives for the consolidation of 9-1-1 and/or dispatching services. This work will be commencing the week of July 27th with a series of Law Enforcement and Fire/EMS focus group sessions. These focus group sessions will provide an opportunity for the leadership of the public safety agencies in Lake County to provide input to IXP on the public safety service level expectations that need to be met as a part of any of the consolidation models/alternatives developed in the study.

There will be four focus groups conducted for the Law Enforcement community and four for the Fire/EMS community. The proposed agencies to attend each of these regional sessions is provided on the last page of this document.

	Location	Sessions
Tuesday, July 28, 2015	Lindenhurst Village Hall Board Room 2301 E. Sandlake Rd Lindenhurst, IL 60046	Law Enforcement 8:00 to 11:30am Fire/EMS 1:00 to 4:30pm
Wednesday, July 29, 2015	Gurnee Police Department Community Room 100 N. O'Plaine Rd Gurnee, IL 60031	Law Enforcement 8:00 to 11:30am Fire/EMS 1:00 to 4:30pm
Thursday, July 30, 2015	Countryside Fire Department 2nd Floor Meeting Room 801 S. Midlothian Rd Mundelein, IL 60060	Law Enforcement 8:00 to 11:30am Fire/EMS 1:00 to 4:30pm
Friday, July 31, 2015	Lake Zurich Police Department Training Room 200 Mohawk Trail Lake Zurich, IL 60047	Law Enforcement 8:00 to 11:30am Fire/EMS 1:00 to 4:30pm

At each of the focus group sessions, representatives from IXP will be facilitating a discussion with the attendees to gain a better understanding of the agencies themselves, the service level expectations they have for their current 9-1-1 and dispatch service providers, and any service level expectations or

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

enhanced capabilities they would like to accomplish as a part of any potential 9-1-1 or dispatch consolidation effort.

If you are unable to attend one of these sessions, you may provide your feedback on these issues in writing and send your information to Kevin Kearns, IXP's Project Manager, at kkearns@ixpcorp.com. Questions can also be directed to Mr. Kearns at this email address or by phone to 206.979.1313.

- The session will open with IXP providing a brief overview of the project approach and schedule and answering any questions about how the input from these focus group sessions will be utilized throughout the study

- Each agency present will then be asked to take a few minutes to briefly describe their organization and the community/communities they serve. Discussion during this portion of the session will help IXP gain a broader regional understanding of the individual Law Enforcement and Fire/EMS organizations within Lake County. These discussions also help identify where agencies have direct and/or routine operational interactions that require some degree of dispatch center coordination or interaction. From past experience, it also often provides an opportunity for agencies to broaden their understandings of each-other's operations and needs.

- The discussion will then turn to gaining an understanding of the routine and specialized services the agencies are receiving from the 9-1-1 and dispatch service providers. We all know that there is much more being done than answering emergency calls for service and dispatching appropriate units, and this discussion will help expose the unique or specialized support activities being provided across the county. During this discussion we will also explore any new services or support functions the Law Enforcement and Fire/EMS communities would be interested in achieving as a result of any consolidation models/alternatives that are developed during the study.

- We will also spend a section of time discussing technology related issues, gaining a better understanding of the various technology systems being used to support field operations and the degree to which those technologies depend on, or are directly integrated with, the dispatch center servicing the agency.

- The session will wrap up with a discussion of the various governance and economic models being used to allocate 9-1-1 and dispatching costs to the agencies being served. While the details of the specific economic models or each 9-1-1 and dispatch organization will be worked through in the individual PSAP-by-PSAP site visits, this discussion will focus more on how the various models are perceived and managed by the agencies being served. Most importantly, this discussion will also focus on the desired governance and economic model characteristics that would need to be embodied in any consolidation models/alternatives that are developed during the study.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

NW Quad	NE Quad	SW Quad	SE Quad
Tuesday July 28, 2015	**Wednesday July 29, 2015**	**Thursday July 30, 2015**	**Friday July 31, 2015**
Lindenhurst Village Hall Board Room 2301 E. Sandlake Rd Lindenhurst, IL 60046	**Gurnee Police Department Community Room 100 N. O'Plaine Rd Gurnee, IL 60031**	**Countryside Fire Department 2nd Floor Meeting Room 801 S. Midlothian Rd Mundelein, IL 60060**	**Lake Zurich Police Department Training Room 200 Mohawk Trail Lake Zurich, IL 60047**
Law Enforcement Session 8:00 to 11:30 am	Law Enforcement Session 8:00 to 11:30 am	Law Enforcement Session 8:00 to 11:30 am	Law Enforcement Session 8:00 to 11:30 am
Fire/EMS Session 1:00 to 4:30 pm	Fire/EMS Session 1:00 to 4:30 pm	Fire/EMS Session 1:00 to 4:30 pm	Fire/EMS Session 1:00 to 4:30 pm
Antioch Fire	Beach Park Fire	Barrington Fire	Bannockburn Police
Antioch Police	Gurnee Fire	Barrington Hills Police	Buffalo Grove Fire
CenCom	Gurnee Police	Barrington Police	Buffalo Grove Police
Fox Lake Fire	Lake County Forest Preserve	Barrington/Countryside Fire	Countryside Fire
Fox Lake Police	Lake County Sheriff	Hawthorn Woods Police	Deerfield /Bannockburn FPD
Grayslake Fire	Newport Fire	Island Lake Police	Deerfield Police
Grayslake Police	North Chicago Fire	Kildeer Police	Highland Park Fire
Greater Round Lake FPD	North Chicago Police	Lake County Forest Preserve	Highland Park Police
Lake County Forest Preserve	Park City Police	Lake County Sheriff	Highwood Police
Lake County Sheriff	Warren/Waukegan FPD	Lake Zurich Fire	Knollwood Fire
Lake Villa Fire	Waukegan Fire	Lake Zurich Police	Lake Bluff Fire
Lake Villa Police	Waukegan Police	Lakemoor Police	Lake Bluff Police
Lindenhurst Police	Winthrop Harbor Fire	Palatine Fire	Lake County Forest Preserve
Newport Fire	Winthrop Harbor Police	Tower Lakes Police	Lake Forest Fire
Round Lake Beach Police	Zion Fire	Wauconda Fire	Lake Forest Police
Round Lake Heights Police	Zion Police	Wauconda Police	Libertyville Fire
Round Lake Park Dist Police			Libertyville Police
Round Lake Park Police			Lincolnshire Police
Round Lake Police			Lincolnshire/Riverwoods Fire
			Long Grove Fire
			Mundelein Fire
			Mundelein Police
			Riverwoods Police
			Vernon Hills Police
			Wheeling Fire
			Wheeling Police
			Lake County Sheriff

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Focus Group Attendees

Police and Communications Center Attendees	
Name	**Agency**
Jack Heneghan	Bannockburn PD
Tom Nugent	Buffalo Grove Police
Lisa Berger	CenCom E911
Mary Anne Glowacz	Deerfield PD
John Sliozis	Deerfield PD
Annette Wolf	FoxComm E911
Eric Deloy	Glenview Public Safety Dispatch
Sarah Kvechler	Glenview Public Safety Dispatch
Phil Perlinin	Grayslake PD
Jeff Myhra	Grayslake PD
Al Marquardt	Gurnee 9-1-1
Willie Meyer	Gurnee PD
Jennifer Paulus	Hawthorn Woods PD
Jon Lowman	Highland Park PD
Tom Pederson	IT Village of FoxLake
Shawn T. White	Lake County Forest Preserve
Steve Husak	Lake Zurich PD
Kevin Finlon	Lake Zurich PD
George Manis	Lakemoor PD
Mike Gregory	LCSO
Bill Price	Lincolnshire PD
Peter Kinsey	Lincolnshire PD
Tom Jones	Lindenhurst PD
Michael O'Brien	Mundelein PD
Luis Rivera	North Chicago PD
Tony Theis	North Chicago PD
Dennis Cress	North Chicago PD/ETSB
Walter Holderbaum	Park City PD
Ken Stoves	Park City PD
Bruce Dayno	Riverwoods PD
Mark Fleischhauer	Vernon Hills Pd
Dave Debaufer	Waukegan PD
Irma Garza	Waukegan PD
Mike Bitton	Winthrop Harbor PD & PSAP & ETSB

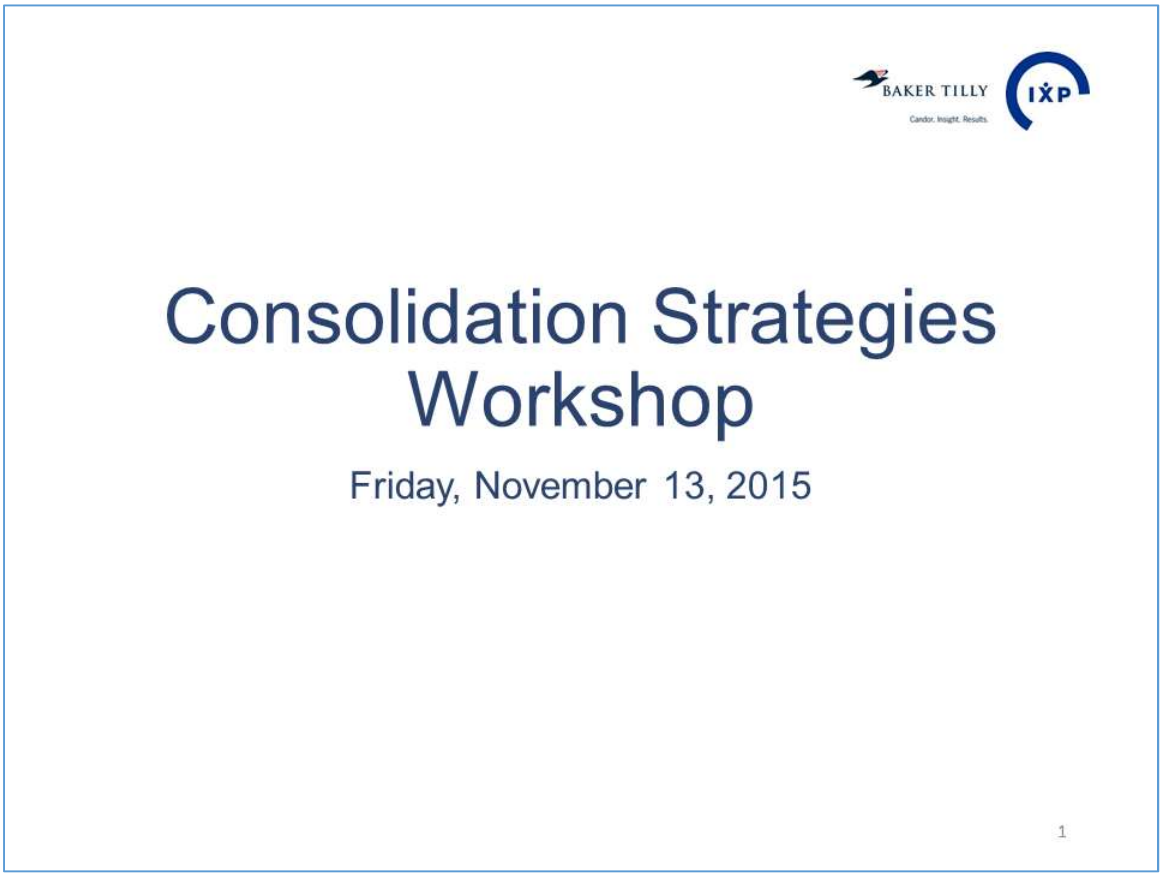
Fire Service Attendees	
Name	**Agency**
A/C Bruce Peterson	Barrington Fire
Henry Gruba	Beach Park FD
Paul Tierney	Beach Park FD
Jeff Steingart	Countryside Fire District
Eric Deloy	Glenview Public Safety Dispatch
Dan Pierre	Grayslake Fire
John Christian	Grayslake Fire Protection District
Paul Maplethorpe	Greater Round Lake FPD
Greg Formica	Greater Round Lake FPD
Al Marquardt	Gurnee 9-1-1
John Kavanagh	Gurnee Fire
Fred Friedl	Gurnee Fire
D/C Don Golubski	Lake Zurich F
Ken Komers	Libertyville Fire
Mark Kirschhoffer	Newport Township FPD
Dell Urban	North Chicago FD
Mike Wahl	Wauconda FD
Paul Gross	Wauconda FD
Joe Hernandez	Winthrop Harbor Fire Dept.

The only agencies invited but not in attendance in person, or represented by their dispatch center, are listed below.

- Barrington Hills Police (dispatched by QuadCom with a small footprint in Lake County)
- Buffalo Grove Fire (dispatched by Northwest Central with footprint into Cook County)
- Deerfield/Bannockburn FPD (dispatched by RED Center)
- Highwood Fire (dispatched by RED Center)
- Island Lake Police (dispatched by Lake Zurich)
- Kildeer Police (dispatched by Lake Zurich)
- Lincolnshire/Riverwoods Fire (dispatched by RED Center)
- Long Grove Fire (dispatched by RED Center)
- Palatine Fire (predominately a Cook County jurisdiction dispatched by Northwest Central)
- Tower Lakes Police (dispatched by Wauconda PD at the time)
- Wauconda Police (dispatched by Wauconda PD)
- Wheeling Police and Fire (predominately a Cook County jurisdiction dispatching themselves)
- Zion Police and Fire (dispatched by Zion PD

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 2 – PRESENTATION MATERIAL FROM THE CONSOLIDATION STRATEGIES WORKSHOP (NOVEMBER 13, 2015)



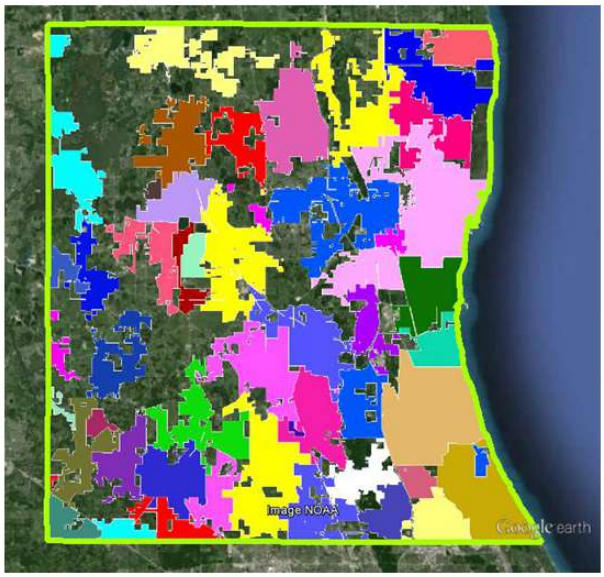
USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Discussion Topics Today

- Overview of the current environment
  - Operational considerations
  - ETSB considerations
  - Technical considerations
  - Facility considerations
- Vision for a Regionalized Dispatch Environment
- Discussion of Governance Concepts
- Next Steps

2

Municipalities in Lake County

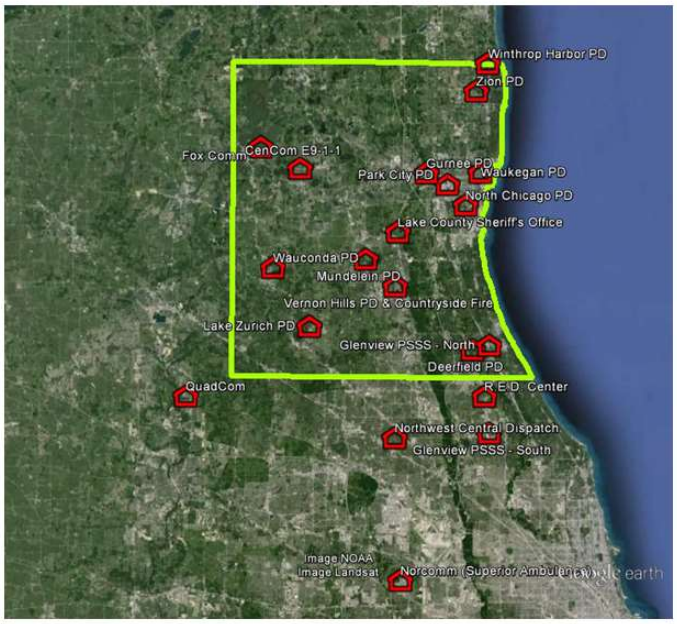


- Over 50 individual municipalities in Lake County, ranging in size from several hundred in population to approximately 89,000 in population

3

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

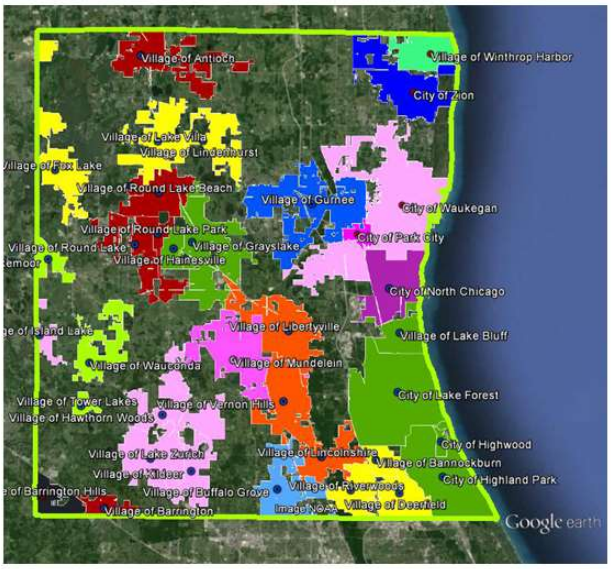
Dispatch Centers Serving Lake County Agencies



- 20 Dispatch Centers serving Lake County with 5 of them physically outside the boundary of Lake County.

4

Law Enforcement Dispatch Areas in Lake County



- 17 Dispatch Centers Provide Law Enforcement dispatching services to 40 Law Enforcement organization, with some serving a single jurisdiction and others serving multiple jurisdictions.

5

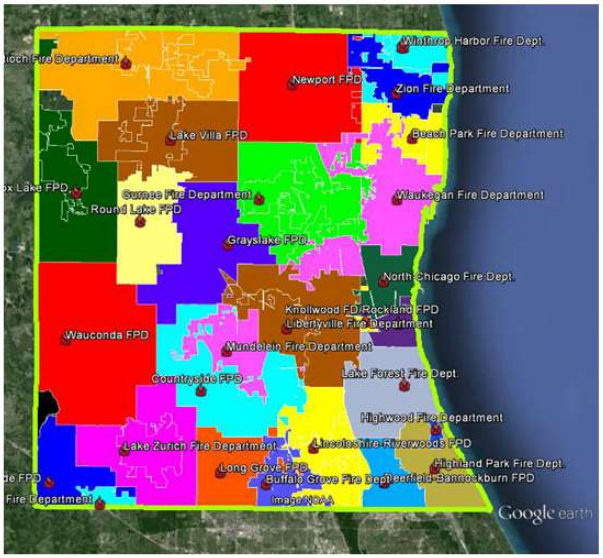
USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Law Enforcement Dispatch Centers

Dispatch Centers	LE Agencies Serve	Municipalities Served	LE Population Served	% of LE Pop Serve
Lake County Sheriff's Office	2	11 + Uninc.	121,809	17%
Waukegan	1	1	88,915	13%
Glenview	5	6	84,950	12%
CenCom	6	7	81,379	12%
Vernon Hills	3	3	53,715	8%
Lake Zurich	4	4	39,928	6%
FoxComm	3	3	33,871	5%
Mundelein	1	1	31,562	4%
Gurnee	1	1	31,207	4%
North Chicago	1	1	30,395	4%
Zion	1	1	24,264	3%
Deerfield	3	3	23,628	3%
Wauconda	3	3	21,184	3%
Northwest Central	1	1	20,000	3%
Park City	1	1	7,440	1%
Winthrop Harbor	1	1	6,730	1%
QuadCom	1	1	4,209	1%

6

Fire Departments in Lake County

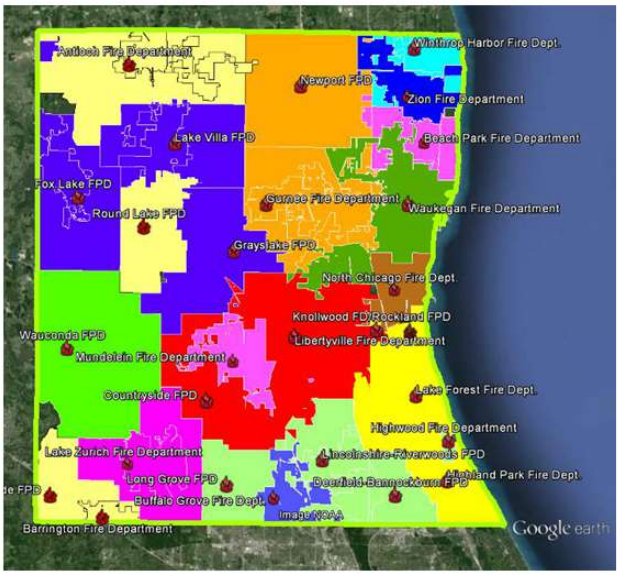


- 30 Fire Departments serving combinations of incorporated and unincorporated areas.

7

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

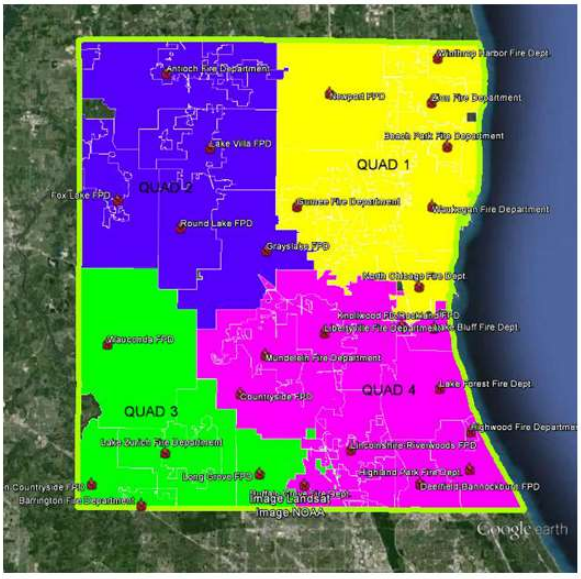
Fire Department Dispatch Areas



- 17 Dispatch Centers Provide Fire Department dispatching services, with some serving a single jurisdiction and others serving multiple jurisdictions.

8

Fire Quads



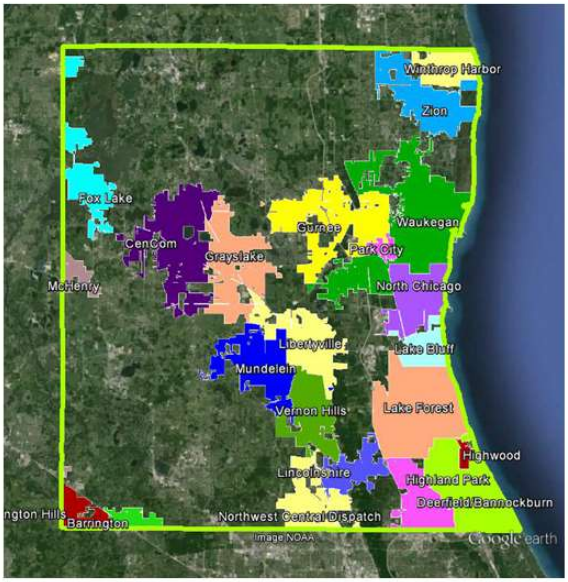
Approximate Populations

- Quad 1 – 250,000
- Quad 2 – 150,000
- Quad 3 – 100,000
- Quad 4 – 200,000

9

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

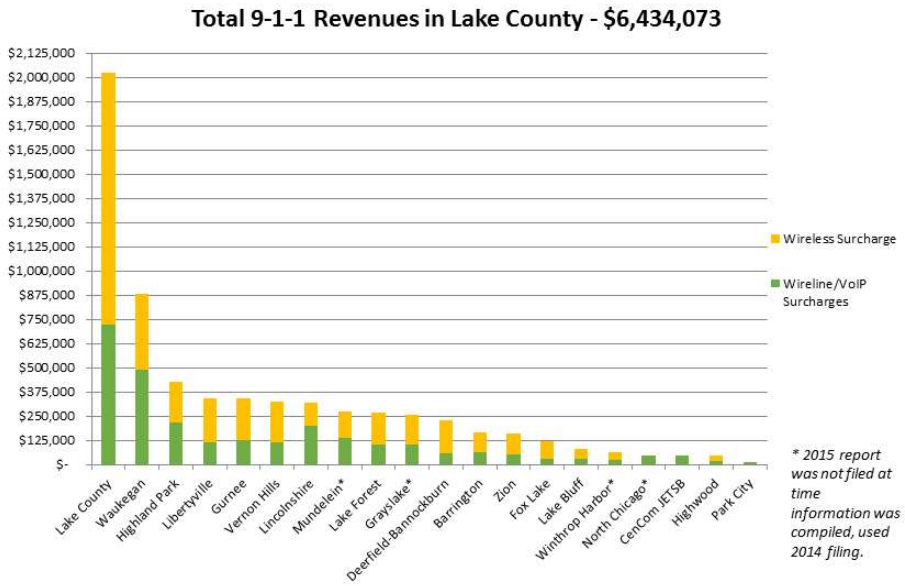
ETSBs in Lake County



- There are 20 ETSBs with their primary service areas in Lake County and several border ETSBs with small portions of their service area in Lake County.
- The Lake County ETSB serves all areas not covered by one of the other ETSBs, creating a complex patchwork of 9-1-1 service delivery areas.

10

Annual ETSB 9-1-1 Revenue

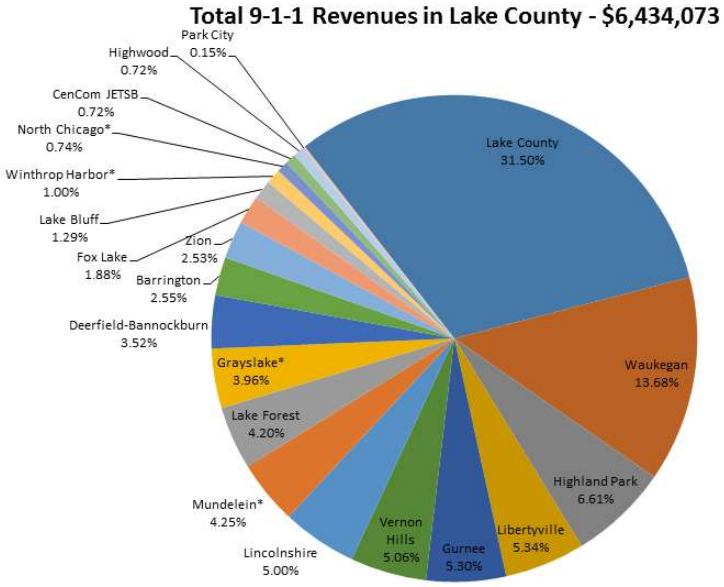


** 2015 report was not filed at time information was compiled, used 2014 filing.*

11

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Annual ETSB 9-1-1 Revenue



** 2015 report was not filed at time information was compiled, used 2014 filing.*

12

Legislative Changes

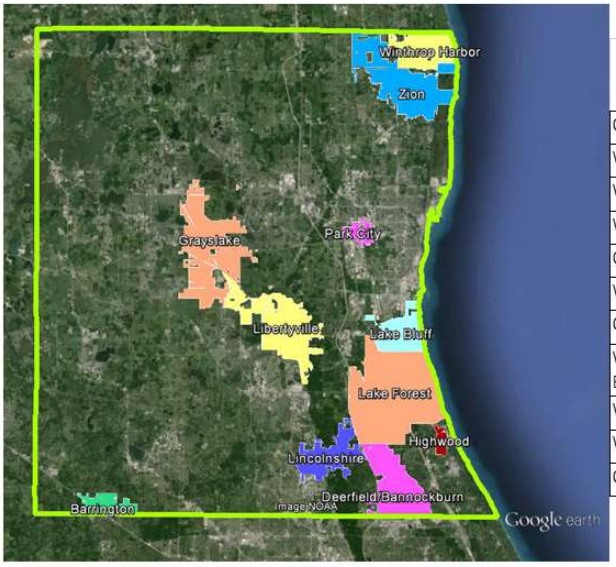
- Recent legislative changes are going to bring impacts to ETSBs with under 25,000 population
- They will also impact ETSBs with more than 2 PSAPs
- They will also impact ETSBs with no PSAPs…
- …and who knows what the future might bring…

- But all of these changes are probably best be viewed as steps along a more forward-looking path…a path to a future with even more regionalized public safety dispatching on a countywide basis.

13

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

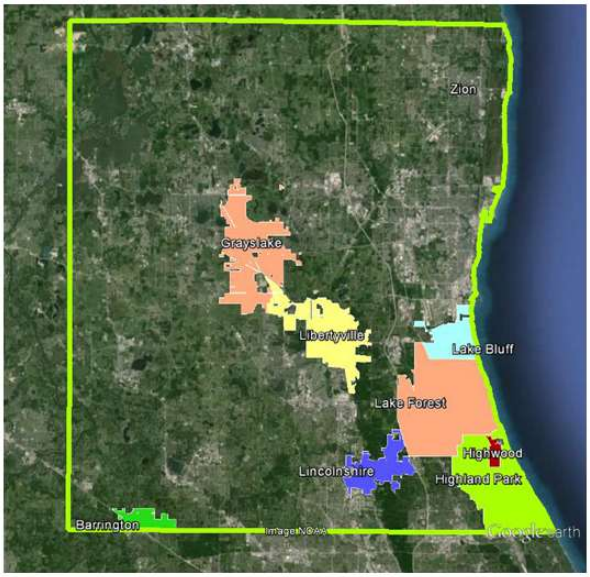
11 ETSBs with a Population of <25,000



ETSB Name	AR 9-1-1 Reported Populati	Census Population (2014 est
City of Highwood	5,338	5,387
Village of Lake Bluff	5,722	5,698
Village of Winthrop Harbor	6,897	6,730
Village of Lincolnshire	7,275	7,292
City of Park City	7,752	7,440
Village of Barrington	10,327	10,373
City of Lake Forest	19,375	19,379
Villages of Deerfield-Bannockburn	23,737	19,968
Village of Libertyville	20,315	20,512
Village of Grayslake	20,330	21,018
City of Zion	24,413	24,264

14

ETSBs that do not have their own PSAP



City of Highwood
Village of Lake Bluff
Village of Lincolnshire
Village of Barrington
City of Lake Forest
Village of Libertyville
Village of Grayslake
City of Highland Park (interpretation will depend on final rules)

15

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Current Dispatch Center Operational Characteristics

- Many of the current Dispatch Centers provide a wide range of functions in addition to handling call receiving and dispatching functions. These include such things as:
  - Monitoring and managing central station alarm board systems
  - Providing law enforcement 'front counter' services either after-hours or 7X24
  - Providing other community-related 'front counter' services
  - Handling all LEADS entries and related transactions
  - Direct interactions/support of officers in booking and related report writing activities
  - Monitoring holding cells and providing Matron services if female officers not on duty
  - Monitoring/controlling building doors, alarms and video
  - Monitoring or accessing other security cameras in their communities
- All of these are issues that have been successfully managed by agencies that are already part of consolidated dispatch centers, so they are not an insurmountable barrier to further consolidation.

16

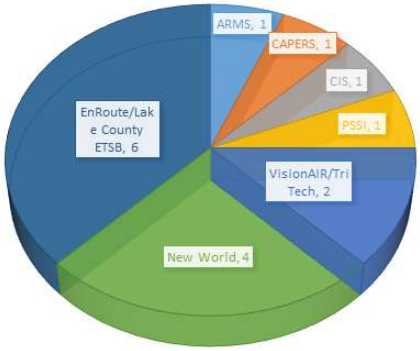
Dispatch Technology Considerations

- Typically the major technology issues with the strongest influence in consolidation initiatives include:
  - CAD/Mobile environment
  - Interfacing of CAD to one or more RMS systems
  - 9-1-1 and general telephony environment both within the Dispatch Centers and regionally
  - Radio system environment (console system and radio system infrastructures)
- For this environment, alarm board systems will also need to be added to the mix.
- Consideration also has to be given to how a smaller number of consolidated dispatch centers will provide backup services for each other. This isn't just an issue of re-routing 9-1-1 calls but needs to consider capability and capacity to provide backup for dispatching services as well.

17

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Current CAD System Vendors/Usage



- The EnRoute CAD environment operated by the Lake County ETSB is currently used at the following Dispatch Centers
  - CenCom
  - Lake Zurich
  - FoxComm
  - Mundelein
  - Wauconda
  - Countryside Fire.
- New World CAD is used at:
  - Waukegan
  - Glenview
  - Vernon Hills
  - Deerfield
- VisionAIR is used at:
  - Sheriff's Office
  - North Chicago
- Public Safety Systems Incorporated (PSSI) is used at Gurnee
- Computer Information Systems (CIS) is used at Zion
- Automated Records Management System (ARMS) is used at Park City
- CAPERS is used at Winthrop Harbor

18

Current 9-1-1 Environment

- The Lake County ETSB is just completing the installation of a Solacom NG9-1-1 system that will utilize a 'private cloud' architecture with redundant network cores. Initially this system will be used at the Sheriff's Office, Lake Zurich, and Wauconda Dispatch Centers.
- This system can be expanded in the future to include other Dispatch Centers.
- There are a variety of Cassidian, Zetron and Intrado (Positron) systems in use at the other Dispatch Centers, some relatively new and others at or near the end of life.

19

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Dispatch Facility Characteristics

- None of the current Dispatch Centers are currently sized to take on significant regionalization of dispatch services.
- Several of the current Dispatch Centers could be expanded to accommodate some new customers to allow and interim consolidation strategy to be implemented while planning and construction of regional centers are underway.
- Any facility strategies for interim or long-term dispatch consolidations need to take into considerations dispatch center structural and reliability standards such as critical facilities requirements in the Building Code and industry standards such as NFPA 1221. These are very often not able to be met with facility refurbishments or expansions and often require new construction to be fully compliant.

20

Establishing a Vision for Regionalized Dispatch

21

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

A Few Advantages of Dispatch Consolidation

- Increased ability to handle incidents within a single Dispatch Center, even if they are multi-disciplinary or multi-jurisdictional incidents. This improves resource coordination, the timeliness of response and situational awareness, all of which have positive impacts on incident outcome.
- Increased depth of staffing to better accommodate surges in call volumes or multiple simultaneous major incidents.
- Ability to share investments in more robust facilities and systems than can be accomplished through multiple individual efforts.
- Ability to share long-term technology system lifecycle costs rather than multiple individual investment streams.

22

A Few Advantages of Dispatch Consolidation

- Ability to create built-in redundancy and backup strategies within the regionalized facilities.
- Ability to offer more robust organizational staffing models including supervisory, training and quality assurance functions. These not only improve overall quality of services but also offer career paths for the personnel that are not possible in smaller Centers.
- Ability to be positioned to adapt to growth without incurring significant capital investments.

23

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Finding the "Right" Level of Dispatch Consolidation

- There are no magic formulas or rules for determining the best consolidation targets.
- Experience across the country shows us that consolidated Dispatch Centers serving large populations and dozens of user agencies can:
  - Offer exceptional levels of service
  - Optimize overall capital investments and lifecycle replacement investments
  - Meet the broad needs of the region while also meeting the needs of individual communities
  - Establish facilities and systems that are highly resilient in their own right while also able to back-up other regional Centers in times of emergency
  - Provide excellent career opportunities for their personnel

24

Potential End-State Model

- Ultimately we believe you could successfully consolidate into three newly-constructed regionalized Dispatch Centers, each serving a mix of communities and agencies of approximately 250,000 population each.
- Facility sizing and technology system architectures could be put in place to allow any of the three facilities to be the backup for one of the others, increasing the overall reliability and resiliency of the overall dispatch environment.
- This capacity would also allow flexibility and capacity when having to deal with major emergencies or disasters.

25

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Potential End-State Model

- Locations could be selected to allow both site security and accessibility by your workforce.
- The entire multi-facility model could be governed and managed through a common governance and operational structure, or coordinated regionalized governance structures could be utilized.

26

Potential Interim Model

- It also feels to us like the upcoming consolidations that would be required by the legislative changes could give you an opportunity to get to an interim Dispatch Center count in the 10 to 12 range and perhaps fewer still ETSBs.
- Coupling this with some combination of CAD, 9-1-1 and radio shared-system migrations would also allow the smaller number of Dispatch Centers to provide relatively full-function backup capabilities within pairs or other combinations of these Centers.

27

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Shared System Initiatives

- Migration towards a countywide NG9-1-1 system (or architecture) coordinated with statewide NG9-1-1 planning.
  - Brings NG capabilities to all PSAPs
  - Shares infrastructure costs
  - Increases routing and backup flexibility
- Migration to unified CAD systems
  - Shares infrastructure and core system costs
  - Increases backup flexibility
  - Could lead to shared RMS opportunities as well
- Migration to StarCom
  - Increases interoperability
  - Increases flexibility in which agencies are on common channels and which dispatch center handles them

28

StarCom and Related Radio Issues

- Regionalized trunked radio systems are often the most significant enabler of dispatch center consolidations.
  - They provide greater flexibility and interoperability between the agencies utilizing the system.
  - They allow virtually any dispatch center to manage any group of users.
  - They allow maximum flexibility in combining agencies on channels to optimize dispatcher workload and staffing levels.
- Unfortunately, trunked system subscriber equipment is more expensive than conventional VHF/UHF equipment. This can limit uptake rates and market penetration.
- Where StarCom migration isn't possible, 'regionalizing' conventional system infrastructures needs to be a priority so that they don't impede any desired dispatch consolidations.

29

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Governing and Managing a Regionalized Organization

30

Dispatch Governance Structures

- The most successful governance models in multi-jurisdictional and multi-disciplinary Dispatch Centers include:
  - Collaborative leadership
  - Shared decision making
  - Representation from all jurisdictions and agencies served
  - Transparency in policy formulation and decision making
  - Economic models that are transparent and understandable
  - Operational excellence
- As with consolidation sizing, there is no single best governance structure. Rather, the structure needs to be fit to the local political realities and the operational model desired for consolidated Dispatch.

31

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Concepts for a Governance Structure

- There are three key elements in a governance structure for consolidated dispatch organizations:
  - Some form of policy level decision making body that takes responsibility for the overall governance of the dispatch organization.
  - Some form of operational level decision making and decision recommending bodies to guide the operational models for Law Enforcement and Fire/EMS dispatching.
  - The management team of the organization itself.

32

Concepts for a Fully Regionalized Governance Structure

- If a fully regionalized dispatch model is established as the goal, the governance model will need to take into consideration how to create and operate the top two layers of the governance model.
- The policy level body would likely be too unwieldy if it embraced full representation by a leader from every jurisdiction participating in the consolidated organization (municipalities, fire districts and the County itself).
- Therefore, some form of 'representative democracy' may be needed to balance the input from small, medium and large jurisdictions while also maintaining a board structure of a manageable size.

33

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Concepts for a Fully Regionalized Governance Structure

- The operational level body would also be exceptionally large if conducted as a single body.
- However, this operational level is often organized into two separate branches with one focusing on Law Enforcement issues and the other focusing on Fire/EMS issues.
- With 40 Law Enforcement and 30 Fire agencies in the mix, this may also create unwieldy sizing, but this could be addressed through sub-regionalization of some of the work and discussions rather than reverting to a 'representative democracy' model.

34

Concepts for a Fully Regionalized Governance Structure

- Organizational management and administration could be accomplished by a centralized management team, with operational management and administrative support positioned at each of the operational Dispatch Centers.
- Organizational management is typically formally accountable to the policy level board but operates the organization under a fairly high level of delegated authority.
- Organizational management works in close collaboration with the Law Enforcement and Fire/EMS operational bodies, and sometimes these bodies also have some degree of delegated decision-making authority.

35

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Next Steps

36

Next Steps

- Over the course of the next two weeks, we will be finishing up all the individual write-ups from our site visits at your dispatch centers and pulling together the Baseline Report.
- We will also begin to develop the prospective economic models for the consolidation alternatives selected for further examination.
- These models will then be reviewed in a workshop session shortly after the first of the year.
- From there, the final report documents and presentations will be assembled and ready for delivery.

37

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

BAKER TILLY
Candor. Insight. Results.

End

38

BAKER TILLY
Candor. Insight. Results.

Extra slides follow with additional legislative information if needed

39

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Legislative Requirements Related to ETSBs

- 50 ILCS 750 Section 15.4a (a) (2) states: "In any county with a population of at least 250,000 that has more than one ETSB, JETSB, or qualified governmental entity, any 9-1-1 Authority serving a population of less than 25,000 shall be consolidated such that no 9-1-1 Authority in the county serves a population of less than 25,000."
- There are 12 ETSBs in Lake County that fall below the 25,000 population threshold (2014 Census Data).

40

Legislative Requirements related to ETSBs

- 50 ILCS 750 Section 15.4a (a) (6) states: "Any 9-1-1 Authority that does not have a PSAP within its jurisdiction shall be consolidated through an intergovernmental agreement with an existing 9-1-1 Authority that has a PSAP to create a Joint Emergency Telephone Board."
- There are 7 ETSBs in Lake County that do not have their own PSAP and are served by other PSAPs. Since all of these are also <25,000 population, they appear to face mandatory ETSB consolidation no matter what.
- While Highland Park does not operate their own PSAP, one of the PSAPs operated by Glenview is within its jurisdiction. Whether this provision would apply to them will most likely depend on how the final Rules are written.

41

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Legislative Requirements Related to PSAPs

- Section 15.4a (a) (3) states: "In any county with a population of at least 250,000 but less than 1,000,000 that has more than one ETSB, JETSB, or qualified governmental entity, each 9-1-1 Authority shall reduce the number of PSAPs by at least 50% or to 2 PSAPs, whichever is greater."
- The only ETSB in Lake County with more than one PSAP is the Lake County ETSB.
  - Lake County Sheriff's Office
  - Lake Zurich Police
  - Wauconda Police
  - Countryside Fire Protection District (Secondary PSAP)
- Depending on how the final rules are structured, they may be required to consolidate to a total of only 2 PSAPs or to a combination of 2 Primary PSAPs and 1 Secondary PSAP.

42

Other Key Legislative Requirements

- 50 ILCS 750 Section 15.4a (b) states that each county required to consolidate ETSBs and/or PSAPs shall file a consolidation plan by July 1, 2016 or request a waiver. Details of what those Plans have to include will be defined in the Rules.
- 50 ILCS 750 Section 15.4 (a) (c) states: "A waiver from a consolidation required under subsection (a) of this Section may be granted if the Administrator finds that the consolidation will result in a substantial threat to public safety, is economically unreasonable, or is technically infeasible."
- 50 ILCS 750 750 Section 15.4b outlines a consolidation grant program that will be prioritized first to counties not currently providing 9-1-1 services and next to other entities consolidating as required under Section 15.4a. Grants will also be available to consolidations already underway and to consolidations completed since 2010.

43

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 3 – PRESENTATION MATERIAL AND PARTICIPANT VOTING FROM THE 9-1-1 AND DISPATCH REGIONAL CONSOLIDATION STRATEGIES WORKSHOP (JANUARY 25, 2016)

BAKER TILLY
Candor. Insight. Results.

9-1-1 and Dispatch Regional Consolidation Strategies Workshop

Monday, January 25, 2016

1

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

197 Individual Agencies Touching Public Safety in Lake County

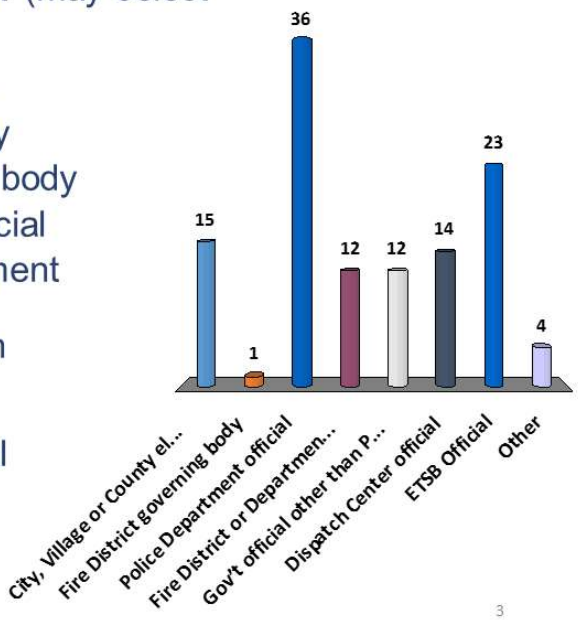
- **53 Municipalities** in Lake County, ranging in size from several hundred in population to approximately 89,000 in population.
- **20 Dispatch Centers** serving Lake County with 5 of them physically outside the boundary of Lake County.
- **40 Law Enforcement** Agencies with **17 Police Dispatch Centers**, some serving a single jurisdiction and others serving multiple.
- **30 Fire** Agencies serving combinations of incorporated and unincorporated areas with **17 Fire Dispatch Centers**, some serving a single jurisdiction and others serving multiple jurisdictions.
- **20 ETSBs** with their primary service areas in Lake County and several border ETSBs with small portions of their service area in Lake County.
- The Lake County ETSB serves all areas not covered by one of the other ETSBs, creating a complex patchwork of 9-1-1 service delivery areas.

2

Who is here today?

Please indicate which type of organization you represent (may select more than 1).

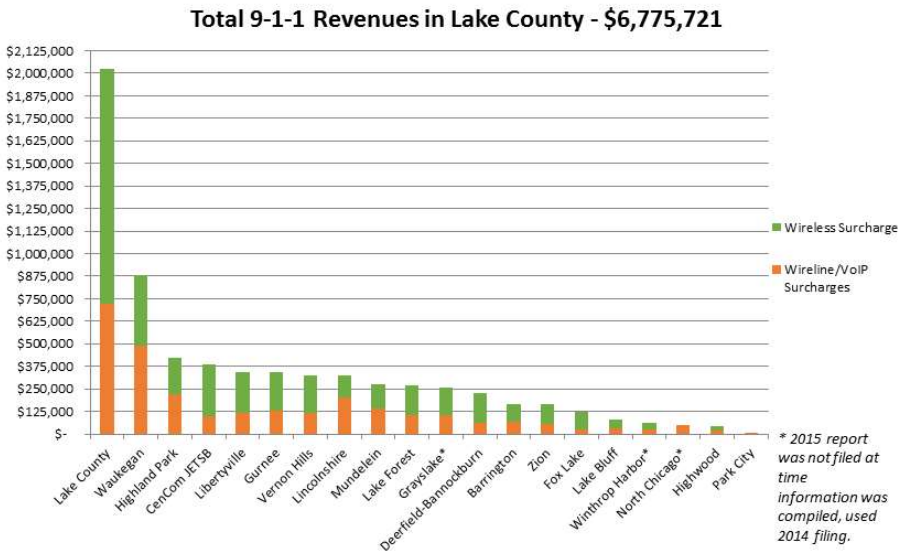
A. City, Village or County elected governing body
B. Fire District governing body
C. Police Department official
D. Fire District or Department official
E. Gov't official other than Police or Fire (village managers)
F. Dispatch Center official
G. ETSB Official
H. Other



3

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

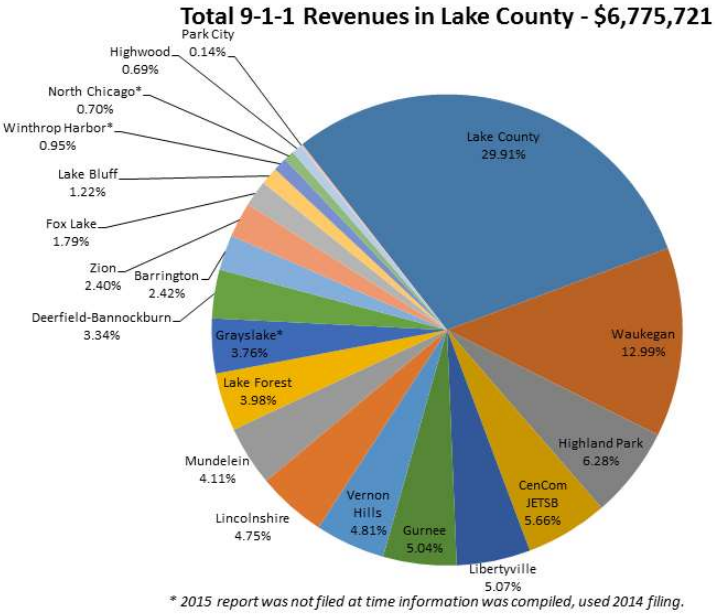
Annual ETSB 9-1-1 Revenue



** 2015 report was not filed at time information was compiled, used 2014 filing.*

4

Annual ETSB 9-1-1 Revenue



** 2015 report was not filed at time information was compiled, used 2014 filing.*

5

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Current Dispatch Center Operational Characteristics

Dispatch Centers provide a wide range of functions in addition to handling call receiving and dispatching functions, including:

- Monitor/manage central station fire and security alarm board systems
- Law enforcement 'front counter' services either after-hours or 7X24
- Handling all LEADS entries and related transactions
- Direct support of officers in booking and related report writing activities
- Monitoring holding cells and providing Matron services if female officers not on duty
- Monitoring/controlling building doors, alarms, video and other security cameras in community
- Handling routine and after-hours communications for Public Works and similar municipal functions.

6

Dispatch Consolidation Technology Considerations

Typically, the major technology issues with the strongest influence in consolidation initiatives include:

- Computer Aided Dispatch (CAD) and Mobile computing environment
- Interfacing of CAD to one or more Records Management Systems (RMS)
- 9-1-1 and general telephony environment both within the Dispatch Centers and regionally
- Radio system environment (console system and radio system infrastructures)
- Fire and Security alarm board systems

7

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Dispatch Facility Characteristics

- None of the current Dispatch Centers are sized for significant regionalization of dispatch services.
- Several current Dispatch Centers could be expanded to accommodate some new customers. Could be an interim consolidation strategy, while planning and constructing long-term regional centers.
- Interim or long-term dispatch consolidations need to consider dispatch center structural and reliability standards: Building Code and industry standards such as NFPA 1221. Difficult to meet in existing or rehabbed facilities and often require new construction to comply.

8

Establishing a Vision for Regionalized Dispatch

9

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Legislative Changes Reinforce the Need for Today's Discussions

- Consolidation is already occurring in Lake County
- In addition, recent legislative changes are going to bring impacts to ETSBs with under 25,000 population
- Will impact ETSBs with more than 2 PSAPs
- Will impact ETSBs with no PSAPs…

…and who knows what the future might bring.

All changes are best viewed as steps along a more forward-looking path to a future with even more regionalized public safety dispatching on a countywide basis.

10

Finding the "Right" Level of Dispatch Consolidation

Experience across the country shows that consolidated Dispatch Centers serving large populations and dozens of user agencies:

- Offers exceptional levels of service for supported agencies.
- Optimizes overall capital investments and lifecycle replacement investments.
- Meets broad needs of the region, while also meeting the needs of individual communities.
- Highly resilient facilities and systems that are able to back-up other regional Centers in times of emergency.
- Provides excellent career opportunities for their personnel.

11

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Advantages of Dispatch Consolidation or Regionalization

- ✓Increased ability to handle incidents within a single DC, including multi-disciplinary or multi-jurisdictional.
- ✓Improves resource coordination, timeliness of response, and situational awareness - positively impacting incident outcome.
- ✓Increased depth of staffing to better accommodate surges in call volumes or multiple simultaneous major incidents.
- ✓Shares investments & operating costs in more robust facilities and systems
- ✓Share long-term technology system lifecycle costs rather than multiple individual investment streams.

12

Advantages of Dispatch Consolidation or Regionalization

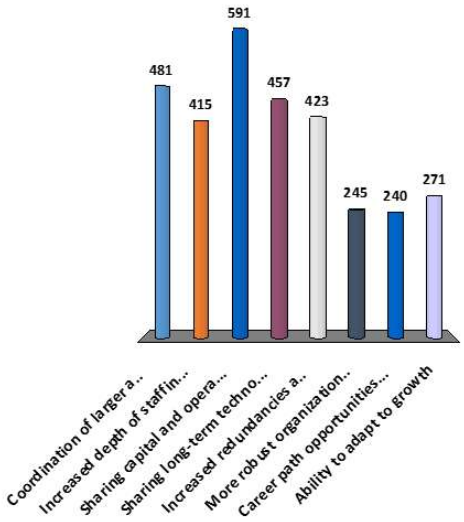
- ✓Create built-in redundancy and backup strategies within the regionalized facilities.
- ✓More robust organizational staffing models including formalized and dedicated supervision, training, quality assurance and technology support functions.
- ✓Creates internal career path opportunities for personnel.
- ✓Positioned to adapt to growth without incurring significant capital investments.

13

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Please rank the desirability of the various potential advantages from the perspective of your organization (most attractive first).

A. Coordination of larger and multi-agency incidents
B. Increased depth of staffing to handle surges
C. Sharing capital and operational costs
D. Sharing long-term technology lifecycle costs
E. Increased redundancies and backup capabilities
F. More robust organizational structure
G. Career path opportunities for personnel
H. Ability to adapt to growth



14

Regionalization of Dispatch also Brings Potential **Challenges**

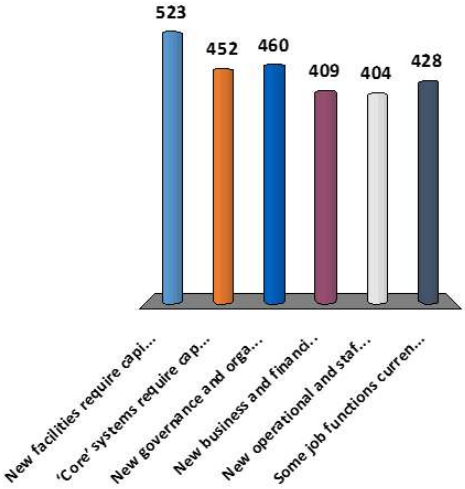
New facilities or expansions, require capital investments maybe difficult to fund.	New or reconfigured 'core' technology systems (CAD, 9-1-1) require capital.	Need to create new governance & organizational structures.
Develop new business and financial models.	Develop new operational and staffing models.	Shift legacy job functions to other personnel or do differently.

15

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Based on what you know so far, please rank the potential challenges (greatest/most challenging first)

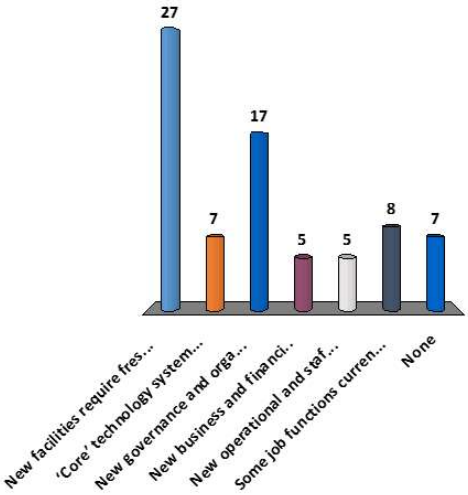
A. New facilities require capital investments
B. 'Core' systems require capital investments
C. New governance and organizational structures are needed
D. New business and financial models are needed
E. New operational and staffing models are needed
F. Some job functions currently done by Dispatch need to shift to other personnel or be done differently



16

Based on what you know so far, please identify a **single** challenge that might discourage you from joining into Regionalized Dispatch.

A. New facilities require fresh capital investments
B. 'Core' technology systems require capital investments
C. New governance and organizational structures needed
D. New business and financial models needed
E. New operational and staffing models needed
F. Some job functions currently done by Dispatch need to be shifted to other personnel or done differently
G. None



17

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Potential End-State Models

- This region can successfully consolidate into a minimum of two, newly-constructed regionalized Dispatch Centers.
- Facility sizing and technology designed for each facility to back up the other, increasing reliability and resiliency of dispatch environment.
- Provides flexibility and capacity when having to deal with major emergencies or disasters.
- Locations selected for both site security and accessibility by workforce.
- Dual-facility model governed and managed by a common governance and organizational structure.

18

Dispatch Governance Structures

- Most successful governance models in multi-jurisdictional and multi-disciplinary Dispatch Centers include:
  - Collaborative leadership
  - Shared decision making
  - Representation from all jurisdictions and agencies served
  - Transparency in policy formulation and decision making
  - Economic models that are transparent and understandable
  - Mechanisms that allow for 'late entry' or to 'opt out'
  - Operational excellence
- There is no single best governance structure. It needs to fit the local political realities and operational model.

19

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Concepts for a Fully Regionalized Governance Structure

- Governance model considers two governance layers: policy body and operational body.
- Full representation from every jurisdiction - policy body too unwieldy. Need manageably sized group.
- 'Representative democracy' needed to balance input from small, medium and large jurisdictions.
- Operational body exceptionally large if single body. Often organized into two separate branches one Law Enforcement and the other Fire/EMS issues.
- With 40 Law Enforcement & 30 Fire agencies, unwieldy sized board, could be addressed by sub-regionalization of some of the work and discussions.

20

Concepts for a Fully Regionalized Governance Structure

- Adm. & Management accomplished by a centralized team with support at each DC.
- Organizational management is accountable to policy board - operates with high level of delegated authority.
- Organizational management collaborates with Law Enforcement & Fire/EMS bodies sometimes having some delegated decision-making authority.
- Budgeting & cost allocation models need long-term view so cyclical large-cost items (technology lifecycle costs) are anticipated.
- Cost allocation models need to be transparent, understandable, and viewed as fair to all sizes and types of agencies served.

21

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Potential Interim Strategies

- Large-scale regionalization initiatives take time to plan and execute. Estimated 8-10 years for full consolidation.
- In short term, current legislation provides opportunity to create smaller consolidations reducing the number of DC's and ETSBs sooner.
- Combination of CAD, 9-1-1 and radio shared-system migrations allows remaining Centers to provide relatively full-functional backup capabilities with combinations of centers.

22

Possible Shared System Initiatives

Migration towards a countywide NG9-1-1 system (or architecture) coordinated with statewide NG9-1-1 planning.
- Brings NG capabilities to all PSAPs
- Shares infrastructure costs
- Increases routing and backup

Migration to unified CAD systems
- Shares infrastructure and core system costs
- Increases backup flexibility
- Could lead to shared RMS opportunities as well

Migration to StarCom21
- Increases interoperability
- Increases flexibility

23

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Please rank your initial interest, from most preferred to least preferred, in the appropriate level of regionalization of 9-1-1 and Dispatching.

A. Countywide service out of 2 newly constructed redundant dispatch facilities.

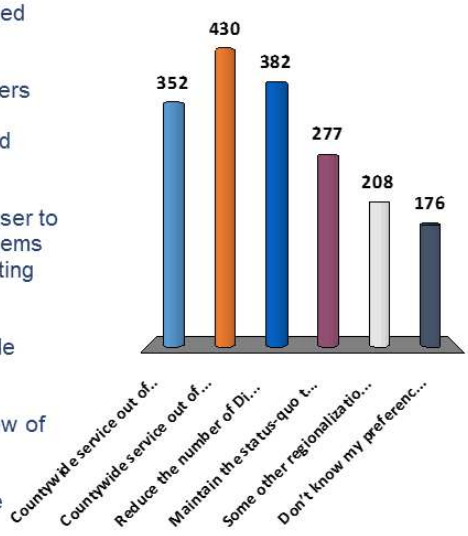
B. Countywide service out of 3-5 dispatch centers that operate on shared systems out of a combination of new and/or existing expanded facilities.

C. Reduce the number of Dispatch Centers closer to 6-8 centers that share most technology systems out of some combination of new and/or existing expanded facilities.

D. Maintain the status-quo to the extent possible under legislative requirements.

E. Some other regionalization strategy you know of or emerging from your group's discussions.

F. Don't know my preference today, need more information and the financial modeling.



24

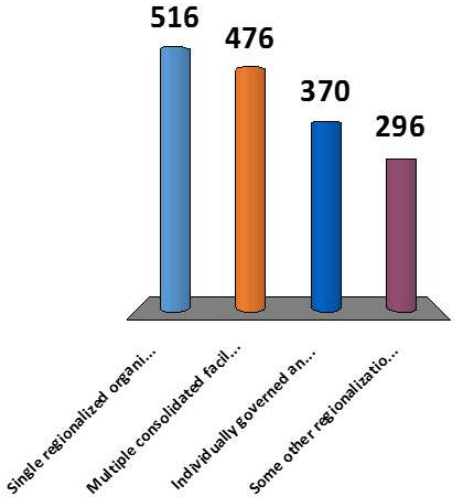
Please rank your initial interest, from most preferred to least preferred, on the governance model you feel should be used for regionalizing 9-1-1 and Dispatching.

A. Single regionalized organization with two redundant facilities, common technology systems and a single governance model.

B. Multiple consolidated facilities with separate governance structures for each operation and intergovernmental agreements for shared system strategies.

C. Individually governed and operated Dispatch Centers.

D. Some other regionalization strategy emerging from your group's discussions.



25

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Thank you for Participating

- Thank you for your participation today.
- The financial analysis process will now get under way and we expect to be able to conduct another workshop to review that material in the spring.
- Follow-up questions or information can be directed to:

Kevin Kearns
kkearns@ixpcorp.com
206.979.1313

- This presentation & other resource materials can be found here: **www.lakecountyil.gov/Regional911**
- Additional input can be sent to:
  Regional911@lakecountyil.gov

26

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 4 – PSAP CHAPTERS

CenCom E9-1-1 Communications Center

Note: CenCom provided some updated statistical and budgetary data but did not provide any specific edits to this write-up.

Agencies Served

Antioch Police Department
Barrington Police Department
Round Lake Police Department
Round Lake Beach Police Department
Round Lake Heights Police Department
Round Lake Park Police
Round Lake Park District Police Department
Antioch Fire Department
Barrington Fire Department
Barrington Countryside Fire Protection District
Greater Round Lake Fire Protection District

Organizational Structure and Governance Model

The CenCom communications center is a multi-jurisdictional and multi-disciplinary public safety communications center that first began operations in 1991 to serve the dispatch needs of participants in the CenCom 9-1-1 Joint Emergency Telephone System Board (JETSB) and other neighboring communities. The communications center organization is governed by in a two-tiered structure, with an upper level Executive Board of Directors that deals with overall policy and budget matters, and an operational Chiefs Operations Board that guides operational policies and procedures. Day-to-day operations of the center are managed by the agency's Executive Director.

The Chiefs Operations Board is composed of the chiefs (or their designees) of each of the public safety agencies served by the agency. This board meets on a monthly basis and reviews operational performance, review and adjust any operational practices as needed, and approve routine expenditures. The Executive Board of Directors is composed of the mayors from the member villages, the chiefs of the fire protection districts, and the Director of the Park Districts. This board meets on a quarterly basis (coordinated with the meetings of the JETSB) to review overall operations of the agency and approve budget matters.

CenCom serves a large mix of agencies over a very disperse geographic area. While several of the police and fire agencies are clustered in the Round Lake area, CenCom also provides services to the Antioch area on the northern border of Lake County and the Barrington area on the southern border. The estimated population served for law enforcement is 81,379 and the Fire/EMS population served is even larger given the larger areas in fire protection districts that go beyond municipality borders.

Funding for the organization is derived from several sources including 9-1-1 surcharge revenues administered by the JETSB and the remaining costs allocated on the basis of calls for service volumes.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

These allocations are established against a 3-year moving average of call volumes to help avoid unanticipated spikes in charges to the customer agencies.

CenCom Communications Center Police Dispatch Service Area

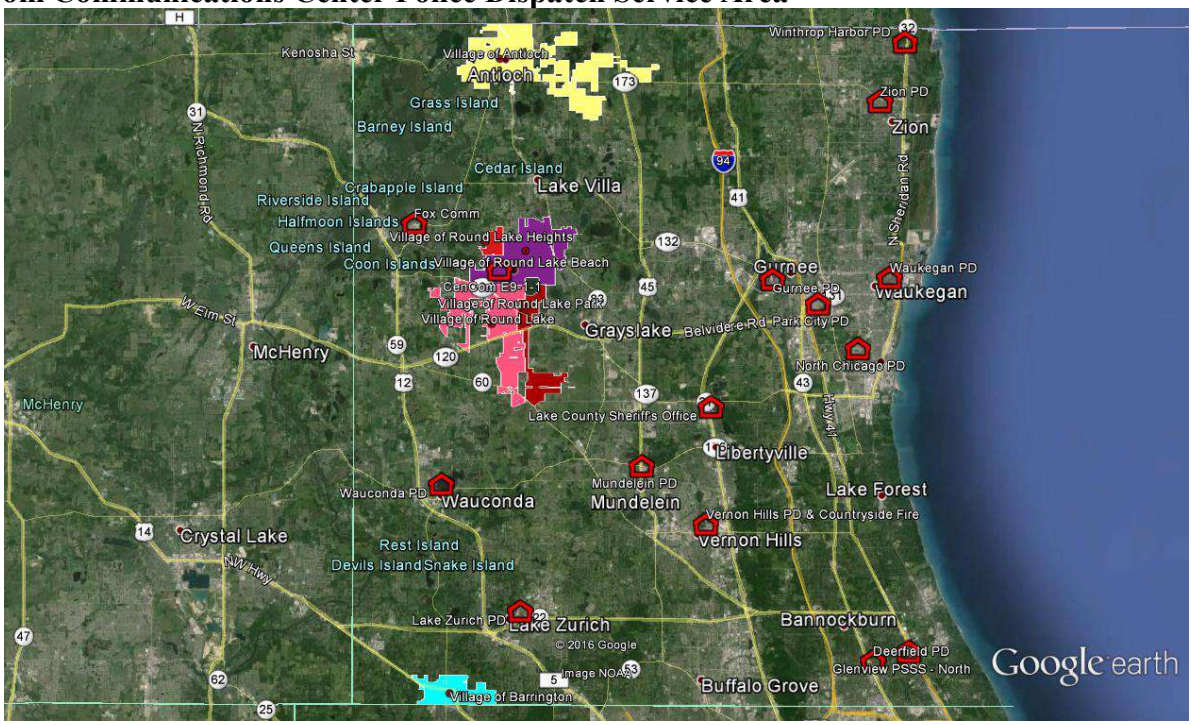


Figure 1 - CenCom Communications Center Police Dispatch Service Area

CenCom Communications Center Fire/EMS Dispatch Service Area

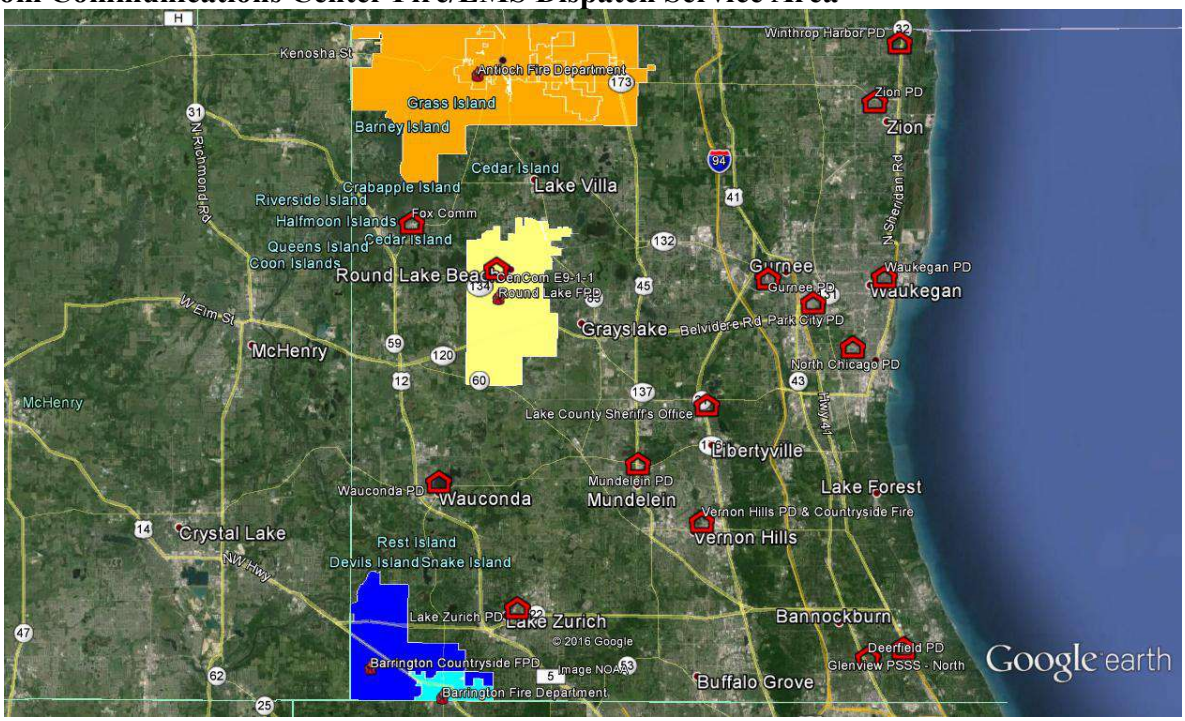


Figure 2 - CenCom Communications Center Fire Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The CenCom E9-1-1 JETSB was originally established in 1989 by the jurisdictions in the Round Lake area, and has since added several members. The current members of the JETSB are:

Village of Round Lake
Village of Round Lake Beach
Village of Round Lake Heights
Village of Round Lake Park
Village of Hainesville
Greater Round Lake Fire Protection District

The Village of Hainesville maintains its membership in the CenCom JETSB even though their police services are provided by the Grayslake Police Department which is dispatched by the Glenview consolidated dispatching organization.

The CenCom E9-1-1 ETSB meets quarterly (coordinated with the Executive Board of Directors of the communications organization) to review financial matters and make any decisions necessary on funding allocations or actions needed to support the operations of the communications center.

The remaining dispatch customers that are not part of the CenCom JETSB (Barrington, Barrington Countryside FPD, Antioch, and the Antioch FPD) are a part of the Lake County ETSB. Agreements are in place between the two ETSBs to allow some funding to be allocated from the Lake County ETSB to support some of the costs for 9-1-1 and dispatch related services for these agencies.

The communications center Director and staff provide the functional support for the ETSB activities, including coordination of all MSAG and GIS updates and coordinating with the Lake County ETSB as needed.

Operational Characteristics
The communications center is managed by a Communications Director and a Deputy Director. The agency is a standalone organization and is housed in the Public Works facility for the Village of Round Lake Beach. The communications center portion of the building was specifically designed for the communications and detention functions that it performs. Communications personnel have none of the front counter or lobby duties found in most all of the communications centers housed in police departments. The communications center side of the building is not open for public access and the only personnel coming and going from the facility are from the agency itself or the customer agencies they serve.

The basement of the building houses a jail facility for the Round Lake area police departments. This shared detention process was identified as one of the key characteristics needed in the facility to allow these formerly separate police and jail functions to come together into a consolidated communications center. CenCom is responsible for the maintenance and upkeep of the jail facility, Livescan system, and cameras, but is not responsible for the actual booking or inmate processing activities other than to open/close sally port and jail entry doors when requested by officers bring in detainees. Telecommunicators are responsible for performing periodic visual video checks on any occupied cells and logging this in CAD.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The communications center is responsible for alarm board monitoring for alarms throughout the areas they serve. They are also responsible for maintaining alarm-holder and key-holder information for all of the alarms in the system.

The communications center personnel are also responsible for a number of other systems and operational processes including:

- Operating a Text-to-911 system
- Operating the 3SI Security Systems tracking system
- Activating warning sirens
- After-hours call outs for the public works agencies for the jurisdictions they serve
- Serving as the dispatch center for MABAS Division 4 (which results in about 50-60 incidents per year)

The communications center staff is responsible for all of the LEADS work for the agencies they serve. In addition to the normal accessing of LEADS information, Telecommunicators enter warrants for the Village of Barrington.

A number of video feeds are delivered to a video display wall in the center. These cameras/feed provide access to:

- Railways through the area
- Antioch PD stationary detention/front door/parking area cameras
- A feed from the transportation PASSAGE system

Most of the information necessary for the individual Telecommunicators to carry out their duties are displayed at the individual consoles.

Staffing of the communications center is covered by a combination of full time and part time communications personnel and cross-trained personnel:

1 Director
1 Deputy Director
1 Part Time Administrative Assisstant
1 Part Time GIS technician
4 Shift Supervisors
17 Full Time Telecommunicators
2 Part Time Telecommunicators

Normal staffing is four personnel on duty. All Telecommunicators are trained to do all aspects of the job. One console position is dedicated to Fire dispatch, and one dedicated to PD. One additional person is regularly scheduled to work from 3 pm to 11 pm. The supervisors are working supervisors and are counted in minimum staffing levels.

The staffing tends to have a bit of turnover with hiring every year. There was quite a bit of turnover when the center became unionized and 12 hour shifts were implemented. The hiring process is coordinated by CenCom E9-1-1. New hires are then put thorough an APCO training process with one of the center employees who have received the APCO Communications Training Officer (CTO) certification. All supervisors are CTO trainers, but only fill in when a regular trainer is off. The full training process takes approximately 6 months to complete.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

All personnel are LEADS certified and also certified in APCO's EMD process, CPR and have completed a variety of NIMS and HazMat courses as well. Quality Assurance reviews are conducted on all calls and the formal QA process on EMD calls is done in conformance with APCO standards.
Fire and EMS dispatching is accomplished with tone and voice radio paging for the Greater Round Lake Fire Department. A Phoenix G2 Fire Station Alerting system is utilized for the Antioch and Barrington fire departments.

If it becomes necessary for CenCom E9-1-1 to dispatch from another location, most of the agencies would be dispatched by FoxComm. The only exception would be the Village of Barrington. Since only wireless calls for Barrington would go to FoxComm, any calls received on wireline would be received and dispatched by Lake Zurich Communications.

Technology Systems Overview
Technology system equipment is located in a dedicated room within the building immediately adjacent to the communications room. These systems are maintained by a combination of contracted service providers including Platinum Systems for the core network and Miner Electronics for the telephone and radio console systems.

9-1-1 and Telephony – The center is currently using a Cassidian telephone system to manage all of their 9-1-1 and 10-digit telephone lines. This system is slated for replacement in 2018 and consideration is begin given to joining the Lake County ETSB's Solacom network-based solution.

CAD/Mobile – The center utilizes the EnRoute CAD and mobile system operated by the Lake County ETSB. The center does not operate an RMS system and each customer agency supports their own RMS solution.

Radio Systems – The center utilizes a Zetron Integrator radio console system which was installed in 2009.

Logging/Recording – The center utilizes an Eventide recording system that was also installed in 2009.

Alarm Board Systems – These are installed and equipment maintained by Tyco/ADT.

Video Systems – A number of video system feeds are integrated into a collection of screens in the center. These provide access to security cameras at the Antioch police station, the in-house jail facility, a variety of weather tracking and warning systems, and the 3SI bank tracking system.

Other technologies – There are a variety of other technologies in use at this communications center.

- A Text-to-911 system from TCS
- A 3SI Security Systems bank-bag tracking system
- Warning siren activation equipment for Barrington, Antioch and the four Round Lake area jurisdictions.
- Phoenix G2 Fire Station Alerting system for Barrington Countryside and Antioch fire departments

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Facilities Overview

The communications center is a part of a building that was constructed to co-locate the public works operations for the Village of Round Lake Beach and the consolidated communications center. The upper floor is configured with a small suite of offices for the administrative and supervisory staff and the operational communications center with its supporting spaces. The communications center portion of the building also has a detention facility in the basement of the building. The facility has a dedicated radio antenna tower adjacent to the facility.

The operational area of the communications center is currently outfitted with a total of 8 dispatch console furniture positions. These positions fill the space available and it would not be possible to operate a larger number of positions without changing to different furniture and room configurations. A dedicated break room and restroom are immediately off the communications room, as is a technology equipment room. This room is very full with current systems and has little capacity for system changes or additions.

The facility is fully supported by an emergency generator which operates on natural gas with an on-site reserve storage tank in case of interruption in gas services. Critical systems are also protected by a UPS system.

There is limited space available for expansion of this facility due to its colocated nature with the public works. While it might be possible to negotiate for some additional space adjacent to the center, it would be challenging to integrate this into the existing operational space. The technology equipment room is also at or beyond reasonable capacity, so any additional systems or equipment would need to be located in newly identified and converted technology equipment space.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Deerfield Communications Center

Agencies Served

Deerfield Police Department
Bannockburn Police Department
Riverwoods Police Department

Collectively these three jurisdictions have a population of approximately 24,000 residents and across the three police agencies there are approximately 85 uniformed personnel being dispatched from the Deerfield center.

Organizational Structure and Governance Model

The service delivery relationships with Bannockburn and Riverwoods are formalized in separate contract documents, and the communications center essentially supports these two customer police departments in the same way they do their own department.

The communications center is operated as a unit of the Deerfield Police Department and is tightly integrated into the operations of the Department. The Chief of Police is the ultimate command authority over the communications center, but consultations with their customer agencies is used to help guide decisions on operational policies and procedures.

Costs of operations are covered through four sources of funding:

- Budget allocations within the Deerfield Police Department budget
- A fee charged to Bannockburn (essentially the salary & benefit cost of one FTE)
- A fee charged to Riverwoods (essentially the salary & benefit cost of one FTE)
- 9-1-1 revenues that flow into the Deerfield/Bannockburn ETSB

Deerfield Communications Center Police Dispatch Service Area

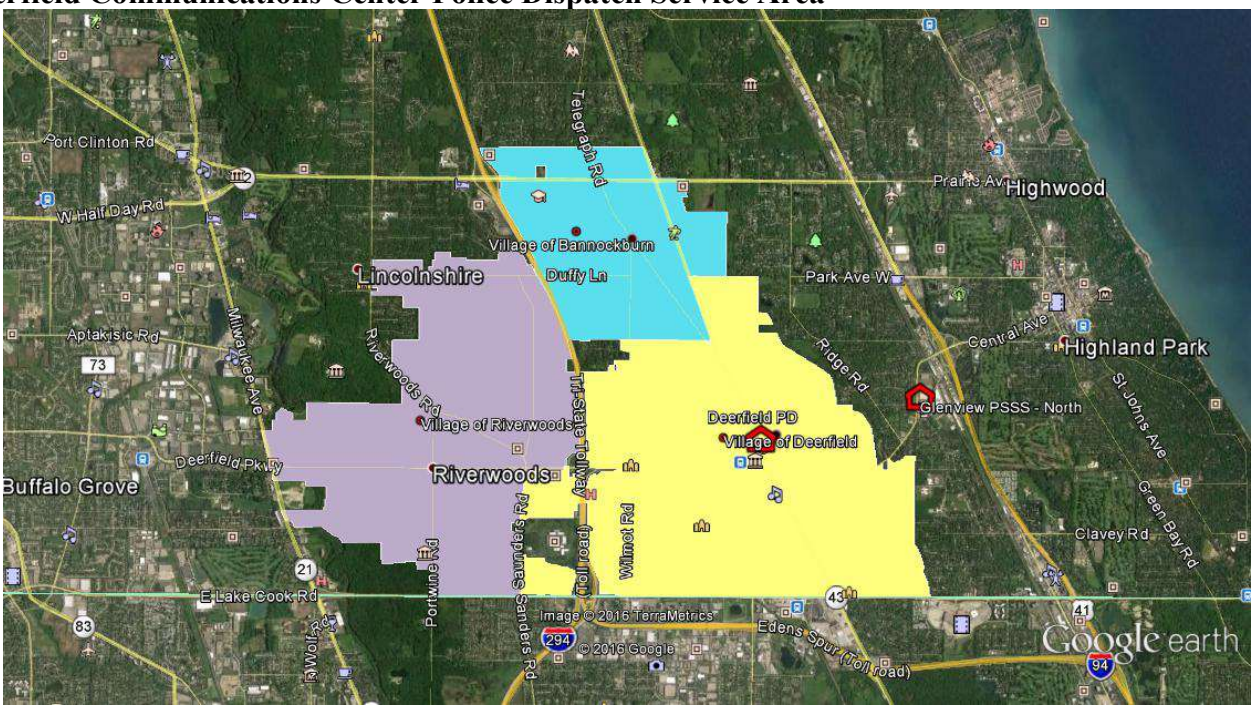


Figure 3 – Deerfield Communications Center Police Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The Village of Deerfield and the Village of Bannockburn have formed a Joint ETSB for administration of 9-1-1 surcharge revenues. Further, an agreement is in place between the Deerfield/Bannockburn ETSB and the Lake County ETSB for the Lake County ETSB to periodically transfer funds attributable to telephone land lines within the Village of Riverwoods. This funds transfer relationship would expire if Deerfield were no longer providing 9-1-1 and dispatching services for Riverwoods.

For Deerfield and Bannockburn, these 9-1-1 revenues support a variety of allowable technology costs for the dispatch center and the police agencies. Since Riverwoods is technically part of the Lake County ETSB, funds from the Deerfield/Bannockburn ETSB are not used to assist in technology costs for Riverwoods Police.

The Communications Director provides the functional support for the ETSB activities, including coordination of all MSAG and GIS updates and coordinating with the Lake County ETSB as needed.

Operational Characteristics
The communications center is managed by a Communications Director and the Police Department is a CALEA Accredited organization (initial accreditation in 2005). The Department has a great deal of pride in the work performed in the communications center and has it fully integrated into their operational model. This includes being responsible for 7X24 lobby window service to the public, video monitoring of jail activities, and perform jail matron duties when needed when female officers are not available for the booking process. The dispatchers are also responsible for performing 30-minute video checks on any detainees and they call in an officer from the street to handle any issues in the jail itself (they do not go into the jail area except when needed for matron duties).

A number of video feeds are delivered to a video display wall in the center. These cameras/feed provide access to:

- Holding cells and booking area
- Cameras at the Deerfield Police Station
- Cameras at the Riverwoods Police Station
- A feed from the transportation PASSAGE system
- A feed from cameras on the train station platform
- The video wall also contains a display of the New World CAD map with AVL tracking of active units.

Staffing of the communications center is covered by a combination of full time and part time communications personnel and cross-trained personnel:

1 Communications Director
7 Full Time Dispatchers
3 Part Time Dispatchers
1 Police Officer cross-trained to dispatch
2 Community Service Officers (CSOs) cross-trained to dispatch

Normal staffing is two personnel on duty. During normal weekday days this is accomplished with one Dispatcher and the Communications Director. Evenings/nights and weekends are covered by combinations of the full time and part time Dispatchers with occasional assistance from the cross-trained

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

personnel. On rare occasions they may have a few hours covered with only one dispatcher on duty. The communications center employees are not covered by a collective bargaining agreement.

While several members of the communications staff have significant longevity with four have over 15 years of experience. But they also have 3 relatively new staff, and have vacancies to fill on a periodic basis. There has been no personnel turnover in the past 24 months. The hiring process is coordinated by the Communications Director in coordination with Village Human Resources. New hires are then put thorough an APCO training process and three of the center employees have received the APCO Communications Training Officer (CTO) certification.

Since this communications center only handles law enforcement agencies, they transfer fire and EMS calls to the RED Center dispatch center for call processing and dispatching of fire and EMS resources within the jurisdictions they serve. Also, since the center does not dispatch fire agencies, they have very little alarm board activity and only 5 security alarms for some Village facilities. All commercial fire and security alarms are monitored by private central station alarm companies.

The communications center utilizes the Glenview North (Highland Park) facility as their 9-1-1 and operational backup if needed. Deerfield does not serve as the 9-1-1 or operational backup for any other PSAP.

The communications center staff handles all the LEADS work for all three agencies and provides a variety of records-oriented support to the officers of all three agencies.

The communications center is also the activation point for the warning siren systems in each of the three communities they serve.

Technology Systems Overview
Technology system equipment is located in a combination of a small room directly within the communications center footprint and then a basement space (adjacent to the building's radio tower) for radio equipment and telephone company point-of-presence equipment. Technology systems are supported by the Village IT staff and augmented with vendor maintenance contracts as needed.

9-1-1 and Telephony – The center utilizes a Zetron MAX 911 telephone and radio console system that is serviced under a maintenance contract with Radicom. This system has only been in place for about a year so it is at the front-end of its lifecycle. The center utilizes desksets on the Village Cisco phone system for business line transactions.

CAD/Mobile and RMS – Deerfield utilizes a fully integrated Tyler/New World CAD/Mobile and RMS system that includes Field Based Reporting. This system is connected to LEADS/NCIC and has been in service for many years and will be undergoing an upgrade to the enterprise version very soon (funds have been budgeted). Bannockburn and Riverwoods operate their own RMS systems interconnected to Deerfield's CAD system.

Radio Systems – As noted above, a Zetron MAX system is used for radio console functionality. The three police agencies are on a common VHF radio channel, the Eastshore Radio Network, and this channel is also shared with Lake Bluff PD, Lake Forest PD, Highland Park PD and Highwood PD. Consideration is being given to migration to the StarCom system in the future.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Logging/Recording – The center utilizes a NICE logging/recording system that has been in place for several years. There are plans to replace it in the near future.

Alarm Board Systems – As noted earlier, an alarm board system is in place but is only used to monitor alarms from Village facilities. All other alarm system monitoring is handled by private central station alarm companies.

Video Systems – As discussed earlier, a number of video system feeds are integrated into a collection of six large screens on one wall of the center. These provide access to security cameras at the Deerfield and Riverwoods police stations, the PASSAGE traffic camera system and the train station.

Facilities Overview
The communications center is a compact combination of a main dispatch area with three dispatch console positions, a small technology equipment room and an office area that serves the dual purpose of being the office for the Communications Director and is also equipped to serve as a fourth dispatch position. The total area is approximately 600 square feet.

The center is located adjacent to the lobby so they can handle the 7X24 counter needs when other department day-shift records staff are not available. The center is fully constrained by other functional areas within the police station and has no room for growth or expansion.

A colocated cellular carrier monopole tower is used by the center for its radio systems as well. The facility is fully supported by generator power and critical systems are also protected with UPS systems.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

FoxComm Communications Center

Agencies Served

Village of Fox Lake Police Department
Village of Lake Villa Police Department
Village of Lindenhurst Police Department
Village of Lakemoor Police Department
City of Park City Police Department (Effective October 1, 2016)
Fox Lake Fire Protection District
Village of Lake Villa Fire Department
Grayslake Fire Protection District

Organizational Structure and Governance Model

The founding of FoxComm grew out of a desire to have shared dispatching for The Northwest Network used by Fox Lake and Lake Villa. Other agencies have joined over the years to get to the current mix of customer agencies. The communications center operates as a functional unit of the Village of Fox Lake, and as a direct report to the Village of Fox Lake Administrator rather than being a functional unit within the Fox Lake Police Department. FoxComm operates as an enterprise fund within the Village financial structure so that all of the revenues and expenses of the operation are encapsulated in their own accounting structure rather than intermingled with other Village finances.

These structures allow the center to operate much like multi-jurisdictional and multi-discipline communications centers that operate under their own governance structure and model. This approach was specifically selected so that the multiple agencies being served by FoxComm had shared input into the operational policies and practices rather than it being solely guided by the Fox Lake Police Department. While a formal user group process is not yet in place this is planned for the near future. Operational costs are recovered from these agencies under a calls for service model that takes into consideration the differences in workload for various call types handled for each agency.

CenCom is the designated back up for FoxComm and FoxComm is the designated backup for CenCom. It should be noted that since the Village of Fox Lake straddles the boundary with McHenry County, during a fall back situation, McHenry County trunks would go to McHenry dispatch center while the Lake County trunks would roll to CenCom. In addition to these backup relationships FoxComm also has a mobile communications vehicle that can be located at a telephone company switching center and operate as a temporary PSAP if needed.

The FoxComm service area for police dispatching services is rather diverse with Fox Lake oriented on the western edge of Lake County and not sharing any borders with the other police agencies dispatched. Lake Villa and Lindenhurst are slightly east of Fox Lake and have limited inter-jurisdictional borders. Lakemoor is directly south of the Fox Lake border and Park City is approximately 18 miles east of Fox Lake. Collectively the population served for law enforcement dispatching is approximately 33,871. The fire agencies dispatched by FoxComm cover a much larger footprint and the population in these areas has been estimated at 85,000.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

FoxComm Communications Center Police Dispatch Service Area

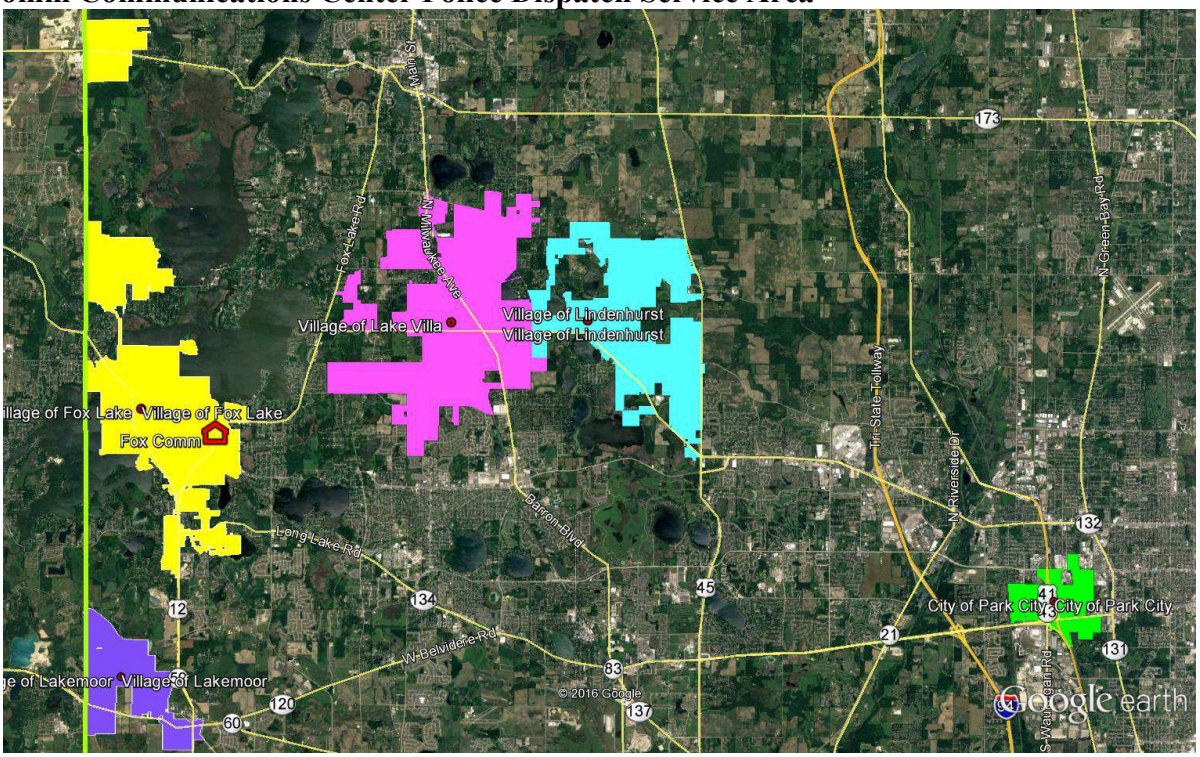


Figure 4 - FoxComm Communications Center Police Dispatch Service Area

FoxComm Communications Center Fire Dispatch Service Area

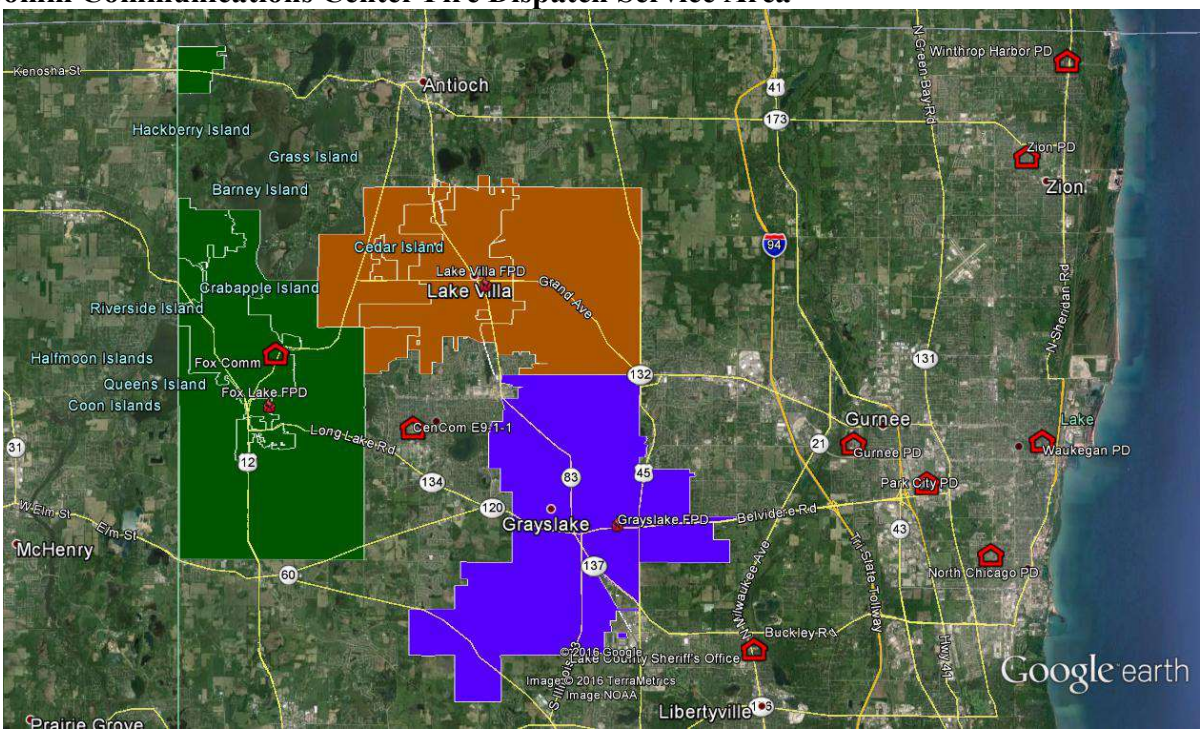


Figure 5 - FoxComm Communications Center Fire Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The Village of Fox Lake established their own ETSB and the board has a very close relationship to the village public safety and administrative leadership. ETSB 9-1-1 surcharges are utilized for specific allowable expenditures for the FoxComm operation. All other financial transactions are handled within the FoxComm enterprise fund.

It is important to note that while the Village of Fox Lake is its own ETSB, the other village and fire district areas dispatched by FoxComm are technically within the footprint of the Lake County ETSB. At the time of this information collection, it was understood that the State 911 office allows FoxComm to count the combined populations of the four villages and one city as being in their service area but it was not clear whether is also a recognition that they are part of the Fox Lake ETSB. Regardless, the Lake County ETSB does not provide any direct financial support to the Fox Lake ETSB for any of these service areas.

Operational Characteristics
The communications center is managed by a Center Manager (who works normal working hours) and routine operations are supervised by two Shift Supervisors. The organization has a great deal of pride in the structure and operational approach of their organization, and the quality of services they provide. This includes successfully passing the communications center elements of the CALEA accreditation process when Grayslake PD went through their accreditation process. As of January 2016 FoxComm was awarded the Accredited Center of Excellence (ACE) designation through the International Academy of Emergency Medical Dispatch, one of two 9-1-1 Centers in Illinois to receive this award. They feel well suited to further expand their customer base as further dispatch consolidation takes place in the region.

Staffing of the communications center is covered by a combination of full time and part time communications personnel and cross-trained personnel:

1 Center Manager
2 Shift Supervisors
2 Lead Telecommunicators
8Full Time Telecommunicators
6 Part Time Telecommunicators

Normal minimum staffing is two personnel on duty during most hours of the day, with an additional person brought on for a power shift between 9 am to 11 pm. Supervisors are working supervisors and are counted as part of the minimum staffing.

While the two positions are generally characterized as a police position and a fire position, both personnel on duty often perform all the functions of the center including call receiving and dispatching both police and fire. The fire position is equipped with the Fox Lake alarm monitoring system, EMnet, FATPOT, and the warning sirens, which are activated for all villages covered by FoxComm.

The communications personnel are responsible for answering the 10-digit lines for the Fox Lake Police Department and answer 10-digit lines for the other police departments after-hours and on weekends.

Police dispatching and radio communications is done on the Northern Illinois Police Network (referred to as “the Net”) which is a UHF conventional system shared by the three FoxComm agencies and the

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Antioch police department. Fire dispatching is done with tone & voice paging on the Quad 2 channel, supplemented with incident information sent to the mobile computers. FoxComm will begin operations on the StarCom 21 trunked system to support Lakemoor and Park City Police. They are currently in the process of installing a new Zetron MAX console system and StarCom control stations to support this change. Lake Villa and Fox Lake are planning a move to the StarCom system before the end of 2016 and Lindenhurst plans to move in the next budget year. The Northwest Net will remain in service as a back-up until it reaches a point where maintaining it is unfeasible.

Communications center personnel are also responsible for various holding cell related functions including video monitoring of the booking and detention areas, as well as sally port control. They are also responsible for performing the periodic audio and video checks on any detainees and logging this in CAD. They call an officer in from the street to deal with any issues detected. Female communications personnel are also trained as matrons and will assist in the booking process when a female officer is not available. And, communications personnel order the prisoner food, with an officer picking it up and making the delivery.

The Alarm Board duties are assigned to the Communications Center. Of the 113 alarms monitored, only 2 are burglar alarms for Village facilities, the rest being fire alarms. Telecommunicators are responsible for keeping all the alarm holder and key holder information up to date in the CAD. The agency doesn't receive any stipend for monitoring of alarms and is trying to shift to a model of having private alarm monitoring companies handle these duties.

The communications center has a number of video feeds delivered to a video display at the designated radio position. These cameras/feeds provide access to:

- Holding cells, booking and prisoners
- In house security for the facility
- A feed from the transportation PASSAGE system

While historically staffing has tended to remain steady, there has been some turnover in the past 24 months. One employee left because the moved out of state, one departed due to family issues and one moved from full time to part time. Rehiring and training has been actively underway, and this has included some hiring of former Wauconda personnel. The hiring process is coordinated by the Communications Manager in coordination with Village Human Resources. New hires are then put thorough a structured multi-phased training process that follows APCO guidelines and is directly monitored by an assigned CTO. The full training cycle takes approximately six to eight months to complete before the person is considered a fully trained Telecommunicator. Telecommunicators also maintain LEADS, EMD and CPR/AED certifications and have taken a variety of NIMS courses as well.

Technology Systems Overview

Technology system equipment is located in a dedicated room within the Fox Lake PD building and near to the communications center. Technology systems are supported by the Village IT staff.

9-1-1 and Telephony – The center utilizes a Zetron Integrator system for the 9-1-1 and general telephony needs. This system was newly installed at the time the facility was constructed in 2005 and has been supported by Radicom since then. Planning is underway to migrate to the Lake County ETSB's Solacom system in the 2017-18 budget cycle.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

CAD/Mobile and RMS – The CAD, Mobile and RMS environment is rather convoluted. FoxComm is a contract user of the Lake County ETSB EnRoute CAD system and also runs an integrated Priority Dispatch EMD module with this system. Fox Lake PD has a system sharing agreement with the Lake County Sheriff's Office to utilize their VisionAIR (now TriTech) RMS, mobile and field based reporting system. The other police customers have their own RMS solutions, with Lake Villa utilizing the VP Law Enforcement Software solution from Brownlee Data Systems and Lindenhurst part of a shared Tyler/New World system along with Lake Zurich, Kildeer, Hawthorn Woods, Round Lake and Round Lake Beach.

Radio Systems – The center utilizes a Zetron Integrator radio console system with wireline and control station interfaces to the radio systems used by the agencies as well as numerous regional interoperability channels. This system was newly installed at the time the facility was constructed in 2005 and has been supported by Radicom since then. A new Zetron MAX console system and StarCom control stations are being installed to support customer migrations to StarCom.

Logging/Recording – The center utilizes a ComLog recorder from CVDS was also installed at the time of construction and is serviced by Radicom. As part of adding the new radio console system, a new NexLog IP recorder is also being installed and will be operational at the same time as the new radio console system.

Alarm Board Systems – As noted earlier, there is an alarm board at this communications center.

Video Systems – As discussed earlier, a number of video system feeds are integrated into a collection of screens in the center. These provide access to security cameras at the Fox Lake and Lake Villa police stations and the holding cells.

Other Technology Systems – The communications center does operate a 3SI tracking system and is part of the regional FATPOT system.

Facilities Overview

The communications center is a dedicated facility located in the basement of the Fox Lake PD. Security doors are located at the outside entrance and at the basement entrance. The facility is fully self-contained with its own break area, restrooms and support spaces. The room is currently equipped with 4 dispatch console positions and electrical and data cabling is in place for a 5th position in the future. There are also telephone and CAD workstations in the Center Manager's office which can be used as a call receiving location during large scale events.

The current facility is approximately 1,750 square feet configured with two small supervisor work cubicles along one wall. Moving/reconfiguring these spaces would allow the room to be reconfigured to accommodate at least up to 6 furniture positions if needed. There is also an adjacent Sergeant/shift commander's office that was identified as potentially being able to be relocated or reconfigured to allow further expansion of the communications room. This expansion is now underway, and when complete the facility will total approximately 2,350 square feet. FoxComm purchased 4 Watson console furniture positions from Wauconda and will be expanding their total position count to 8 when the construction is complete. Six of these positions will be fully equipped in time for the cutover of Park City Police, and the final two positions will be equipped in the 2017-18 budget cycle.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Technology equipment is located in two rooms immediately adjacent to the communications center and these rooms are well organized and have room for equipment expansion. One of these rooms is interconnected to the facilities radio antenna tower and both the room and tower have capacity for additional systems to be added.

The facility is fully supported by generator power and the critical systems throughout the center are also protected with a UPS system. The facility is also equipped with an external auxiliary power plug to allow a portable generator to be brought in if the main generator were to fail.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Glenview Public Safety Support Services Communications Centers

Agencies Served (Lake County)

Highland Park Police Department
Highwood Police Department
Lake Bluff Police Department
Lake Forest Police Department
Highland Park Fire Department
Lake Bluff Fire Department
Lake Forest Fire Department
Grayslake Police Department (which also serves Hainesville)

In addition to these Lake County agencies, Glenview also provides communications services for the following Cook County agencies:

Glenview Police Department
Morton Grove Police Department
Niles Police Department
Glenview Fire Department

Organizational Structure and Governance Model

The Glenview communications centers act as a separate Public Safety Support Services (PSSS) organization within the overall governance structure of the Village of Glenview. The Director of the communications centers reports to the Glenview Village Manager and the organization is self-sustaining from an operational perspective. The organization utilizes central administrative and IT support services from the Village as needed.

Glenview PSSS operates two communications centers that are linked together and operate on a number of shared systems. The two communications centers are located within police department facilities. The North facility is located at the Highland Park Police Department and the South facility is located at the Glenview Police Department. However, neither of these police entities have any direct influence on the operational practices of either communications center. Instead, their service level and operational needs are coordinated through the management of Glenview PSSS.

The relationships with each of the customer agencies are formalized in intergovernmental agreements and the costs for dispatching services are individually calculated and negotiated with each customer agency. The Glenview Board of Trustees is directly involved in any considerations about bringing on new customers and consults with existing customers before making any decisions.
Collectively, the Lake County law enforcement agencies that Glenview dispatches for have a population of approximately 84,950. The population served for fire and EMS dispatching is approximately 54,948.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Glenview Communications Centers' Lake County Police Dispatch Service Area

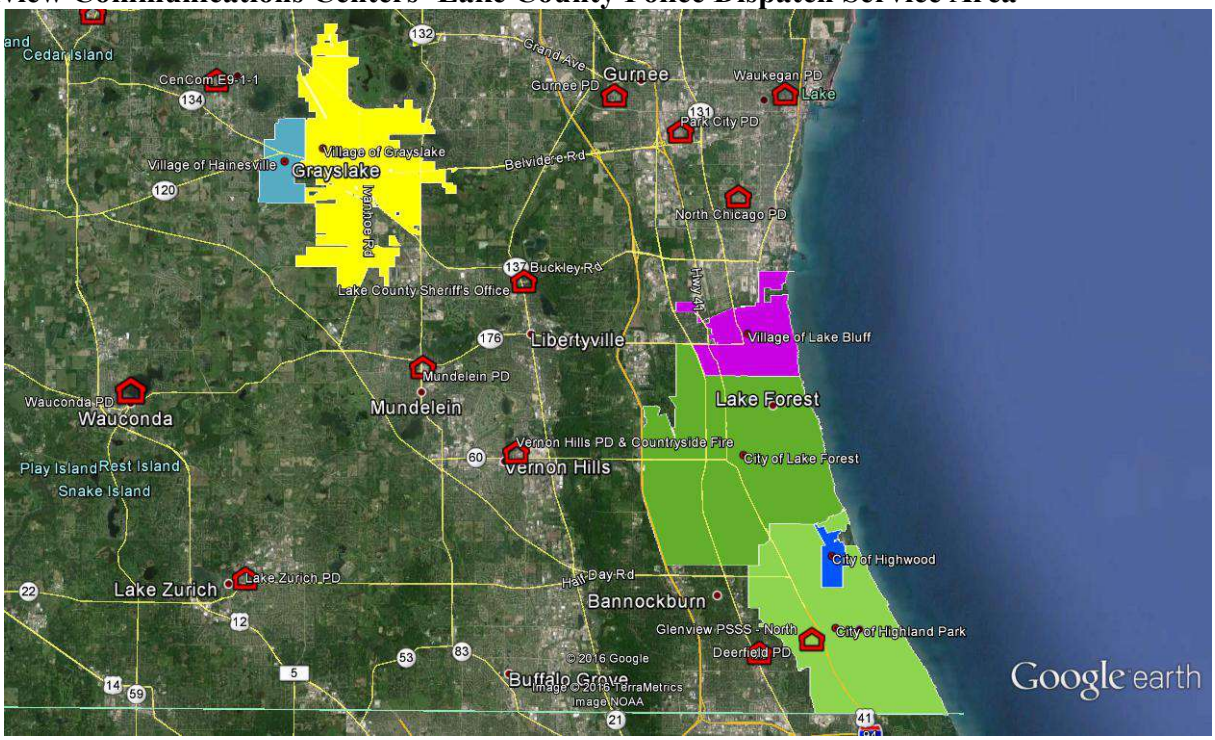


Figure 6 – Glenview Communications Centers' Lake County Police Dispatch Service Area

Glenview Communications Centers' Lake County Fire Dispatch Service Area

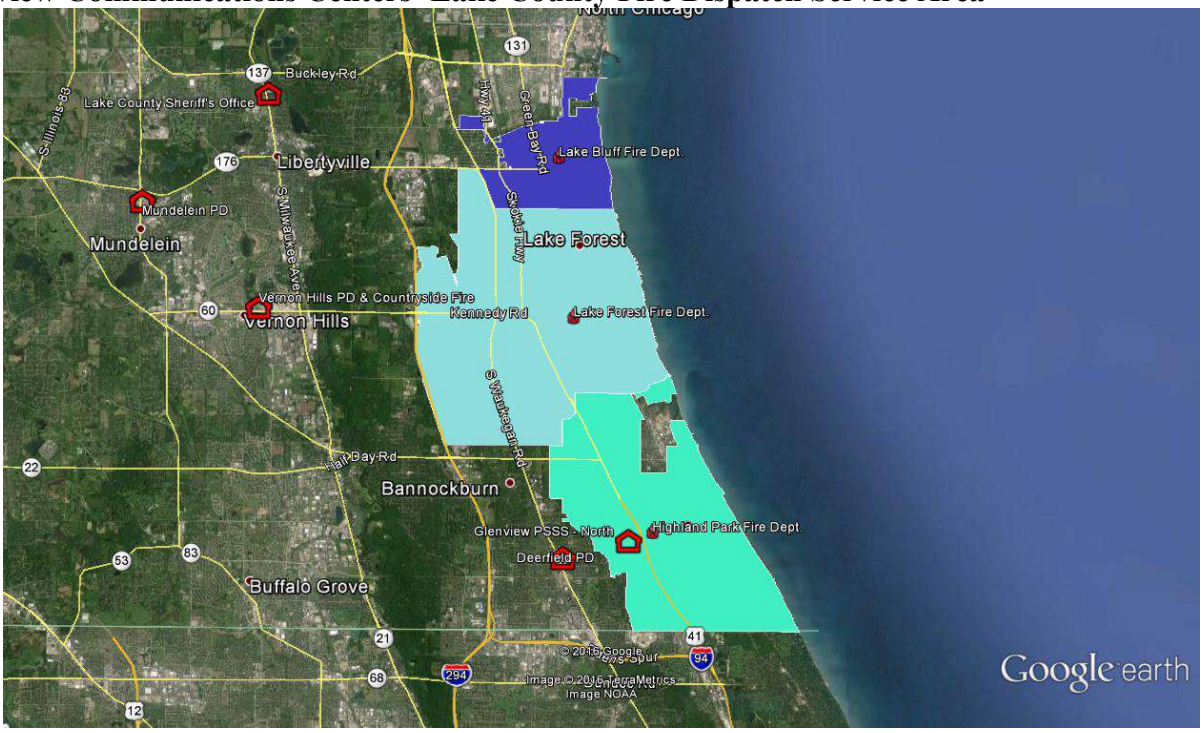


Figure 7 – Glenview Communications Centers' Lake County Fire Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationships
The Lake County jurisdictions served by the Glenview Public Safety communications centers each have their own ETSB for their jurisdictional area.

City of Highwood – Estimated population 5,387
Village of Lake Bluff – Estimated population 5,698
City of Lake Forest – Estimated population 19,379
Village of Grayslake – Estimated population 21,018
City of Highland Park – Estimated population 29,871

Each of these jurisdictions use a combination of their ETSB 9-1-1 surcharge revenues and local municipal budgeted funds to pay the costs of operating 9-1-1 systems in their areas and paying for their dispatching services from the Glenview PSSS organization.

Glenview and their partner agencies have filed an ETSB consolidation plan with the State to create the Glenview Joint ETSB that will collapse all five of these ETSBs in Lake County together with the Glenview, Morton Grove and Niles ETSBs in Cook County. This plan was approved on September 12, 2016 and will become effective on January 1, 2017.

Operational Characteristics
The communications centers are overseen by one Director and one Deputy Director who report to the Glenview Village Manager's office. There is currently no formal user group process for the customer agencies to meet periodically and guide operational processes and practices, but this is in the planning stages. The Director and Deputy Director maintain close relationships with the leadership of each agency they dispatch for and make sure their service needs are being met.

Staffing of each of the communications centers is covered by a combination of full time and part time communications personnel and cross-trained personnel:

Glenview Public Safety Dispatch Center South:
- 1 Director
- 1 Deputy Director
- 3 Shift Supervisors
- 20 Full Time Telecommunicators
- 10 Part Time Telecommunicators

Normal minimum staffing at this facility is five personnel on duty during most hours of the day, with staffing reduced to four from midnight to 6 am. The Shift Supervisors are included in minimum staffing.

Glenview Public Safety Dispatch Center North:
- 3 Shift Supervisors
- 9 Full Time Telecommunicators

Normal minimum staffing at this facility is three personnel on duty during most hours of the day, with staffing reduced to two personnel during the hours of midnight to 6 am. Shift Supervisors are included in minimum staffing.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The part time positions are meant to be used to cover where necessary in either center. These part time positions are off duty police officers, college students wanting to get into the field, or off-duty operators from other centers in the area.

All personnel are LEADS certified and perform the LEADS work for the law enforcement agencies they serve.

The four contiguous police agencies (Lake Bluff, Lake Forest, Highwood and Highland Park) previously operated on the Eastshore Radio Network VHF radio system, a channel also used by the law enforcement agencies dispatched by Deerfield PD (Deerfield, Bannockburn and Riverwoods). The Lake Bluff, Lake Forest, Highwood and Highland Park police departments have completed their migration to the StarCom trunked radio system while the Grayslake PD operates on their own channel.

. The Glenview communications centers were prepared for these migrations with a new Motorola console system that can utilize control station interfaces to access any new Talkgroups that they need to support. This console system could also be directly connected to the radio network core if the additional features this brings were needed for their operations in the future.

Each of the console positions in both centers can easily dispatch for any of the other agencies, or answer incoming calls. Each center is fully redundant in its ability to provide services for all of the customer agencies, and spare positions at each center provide capacity for either center to serve as the backup for the other.

Fire dispatching is accomplished through a combination of approaches. For Highland Park and Glenview, a WestNet fire station alerting system is being used, with controlling systems installed at both of the communications centers. Tone and voice paging is used for dispatching Lake Bluff and Lake Forest. EMS related calls are processed using the Priority Dispatch EMS protocols and all personnel are EMD certified. The Lake Forest and Lake Bluff fire departments are dispatched on Quad 4 and Highland Park fire is on their own channel. The centers have access to a number of other regional interoperability channels to use as needed.

The Communications personnel are responsible for other duties within the police departments dispatched for. The Lake Forest and Lake Bluff Police Departments each have kiosk type lobbies for after hours. The Glenview Center North monitors these kiosks and can interact through voice and video with any one requesting assistance. The kiosks are also areas of refuge to which the dispatch center personnel can allow access when necessary.

The Glenview Center North also monitors the jail cells at the Highland Park Police Station, with entries for prisoner checks documented into CAD. There is no physical contact with the detainees and female Telecommunicators are not utilized as jail matrons.

Neither of the communications centers provide alarm monitoring services. Fire and security alarms in the jurisdictions they serve are monitored by private central station alarm companies and then relayed to the communications center when alarms are activated. This relieves the communications center

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

personnel of all the records maintenance functions for the alarms and relieves it from having to handle all of the interactions with alarm maintenance workers as false and trouble alarms are resolved.

Each communications center has a number of video feeds delivered to a video display wall in the center. These cameras/feeds provide access to:

- Area maps
- AVL maps
- Facility security cameras
- Video kiosks at Lake Forest and Lake Bluff

The staffing tends to remain steady with low turnover. The hiring process is managed by the Director in coordination with Village of Glenview Human Resources. New hires are then put thorough a structured multi-phased training process that follows APCO guidelines and is directly monitored by an assigned CTO. The full training cycle takes approximately 12 to 16 weeks to complete before the person is considered a fully trained Telecommunicator. Each Telecommunicator completes a one-year probation.

Technology Systems Overview

Technology system equipment is located in a dedicated equipment room within each of the centers' operational areas. Technology systems are supported by a team of two individuals from the Glenview IT organization who are dedicated to supporting the communications centers' and public safety technology systems. A contracted employee has recently been added as an application support specialist for the full New World environment.

9-1-1 and Telephony – The centers utilize a Cassidian (now Airbus DS) dual core 9-1-1 telephone system installed in 2012. Due to characteristics in how 9-1-1 infrastructure is administered in Illinois, the 9-1-1 trunks for agencies in Cook county are terminated in the facility at Glenview, and the 9-1-1 trunks for the agencies in Lake County are terminated in the Highland Park facility. However, since the Cassidian system is networked between the two facilities, each facility can access and process calls that arrive in the system from either of the system cores.

CAD/Mobile and RMS – Glenview PSSS operates an enterprise version of Tyler/New World's CAD/Mobile, Field Reporting and RMS applications. The system operates on redundant servers with one at each facility and networked together for redundancy and is interfaced to LEADS/NCIC. All of the agencies served are managed through the CAD/Mobile environment and all but Highwood maintain their records on the common RMS environment (Highwood maintains their own stand-alone RMS system that is not interfaced to New World). Glenview PSSS does not have any records management responsibilities other than to maintain the system for use by the individual customer agencies. The CAD system is also interfaced to individual Firehouse records systems in use by the customer Fire Departments.

Radio Systems – The centers utilize Motorola MCC7500 radio console systems at each of their facilities and access the radio networks utilized to support their agencies through a combination of microwave and control station interfaces. Plans are to network the two MCC7500 systems together so that all radio channels can be accessed from either communications center. Initially, as agencies migrate to the Starcom 21 trunked radio system control stations will be utilized to access the necessary Talkgroups, but

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

consideration to directly connecting the console network to the trunked system core will also be considered in the future if the features this brings are needed by the agencies they serve.

Logging/Recording – The centers utilize a newly installed RevCord logging and recording system. This system allows them to record both analog and IP traffic and has an integrated Quality Assurance module.

Video Systems – As discussed earlier, a number of video system feeds are integrated into a collection of screens in the center and on individual consoles

Lake Forest Police and Lake Bluff Police have 2-way video kiosks at their lobbies so in afterhours situations the public has direct access to dispatch through this audio-visual link. These systems combine an IP link for the video, and an autodial approach for the audio, so the call is processed as a normal 10-digit call for the audio side while the Telecommunicator is able to view the caller over the IP video link. Grayslake police have a directly connected phone at their front entrance for after-hours direct contact to dispatch.

Other Technology Systems – The centers are responsible for activating warning sirens in the communities served. Some of these are activated through the radio console system and some are controlled by separate Whelan siren controller systems.

The centers also have implemented the Code Red community notification system and this is utilized by most customer agencies with its own cost-sharing model for those that use it.

As noted earlier, the centers have implemented a WestNet fire station alerting system that is integrated with CAD. This system significantly reduces the time required to dispatch the agencies utilizing the system when compared to the agencies still on tone and voice paging.

Facilities Overview

North Facility (Highland Park)

The communications center operated out of the Highland Park police station is currently configured with four full dispatch workstations, with one designated as a Fire dispatch position, one designated as the Police dispatch position, and two designated for call receiving or additional dispatching positions if needed. There are also two smaller positions (characterized as backup positions) that can be utilized as well but just aren't as conveniently arranged.

The center also has a break area and supervisor's office immediately attached to the main communications room. Through the use of different console furniture systems and room configuration, the space could accommodate at least six fully equipped positons. Due to constraints within the facility for other police department functions, the facility could not be expanded beyond its current footprint. The total space for the communications center is approximately 1,100 square feet.

The facility is supported by an emergency generator and critical systems are protected by UPS systems.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

South Facility (Glenview)
The communications center operated out of the Glenview police station is a newly constructed facility created as a part of a large-scale reconstruction of the entire Glenview facility. The communications center space was specifically designed for this function and meets current codes and standards for communications centers.

The facility is currently configured with eight fully equipped console furniture positions and is pre-planned to allow the addition of six more positions to get to a total 14 positions. The facility is arranged with a row of offices and support spaces along the outside wall of the building. These spaces are used for the Director and Deputy Director offices, a shift supervisor's office, a spare office, a break area and the technology equipment room (which is well organized and sized to allow for growth and system maintenance/replacement activities.)

The facility is fully supported by generator power and the full communications center is also protected on a UPS system. The facility also has a very robust monopole radio tower and radio equipment support room. Both have room to add additional equipment if additional agencies are brought in.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Gurnee Communications Center

Agencies Served

Gurnee Police Department
Gurnee Fire Department (includes the Warren/Waukegan FPD)
Newport Fire Protection District

Organizational Structure and Governance Model

The communications center operates as a functional unit of the Gurnee Police Department and is tightly integrated into the operations of the Department. Gurnee is a CALEA accredited police department. The Administrative Commander is organizationally responsible for the communications center and day-to-day operations are administered by a Communications Supervisor.

The Gurnee and Newport fire departments provide guidance on operational procedures related to fire and EMS services. The service delivery relationship with the Newport FPD is through a written agreement and the communications center provides the same level of services to both fire agencies they serve. Newport pays for their services on a calls-for-service basis, with all other costs of the organization borne by the Village and its ETSB.

Gurnee is a community of approximately 31,207 and is bordered on much of its northern, eastern and southern boundaries by Waukegan. Park City is enveloped by Gurnee and Waukegan. Unincorporated areas border the Village on most of the northern and western boundaries. The expanded service area for the Gurnee and Newport fire departments have the center providing fire and EMS dispatching for a much larger population.

Gurnee is willing to see their communications center expand in the number of agencies served and is actively pursuing what the call an 'open for business' strategy. They are prepared to modify the governance model for the communications center to accommodate the service level needs of any agencies they serve. They are also willing to work with other ETSBs to form JETSBs as needed.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Gurnee Communications Center Police Dispatch Area

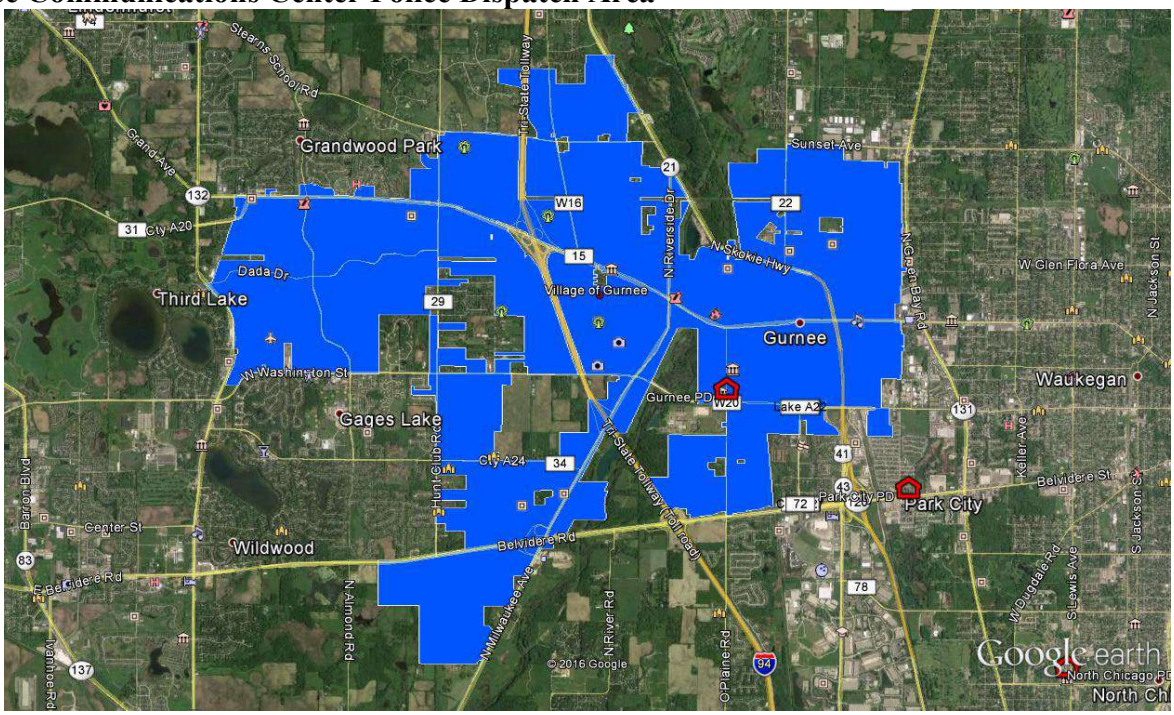


Figure 8 – Gurnee Communications Center Police Dispatch Area

Gurnee Communications Center Fire Dispatch Service Area

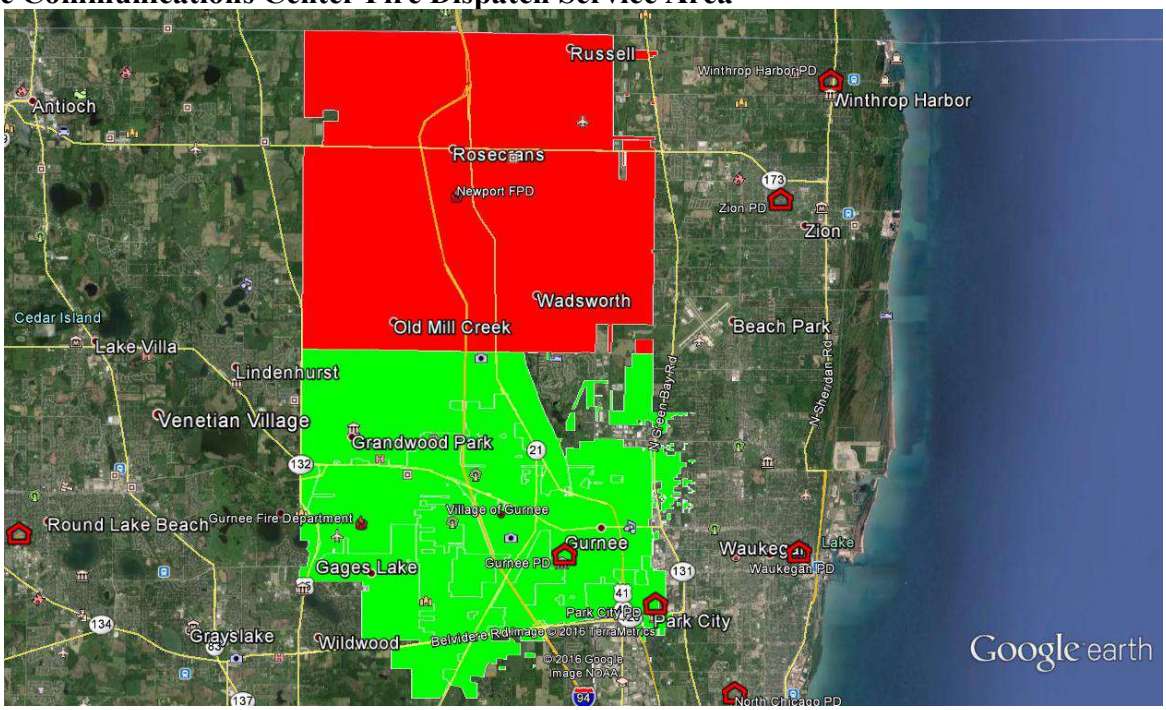


Figure 9 - Gurnee Communications Center Fire Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
Gurnee has their own ETSB and there is a very close relationship between the public safety agencies and city administration and the ETSB activities. 9-1-1 surcharge revenues are used to support a combination of capital and operational costs within allowable limits.

The Newport FPD services municipalities and unincorporated areas that are all covered by the Lake County ETSB. Agreements have been worked out to allow the ETSB to provide limited support to the FPD for some of their mobile equipment costs related to being on the Gurnee CAD/Mobile systems.

The Communications Supervisor provides the functional support for the ETSB activities, including coordination of all MSAG and GIS updates and coordinating with the Lake County ETSB as needed.

Operational Characteristics
The communications center is managed by a Communications Supervisor (who works normal working hours) and routine operations are supervised by two Shift Leaders. The Department has a great deal of pride in the work performed in the communications center and feels they are able to expand their service offerings to other communities.

Staffing of the communications center is covered by a combination of full time and part time communications personnel and cross-trained personnel:

1 Communications Supervisor
2 Shift Leaders
10 Full Time Telecommunicators
2 Part Time Telecommunicators
1 Part Time call taker

Normal minimum staffing is two personnel on duty during most hours of the day. Personnel work 12 hour shifts on a 5-on/2-off and 5-on/3-off rotation. The one part-time call taker will be scheduled to fill in hours that traditionally have higher call volumes. The Shift Leaders will work in their office when possible, but often are working at their console position on the floor and assisting with call receiving and other duties. The police department often operates with 5-6 Officers and 1-2 Sergeants on the street at any given time. Along with specialized personnel such as detectives and CSOs it is not uncommon for 10-12 units to be on the air at any given time.

The summer and holiday seasons have significant impacts on staffing demands, with officers specifically stationed at Six Flags when it is in operation and increased staffing at Gurnee Mills during holiday shopping seasons.

Gurnee also experiences a fairly high volume of wireless 9-1-1 calls that get initially routed to the wrong PSAP. This due to their complex borders with Waukegan and the Sheriff's office and the general inaccuracy of wireless 9-1-1 routing. There is a strong sense from the fire departments that this is causing delays in getting calls to the correct dispatch centers and getting resources dispatched.

While the two positions are generally characterized as a police position and a fire position, both personnel on duty often all the functions of the center including call receiving and dispatching both

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

police and fire. One of the positions, on a rotating basis, is designated as the position that will handle the alarm board work. The other position will then handle all of the jail video monitoring and logging.

Fire dispatching is done with tone & voice paging supplemented with incident information sent to the mobile computers. While the Gurnee and Newport fire departments operate on a Gurnee-licensed channel, there is also routine interaction on other regional Quad channels. Gurnee is also the designated "pod" coordination center for the Quad 1 channel. All EMS related calls are processed with the Priority Dispatch EMD protocols and the procedures have been streamlined so that dispatching can begin will the full EMD process is being completed.

The Communications personnel are responsible for a number of other responsibilities within the police department. The provide front lobby window service to the public on evenings and weekends when the Records Section of the Police Department is closed. They also perform all of the LEADS work for the agency.

Communications center personnel are also responsible for various jail related functions including video monitoring of the booking and detention areas. They are also responsible for performing the periodic audio and video checks on any detainees and logging this in CAD. They call an officer in from the street to deal with any issues detected. Female communications personnel are also trained as matrons and will assist in the booking process when a female officer is not available.

The Alarm Board duties do take a significant portion of one Telecommunicators time, particularly in the earlier parts of each shift when alarm maintenance and testing activities are underway. Telecommunicators are responsible for keeping all the alarm holder and key holder information up to date and make all the contacts necessary for any false alarm situations. Persistent problems with particular systems are then followed-up on by fire prevention personnel.

The communications center has a number of video feeds delivered to a video display wall in the center. These cameras/feeds provide access to:

- Jail cells, booking and prisoners
- In house security for the Gurnee Police Station
- A feed from the transportation PASSAGE system
- CAD mapping display with AVL tracking of active units

The staffing tends to remain steady with an approximate 15% turnover rate. It is found that if an operator stays 4 years, they tend to stay for the duration of their career. The hiring process is coordinated by the Communications Supervisor in coordination with Village Human Resources. New hires are then put thorough a structured multi-phased training process that follows APCO guidelines and is directly monitored by an assigned CTO. The center has a total of six personnel APCO Certified as CTOs. The full training cycle takes approximately 5 months to complete before the person is considered a fully trained Telecommunicator.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Technology Systems Overview
Technology system equipment is located in a dedicated room within the Gurnee PD building and immediately adjacent to the communications center. Technology systems are supported by the Village IT staff and augmented with vendor maintenance contracts as needed.

9-1-1 and Telephony – The center previously utilized a legacy Positron Lifeline 9-1-1 controller with a Nortel Meridian Option 61 switch for its telephony needs. This system has now been replaced with a West/Intrado VIPER system for 9-1-1 lines and a Cisco Unified Communications Manager system for administrative lines.

CAD/Mobile and RMS – The center utilizes a CAD/Mobile/RMS suite of applications from Public Safety System Incorporated (PSSI). The system also supports AVL and Field Based Reporting functionality and is interfaced to LEADS/NCIC. This system has been modified to prepare it for providing multi-jurisdictional dispatching functionality. Gurnee is the only jurisdiction in Lake County to use this vendor's solution. The system is also interfaced to the Firehouse records systems used for fire records management.

Radio Systems – The communications center previously utilized a Motorola Gold Elite radio console system that is at the end of its lifecycle. The system has now been replaced with current generation Motorola MCC7500 consoles as further integration with the StarCom 21 radio system is planned for the future and the system is equipped with an AIS Server for interface to IP capable logging equipment already in place. The police department operates on a 2-channel 800 MHz conventional radio system and fire operates on a conventional VHF system with its own channel rather than sharing one of the Quad channels. While StarCom 21 radios are being acquired for the police department, they will continue using their 800 MHz conventional channels for routine communications and be using StarCom for ancillary communications and regional interoperability.

Logging/Recording – The center utilizes a DSS Equature recording system that is only about 4 years old. It performs both analog and IP recording for current and future systems. The system also supports CAD screen captures and replay which can aid in quality assurance and follow-up work.

Alarm Board Systems – As noted earlier, there is a very active alarm board function at this communications center utilizing the SIS alarm monitoring system provided by ADT and AES Wireless alarm interfaces.

Video Systems – As discussed earlier, a number of video system feeds are integrated into a collection of screens in the center. These provide access to security cameras at the Gurnee police station, the PASSAGE traffic camera system and the AVL system.

Facilities Overview
When the police station was designed the NFPA 1221 standards were used by their architect as a guide for facility systems and the communications center. The communications center is a dedicated room with 4 fully equipped dispatch console furniture positions, a larger and fully equipped position for the Shift Leaders, and two smaller positions with telephone and CAD capability. There is also a complete

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

set of dispatch system equipment in the Shift Leaders office which can be used if needed during large scale events. The total current space is estimated at 1,350 square feet.

The room is also configured in such a way that with different furniture and/or furniture configurations it looks like at least 8 full positions could be created within the space. There is also some space adjacent to the communications center that could be repurposed for support functions so that the Shift Leaders office could be more fully integrated into the communications room. Gurnee has expressed a strong interest in adapting their facility and operations to allow them to support additional agencies.

The facility is fully supported by generator power and critical systems are also protected with UPS systems. The facility also has a very robust radio tower and radio equipment support room, and both have room to add additional equipment if additional agencies are brought in.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Lake County Sheriff's Office Communications Center

Agencies Served

Lake County Sheriff's Office
Lake County Coroner's Office
Lake County Forest Preserve Police
Lake County Reserve Unit
Lake County Marine Unit
Lake County DOT/Public Works
Lake County Animal Control
Metropolitan Enforcement Group (MEG)
Village of Beach Park
Village of Deer Park
Village of Lake Barrington
Village of Mettawa
Village of North Barrington
Village of Long Grove
Village of Volo
Village of Green Oaks*
Village of Third Lake*
Village of Indian Creek*
Village of Wadsworth*
Village of Old Mill Creek*
Village of Port Barrington*

These villages do not have their own police departments so utilize the Sheriff's Office for patrols. Villages noted with an * do not have a specific contract with the Sheriff's Office for law enforcement services.

Organizational Structure and Governance Model

The communications center operates as a functional unit of the Lake County Sheriff's Office. Day-to-day operations are administered by a Lieutenant who reports to the Deputy Chief of the Patrol Division. The center is located at the County campus in Libertyville.

The Lake County Sheriff's Office communications center has routine interactions with the other communications centers in the county due to the large numbers of 9-1-1 calls that need routing to other centers. This occurs either for Fire/EMS dispatching (the Sheriff's Office is not responsible for any Fire/EMS dispatching) or due to a misrouting of a wireless 9-1-1 call to the Sheriff's Office rather than to a local jurisdiction's communications center. This is a common occurrence in the region due to the complex borders between the various jurisdictions and the communications centers that serve them.

The Sheriff's Office also has a strong working relationship with the other law enforcement agencies in the county due to their numerous interlocking boundaries and a number of special teams and task force

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

units that draw multi-jurisdictional participation. The center also serves as the main answering point, in the Lake County area, for the Illinois State Police Emergency Radio Network (ISPERN).

Lake County encompasses 444 square miles and has a total population of approximately 705,186. The Lake County Sheriff's Office provides law enforcement services to a population of approximately 121,809 in the combined villages and unincorporated areas they serve (approximately 17% of the countywide population). These areas are approximately 208 square miles (approximately 47% of the countywide land area).

Specific Jurisdictions Served by the Lake County Sheriff's Office

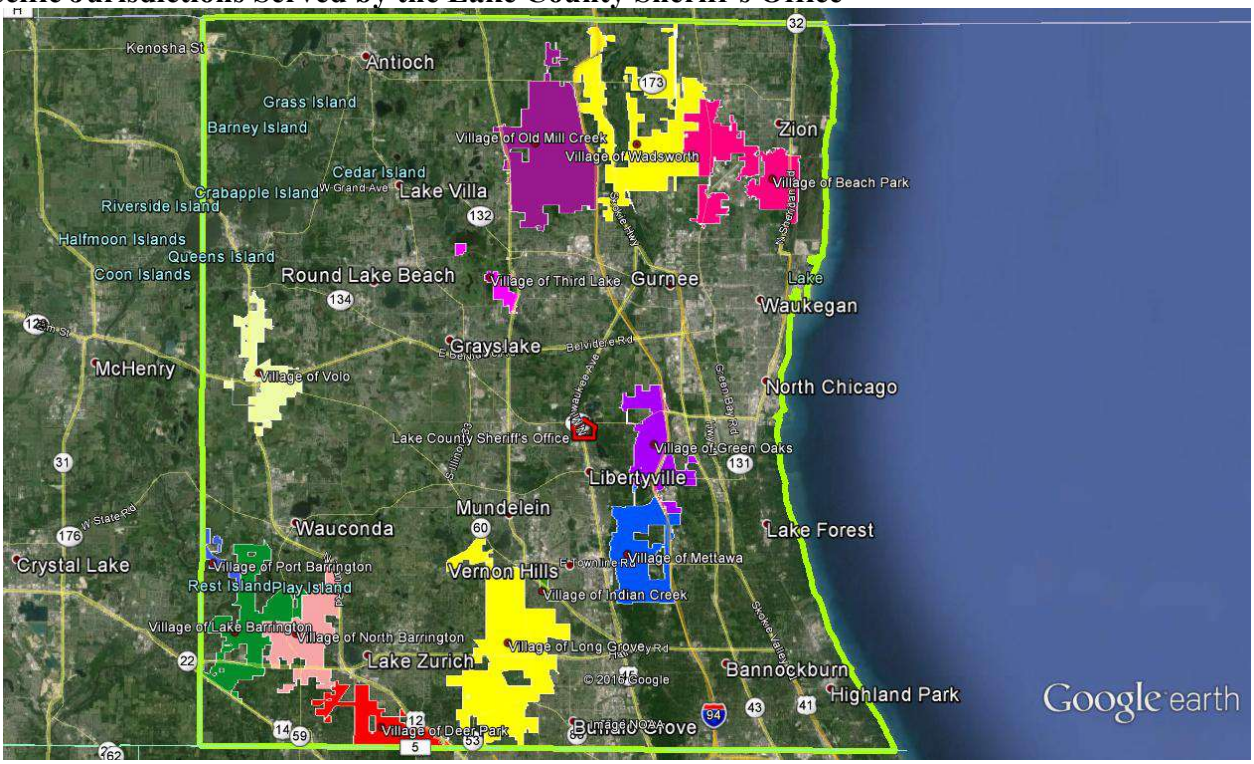


Figure 10 - Specific Jurisdictions Served by the Lake County Sheriff's Office

Viewed a different way, the Sheriff's Office provides law enforcement services to any of the areas not specifically identified as having police departments of their own in the map below (Figure 11).

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

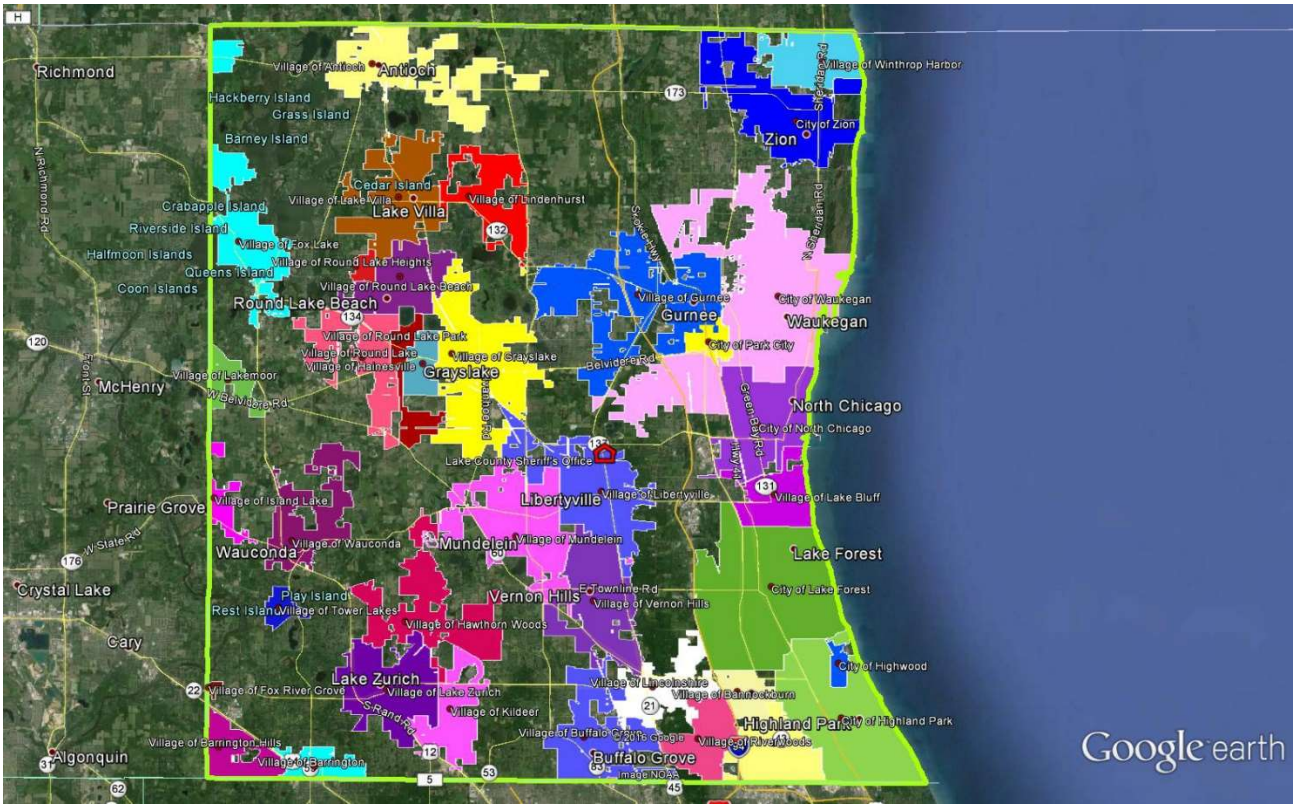


Figure 11 - Lake County Sheriff's Office serves all of the areas not served by one of the local Police Departments shown in this map

ETSB Relationship

The Lake County Sheriff's Office communications center is the largest communications center supported by the Lake County ETSB. The Lake County ETSB is responsible for providing 9-1-1 services for all the areas of Lake County not covered by one of the other 19 other local ETSBs in the county. To help understand the geographic footprint and diversity of the area served by the Lake County ETSB, the map on the following page (Figure 12) shows these other ETSBs.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

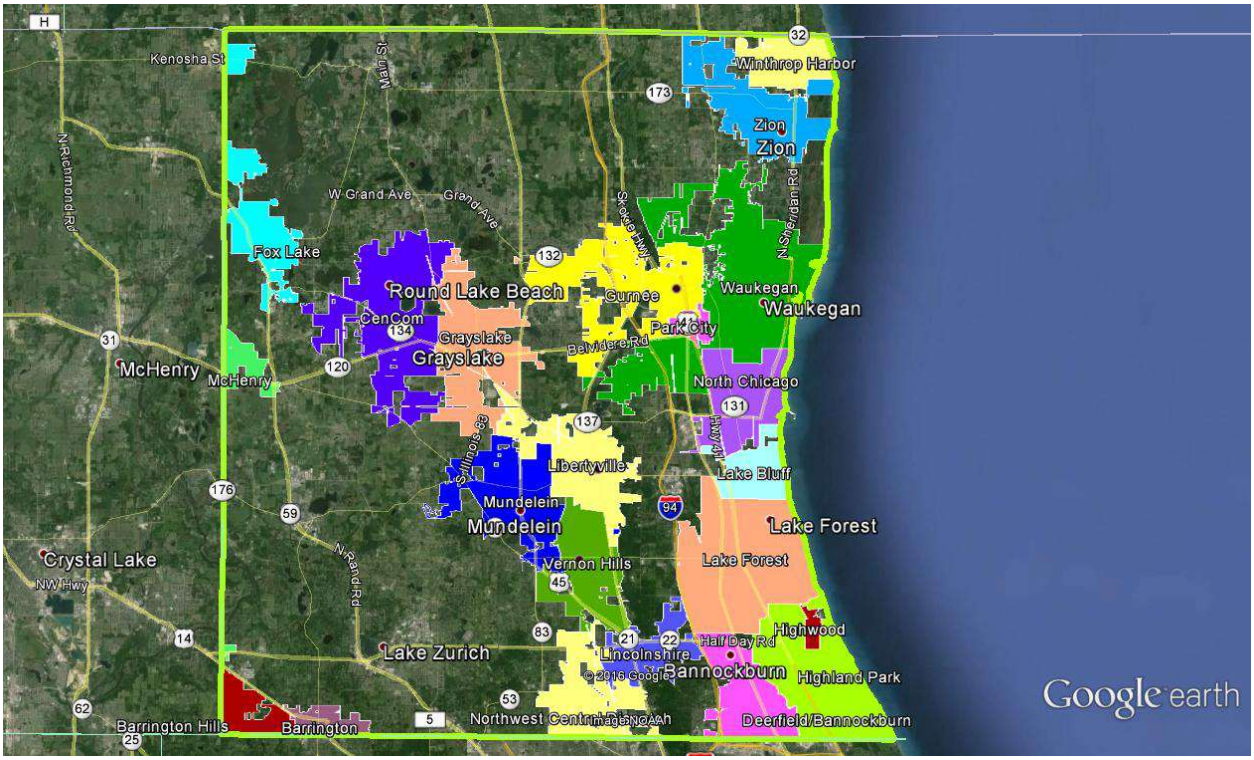


Figure 12 - Lake County ETSB serves all the areas not served by one of the local ETSBs shown in this map

The Lake County ETSB supports a variety of 9-1-1 and related costs for each of the communications centers (LCSO, Lake Zurich, Wauconda and Countryside Fire Dispatch) and jurisdictions that are within the Lake County ETSB service area. This includes all the 9-1-1 infrastructure and services, the onsite 9-1-1 telephone systems, logging/recording equipment, CAD and Mobile/Mapping systems, UPS systems to support critical systems, access to translation services and financial support for training of Telecommunicators. The ETSB has also provided a limited amount of direct financial support for Telecommunicators based on a formula established to account for added staffing needed to handle increasing wireless 9-1-1 call volumes. This funding may be ending in the current fiscal year due to changes in statewide 9-1-1 revenue collection and distribution.

Since the Sheriff's Office utilizes their own VisionAIR (now TriTech) CAD and mobile systems, they are not users of the ETSB's EnRoute systems. The ETSB does still support the costs of the mobile PCs and wireless connectivity consistent with the other jurisdictions within their service area, but the Sheriff's Office has full financial responsibility for the VisionAIR software suite.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Operational Characteristics
The communications center is overseen by a Communications Director who reports to the Deputy Chief of Highway Patrol Division. Day-to-day operations are overseen by 3 Shift Supervisors who are supported by 3 Assistant Supervisors. Together, this team provides 7X24 supervisory coverage for the communications center.

Staffing of the communications center is covered by full time/cross-trained communications personnel:

1 Communications Director
3 Shift Supervisors
3 Assistant Supervisors
21 Full Time Telecommunicators

Normal minimum staffing is 4 to 6 personnel on duty during most hours of the day. During the day shift, staffing is assigned 6 Telecommunicators, but depending on the situation, can work with no less than 4. During the afternoon shift, the absolute minimum is 5. And after 3 am, center staffing can be 3 Telecommunicators until day shift comes in.

There are three dedicated positions that are always filled:

- The "Center" position never answers the phone and is dedicated to handling radio traffic with the Patrol units;
- The Backup position listens to "Center" and runs plates, and answers phones; and
- The LEADS position will take phone calls as a backup, but does have the added duty of verifying warrants after hours since they possess full LEADS access.
- Additional positions are staffed as needed to handle additional call volumes

There are no jail/holding cell duties, no alarm board processing, no front counter duties, and no Fire/EMS dispatching responsibilities (so no EMD processes). The Court Security and Corrections operations operate on their own radio Talkgroups and communications control, but when an Emergency button is activated on one of their radios it alarms at the communications center and notification is then relayed on to the communications control point as needed.

Some of the Villages patrolled by LCSO are covered by contractual agreements that specify the number of hours of coverage in a given day. Others are not covered by these agreements and get patrol and response services on an as needed basis. The Marine Unit is active 6 months out of the year and works closely with the Department of Natural Resources and other local agencies as needed during the busy recreational boating season.

The communications center has a number of video feeds delivered to a video display wall in the center. These cameras/feeds provide access to:

- News television channel
- Weather and radar display
- Security camera for the building
- Lake County Passage cameras
- AVL monitor – not yet on line

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The staffing tends to remain steady with very little turnover. Reasons attributed to the low turnover are the supervisory staff, no EMD dispatch, good compensation/benefits, and no extra duties other than dispatching. The hiring process is coordinated by the Centers Director and the County's HR Division. New hires are put thorough a structured multi-phased training process that follows APCO guidelines and is directly monitored by an assigned CTO. The full training cycle, ideally, takes approximately 5 months to complete before the person is considered a fully trained Telecommunicator. The new employees are on probation for their first year of employment

Technology Systems Overview

Technology system equipment is located in a dedicated room within the facility and adjacent to the communications center. This space is quite full and there is very little room for expansion of systems or system lifecycle replacements. The servers to support the CAD, RMS and related systems are located at county data centers and networked to the communications center over fiber links. Technology systems within the Sheriff's Office are supported by two IT personnel with additional staff available from county IT as needed. Systems are also covered by vendor support agreements.

9-1-1 and Telephony – The center previously utilized a Plant CML phone system for their 9-1-1 and 10-digit needs but have now completed their migration to the Solacom networked system operated by the Lake County ETSB. The 9-1-1 backup location for the Sheriff's Office is now the Lake Zurich communications center and the Sheriff's Offices is Lake Zurich's backup center for law enforcement dispatching.

CAD/Mobile and RMS – The Sheriff's Office utilizes a suite of applications from VisionAIR (now TriTech) that includes CAD, Mobile/AVL, RMS, Jail and Field Based Reporting functionality. An upgrade to the CAD system will be done this year with no cost for the upgrade.

Radio Systems – The County previously utilized an EDACS 800 MHz trunked radio system, but has now completed the migration to the StarCom 21 system. As part of this migration a new Motorola MCC7500 radio console system has been implemented for the center.

Logging/Recording – The center currently utilizes a NICE recording system for recording of their phone traffic. A new voice recording system was implemented along with the StarCom 21 expansion in Lake County to allow recording from the P25 digital radio system. Further research is underway to determine if all recording for phones and radio will be migrated to a common environment or if they will remain on separate platforms.

Video Systems – As discussed earlier, a number of video system feeds are integrated into a collection of screens in the center.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Facilities Overview

The interior of the communications center was fully remodeled about two years ago and is arranged so the maximum number of furniture positions would fit the space. There is a total of 9 positions and no space for additional positions. The total communications center space is approximately 2,225 square feet

Six of the positions are fully equipped with all systems that can be used for either call receiving or dispatching responsibilities. One of the positions is designated as the supervisor's position and the others are used for call receiving and dispatching as needed. The 3 positions currently have limited radio system flexibility, but are otherwise fully functional. The new StarCom MCC7500 radio consoles have been installed at all 9 positions so they will all be able to perform all functions as needed. Two of the positions have also been equipped to support the EnRoute CAD system utilized by Lake Zurich so they can conduct back-up operations if needed. Similarly, two positions at Lake Zurich have been equipped to support the Sheriff's Office TriTech system for their backup use.

The facility is fully supported by generator power and critical systems are also protected with UPS systems.

The county's radio shop and EOC are colocated in the same building as the communications center, and there is a robust radio antenna tower immediately adjacent to the building to support all the antenna needs of the facility. Motorola and the StarCom Network Operations Center now provide support for the radio system. The Lake County Radio Department still maintains all of the conventional radio systems and all the equipment installed in vehicles.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Lake Zurich Communications Center

Agencies Served

Lake Zurich Police Department
Hawthorn Woods Police Department
Kildeer Police Department
Island Lake Police Department
Wauconda Police Department
Tower Lakes Police Department
Lake Zurich Fire Department
Wauconda Fire Department

Organizational Structure and Governance Model

The communications center operates as a functional unit of the Lake Zurich Police Department. The 911 Director is organizationally responsible for the communications center and its day-to-day operations. Services to the other police departments are formalized in intergovernmental agreements. A Joint Operations Committee meets on a quarterly basis to review and guide operational policies and practices. There are seldom any issues to resolve since all of the agencies operate in a very similar manner. The organization is prepared for growth and is amenable to adding additional agencies to their mix of customers.

The Lake Zurich Fire Department is the only Fire/EMS agency dispatched by Lake Zurich. The fire department's service area includes all of Lake Zurich, and much of Hawthorn Woods and Kildeer, there are areas in these jurisdictions that fall in other fire agency boundaries. Wireline 9-1-1 calls in the full footprint of Hawthorn Woods and Kildeer are routed to the Lake Zurich communications center and then transferred as needed if the incident requires fire or EMS response and is outside the Lake Zurich Fire Department service area.

The combined population served for the six police agencies is 55,099. The service area for the Lake Zurich Fire Department covers a larger footprint and in addition to the areas in Hawthorn Woods and Kildeer also includes areas in Deer Park and North Barrington. The estimated population in this service area is approximately 54,000.

Funding for the communications center operation is derived from several sources:

- The Village of Lake Zurich general revenue
- Fees for service charged to the contract police agencies
- Cost supported directly by the Lake County ETSB

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Lake Zurich Communications Center Police Dispatch Service Area

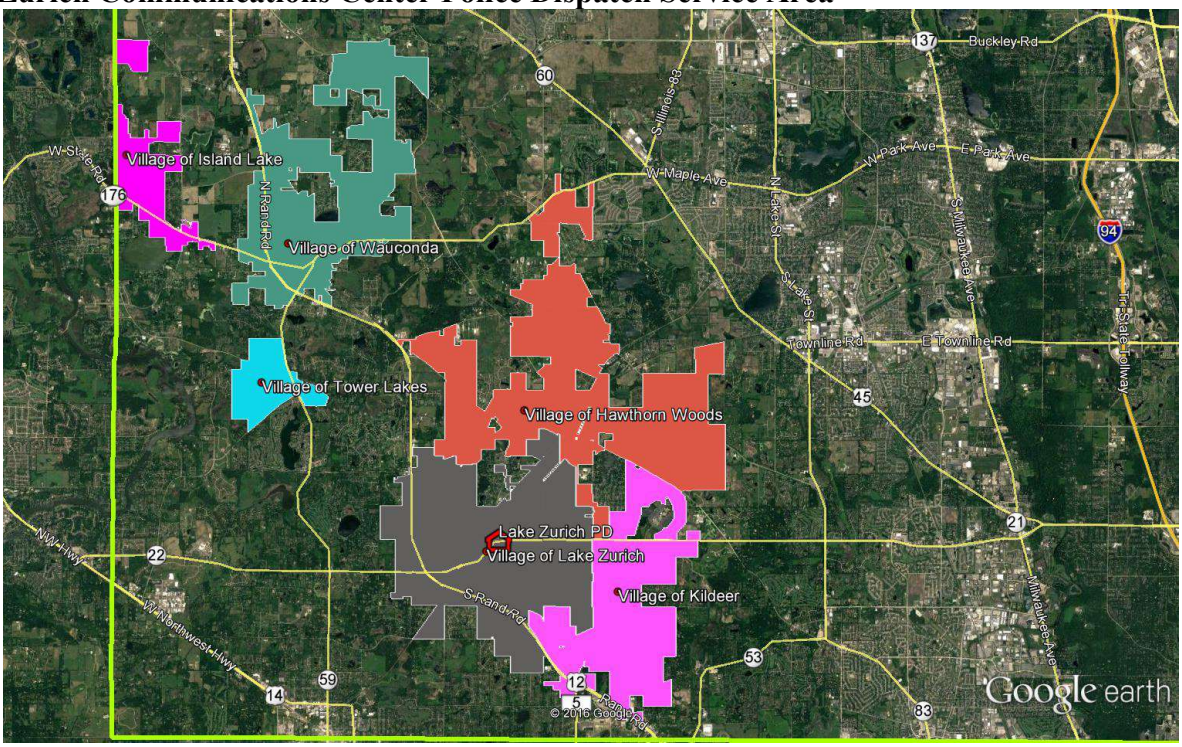


Figure 13 - Lake Zurich Communications Center Police Dispatch Service Area

Lake Zurich Communications Center Fire Dispatch Service Area

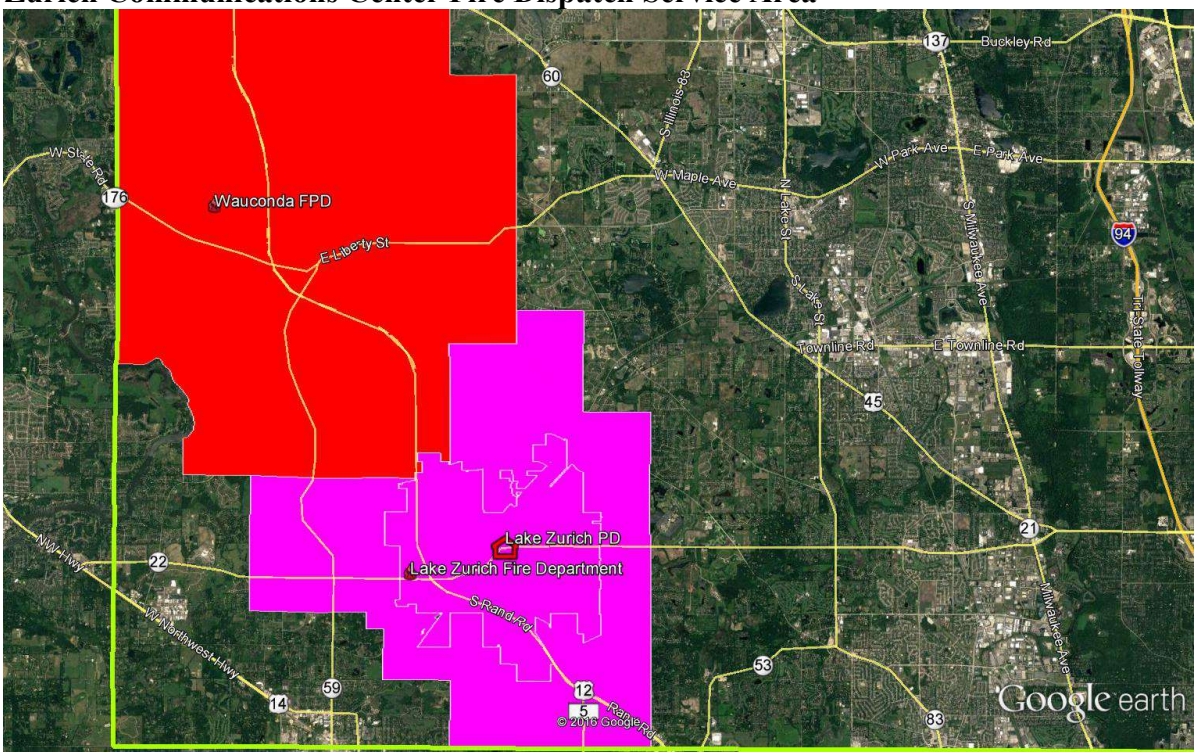


Figure 14 - Lake Zurich Communications Center Fire Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The Lake County ETSB is responsible for providing 9-1-1 services for all the areas of Lake County not covered by one of the other 19 other local ETSBs in the county. Lake Zurich did not form their own ETSB and along with Hawthorn Woods, Kildeer, Wauconda, Tower Lakes and Island Lake are part of the Lake County ETSB service area.

The Lake County ETSB supports a variety of 9-1-1 and related costs for each of the communications centers (LCSO, Lake Zurich, and Countryside Fire Dispatch) and jurisdictions that are within the Lake County ETSB service area. This includes all the 9-1-1 infrastructure and services, the onsite 9-1-1 telephone systems, logging/recording equipment, CAD and Mobile/Mapping systems, UPS systems to support critical systems, access to translation services and financial support for training of Telecommunicators. The ETSB also supported the cost of a backup generator for the Lake Zurich communications center. The ETSB provides a limited amount of direct financial support for Telecommunicators based on a formula established to account for added staffing needed to handle increasing wireless 9-1-1 call volumes. This funding may be ending in the current fiscal year due to changes in statewide 9-1-1 revenue collection and distribution.

Operational Characteristics
The communications center is managed by a 911 Director who works a 4-10 schedule, Monday through Thursday from 0600 to 1600 hours. There is also a Communications Supervisor who works a 5-8 schedule, Monday through Friday from 1500 to 2300. This allows the center to be covered by the Director or the Supervisor for the busiest hours of operation and to have overlap time to coordinate their activities. Both are also available afterhours as needed to be contacted by the personnel on duty in the deep nights and on weekends.

Staffing of the communications center is covered by full time communications personnel:

1 911 Director
1 Supervisor
11 Full Time Telecommunicators
1 Part Time IT technician (This is a Lake Zurich IT staffer that is assigned to support communications center issues as needed)

Normal minimum staffing is two personnel on duty during most hours of the day. There are times when 3 Telecommunicators are scheduled for the afternoon shift to handle the larger volume of incoming calls. The 911 Director and the supervisor may also work the floor if needed to cover for personnel being off or if call volumes surge due to extreme events.

While the two positions are generally characterized as a police position and a fire position, both personnel on duty often fulfill all the functions of the center including call receiving and dispatching both police and fire. Fire dispatching is done with tone & voice paging, supplemented with incident information sent to the mobile computers.

The Communications personnel are responsible for a number of other responsibilities within the police department. They provide front lobby window service to the public on evenings and weekends when the Records Section of the Police Department is closed. Communications personnel may hand out reports

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

that were previously requested from records, handle the request if a person walks in to request a report, or collect tow fees.

Communications center personnel are also responsible for various holding cell related functions including video monitoring of the booking and detention areas. Personnel are also responsible for performing the periodic checks on any detainees and logging this into CAD. Because there are blind spots created by the privacy blanks on the video, dispatchers must make visual contact through the cell window, also. Female Telecommunicators are also occasionally asked to perform jail matron duties if a female officer is not on duty. Being trained as a matron is voluntary.

Communications personnel are the after-hours point of contact and dispatch for Lake Zurich Public Works, and are responsible for notifications to several regional teams such as the Major Crimes Task Force and the Major Crash Assistance Team. Personnel are also responsible for activating warning sirens when needed.

The Alarm Board duties are to monitor and dispatch alarms received. These are mostly fire alarms, but the agency will take on monitoring of burglar alarms if requested, for a fee. The Fire Department handles all the maintenance for alarm-holder and key-holder information.

The Peapod grocery delivery service for this region is headquartered in Lake Zurich, so any time one of their drivers reports a need for police, fire or EMS services, the Peapod dispatcher calls 9-1-1 and the call arrives at the Lake Zurich communications center. However, a large majority of these calls are not in Lake Zurich's dispatch service area and require location determination and routing to another communications center.

The communications center has a number of video feeds delivered to a video display wall in the center. These cameras/feeds provide access to:

- Facility security camera
- Booking and holding cells
- Kildeer PD's booking area
- Weather map
- Railroad map with indications of a train's location
- Lake County Passage camera

The staffing tends to remain steady and over the past 24 months there has been no turnover. Over the past 15 years, 24 employees left employment and the reasons are well documented. The hiring process is coordinated by the 911 Director who publishes the opportunity in the Blue Line. New hires are put thorough a structured multi-phased training process that follows APCO guidelines and is directly monitored by an assigned CTO. The full training cycle takes approximately 12 weeks to complete before the person is considered a fully trained Telecommunicator.

Technology Systems Overview

Technology system equipment is located in a dedicated room within the Lake Zurich PD building and immediately adjacent to the communications center. Technology systems are supported by a

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

combination of Lake County ETSB personnel, the Village IT staff and augmented with vendor maintenance contracts as needed.

9-1-1 and Telephony – The center previously utilized a legacy CML Rescue Star 9-1-1 telephone system that was decommissioned with the cutover to the Lake County ETSB Solacom networked 9-1-1 system. This system is also now fully operational at the Lake County Sheriff's Office, which is the designated 9-1-1 and operational backup location for Lake Zurich. The Sheriff's Office in turn utilizes Lake Zurich as their backup location.

CAD/Mobile and RMS – The center utilizes the Lake County ETSB EnRoute CAD, mobile and mapping capabilities. Several police agencies (Lake Zurich, Kildeer, Lindenhurst, Hawthorn Woods, Round Lake Beach and Round Lake) have implemented a shared Tyler/New World RMS system which is linked to LEADS/NCIC. Lake Zurich has also launched the Field Based Reporting functionality for their operations.

Radio Systems – The center has completed a migration to the StarCom trunked radio system for all of its law enforcement agencies. StarCom control stations have been added to the existing Zetron Integrator radio console system to access the appropriate Talkgroups. The Lake Zurich and Wauconda Fire Departments operate on their own VHF radio system and plan to remain on this system.

Logging/Recording – The center utilizes a NICE recording system that is approximately 5 years old. This system is supported through the Lake County ETSB. StarCom trunked radio system recording is accomplished on a centralized system that is part of the StarCom environment.

Alarm Board Systems – As noted earlier, there is an active alarm board function at this communications center.

Video Systems – As discussed earlier, a number of video system feeds are integrated into a collection of screens in the center. These provide access to security cameras at the Lake Zurich police station, the PASSAGE traffic camera system, holding cells in two agencies, and railroad and weather maps.

Other Technology Systems – The center utilizes an Everbridge community notification system and also uses this system to dispatch several regional teams such as the Major Crimes Task Force and the Major Crash Assistance Team.

Facilities Overview

The communications center is located adjacent to the lobby of the Lake Zurich Police Department and has a window to the lobby to support after-hours interaction with the public. The center is well designed and sized to allow for growth with a total area of approximately 1,800 square feet. The communications center staff participated in the design of the facility so it is tailored to their operational practices. The new design located the communications center adjacent to a light well in the building bringing in natural daylight via clerestory windows on one wall of the room.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The main communications room is currently equipped with five large console furniture positions that are arranged in a bullpen configuration. Utilizing different console furniture and/or different furniture configurations would allow several additional positions to be added if needed for growth.

The Director and Supervisor offices are immediately adjacent to the communications room, as is a large work area for printing, copying and filing. The center also has its own break area and restroom so it meets contemporary standards for communications center security and access control. Technology equipment is located in rooms designed for this purpose and are sized to allow for growth and system replacement activities.

The facility is fully supported by generator power and critical systems are also protected on a UPS system. Electrical systems are well organized in a room specifically designed for this function.

In addition to several radio base stations located in the technology equipment room, there is a stand-alone radio site located away from the building. This site is shared with a commercial carrier, but Lake Zurich has a separate equipment room and designated spaces on the monopole tower to accommodate their current and future radio needs.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Mundelein Communications Center

Agencies Served

Mundelein Police Department
Mundelein Fire Department

Organizational Structure and Governance Model

The Mundelein Police communications center is solely dedicated to dispatching Police and Fire/EMS services for the Village of Mundelein. The communications center is an integrated part of the Mundelein Police Department and as such is overseen by a Deputy Chief in the Police Department.

Mundelein is a community with a population of approximately 31,562. The Village is a low crime area and is said to be the 42nd safest city in the nation. While currently an operation that only supports a single municipality the organization has expressed a willingness and interest in expanding their service area to accommodate further dispatch consolidation.

Funding for the communications center is derived from a combination of funds appropriated in the Police Department's operational budget and costs that are borne by the Mundelein ETSB.

Mundelein Communications Center Police and Fire/EMS Dispatch Service Area

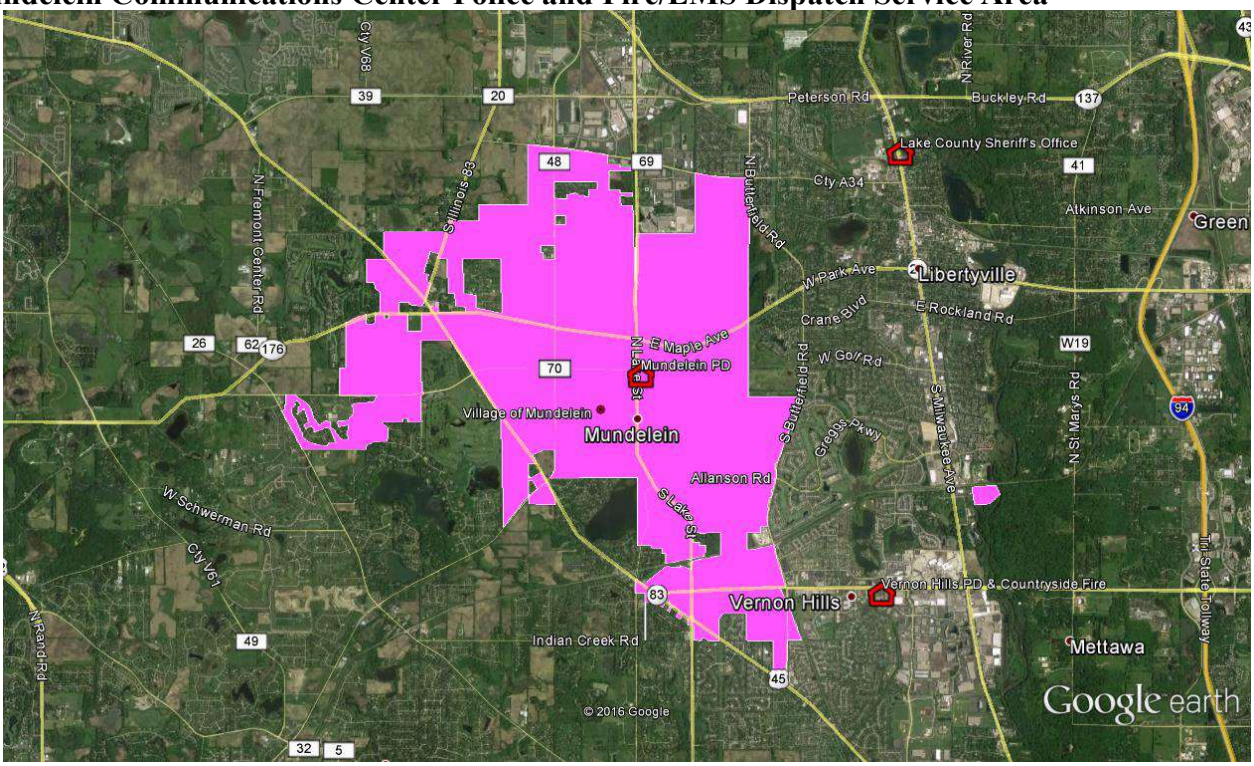


Figure 15 - Mundelein Communications Center Police and Fire/EMS Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The Village of Mundelein established its own ETSB. The ETSB members are the Police/Fire Chief, Village attorney, and two Village Trustees. This provides for very close coordination between the public safety agencies and the ETSB. The ETSB has expressed a willingness to join with other ETSBs to form a Joint ETSB if needed to accommodate further dispatch consolidation.

Operational Characteristics
The communications center is overseen by a Deputy Chief in the Police Department. A Communications Supervisor manages the day to day operations. The communications center is housed within the Police Department facility in an area specifically designed for the communications function. Since the communications personnel are responsible for front counter duties after hours, the center is located near the front lobby with a dedicated position, in dispatch, for front counter duties.

Mundelein communications personnel offer a wide variety of services to the public from their lobby window and the lobby is open 24 hours a day. Included in job duties for the public are; bonding out prisoners; ticket payments, fingerprinting; overseeing in exchange of custody; payment of parking tickets; payment of water bills; purchase of Metra passes; and calling for taxies.

The building houses a jail facility for the Mundelein police department. While the female dispatch personnel are trained for matron duties, this is only an occasional duty. The communications personnel are responsible to keep an eye on the holding cells but are not responsible for periodic prisoner checks.

The communications center is responsible for monitoring an alarm board which is owned and maintained by Tyco. Telecommunicators are also responsible for updating alarm-holder and key-holder information, as well as dealing with the normal level of alarms service work and false alarms that come with an alarm board function.

The communications center personnel are also responsible for a number of other systems and operational processes including:

- Entering tickets written by officers, into the “in-house” ticket tracking system
- Building door controls – Telecommunicators have the ability to lock down all doors for the entire building. They are also responsible for all doors to the jail and sally ports
- Activating warning sirens

A video display wall has two large monitors to provide access to:

- Lake County PASSAGE
- Weather monitor/FATPOT

Most of the information necessary for the individual Telecommunicators to carry out their duties are displayed at the individual consoles.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Staffing of the communications center is covered by full time/cross-trained communications personnel:

1 Supervisor
9 Full Time Telecommunicators
1 Part Time Telecommunicator

Normal staffing is two personnel on duty. Personnel work 8 hour shifts on a 5-on/2-off rotation. All Telecommunicators are trained to do all aspects of the job. Each on-duty Telecommunicator is responsible for answering phones and dispatching traffic associated with that call. The positions are not divided into Fire or Police. After hours and on weekends, the Telecommunicators have the additional duty of answering the 10-digit non-emergency police lines.

Due to the complex borders with neighboring municipalities and unincorporated county areas, there are a significant number of wireless 9-1-1 calls that need to be transferred to the appropriate communications center if the incident isn't within Mundelein's service area.

The staffing tends to remain steady. Most turnover is due to new hires not being able to complete the training process, however two vacancies occurred in the past 24 months due to personnel moving to other law enforcement positions. The hiring process is coordinated by The Village of Mundelein HR and the PD, with job advertisements usually posted through Blue Line. New hires are then put thorough an APCO training process with one of the center employees who have received the APCO Communications Training Officer (CTO) certification. All personnel are LEADS and EMD certified (NAED protocol) and have also completed several NIMS course. Training lasts approximately 5 months, with a new hire being on probation for the first year of their employment.

Mundelein police dispatching and communications was previously conducted on the Central Lake County Radio Network which is shared with the Vernon Hills, Libertyville and Lincolnshire police departments. These other three agencies are dispatched by the communications center operated by Vernon Hills police. All of these agencies have completed their migration to the StarCom trunked radio system and share a Talkgroup with Vernon Hills, Libertyville and Lincolnshire.

Fire and EMS dispatching is accomplished with tone and voice radio paging over the Quad 4 radio channel, which is shared by a number of other fire agencies in the region.

Mundelein uses Vernon Hills as their 9-1-1 and communications backup center and reciprocates by allowing Vernon Hills to use Mundelein as their backup.

Technology Systems Overview

Technology system and telecommunications equipment are located on the lower floor of the building in separate rooms dedicated for these functions. These systems are maintained by a combination of Village IT staff and vendor support contracts.

9-1-1 and Telephony – The center utilizes a new Zetron MAX telephone system to manage all of their 9-1-1 and 10-digit telephone lines. This system was put in place 2 years ago. In addition to managing telephony with MAX, they also use the system for their radio system console, monitoring various

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

facility alarms, building access control points, and activation of warning sirens. Radicom provides maintenance and support for this system.

CAD/Mobile – The center utilizes the Lake County ETSB EnRoute CAD and mobile system on a contract basis. Mundelein Police utilizes a CAPERS RMS and Field Based Reporting system which went live in June of 2015. The CAPERS system is accessed by the mobile units through a secure browser application but is not linked to ILETS/NCIC. An automated process has been established to import CAD system data into the RMS on a routine 10-minute basis. The legacy VisionAIR RMS system will be kept running for access to historical records. The communications center has access to both RMS systems to look up incident history information and to use the vacant house watch and bicycle registration modules.

Radio Systems – The center utilizes the Zetron Max console system for control of their radio system access as well. With the move to the StarCom 21 radio system, additional control stations have been added to provide access to the necessary Talkgroups.

Logging/Recording – The center utilizes a NICE logging system that is maintained by Word Systems.

Alarm Board Systems – These are installed and equipment maintained by Tyco/ADT.

Video Systems – A number of video system feeds are integrated into a collection of screens in the center.

Facilities Overview
The communications center is a part the Mundelein Police Department and was designed specifically as a communications center. The communications center is immediately adjacent to the Records section, so when Records is closed the public has easy access to the window into communications.

The operational area of the communications center is currently outfitted with a total of 5 fully functional dispatch console furniture positions. The room could easily accommodate a 6th position. The total current space is approximately 1,400 square feet and reconfiguration of the common wall between the communications center and Records section could allow for further expansion if needed.

The center also has its own break area and restroom and meets contemporary standards for communications center security and access control. Technology equipment is located in a dedicated room on the lower floor of the building and is sized to allow for growth and system replacement activities.

The facility is fully supported by generator power and the communications center is also protected on a UPS system with approximately 1 hour of runtime of its own. Electrical systems are well organized and maintained in a room specifically designed for this function and the room is free of any ancillary storage or other uses.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

North Chicago Communications Center

Note: North Chicago did not provide any additional data in response to the update request, nor did they provided edits to this write-up.

Agencies Served

North Chicago Police Department
North Chicago Fire Department

Organizational Structure and Governance Model

The communications center operates as a functional unit with the Police Department and operates within the structure of the department's policies and procedures. The center is led by a Communications Supervisor who reports up the police department chain of command. North Chicago, with a population of 30,395, is located along the lake shore with Waukegan on the north and Lake Bluff on the south. The western borders include Green Oaks and unincorporated areas where the Sheriff's Office provides law enforcement services.

North Chicago Communications Center Police and Fire/EMS Dispatch Service Area

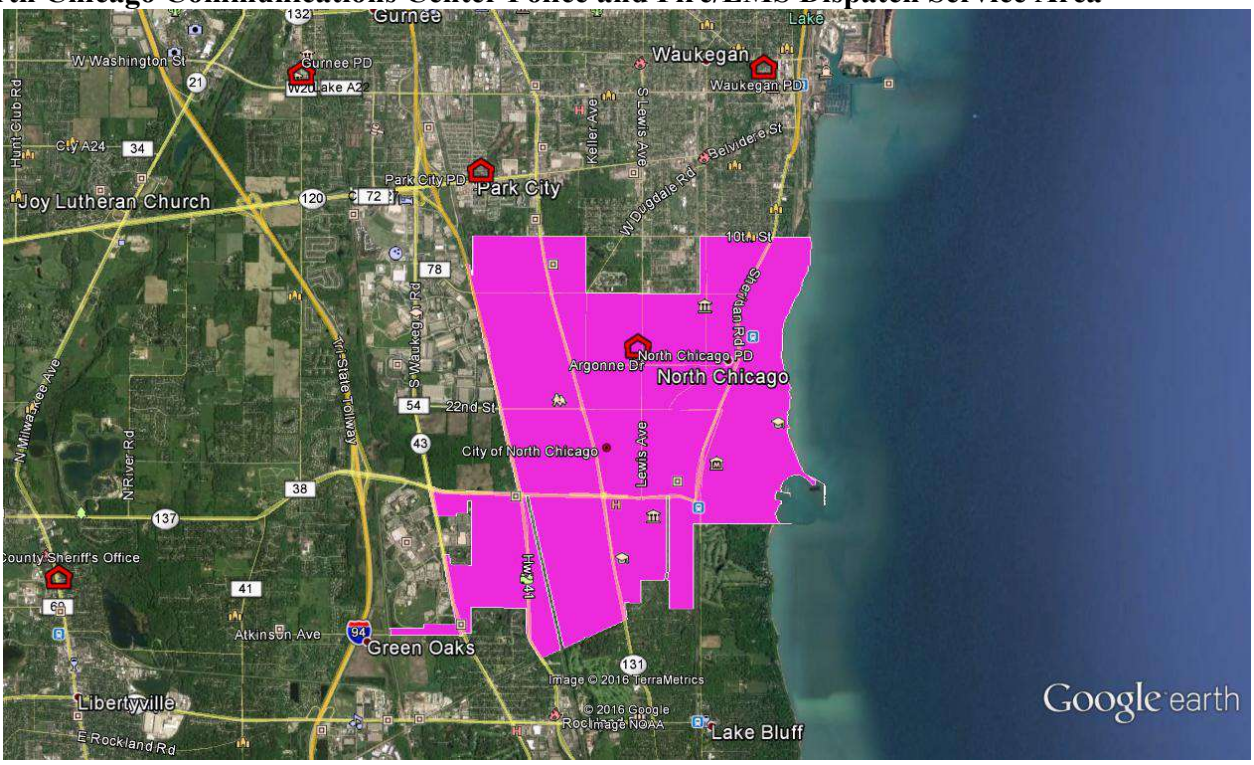


Figure 26 - North Chicago Communications Center Police and Fire/EMS Dispatch Service Area

ETSB Relationship

North Chicago has its own ETSB and the relationship between the public safety departments and the communications center is very close.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Operational Characteristics
North Chicago is a unique municipality since large portions of land within the city are not directly the city's responsibility for law enforcement or Fire/EMS services.

- Great Lakes Naval Station – For the Naval Station itself, Naval Station personnel have responsibility for law enforcement, fire and EMS responses. The fire department participates in the MABAS system so there are sometimes responses by North Chicago fire units into the base to support their operations.

- Midwest Family Housing – This private contractor is responsible for property management and leasing of all of the 'base housing' associated as being part of the Naval Station. While much of this housing is military personnel, private citizens are eligible to lease in the complexes as well. It is estimated that perhaps as much as half the total city population lives in these 'base housing' units but it is not clear what the split might be between military and non-military residents. The area is generally described as a low-crime area.

Here again, the Naval Station takes responsibility for fire and EMS responses within these housing areas, but they contract to the City of North Chicago for law enforcement services. 9-1-1 calls from the housing areas are routed to the North Chicago PSAP and are transferred as needed to the Secondary PSAP at the Naval Station if Fire/EMS resources are needed.

- Captain James A. Lovell Federal Health Care Center – The Department of Veterans Affairs operates a large medical and veteran's services complex near the naval base, with Rosalind Franklin University of Medicine immediately adjacent. While these facilities are within the response responsibilities of North Chicago's police and fire departments, they tend to have a very low rate of incidents.

- Given the location of North Chicago and the close proximity to surrounding municipalities and unincorporated areas, it is not uncommon for wireless 9-1-1 calls to be routed to the wrong PSAP initially, requiring location determination and transferring on a large number of wireless calls.

The communications center is staffed with a total of 11 personnel:

1 Communications Supervisor
9 Full-time Telecommunicators
1 Part-time Telecommunicator

When necessary, temporary employees from Backup Communications are used if no other personnel are available to cover a shift. Minimum staffing is two personnel on duty with a third person added if there are known events planned where call volumes will be higher.

Fire/EMS and police dispatching duties are split between the two personnel on duty, and Priority Dispatch EMD protocols are used for processing EMS calls. In addition to their call receiving and dispatching responsibilities, the communications center personnel provide a number of other functions within the organization, including:

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

- Performing all of the LEADS work for the agency (all communications personnel are LEADS certified)
- Running all the criminal history and related background reports for officers and detectives
- Maintain the sex offender database
- Dispatching animal control when needed
- Activating warning sirens when directed
- Handle Blackboard Connect community notifications when directed
- Answering all police lines if they are not answered by others, and handle all lines after hours and on weekends.
- Answer public works phone lines after hours and on weekends
- Monitor the public works radio channel and handle radio communications with public works units if the public works office doesn't answer

The communications center also has a number of video camera systems that they access when needed. These include security cameras within the facility including at the front desk and in booking (although the communications staff are not responsible for actively monitoring the booking or detention areas) and a number of cameras around the city that can be used to observe known areas where law enforcement and crime issues benefit from having video surveillance. They also have access to the PASSAGE transportation camera system.

Turnover has not been a significant issue in the past, although in the past couple of years they have had to replace four positions. When new personnel are hired, they are trained in a structured process of multiple phases based on APCO training standards. They are assigned to a CTO to guide them through this process and may move between trainers during the process to gain different insights on the job. Overall the training process takes about 18 weeks to complete. All performance reports and documentation during training is monitored by the Communications Supervisor. Also, since the Communications Supervisor's desk is directly in the communications room, there is ample opportunity for direct observation of both trainee performance and the performance of all personnel.

Fire dispatching has been structured so that as soon as a call is determined to need fire or EMS response, a voice alerting system is used to per-alert the on-duty crew in the fire station. This system allows them to hear the audio from the call taker's interaction with the caller and begin their turnout process before the call receiving process is complete and the incident is dispatched over the air using traditional tone & voice paging. Priority Dispatch's EMD protocol are used to process EMS calls and all personnel are certified in the protocol.

The center does perform an alarm board monitoring function with approximately 100 alarms under monitor. While they do have to deal with all of the testing and trouble interactions that occur in an alarm monitoring environment, they do not have responsibility for maintaining alarm subscriber information or key-holder information. The alarm monitoring system also monitors various panic and security alarms within the facility such as the Mayor's office and the Comptroller's office.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Technology Systems Overview
9-1-1 and Telephony – The center recently replaced their phone systems with a new VESTA system from Cassidian (now Airbus DS) and utilize this system for all of their 9-1-1 and 10-digit telephony needs in the communications center. Park City is the 9-1-1 backup location for North Chicago. North Chicago is not used as a 9-1-1 backup for any other center. The system is interfaced to CAD so mapping of 9-1-1 calls is performed in the CAD mapping function.

CAD/Mobile and RMS – North Chicago utilizes a suite of systems from VisionAIR (recently acquired by TriTech) for CAD, Mobile, RMS and Field Based Reporting. The fire department utilizes Firehouse for their RMS needs. They, along with the Sheriff's Office, are the only two agencies using the VisionAIR product.

Radio Systems – A Communications Systems Solutions (CSS) Mindshare radio console system is used to control and access the various radio channels used by the agencies. This system is only about 3 years old. In addition to the three positions in the communications center there is also a position located in the watch office of the main fire station and it can be used as a backup radio dispatch location if needed. Field radios are equipped with Push-to-Talk ID capabilities and PTT ID displays are installed at each radio console position. The police department operates on a T-Band UHF channel and the fire department operates on the Quad 1 fire channel.

Logging/Recording – The center recently installed a new NICE logging and recording system along with the installation of the new telephone system.

Alarm Board Systems – The center is equipped with an alarm monitoring system as discussed above.

Video Systems – The center does have access to a number of video feeds as disused above.

Other technologies – The center is equipped to be the activation point for warning sirens and is also equipped to be the activation point for any Blackboard Connect community notifications.

Facilities Overview
The communications center is embedded within the Police Department building and therefore does not have any front counter responsibilities. The room is arranged with three full dispatch console positions and a desk/work area for the Communications Supervisor. The current space of approximately 400 square feet is completely filled in its current operation and there is no opportunity for expansion given the location of the room within the building.

All technology back-end systems are contained in a separate and secure technology equipment room that is well-organized with UPS protection for critical systems. The full facility is generator supported.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Park City Communications Center

Note: Park City did not provide any updated data in response to the update request, nor did they provide any edits to this write-up.

Agencies Served

Park City Police Department

Organizational Structure and Governance Model

The communications center a function within the police department and therefore is part of the command structure of the department. Park City is a small jurisdiction with a population of approximately 7,500 sandwiched between Gurnee, Waukegan and North Chicago along the Route 41 corridor. The total uniformed staff includes 11 full-time and up to 5 part-time personnel.

Park City Communications Center Police Dispatch Area

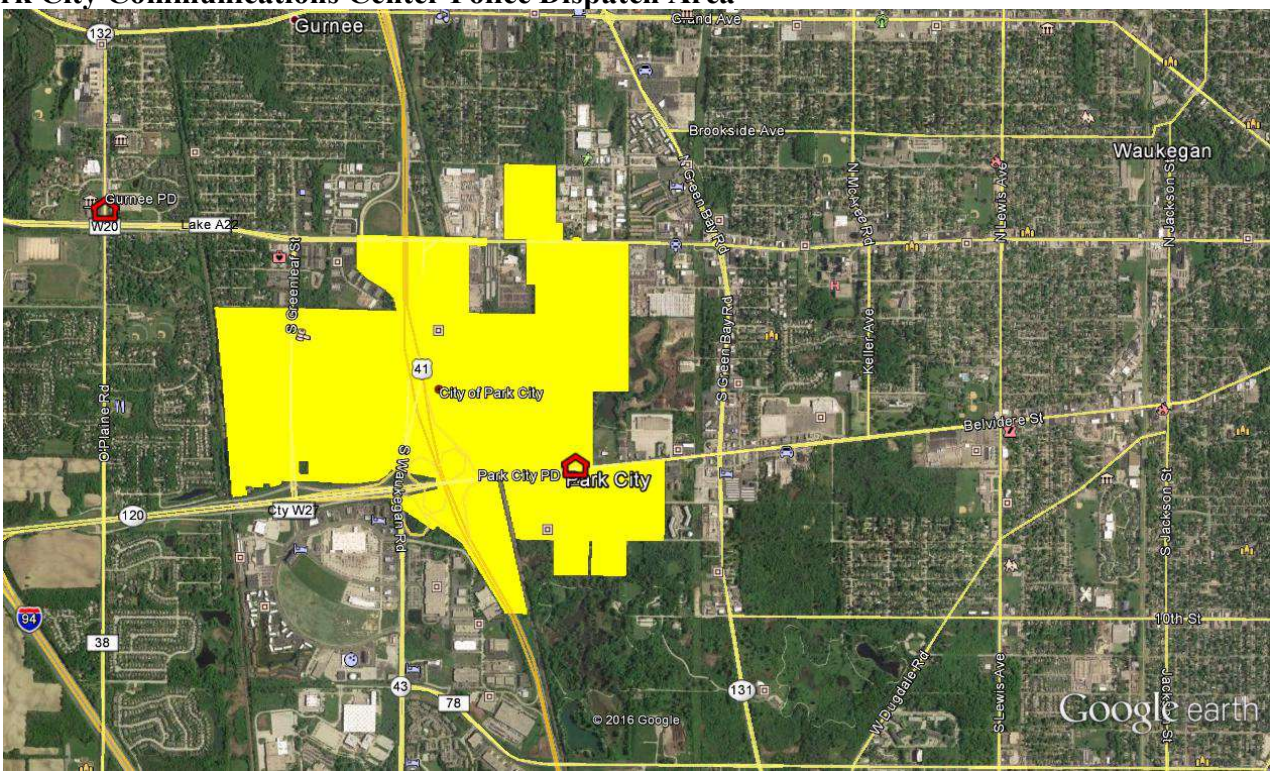


Figure 137- Park City Communications Police Dispatch Service Area

ETSB Relationship

Park City has their own ETSB. Due to the small size of the jurisdiction and the mechanisms used for wireless surcharge distributions, the ETSB collects very low revenue levels. There is a very tight relationship between the ETSB and the police department since there are so few issues to deal with on a routine basis. At the time of this writing, processes are currently underway to merge Park City into the Lake County ETSB and for Park City to close their dispatch center and have FoxComm provide dispatching services for them.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Operational Characteristics
This is a very small communications center that is closely integrated into the work processes of the police department. Due to the orientation of the jurisdiction being enveloped by Waukegan and Gurnee, and close adjacency to North Chicago, there is a significant amount of interaction with each of these agencies, particularly with Waukegan.

The center operates with a single dispatcher on duty and is supervised as a part of each shift of officers by the Sergeant on duty for that shift. Staffing consists of:

3 full-time dispatchers
2 part-time dispatchers
Contracted personnel from Backup Communications when needed

The full-time dispatchers cover weekday shifts on a 7X24 basis and part-time and Backup personnel are used to fill the weekend schedule and any vacations.

Since this is a police-only dispatch center, calls requiring fire or EMS resources are transferred to Gurnee for call processing and dispatch of Gurnee Fire Department resources. Also, as a police-only operation there are no alarm monitoring responsibilities. They do however monitor several security alarms for city properties and panic alarms for the Mayor and City Clerk offices. There is also access to several video feeds from building security cameras, a few cameras around the city, and the PASSAGE transportation system.

The dispatchers provide all of the first point of contact for the police department, including answering of all 10-digit lines and handling all front counter transactions (walk-ins, accident reports, impound recoveries, etc.). They also directly support the records functions for the agency and also assist officers in preparing material for case entry in the RMS. Waukegan provides LEADS entry support through a service agreement. Full-time dispatchers are LEADS certified but part-time personnel are not.

The police department does not operate any holding cells, so the only processing or arrests at the facility is booking related and the prisoner is then transported to Waukegan for detention.

Turnover for the organization has been very low, with the last new-hire approximately 3 years ago. Training is accomplished through direct sit-along training with an experienced dispatcher, supported by a variety of operational manuals and policy/procedure documents.

Technology Systems Overview
Technology equipment is housed in a combination of an equipment cabinet in the dispatch room itself and a nearby technology equipment room that contains the balance of the department's technology infrastructure. The police department lives in a separate network domain from the balance of the city.

9-1-1 and Telephony – 9-1-1 and some 10-digit telephony are handled with Zetron Model 3240 desk sets that have been in service for many years. Each position also has a deskset on the city's telephone system for access to additional internal and external lines. Waukegan serves as the 9-1-1 backup for Park City.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

CAD/Mobile and RMS – The department utilizes a CAD and RMS system from Automated Records Management System (ARMS) and this system has been in use for many years, being originally installed in 2000. Park City is the only agency in Lake County utilizing this vendor's system. The system does not have a mobile component, but officers carry iPad tablet computers that they can use to access LEADS information through an Illinois Public Safety Agency Network (IPSAN) interface. These transactions are done on a stand-alone basis and are not integrated with CAD or RMS functions in ARMS. An ongoing maintenance and support agreement is in place with ARMS.

Radio Systems – The police department operates on the Lake County trunked radio system and utilizes Zetron Model 4010 desktop radio control consoles with control stations to access this system and other channels they have access to. The department will be moving to the Starcom 21 network and will add control stations as needed to access this system. There are no current plans to replace the Zetron desksets.

Logging/Recording – Recording is accomplished on a Revcord logging recorder which was recently installed (2015). They purchased the unit with a 5-year service agreement to help manage ongoing costs.

Alarm Board Systems – The only alarms monitored in dispatch are security and panic alarms from the city hall/police department facility

Video Systems – As noted earlier, the center does have access to video feeds from security cameras at the facility, some cameras around the city, and the PASSAGE transportation cameras.

Other technologies – The iPads carried by the offices are also used for photographing incidents and evidence as needed as well as making audio or video recordings and taking notes.

Facilities Overview
The communications center is contained in a single room of approximately 250 square feet that is immediately adjacent to the main entry for the police station. The center is configured with one full-sized communications console and a smaller desk-sized auxiliary dispatch position. Both are fully equipped to handle all call receiving and dispatching responsibilities. There is no room for any expansion.

The facility is protected by a backup generator and critical systems are protected on their own UPS systems.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Vernon Hills Communications Center

Agencies Served

Village of Vernon Hills Police Department
Village of Libertyville Police Department
Village of Lincolnshire Police Department

Organizational Structure and Governance Model

The Vernon Hills Police Communications Center is a multi-jurisdictional public safety communications center that first began operations in the current location in 2008. The Vernon Hills communications center also hosts the Countryside Fire Protection District communications center, which moved to this facility in 2010. Both operations share a common communications room environment and many shared technology systems. Countryside Fire's use of the facility is defined in an intergovernmental agreement, but Countryside is not assessed a fee for use of the facility.

The communications center operates as a functional unit of the Vernon Hills Police Department and is managed by a Communications Supervisor who reports to the Deputy Chief of support services. Services provided to the Libertyville and Lincolnshire police departments are defined in separate 5-year agreements which establish the fees they will be charged for service with a formula that includes village population, number of officers and number of calls for service.

Quarterly meetings are held with these customers to review operations and guide any policy or procedural changes, but there are seldom any issues to discuss or resolve. All three police departments operate very similarly and all have agreed to respond to all calls within their jurisdiction (including Fire/EMS calls) so there are no unique dispatch policies to factor into operations.

There is a willingness to see the communications center function expanded to serve additional jurisdictions and/or integrated into broader regional consolidation strategies.

Funding for the operation of the communications center is derived from several sources:

- Appropriated funds in the Police Department budget
- Revenue from the two customer agencies for their contracted services
- Costs that are supported by the Vernon Hills ETSB

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Vernon Hills Communications Center Police Dispatch Service Area

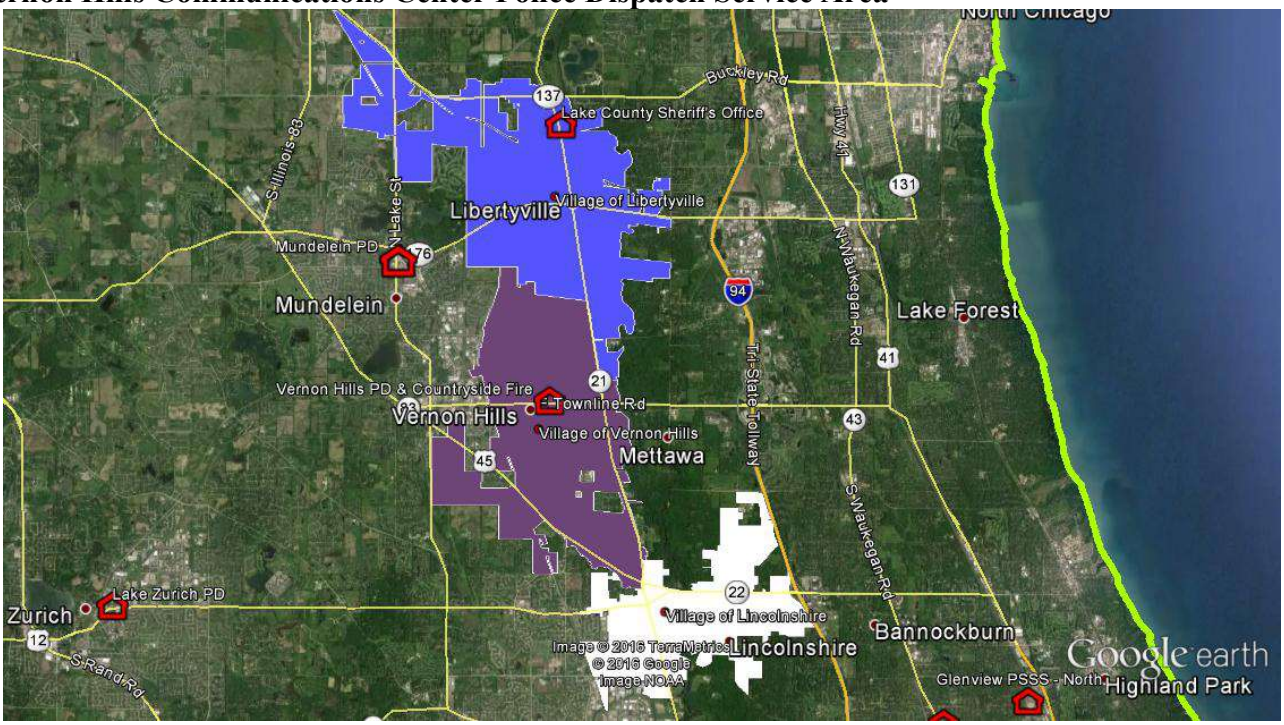


Figure 18 - Vernon Hills Communications Center Police Dispatch Service Area

ETSB Relationships

The Village of Vernon Hills operates their own ETSB and there is a close working relationship between the communications center and the ETSB.

Lincolnshire and Libertyville also each have their own ETSBs and Vernon Hills has expressed a willingness to form a JETSB with one or both of them if they so desire. These ETSBs utilize their 9-1-1 surcharge revenues to pay for 9-1-1 services and other allowable costs such as equipment and a portion of their cost to have Vernon Hills provide their dispatching services.

Operational Characteristics

The communications center is overseen by the Deputy Chief of Support Services for the Police Department. Day to day operations management is by a Communications Supervisor.

Personnel perform front counter duties after hours and on weekends. During normal business hours these duties are performed by the Vernon Hills Records section, which shares the building with communications. Duties include: collecting fees for parking tickets and administrative fines; bond; animal complaints; and giving directions.

The Vernon Hills communications personnel are responsible for limited actions associated with the jail facilities for all three agencies under their jurisdiction. Communications personnel view, but not monitor prisoners at the Vernon Hills facility. They unlock the doors and sally ports for all three agencies' jail facilities. Matron duties are included in the job description only for the rare occasion that an on-duty

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

female officer is not available for assistance with female prisoners. In those instances, where matron duties are required at either the Libertyville or Lincolnshire facility, a patrol officer transports an employee from the Vernon Hills Communications Center to the Libertyville or Lincolnshire jail facility, then back.

The communications center personnel are also responsible for activating warning sirens in all three communities they serve.

A number of video feeds are delivered to video displays around the center. These cameras/feed provide access to:

- Weather
- The transportation PASSAGE system
- Railroad crossings
- Security cameras to monitor various areas around the agencies
- Television for news casts.

Most of the information necessary for the individual Telecommunicators to carry out their duties are displayed at the individual consoles, with the exception of the warning siren. The information is programmed through the radio console, but only one position is equipped to actually set off the sirens.

Staffing of the communications center is covered by a combination of full time and part time communications personnel and cross-trained personnel:

1 Deputy Chief of Support Services
1 Communications Supervisor
1 Assistant Communications Supervisor
14 Full Time Telecommunicators
    4 of these are assigned to Officer in Charge positions
3 Part Time Telecommunicators
1 IT support technician
1 Private subcontracted IT Assistant

Normal staffing is three personnel on duty, with minimum staffing at two from 2 am to 6 am, and going up to 4 from 10 am to 10 pm. All Telecommunicators are trained to do all aspects of the job. The Officer in Charge positions take on the additional duties of training, control of the room, and personnel issues on a shift. There are four functional positions within the Police Dispatch section. Three of the four consoles are in constant use, with two being radio positions and one being a call answering position. The fourth position is either a call answering position, or backup for Fire.

Incoming 9-1-1 call processing is handled in a unique manner due to the colocation of the Countryside Fire Secondary PSAP. While the Vernon Hills call taker is the first voice the caller will hear, the Countryside Fire call taker will also be monitoring the line and take over if needed for fire or EMS call processing. For calls requiring both police and fire response both call takers stay on the line to get the information they need to process the incident in their separate CAD systems. If all Vernon Hills personnel are busy Countryside Fire personnel will answer incoming 9-1-1 calls as needed.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The call answering position also answers all incoming administrative calls for the Vernon Hills PD. The Telecommunicators transfer all incoming administrative calls to the various departments within the police department, leaving voice messages as necessary. Phone call duty also includes non-emergency phone calls that are transferred to Lincolnshire PD during all hours. During weekends and after 9 pm, non-emergency calls are received and handled for the Village of Libertyville.

Police radio communications and dispatching are performed on a shared Talkgroup on the StarCom trunked radio system that is also utilized by Mundelein Police. This allows all four agencies to continue to operate in a shared-channel environment as they did previously on their former system.

There is very little turnover in staffing. In the last year, one person promoted, and another position was added and in the past 24 months there has been no turnover. Any turnover is the result of not completing training. The hiring process is coordinated through the Vernon Hills HR. New hires are then put thorough an APCO training process with one of the center employees who have received the APCO Communications Training Officer (CTO) certification. The full training process can take 8 to 10 weeks, and up to a year to complete.

All personnel are LEADS certified and also certified in the NAED EMD protocols (even though Countryside Fire normally handles the EMD process the Vernon Hills personnel are EMD trained so they can assist in the process if needed).

The Mundelein communications center is the designated backup for Vernon Hills 9-1-1 routing and backup dispatch location. Countryside Fire uses the Lake Zurich communications center as its backup.

Technology Systems Overview

Technology system equipment is located in an equipment room that is immediately adjacent to the main communications room. This room is well sized and has room for system growth and for system replacement activities. Systems are maintained by a dedicated IT staffer assigned to the communications center and a contracted IT assistant. Vendor support contracts are also in place as needed.

9-1-1 and Telephony – The center currently utilizes a Positron 9-1-1 phone system that will be due for replacement in 2017. No decisions have been made yet on what the replacement path will be, but consideration will be given to the Intrado VIPER systems offered by West Corporation and the Solacom networked 9-1-1 phone system installed by the Lake County ETSB.

CAD/Mobile – The Vernon Hills Police Department utilizes a suite of CAD, Mobile RMS and Quick Booking applications from New World (now part of Tyler Technologies) and this system is shared with Libertyville and Lincolnshire.

Radio Systems – The center has completed the migration to the StarCom trunked radio system and implemented new Motorola MCC7500 console positions in the process.

Logging/Recording – The center currently utilizes a NICE Mirra IV recording system. With the move to the StarCom 21 system a new logging/recording environment is established to record the traffic on this

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

P25 digital trunked radio system. The center will continue to use the current recorder for their phones and conventional radio channels.

Alarm Board Systems – An alarm board system is present in the center but this is handled by Countryside Fire.

Video Systems – A number of video system feeds are integrated into a collection of screens in the center. These provide access to security cameras at the various police stations, jail facilities, a variety of weather tracking and warning systems, and traffic and railway systems.

Other technologies – There are a variety of other technologies in use at this communications center.

- Warning siren activation equipment for Vernon Hills, Libertyville and Lincolnshire
- Blackboard Connect for community notifications within Vernon Hills (Libertyville and Lincolnshire have their own systems)

Facilities Overview

The communications center is a part of a campus environment for the Vernon Hills Police Department. The communications center shares a building with the Records Section of the police department. The two areas are separated by an entrance hallway. The Communications Center area houses both the Vernon Hills Police Communications Center and the Countryside Fire Protection Dispatch. There are two supervisor offices in the area with one office for police and one for fire along the outside walls of the center. All consoles for both disciplines are clustered in the same area. In total, approximately 2,200 square feet of space is utilized for the communications center functions.

The operational area of the communications center is currently outfitted with a total of 6 dispatch console furniture positions. Four of the positions are dedicated to the Police Communications functions and the other two are used by Countryside Fire. The center also has a self-contained break area and restroom so it meets current practices for access control and security.

The 6 furniture positions currently in the communications room completely fill the space available. It would not be possible to operate a larger number of positions without expanding the room into the adjoining offices that ring the outside wall or expanding across the hall to other areas in the building (an option that is willing to be discussed).

The communications center is fully supported by an emergency generator and a UPS system with approximately 1 hour of runtime.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Countryside Fire Protection District Communications Center

Agencies Served

Countryside Fire Protection District
Libertyville Fire Department
Knollwood Fire Department

Organizational Structure and Governance Model

The Countryside Fire Protection District communications center was originally established as a stand-alone Secondary PSAP within the Lake County ETSB to provide dedicated fire and EMS dispatching for the communities served within the FPD borders. The center operated out of one of the FPD fire stations initially and then was moved to be colocated with the Vernon Hills Police communications center. This colocation is formalized in an intergovernmental agreement that defines the relationship between the two entities and allows the Countryside operation to use the facility at no direct cost to the FPD.

The three fire departments dispatched by Countryside cover a large and diverse area of multiple local municipalities and unincorporated areas.

Countryside Fire Communications Center Fire/EMS Dispatch Service Area

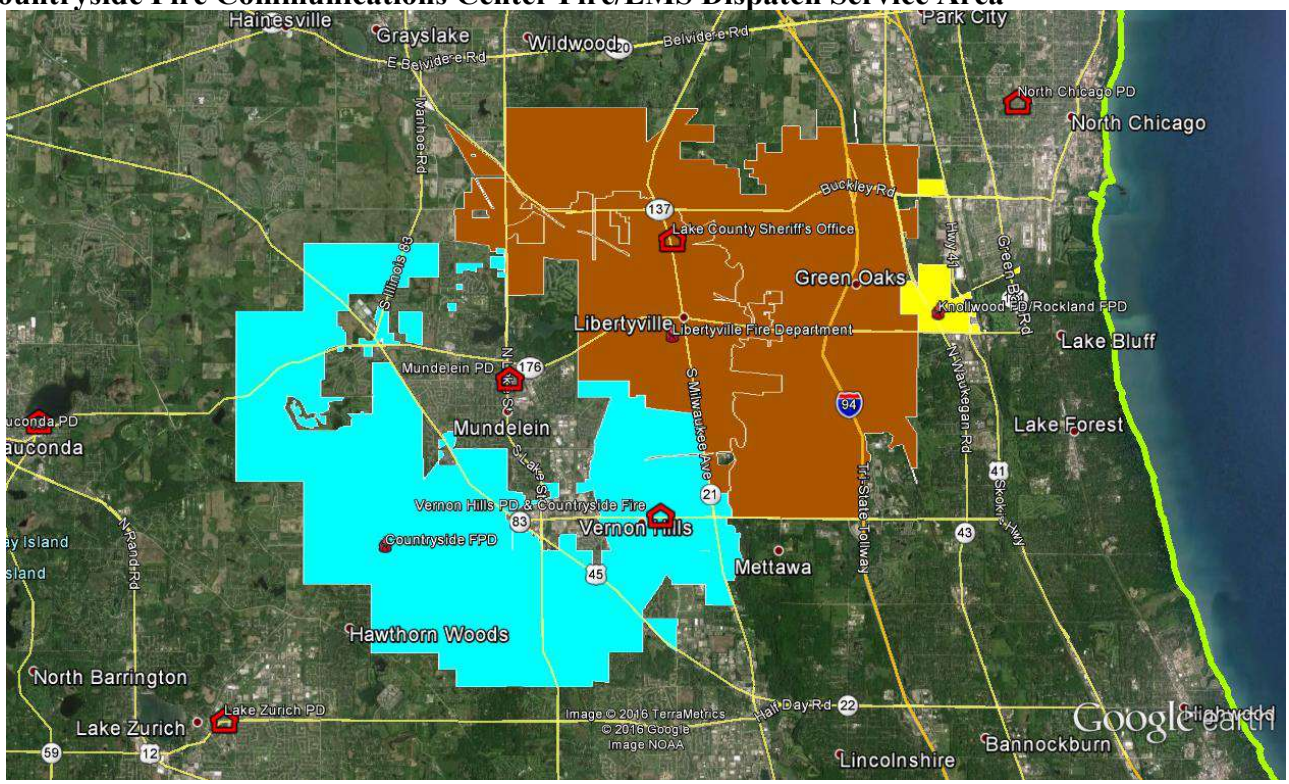


Figure 19 - Countryside Fire Communications Center Fire/EMS Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The Countryside FPD communications center is a secondary PSAP within the Lake County ETSB. This allows them to utilize the EnRoute CAD, mobile and mapping system operated by the ETSB and also provides some funding for mobile equipment for the fire agencies they support. This support is proportional to the areas the fire agencies serve that fall within the Lake County ETSB boundaries rather than in the boundaries of other ETSBs.

Operational Characteristics
The communications center is managed by a Communications Director who answers to the Deputy Chief of Administration for the Fire District. The center is a secondary PSAP within the Lake County ETSB and colocated within the Vernon Hills Police communications center.

This unique colocation of a Primary and Secondary PSAP, each with their own service area, creates a number of unique 9-1-1 call processing scenarios.

- Since Vernon Hills PD is the Primary PSAP for Vernon Hills and Libertyville, any calls requiring fire or EMS response in those areas can be handled in a single transaction with the caller since the Countryside Fire Telecommunicators (who operate on the same 9-1-1 phone system as the Vernon Hills PD personnel) can join the active 9-1-1 call in tandem with the Vernon Hills PD call taker. This allows them to capture the information they need for dispatch of Countryside Fire or Libertyville Fire units as needed.

- Since the Vernon Hills PD communications center also serves Lincolnshire, but the Countryside Fire communications center does not, fire or EMS calls are transferred by Vernon Hills to the RED Center communications center for call processing and dispatching of Lincolnshire-Riverwoods FPD resources.

- Due to the complex jurisdictional boundaries in the area, wireless 9-1-1 calls from locations within the Countryside Fire, Libertyville Fire of Knollwood Fire service areas sometimes get routed to other Primary PSAPs, such as the Sheriff's Office, Lake Zurich or Mundelein, rather than to Vernon Hills. Calls requiring fire or EMS response within these areas are then transferred to the Vernon Hills/Countryside Fire communications center for call processing and dispatch.

- On limited occasions, if all of the Vernon Hills PD personnel are busy, a Countryside Fire Telecommunicator will answer incoming 9-1-1 calls and handle call processing until a Vernon Hills Telecommunicator can take over the call.

Since the Countryside Fire communications center is a tenant within the Vernon Hills communications center, they have none of the front counter or ancillary duties that are handled by the Vernon Hill personnel.

The communications center is responsible for alarm board monitoring for fire alarms throughout the Countryside Fire and Libertyville Fire service areas. There are approximately 1400 alarm related calls

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

per month and a significant amount of administrative work maintaining alarm-holder and key-holder information.

The communications center personnel are also responsible for the department's Firehouse records management system. They initiate the incident reports in Firehouse and populate all the relevant data that is known at the communications center. This allows the field crews to focus on the specific details and narrative information about the incident. They also have access to the Image Trend EPCR system to support dispatch information entry as needed.

A number of video feeds are delivered to video displays around the center. These cameras/feed provide access to:

- Threat Net – displays wind speed and HazMat information for fires.
  - The cost of this is covered by Countryside FPD
- The transportation PASSAGE system
- Railroad crossings
- Security cameras to monitor various areas around the agencies
- Television for news casts.

Staffing of the communications center is covered by a combination of full time and part time communications personnel:

1 Communications Director
7 Full Time Telecommunicators
4 Part Time Telecommunicators

Telecommunicators work 12 hour shifts with shift changes at 0600 and 1800 each day, with the minimum staffing at 1 person on duty. Then, from 0800 to 2000 an additional 'power shift' Telecommunicator is added so that two personnel are on duty during these busier hours. Since the Vernon Hills PD Telecommunicators are also EMD certified, even during the periods when only a single Countryside Fire Telecommunicator is on duty, any additional EMS related calls can still receive full EMD call processing.

There is little turnover in staffing, with most turnover attributed to new employees not completing training rather than leaving for other jobs or performance issues. There have been two departures in the past 24 months with one moving to another agency and the other for performance issues. The hiring process is initiated by the Communications Director by sending a posting to the North East Illinois Chapter of APCO. New hires are put thorough an APCO training process with one of the center employees who have received the APCO Communications Training Officer (CTO) certification. The full training process takes approximately 8 to 12 weeks to complete and will include ride-alongs with each agency.

All personnel are certified in the NAED EMD protocols and CPR, as well as having completed a variety of NIMS, blood borne pathogens, and HazMat courses as well. Quality Assurance reviews are conducted on all calls and the formal QA process on EMD calls is done in conformance with NAED standards.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Fire and EMS dispatching is accomplished with tone and voice radio paging over the Quad 4 radio channel. An eDispatch alerting system is also installed which captures the tone and voice dispatch information and relays it to phone numbers or smartphone applications for notification of personnel that aren't radio equipped. Communications also take place on the Quad 2, Quad 3, Lake Zurich and IFERN channels as needed.

If it becomes necessary for Countryside to dispatch from another location, their backup location is the Lake Zurich communications center since it operates on the same EnRoute CAD system. Conversely, Countryside Fire is the backup dispatch location for Lake Zurich's Fire dispatching if needed and they are also the designated backup for MABAS Division 4.

Technology Systems Overview
The Countryside Fire communications center operation has very little technology impact at the Vernon Hills communications center. In some cases, they use the system in place for Vernon Hills, and in other cases they are networked to departmental systems that reside at other locations rather than to systems in the Vernon Hills technology equipment room.

9-1-1 and Telephony – The Countryside communications personnel use the same Positron 9-1-1 phone system used by Vernon Hills, so there is only a single 9-1-1 system in the communications center. When Vernon Hills ultimately replaces their system Countryside's operation would migrate to that system as well.

CAD/Mobile – The center utilizes the EnRoute CAD, Mobile and mapping applications operated by the Lake County ETSB. Access to the Department's network and systems (such as Firehouse and the Image Trend EPCR systems) is handled through remote network connectivity.

Radio Systems – The communications center currently utilizes Motorola MCC5500 radio consoles. With the Vernon Hills PD migration to the StarCom 21 system and directly connected MCC7500 positions, the plan is to have the Countryside operation remain on the legacy MCC5500 console system since it is already integrated to all the channels they need to support fire and EMS operations.

Logging/Recording – The center currently utilizes a NICE Mirra IV recording system. With police moving to StarCom, a new logging/recording environment will be established for recording this P25 digital trunked radio system. The existing NICE recorder will be kept operational for recording telephones and conventional radio channels, which meets Countryside's operational needs.

Alarm Board Systems – An alarm board system is in operation at the center and monitoring is handled by the Countryside Fire Telecommunicators.

Video Systems – As discussed above, a number of video system feeds are integrated into a collection of screens in the center. These provide access to video systems critical to the fire dispatch environment.

Facilities Overview
The Countryside Fire communications center operation is colocated in the Vernon Hills communications center. Countryside Fire is allocated 2 dispatch console positions within the center from which to

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

operate. All facility maintenance and operations issues are handled by Vernon Hills, so Countryside Fire has no facility responsibilities.

As noted in the overview of the Vernon Hills communications center, the current communications room is completely full, but expansion alternatives do exist within the building and Vernon Hills is willing to consider these if needed.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Wauconda Communications Center

NOTE: The following information describes the Wauconda Communications Center at the time of the initial round of information collection for this report. This center has now been closed and the agencies previously served from this center have migrated to other communications centers as described elsewhere in this report.

Agencies Served

Wauconda Police Department
Lakemoor Police Department
Tower Lakes Police Department
Wauconda Fire Department

Organizational Structure and Governance Model

The communications center operates as a functional unit of the Wauconda Police Department and operates within the structure of the department's policies and procedures. Written agreements form the basis of these dispatching relationships but they are currently expired and are continuing on a month-to-month basis. The communications center reports to the Deputy Chief of the police department and no formal process is in place for the customer agencies to influence operational procedures. When needed, they can approach the agency and request changes in process and these changes are accommodated whenever possible.

The communications center serves a combined population of approximately 21,184 for the three police departments and a much larger population within the footprint of the Wauconda Fire Department. The fire department service area extends well beyond the Village of Wauconda and includes portions of communities such as Lakemoor, Volo, Island Lake, Tower Lakes, Lake Barrington and North Barrington

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Wauconda Communications Center Police Dispatch Service Areas

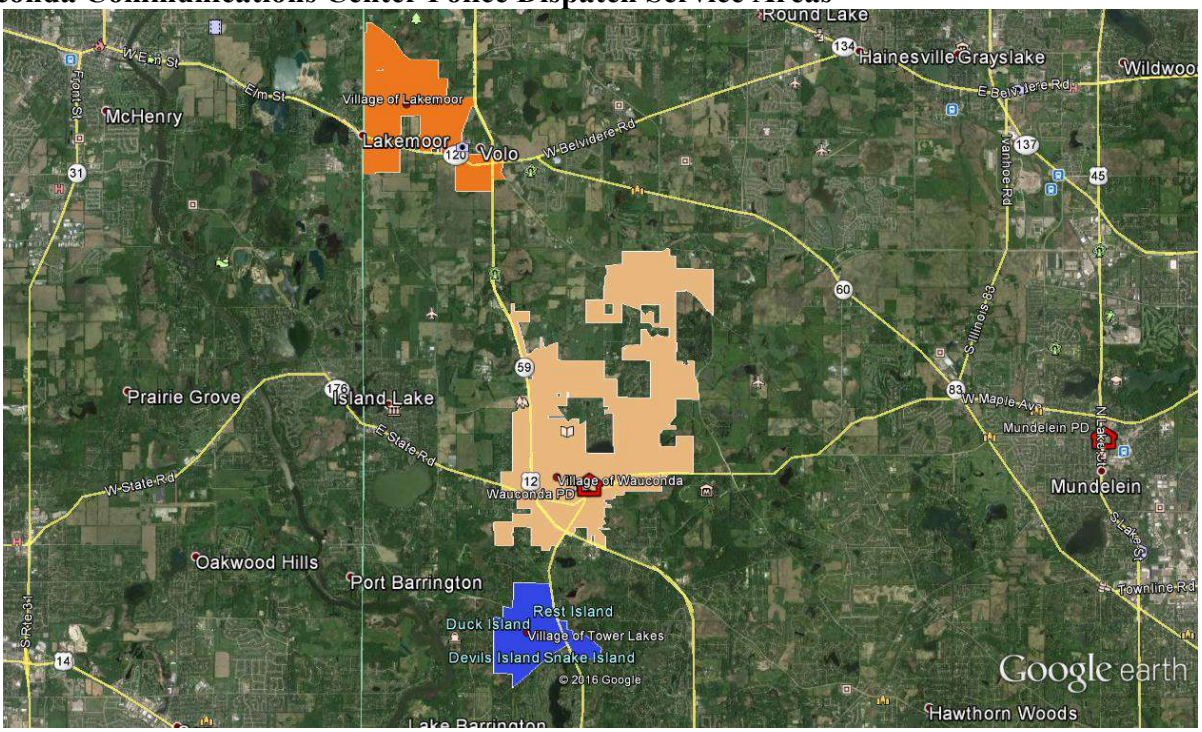


Figure 20 - Wauconda Communications Center Police Dispatch Service Area

Wauconda Communications Center Fire/EMS Dispatch Service Area

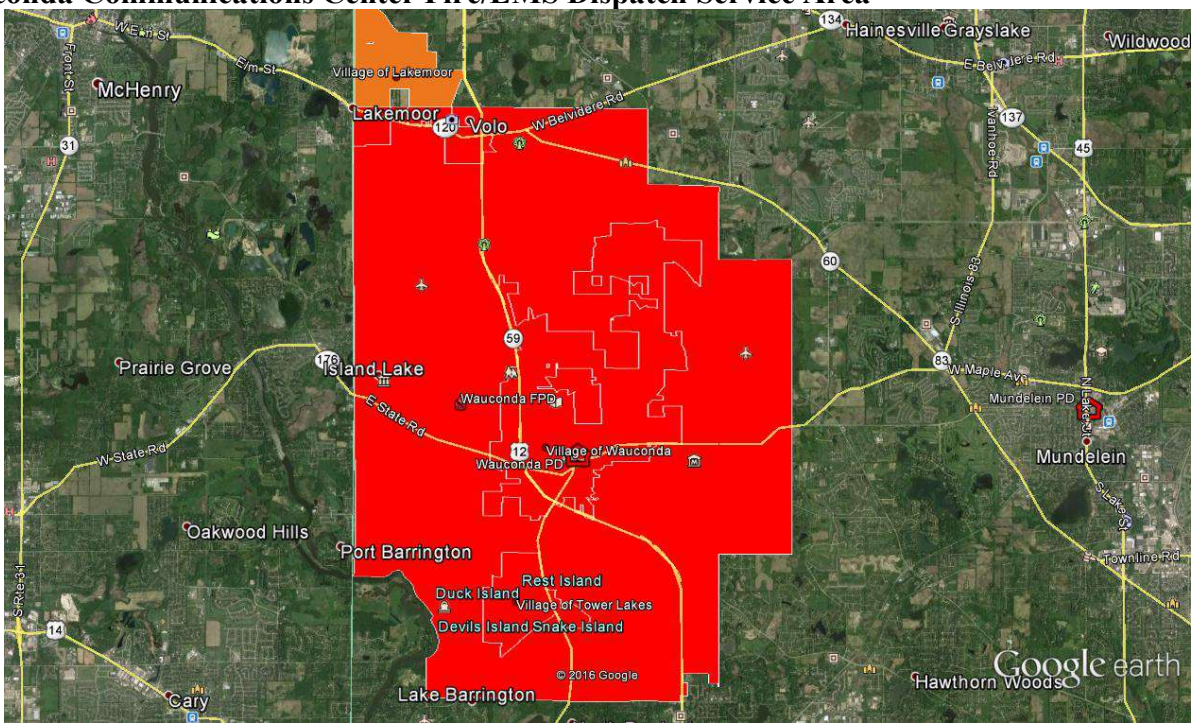


Figure 21 - Wauconda Communications Center Fire/EMS Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
The Wauconda communications center is one of three centers within the Lake County ETSB. As a Lake County ETSB agency, they are fully supported on the ETSB's 9-1-1 telephony system and EnRoute CAD system. Funding is also provided to support the logging/recording system and CAD mobile devices and licenses, as well as some of the radio equipment related to dispatching the agencies served.

Operational Characteristics
The communications center is staffed with 10 full-time Telecommunicators. There had formerly been a Supervisor specifically assigned to communications but this role was shifted to other administrative functions in the department. The Deputy Chief is formally responsible for the communications center, and routine supervision of communications personnel is provided by the Sergeant on duty for each of the patrol shifts. The communications personnel are covered by a collective bargaining agreement, but a copy was not provided.

Wauconda PD typically will operate with 3 to 5 officers on the street depending on the shift. Lakemoor typically has 2-3 officers on duty at any time and Tower Lakes typically has 1-2 officers on duty at any time. Minimum staffing for the center is two personnel on duty, with a third person on duty when scheduling allows. One position works all three police departments on a common Talkgroup and the other position works fire on the Quad 3 channel and other regional fire channels. Both positions provide call answering as needed. As observed at other communications centers in the region, there are a significant number of wireless calls that are not routed to the proper PSAP initially so transferring of calls is quite common.

The communications center is responsible for all LEADS work for the three agencies they serve, and all center personnel are LEADS certified. Records work is performed by others in the department so this is not a communications function.

The communications center is located in the basement of the building and therefore does not have any routine front counter responsibilities during normal business hours. After-hours there is a window that the public can come to if direct interaction is needed. There are a number of other functions handled by the communications center including:

- Answering all 10-digit lines for the Wauconda PD
- Answering 10-digit lines for their customer agencies after hours
- Monitoring the public works SCADA alarms
- Processing fees and fines, providing report copies, and issuing garage sale permits
- Activating warning siren systems when directed to do so by other ranking personnel or by policy

The communications center is also responsible for monitoring the detention area if an officer is not in quarters. Four of the female Telecommunicator are trained as jail matrons and will support the booking process if a female officer is not on duty. There are very few instances where a Telecommunicator needs to perform matron duties.

The communications center also monitors an alarm board with approximately 300 alarm accounts and are responsible for maintaining all the account holder and key holder information. Like most other

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

centers with alarm board functions, they also experience a number of trouble and maintenance interactions with the monitored systems during the normal workday.

Employee turnover has not been a significant issue in the recent past with only two new hires in the past two years and the only one prior to these was in 2006. Training of new personnel is accomplished is accomplished in a side-by-side manner with an assigned trainer. During a training period a new hire will be assigned to more than one trainer so that there are several perspectives on their progress, including observations from the shift Sergeants.

Technology Systems Overview
9-1-1 and Telephony – The communications center operates on the CML system maintained by the ETSB and will be moving to the Solacom networked 9-1-1 system as soon as it is ready for operation. Wauconda is the 9-1-1 backup for Lake Zurich and Lake Zurich is the 9-1-1 backup for Wauconda. Wauconda also has designated one of its four console positions for use by the Lake County Sheriff's Office if they needed to evacuate their communications center.

CAD/Mobile and RMS – The center and the agencies they support operate on the Lake County ETSB EnRoute CAD system. RMS system information was not provided.

Radio Systems – The communications center utilizes a Telex radio console system and uses control stations to interface to the Starcom 21 Talkgroups used to support the police agencies and the various radio channels needed to support fire dispatching and regional interoperability.

Logging/Recording – A NICE logging recorder is in place and maintained as part of master agreement administered by the ETSB.

Alarm Board Systems – The alarm monitoring system has approximately 300 monitored alarms.

Video Systems – In addition to the building security cameras and cameras in the jail area, there are no other video systems integrated into the center.

Facilities Overview
The communications center is arranged with four full dispatch console positions which fully occupy the space available. A secure window allows interaction with the public after hours after the come downstairs to get to the window (an elevator is also available). The center has a break room directly attached to it.

The technology equipment spaces are well organized and well maintained, but the space is very full with little expansion or work space. There is also some evidence of past infiltration of water into the space.

The facility is supported by a backup generator and critical systems are protected with a UPS system.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Waukegan Communications Center

Agencies Served

Waukegan Police Department
Waukegan Fire Department

Organizational Structure and Governance Model

The communications center operates as an organizational unit of the Waukegan Police Department. Day-to-day operations of the center are managed by the communications center Manager who reports to the Sergeant in charge of Administrative Services. Operational policies and procedures are directly aligned to the operational needs of the Waukegan police and fire departments.

Funding for the organization is derived through appropriated city budget funds for the Police Department and costs that are covered by the Waukegan ETSB.

The City of Waukegan has a complex geographical footprint and has numerous border interactions with neighboring police and fire agencies. The total population of Waukegan is approximately 88,915.

Waukegan Communications Center Police and Fire/EMS Dispatch Service Area

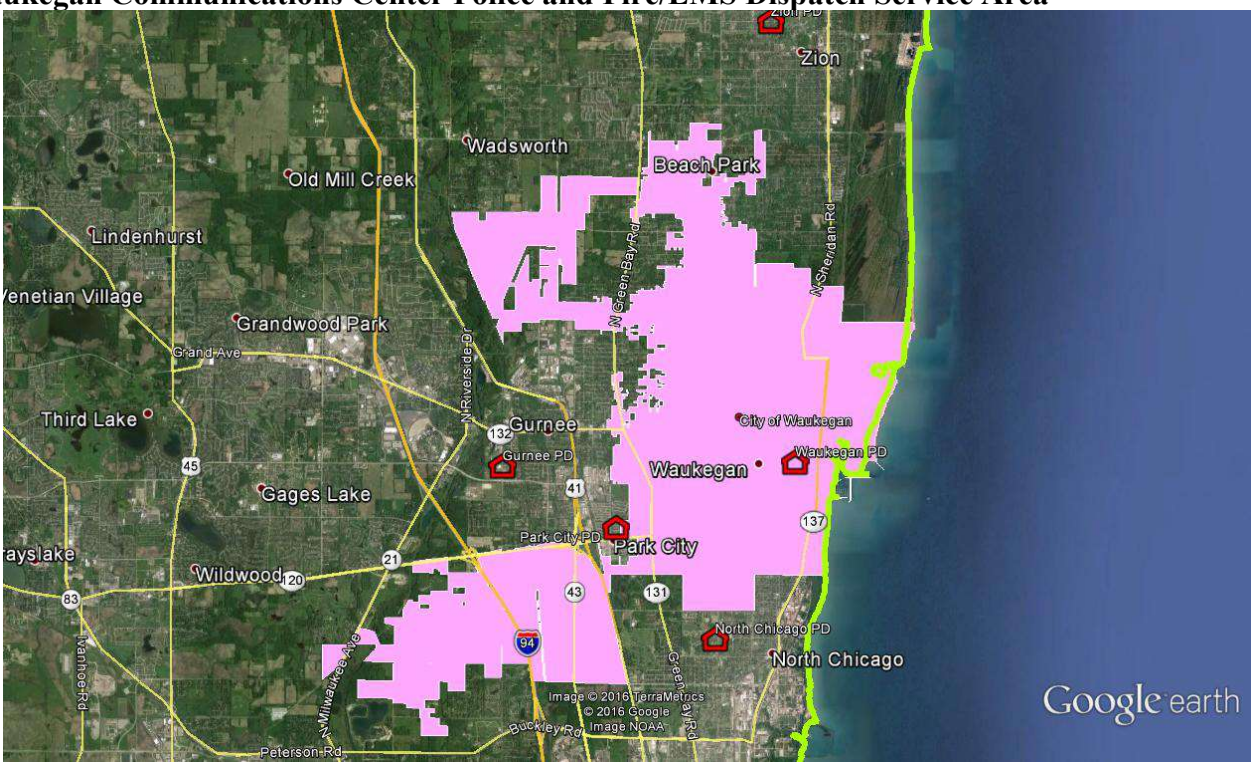


Figure 22 - Waukegan Communications Center Police and Fire/EMS Dispatch Service Area

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

ETSB Relationship
Waukegan established their own ETSB, which is governed by a five-member Board composed of the Fire Department's Chief and Deputy Chief, the Police Department's Chief and Deputy Chief, and one citizen at large. The Board meets on a monthly basis to oversee the revenues and expenditures of the ETSB.

Funds from the ETSB are used to support the costs of providing 9-1-1 system capabilities for the city and a number of allowable capital items in the communications center related to 9-1-1 call processing. The ETSB also provides the funding for any overtime expenditures of the communications center so these are not reflected in the operational budget for the organization. The ETSB also occasionally funds expenses for attending training and conferences.

Operational Characteristics
The communications center is overseen by an Administrative Services Sergeant. The Communications Section is just one area of the Police department the position oversees. A Communications manager reports to the Administrative Services Sergeant, and directly oversees all operations within the Communications Section.

Staffing of the communications center is covered by full time/cross trained personnel:

1 Administrative Services Sergeant
1 Communications Manager
3 Communications Supervisors
3 Senior Dispatchers
13 Full Time Dispatcher

Technology support is provided by city IT personnel supplemented with system vendor maintenance contracts as needed. These personnel are all contained in the IT budget so they are not reflected in the communications center budget and cost of operation.

In the Communications center, minimum staffing is four personnel on duty, often with five personnel on duty during the mid-day shift. Filling this 5th position requires paying overtime which is covered by the ETSB rather than the communications center budget.

All Telecommunicators are trained to do all aspects of the job. Each of the consoles are equipped essentially the same, but each one typically performs a specific function. One console position is dedicated to Fire dispatch, one is dedicated to Police dispatch, and one serves as the Call Taker and LEADS transactions. A Supervisor, or Senior Supervisor, is the 4th person in the minimum staffing mix and can assist with any of the positions in the center as needed.

The communications center was renovated in June 2015, but even with the low rise computer flooring system, the room has a very low ceiling which makes hanging video monitors for all to view not feasible. The Weather computer is situated in a corner of the room and can be accessed by walking over to it. The bank alarm computer is situated near the weather computer and is accessed the same way. Lake County PASSAGE, FATPOT, and internal cameras for around the department are each one monitor on one position.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The communications personnel also:

- Handle all the LEADS work for the Department, as the Records personnel are not LEADS certified. LEADS work includes updating sex offender registration changes weekly.
- Handle monitoring of alarms on the alarm board system (794 fire alarms and 27 security alarms). Includes updating key holder information, logging alarms, and any other alarm related duties.
- Responsibility for sending out Blackboard Connect community notifications after hours and on weekends (during weekdays this is handled by IT). The communications center is not responsible for composing the notification messages themselves.
- Serve as the point of contact for any sick leave call-ins for the City Yards, fill out a form, and FAX it to the City Yards at the start of each day.
- Responsibility for activation of warning siren systems when needed.

The Police Department staffs a Desk Officer at the public entrance to the building to handle all interactions with the public. For this reason, the communications center staff does not have any front counter responsibilities. The front desk personnel will transfer EMS type calls to Communications, if necessary.

The jail is operated as a separate functional unit of the Police Department. The Telecommunicators do not have jail monitoring or booking responsibilities. Matron duties are written into the union contract. Although there is a small stipend stipulated for those trained as matrons, none of the Telecommunicators have elected to be trained in these duties.

The staffing tends to remain stable once a person is through their training and probationary period. In the last two years, six new hires have not made it through their probationary period. However, eleven of the sixteen employees have been with the department more than 10 years. The hiring process is coordinated by the City of Waukegan HR, with the Finance Department granting permission to fill positions. New hires are put thorough a multi-phased training process that uses a combination of in-house and APCO training materials. The full training process is approximately 24 weeks in duration, and during training, the trainee works on each of the three shifts so they are exposed to all aspects of the job.

Due to the larger geographic footprint of Waukegan, there are fewer wireless 9-1-1 calls that need to be transferred to other PSAPs.

If it becomes necessary for Waukegan to dispatch from another location, communications personnel would relocate to Gurnee communications center which is the designated 9-1-1 backup for Waukegan. There is also a backup radio position at Fire Headquarters that can be utilized to support fire communications.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Technology Systems Overview
Technology system equipment is located in a dedicated room within the building. This space is completely full and there is no room for expansion or system replacement work. Technology support is provided by City IT personnel, supplemented with system vendor maintenance contracts as needed. One IT staffer is assigned to support the Police Department building/systems and other staffers handle duties such as desktop support.

9-1-1 and Telephony – The communications center utilizes a newly installed Cassidian (now Airbus DS) telephone system (linked to a Nortel PBX) to handle all their 9-1-1 and 10-digit lines within the center at each of the dispatch positions. The non-emergency 10-digit lines for the Department are auto-answered with voice instructions and a telephone tree to allow the caller to gain direct access to the appropriate destination within the department. Any response to the "Press 0 for an operator" ring through to the communications center.

CAD/Mobile/RMS – The Waukegan Police Department utilizes a full suite of applications from New World (now part of Tyler Technologies) including CAD/Mobile and RMS functionality. The Fire Department operates mobile computers that are part of the New World CAD/Mobile environment for dispatch and response activities, and utilize Firehouse for their RMS needs.

Radio Systems – The Police Department currently operates on their own UHF (T-Band) radio channel and Fire operates on their own VHF Channel. The communications center and Police Department are in the process of migrating to the StarCom 21 trunked radio system. The new MCC7500 radio console positions are interfaced to the legacy radio systems until the cutover is complete. Fire will remain on their VHF channel with dispatch and alerting via tone and voice paging over that channel.

Logging/Recording – The center currently utilizes a Revcord recording system for their telephone and radio traffic. With the move to the StarCom 21 P25 digital radio system, a new NICE recording system is also being implemented with the system. The Revcord system will be left in place to serve as a backup for recording phone lines and analog radio inputs.

Alarm Board Systems – An alarm board system is utilized with approximately 800 alarms being monitored in the communications center. The system is interfaced with the CAD system so alarm activations can be handled at any of the six dispatch positions. The system is maintained by a private contractor.

Video Systems – A number of video system feeds are integrated into a collection of screens in the center. These provide access to security cameras at the Waukegan police station, EMnet for statewide weather emergencies, and 3SI bank tracking system.

Other Technology Systems – The city utilizes Blackboard Connect for community notifications and alerting.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Facilities Overview

The communications center is a dedicated room within the Waukegan Police facility having six fully equipped dispatch consoles, a break room, a Manager's office and a Supervisors' office. The communications room has a section of clerestory windows to allow some natural light into the facility.

The room is completely full in its current configuration and there is no room for expansion even with furniture reconfiguration. The currently occupied space is approximately 1,400 square feet. The room is also located on an outside wall adjacent to an unsecured parking area with no physical barriers to prevent vehicles from striking the building.

The communications center is on its own HVAC system and the full communications center is supported by an emergency generator. This is a trailer mounted unit, with a small internal fuel tank, connected to a transfer switch. The critical communications center systems are also protected on a UPS system.

There is a large radio antenna tower immediately adjacent to the technology equipment room to handle all of the needed antennas for the operation of the center.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Winthrop Harbor Communications Center

Agencies Served

Winthrop Harbor Police Department
Winthrop Harbor Fire Department

Organizational Structure and Governance Model

The communications center operates as a functional unit within the Police Department and operates within the structure of the department's policies and procedures. A police Commander is responsible for the communications center. Winthrop Harbor is a small community with a population of 6,730 in the northeastern corner of the county bordering Wisconsin. It is also home to the largest fresh water marina in the U.S. with approximately 1,500 slips, so in the spring and summer seasons there is a significant level of non-resident population coming in and out of the area.

Winthrop Harbor Communications Center Police and Fire/EMS Dispatch Service Area

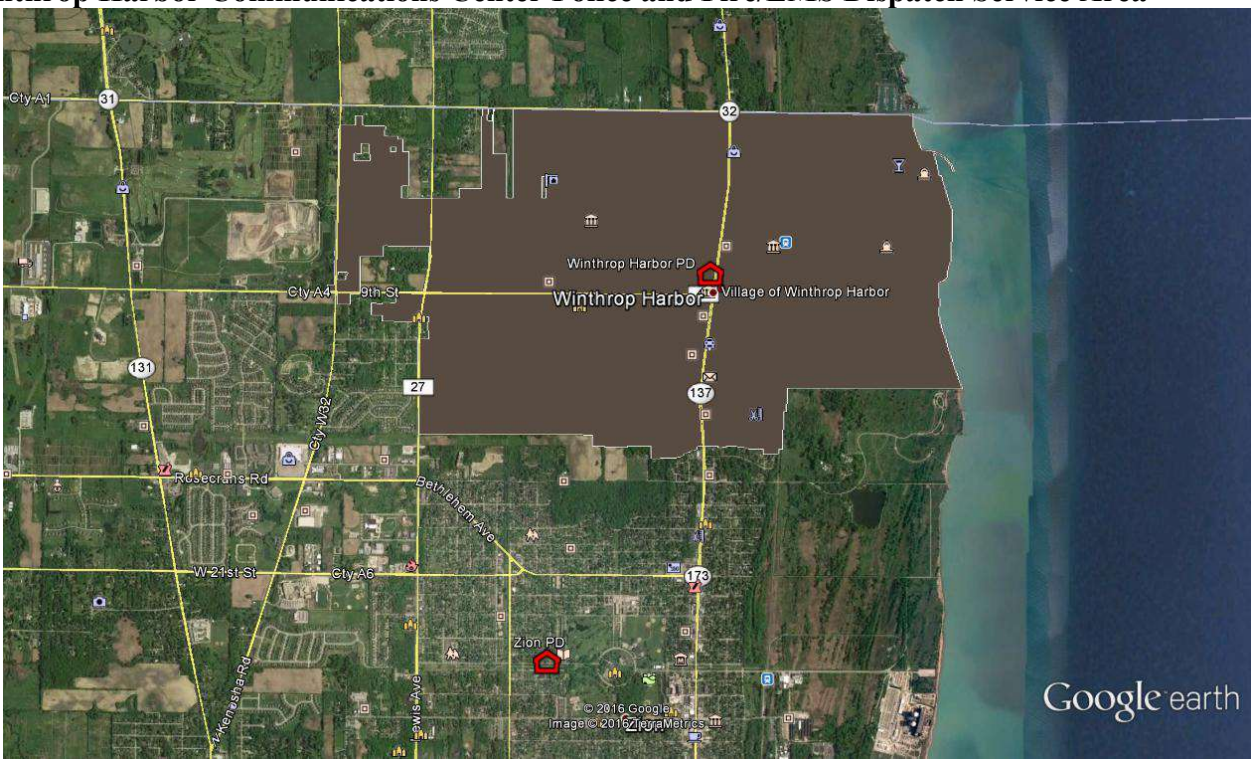


Figure 23 - Winthrop Harbor Communications Center Police and Fire/EMS Dispatch Service Area

ETSB Relationship

Winthrop Harbor its own ETSB and the relationship with the public safety departments and the communications center is very close.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Operational Characteristics
Winthrop Harbor utilizes a very unique staffing structure for an organization their size, identifying a total of 8 dispatch personnel with 5 of them being full-time and 3 part-time. But all of the full-time personnel and 2 of the part-time personnel are also commissioned police officers and their duties will fluctuate depending on staffing needs between working a shift in dispatch or working a shift on the street. Two of the full-time personnel are designated as Dispatch Administrators and carry some additional responsibilities for managing the communications center and processes. One serves as the LEADS coordinator and the other manages the department's learning management system.

Staffing of the communications center is often with only a single person on duty, but occasionally two personnel are on duty. Since their staffing model and budget can't support constant staffing with two on duty, they do not perform EMD call processing for EMS related calls. Normal officer counts on the street are a Sergeant and two officers at minimum and sometimes up to three additional officers or command staff on the air. The shift Sergeants serve as the supervisor for communications personnel on duty during their shift.

The communications center staff are not covered by a collective bargaining agreement when working in that capacity, but when working as an officer they are covered by the bargaining agreement covering uniformed officers.

Since the borders of Winthrop Harbor is essentially enveloped by Zion most of their routine interactions are with Zion police or fire. There is occasional need to bring Pleasant Prairie, WI into larger fire responses. As with other jurisdictions in this area, they often experience wireless calls not being directed to the proper PSAP so call transfers are not uncommon.

The Fire Department is a single station operation operating out of the same public safety facility with police and dispatch. Staffing is accomplished with part-time personnel with 6 firefighters on duty at any given time. As a part of the call receiving process, if it is clear a response will be needed, the on-duty personnel are given a pre-alert over the phone system so they can begin their turn-out process. Incidents are then radio dispatched using tone & voice alerting on the Quad 1 channel. This tone & voice notification is also re-transmitted through an eDispatches terminal to personnel with the application on their smartphones. Police units are sent on all incidents to support fire as needed.

Communications center personnel are responsible for after-hours support of the lobby window that is open to the public on a 7X24 basis (normal working hours are covered by other staff). This includes processing various fees and fines as well as receiving payments for municipal water service bills.

They are also responsible for supporting the booking process through a combination of video monitoring of the booking process and printing out supporting documentation for the booking process. They are not responsible for video monitoring of any detainees and road officers come in to perform routine checks on any detainees.

The communications center staff handle all of the LEADS work for the agency. They also are responsible for entering all the non-moving citations into the courts adjudication scheduling system. The communications center is the activation point for the warning sirens in the village.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

The communications center also serves as the coordinating point for dispatching of the Air 1 air support organization. It also serves as the 9-1-1 and operational backup location for the Zion communications center and Zion is the backup for Winthrop Harbor.

Several video surveillance systems at the facility, the community park and the EMA facility. While these cameras are not monitored on a continuous basis, they are used when needed to support operations.

Turnover has been a mixed issue for them. In general, it is perceived as low, but they also experience personnel entering the law enforcement profession through their organization because of the unique opportunity to work as a Telecommunicator but also as a part time officer. Some of these personnel ultimately shift to the law enforcement side of the business or move to other agencies. Over the past 24 months there has only been one departure due to termination. They also use a number of CSOs for their marina security patrols and occasionally these CSOs move into dispatch roles, so they are often coming to the role as someone that already has operational experience with the organization.

When new hires are done, they are trained in a director mentoring style by one of the Dispatch Administrators. Good training manuals and operational documentation are provided to the trainee and the work through a progressive advancement of learning call receiving, police radio and then fire radio practices. Collectively it takes about 6 months before they feel the person is fully trained and able to work on their own in the center.

Technology Systems Overview

9-1-1 and Telephony – Legacy Zetron 3200 series 9-1-1 telephone and ANI/ALI display equipment is used for 911 lines. Desksets on the Village VoIP phone system are used for their 10-digit lines. There is no mapping of 9-1-1 calls in this system nor in the CAD system. Winthrop Harbor is the 9-1-1 backup for Zion and Zion is the 9-1-1 backup for Winthrop Harbor.

CAD/Mobile and RMS – The department utilizes a suite of CAD/Mobile/RMS and Court systems from CAPERS and find that it fits their needs well. Winthrop Harbor is the only jurisdiction in Lake County using the CAPERS CAD system but Mundelein is also a CAPERS RMS user.

Radio Systems – Legacy Zetron 4000 series radio consoles are used to access the various radio channels/systems used by the agencies which includes a number of VHF channels for the police department, public works, marina and Emergency Management. Fire dispatching is done on the Quad 1 fire channel. There are no current plans to migrate to the StarCom trunked radio system.

Logging/Recording – The center recently replaced their logging recorder with a new Eventide system. This system is capable of both conventional and IP recording so it can record lines as needed on the in-house VoIP system as well.

Alarm Board Systems – The communications center does not monitor local alarm systems.

Video Systems – As mentioned above, there are a number of fixed and IP video systems either covering the facility itself or specific areas throughout the village.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Other technologies – Winthrop Harbor utilizes the Blackboard Connect community notification system. This system is also used for call-outs of specialized teams or messaging to specific groups of Village personnel.

Facilities Overview

The communications center is located in a very small space of approximately 250 square feet and is completely filled with the two dispatch positions. A small closet in the room is used for much of the technology system equipment/servers and additional equipment is located in a newly remodeled equipment room elsewhere in the building. There is no expansion capability.

The facility is supported by an emergency generator and critical systems in the communications center are protected with UPS systems.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Zion Communications Center

Agencies Served

Zion Police Department
Zion Fire Department

Organizational Structure and Governance Model

Zion is a community of 24,264 located in the northeastern portion of Lake County. The communications center operates as a functional unit within the Police Department and operates within the structure of the department's policies and procedures. The Deputy Chief is responsible for the communications center and the on duty Patrol Commander of each shift is responsible for supervision of both the officers and the dispatch personnel on the shift.

Zion Communications Center Police and Fire/EMS Dispatch Service Area

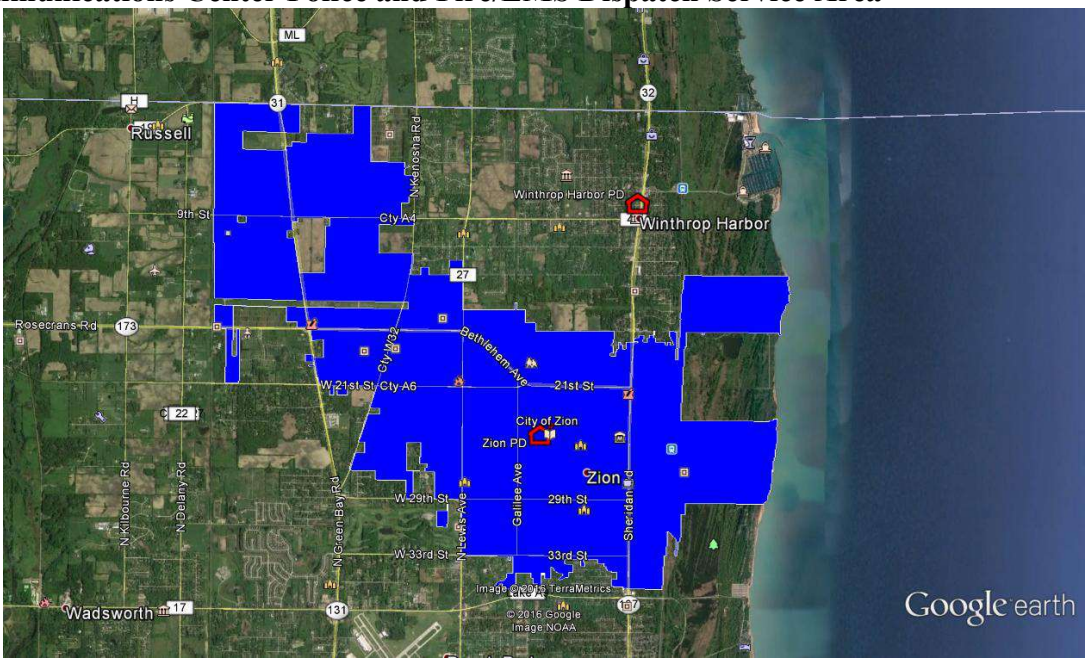


Figure 24 - Zion Communications Center Police and Fire/EMS Dispatch Service Area

ETSB Relationship

Zion has its own ETSB and the relationship between the ETSB and public safety and city leadership is very close.

Operational Characteristics

The Police Department has 44 officers and operates with between 3 and 5 on duty at any given time. There are also 7 Detectives, 6 School Resources Officers and 3 officers on special assignments. The Fire Department has 30 uniformed personnel and operates from 2 stations with 7 personnel on duty per shift.

There are 9 full-time and 5 part-time dispatch personnel and they are covered by a collective bargaining agreement (copy not provided). Normal staffing is 2 personnel on duty at all times with a 3rd positon staffed during special events. Personnel work 8 hour shifts with a 3-on/2-off/3-on/2-off/4-on/1-off/4-

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

on/2-off rotation. Scheduling is highly structured and planned out far into the future. Any overtime is offered to full-time personnel first and time is only offered to part-time personnel if slots can't be filled.

One of these Telecommunicators is designated as the Senior Telecommunicator and supports a number of technology issues, vendor coordination issues, training and related duties. The communications center receives some additional technology support from a city IT staffer.

The community is heavily residential in nature with a number of apartment and senior housing complexes. The area was also hit fairly hard during the economic downturn and there are still a number of vacant single-family residences. The overall nature of the types of calls they experience was described as a fair volume of personal and property crimes and a high volume of EMS incidents related to the senior housing areas.

Most of Zion's interactions with neighboring agencies involves the Sheriff's Office and Winthrop Harbor. Zion is surrounded on the south and west sides of its area by Beach Park and Wadsworth, both areas where the Sheriff's Office provides police protection. Winthrop Harbor borders them on the north. Since wireless calls to 9-1-1 are often not routed to the correct communications center it is not uncommon for calls to have to be transferred to the Sheriff's Office or Winthrop Harbor (and sometimes Waukegan) and the same is true of calls to these communications centers that need to be routed to Zion. Zion also serves as the 9-1-1 and operational backup location for the Winthrop Harbor communications center and Winthrop Harbor is the backup for Zion.

Fire department responses often involve notifications to neighboring communications centers to initiate automatic-aid responses. This includes interactions with dispatch centers for Winthrop Harbor, Gurnee and Waukegan. It also occasionally involves coordination with Pleasant Prairie, WI since Zion's northern border is on the Wisconsin state line.

The Total Response EMD protocol from Power Phone is used for processing EMS calls for service.

There are no alarm monitoring responsibilities but there are a number of security cameras around the facility and in other areas in the community and the communications center can monitor these if needed.

Since the communications center is in the basement of the building, there is no routine responsibility for front counter work, which is handled upstairs during normal business hours by records personnel. During nights and weekends the dispatch staff can interact over a telephone link with anyone that comes to the outer door of the police station. On some occasions a Telecommunicator may go upstairs to assist a citizen with a transaction involving paperwork, but for any other issue they notify an on-duty officer to contact the citizen.
The communications center staff handle all of the LEADS entry and maintenance work for the agency.

The police department does operate a jail detention area and jail cameras can be monitored in the communications center, but the dispatch staff is not formally responsible for any prisoner monitoring and none of the female personnel are utilized as matrons.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

There if very little turnover, but when new hires take place they are trained in a formalized manner. Two of the Telecommunicators are certified as APCO CTOs and they put new personnel through a structured process of one-on-one and work-along training to prepare them to progressively work through learning fire radio, call receiving, and police radio procedures. Typically, the full process takes about 2 ½ to 3 months.

Technology Systems Overview
9-1-1 and Telephony – The center utilizes and integrated Zetron console system for their 9-1-1, telephone and radio activities. Radicom is retained on a service contract to support this system. Winthrop Harbor is the 9-1-1 backup for Zion and Zion is the 9-1-1 backup for Winthrop Harbor.

CAD/Mobile and RMS – The department utilizes an integrated solution from Computer Information Systems (CIS) for all three of these functions. They will soon be adding the jail/booking module as well. Zion is the only agency in Lake County using the CIS systems. They apparently had been with CIS in the past and switched to New World Systems several years back. However, they moved back to CIS a few years ago and are very happy with its functionality for their purposes.

Radio Systems – A Zetron console system is used within the communications center. The police department operates on their own VHF channel and the fire department operates on the Quad 1 fire channel. Fire station and personnel alerting is done via tone & voice and this is augmented by an interface to an eDispatches terminal that relays the tone & voice message to smartphones carried by all personnel with the eDispatches application on them. This provides an effective mechanism both for alerting on-duty crews but also for initiating off-duty callbacks.

Logging/Recording – The center utilizes a Voice Print International (VPI) recording system to record all of their 9-1-1 and 10-digit lines and all radio channels. The system is capable of also doing keystroke and screen logging but it is not used for that purpose at this time. Personnel can append notes to certain audio segments to aid in later follow-up or research if needed.

Alarm Board Systems – There is no alarm monitoring being done at this communications center.

Video Systems – The center has access to video feeds from a number of security cameras around the facility and a number of cameras located around the city.

Other technologies – The city has implemented the Code Red community notification system and the communications center is responsible for using this system when needed.

The communications center is also responsible for activating warning sirens in the community.

Facilities Overview
The communications center is located in the basement of the public safety building and the building is located on a large parcel of land removed from any immediate adjacent structures. The communications room itself is approximately 450 square feet is configured with four full dispatch furniture positions which completely fill the room. Three of these positions are fully equipped to operate as dispatch

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

positions. The fourth position has limited equipment and is mainly used for internet access and special projects.

There is a large break area of approximately 800 square feet just outside the communications center that may allow some room for limited expansion if needed, but it would not be an easy project since the wall between them is a bearing concrete block wall and this space is shared with other Police Department functions. Basically the facility is at capacity and not a good candidate for expansion to handle a larger number of agencies.

The full building is protected by an emergency generator and the communications center systems are also protected by a UPS system.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 5 – PROFILES OF REPRESENTATIVE CONSOLIDATED DISPATCH CENTERS SERVING SIMILAR POPULATIONS

South Sound 911

South Sound 911 provides 9-1-1, emergency communications and Law Enforcement records services for all of Pierce County, WA. This countywide emergency communications organization was established in 2013 to consolidate a number of communications centers into a single organizational structure and ultimately into newly constructed, fully consolidated, facilities. Beginning with 7 individual dispatch facilities, the agency has now consolidated operations into 4 facilities and will continue these operations until their new facilities are competed, with construction beginning in 2018.

Representative Statistics:

- 844,000 population served
- 19 Law Enforcement agencies
- 20 Fire/EMS agencies
- 226 total personnel (includes 39 in the Records unit)
- 952,471 incoming calls in 2015
    - 531,919 Emergency (56%)
    - 420,552 Non-Emergency (44% of total volume and 79% of the Emergency call volume)

Valley Communications Center

Valley Communications Center provides 9-1-1 and emergency communications services for the southern half of King County, WA. This consolidated organization began over 40 years ago with four cities and the original partners. It has grown over the years to add neighboring cities and fire districts and has undergone two facility replacement projects during that time period.

Representative Statistics:

- 697,000 population served
- 9 Law Enforcement agencies
- 12 Fire/EMS agencies
- 130 total personnel
- 593,368 incoming calls in 2015
    - 412,827 Emergency (70%)
    - 180,541 Non-Emergency (30% of total volume and 44% of the Emergency call volume)

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 6 – LAKE COUNTY STARCOMM USERS AS OF DECEMBER 2016

Municipality / District	Users
Antioch	Police
CenCom dispatch	Available at dispatch consoles
City of Park City	Police
City of Waukegan	All departments (PD, FIRE, PW)
Countryside Fire Protection District	vhf with some STARCOM capabilities
County of Lake	All Departments
FoxComm Dispatch	Available at dispatch consoles
Glenview Dispatch	Available at dispatch consoles
Lake County ETSB	Staff
Lake County Forest Preserve District	Ranger Police
Lake Villa	Police
Lindenhurst	Police
Village of Antioch	Police
Village of Barrington	Police
Village of Hawthorn Woods	Police
Village of Island Lake	Police
Village of Killdeer	Police
Village of Lake Zurich	Police and Fire (fire has VHF also)
Village of Lakemoor	Police
Village of Libertyville	Police
Village of Lincolnshire	Police
Village of Mundelein	Police
Village of Tower Lakes	Police
Village of Vernon Hills	Police
Village of Wauconda	Police
Wauconda Fire District	Fire has both STARCOM and VHF

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

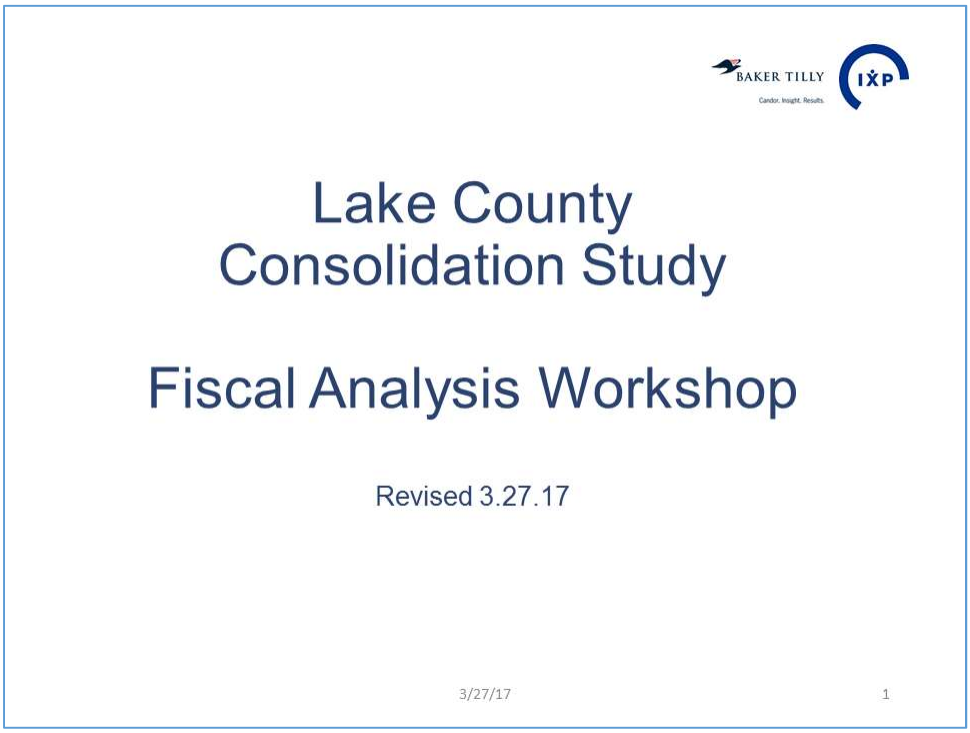
APPENDIX 7 – CURRENT COST ESTIMATIONS

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 8 – STAFFING MODEL DETAILS

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 9 – MATERIAL FROM PHASE 6 FINACIAL ANALYSIS PRESENTATION TO LAKE COUNTY 911 COMMISSION ON 3/23/2017



USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Explanation of Revisions to Slides

- Overall the information presented was correct with the exception of a slight change on the chart shown on slide 6, due to some last minute changes made based on the last review sessions. We will update the numbers in the narrative, in our opinion they are not material. Specifically the numbers change as follows: Net Income Cost: $18,288,261(new) versus $18,355,046 and a savings impact of $2,396,019(new) versus $2,329,234.
- The confusion regarding slide 6 can be explained by taking a closer look at the detail from the model workbooks - the summary tab 1 from both which was intended to be included as Appendix 8. The confusion we believe is that those at the session were trying to get the columns to sum – when in fact, the calculation is the difference between current state and each of the models.
- To ensure this confusion does not happen in the future we suggest the following – 1) add the detail from the workbooks in the appendices; and 2) add an explanation to the chart indicating that it is a summary and NOT a summation of figures. We also would like to see the cost estimations spreadsheet included in Appendix 7 as intended.
- The issue of net cost discussed at the beginning of our presentation relative to the $15m in net cost current operations was we agree confusing. It can be explained in this way – the net current costs of operations (prior to any estimated costs ($684k) or inflationary adjustments) is $15m. Once these adjustments are applied – the net cost is $20.64m which is then the number used for comparison between current and proposed future states.

3/27/017 2

Key Objectives of the Consolidation Study

Overall	Fiscal Analysis
Explore feasibility of consolidating all or some of the existing PSAPs serving Lake County	Determine the estimated costs, both one time and recurring associated with each model.
Provide models that include operation of a single consolidated PSAP and multiple consolidated PSAPs that provide inherent and operational redundancy.	Identify the overall financial requirements to create the models examined.

3/27/17 3

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Overview of the Current State

- 21 ETSBs in Lake County + 4 in neighboring counties
- 16 Primary & Secondary PSAPs in Lake County + 4 in neighboring counties
- 235.5 Employees supporting Lake County Dispatching
  - 11 Directors/Deputy Director/Center Managers
  - 2 Admin/Tech/GIS
  - 25 Supervisors
  - 197.5 Telecommunicators (full-time & part-time)
- 11 Separate CAD systems from 7 vendors in use; 13 Separate 911 Telephony systems of various ages
- Surcharge Revenue = $6.8 million
- Total Operation Costs = $25.4 million (net current cost (prior to inflationary adjustments and estimated costs = $15 million)

3/27/17 4

Consolidation Models Examined

	Semi-Consolidated A transition stage where the fully consolidated management and organizational structure is put in place with shared systems and operations. Allows staffing reductions that begin to approach the level of efficiency that will ultimately be achieved in the Fully Consolidated model.	**Fully Consolidated** Single organization and governance structure operating two dispatch centers that each provide redundancy and diversity for the other.
Staffing	228.1 FTEs	192.3 FTEs
Technology Investment	Replace/Upgrade: 9-1-1 & Admin Telephony, CAD/RMS/Mobile, Radio, & Other Technology Systems; Network Backbone; Administrative servers, racks, KVM, etc.; Supplement: Logging & Recording, Alarm Board & Video Integration systems; Warning Siren Interface; Admin PCs, printers, FAX, Licenses, etc.	Replace/Upgrade: 9-1-1 & Admin Telephony, CAD/RMS/Mobile, Logging & Recording, Radio, Alarm Board, Video Integration, & Other Technology Systems; Network Backbone; Warning Siren Interface; Administrative servers, racks, KVM, etc.; Admin PCs, printers, FAX, Licenses, etc.
Facilities	9 of the existing PSAPs Office site	Headquarters facility Second facility
Development	None	Building, Land, Soft Cost and Contingencies

5

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Potential Cost Savings – Bottom Line

Consolidation Option	Projected Overall Savings
Fully Consolidated	$2.3 million annually
Semi-Consolidated	$.4 million annually

Key Assumptions:

- Revenue surcharge amount – no net increase
- Significant change in staffing model – semi consolidated model
- Capital and acquisition costs are annualized

3/27/17 6

Operational Cost Summaries

The below indicates the overall cost decrease realized from each of the proposed models. The numbers at the bottom show the variance between not the summation of the figures above. See the Appendices for the details.

	Current	Semi-Consolidated	Fully Consolidated
Total Surcharge Revenue	$6,832,833	$6,832,833	$6,832,833
Total Operating Expense	$25,419,166	$25,995,591	$22,656,038
Total Staffing Expense	*$19,858,072*	*$21,464,363*	*$17,367,777*
Total Annualized Capital Expense	$2,097,948	$1,793,208	$1,887,827
Net Income (cost)	($20,684,281)	($20,256,509)	($18,288,261)
Cost Increase (Decrease)		($427,771)	($2,396,019)

3/27/17 7

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Cumulative Impact on Expenditures Compared to Current State

	Semi-Consolidated	Fully Consolidated
Total Compensation	Increase	Decrease
Total Operating Expense	Increase	Decrease
Routine Capital Expenditures (currently approximately 7.6% of total annual expenditures)	Decrease	Decrease
Site Acquisition and Development	None	New Facilities

The most significant impacts on costs as the result of a consolidated operation are the following:

- Decreased staffing expense due to economies of scale in consolidated operations
  - ($2.5M – Fully Consolidated only)
- Avoidable costs for capital equipment and maintenance
  - ($2.3M – Fully Consolidated; $.7M Semi-Consolidated)
- Required investments in site acquisition and development
  - ($3.0M – Fully Consolidated only)

3/27/17 8

Staffing– Detailed Impact

	Current State	Semi Consolidated	Fully Consolidated
Staffing	235.5	228.1	192.3
Salaries and Wages	$14,314,772	$14,701,619	$11,895,738
Overtime	$ 889,462	$ 1,176,130	$951,659
Benefits	$4,653,838	$5,586,615	$4,520,380
Total Compensation	$19,858,072	$21,464,363	$17,367,777
Cost Savings (Increase)	-	($1,606,291)	$2,490,296

- Greater salary expenses under the semi consolidated model are a result of:
  - market-based compensation levels for technically proficient staff
  - 20 Management and Administrative staff as well as 9 Communication Center Managers that aren't reflected in the current state, which only has 13 personnel in these kinds of roles
- Benefits for the consolidated models are based upon current Lake County levels within public safety, and in comparison to other municipal PSAPs.

3/27/17 9

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Appendices

BAKER TILLY
Candor. Insight. Results.

Lake County Dispatch Consolidation - Model 1
Fully Consolidated Cost Summary

Description: The Fully Consolidated Cost Summary illustrates cost estimates for the "desired future state," which includes a single governance structure operating two dispatch centers that each provide redundancy and diversity for the other (i.e., ability to handle a variety of calls, such as police, alarm, fire, EMS, etc.).

	Fully Consolidated	Current Structure	Cost Increase (Decrease)	Assumptions/notes
Revenues:				
Wireline (includes VOIP) surcharges	$ 2,811,636	$ 2,811,636	$ -	AA
Wireless surcharges	4,021,197	4,021,197	-	AA
Total Surcharge Revenue	**$ 6,832,833**	**6,832,833**	-	
Expenses:				
Salaries and Wages	11,895,738	14,314,772	(2,419,035)	DD
Overtime	951,659	889,462	62,197	8%
Employee Benefits	4,520,380	4,653,838	(133,458)	DD
Total Staffing Expense	**17,367,777**	**19,858,072**	**(2,490,296)**	
Technology/ Maintenance/ CAD & other Licensing Fees	3,418,095	3,885,182	(467,087)	
Administration and Professional Development	297,000	162,752	134,248	
Office Equipment and Supplies	233,000	379,316	(146,316)	
Insurance, utilities, and rent	438,439	333,092	105,347	
Professional Services	584,860	591,115	(6,255)	
Other Operating Costs	316,867	209,637	107,230	
Total Operating Expense	**22,656,038**	**25,419,166**	**(2,763,128)**	
Net Operating Income (Cost)	**(15,823,205)**	**(18,586,333)**	**(2,763,128)**	
Ongoing Capital	1,887,827	2,097,948	(210,120)	BB
Avoidable Costs for Capital & Maintenance-Annualized	(2,308,176)	-	(2,308,176)	
Site Acquisition and Development	2,885,405	-	2,885,405	CC
Total Capital Expense	**2,465,056**	**2,097,948**	**367,108**	
Total Operating and Capital Expense	**25,121,094**	**27,517,114**	**(2,396,019)**	
Net Income (Cost)	**$ (18,288,261)**	**$ (20,684,281)**	**$ (2,396,019)**	

Assumptions
AA See p2 for notes for current state. For future state, assumed that surcharges would be constant under current legislation.
BB Capital Expenses for Model 1 are presented as the sum of the monthly financing payments for one year.
CC Site Acquisition and Development Expenses are presented as the sum of the monthly financing payments for one year. This includes financing expenses for building construction, soft costs and contingencies, and land acquisition. It is assumed that the total cost of Site Acquisition and Development ($56,346,744) will be financed over 30 years and not paid up front.
DD Salary and benefit data was originally accumulated with primarily 2015 information. Increased by 2.5% to be comparable to 2016 salary estimates used for the models.

3/27/2017 10

Appendices (cont.)

BAKER TILLY
Candor. Insight. Results.

Lake County Dispatch Consolidation - Semi-Consolidated
Model 2 Cost Summary

Description: The semi-consolidated model illustrates cost estimates of spreading the workload across nine of the existing PSAPs and renting a separate office site that would house the management and back office support staff of a consolidated organization.

	Semi Consolidated	Current Structure	Cost Increase (Decrease)	Assumptions/notes
Revenues:				
Wireline (includes VOIP) surcharges	$ 2,811,636	$ 2,811,636	$ -	AA
Wireless surcharges	4,021,197	4,021,197	-	AA
Total Surcharge Revenue	**6,832,833**	**6,832,833**	-	
Expenses:				
Salaries and Wages	14,701,619	14,314,772	386,846	CC
Overtime	1,176,130	889,462	286,668	8%
Employee Benefits	5,586,615	4,653,838	932,777	CC
Total Staffing Expense	**21,464,363**	**19,858,072**	**1,606,291**	
Technology/ Maintenance/ CAD & other Licensing Fees	3,084,570	3,885,182	(800,612)	
Administration and Professional Development	317,500	162,752	154,748	
Office Equipment and Supplies	154,500	379,316	(224,816)	
Insurance, utilities, and rent	160,708	333,092	(172,384)	
Professional Services	616,950	591,115	25,835	
Other Operating Costs	197,000	209,637	(12,637)	
Total Operating Expense	**25,995,591**	**25,419,166**	**576,425**	
Net Operating Income (Cost)	**(19,162,758)**	**(18,586,333)**	**576,425**	
Ongoing Capital	1,793,208	2,097,948	(304,739)	BB
Avoidable Costs for Capital & Maintenance-Annualized	(699,457)	-	(699,457)	
Site Acquisition and Development	-	-	-	
Total Capital Expense	**1,093,751**	**2,097,948**	**(1,004,197)**	
Total Operating and Capital Expense	**27,089,342**	**27,517,114**	**(427,771)**	
Net Income (Cost)	**$ (20,256,509)**	**$ (20,684,281)**	**$ (427,771)**	

Assumptions
AA See p2 for notes for current state. For future state, assumed that surcharges would be constant under current legislation.
BB Capital Expenses are presented as the sum of the monthly financing payments for one year.
CC Salary and benefit data was originally accumulated with primarily 2015 information. Increased by 2.5% to be comparable to 2016 salary estimates used for the models.

3/27/2017 11

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

APPENDIX 10 – COMMENTS RECEIVED FROM LAKE COUNTY 911 TASK FORCE

Location	Comment	Response
General	The document should reflect major dispatch center realignment to date – this has a significant impact on costs and logistics. Rolling the plan to stakeholders with anything less is counterproductive.	There was unanimous acceptance by the Lake County team as far back as August 2016 that the report reflects data reported as of March 2016. There was a second collection process initiated on 9/1/16 that resulted in some "new" data being received as well as updated call volumes. Any new data that was received during the September timeframe was incorporated into the report.
Page 19, Paragraph 3	What is hard data related to keeping a lobby window open? Then apply cost / benefit to staffing.	Leave behind duties, including Lobby window staffing, are completely arbitrary at this point. Decisions will have to be made by each PSAP/agency during the implementation phase as they prepare to consolidate.
Page 25, Paragraph 1	Consideration should be given to also consolidating warning sirens as a measure of county-wide public safety under emergency management. Add Mass Emergency Notification to this paragraph too. Significant cost reduction here.	Consideration for consolidation of warning siren systems and practices is a good idea, as is some form of Mass Notification system, but those are not specifically driven by Dispatch consolidation. They could be done in the absence of Dispatch consolidation, or conversely, Dispatch consolidation could take place and individual communities could still operate their own separate warning siren systems. If anything, consolidation of Dispatch provides an opportunity to begin discussions about further shared services such as warning sirens or Mass Notification, which is what is expressed in the text of the report.
Page 42-47	Careful consideration should be given to 3rd party / contract service for some HR / accounting functions in the organization. An org chart would be a helpful visual.	We agree that this is a very important implementation question to be addressed and investigated as the management team is being formed. This factor was considered in the cost estimates derived to capture current costs.
Page 43, Paragraph 5	Confidential Secretary? How about Executive Admin Assistant?	Correction made
Page 49-56	A strategy needs to be included for the initial semi-consolidation for a back-up / emergency operations plan.	There will be a period of time, between "now" and when the migration to only 9 centers is completed and all are on a common 9-1-1 phone system and CAD system, where current PSAP-to-PSAP backup relationships will need to be sustained, or new relationships established. Once they are all on common systems, everyone can back each other up.
General	There is little / no reference to recognized standards that benchmark dispatching performance; such as NFPA/APCO/NENA	These standards are referenced as they pertain to Call Handling. However, there are no other standards that are related to "Consolidation" specifically.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT

Page 59, Table 11	Several major elements of data were not provided by agencies leaving a potential gap in calculating other elements of the plan. (Cost/staffing)	This will be addressed during the meeting with the taskforce as great lengths were taken to estimate costs that were not provided. Again, once the model and actual participants are defined as part of the implementation phase, this is an area that will need refinement and additional analysis which is typical for any consolidation situation.
Page 99	Perhaps the American City & County Municipal Cost Index (MCI) should be utilized as an inflation factor instead of the cpi.	There are several cost indices available for use in projecting potential inflationary impacts on future costs. Given that this consolidation effort is at the feasibility stage, we chose what we feel to be the most conservative and most commonly recognized of the two indices (CPI or CCI) typically used to estimate future cost of capital projects. We agree that considering the application of the MCI may have some merit once the full scale of the consolidation is known and the implementation phase of the project commences. This inflationary factor was approved by the Steering Committee.
Tables 3, 4 & 10 Pages 10, 13, 35	Multiple comments regarding the representation of Wauconda data	The Wauconda PSAP closed on May 11, 2016 which is after the data collection period, however the document was amended with footnotes to acknowledge the fact.
Table 5, Page 28	Lake Zurich has ~~10~~ **11** FT TCs	This 11th FT T/C was hired in May 2016 which is after the data collection period.
Table 6, Page 30	Lake Zurich - Maximum Sick Lead Accrual is ~~240~~ **1920** hour	Correction made.
Table 10, Page 35	Lake Zurich - Total Estimated Area ~~1800~~ **2,600** Estimated Population Served ~~55,000~~ **76,100**	Correction made.
Appendix 4 Page 4-42	Lake Zurich - The main communications room is currently equipped with ~~four~~ **five** large console furniture positions that are arranged in a bullpen configuration.	Correction made.
	Population counts do not match, i.e. tables on pages 10 & 11 do not match the population numbers in the table on page 35.	Table 3 on Page 10 & 11, represents the populations covered by Law Enforcement only. Which is generally less than the total population served by a PSAP as represented in Table 10.

USE OR DISCLOSURE OF DATA IS SUBJECT TO THE RESTRICTION
ON THE TITLE PAGE OF THIS DOCUMENT