MissionCriticalPartners
Because the Mission Matters

Emergency Dispatch Performance Audit

Final Report

PREPARED FEBRUARY 2020
FOR CITY OF LEE'S SUMMIT, MISSOURI

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Executive Summary

The City of Lee's Summit, Missouri (City or Lee's Summit) engaged Mission Critical Partners, LLC (MCP) to perform an audit of the City's Emergency Dispatch organizational structure, resources, processes, policies, and procedures. To accomplish this task, MCP completed a comprehensive assessment of the public safety communications services within the City. MCP is pleased to provide this report, *Emergency Dispatch Performance Audit*, which presents the findings of the analysis and opportunities to enhance public safety communications capabilities.

The Lee's Summit Police Department (LSPD), Lee's Summit Fire Department (LSFD), and Information Technology Services Department (ITS) served as the core team for this project, with representatives from each stakeholder group. Additional input was sought from regional agencies who contract with LSFD for dispatch services and from other regional public safety answering points (PSAPs) of similar size or makeup. Each representative was selected by the leadership of his or her respective organization.

The 9-1-1 environment across the nation is rapidly changing and PSAPs, including LSPD and LSFD, are cognizant of the pressures that are often associated with change. LSPD and LSFD have undergone operational changes in the past, including leadership, which have affected all stakeholders to varying degrees. The City sought a comprehensive study to provide an objective view of 9-1-1 operations and explore the potential for consolidating its two PSAPs to provide for enhanced capabilities for the public and first responders.

For each agency, MCP conducted an analysis using national standards, best practices, and Missouri legislation, and used its industry knowledge and experience to identify recommendations for consideration to improve the overall quality of service that is provided to the citizens, visitors, and first responders of Lee's Summit.

This report, which takes a holistic approach, is culminated in a graphical representation of the current state based on the multivariate data collected. MCP's Model for Advancing Public Safety^{SM} (MAPS^{SM}) uses pre-determined levers to provide a snapshot of the current environment compared to national standards and best practices. The graphical representation also shows a predicted future environment, understanding that it can be achieved if recommendations are implemented, changes are made, or effective efforts are maintained. The factors described below were examined.

Organizational Structure – Structure is conducive to providing opportunities for professional development and career advancement within the span of control.

Operational Configuration – Operational configuration reduces agency liability as it relates to staffing.

Staffing – Authorized full-time equivalents are within 5 percent of the staffing report results.

Training – Training meets any state standards; state standards align with or exceed the minimum training guidelines from the National 911 Program and other national training standards (e.g., Association of Public-Safety Communications Officials-International [APCO]).

Quality Assurance – Quantity of quality assurance/quality improvement (QA/QI) reviews as well as components of review meet or exceed national standards (or vendor standards for certain products).

Leadership and Planning – Expectations of roles, responsibilities, duties, and professional conduct are well-defined and exhibited.

Performance Management – Call handling statistics (answering and processing) meet or exceed applicable national standards from the National Emergency Number Association (NENA) and/or the National Fire Protection Association (NFPA).

Technology – Technology contributes to efficiency of operations and does not inhibit productivity.

As shown in Figures 1 and 2, between both LSPD Communications and LSFD Communications, based on national standards and best practices, there is significant room for improvement in seven of the eight MAPS factors, including organizational structure, operational configuration, staffing, training, quality assurance, leadership and planning, and technology. However, for the most part, the organizations are on the right path, motivated, and, as noted by the current initiatives, positioned to improve service delivery. The recommendations overall should lend themselves well to support the current activities and future 9-1-1 planning efforts in Lee's Summit.

Figure 1: LSPD MAPS

Figure 2: LSFD MAPS

Except for the significant pay disparities, it is MCPs position, based on the information received, that personnel management could be a significant factor as it relates to current management personnel in a co-located or consolidated PSAP. The relationship between the two PSAPs does require improvement, and additional staffing is warranted. The success of a joint operations effort in the form of a co-location or consolidation will hinge on the proper selection of management.

Proper management is important for every 9-1-1 system, whereas administrative oversight and governance, helping to set municipal policy, and guide relationships and set expectations, must be in place to enable management to allocate funds, prioritize operations, and generally carry out a PSAP's mission and vision.

The management, administrative oversight, and governance of a PSAP 9-1-1 system are separate issues. Management involves day-to-day PSAP operations, administrative oversight involves policy that establishes and is accountable for overall municipal system performance, while governance, generally in a multi-jurisdiction consolidated environment, involves an even higher level of oversight.

Stakeholders requested a comprehensive review of operations in order to have objective information with which to determine a path forward for more effective communication services and to improve 9-1-1 call processing and dispatch throughout the city. As it relates to key elements of a successful initiative and serves to assist decision-makers in recommending the best model for public safety communications in Lee's Summit, MCP identified strengths and challenges along with numerous opportunities for improvement regardless of a decision to move toward a form of joint operations or to maintain the status quo.

Essential areas of improvement include proper selection of management, adequate levels of staffing, both telecommunicators and support staff, and clear administrative oversight that enhance the ability to resolve conflicts during both critical and non-critical times so that the system functions efficiently when it really matters.

There are many national, regional, and local changes facing the 9-1-1 community, which are driving the creation of a variety of management and governance models to achieve and sustain successful consolidations. However, there is no perfect model. Like any relationship, each takes commitment and hard work to be successful. Each relationship will have its good days and trying days but can weather a storm when it occurs if the partners have worked together in between those times.

The most highlighted issues that can positively impact the success of a potential fully integrated joint operations effort in Lee's Summit is proper selection of management, adequate levels of staffing—both telecommunicators and support staff—and clear administrative oversight. It is important to remember that true success in a consolidation effort only can be achieved when members establish trust, engage in constructive conflict, are committed to the success of the organization, hold each other accountable, and are focused on the results.

1 Background

The City of Lee's Summit (City or Lee's Summit), situated in the southeastern portion of the Kansas City, Missouri, metropolitan area, encompasses 65 square miles. The City limits are mostly in Jackson County, with a small portion of the southern tip of the city in Cass County. The United States (U.S.) Census Bureau estimated the city's 2018 population at 98,469; this represents a 7.8 percent increase in population since the 2010 census.[1] It was reported during data collection that two very large tracts of land owned by Property Reserve, Inc. will become available for development over the next one to two years, providing for a potentially rapid population increase in relation to past trends.

Figure 3: Lee's Summit City Limits

Between 2010 and 2018, Missouri's statewide population grew by 2.3 percent.[2] Jackson County's population is expected to increase by an estimated 2.2 percent to approximately 714,467 by 2030.[3]

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[1] "U.S. Census Bureau QuickFacts: Lee's Summit city[*sic*], Missouri." Census Bureau QuickFacts. https://www.census.gov/quickfacts/fact/table/leessummitcitymissouri,MO/PST045218.
[2] "U.S. Census Bureau QuickFacts: Missouri." *Census Bureau QuickFacts*. www.census.gov/quickfacts/MO.
[3] "Missouri Population Projections - by County, Age, and Sex: 2000 to 2030." *Office of Administration Division of Budget & Planning*. https://oa.mo.gov/budget-planning/demographic-information/population-projections/2000-2030-projections.

Conversely, based on U.S. Census data, since 2000 the population of Lee's Summit is growing at an average of 2.9 percent each year.

A 2012 Jackson County development plan indicated that between 2005 and 2035, Jackson County as a whole could experience an approximate 15 percent growth, while Lee's Summit could see an almost 60 percent population increase during that same time frame; shown in Table 1.

Table 1: Jackson County Population Projections[4]

	2005	2035	Population Change	
			#	%
Jackson County Estimate	683,239	786,859	103,620	15.17%
Lee's Summit Estimate	85,642	115,279	29,637	34.61%

An increase in population will necessitate regular increases in public safety capacity to provide law enforcement and fire rescue services to an expected level. Consequently, appropriate increases in public safety communications will also be necessary to support law enforcement and fire rescue operations. The population increase could be further compounded if the development of land, which is currently restricted by Property Reserve, Inc., does come to fruition.

The City engaged Mission Critical Partners, LLC (MCP) on behalf of itself, the Lee's Summit Police Department (LSPD), and the Lee's Summit Fire Department (LSFD) to complete a comprehensive assessment of public safety communications services within the city, specifically evaluating the feasibility of consolidating the LSPD and LSFD public safety communications operations into a single operational entity.

Consolidation means many things to many people. Consolidation efforts typically result in one organization, in one facility, utilizing common systems and serving multiple response agencies and/or jurisdictions.[5]

In 2010, the Federal Communications Commission (FCC) created the Communications Security, Reliability and Interoperability Council (CSRIC) to provide ongoing recommendations to the FCC on issues such as

[4] "Building a Vision Together: Jackson County Development Plan." (2012) Jackson County, Missouri. https://www.jacksongov.org/DocumentCenter/View/768/Development-Plan-PDF?bidId=.
[5] "Key Findings and Effective Practices for Public Safety Consolidation." Federal Communications Commission, Communications Security, Reliability and Interoperability Council. https://transition.fcc.gov/pshs/docs/csric/CSRIC-1A-Report.pdf

optimal security and reliable communications for public safety answering points (PSAPs). One of the reports produced by CSRIC Working Group 1A is the *Key Findings and Effective Practices for Public Safety Consolidation*.[6] This document provides key best practices for potential PSAP consolidations. The report is based on the experiences of multiple PSAPs and states around the country that have undergone the process of consolidation, as well as the knowledge of working group members themselves. As part of the report process, these individuals were interviewed to determine their experiences. Some of their responses regarding to the process of consolidation are below.

- Arlington, Virginia: Improving efficiencies were met by providing a centralized dispatch service through common technology platforms.
- Dakota County, Minnesota: Improving efficiencies were met by providing a centralized dispatch service through common technology platforms.
- Metropolitan Emergency Services Board (MESB) Minneapolis and St. Paul, Minnesota: The MESB consolidation supports public safety elements provided to a region of counties. The regional approach provides greater influence in dealing with the State, the 9-1-1 service provider, and stakeholders in general and is positioned for the transition to Next Generation 9-1-1 (NG9-1-1).
- State of Washington: The State of Washington found a trend of technology in 9-1-1 is toward systems that demand a greater degree of consolidation to be successful.[7]

Additional information regarding the process of PSAP consolidation and associated best practices can be obtained by reading the CSRIC report. However, for those not familiar with the aspects of a PSAP consolidation, *9-1-1 Magazine* published an article that provides foundational information. The article provides information regarding different forms of joint operations—consolidation, co-location, and shared services—in a simplified and easy to understand manner.

> ***Full consolidation:*** *All existing dispatch services are moved to a single dispatch center with a single management structure. A consolidated center requires diverse centers to be brought together under one management team with common operating platforms. While full consolidation often has the largest start up costs (initial investment) it typically provides the greatest long-term cost savings.*
>
> *A consolidated center offers many advantages:*
> - *employs common electrical, HVAC, and emergency power subsystems*
> - *employees may be cross-trained*
> - *employee schedules may be combined for added personnel efficiency*
> - *flexible arrangements may amplify the commonalties in fire and medical dispatch*
> - *better interagency information sharing*
> - *elimination of duplicate services*
> - *opportunities to pool financial resources to fund system upgrades*

[6] Ibid.
[7] Ibid.

- *increased ability to communicate between agencies*
- *more efficient dispatch collaboration for fire and EMS*
- *potentially, a more cost effective overall solution*

Several technical issues that must be addressed with a full consolidation: 911 equipment, administrative telephones, Computer Aided Dispatch (CAD), Records Management System (RMS), and recording equipment. The 911 equipment must be sized for the consolidated dispatch operation. The telephone workstations themselves must also accommodate the larger number of 911 and non-911 lines.

A single CAD … operating platform for the consolidated 911 operation is a necessity. Any new CAD must feed multiple records management systems. This single CAD must be able to upload into the various records management systems and be sophisticated enough to handle the call volume and dispatch functions. A consolidated center requires a single recording system capable of handling the consolidated load. These factors necessarily limit the number of CAD vendors, RMS vendors, and equipment vendors available because smaller vendors are not able to handle the increased capacity [sic]

Co-located consolidation: *In this scenario, multiple dispatch centers are moved to the same physical location, but maintain separate operations. Often, this type of consolidation will bring together all of the agencies into one center located in the same building. The different operations share some of the infrastructure costs, but they remain separate in their dispatch responsibilities. This type of configuration is often driven by diverse dispatch needs in the individual communities.*

In a scenario where 911 centers are co-located with separate operations, there is the potential (though not the requirement) to share some common equipment, such as the CAD system, RMS and radio equipment and maintain multiple 911 switches. The CAD and recorder systems in this scenario may also remain separate. The most challenging issues, however, usually involve personnel: parallel staffing for each agency, with multiple, separate schedules, pay scales, leave policies, and supervisors may prove inefficient.

Shared services: *The major services are shared among multiple agencies. Typically, this includes the CAD, 911 Customer Premise Equipment (CPE) Automatic Number Identification / Automatic Location Identification (ANI/ALI), logging recording, Geographic Information System (GIS) mapping, and possibly the RMS system. In some cases, it may also be preferable to share radio system resources. In this scenario, critical systems are maintained in a single location, and all dispatch centers access them via an IP network. This environment requires redundant, reliable high-speed connectivity between the shared services location and each dispatch center.*

Additionally, the agencies may agree to use a common CAD, RMS and radio console vendor. In this type of shared services environment, many of the dispatch centers may maintain their own CAD and RMS servers but choose a configuration that facilitates a common operating picture, which enables them to see all emergency response assets. A key advantage of this approach is

the opportunity to share equipment costs and to reduce purchase and maintenance costs. In addition, shared technical support may increase interoperability and operational awareness.

One disadvantage of the shared services consolidation may be duplication of personnel and management, but our experience is that personal preferences and political realities may not support consolidation beyond this shared services approach.[8]

This report presents the findings of the analysis and opportunities to enhance public safety communications capabilities.

2 Methodology

MCP focused on eight elements, shown below, with special attention towards how emergency response outcomes can be improved through different PSAP joint operations models.

Figure 4: Report Focus Areas

[8] AECOM Consolidated Dispatch Centers. 9-1-1 Magazine, June 2011.

This comprehensive study of the operations and organization of LSPD Communications and LSFD Communications spanned several months. During that time, MCP had the opportunity to collect data, thoughts, and ideas in several different manners, shown in Figure 5, including MCP's proprietary Model for Advancing Public Safety℠ (MAPS℠) program that helps to identify strengths and risks within the ecosystem and provides specific recommendations.

Interviews with Stakeholders

- MCP was on-site for three consecutive days speaking with operations, management, executives and city officials, and contract agencies who wished to share ideas, thoughts, and/or concerns.
- Eleven focus group sessions were conducted that included a total of 43 individuals.
- Following the on-site, MCP continued to obtain additional data from staff members.

Discussions with Administration

- MCP worked with the administration of LSPD and LSFD to understand their priorities and responsibilities on a muncipal level.

Data Collection

- MCP met with communications leadership and support staff from both centers to gather data on staffing, call and incident volumes, incident types, anciliary duties, operations, and policies and procedures.

Operational Observations

- MCP visited both communications centers and spoke with supervisors, call-takers, and dispatchers and observed operations as staff processed calls for service.

Data Analysis

- Data and information was analyzed against industry standards and best practices, which served as the baseline.

Model for Advancing Public Safety (MAPS)

- MAPS is designed to help agencies quantify their risks in the public safety ecosystem and convert them into opportunities.

Figure 5: Methodology

Findings, analysis, and recommendations are identified for the eight elements evaluated.

Findings and Analysis

The findings portion contains information garnered through data collection, research, and observations; it generally details the current state. The analysis portion is the analytical portion of the study that measures findings to national standards, best practices, regulations found in Missouri Revised Statutes (MRS), and/or MCP's industry experience and knowledge. The analysis was also made based on findings, recommendations, and/or legislative requirements of the Missouri Department of Public Safety, National

911 Program Office, National Emergency Number Association (NENA), Association of Public-Safety Communication Officials-International (APCO), Mid-America Regional Council (MARC), and national public safety communications standards setting bodies (See Appendix C).

Recommendations

The recommendation sections are designed to allow Lee's Summit stakeholders to maintain and/or increase its resources to improve service to the community. Each recommendation is presented with a desired outcome.

A cumulated version of the recommendations, found in Appendix A, is designed to stand alone from the report as a daily reminder of the goals and progress that is being made to implement the desired recommendations. Here, each recommendation is identified and highlights outcomes, metrics, a report and goal reference, and an owner. This approach allows City and departmental leadership to easily identify priorities and create a strategic plan to implement the desired recommendations. Table 2 describes the cumulative recommendations table.

Table 2: Prioritized Recommendations Table Outline

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
The recommendation is the end goal the PSAP should be trying to achieve	This is the expected outcome	This is what should be achieved during implementation	This is the section of the report to refer for further information	This is who should own the recommendation and ensure it happens

3 Organizational Structure

Management, administrative oversight, and governance of a 9-1-1 system are separate issues. Management involves day-to-day PSAP operations, administrative oversight involves policy that establishes and is accountable for overall municipal system performance, while governance, generally in a multi-jurisdiction consolidated environment, involves an even higher level of oversight. These factors become even more important as the nation moves away from analog technology and towards an Internet Protocol (IP)-based NG9-1-1 environment where consolidations no longer necessarily involve being physically located in the same facility; virtual consolidation models focus on sharing services. Proper management is important for every 9-1-1 system. As a matter of municipal government, administrative oversight typically is innate in a single jurisdiction 9-1-1 system but cannot be assumed when the system is subject to a primary/secondary PSAP structure. In the later scenario, the importance of administrative oversight is more aligned with the need for governance in a multi-jurisdictional 9-1-1 system structure

which must be in place to enable management to allocate funds, prioritize operations, and generally carry out a PSAP's mission and vision.

3.1 Findings and Analysis

3.1.1 Organizational Structure

Lee's Summit has two PSAPs: LSPD Communications and LSFD Communications. LSPD Communications is the primary PSAP for all incoming 9-1-1 calls, handling requests for law enforcement services, while transferring requests for fire, rescue or emergency medical services (EMS) to LSFD Communications. LSFD Communications is a secondary PSAP not only for the City but also serves as a secondary PSAP for seven fire protection districts.

Communications positions, roles, and organizational structure of both communication centers are clearly defined (See Appendix B). Position descriptions reviewed are comprehensive—including expected span of control—and consistently formatted based on the City of Lee's Summit Human Resources (HR) requirements.

LSPD Communications provided three position descriptions: Communications Specialist, Lead Communications Specialist, and Communications Supervisor. The descriptions were last updated in October 2018. Each position description includes a new "Job Description Review Acknowledgement" signatory page. Although unused up to this point, the City intends to use this page in the future, which will provide employees an important opportunity to seek clarity about the expectations of the position.

LSFD Communications provided two position descriptions: Communications Specialist and Communications Supervisor. The descriptions were last updated in 2016. During discussions, there were several references to Lead Communications Specialists at LSFD Communications; however, a position description was not provided for this role.

3.1.2 Promotional Requirements

In addition to routine requirements, the descriptions include the minimum qualifications, knowledge, skills and abilities, principal working relationships for each role that addresses promotional requirements. Clearly articulating these requirements helps staff acquire and prepare for promotions and helps management identify staff with the skills associated with supervision.

3.1.3 Career Advancement

The organizational structures at both communications centers are flat, with very few opportunities for career advancement. The limitations on upward career advancement is not always a reflection on the administration but in many cases an inherent drawback of small PSAPs. However, staffing is so limited at both centers that training for career advancement for either upward advancement or specialized assignments is extremely limited. Administrators of both communications centers report that a plethora of

training is available through MARC; however, due to minimal staffing levels personnel are typically not granted permission to attend training.

LSPD Communications staff are not currently under any labor organizations; however, an effort is underway from the Communications Workers of America (CWA) to organize positions. LSFD Communications are covered under the International Association of Fire Fighters (IAFF). This is important to note because results of the efforts at LSPD Communications and any negotiations could impact the organization of the unit, including further constraining an already flat organizational structure with limited career advancement opportunities, which may impact an employees' decision to apply when opportunities for career advancement arise, which in turn impacts retention.

To highlight the challenges that staffing plays in career advancement, because of the short staffing, although there is a desire, there has not been any work toward establishing a leadership development plan at LSFD. LSFD does promote attendance at training programs offered by MARC, Government Training Institute (GTI), and 9-1-1, and attendance of conferences, when available. For example, this year they sent three Communications Specialists to the Missouri Telecommunicator Conference. There has been a limited amount of work done to establish a core set of classes that, over time, all Communications Specialists will attend but again these activities are limited because of staff availability.

3.1.4 Leadership Training

With staffing levels so low at both communications centers, training for newly promoted lead supervisors is also extremely limited. There are several leadership training courses offered annually by MARC, but there are not enough employees at either PSAP to enable shift relief so supervisors can attend these courses.

3.1.5 Management, Administrative Oversight, and Governance

From a management perspective, while both communications centers operate independently of each other administratively, each prescribes to a traditional para-militaristic hierarchy. Beyond the Communications Supervisor level, which would typically be a manager at PSAPs with comparable call volume, the reporting structure is to uniformed police and fire rescue personnel. Appendix B contains the organizational charts for the City of Lee's Summit, LSPD, and LSFD.

There are a couple of areas that should prompt a high level of concern at the executive leadership level of both LSPD and LSFD. MCP found there is a severe lack of trust, support, and engagement between communications staff and a very high degree of skepticism, speculation, and rumors regarding who would comprise the leadership in a consolidated scenario.

From what MCP could establish, even though there is clearly the need for cooperation between LSPD and LSFD, there are no operational or administrative policy-driven interdepartmental activities or work groups that could improve communication for tasks related to shared responses and employee and stakeholder perspectives of each PSAP's roles and responsibilities. Initially MCP thought this was a result not having enough staff to allow for this type of engagement; however, the perceptions expressed as to the importance of each PSAP's role in "helping" or "not helping" the public is likely also a contributing factor to

the silo-type functionality. This also ties into feelings expressed about major operational changes in general and what would be viewed as trying to thwart efforts toward joint operations based on unvalidated concerns about the leadership structure, job functions felt to be distasteful or not what they signed up for, and loss of labor representation.

Remembering that management, administrative oversight, and governance are different—with the importance of administrative oversight and governance more aligned in the primary/secondary 9-1-1 system structure—when reviewing whether communications leadership engages in active oversight with regards to interdepartmental relationships beyond the day-to-day management of the organization, until such time that the City makes a decision on a path forward, the governance discussion is reserved for the relationship between LSFD and the fire districts that it serves (See Appendix E for related governance models).

Similar to governance, active oversight is an ideal that is often difficult to achieve. Both processes characteristically involve well-intentioned people who bring his or her ideas, experiences, preferences and other strengths (and sometimes shortcomings) to the policy-making table. They are achieved through an ongoing discourse that attempts to capture all considerations involved in assuring that stakeholder interests are reasonably addressed and reflected in policy.

Effective administrative oversight and governance typically result in the following outcomes:

- Standardization of operations and equipment
- Improved quality and reliability of the 9-1-1 system
- Cost savings through the sharing of resources
- Standardization of services and establishing customer expectations
- Funding leverage and accountability
- Purchasing power, plus improved and/or coordinated purchasing decisions
- Faster adoption of new technology
- Greater level of overall cooperation and coordination
- Reduced response times
- Decreased loss of life and property

LSFD communicated the desire not only to continue serving the existing partner districts with the highest level of service possible, but also to bring on additional agencies. The findings with regards to the LSFD and member agency relationships discussed in section 7.2.1 of this report are valid regardless of whether this report recommends a path toward joint operations between the PSAPs or not.

Concern was expressed about the costs borne by the contracting agencies, what those funds are used for, and service quality. Service quality concerns expressed include Communications Specialists not checking on personnel on active incidents nor completing personnel accountability reports (PARs). Section 3 of the agency contracts articulates that an Advisory Committee, consisting of at least representative from each entity that contracts with the City is to exist. This committee is to be the mechanism for addressing the concerns mentioned above; however, LSFD advised this committee does not actually exist.

Key Take-aways

- Collectively, LSPD Communications and LSFD Communications serve the City police and fire departments.
- LSFD Communications provides call-taking and dispatch services for several other neighboring localities.
- The organizational structures at both centers are flat with very few opportunities for career advancement.
- There is a lack of clarity and disagreement with regards to the status of the Lead Communications Specialist classification at LSPD as it relates to eligibility for labor representation.
- Staffing levels do not allow for training of newly promoted lead supervisors.
- There are no inter-agency activities or work groups that could improve communications between the two centers.
- There is a severe lack of trust, support, and engagement between communications staff and a very high degree of skepticism, speculation and rumors regarding potential leadership in a consolidated scenario.
- There is a significant risk to any joint operations integration effort based on unvalidated concerns about the leadership structure, job functions felt to be distasteful or not what they signed up for, and loss of labor representation.
- There is concern about the costs borne by the contracting agencies, what those funds are used for, and service quality.
- The advisory committee to which contract agencies can address their concerns does not exist, inadvertently eliminating this vital avenue of effective governance and communication for the contract agencies.

3.2 Recommendations

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Minor change or improvement is recommended in organizational structures to improve supervision and support functions	• Increases support positions to improve efficiencies with accreditation, QA, etc. • Reduces frequency of telecommunicators being responsible for secondary functions simultaneously • Improves span of control
Formalize administrative oversight that provide structure and a framework to hold all parties accountable	• Reduced complaints • Increased efficiency • Reduced response times • Alleviates call processing errors

Recommendations	Outcomes
Create interagency working groups that leverage similarities between LSPD Communications and LSFD Communications	• Eliminates duplication of effort and provides relief to staff workloads • Reduces duplicate expenditures associated with the duplication of effort • Improves stakeholder involvement and shares responsibilities for tasks related to shared responses • Improves stakeholder perspectives and expectations between PSAPs
Share back of the house services	• Reduces costs • Streamlines recruiting, hiring, and training • Improves consistency of operational service
Update the fire rescue agency contract	• Modernizes the ILA – Purpose of the agreement – Baseline for terminology and definitions – Scope of services – Responsibilities and expectations of all participating communities, including the host agency – Pricing structure to include initial costs and predictive ongoing fees for services – Onboarding and integration planning – Performance standards and reporting – Change management – Complaint resolution workflow and escalation – Authority of host PSAP to manage financial and personnel matters – Terms and general provisions • Manages fiscal and political issues • Provides issue resolution across agencies • Provides oversight of strategic goals and strategy modifications • Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk • Improved workflow for review and approval of overall procurement strategies
Hold member and host agency accountable for contract requirements	• Stated roles, responsibilities, and membership requirements are met routinely • Provides leadership and support for initiatives

Recommendations	Outcomes
	• Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk

4 Operational Configuration

Effective operational configuration reduces agency liability and mitigates risks as it relates to staffing. Essential to this effectiveness are factors such as clearly defined functions, the number of frequencies/talk groups and field responders managed by telecommunicators, the supervisor/employee ratio, i.e., span of control, and the use of call taking and dispatch protocols.

4.1 Findings and Analysis

LSPD Communications and LSFD Communications are two separate entities, each with its own scope of practice and areas of responsibility. Each center has its own management structure within its respective organization. At present, the centers do not collaborate for operations. As the primary PSAP, LSPD Communications receives all 9-1-1 calls within the city limits of Lee's Summit; requests for fire, rescue, or EMS are transferred to LSFD Communications for call-taking and dispatch.

LSFD Communications utilizes structured emergency medical dispatch (EMD) call taking protocols from the International Academies of Emergency Dispatch (IAED) to process all incoming EMS requests. It was determined during data collection though that LSFD telecommunicators are not appropriately following the EMD protocols. The protocols, designed to be followed verbatim, are often shortened or modified to decrease the overall call processing time frame due to low staffing. Post-dispatch instructions, which are meant to prepare the caller and/or patient for arrival of EMS, are often skipped for the same reason. When questioned about this practice, on-duty personnel stated this was common due to the perception of LSFD telecommunicators that their operation was understaffed. LSPD Communications does not currently utilize emergency police dispatch (EPD) protocols, but PSAP management has considered this purchase. Management is deciding between implementation of IAED or PowerPhone EPD protocols.

LSPD Communications operates on 12-hour shifts. With four shifts, each shift works a rotating two days on, two days off, with every other weekend (Friday, Saturday, Sunday) off. The main shift start times are 6:00 a.m. and 6:00 p.m.; additional coverage start times vary based on the day of the week and the season of the year.

Table 3: LSPD Communications Minimum Staffing Requirements

Summer Months (March 1st – October 31st)	
Sunday through Thursday	0600-0000 (3 personnel) 0000-0600 (2 personnel)
Friday and Saturday	0600-1800 (3 personnel) 1800-0200 (4 personnel) 0200-0600 (2 personnel)
Winter Months (November 1st – February 28th)	
Sunday through Thursday	0600-0000 (3 personnel) 0000-0600 (2 personnel)
Friday and Saturday	0600-1800 (3 personnel) 1800-0000 (4 personnel) 0000-0200 (3 personnel) 0200-0600 (2 personnel)

LSFD Communications also operates on 12-hour shifts. Each shift follows a rotation of four days on, four days off. However, 17 weeks each year, an employee's last workday of the shift is adjusted to eight hours, resulting in employees only working 2,080 hours each year. Shift start times remain constant at 7:00 a.m. and 7:00 p.m.

Key Take-aways

- LSPD Communications and LSFD Communications are two separate entities, without sharing any common processes or procedures despite working for the same end goal.
- A lack of collaboration between LSPD and LSFD may hinder overall operations as well as the continued working relationship between the two centers.

4.2 Recommendations

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Resolve pay disparity between LSPD Communications and LSFD Communications to assure recommendations can be implemented under any future management models	• Equal pay and comparable benefits across the region tend to increase staff morale and, consequently, overall retention rates tend to improve also
Review and alignment of hiring policies (i.e. tattoos, history of misdemeanors, etc.)	• Alignment of hiring practices between both agencies ensures that the same quality of personnel is hired
Develop program formalizing a documented practice of sending new hires to LSPD Communications and LSFD Communications during training to observe their sister agency and then at least once every two years (if joint operations in the form of co-location and/or consolidation are rejected)	• Cooperative training and continuing education assist in the overall learning experience of both new hire and seasoned employees alike • Being able to observe and monitor the operations of a sister agency allows personnel to learn from the experiences and policies of the other agency and implement said knowledge in their own agency

5 Staffing

The primary goal of a staffing analysis is to determine whether a PSAP is appropriately staffed with the number of personnel to ensure efficient processing of emergency calls now and to determine the number of personnel that may be needed in the future; although the farther into the future one looks, the more difficult it is to predict. Operational efficiency is gauged by comparing statistical data and personnel utilization with appropriate national standards.

Many public safety communications centers across the country are struggling with staffing shortages. Tenured employees are retiring; others just leave for any number of reasons—shift work, the hours, childcare issues, stress, and better pay in the private sector. While generally there is no lack of applicants for open positions, the often-stringent job qualifications (i.e., background checks, prior drug usage) disqualify many, as do the lengthy application processes; it is not unusual for many communications centers to have processes that take upwards of six months from application to start date. Thus, communications centers often find themselves with a revolving door for staff; unfortunately, many are not able to fill the vacancies before more staff leave, creating an even larger gap.

The staffing levels of each agency are interdependent of one another—staffing is determined based on different internal criteria, but the process to allocate employees to each agency is the same. The City provides LSPD and LSFD with a specific number of full-time employee positions per year, and it is up to the respective department chief to earmark those positions within the department to cover all operations.

Communications management from both departments have requested additional staff for several years; however, these requests have been largely and repeatedly declined by the City.

5.1 Findings and Analysis

5.1.1 Current Staffing

LSPD Communications is currently authorized for four Lead Communications Specialists and 14 Communications Specialist positions; four of these 18 positions are currently vacant (one being a Lead Communications Specialist), with employee prospects currently undergoing background investigation. There is one Communications Supervisor (PSAP manager) position, which functions as the manager. There is no current policy dictating that a Lead Communications Specialist is to be scheduled each shift. This results in the potential for a front-line supervisor to not be on shift. Thus, clarifications of policy, how to handle incidents, for example, must be made by on-duty staff or the on-call member of supervision. Staffing has remained at 18 full-time positions, excluding the supervisor, since approximately 2007-2008 when staffing was increased from 14 to 18.

LSFD Communications is currently authorized for 13 full-time Lead and Communications Specialist positions, without a dedicated Communications Supervisor (PSAP manager). Each shift has a Lead Communications Specialist; however, these positions staff either a phone or radio position each shift and cannot adequately function as a shift supervisor. Staffing has remained at 13 since 2000, while service demand and workload have increased over 50 percent since 2000.[9]

In 2015, the then current LSFD Communications Supervisor resigned, and this position was converted to a Communications Specialist position to help augment staffing levels. The responsibilities held by the previous Communications Supervisor were transferred to an assistant fire chief who, in addition to his normal day-to-day duties, also fulfills the manager role for the communications center.

MCP's staffing analysis involves a multimodal approach that considers workload, volume- and/or coverage-based staffing, and performance metrics. Volume-based staffing calculates the number of personnel required to handle the volume of the respective data, while coverage-based staffing calculates the number of personnel required to staff a position 24 x 7, irrespective of need.[10] Coverage-based staffing is used most often as a PSAP generally has a defined operational configuration. MCP uses these calculations in tandem. Statistical calculations are balanced with operational logistics to identify how many personnel are needed for a PSAP to achieve its performance goals while providing efficient and effective service. MCP analyzes the resulting data, considering a respective PSAP's operational configuration, to determine staffing requirements.

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[9] "2017-2027 Staffing Plan." Lee's Summit Fire Department, Workforce Planning Committee.
[10] For example, if fire call volume is low, perhaps one person could handle all the traffic based on the provided statistical data. However, this is not realistic as one person cannot work 24 x 7. In this case, coverage-based staffing would be used to calculate the number of staff required to staff the fire position 24 x 7.

Additional information on the staffing analysis methodology and the statistical calculation used (including any assumptions made) can be found in Appendix D – Staffing Methodology.

Call and incident volumes are shown below for 2018.

Table 4: 2018 Call Volume Data

	LSPD	LSFD
9-1-1 Wireline	3,551	2,918
9-1-1 Wireless	28,954	7,872
Voice over IP (VoIP)	2,038	1,454
10-digit Emergency and Non-Emergency	113,915	62,777
Abandoned	2,411	81
Text-to-9-1-1	1,078	0
Total	151,947	75,102
Outbound	31,080	12,379
Total Processed	183,027	87,481
Avg. Time for 9-1-1 Calls	1 min. 26 sec.	2 min. 9 sec.[11]
Avg. Time for 10-digit Calls	1 min. 17 sec.	39 sec.

Table 5: 2018 Incident Volume Data

	LSPD	LSFD
Law Enforcement	71,899	N/A
Fire	N/A	6,233
EMS	N/A	12,906
Total	71,899	19,139

[11] The average processing time for 9-1-1 calls is calculated from the moment the call is answered by a telecommunicator, until the moment the call is disconnected. This is not the same statistic used by LSFD for accreditation purposes.

	LSPD	LSFD
Avg. Incident Time for Law Enforcement	29 min. 42 sec.	N/A
Avg. Incident Time for Fire	N/A	22 min. 17 sec.
Avg. Incident Time for EMS	N/A	34 min. 59 sec.

Based on the provided data, staffing one position 24 x 7 within LSPD requires 5.2 telecommunicators, without attrition, as indicated in the table below. With attrition, 6.4 telecommunicators are needed.

Table 6: LSPD Coverage Staffing

FTEs[12] for Coverage		
A	1	Total number of console positions to be covered
B	24	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	8736	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1,692.17	True Availability per Telecommunicator
FTEs Needed:		
G	5.2	FTE base estimate (FTE) = E / F
H	23.5%	Attrition Rate
I	6.4	FTEs required to accommodate turnover

Likewise, staffing one position 24 x 7 within LSFD Communications requires 5.8 telecommunicators, without attrition, as indicated in the table below. With attrition, 7.5 telecommunicators are needed.[13]

[12] Full-time equivalents
[13] Personnel in the LSFD PSAP use a significantly higher amount of leave per year than their LSPD counterparts, leading to the higher number of personnel needed to staff a single position 24x7.

Table 7: LSFD Coverage Staffing

FTEs for Coverage		
A	1	Total number of console positions to be covered
B	24	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	8,736	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1,498.96	True Availability per Telecommunicator
FTEs Needed:		
G	5.8	FTE base estimate (FTE) = E / F
H	27.9%	Attrition Rate
I	7.5	FTEs required to accommodate turnover

Overall staffing calculations were completed factoring in two different scenarios: LSPD Communications and LSFD Communications maintaining the current operational configurations (separate PSAPs), and both PSAPs combining into a single consolidated PSAP. The following is an analysis of each scenario with associated recommendations for staffing.

Maintain Current Configurations

The first option is for both PSAPs to maintain their current operational configuration. Under this scenario, both PSAPs could implement staffing recommendations without the need to make technological or facility changes.

LSPD Communications

In LSPD Communications' current configuration, three positions are staffed during daylight hours and four positions are staffed during overnight hours.[14] The configuration of these positions is typically one position covers call-taker responsibilities and the traffic radio talk group, while the other positions cover the remaining two radio talk groups (patrol and administrative) and overflow phone calls that the first position cannot handle. Additionally, telecommunicators are often required to handle jail intercoms and jail door alarms when the jail is understaffed, leading to a large increase in the workload. This requires a complement of 18 telecommunicators, without attrition (22 with attrition). The current authorized FTE count for LSPD Communications is 18, including

[14] The number of telecommunicators on duty for the LSPD varies greatly between the days of the week and times of the day, as well as the season of the year, to cover highs and lows in incident volume. When averaging the schedule into daylight and overnight shifts, the coverage is simplified as three and four telecommunicators respectively.

three current telecommunicators in training (slated to be complete in early spring 2020) and four additional vacant positions.

Table 8: LSPD Coverage Staffing

FTEs for Coverage		
A	3.5	Total number of console positions to be covered
B	24	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	30,576	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1,692.17	True Availability per Telecommunicator
FTEs Needed:		
G	18.0	FTE base estimate (FTE) = E / F
H	23.5%	Attrition Rate
I	22.2	FTEs required to accommodate turnover

For optimum staffing, during peak hours of the day two call-takers would be needed to answer emergency calls and meet industry standards.[15] To handle non-emergency calls, which do not require the same urgency, two call-takers would be needed during peak hours of the day as well. However, there will be downtime between calls which is largely filled with additional duties such as handling jail intercoms and jail door alarms. Thus, staffing two dedicated call-taker positions around the clock would be appropriate. Assuming two dedicated call-takers are staffed around the clock, this requires 10 telecommunicators.

If the current daytime configuration of three radio positions is maintained around the clock, the current position which monitors the traffic radio talk group can handle overflow phone calls during peak hours. Maintaining three radio dispatch positions around the clock would require an additional 16 telecommunicators.

Hence, to staff five positions around the clock requires a staff complement of 26 telecommunicators, excluding supervisors. A supervisory compliment of four is appropriate for this number of telecommunicators (one per 12-hour shift). A total of 30 personnel could be divided into four shifts of six telecommunicators and one supervisor each, with the remaining two personnel assigned to a power shift role (to accommodate the schedule changes as described herein).

[15] "9-1-1 Call Answering Standard." National Emergency Number Association." https://www.nena.org/?page=911CallAnswerStnd.

Therefore, based on this operational configuration, LSPD is understaffed by 12 telecommunicators (not including the current vacancies).[16]

LSFD Communications

In LSFD Communications' current configuration, three fire and EMS positions are staffed 24 x 7 (one call-taker and two radio dispatchers handling fire and EMS incidents) during optimum staffing, with some shifts only staffed with two personnel. This requires a complement of 17.5 telecommunicators, without attrition (22.4 with attrition). The current authorized strength for LSFD Communications is 13. The current contract with outside fire agencies requires a dedicated dispatcher for the contract agencies; however, the current LSFD fire and EMS dispatch volume is such that both on-duty telecommunicators assigned to dispatch duties must handle LSFD incidents.

Table 9: LSFD Coverage Staffing

FTEs for Coverage		
A	3	Total number of console positions to be covered
B	24	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	26,208	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1,498.96	True Availability per Telecommunicator
FTEs Needed:		
G	17.5	FTE base estimate (FTE) = E / F
H	27.9%	Attrition Rate
I	22.4	FTEs required to accommodate turnover

For optimum staffing, one call-taker would be needed to answer emergency calls and meet industry standards. To handle non-emergency calls, which do not require the same urgency, one call-taker would be needed during peak hours of the day as well. However, there will be downtime between calls. Thus, staffing two dedicated call-taker positions around the clock would be appropriate. Assuming two dedicated call-takers are staffed around the clock, this requires 12 telecommunicators. Staffing two telecommunicators around the clock for call taking could allow for the proper application of the EMD protocols, to include verbatim questioning of callers, along with appropriate provision of pre- and post-dispatch instructions. Once staffing as described herein is reached, and EMD protocols are followed verbatim, including provision of pre- and post-dispatch instructions, the average time for 9-1-1 calls should be re-evaluated. It is anticipated that the length of time to process 9-1-1 calls

[16] MCP acknowledges that most entities are not able to recognize a significant increase to authorized strength during a single budget cycle. MCP recommends incremental increases over several years to reach appropriate FTE strength.

will increase slightly due to the proper provision of the EMD protocols, which could increase the need for call-taker staffing, thus requiring additional FTE staff positions.

If the current daytime configuration of two radio positions is maintained around the clock, the LSFD talk group, and contract agencies talk group can be monitored separately as is required in the existing agency contracts. However, if a working incident occurs, one of the additional personnel on shift should be able to manage radio traffic separately for that incident as required by NFPA standards. Maintaining two radio dispatch positions around the clock would also require an additional 12 telecommunicators (six to cover the LSFD talk group and six to cover the contract agency talk group); this increases to 18 if a third radio dispatch position is added to accommodate the NFPA requirement for a dedicated dispatcher for working incidents when requested by incident command.

Hence, to staff four positions around the clock requires a staff complement of 24 telecommunicators (30 if a third radio dispatch position is added), excluding supervisors. A supervisory compliment of four is appropriate for this number of telecommunicators (one per 12-hour shift). A total of 30 personnel could be divided into four shifts of six telecommunicators and one supervisor each, with the remaining two personnel assigned to a power shift role (to accommodate peak hours as needed or provide floating coverage for schedule vacancies).

Therefore, based on this operational configuration, LSFD Communications is understaffed by 15 telecommunicators.[17]

LSPD and LSFD Operating as a Combined Center

The second option to be analyzed is for LSPD Communications and LSFD Communications to consolidate as a single entity. This could potentially require new management structures, in addition to possible operational, technical, and facility changes.

To determine potential staffing, personnel leave usage, and average call/incident processing times were averaged, while attrition, telephone and incident data were combined.[18] This process provides a more realistic representation of what would be the likely result of such a joint operations effort. Maintaining the operational dispatch configuration shown below, this requires a staffing complement of 32 telecommunicators, without attrition (40 with attrition).

- 3 law enforcement dispatch positions (traffic, patrol and administrative talk groups)
- 3 fire/EMS dispatch positions (fire dispatch, fire tactical and contract agency talk groups)

[17] MCP acknowledges that most entities are not able to recognize a significant increase to authorized strength during a single budget cycle. MCP recommends incremental increases over several years to reach appropriate FTE strength.
[18] LSFD Communications 9-1-1 wireline and wireless call data is included in the LSPD Communications 9-1-1 wireline and wireless call volumes due to the call transfer to LSFD not occurring.

Table 10: Combined Dispatch Coverage Staffing

FTEs for Coverage		
A	6	Total number of console positions to be covered
B	24	Number of hours per day that need to be covered
C	7	Number of days per week that need to be covered
D	52	Number of weeks per year that need to be covered
E	52,416	Total Hours needing coverage (A x B x C x D)
Telecommunicator Availability:		
F	1,643.23	True Availability per Telecommunicator
FTEs Needed:		
G	31.9	FTE base estimate (FTE) = E / F
H	25.2%	Attrition Rate
I	39.9	FTEs required to accommodate turnover

During peak hours of the day, two call-takers would be needed to answer emergency calls around the clock and meet industry standards. To handle non-emergency calls, which do not require the same urgency, two call-takers would be needed during peak hours of the day. However, there will be downtime between calls. Thus, staffing three dedicated call-taker position on all shifts, with an added dedicated call take position (power-shift position concept) during the 12 busiest hours of the day would be appropriate. Assuming three dedicated call-takers are staffed around the clock with an additional dedicated call-taker during the peak hours of the day, this requires 16 telecommunicators.

Thus, to staff nine positions around the clock, with a powershift position during peak hours, requires 50 telecommunicators. A shift complement, on average of 13, requires two supervisors to align with best practices. Assuming all telecommunicators work within a single space, two supervisors (a supervisor and assistant supervisor) assigned to a shift would be appropriate if one were always on duty.[19] If the functional areas are separate, the need for additional supervisors to always be on duty could increase (based on the operational configuration and management discretion). Staffing two supervisors on each shift requires an additional 10 telecommunicators.

Thus, staffing a combined center requires approximately 61 telecommunicators and supervisors (not including any administrative or support staff). Between the LSPD and LSFD Communications exists a combined current authorized FTE staffing of 21 (with four current LSPD vacancies).

Proper staffing is a balancing act and while statistical data may indicate one path, communications leadership are more familiar with the ins and outs of everyday operations and may see the need to adjust. It is understood that most local governments cannot increase staffing numbers by large quantities all in a

[19] During times when either the supervisor or assistant supervisor are off-duty, a senior telecommunicator can function in a supervisor capacity.

single fiscal year. The best course of action in these situations is for management to request additional staff in a phased approach—requesting the additional positions over several years. Not only does this lessen the immediate fiscal impact each year, but it also allows for new personnel to be hired and trained prior to the next group of employees beginning their tenure; thus, preventing inordinately large numbers of potential employee retirements at the end of their career.

Neither LSPD or LSFD have increased telecommunicator staffing in at least 11 years. As of September 2019, four positions were vacant (with individuals currently in the hiring process). Both communications centers have requested staffing increases for many consecutive budget cycles without success. Neither center operates with any administrative support, such as QA, training staff, or administrative assistants. These administrative positions would help with overall agency effectiveness.

Requesting additional staff in a phased approach is the best course of action.

5.1.2 Future Staffing

Predicting staff needs for the long-term is not as statistically simple as it used to be. Current calculations rely on statistical data, such as population, as well as call volume and incident volume data. However, the 9-1-1 community already has begun its transition to NG9-1-1, which has allowed new types of media into PSAPs that traditionally have been voice-centric. For instance, many PSAPs already accept text-to-9-1-1 calls. While this has proven, to date, to have little effect on current staffing needs, images and streaming video soon may be accepted by PSAPs. In addition, the number of devices with the capability to transmit data continually increases: body cameras, drones, smart home devices, personal and industrial sensors—the list continues to grow.

All these devices have the potential to transmit data to a PSAP in the future—what is unknown is how this will affect staffing in the digital age. It is likely that “digital analysts,” as the Police Executive Research Forum (PERF) notes, may be responsible for analyzing the information before it is shared with responders. Will these analysts be in a PSAP? A fusion center? A real-time crime center? How PSAPs choose to approach the data that will be available, as well as the associated tasks, will be up to each agency unless a statewide approach is taken. Real potential exists that some of this information could be flowing into PSAPs in Missouri in the next five years.

LSFD has shown the desire to potentially increase the number of contract agencies for which they provide dispatch services, based on inquiries made by several outside jurisdictions. This effort could take several years to achieve full maturation, considering the intricacies. One of the key decisions will be the operational configuration—that is, how call-taking and dispatch will occur and how many positions will be staffed in either an individual LSFD Communications or a combined center. While not necessarily central to future staffing predictions, knowing this plays a key role in the ability to absorb any increase in workload.

The City, as well as Jackson County as a whole, has experienced population increases since the 2010 U.S. Census, 7.77 percent and 3.88 percent, respectively. Slightly over 14 percent of the county’s overall population is attributable to Lee’s Summit.

Table 11: Lee's Summit Population Changes

Year	Jackson County	City of Lee's Summit[20]
1990	633,232[21]	46,418
2000	654,880[22]	70,925
2010	674,158[23]	91,364
2018 (estimate)	700,307[24]	98,469

Based on the estimated 2018 Lee's Summit population and 2018 call and incident statistics, the average number of incoming calls per person is 2.16. The average number of law enforcement incidents per person is 0.73, while the average number of fire/EMS incidents per person is 0.19. This information is used with projected population data to determine the potential growth that a consolidated PSAP in the City could realize.

The Jackson County Development Plan projects a population for the City of 115,279 in 2035, a 26 percent growth rate over the 2010 Census figures. This growth rate does not include a potential increase from any growth sustained from the development of land currently held by Property Reserve, Inc. County growth of approximately 17 percent would have the County's population at approximately 786,859.

Based on 26 percent population growth and the calls per person listed herein, incoming call volume could reach 249,000 (rounded to the nearest thousand); of these, 38,000 could be 9-1-1 calls (rounded). Law enforcement incidents could reach 84,000 (rounded); fire/EMS incidents could reach 22,000 (rounded).

The recommended operational configuration for a full consolidation, shown below, regardless of oversight entity, should be able to absorb the increases in call and incident volumes without the need to staff additional workstations.

- Day Shifts – 15 staff each
  - 1 supervisor
  - 1 assistant supervisor
  - 13 telecommunicators
- Night Shifts – 15 staff each
  - 1 supervisor
  - 1 assistant supervisor
  - 13 telecommunicators

[20] "2018 Development Report Final." City of Lee's Summit, Planning and Special Projects.
[21] "1990 Census of Population Social and Economic Characteristics Missouri." United States Census Bureau. https://www2.census.gov/library/publications/decennial/1990/cp-2/cp-2-27-1.pdf.
[22] "Missouri: 2000 Population and Housing Unit Counts." United States Census Bureau. https://www.census.gov/prod/cen2000/phc-3-27.pdf.
[23] "Missouri: 2010 Population and Housing Uni Counts." United States Census Bureau. https://www.census.gov/prod/cen2010/cph-2-27.pdf.
[24] "QuickFacts Jackson County, Missouri." United States Census Bureau. https://www.census.gov/quickfacts/jacksoncountymissouri.

The initial staffing complement of 52 telecommunicators and eight supervisors, increasing supervisory staff to 12 over the long-term, will allow four call-taker positions to be consistently staffed each shift. This configuration also provides for three law enforcement dispatch positions and three fire/EMS dispatch/tactical positions. If 9-1-1 call volumes rise, then consideration may need to be given to an additional call-taker position to meet national standards.

While looking forward five years does present challenges, attempting to predict staffing needs 10 to 20 years into the future is next to impossible, particularly given the migration to NG9-1-1. There are too many unknowns. What is certain is that today's 9-1-1 operational environment longer will be the same. "Calls," whether voice or data-infused or a Skype-type, likely will take longer to process in the future. Requirements of first responders also will evolve. While the telecommunicator position as we know it today might change, how is still unknown, though a similar-type position and responsibility seems likely.

It is possible that PSAPs may experience a decrease in call and incident volumes due to the various forms of data that could be presented to a telecommunicator and the form of presentation. Technology may develop that allows sensory devices to input data directly into a CAD system, bypassing a call-taker altogether. Citizens may be able to access incident systems to report events without speaking to a call-taker. 9-1-1 personnel may be able to telework, operating from virtual PSAPs. The opportunities far exceed the 9-1-1 community as we know it.

One thing is certain, the types of media that may be presented to a PSAP undoubtedly will affect staff in ways not realized by just hearing an event. PSAPs must consider such impacts to staff when making decisions for the future.

Key Take-aways

- LSPD Communications has four current vacancies which hamper current operations due to short-staffing.
- LSPD Communications does not staff a Lead Communications Specialist on each shift, introducing the potential for errors due to lack of supervision.
- LSPD Communications and LSFD Communications are currently significantly understaffed.

5.2 Recommendations

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Address staffing shortages at the individual agency level prior to consideration of any joint operations effort	• Adequate staffing in the PSAP allows for the handling of calls and incidents according to national standards and maintains appropriate field responder safety. It

Recommendations	Outcomes
	also tends to increase staff morale and, consequently, overall retention rates tend to improve also
Provide a position on every shift that has supervisor authority	• Maintaining appropriate management (according to span of control principles) helps agencies to maintain situational awareness, address problems or crises as they arise, and reduce the risk of errors

6 Training

The duties of a telecommunicator are extremely difficult, and opportunities for mistakes within the profession abound when proper training is absent. With the proper training, the likelihood of mistakes decreases, however. Citizens and first responders alike should receive the same work product from a telecommunicator in California as they do in North Carolina. Adopting a training program that adheres to state and/or national standards is the way this can occur.

APCO initiated Project 33 (P33) in 1995 as a mechanism for PSAPs to receive certification for their agency training programs. As a result of P33, APCO developed the Minimum Training Standards for Public Safety Telecommunicators. APCO is an American National Standards Institute (ANSI) standards development organization, indicating its standards have gone through a rigorous development process which includes peer review and comments from the PSAP community.

A similar process began in 2010 after Nathan Lee of the Denise Amber Lee Foundation gave the keynote address at the 2009 California NENA (CalNENA) conference. This standard, much like the APCO standard, addresses key subject areas for training public safety telecommunicators; however, this standard was developed by a working group that was comprised of representatives from APCO, the Denise Amber Lee Foundation, NENA and many other national organizations responsible for or involved in the training of public safety telecommunicators.

6.1 Findings and Analysis

Missouri has instituted its own public safety telecommunicator training standard, although there are no state-sponsored certification programs for PSAPs. The 911 Training and Standards Act identifies a specific number of initial training hours that must be completed by each telecommunicator, based on the type of function or role that individual will fill (e.g., police dispatcher versus fire dispatcher). The law further identifies that each telecommunicator shall complete a total of 24 hours of continuing dispatch education (CDE) every three years. The law does not state the topics in which telecommunicators must complete

initial or continuing education, however.[25] Internally, both agencies have formalized training programs that new PSAP employees must complete.

LSPD Communications' training program, as dictated by standard operating procedures (SOP), lasts approximately 26 weeks but can be extended as needed. During the training period, each trainee is required to attend and complete the MARC 40 Hour Basic Telecommunicator's Course. To maintain appropriate learning on a continual basis, the SOP further stipulates that each PSAP employee must complete CDE, which is provided by Police Legal Sciences (PLS) on a monthly basis. If the monthly PLS CDE is not completed by the due date, employees face possible discipline. As a member of MARC, all LSPD telecommunicators are eligible for free training above and beyond the basic course. All MARC training is offered free of charge to personnel of member agencies, and MARC maintains a training calendar that is accessible to employees. This training is provided to new telecommunicators in an on-the-job training format; however, the overall new hire training is laid out in a way, which a few tweaks and addition of material to meet national training standards, the course could be taught in a classroom setting to allow new telecommunicators to more easily absorb the material. The Communications Supervisor has indicated a desire to conduct the training in a classroom setting but due to staffing limitations this is not a possibility at the current time.

LSFD Communications' training program is similarly laid out through an SOP. The policy lists a specific set of courses that must be completed during an employee's first year of training. A training manual also exists, which provides the newly-hired telecommunicator with additional in-house, agency-specific training. LSFD is also a member of MARC, allowing personnel access to CDE training programs. Additionally, IAED EMD certification requires 24-hours of CDE every two years. The only CDE requirements that are listed within the training SOP, however, are the 24 hours of CDE to maintain EMD certification. This training is provided to new telecommunicators in an on-the-job training format; however, the overall new hire training is laid out in a way, with a few tweaks and the addition of material to meet national training standards, the course could be taught in a classroom setting to allow new Telecommunicators to more easily absorb the material.

Despite following state and national standards and mandated legislation, both agencies suffer from reduced levels of continuing education and employee development. During data gathering, it was determined that continuing education requirements to maintain current certifications are being met by the slimmest of margins, mainly due to low staffing levels. Low staffing levels negatively impact employee training, which prevents employee development from occurring. Employee development refers to the "formal education, job experiences, relationships, and assessments of personality and abilities that help employees perform effectively in their current or future job and company."[26] Employee development is essential to the proper function and professional growth of any agency. This is especially true when promoting current employees to management positions, because employee development is future-

[25] "Rules of Department of Public Safety, Division 30—Office of the Director: Chapter 13—911 Training and Standards Act." Missouri Secretary of State. https://www.sos.mo.gov/cmsimages/adrules/csr/current/11csr/11c30-13.pdf.
[26] "Employee Training and Development. Fifth Edition" (2010) Noe, Raymond A. McGraw-Hill Irwin Publishers. New York, NY.

oriented. Employee development is essential in all aspects of a PSAP including quality improvement, meeting the challenges of social change, implementing operational or management changes, and incorporating advances in technology[27] (such as NG9-1-1).

Key Take-aways

- Both LSPD Communications and LSFD Communications have training programs in place that appear to meet and/or exceed the Missouri 911 Training and Standards Act and may qualify for APCO Training Program Certification.
- LSPD Communications has only had a single telecommunicator complete initial training in the past several years.
- Low staffing levels are negatively affecting employee training and development opportunities.

6.2 Recommendations

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Establish interdepartmental training	• Leverage common continuing education opportunities • Leverage training resources into a combined telecommunicator training academy • Develop supervisory think tank
Develop program formalizing a documented practice of sending new hires to the other PSAP during training to observe their sister department and then at least once every two years	• Cooperative training and continuing education assist in the overall learning experience of both new hire and seasoned employees alike • Being able to observe and monitor the operations of a sister agency allows personnel to learn from the experiences and policies of the other department and implement said knowledge in their own department
Evaluate LSPD Communications training program	• Increase new hire training completion rate • Increase unit morale • Increase CTO morale • Decrease overtime costs • Reduce overtime resulting in improved personnel health

[27] Ibid

7 Leadership and Planning

Agency leadership and planning, or the lack thereof, have a direct and crucial effect on the success or failure of a public safety entity. Both leadership and planning go hand in hand, because without proper leadership the best plans often go awry, and without proper planning the best leaders often falter. Sir Winston Churchill is credited with the saying “He who fails to plan is planning to fail.” This is as true in each branch of public safety—including public safety communications—as it is in any business.

Leadership, as defined by the Business Dictionary, is as follows:

1. *The individuals who are the leaders in an organization, regarded collectively.*

2. *The activity of leading a group of people or an organization or the ability to do this.*

Leadership involves:

1. *establishing a clear vision,*
2. *sharing that vision with others so that they will follow willingly,*
3. *providing the information, knowledge and methods to realize that vision, and*
4. *coordinating and balancing the conflicting interests of all members and stakeholders.*

A leader steps up in times of crisis and is able to think and act creatively in difficult situations.[28]

Planning is defined as:

1. *A basic management function involving formulation of one or more detailed plans to achieve optimum balance of needs or demands with the available resources. The planning process (1) identifies the goals or objectives to be achieved, (2) formulates strategies to achieve them, (3) arranges or creates the means required, and (4) implements, directs, and monitors all steps in their proper sequence.*

2. *The control of development by a local authority, through regulation and licensing for land use changes and building.*[29]

[28] Leadership. BusinessDictionary.com. WebFinance, Inc. http://www.businessdictionary.com/definition/leadership.html (accessed October 1, 2019).
[29] Planning. BusinessDictionary.com. WebFinance, Inc. http://www.businessdictionary.com/definition/planning.html.

7.1 Leadership Influence and Strategic Planning

Each agency and its associated leadership have conducted planning to varying degrees. LSPD conducts internal planning efforts with senior leadership; however, during data collection it was reported by the Communications Supervisor that he thinks LSPD senior leadership does not take into account how enacted changes will affect PSAP operations. The current LSPD Communications Supervisor reports that planning efforts conducted at the communications level are typically not considered or are not enacted due to lack of funding. The Communications Supervisor has completed a five-year strategic plan (dated January 2, 2019) but has not shared this plan with senior LSPD leadership. The plan contains goals related to increasing unit cohesion and employee morale, evaluating the hiring and recruitment process, and addressing employee retention. To resolve these thoughts, which are not shared by LSPD senior leadership, the Communications Supervisor could become more active in LSPD planning efforts. Additionally, the Communications Supervisor could schedule a recurring monthly update meeting, through the appropriate chain of command, to keep senior leadership abreast of changes within LSPD Communications and the public safety communications industry as a whole.

LSFD routinely completes planning efforts and creates documents to guide each effort. One example of the planning efforts is the annual Community Risk Assessment Standards of Cover document, which is compiled to maintain the Center for Public Safety Excellence (CPSE)'s accreditation, administered by the Commission on Fire Accreditation International (CFAI). This document addresses comprehensive fire department initiatives. A supplemental staffing plan was also created that outlines suggested increases to personnel over the course of ten years (2017 – 2027).

7.2 Financial Planning and Cost-sharing

With the operation of two independent communications centers within the City comes the need for two separate budgets. Some recurring and annual costs—for example, office equipment, supplies, technology and information technology (IT) expenses—are duplicated. This situation poses a potential for savings should the two centers consolidate into a single location. The level of savings will depend on the operational and business decisions that are made as part of the joint operations process.

The use of a shared CAD system is one example of the potential for shared expenses. If two separate CAD systems are maintained, the initial purchase as well as ongoing maintenance costs will be duplicated. Fees such as licensing and preventative maintenance, among others, must be allocated for both centers. Should a shared CAD system be utilized, this will reduce this duplication of expenditures and a potential cost savings will be realized. With enough cost savings realized, the potential exists to add additional full-time communications staff without the need to increase the budget over current expenditures.

Influence of the budget on the current, or future, operations, seems limited based on data collection efforts. Each communications center is included in the department's respective annual budget requests that are submitted to the City Manager during planning. Historically however, as the budget process proceeds requests have been rejected and the needs of the centers foregone to other needs that are considered a higher priority. This is especially true when it comes to planning for and requesting additional full-time communications staff. No staffing increases have been approved, even though they have been requested

every year, since 2000 for LSFD Communications and 2007-2008 for LSPD Communications. Baseline needs are planned for and accommodated, but these expansion requests beyond the baseline are normally not funded.

Regardless of whether or not the path forward includes consolidation—and even more importantly if it does—the issue of pay disparity must be addressed or the entire effort will fail. LSFD is currently represented by IAFF Local 2195. The union has negotiated salaries in the past that are higher than the salaries seen by LSPD telecommunicators of the same years of service. The starting pay of both agencies is identical; however, LSPD provides salary increases based on a merit increase system versus LSFD, which provides increases based on a step system (based on years of service). This pay disparity—which in at least one instance exceeds $18,000—was noted by numerous employees during data collection and the issue is a serious source of contention. If the pay disparity issue is not resolved, with telecommunicators all being on even footing, any effort to change the operational structure will be met with extreme resistance. The existing pay disparity has already caused animosity towards LSFD Communications.

The issue has been raised in the past by LSPD, with little being done to find a solution to the issue. Resolving this issue is not without financial challenges though. It will be incumbent upon the City to determine the overall impact to the budget during the resolution process. An increase to the overall budget or one organization or another should not be a deterrent to resolving the disparity. Employees ultimately work for the same employer, the City, doing the same and should all be on equal footing regarding pay. If major operational change is considered, an appropriate system for resolving the pay disparity must be determined and implemented; the overall impact to budget(s) will also need to be determined.[30]

Additionally, resolving the staffing deficiencies as recommended herein will also require a modicum of financial planning. Direct costs such as salaries for new employees and trainers alike must be appropriately budgeted. Similarly, indirect costs such as benefits and training costs must also be identified and planned for. Any operational changes, such as cross-training of employees, will also affect the level of direct and indirect costs that must be planned for.

7.2.1 Fire Contract Agencies

LSFD currently serves as a secondary PSAP providing call-taking and dispatch functions for seven contract agencies outside of Lee's Summit, the oldest contract dating to 1997 and the most recent dating 2012:

- Fort Osage Fire Protection Districts
- Lake Lotawana Fire Protection District
- Lone Jack Fire Protection District
- Pleasant Hill Fire Protection District
- Prairie Township Fire Protection District

[30] Depending on the type of operational change initiated, there may be cost savings that could be applied towards correcting the pay disparity issue.

- Sni Valley Fire Protection District
- Western Cass Fire Protection District

Most of the seven contract agencies believe that dispatch services provided by LSFD Communications are the best in the metro region, but there are still concerns with the financial model currently in place. The current contracts require LSFD Communications to staff a dedicated dispatcher to handle contract agencies, only supplementing LSFD Communications telecommunicators as needed. This has never been implemented within LSFD Communications. The concern was voiced virtually universally by the contract agencies that they think the money they are paying to receive this service is not being used to provide the service, but rather to supplement LSFD Communications operations. These thoughts have also led to a lack of trust in the existing governance model. The creation of an advisory committee is spelled out in the contracts each agency signed, but the committee has not been formed and the agencies have no formal method for raising and resolving concerns. This furthers the impression that the money from outside contract agencies is simply supplementing LSFD Communications' budget versus providing the services as dictated in the contracts.

Additionally, when some of the contract agencies began dispatch services, the City was to provide for the radio equipment that needed to be installed in LSFD Communications. Due to City budget constraints at the time, the contract agencies instead had to provide this equipment.

Cost-sharing

Funding is a key area of concern for primary and secondary PSAPs nationwide. Without appropriate funding, PSAPs are not able to upgrade technology as required, schedule staffing appropriately, or complete day-to-day operations of the PSAP in an efficient manner. Funding can be identified from multiple sources, but without adequate funding, the efficiency of the agency suffers.

Each contract agency can enact a fire tax in its locality per Missouri state law to help partially fund communications; all seven contract agencies have done so. Two additional agencies, with the potential for up to six, wish to consider entering into a contract with LSFD for dispatch services. The question put forth for this report is—is there an approach to cost-sharing that would better serve both the LSFD and contract agencies?

The concept of cost-sharing is an area of funding that continues to be investigated by PSAPs nationwide. The purpose of cost-sharing is to spread the cost of an individual purchase or ongoing costs over multiple entities to reduce the overall impact on each entity individually. As is the case in Lee's Summit, the concept of cost-sharing has led to the consolidating of staff, services, and sharing of infrastructure with the noted contracting agencies. A successful cost-sharing model requires the equitable division of onboarding and ongoing fees for services that are representative of LSFD's liability and is predictive of the expected workload of the served agencies.

Identifying a cost-sharing method for a secondary PSAP is a complicated task in this case. particularly as contractually LSFD Communications has created a communications system that provides call handling and

dispatch services for the contracting agencies. A key goal should be the fair and equitable funding of services—particularly relating to call dispatch—across all member jurisdictions.

The method selected should provide a level of predictability and fairness upon which all member jurisdictions can agree. Several cost-sharing models currently utilized by other communication centers are described in Appendix H.

Probably the most relevant cost-sharing factor for consideration is for the City to organize a cost-sharing formula workgroup with diverse representation. This ensures stakeholder input, awareness, and transparency of development and modification of the formula. In fact, it could be argued that the most important aspect of governance between the City and the contracting agencies is the cost-sharing formula.

MCP recommends that the current cost-sharing model undergo a more intensive financial analysis focused on the development of a fair and equitable formula. A workgroup should be convened to solicit input on the selected model from as many stakeholders as possible, especially if the agencies are being asked to share the burden in any way.

Additionally, MCP recommends that the contract be updated to include language that the parties will review costs every two to three years rather than another time frame such as annually. This will improve predictability and the memberships' ability to plan, while providing the City with the ability to accommodate an adjustment for increases in salaries and/or benefits or if factors such as inflation or estimated versus actual costs impact the maintenance-of-effort. Language should also be included in the contract setting the expectation that upon renewal, costs may be adjusted on this cycle if there are increases in salaries and/or benefits or if factors such as inflation impact the maintenance-of-effort.

Key Take-aways

- When initiatives are approved, they are generally implemented effectively.
- Negativity about the other PSAP is not effectively managed by leadership, which negatively influences the organization.
- Leadership at the executive level works well together.
- Leadership at the PSAP level effectively forges professional relationships outside the department.
- The pay disparity needs to be resolved if operational changes are to be successful.
- The City actively engages and is committed to broad strategic planning but not at a 9-1-1 system level.
- The contract agencies think the funds they are paying to receive services are not being used to provide the service, but rather to supplement LSFD Communications operations.
- Alternative cost-sharing models may provide more equitable division of onboarding and ongoing fees for services that are representative of LSFD's and are predictive of the expected workload of the served agencies.

7.3 Recommendations

MCP has presented recommendations below with associated outcomes; refer to Appendix G – Leadership and Planning for more detailed information regarding the first three of the following recommendations.

Recommendations	Outcomes
Develop a joint strategic plan at the communications unit level	• Provides oversight of strategic goals and strategy modifications • Coordinates and leverages funding opportunities and helps ensure the availability of funds • Facilitates jurisdictional and interdepartmental collaboration • Improved ability to direct resources to accomplish goals • Provides leadership and support for initiatives • Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk
Establish a change management workflow	• Facilitates jurisdictional and interdepartmental collaboration • Improved workflow for review and approval of overall procurement strategies • Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk • Improved decision-making • Increased project success (projects that stay within scope, time and budget with required functions and features) • Decreased opportunities for unexpected and planned systems downtime
Identify sustainable funding for existing and future emergency communications priorities	• Ensures the availability of funds • Improved workflow for review and approval of overall procurement strategies • Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk
Organize a cost-sharing model workgroup to review and develop an equitable, predictable and scalable formula	• Improved transparency and helps build trust • Facilitates jurisdictional and interdepartmental collaboration • Provides member agencies with clarity and improved budgeting

Recommendations	Outcomes
Update contract language to include that the parties will review costs every two to three years rather another time frame such as annually	• Improves predictability and the memberships' ability to plan while providing the City with the ability to accommodate an adjustment

8 Performance Management

Performance management provides for holistic organizational success and includes everyone in a communications center from telecommunicators to managers and directors. The process is cyclical and is a means to assure that everyone understands his or her respective roles and responsibilities, has the resources to complete them and be successful, and meets expectations. The performance management cycle includes five elements: plan, monitor, review, improve, and measure.

Figure 6: Performance Management Cycle

8.1 Findings and Analysis

Both LSPD Communications and LSFD Communications have access through MARC to a dashboard that displays call data and statistics. Access to Vesta Analytics also enables management to obtain data for evaluation. Both agencies utilize a CAD system and RMS from which additional data can be retrieved for various purposes. Beyond the normal call and incident data available from these systems, data does not appear to be retrieved and analyzed on a normal basis.

8.1.1 Accreditation

Accreditation by a recognized body, or seeking accreditation, demonstrates and results in an expectation of a certain level of professionalism and skill of its personnel, and is another means to assure performance standards are met or exceeded. Expectations regarding accreditations and informing stakeholders when updated or lost can be communicated in many ways, including provisions requiring notifications in interlocal agreements (ILAs).

Several industry organizations offer accreditation, including the Commission on Accreditation for Law Enforcement Agencies (CALEA), the Commission on Fire Accreditation International (CFAI), and. the Commission on Accreditation of Ambulance Services (CAAS). While these organizations are primarily geared towards its respective discipline, each has a communications component. CALEA does have a standalone accreditation for public safety communications centers, as does IAED for entities who use the Academies' protocols. Information on the accrediting organizations can be found in Appendix C.

Both LSPD and LSFD are accredited.

- LSPD attained initial CALEA Law Enforcement accreditation in July 2011, with successful reaccreditations occurring in July 2014 and July 2018. Ideally, LSPD will successfully complete the reaccreditation process in 2020.
- LSFD attained initial CFAI accreditation in 2016. Ideally, LSFD will successfully complete the reaccreditation process in 2021.

Neither communications center is accredited individually.

8.1.2 Protocol Usage

LSFD Communications utilizes Priority Dispatch's EMD protocol system. IAED defines a protocol as "a highly-defined procedure placed into a reference system…designed to lead the calltaker through a predictable, repeatable, and verifiable process for a specific situation."[31] "Protocols have become an integral part of modern day, emergency dispatch operations. Protocols reduce variance, ensure a continuity of care, reduce liability, standardize response decisions, and provide a basis for performance measurement and quality improvement efforts."[32]

Protocols involve a set of scripted questions designed to elicit as much information from the caller as possible.[33] Essential information is gathered in a standardized format, including the address of the incident, the caller's phone number and name, and the problem. Once the problem has been identified, questioning continues to help assess scene safety, prioritize the response, select appropriate instructions for the caller, and provide pertinent information for responders. The questions are designed to be asked verbatim and in order. Where the answer is obvious, questions may be skipped. Post-dispatch instructions are designed to ensure responders' and the caller's safety. If necessary, pre-arrival instructions—potentially life-saving, scripted instructions—are provided.

LSPD Communications does not currently utilize a protocol system. Specific protocol-like questions have been determined locally and are programmed into the CAD system. PSAP management has considered use of an emergency police dispatch protocol through either IAED or Power Phone. This has not been implemented and funds are currently not allocated for implementation.

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[31] The National Academies of Emergency Dispatch® (2011) *Emergency Telecommunicator Course Manual,* Edition 3. Salt Lake City, Utah: Priority Press.
[32] "Protocol Use in Emergency Dispatch: An Evolving Standard of Care," 9-1-1 Magazine.com, May 13, 2011, http://dispatchingdiscussions.blogspot.com/2013/05/protocol-use-in-emergency-dispatch.html.
[33] While there are numerous vendors for dispatch protocols, the terminology and information referenced is from Priority Dispatch; other vendors may have slightly differing terms and sequencing.

8.1.3 Quality Assurance

QA is another way the performance management cycle can be applied. According to the American Society for Quality (ASQ), QA is "part of quality management focused on providing confidence that quality requirements will be fulfilled."[34] In a PSAP environment, this equates to "all actions taken to ensure that standards and procedures are adhered to and that delivered products or services meet performance requirements."[35]

An appropriate QA/QI program is an essential component when using a protocol system. The process of conducting quality audits, or the systematic review of telephone and incident recordings, is required by the *Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points (APCO/NENA ANS 1.107.1-2015),* if adopted. This standard requires that 2 percent of all incidents are reviewed (call-taking and dispatch for a single incident are conducted under separate review processes). IAED also requires QA reviews as part of the accreditation process. LSFD Communications does not review incidents beyond cardiac arrests (classified internally as "non-breathers") and structure fires. In the 2018 CFAI annual compliance report, LSFD reports:

> *The communications center has sponsored five of its personnel to become Mid-America Regional County (MARC) Certified Training Officers (CTO). They have implemented a training program that incorporates a quality assurance feature as a requirement for advancement for Probationary Communication Specialists between training step levels.*

The process described above, while technically qualifying as QA, may more accurately be described as trainee monitoring versus QA. The intent of the QA process is to ensure that standards and procedures are adhered to and that delivered products or services meet performance requirements. Probationary employees still actively engaged in the training program are still learning these standards and procedures. IAED refers to training and certification as the first step in the QA process (prior to call-taking and dispatch reviews). Certification is needed to ensure that each telecommunicator has the knowledge and skills necessary to properly utilize protocol systems, as well as follow agency standards and procedures.

For users of IAED protocols, the Academy requires a formal Dispatch Steering Committee (DSC) and a formal Dispatch Review Committee (DRC) for accreditation, but highly recommends it for all agencies. The purpose of the DSC is to provide a venue for high-level policy decisions and general guidance for the protocol systems and provision of services. Typical representatives on this committee include individuals such as the fire chief, police chief, medical director, PSAP manager and other stakeholder representatives. The DSC would typically meet quarterly.

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[34] "Quality Assurance vs. Quality Control." American Society for Quality. https://asq.org/quality-resources/quality-assurance-vs-control. Viewed July 31, 2019.
[35] "Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points (APCO/NENA ANS 1.107.1-2015," Association of Public Safety Communication Officials, National Emergency Number Association. https://cdn.ymaws.com/www.nena.org/resource/resmgr/Standards/APCO-NENA_ANS_1.107.1.2015_Q.pdf

The purpose of the DRC is to review QA results at least monthly for the purpose of improving the performance of individual telecommunicators as well as the group and translating the reviews into real-world suggestions for improvement (including individual, shift, and agency-wide continuing education). The DRC typically includes representatives of the QA unit and other supervisory-level personnel.

LSPD Communications is in a slightly different position. In the current agency SOP manual, a QA/QI program is outlined but it is not followed; incident reviews are only completed for the purpose of conducting internal investigations. The manual states:

> *Telephone and radio monitoring and recording is* [sic] *used to identify and correct performance problems through targeted training. Supervisors will complete the Quality Assurance Checklist to ensure standard performance and to aid in employee evaluation.*

When evaluating the current environment, however, it was determined that management has not yet created such a program. The wording of this policy, combined with the APCO/NENA standard that exists today, could open LSPD and the City to future liability.

To assist agencies that do not have full-time positions to conduct QA reviews, agencies such as Priority Dispatch's National Q or the Denise Amber Lee Foundation provide contract services for QA reviews. These entities, while for profit, provide a third-party review process that allows the PSAP to meet the requirements of the APCO/NENA ANS 1.107.1-2015 QA standard. Utilizing in-house staff is certainly appropriate, and use of a third-party agency is not mandatory.

With the efficiency of 9-1-1 operations being reliant upon both communications centers being operationally close-knit, there are numerous opportunities to leverage activities occurring at one center for the holistic betterment of the entire system. One example is continuing dispatch education (CDE) created by one agency that could be shared with the other to aid in call processing and performance improvement, assuring that both centers are working in alignment to provide the highest level of service to the community. A joint operations task team can collectively submit suggestions for CDE content that will benefit telecommunicators from both entities.

In a co-located and/or consolidated environment, a shared operations task team will assure that protocols and associated policies are implemented uniformly. A shared operations task team will also benefit the communications centers, assuring a consistent and repeatable method of reviewing problematic QA evaluations, as well as providing a pathway for addressing complaints filed by either agency.

8.1.4 Complaint Resolution

It is imperative to organizational integrity to maintain written standards (directives) concerning complaints and the complaint resolution process, including notifications; it is also an industry standard.

It is important for any agency in a customer service industry, including public safety communications, to maintain an appropriate complaint resolution process. This process involves the logging and investigation of complaints, along with providing an appropriate resolution to the complaint to internal and/or external customers. Much like the QA process, it is through a complaint resolution process that telecommunicators can learn from their mistakes.

When two entities enter into an arrangement to provide and/or receive services from one another, a complaint resolution process is one of the key components of proper communications between the agencies. This communication not only allows for mistakes to be investigated and addressed, but it also provides the opportunity for each agency to learn and grow from one another rather than to allow mistakes to go uncorrected and negative feelings to fester.

A formal complaint resolution process is in place for both LSPD Communications and LSFD Communications. Complaints against LSFD telecommunicators are filed through the fire chief's office, while complaints against LSPD telecommunicators are filed online on LSPD's website, which is disseminated to Communications from the police chief's office. Commendations for each agency follow the same process as the complaint procedures, respectively.

There does seem to be animosity between the telecommunicators of both agencies. For example, LSFD telecommunicators complained that they thought LSPD telecommunicators take too long to transfer 9-1-1 calls for fire and EMS to LSFD Communications. LSPD telecommunicators, when asked about the possibility for consolidation, were very adamant that their focus was police officers and they did not want to work with the fire department because they believe it would take away from serving the police officers and put their safety at risk.

An avenue for improving relations between both agencies, regardless of a joint operations initiative, is to conduct joint processes and committees. The two communications centers currently operate as separate entities, with little collaboration between leadership of the communications centers. In the short-term, establishing working groups and/or committees to address mutual shared interests is an excellent way to begin building a more collaborative working relationship for issues such as hiring workflows, joint training, QA/QI programs, and collaborative SOG/SOPs (where law enforcement operations affect fire operations, and vice versa). Establishing joint processes will enable the two communications centers to function more

efficiently, as well as more like a single public safety system, as opposed to two different departments, which will ultimately benefit first responders and the public alike.

Key Take-aways

- Performance management provides for holistic organizational success and includes everyone in communications from telecommunicators to managers/directors.
- Both LSPD Communications and LSFD Communications have access to a dashboard through MARC for call data and statistics. Access to Vesta Analytics also enables management to obtain data for evaluation.
- Beyond the normal call and incident data available from MARC and VESTA systems, data does not appear to be retrieved and analyzed on a normal basis.
- While neither communications center is accredited individually, the centers are assessed for LSPD's and LSFD's respective accreditations.
- There is not a joint complaint resolution process for LSPD Communications and LSFD Communications, although each department does have a process in place.
- A QA/QI program that complies with either IAED and/or APCO/NENA standards is not in place for either center.
- The LSPD Communications policy manual states a QA/QI program exists, while in practice it does not.
- LSFD Communications does not review incidents beyond cardiac arrests (classified internally as "non-breathers") and structure fires.
- The opportunity for a joint training and other process exists between the two communications centers.

8.2 Recommendations

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Add interdepartmental workgroups for QA/QI, complaint resolution, change management, after-action reviews, etc.	• Increased interagency communication and cooperation
Ensure all components of QA/QI program meet applicable standards (local, state, federal and accrediting agency)	• Ensures compliance with standards • Reduced telecommunicator errors • Ensures transparency

9 Technology

Technology—hardware, software and infrastructure—is at the heart of modern-day public safety operations. Call-handling systems, once operated using equipment containing vacuum tubes, is now computerized. 9-1-1 phone calls, which have been received via copper phone lines for over 50 years, will be received over an Emergency Services IP network (ESInet) soon. CAD and RMS are highly technical systems that enable a telecommunicator to be more effective and efficient. Technology covers virtually every aspect of PSAP operations.

9.1 Findings and Analysis

Technology within the City is handled by the Information Technology Services Department (ITS). LSFD does not have any technology staff within its ranks, while LSPD has a single police officer with some technology experience whose function is to direct special projects (including IT needs and projects). ITS has several staff that work primarily with the public safety entities, but they are not assigned solely to these tasks.

Technology needs are handled through ITS. Each piece of equipment has a useable life assigned to it through a central IT replacement plan. When a piece of equipment is nearing the end of its documented life span, both departments are provided with the option to replace the equipment or continue to use it until it fails and requires replacement. Both chiefs reported that when they are notified that a piece of equipment is nearing this date, the equipment is always replaced. This has resulted in a reduced number of on-the-job failures of hardware. Both LSPD and LSFD reported that software versions are typically kept up to date and within one version of the most current release of each of its systems.

The City has a centralized ticket system for IT issues. Both LSPD and LSFD submit tickets directly to this system. ITS has a classification system for submitted tickets to determine the severity and, ultimately, the speed by which the tickets are addressed. While it was reported that this typically is not a major issue, there is some discrepancy between ITS and LSPD or LSFD regarding what priority a ticket should receive. Issues that ITS may believe are not as critical may be a critical problem in the eyes of responders or telecommunicators.

LSPD has two personnel on-site who deal with IT-related issues on a daily basis. The first is a police officer who has been given the role of special projects manager. In this role, the officer serves as the internal LSPD contact for projects such as the Zuercher CAD implementation. The second is an ITS employee assigned to LSPD; this individual has multiple responsibilities. It was reported that due to this workload, problems with Communications equipment reported to the ITS employee may take anywhere from a few days to a few weeks to be addressed.

9.1.1 Call-Handling Equipment

Call-handling equipment (CHE) for both LSPD Communications and LSFD Communications is provided and maintained by MARC. Typically, primary PSAPs are upgraded first, followed by secondary PSAPs as

funding is available. The CHE servers for both LSPD Communications and LSFD Communications were upgraded to NG9-1-1-compliant equipment and software approximately one year ago. The individual call-taking workstations themselves have not been upgraded in approximately three to four years.

9.1.2 CAD/RMS

LSPD Communications and LSFD Communications currently use separate CAD and RMS. LSPD Communications is in the process of upgrading its current CAD/RMS to a Zuercher CAD (a CentralSquare product) with a go-live date of approximately February 7, 2020. LSFD Communications is using Fire Data Management (FDM) CAD/RMS and has been advised by CentralSquare that no further program upgrades or feature additions will be made (FDM was acquired by TriTech, before TriTech became CentralSquare). This poses a prime opportunity for LSFD Communications to either consolidate into a single, city-wide CAD/RMS or solicit for a new CAD/RMS all together (including a CAD-to-CAD interface for ease of call transfers).

9.1.3 Radio System

The City is in the final stages of upgrading its current radio system to a new Motorola digital system. The installation of mobile radios in LSPD and LSFD vehicles as well as coverage testing is slated to begin around November 1, 2019. Once complete, the system should be placed into service approximately January 1, 2020.

LSFD also must monitor two additional radio systems in use by its contract agencies. This places additional workload on the telecommunicators; radio traffic on one radio system can potentially cause radio traffic on another system to be missed.

Key Take-aways

- A ticketing system is in place through City ITS for reporting IT-related issues, but the expectation of how quickly these should be addressed is not the same between LSPD or LSFD and ITS.
- LSPD historically has allowed equipment to fail, rather than allowing for replacement when the equipment reaches the end of its documented serviceable life.
- LSPD uses an internal employee to initially handle many IT-related issues, which has caused delays.
- The opportunity exists for LSFD Communications to join the LSPD CAD system (Zuercher Public Safety Suite) currently being implemented.

9.2 Recommendations

Due to the technology described herein and that which is unknown but may be added in the future, the City should investigate the possibility of hiring both a public safety radio technician and a public safety IT technician to work directly with the public safety agencies. The ITS employees currently assigned have other duties and are not able to focus specifically on the issues at hand, many of which are unique to

public safety. The return on this investment could enable City ITS to redeploy personnel in a manner that reduces turnaround time on tickets from other City departments. The new public safety technology positions are essential to the long-term success of any future operational changes (discussed in Section 12).

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Establish common expectations for response times for service issues	• Sets expectations for service • Decreases response times • Improves system functionality and reliability • Decreases system downtime
Include IT replacement as part of a communications focused strategic plan	• Improves system performance and efficiency • Decreases system failures and downtime • Improves user experience and performance
Make a decision for LSFD Communications to join LSPD Communications' CAD system, if the decision is made to continue operating two PSAPs	• Provides greater functionality with implementation of new CAD system • Reduces call processing times • Reduces risk of call entry errors
Investigate the possibility of hiring both a public safety radio technician and a public safety IT technician to work directly with public safety	• Enables dedicated IT support to LSPD Communications and LSFD Communications • Return on investment could enable City ITS to redeploy personnel

10 Facilities

DHS has designated mission-critical public safety facilities as critical infrastructure (CI). CI is defined as:

> *… systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.*[36]

[36] Presidential Policy Directive – Critical Infrastructure Security and Resilience. Presidential Policy Directive/PPD-21. The White House. February 12, 2013. https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil.

Mission-critical public safety facilities must continue to support operations even under the most adverse conditions (i.e., last operational building). The design of public safety facilities includes considerations for enhanced personnel security, hardened structural components, redundant systems, continuity of operations, and disaster recovery planning.

Lee's Summit is susceptible to a wide range of natural, technological, and human-induced hazards and threats. The table below summarizes the threats and hazards that can adversely affect PSAP operations within the region. PSAP managers must be prepared to maintain operational capacity regardless of emergency circumstances.

Table 12: Lee's Summit Hazard Summary

Lee's Summit Hazard Summary	
Natural Hazards	
• Severe Thunderstorms • Flooding • Tornados • Subsidence/Seismic Activity • Pandemic Diseases	• Winter Storms • Wildfires • Drought
Technological Hazards	
• Wireless Carrier Outages • Structure Fires • Hazardous Materials Release (Fixed Site/Transit) • Interruption of Primary/Secondary Electrical Power	• Interruption of Building Services (water, sewage, HVAC[37]) • Radiological Incidents • Radio Tower Failures
Human-induced Threats	
• Cyber Attacks/Ransomwares • Active Assailants • Improvised Explosive Devices (IEDs) • Package Explosive Devices • Person-borne Devices (Suicide Bomber) • Vehicle-borne Explosive Device	• Chemical Agents • Biological Agents • Sabotage • Theft • Property Destruction/Vandalism • Civil Unrest/Protests

[37] Heating, ventilation and air conditioning.

10.1 Findings and Analysis

LSPD Communications is located on the ground floor of the police headquarters building. The communications center has eight ergonomic dispatch consoles arranged in two groups of four. Each position is fully functional and has the same equipment installed. Four consoles are utilized daily, with four reserved for training, upstaffing during emergencies or events, and future growth. A raised flooring system is installed in the center; however, it is unknown if the raised flooring is appropriately grounded per Motorola R56, *Standards and Guidelines for Communication Sites*.

LSPD has $5.5 million as part of a recent municipal bond issuance towards facility renovations, making this an opportune time to re-evaluate location of the communications center, as well as co-location and consolidation options. If the staffing recommendations for the current configuration are acted upon, the communications center has enough room to accommodate additional personnel on shift. With the consolidation staffing recommendations made herein, the number of on-duty staff would not be able to fully occupy this space, as console positions for two supervisors would not be available. If co-location or consolidation were to occur and occupy the current LSPD Communications space, significant renovations and expansion would be needed to accommodate all operational personnel scheduled per shift.

LSFD Communications is located in the basement of the fire headquarters building. The communications center has six ergonomic dispatch consoles. Each position is fully functional and has the same CAD, CHE and radio equipment installed. Two or three consoles are utilized daily, with the others reserved for training, upstaffing during emergencies or events, and future growth. The sixth position is in a corner of the room, not immediately in line with the other consoles; this is the supervisor console. This offset does not lend to ease of monitoring dispatch operations, and during data collection the position appeared to have been unused for some time. A raised flooring system is not installed in the center, lending to difficulties adding or re-arranging consoles and the associated wiring of each.

If the staffing recommendations for the current configuration are acted upon, the communications center has enough room to accommodate additional personnel on shift with one console to spare. With the consolidation staffing recommendations made herein, the number of on-duty staff would not be able to fully occupy this space, as there are not enough console positions. Significant renovations to the building would need to occur to reconfigure the existing center and provide for additional space for new staff. It is unknown if this space could be reclaimed from adjacent office space, but this appears highly unlikely.

10.1.1 Emergency Operations Center

The City's current Emergency Operations Center (EOC) is in a dual-use auditorium in the basement of LSFD headquarters, which was built in 1975. Most of the time, the auditorium serves as a meeting and training space for LSFD and other agencies. The LSFD headquarters building is a hardened facility, making it an ideal location for an EOC during severe weather and natural disasters. The basement is not, however, handicap accessible; while the current space is adequate for the current need, there is limited room for growth and/or expansion.

One of two IT closets for the EOC and LSFD Communications is in the EOC. This closet holds the radio equipment for Communications (including radio control stations and combiners) and is very small with no room for additional equipment. During data collection, it was observed that the room's existing HVAC setup is not sufficient for the equipment contained in the room. This is of concern because typical public safety IT infrastructure generates a large amount of heat and is very heat sensitive; the equipment should always be kept cool. Other deficiencies, such as the basement lacking handicap access, exist with this facility as well.

The EOC functions as a command and control center during disasters and planned events, versus a communications center, which handles normal day-to-day emergency communications for the City. The two are not tied to one another during a disaster and having them in separate facilities is common in some localities for many reasons. However, there are some benefits to having both located in the same facility, including command staff for an incident having ready access to the communications center to request additional incident resources.

The EOC is maintained and used primarily by LSFD; it is partially activated two to four times per year for planned events and incidents, and fully activated typically once every two to three years. LSPD utilizes the EOC as a command post, but only during select downtown events. The LSFD building is strategically located to the downtown area, allowing the LSPD command structure to be relatively close to an event. Due to the geographical separation of LSPD and LSFD facilities, LSPD staff believe it is inappropriate to use the EOC for any incidents other than those for which it is already used. LSPD staff believe that a mobile command post, which the City has not purchased, would be of better use to them than the EOC. It was further stated that current LSPD policies do not have any provisions for utilizing the EOC for any critical and/or long-term incidents.

Several years ago, LSFD converted the EOC from hardwired network connections to wireless connectivity. This allows City agency and department directors and staff to utilize his or her issued laptop during activations; thus, eliminating the need to constantly maintain a seldom-used room full of computers and the associated maintenance costs. Despite this upgrade, technology continues to be an issue during EOC activations. Technology and audiovisual needs top the list of issues that must be addressed for better functionality. The space is equipped with enough electrical outlets as well as tables and chairs. There is a projector mounted to the ceiling and a large projection screen on a raised platform/stage at the front of the room. A project is underway to implement Zoom, a video conferencing system for use during incidents and emergencies.

WebEOC, an incident management platform used by numerous states throughout the nation, is one of the technologies in place to help maintain situational awareness in times of disaster or during planned events. LSFD utilizes WebEOC, but it is the only department or agency within the City to do so. Permission has been granted by the State to build out the system locally to encourage additional use at the local level. LSFD has sponsored personnel who have become WebEOC instructors, but the training has not been provided to City employees outside of LSFD yet. LSFD has the goal to build out the local WebEOC system and train staff so that the system can be operational within six months to one year.

From a facility standpoint, if the path of co-location and/or full consolidation is considered, so too should relocation of the EOC be considered. As stated, it is not essential that a communications center and the

EOC be adjacent to one another but there are some efficiencies that are realized during incidents and disasters from such an arrangement. If the hardened facility located near LSPD is chosen as the site for the consolidated or co-located center, or another such site with enough space for appropriate construction and/or renovation, this would be a prime location for relocating the EOC.

Not only would efficiencies be realized for incidents and emergencies, but so too could efficiencies be realized with facility construction. Space within the facility that is common to both a communications center and an EOC could be constructed once and shared by both operations. For example, a large enough kitchen/break room facility could be constructed so that it meets the needs of communications personnel for day-to-day use, while also providing enough space to also accommodate personnel working in the EOC during an activation. Locker room and shower facilities could be constructed to also accommodate both sets of personnel. By co-locating both operations together and constructing shared spaces, the cost to construct these facilities is reduced; thus, saving the City financial resources. Shared IT resources are another aspect whereby co-location of the two communications operations could potentially save on overall infrastructure costs. Additionally, relocation of the EOC to the same facility as the new consolidated or co-located communications center would free up the current space in the basement of LSFD headquarters, which could be reclaimed and renovated to fit the growing needs of LSFD.

Key Take-aways

- The potential exists for a new public safety center to be created, possibly housing both a co-located/ consolidated PSAP and the EOC.
- If co-location or consolidation were to occur and occupy the LSPD PSAP, significant renovations and expansion would be needed to accommodate all of the operational personnel scheduled per shift.
- The EOC has no space available for expansion without taking away space from other operations.
- LSFD is upgrading technology within the EOC, but additional challenges still must be addressed.
- If the EOC is relocated, consideration should be given to keeping it within a space adjacent to a co-located or consolidated communications center to enable more efficient operations during emergencies or events.

10.2 Recommendations

MCP has presented recommendations below with associated outcomes.

Recommendations	Outcomes
Plan to accommodate LSPD and LSFD operations at a City-owned hardened facility	• Provides a secure facility which can be renovated to appropriately accommodate the City's law enforcement and fire/EMS operations in a single location
Develop continuity of operation (COOP) plans for each communications center	• Provides guidance in maintaining operational capacity during disruptive events

11 Regional Comparison

To facilitate an informed decision-making process, the City requested a review of several nearby localities to determine the composition of their PSAPs. This regional comparison will allow the stakeholder group to evaluate other PSAPs and learn from the experiences of those agencies. The regional PSAPs that participated in this comparison are noted below.

- Kansas City, Missouri, Police Department Communications
- Kansas City, Kansas, Police Department Communications
- Independence, Missouri, Police Department Communications
- Johnson County, Kansas, Sheriff's Office Communications

11.1 Findings and Analysis

Each participating agency was asked a series of questions to determine various basic statistical factors (e.g., population, 9-1-1 call volume, number of telecommunicators) as well as questions to determine the operational format. Each agency was also asked for specific factors (strengths and challenges) that resulted from the operational change to the current configuration.

In evaluating the answers, it was determined that issues currently under consideration by or recommended to the City, such as cross-training and co-location, were largely met with success by these agencies. The agencies were a mixture of primary and secondary PSAPs, some handling only call-taking and law enforcement dispatch duties, with others fully consolidated. Despite the differences in their specific makeup, the common theme still held true. While no operational change is fully without bumps, the experience of these agencies showed that operational changes suggested herein can be accomplished without compromising safety of the citizens or first responders, while still providing excellent service.

Responses for each agency can be found in Appendix I – Regional PSAP Comparison.

Key Take-aways

- The issues currently under consideration by or recommended to the City, such as cross-training and co-location, were largely met with success by the participating agencies.
- The experience of these agencies showed that operational changes suggested herein can be accomplished without compromising safety of the citizens or first responders, while still providing excellent service.

12 Future Direction

12.1 Discussion

Planning for the future of public safety communications in Lee's Summit is a key effort that should be given priority attention. The City is projected to experience large growth in the coming years, even without the release of additional land for development, which will increase the overall workload on both communications centers. Both centers have already seen substantial increases in workload over the past ten-plus years without any increase in staff to help mitigate the increases.

Fully integrated joint operations would bring LSPD Communications and LSFD Communications together as a single entity. Some decisions that must be made include what entity would be the managing agency (LSPD, LSFD, or a new City department), what pay scale and benefits would the employees fall within and what location would be used for the consolidated center. While these and other decisions may seem like minor decisions to some officials, in the grand scheme of the plan, to LSPD Communications and LSFD Communications telecommunicators these decisions have real-life impacts. Any consolidation plan moving forward should include not only administrative members of each agency, but operational members (e.g., telecommunicators) as well to assure the best chances for success. Not taking the perspective of the employees most affected by a joint operations environment into consideration would cause unnecessary hurdles to overcome throughout.

The concept of co-location of both LSPD Communications and LSFD Communications is another option open to the City. In a co-location scenario, both centers will exist within the same physical structure but would still maintain independent operations, allowing each entity to maintain its autonomy, while possibly sharing infrastructure and other costs to realize some potential cost efficiencies.

During data collection interviews, this scenario was broached several times with varying reactions. Some individuals were skeptical of the idea but willing to consider it, while other individuals thought the only way to make this effort successful was to build some sort of wall or partition that would separate the two centers. This perceived level of animosity between the two entities is one additional consideration that must be addressed regardless of which path is chosen.

The final scenario introduced in the *9-1-1 Magazine* article, mentioned above, is that of shared services. In a shared services environment, certain "back of the house" items such as CAD and CHE servers can be shared. This eliminates multiple sets of servers and both entities operate using a single set of servers connected through the City's IT network. If a high availability disaster recovery solution does not currently exist, the second set of servers can be repurposed and installed at a location within the City, remote from the centers, to provide a geodiverse backup and disaster recovery solution. Other services, such as a shared training officer or shared CAD administrator can be utilized. These arrangements must be properly defined within administrative policy documents but with proper planning these positions can successfully serve both entities; thus, reducing the cost to employ separate individuals for each agency.

The City can benefit from the co-location or consolidation of LSPD Communications and LSFD Communications into a single facility. Currently, LSPD Communications and LSFD Communications serve as each other's back-up for evacuations; one key challenge that must be overcome, if co-location or consolidation occurs, is the need for a continuity of operations and disaster recovery plan.

Leaders should not expect to realize any cost savings for numerous years because of one-time costs and the time it takes to implement more complex recommendations such as establishing suitable facilities and increasing staffing. Even eliminating call transfers will take some time because of the necessity to take an evolutionary approach. The recommendation for the City to take an evolutionary approach stems primarily from the lack of interest and skepticism of existing staff and leadership toward major operational changes resulting from a fully integrated joint operations environment with staff cross-trained in call-taking and dispatching.

Such an evolutionary approach begins with a good foundation that all levels of the organization can commit to and support—co-location of LSPD Communications and LSFD Communications in one facility while maintaining independent administrations. The table below provides a high-level overview of how the City can build upon that foundation and transform its public safety communications into the Lee's Summit Emergency Communications Center (ECC).

Table 13: Lee's Summit Emergency Communications Evolution

Transformation Steps	
Phase 1	Virtual PSAP Consolidation/Shared Services
	Step 1: Enhancements • Form a joint operations advisory board—or appropriately named entity—comprised of operational customers with clear roles and responsibilities to provide "guidance" for future phases. • Implement staffing recommendations. • Require new hires to participate in observation at the other PSAP. • Create an operations team comprised of staff from both PSAPs and jointly led by the Lead Communication Specialists. Step 2: Shared Services • Determine which technologies can be shared and operated jointly—CAD/RMS, CHE, radio, and other PSAP systems—and determine implementation costs/effort for each. • Implement CAD/RMS, CHE, radio, and other PSAP systems deemed to realize fiscal savings and operational efficiencies for the City.
Phase 2	PSAP Physical Co-location of Joint Operations
	• Develop a thoughtful and practical transition plan to co-locate LSPD Communications and LSFD Communications in one facility.

Transformation Steps	
	• Both PSAPs will maintain their independent administrations. • Recruiting efforts will continue in order to fill either law enforcement or fire rescue communications specialist positions. • After the co-location has been implemented, the next phase will require the creation of a tiered organizational structure and salary incentives to accommodate call-takers that are capable to handling calls for both disciplines. • Recruiting will continue to promote separate law enforcement and fire rescue dispatch openings for dispatch purposes however; all new hires will be required to serve as call-takers for both disciplines. • A request and training path will be created and offered moving forward for any existing staff that may want to become cross trained call-takers, however; none of the existing staff will be forced to be cross-trained.
Phase 3	Full Physical Integration of Joint PSAP Operations
	Step 1: Management • Leading up to implementation of this phase, update the organizational structure to be established as an independent department alongside other City department heads such as the Finance Director, Police Chief, Fire Chief, HR Director, etc. • An executive-focused recruiting effort[38] would be engaged to identify and hire/promote qualified leadership. • The management of the City ECC would transition from under the police and fire chiefs to an independent department. • During this phase the tiers will be expanded along with salary incentives, selection criteria such as performance and time in service requirements, to accommodate existing staff that may desire to cross train in the opposite discipline than what they were hired for. Step 2: Consolidation • Recruiting will continue to promote separate law enforcement and fire rescue dispatch openings as none of the existing staff will be forced to cross-train. • Appropriate additions to training curriculum according to national standards to enable cross-training of existing staff members. • A request and training path, to include strict performance testing, will be created and offered moving forward for any existing staff that may want to serve as dispatchers for both disciplines. • The operational configuration will require adjustment to ensure cross-trained dispatchers routinely dispatch both disciplines to ensure quality assurance.

[38] See Appendix G

Unless the decision by stakeholders is to remain status quo, whatever form the management and operational structure of public safety communications in Lee's Summit takes in the future, a thoughtful and practical transition plan will be required and vital to its success.

A crosswalk document capturing human resource-related items that require decisions to be made during an operational transition is designed to ensure a complete picture is captured during execution of a consolidation effort. The project manager executing the full transition plan can use a document template as a starting point to compare line-by-line a complete set of human resource-related elements such as pay and benefits.

Even if status quo, an exercise between the two departments at the administrative oversight level to identify opportunities to align and promote public safety communications citywide as a place to work can be beneficial; see Appendix F – Workforce Integration and Transition Crosswalk for elements to consider.

12.2 Recommendations

Given the information gained and the opinions shared with the project team by the telecommunicators, it is highly advantageous for the City to consider a phased, multi-year approach to joint operations integration involving shared services, co-location, and consolidation, as shown below.

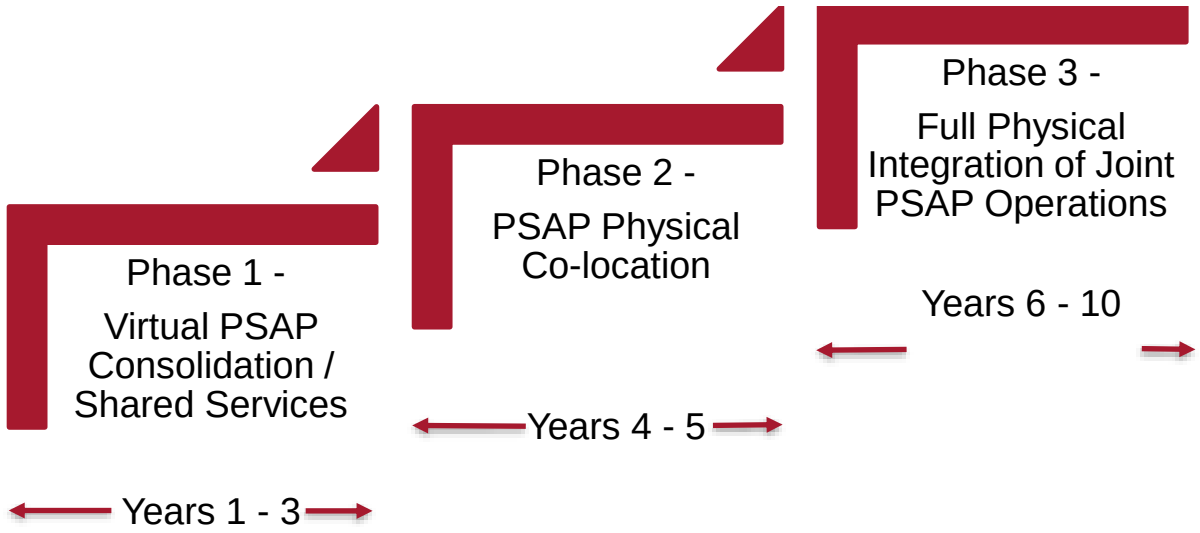

Figure 7: PSAP Consolidation Phased Approach

A phased approach is advantageous in this situation due to some initial negative reactions and/or perceptions of the concept of consolidation. During data collection, MCP uncovered many feelings of uncertainty and potential hostility towards consolidation. Some of these feelings can be attributed to the misunderstanding of what true consolidation means for an agency and its employees. In other cases, however, these feelings can be attributed to the assumption that one specific individual is already assumed to be the default leader of a consolidated organization. This has caused hard feelings towards the overall

concept of consolidation and why such an effort is being investigated by the City from both organizations (at multiple levels) and IAFF union representation. In fact, several telecommunicators were so adamant against consolidation that they were not willing to consider the idea. Some of these telecommunicators even stated that they would find employment elsewhere if they were forced to work with or for the other agency. Other telecommunicators were hesitant to embrace consolidation but were willing to consider the idea.

A phased approach will allow the process to follow a natural transition in small, incremental steps that may allow trust to be built not only between the two centers, but also trust in the City and the process. This trust is integral to the overall success of the effort.

By beginning with a shared services approach, efficiencies of scale can start to be realized in the near term. For example, LSPD Communications is currently undergoing a process to upgrade its CAD system. LSFD has reported that since acquisition of its current FDM CAD system by CentralSquare Technologies, management has been advised that the system will no longer receive software upgrades, but the vendor will continue to support the system for the time being. LSPD is in the later stages of the implementation of Zuercher Public Safety Suite Pro (CAD/RMS/mobile data), also now a CentralSquare Technologies product. CentralSquare Technologies could be engaged to increase the scope of this project to include LSFD. The original go-live date for the Zuercher system was scheduled for November 2019 but has now been pushed to February 7, 2020. This presents a prime opportunity to renegotiate costs, scope of work, and implementation time frame to incorporate LSFD into this new system.

Use of a single CAD system solution will help to improve communications between the centers because incidents that originate through 9-1-1 could already be created in CAD and awaiting an LSFD telecommunicator to complete the details; thus, eliminating potentially duplicate questioning (e.g. location and call type) and ultimately saving time. Once a final organizational model begins to take shape, new shared staff and management positions could be established to help both existing communications centers begin the process of shared training, CAD administration, and quality assurance/quality improvement (QA/QI).

The next step in the phased approach is to colocate both communications centers into the same facility. It has been reported that the City has several hardened facilities that could fit this need (in addition to City-owned land where a new facility could be constructed). With some renovation of existing spaces and/or creating of new spaces, a co-located communications center could be created where both LSPD Communications and LSFD Communications could co-exist. This would incorporate the savings already realized through any shared services arrangement(s), as well as ultimately realizing cost efficiencies—such as elimination of duplicate data centers—from not operating two separate centers. The existing LSPD Communications facility could be re-appropriated for other uses by LSPD, while the LSFD Communications facility could either be re-appropriated for additional space for the existing EOC or re-appropriated as a backup PSAP (with appropriate renovations to better enable the space to house the appropriate number of console positions). An additional option exists whereby the backup PSAP could be created in another City-owned building (e.g., a police station, fire station, or City Hall) with renovated space large enough to house said operations.

If the option to move to said structure is not available, the current space within the LSPD headquarters facility could be evaluated for co-location. It has been reported that LSPD is undergoing a space study for the facility, and now would be the optimum time to re-evaluate the location of LSPD Communications and identify space for a potential co-located/consolidated center within the LSPD headquarters facility. This is not to say that LSPD would by default manage a consolidated center, but rather LSPD would simply act as the host to said PSAP. Alternatively, space within another City-owned building could be evaluated for renovation to house a newly co-located and/or consolidated center.

Regardless of the location chosen for creation of a co-located and/or consolidated center, care should be taken to ensure that the building is a hardened, secure facility. Additionally, a backup PSAP should be planned for; the current LSPD Communications facility is not storm-rated, and as such during a severe storm LSPD telecommunicators must travel through the inclement weather to Independence so that dispatch operations can continue in a storm shelter-rated facility.

The final step in this phased approach is full consolidation of both PSAPs into a single City communications center. There are numerous elements that must be considered in a full consolidation such as who will be the managing entity, pay structure, chain of command, operational policies and procedures, labor relations representation, and others. Multiple employees from both LSPD Communications and LSFD Communications expressed the fear that if both organizations are consolidated, one or both would lose the opportunity to be represented by a labor union. This phase of the effort will be the most difficult, could last several years, and should not be rushed. It will take several years of planning to adequately merge the two communications operations into a single organization, whether standalone or part of a department; inadequate planning or a rushed full integration of operations, in this case, will only serve to heighten the distrust and apprehension already experienced by many employees within both departments.

Regardless of the path forward, it is important not to rush a timeline. From the time of the agreement to move to take a path forward, regardless of which path that may be, management must ensure that impacted staff have the operational support and training to perform and mitigate any lapse in service levels. When the proper time is not taken, many considerations for not only governance but also personnel management can be unintentionally missed.

One element of consolidation planning which is designed to help integrate employees who have not initiated a lateral move voluntarily but find themselves part of a new City organization is a transfer and integration plan. Establishing a transfer and integration plan within a full transition plan will also set guidelines to ease the same process if there are more changes in the future. It is important that the most valuable resource, the people that work the line at both a hosting PSAP and an integrating PSAP know that they will continue to be protected from the possibility of severe economic hardships caused by illness, disability, loss of life, or unemployment, as well as define leave and other benefits. Establishing such a plan has in other organizations demonstrated to provide the following benefits:

- Attract and retain talented communications staff (before, during and after the transition)
- Align benefits obtained through collective bargaining with years of service due the transferring employee

- Promote higher levels of morale among employees because they know what to expect now and in with future regionalization efforts, know their concerns are being taken into consideration and most importantly know their experience is respected and valued
- Provide opportunities for promotion or advancement as changes take place in the future

12.2.1 Cross-training

It is clear that cross training of Communications Specialists in both call taking and police or fire dispatching is viewed extremely negatively and as a responder safety issue. This is a regional perception among other police and fire dispatch agencies, as nationally there are numerous organizations throughout the country that successfully use a combined PSAP model where all telecommunicators are cross-trained, not only in call taking, but in police, fire, and EMS dispatch.

It is clearly understood from fire rescue executives, telecommunicators, and labor representation perspectives that cross-training would be a barrier to moving forward with any consolidation model recommendation. There may be resistance from the law enforcement community also, but, in MCP's opinion, to a slightly lesser extent and for the same reason based on statements from LSPD Communications personnel With that said, however, given the experience of many PSAPs across the country that have consolidated it would be in the best interest of the public, first responders, and the City to work towards maintaining a consolidated PSAP. This is for reasons such as the elimination of potentially time consuming call transfers from one communications center to another, a more complete operational picture (e.g. fire dispatchers can more easily monitor law enforcement incidents and vice versa to determine operation impact to fire department incidents), and potential cost savings.

To begin the process of cross-training, it is recommended that integration of LSPD Communications and LSFD Communications employees also take place in phases. Existing employees could be given the opportunity to cross-train in universal call-taking (versus mandating cross-training). Universal call-taking is the method of a single telecommunicator processing a 9-1-1 call from beginning to end, asking all the pertinent information, regardless if it is a request for law enforcement, fire or EMS services (or a combination thereof). This method of call-taking is advantageous for the City because it will reduce the overall call transfer time, thereby reducing the time between call initiation and the dispatching of field responders (due to calls not being transferred to another PSAP or call-taker). All new employees hired beyond a specific date (to be determined by management) could be trained in universal call taking from the onset of his or her employment. As the City transitions from the end of the second phase to the start of the third, universal call-takers can be hired and trained even before the official implementation of a single consolidated center, allowing a larger pool of staff to enable a successful transition to a fully consolidated PSAP. Over time, as universal call-takers gain experience and are eligible, they can transition to dispatch duties, with specialty certifications (such as National Crime Information Center [NCIC]) conducted during the appropriate training modules.

Three options exist for cross-training law enforcement and fire and EMS dispatchers in universal call taking and in the other dispatch disciplines. It should be noted that in all three options below, all new hire employees would be hired under the understanding that they will be trained in universal call taking and,

after an appropriate period, they will be trained in both law enforcement and fire/EMS dispatch. All new employees will be fully cross-trained in this manner.

The first option is for existing telecommunicators to be provided the option of attending universal call taking and/or the appropriate training to become cross-trained. Allowing current telecommunicators the option to cross-train in universal call taking or the opposite dispatch discipline will help to reduce some of the perceived anxiety regarding a fully integrated joint operations environment and the idea that law enforcement dispatchers being trained for fire and EMS, and vice versa, would be a safety issue for first responders. This method will also allow those employees hired as part of the consolidation effort to serve as examples for the existing telecommunicators of how cross-training can be successful. The downfall to this method is the potential to have few existing employees volunteer for cross-training, resulting in scheduling difficulties.

The second option is for existing telecommunicators to become cross-trained as stated above, but at an appropriate future date (to be determined by management); all existing telecommunicators would be mandated to attend the appropriate training to become fully cross-trained. With this method, once new hire employees are trained and released to independent practice management can utilize these employees to fill some of the positions that would be vacated on the schedule while existing staff attend the appropriate classroom and on-the-job training. Management would be required in this instance to determine if they wish to allow existing staff the option to choose when they wish to attend cross-training or if they wish to assign personnel. The benefit to this method is that a sizeable portion of existing employees would ultimately become fully cross-trained. The downside to this method, however, is the risk that existing telecommunicators who are not cross-trained may continue to hold on to negative feelings exhibited during data collection, causing unnecessary complications (and potential employee loss) during the overall consolidation period. To combat this, management may wish to consider allowing a small number of existing employees who are outstanding in his or her current dispatch discipline to refuse cross-training (e.g. five dispatchers from both LSFD Communications and LSPD Communications).

The final method of cross-training would be for management to mandate that all existing telecommunicators attend cross-training from the beginning of the integration. This will, in theory, provide the quickest transition to a fully cross-trained staff, although it will still be a lengthy process. This method may not feasible if current staffing deficiencies are not corrected in large part prior to the consolidation effort. The benefit to this method is that all existing employees would ultimately become cross trained. The downside to this method, however, is the risk that existing telecommunicators who are not cross-trained may continue to hold on to negative feelings exhibited during data collection, causing unnecessary complications (and potential employee loss) during the overall integration period.

Regardless of the method chosen, cross-training would likely last several weeks to several months per discipline (to be determined by management), to provide for adequate classroom instructional time, time for role play scenarios, and on-the-job training with a seasoned employee. As a result, management will likely have to conduct multiple cross-training sessions to fully cross train all existing staff of both agencies. New staff that are hired along the way can be cross-trained from his or her first day alongside of more experienced coworkers.

13 Conclusion

Daily, dedicated communications staff at both LSPD Communications and LSFD Communications work to assure that all first responders and members of the community are served when emergencies arise. For years, staff at both centers have done this in an extremely understaffed organizational structure. The City is committed to ensuring 9-1-1 services are in place to assure service to the community is reliable, standardized, and provides the best service. Achieving this in a consolidated environment is a process and one that can be arduous and met with many roadblocks. Communications is proving to be a steadfast group of dedicated professionals committed to the mission and service they provide.

Next steps, in the form of recommendations, are outlined in Appendix A. Overall, the recommendations should lend themselves well to support the current activities and future 9-1-1 planning efforts in Lee's Summit. LSPD and LSFD leadership is encouraged to consider engaging in a one-page strategic planning methodology specific to its communications center to support these efforts. The identified recommendations can become the commitments and initiatives or the foundation for broader goals that meet the City's 9-1-1 needs from a holistic perspective.

While there are great strides being made in various aspects of the public safety communications systems in Lee's Summit, there are some areas where improvements will be beneficial, both immediately and for the long-term continued success of the centers. Acting on the areas of improvement will move the centers towards the "ideal" state, which MAPS defines as a public safety-grade, or best-in-class, operation.

The first step in improving communications as a whole is to identify areas of risk and translate them into opportunity. Now that Lee's Summit has completed MAPS for LSPD Communications and LSFD Communications, and a forward look at Lee's Summit public safety communications through an evolution into a fully integrated joint operation, recommendations have been made to move toward improving the current operations as well as establish metrics to measure progress moving forward.

MCP is confident that the public safety communications leadership in Lee's Summit can set goals and execute on them for measurable results. The goals created should be visited often to ensure the initiatives are, in fact, progressing towards the end result. Despite the challenges that have arisen from the understaffing of both PSAPs and the skepticism of the staff, given a commitment to proper staffing and inclusive planning, LSPD Communications and LSFD Communications can successfully serve the community well in a consolidated environment with improved technology, personnel, and the overall service provided each day.

Appendix A – Future State and Prioritized Recommendations

The table of recommendations is a collection of all recommendations made throughout this report which the administration of both the LSPD and LSFD can act upon. This appendix does not include the recommended future state as described in Section 12 – Future Direction. The recommendations listed herein, if accepted and acted upon, will position the City of Lee's Summit to be able to pursue the listed future state. To appropriately determine the future state path forward, the City in combination with the LSPD and LSFD administrations must first correct known issues which can become major roadblocks to discussions and negotiations the future state direction as described herein.

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Priority One – within 6 months				
Change or improve organizational structures	• Increases support positions to improve efficiencies with accreditation, QA, etc. • Reduces frequency of telecommunicators being responsible for secondary functions simultaneously • Improves span of control	Improves supervision and support functions	Section 3 – Organizational Structure	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Formalize administrative oversight	• Reduced complaints • Increased efficiency • Reduced response times • Alleviates call processing errors	Provides structure and a framework to hold all parties accountable	Section 3 – Organizational Structure	TBD
Create interagency working groups	• Eliminates duplication of effort and provides relief to staff workloads • Reduces duplicate expenditures associated with the duplication of effort • Improves stakeholder involvement and shares responsibilities for tasks related to shared responses • Improves stakeholder perspectives and expectations between PSAPs	Leverages similarities between LSPD Communications and LSFD Communications	Section 3 – Organizational Structure	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Update the fire rescue agency contract	• Modernizes the ILA – Purpose of the agreement – Baseline for terminology and definitions – Scope of services – Responsibilities and expectations of all participating communities, including the host agency – Pricing structure to include initial costs and predictive ongoing fees for services – Onboarding and integration planning – Performance standards and reporting	Improves fiscal and political issues and provides issue resolution across agencies	Section 3 – Organizational Structure	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	– Change management – Complaint resolution workflow and escalation – Authority of host PSAP to manage financial and personnel matters – Terms and general provisions • Manages fiscal and political issues • Provides issue resolution across agencies • Provides oversight of strategic goals and strategy modifications • Supports the project and project components by communicating the			

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	vision and working to reduce barriers and mitigating risk • Improved workflow for review and approval of overall procurement strategies			
Hold member and host agency accountable for contract requirements	• Stated roles, responsibilities, and membership requirements are met routinely • Provides leadership and support for initiatives	Increases effectiveness, efficiency, and working relationships	Section 3 – Organizational Structure	TBD
Resolve pay disparity between LSPD Communications and LSFD Communications	• Equal pay and comparable benefits across the region tend to increase staff morale and, consequently, overall retention rates tend to improve also	Assures recommendations can be implemented under any future management models	Section 4 – Operational Configuration	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Review and alignment of hiring policies (i.e. tattoos, history of misdemeanors, etc.)	• Alignment of hiring practices between both agencies ensures that the same quality of personnel is hired	Ensures same quality of personnel is hired	Section 4 – Operational Configuration	TBD
Develop program formalizing a documented practice of sending new hires to LSPD Communications and LSFD Communications during training to observe their sister agency and then at least once every two years (if joint operations in the form of co-location and/or consolidation are rejected)	• Cooperative training and continuing education assist in the overall learning experience of both new hire and seasoned employees alike • Being able to observe and monitor the operations of a sister agency allows personnel to learn from the experiences and policies of the other agency and implement said knowledge in their own agency	Improves telecommunicator knowledge of opposite agency's function and improves inter-agency working relationships	Section 4 – Operational Configuration Section 6 – Training	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Evaluate LSPD Communications training program	• Increase new hire training completion rate • Increase unit morale • Increase CTO morale • Decrease overtime costs • Reduce overtime resulting in improved personnel health	Improves telecommunicator knowledge, efficiency and effectiveness	Section 6 – Training	TBD
Establish a change management workflow	• Facilitates jurisdictional and interdepartmental collaboration • Improved workflow for review and approval of overall procurement strategies • Supports the project and project components by communicating the vision and working to	Improves overall workflows and improved decision making	Section 7 – Leadership and Planning	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	reduce barriers and mitigating risk • Improved decision-making • Increased project success (projects that stay within scope, time and budget with required functions and features) • Decreased opportunities for unexpected and planned systems downtime			
Add interdepartmental workgroups for QA/QI, complaint resolution, change management, after-action reviews, etc.	• Increased interagency communication and cooperation	Increases interagency communication and cooperation	Section 8 – Performance Management	TBD
Ensure all components of QA/QI program meet applicable standards (local, state, federal and accrediting agency)	• Ensures compliance with standards • Reduced telecommunicator errors	Improves overall service level provided to citizens	Section 8 – Performance Management	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	• Ensures transparency			
Establish common expectations for response times for service issues	• Sets expectations for service • Decreases response times • Improves system functionality and reliability • Decreases system downtime	Improves overall service level provided to citizens	Section 9 – Technology	TBD
Priority Two – within 6 to 18 months				
Share back of the house services	• Reduces costs • Streamlines recruiting, hiring, and training • Improves consistency of operational service	Improves fiscal position and increases efficient and effective service	Section 3 – Organizational Structure	TBD
Address staffing shortages at the individual agency	• Adequate staffing in the PSAP allows for the handling of calls and incidents according to	Allows calls and incidents to be handled in accordance with national standards	Section 5 – Staffing	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	national standards and maintains appropriate field responder safety. It also tends to increase staff morale and, consequently, overall retention rates tend to improve also			
Provide a position on every shift that has supervisor authority	• Maintaining appropriate management (according to span of control principles) helps agencies to maintain situational awareness, address problems or crises as they arise, and reduce the risk of errors	Provides appropriate management oversight and situational awareness on all shifts	Section 5 – Staffing	TBD
Establish interdepartmental training	• Leverage common continuing education opportunities	Improves telecommunicator knowledge of opposite	Section 6 – Training	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	• Leverage training resources into a combined telecommunicator training academy • Develop supervisory think tank	agency's function and improves inter-agency working relationships		
Develop a joint strategic plan at the communications unit level	• Provides oversight of strategic goals and strategy modifications • Coordinates and leverages funding opportunities and helps ensure the availability of funds • Facilitates jurisdictional and interdepartmental collaboration • Improved ability to direct resources to accomplish goals • Provides leadership and support for initiatives	Improves agency's long-term function and outlook; allows for better forecasting and budgeting	Section 7 – Leadership and Planning	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	• Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk			
Identify sustainable funding for existing and future emergency communications priorities	• Ensures the availability of funds • Improved workflow for review and approval of overall procurement strategies • Supports the project and project components by communicating the vision and working to reduce barriers and mitigating risk	Ensures availability of appropriate funding levels	Section 7 – Leadership and Planning	TBD
Organize a cost-sharing model workgroup to review and develop an equitable, predictable and scalable formula	• Improved transparency and helps build trust • Facilitates jurisdictional and	Improves the cost-sharing funding mechanism and allows for a more equitable division of annual	Section 7 – Leadership and Planning	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
	interdepartmental collaboration • Provides member agencies with clarity and improved budgeting	funding for each contract agency		
Update contract language to include that the parties will review costs every two to three years rather another time frame such as annually	• Improves predictability and the memberships' ability to plan while providing the City with the ability to accommodate an adjustment	Improves the cost-sharing funding mechanism and allows for a more equitable division of annual funding for each contract agency	Section 7 – Leadership and Planning	TBD
Include IT replacement as part of a communications focused strategic plan	• Improves system performance and efficiency • Decreases system failures and downtime • Improves user experience and performance	Improves system performance and efficiency, and user experience	Section 9 – Technology	TBD
Make a decision for LSFD Communications to join LSPD	• Provides greater functionality with	Provides greater functionality with	Section 9 – Technology	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Communications' CAD system, (if the decision is made to continue operating two PSAPs)	implementation of new CAD system • Reduces call processing times • Reduces risk of call entry errors	implementation of new CAD system		
Investigate the possibility of hiring both a public safety radio technician and a public safety IT technician to work directly with public safety	• Enables dedicated IT support to LSPD Communications and LSFD Communications • Return on investment could enable City ITS to redeploy personnel	Improves effectiveness and efficiency of all public safety communications personnel and assets	Section 9 – Technology	TBD
Plan to accommodate LSPD and LSFD operations at a City-owned hardened facility	• Provides a secure facility which can be renovated to appropriately accommodate the City's law enforcement and fire/EMS operations in a single location	Improves efficiencies and effectiveness between both agencies (or improves the whole of a consolidated agency)	Section 10 – Facility	TBD

Recommendation(s)	Outcome(s)	Metric(s)	Report and Goal Reference	Owner
Develop continuity of operation (COOP) plans for each communications center	• Provides guidance in maintaining operational capacity during disruptive events	Provides guidance in maintaining operational capacity during disruptive events	Section 10 – Facility	TBD
Priority Three – within 18 to 36 months				

Appendix B – Organizational Charts

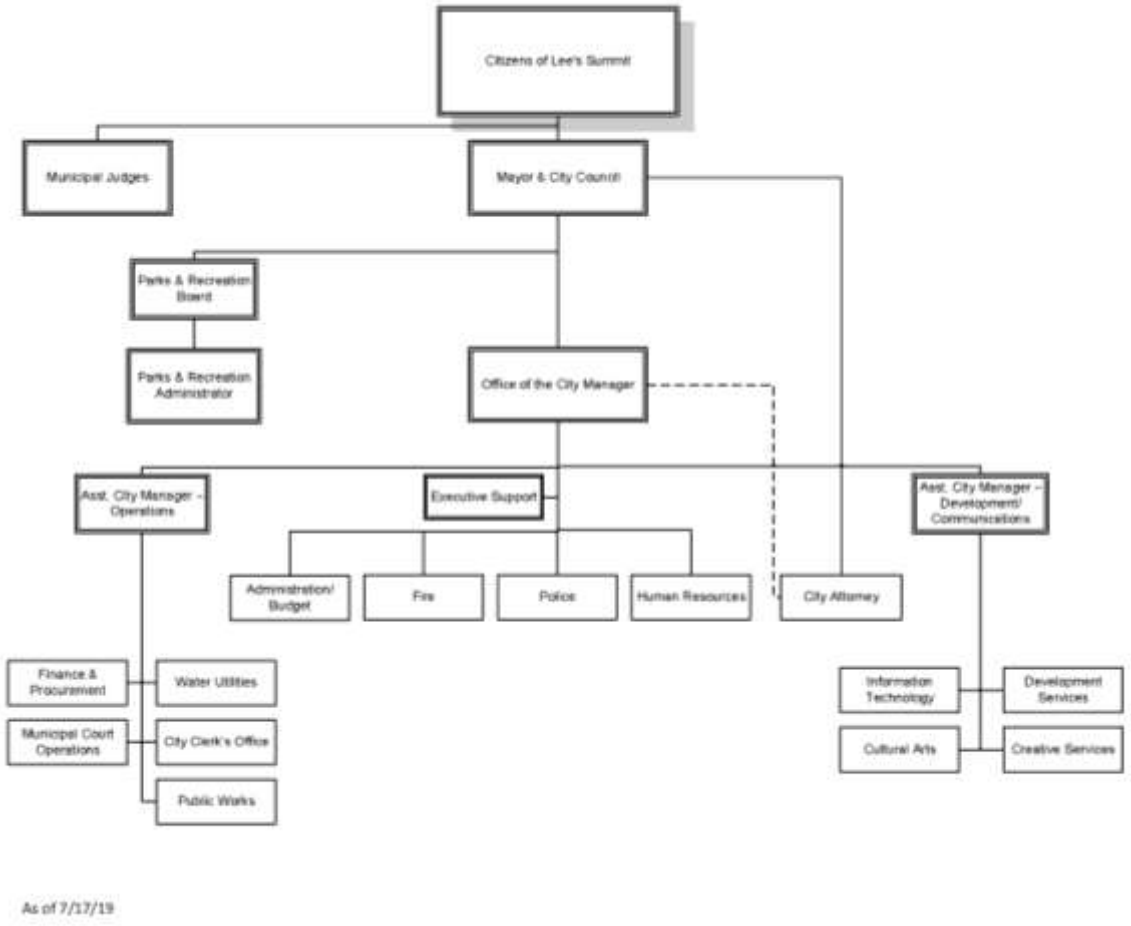

Figure 8: City of Lee's Summit Organizational Structure

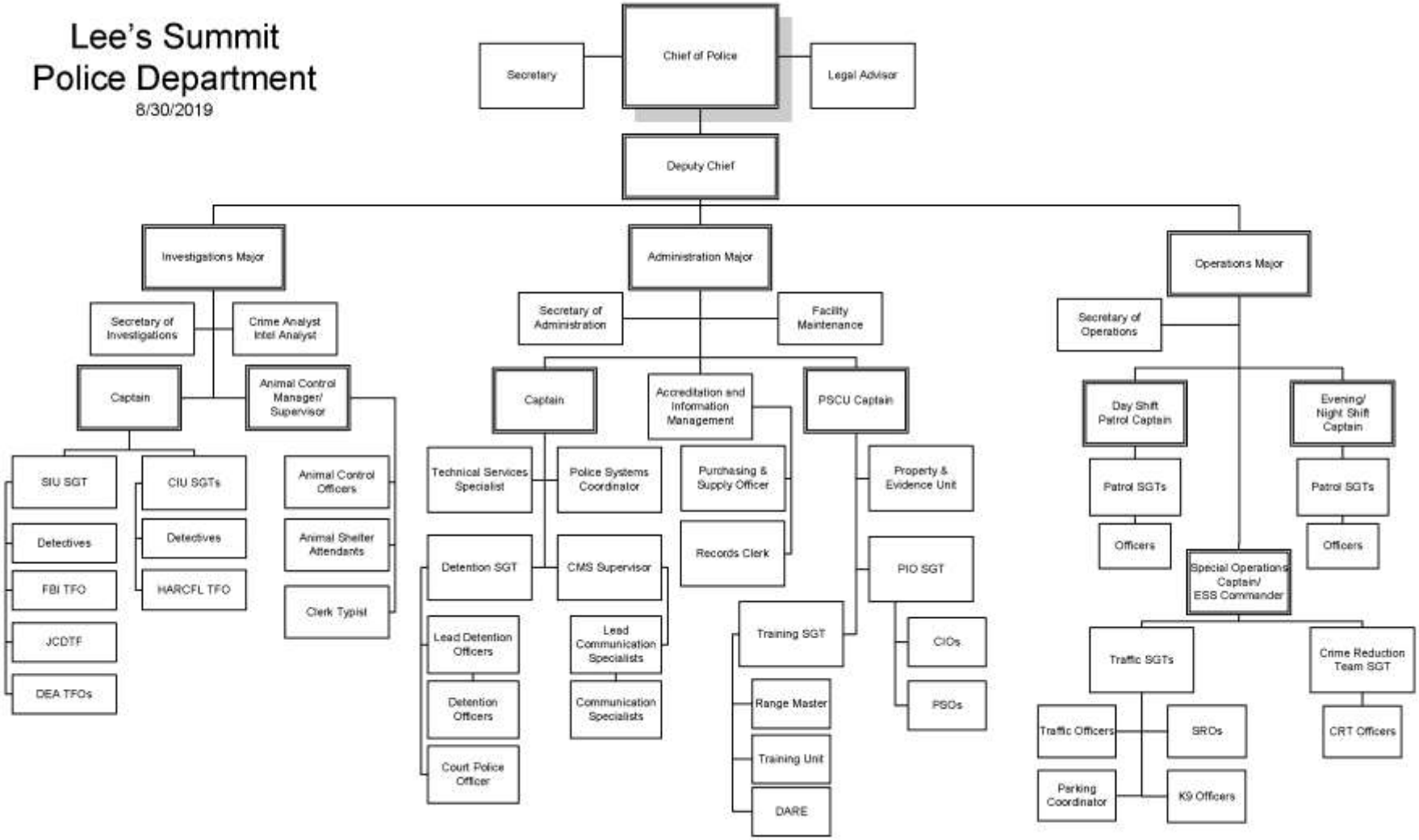

Figure 9: LSPD Organizational Structure

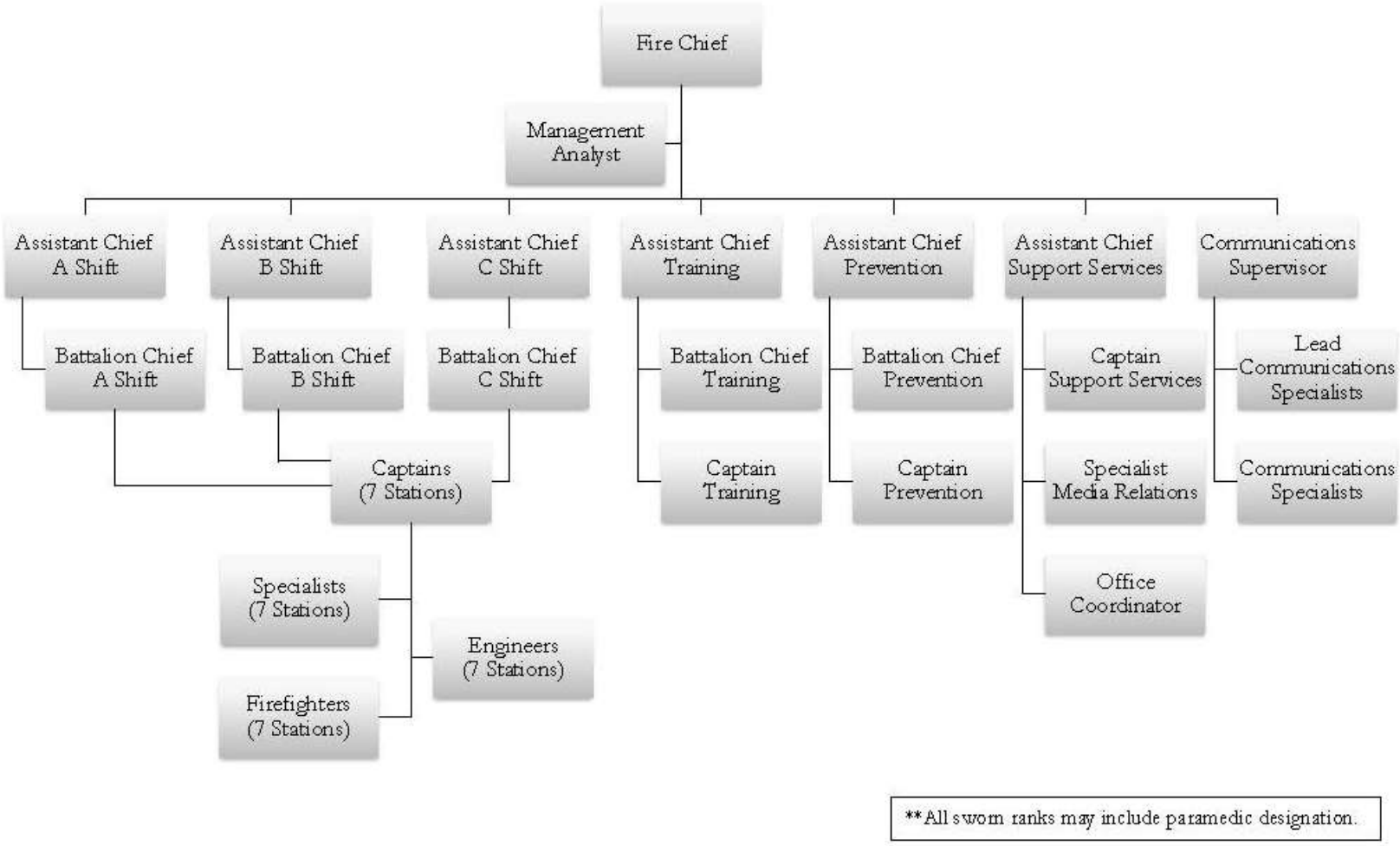

Figure 10: LSFD Organizational Structure

Appendix C – Standards and Accrediting Organizations

Throughout the country, PSAPs adopt and use industry standards and best practices to assure the effectiveness of the center and that the best possible service is provided to citizens and first responders. Measurable standards create an objective view of 9-1-1 operations and provide for consistent interactions with the public and first responders. The information in this appendix is intended to provide the reader with information on industry organizations that set standards applicable to a PSAP, as well as some of the standards.

Standards and best practices most often used in PSAPs are from APCO and NENA. Also used often are National Fire Protection Association (NFPA) standards, specifically NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, and NFPA 1061, *Professional Qualifications for Public Safety Telecommunications Personnel*, and standards from CALEA, particularly *Standards for Public Safety Communications Agencies*. NENA, APCO, and NFPA are each an ANSI-accredited standards development organization (SDO).

Standards Organizations

APCO "is the world's oldest and largest organization of public safety communications professionals and supports the largest United States membership base of any public safety association. It serves the needs of public safety communications practitioners worldwide – and the welfare of the public as a whole – by providing complete expertise, professional development, technical assistance, advocacy, and outreach."[39] APCO has undertaken many projects over the years. Two notable projects are Project 25 (P25), the development of standards for digital telecommunications technology, and Project 33, development of a telecommunications training standard. In Project 33, APCO collaborated with NENA "to evaluate what type of standardized training programs (if any) each state had. The information gathered helped APCO build the foundation for the National Public Safety Telecommunicator Training Standard, which is the minimum standard used today."[40]

NENA, a non-profit corporation, is dedicated to a "public made safer and more secure through universally available state-of-the-art 9-1-1 systems and trained 9-1-1 professionals"[41] NENA's mission is to improve "9-1-1 through research, standards development, training, education, outreach, and advocacy."[42] NENA has several topic-specific committees that develop PSAP-related recommendations and standards and other information documents pertaining to PSAP operations. NENA recommendations and standards give PSAPs the tools needed to maintain a consistent level of service and work in relation to their peers in neighboring counties and states.

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[39] "About APCO," APCO International, 2017, https://www.apcointl.org/about-apco.html.
[40] "APCO Projects," APCO International, 2017, https://www.apcointl.org/about-apco/apco-projects.html.
[41] "NENA's Mission," National Emergency Number Association, http://www.nena.org/?page=Mission.
[42] Ibid.

NENA 56-005, *Call Answering Standard/Model Recommendation*, states, “Ninety percent (90%) of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within ten (10) seconds during the busy hour (the hour each day with the greatest call volume, as defined in the NENA Master Glossary 00-001). Ninety-five (95%) of all 9-1-1 calls should be answered within twenty (20) seconds.”[43]

NFPA has higher standards for call processing. Also a non-profit organization, NFPA “delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach, and advocacy …”[44] NFPA 1221, 2019 Edition, Section 7.4.1 states, "Ninety- *[sic]* percent of events received on emergency lines shall be answered within 15 seconds, and 95 percent of alarms shall be answered within 20 seconds."[45]

NFPA further defines call processing times. Section 7.4.2 states: "Call processing time shall include the time from call answer to initial notification of the responding ERU(s)."[46] Explanatory material for this section states, in part:

> *Transfers, especially multiple transfers, have the impact of making compliance with the overall processing time standard nearly impossible. Given the life safety implications for critical incidents, PSAPs should make every effort to reduce/eliminate transfers, thereby reducing the amount of time required to answer, process, transfer, and dispatch alarms.*[47]

Section 7.4.3 states: "Emergency alarm processing for the highest prioritization level emergency events listed in 7.4.3.1 through 7.4.3.2 shall be completed within 60 seconds, 90 percent of the time."[48]

Sections 7.4.3.1 and 7.4.3.2 provide the highest prioritization levels.

NFPA does not address law enforcement call processing and dispatching times, allowing the jurisdictions to establish time frames for dispatch in accordance with respective SOPs.

Accrediting Organizations

Accrediting organizations also develop standards with which agencies applying for respective accreditation must comply.

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[43] “9-1-1 Call Answering Standard,” National Emergency Number Association,” June 10, 2006, https://www.nena.org/?page=911CallAnswerStnd, page 8 of 12.
[44] “NFPA Overview,” National Fire Protection Association, 2017, http://www.nfpa.org/about-nfpa/nfpa-overview.
[45] “NFPA 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems,” National Fire Protection Association, 2019.
[46] Ibid.
[47] Ibid.
[48] Ibid.

CALEA is a “credentialing authority through the joint efforts of law enforcement's major executive associations.”[49] CALEA accredits law enforcement agencies and PSAPs. CALEA’s “accreditation program provides public safety agencies an opportunity to voluntarily demonstrate that they meet an established set of professional standards which:

- Require an agency to develop a comprehensive, well thought out, uniform set of written directives. This is one of the most successful methods for reaching administrative and operational goals, while also providing direction to personnel.
- Provide the necessary reports and analyses a chief executive officer (CEO) needs to make fact-based, informed management decisions.
- Require a preparedness program be put in place—so an agency is ready to address natural or man-made critical incidents.
- Are a means for developing or improving upon an agency's relationship with the community.
- Strengthen an agency's accountability, both within the agency and the community, through a continuum of standards that clearly define authority, performance, and responsibilities.
- Can limit an agency's liability and risk exposure because it demonstrates that internationally recognized standards for law enforcement have been met, as verified by a team of independent outside CALEA-trained assessors.
- Facilitates an agency's pursuit of professional excellence.”[50]

CALEA standards define what needs to be done, not how agencies are to accomplish it.

CALEA accreditation for law enforcement requires active participation from the respective PSAP that serves the agency; an entire chapter (Chapter 81) is dedicated to law enforcement communications.

Table 14: CALEA Accreditation Standards

Chapter	Subchapter	
81.1 Administration	81.1.1	Agreements, Shared/Regional Facility
	81.1.2	Operations Meet FCC Requirements

[49] “The Commission,” CALEA, http://www.calea.org/content/commission.
[50] Ibid.

Chapter	Subchapter	
81.2 Operations	81.2.1	24 Hour, Toll-Free Service
	81.2.2	Continuous, Two-Way Capability
	81.2.3	Recording Information
	81.2.4	Radio Communications Procedure
	81.2.5	Access to Resources
	81.2.6	Victim/Witness Calls
	81.2.7	Victim/Witness Requests for Information
	81.2.8	Recording and Playback
	81.2.9	Local/State/Federal CJI Systems
	81.2.10	Alternative Methods of Communication
	81.2.11	Emergency Messages
	81.2.12	Misdirected Emergency Calls
	81.2.13	Private Security Alarms
	81.2.14	First Aid Over Phone
81.3 Facilities and Equipment	81.3.1	Communications Center Security
	81.3.2	Alternate Power Source
	81.3.3	Telephone System
	81.3.4	Mobile/Portable Radios

When the law enforcement agency is assessed for accreditation, the PSAP also is assessed to ensure that the areas detailed above comply with the respective standard. While compliance may be observed for many of the listed standards, others require a written directive or SOP.

CFAI's accredits fire and emergency service organizations through the Center for Public Safety Excellence (CPSE). The mission of the CPSE, a non-profit corporation, is to "lead the fire and emergency service to excellence through the continuous quality improvement process of accreditation, credentialing, and education."[51] CFAI has noted that its accreditation process provides a well-defined benchmark system to measure the quality of fire and emergency services.

For CFAI accreditation, the respective PSAP has to adhere to the call-answering and call-processing standards established in NFPA 1221.

The Insurance Services Office (ISO)'s Fire Suppression Rating Schedule (FSRS) evaluates four primary categories of fire suppression: fire department, emergency communications, water supply, and community risk reduction. The FSRS "measures the major elements of a community's fire protection system and

[51] "CPSE Over," Center for Public Safety Excellence, 2018, https://cpse.org/cpse-overview/.

develops a numerical grading called a Public Protection Classification."[52] Ten points are available for emergency communications.

Table 15: ISO Public Protection Classification Elements

Emergency reporting:	ISO will credit basic 9-1-1 or Enhanced 9-1-1. Other items evaluated include E9-1-1 wireless, VoIP, and CAD.	3 points
Telecommunicators:	ISO credits the performance of the telecommunicators in accordance with the general criteria of NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*. We also credit emergency dispatch protocols and the telecommunicators' training and certification programs.	4 points
Dispatch circuits:	ISO credits the number and type of dispatch circuits in accordance with the general criteria in NFPA 1221.	3 points[53]

The ISO notes:

> *"We base our evaluations on nationally recognized standards developed by the Association of Public-Safety Communication Officials International (APCO) and the National Emergency Number Association (NENA). ISO works very closely with APCO, NENA, the National Fire Protection Association (NFPA), county coordinators, directors, and staff at the communications centers we survey. We've found that the most critical factor in responding to emergencies is telecommunicators. Having a sufficient number of well-trained telecommunicators can make all the difference when responding to an emergency, and our evaluation gives this component the weight it deserves."*[54]

Thus, fire department accreditation and ISO ratings rely on PSAP compliance.

CAAS is the accrediting body for ambulance services. CAAS is an independent commission that "established a comprehensive series of standards for the ambulance service industry."[55] CAAS standards

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[52] PPC "is the countrywide classification system used by the Insurance Services Office (ISO) to reflect a community's local fire protection for property insurance rating purposes. The public fire protection of a city, town or area is graded using ISO's Fire Suppression Rating Schedule to develop the community's classification."
[53] "Items Considered in the FSRS," ISO Mitigation, 2019. https://www.isomitigation.com/ppc/fsrs/items-considered-in-the-fsrs/.
[54] "Emergency Communications," ISO Mitigation, 2018, https://www.isomitigation.com/emergency-communications/.
[55] "About CAAS," Commission on Accreditation of Ambulance Services, 2017, http://www.caas.org/about/.

are designed to help increase operational efficiency and decrease risk and liability across the entire spectrum of the organization, often exceeding standards established at the local or state level. While CAAS does not accredit PSAPs, Section 204 of the standards addresses communications centers, stating, "efficient call taking, effective resource deployment, and continuous communications capabilities are required to maintain an effective EMS agency."[56] There are seven applicable areas within Section 204:

204.01 – Policies and Procedures
204.02 – Contingency Plans
204.03 – Preventive Maintenance
204.04 – Training
204.05 – Licensure
204.06 – Communications Inter-Agency Dialogue
204.07 – Communications Performance Improvement

IAED "is a non-profit standard-setting organization promoting safe and effective emergency dispatch services worldwide. Comprising three allied Academies for medical, fire, and police dispatching, the IAED supports first responder-related research, unified protocol application, legislation for emergency call center regulation, and strengthening the emergency dispatch community through education, certification, and accreditation."[57]

Entities that utilize IAED's internationally recognized protocols, available through Priority Dispatch Corporation, can apply to become an Accredited Center for Excellence (ACE).

[56] "Standard Summaries," Commission on Accreditation of Ambulance Services, 2017, http://www.caas.org/caas-standards/content-summaries.
[57] "Welcome to the Academy," International Academies of Emergency Dispatch, http://www.emergencydispatch.org/.

Appendix D – Staffing Methodology

A staffing analysis is conducted to determine whether a PSAP has an adequate number of personnel to assure efficient processing of emergency calls now and/or to determine the number of personnel that may be needed in the future—although the farther into the future one looks, the more difficult it is to predict. A forward-looking staffing analysis considers projected population growth to assure that the agency is well-positioned in its future planning efforts and that it meets the expectations of the public and the agencies it serves. Operational efficiency is gauged by comparing statistical data and personnel utilization to appropriate national standards.

Additionally, a staffing analysis often is conducted to assess the number of physical console positions required for PSAP operations and how many of these positions should be routinely staffed throughout the day. The number of required positions can be used to assist in programming any future facility to ensure that adequate space is allotted.

Industry tools are available to assist with determining baseline staffing requirements for call-takers, dispatchers, and supervisors. APCO offers Project RETAINS,[58] developed by the University of Denver Research Institute in 2004. The RETAINS toolkit 2.0 expanded its functionalities and capabilities.[59] NENA offers a Communications Center Staffing Tool, which is available through a staffing workshop or the Center Manager Certification Program (CMCP).[60] Both tools utilize agency-specific data, such as call and incident volumes and other data, such as employee leave, to calculate baseline staffing requirements. One difference between the tools is that NENA considers the workload in terms of incidents that a dispatcher can or should be able to handle at one time, whereas RETAINS does not. While this is a subjective number, the agency itself defines the parameters.

MCP's staffing analysis involves a multimodal approach that considers workload, volume- and/or coverage-based staffing, and performance metrics. Volume-based staffing calculates the number of staff required to handle the volume of the respective data, while coverage-based staffing calculates the number of personnel required to staff a position 24 x 7, regardless of volume. MCP uses these calculations in tandem. Statistical calculations are balanced with operational logistics to identify how many personnel are needed for a PSAP to achieve its performance goals while providing efficient and effective service. In addition, MCP uses Erlang C calculations and its experience in the 9-1-1 community to assist in projecting the number of staff required to efficiently answer and dispatch emergency and non-emergency calls for law enforcement, fire, and EMS agencies. MCP analyzes resulting data with a respective center's operational configuration to approximate staffing requirements. The value of any resulting staff projections is dependent upon the accuracy of the data and statistics provided by the PSAP. LSPD Communications and

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[58] "APCO Project RETAINS," APCO International, 2018, https://www.apcointl.org/resources/staffing-and-retention/retains.html.
[59] RETAINS is available for a subscription. From appearances, the last update was in 2009.
[60] Both the workshop and the center manager program are available for a cost. NENA notes that the workshop is hands-on, that has "you using the Tool during the workshop to determine your center's staffing needs at a high-level. You will use a combination of facilitator-provided practice data and your PSAP's actual data to determine the staffing needs of your center." http://www.nena.org/?page=CommCenterStaffing.

LSFD Communications provided statistical data, including incident volume, call volume, and personnel data.

Many factors play a role in determining appropriate staffing levels, including available work hours, utilization, and attrition rates. Available work hours are the number of hours a telecommunicator (call-takers and dispatchers) is available to work during a year. There are many subfactors to this calculation, including leave usage, i.e., any time that the employee is away from his or her assigned duties. This time includes vacation, holiday, sick, and personal leave; training; military leave; and other activities.

In 2018, LSPD Communications personnel[61] used approximately 350 hours of leave per person. In 2018, LSFD Communications personnel used approximately 445 hours of leave per person. This is not to say that each person used this amount of leave; some may have used less, and some may have used more. Based on a 12-hour day, this ranges from 29 days to 37 days of leave per person.

Utilization is a subjective number, designed to provide an estimate of the time per shift that a telecommunicator should be busy providing call handling and dispatching services.[62] Breaks and meals are subtracted from the shift length, as is time spent doing other work-related activities, such as filing paperwork or decompressing after a stressful incident. Neither LSPD Communications nor LSFD Communications personnel are allocated dedicated break and meal times per shift, because staffing levels and workload do not allow for dedicated time away from the console. In MCP's experience, telecommunicators may spend four to seven minutes per hour on other work-related activities. The LSPD Communications and LSFD Communications management reported other work-related activities of approximately 5 minutes per hour with the resulting utilization rate for of 92 percent for both agencies. As APCO notes, "Researchers in commercial call centers report increased employee turnover and 'undesirable' agent behaviors when agent occupancy rates exceed 85 to 90% over extended periods of time." Unfortunately, always trying to maintain utilization below 85 percent can lead to overstaffing.

Calculating the net work hours (scheduled hours less leave) and the utilization rate results in the true availability of an employee. In the case of LSPD Communications, this means that a telecommunicator is scheduled to work 2,184 hours, but subtracting leave an employee may only work 1,692 hours during a year. In the case of LSFD Communications, this means that a telecommunicator is scheduled to work only 2,080 hours, but subtracting leave an employee may only work 1,635 hours during a year.

Attrition, also referred to as turnover, is a factor that must be considered. The attrition data includes the highest number of employees for a given year as well as the number of staff that left voluntarily or involuntarily. The result is the attrition rate. The national average for recent years is estimated to be approximately 13 percent; however, MCP is aware of several PSAPs whose attrition rate has been higher

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[61] Those whose primary assignment is shift work.

[62] Utilization should not be confused with agent occupancy. Utilization is the total time an employee is at work and able to do their respective tasks, such as call take and dispatch. (This would not occur on breaks, for example.) Occupancy is the actual time at work busy on assigned tasks. This link (http://www.thinkhdi.com/~/media/HDICorp/Files/Library-Archive/Insider%20Articles/agent-occupancy.pdf) provides good information.

than 15 percent, and some upwards of 25 percent. APCO RETAINS Retention report does not have a current turnover rate, reporting 2009 data as its latest reference. In its report, APCO RETAINS identifies the national turnover rate at 17 percent for 2005 and 19 percent for 2009.[63] LSPD Communications reports a three-year attrition rate of approximately 24 percent, with LSFD Communications reporting approximately 28 percent.

Staffing calculations also should consider performance metrics, which measure the operational efficiency of a PSAP compared with targeted goals and established standards. MCP uses performance metrics and national standards to ascertain how staffing may be positively or negatively affecting PSAP operations.

The most common metric involves the average time it takes a PSAP to answer its incoming emergency calls. PSAPs typically try to align their call-answering goals with either NENA[64] or NFPA[65] standards.

Another metric is the abandoned call rate. Every center will experience abandoned calls; the goal is to keep them as low as possible. There are many reasons for abandoned calls, including those who realized they have misdialed. When telecommunicators are on another line, incoming calls cannot be answered immediately. Regardless of the reason, this creates additional work as telecommunicators must try to reestablish contact with the caller to determine if there is an actual emergency. There is no industry metric for a "normal" number of abandoned calls. In MCP's experience, an abandoned call rate of 8 percent or less is ideal and attainable when a center is appropriately staffed. MetricNet, a performance-benchmarking company in McLean, Virginia, for IT and call centers, suggests an abandoned call rate of 4 percent to 7 percent.[66] While their focus is on the service industry, not the 9-1-1 sector, there is a correlation between the two. Both are answering calls from the public in response to their stated mission or objective. LSPD Communication's abandoned call rate is approximately 7.4 percent, while LSFD Communications' rate is approximately 0.75 percent[67]. Many factors can contribute to a high abandoned call rate, including a lack of available call-takers to answer incoming 9-1-1 calls.

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[63] According to the APCO RETAINS Retention document, the comparison rates were derived from Project RETAINS Study I and the RETAINS Next Generation Study.
[64] NENA: 90 percent of 9-1-1 calls answered within 10 seconds during the busy hour and 95 percent 9-1-1 calls answered within 20 seconds
[65] NFPA: 90 percent answered within 15 seconds and 95 percent answered within 20 seconds
[66] "Call Abandonment Rate," MetricNet, May 23, 2012, http://www.metricnet.com/call-abandonment-rate.
As a secondary PSAP, the abandoned call rate for LSFD Communications is much lower because only callers who disconnect after the call transfer is initiated by LSPD Communications are counted in this number.

Appendix E – Governance Base Models

Two governance options applicable to LSFD contracting services are explained at a high level in the sections that follow.

Host Agency with Contracted Services

Participating entities are part of an existing public safety organizational structure of law enforcement, fire, and EMS agencies; usually the agency with the largest call volume or modern facility that can support hosting all member agencies. While the host agency absorbs and operates the contracting agency's PSAP services, the contracting agency often appoints a point of contact within the reporting structure—such as the agency chief or a contract administrator/liaison—to provide accountability and promote collaboration with the host agency. PSAP management typically reports as part of the current organizational structure under the authority of the hosting agency sheriff, police chief, or fire chief.

Table 16: Host Agency with Contracted Services

Strengths and Opportunities	Challenges and Risks
The host agency provides leadership and management from within its current staff, thereby eliminating the time and new funding needed to hire additional leadership staff.	During any consolidation, there is a concern associated with the loss of direct control over PSAP personnel and dispatch services.
The host agency has established administrative, operational, and technical resources within the county/municipal/public safety entity structure. Examples include HR, training, facility maintenance, and network support.	A perception can exist that the host agency does not view the needs of the contracting agency with the same importance, and that the contracting agency receives a lesser level of service than the host agency.
Buy-in for consolidation may be better received when the suggested host PSAP already is dispatching for the disciplines served by the contracting agencies. Buy-in can be enhanced further when the contracting agency also is housed within the same type of agency (e.g., police department to police department rather than fire department to police department or even police department to sheriff's office).	Although the current political environment may be conducive to a contract arrangement, changes in leadership and political agendas over time can create challenges regarding oversight and service level expectations. Such an environment can strain relationships and exacerbate existing stressors. To mitigate this risk for all parties, a detailed governance document is required to protect all parties.
	A need exists to mitigate the challenges of custom/one-off contracts with individual participating agencies, as they become part of the host agency.

IGA Partnership with Advisory Board

Like the contracting structure described above, participating entities are part of an existing public safety organizational structure of law enforcement, fire, and EMS agencies; usually the agency with the largest call volume or modern facility that can support hosting all member agencies. However, this model advances governance beyond one-to-one contracts to develop partnerships within a governance structure. Such a structure would leverage a standardized governance agreement that promotes collaboration by including representatives from each participating agency.

In this structure, PSAP management typically reports as part of the current organizational structure under the authority of the hosting agency, sheriff, police chief, or fire chief, and receives advice and guidance from an advisory board. Participating agencies commit to appointing representatives who will serve on the advisory board, which traditionally is composed of public safety officials concerned with day-to-day operations of the PSAP. The advisory board works closely with the PSAP director to establish operational procedures. Typically, the host agency is not bound by the decisions of the advisory board, which does not administer supervisory authority over the PSAP director.

Table 17: Partnership Agreement with Advisory Board

Strengths and Opportunities	Challenges and Risks
PSAP management has a clear reporting structure within the host agency.	During any consolidation, there is a concern associated with the loss of direct control over PSAP personnel and dispatch services. This challenge can be mitigated by strong, positive communications between the advisory board and the PSAP director.
The hosting PSAP has established administrative, operational, and technical resources within the county/municipal/public safety entity structure. Examples include HR, training, facility maintenance, and network support.	Leadership personnel will require technical and operational skills specific to the PSAP environment. Without adequate succession planning, turnover in leadership positions can create a significant risk.
This model includes an advisory board comprised of public safety officials concerned with the day-to-day operations of the PSAP. The advisory board can include municipal and community representatives, if desired. This board has advisory input only.	Even though the board is only advisory in nature, the risk still exists that the PSAP can be impacted by political agendas and changes in direction that result from a lack of participation and turnover in the advisory board.
The PSAP director has the support and advice of an advisory board to remove roadblocks and champion efforts. The advisory board also can assist with complaints and disputes arising from QA and can make QI recommendations.	

Strengths and Opportunities	Challenges and Risks
This structure mitigates the risks and challenges associated with one-to-one contracts with individual participating agencies, as they become part of the consolidated organization.	
This model provides the opportunity to formalize governance documents and pricing structures that are predictive and equitable with future participating agencies. For existing contracts, the opportunity exists to renegotiate or amend the contracts to bring them into the new structure.	

Appendix F – Workforce Integration and Transition Crosswalk

Employment • Transitional Employment Criteria • Positions (titles/roles) • Organizational Structure • Salary, Raises and Monetary Achievement Awards • Separation of Service • Seniority	Administration • Dress Code • Shift Bids • Vacation Bids Training Requirements • New Hire vs Transitional • Probation
Leave Accrual • Bereavement • Comp Time • Disability • Domestic Violence • Donation of Time • Holiday Time • Jury Duty • Leave without Pay • Military Leave • Paid Holidays • Parental Involvement • Personal Days • Sick • Sick Leave Conversion • Vacation	Health Insurance • Dental • Employee Assistance Program (EAP) • Employee Health Centers • Flexible Savings Account (FSA) • Life Insurance • Medical • Nurse Line • Vision • Wellness Program
Retirement • Payouts • Pension Plan • Retiree Insurance Benefits • Retirement Recognition	Other • Awards and Recognition • Cardio Station • Liability Protection • Professional Development Opportunities • Tuition Assistance • Uniform Allowance

Appendix G – Leadership and Planning

Strategic Planning

The modern public safety communications ecosystem is a technologically sophisticated environment that is essential to effective emergency response operations. The more complex the ecosystem gets and the faster it expands, the harder it is to maintain clarity of direction and keep everyone in alignment. It is not uncommon for organizations to have strategic plans with numerous pages of wordy narrative, combined with appendices and supporting memorandums, policies, and e-mails, each claiming to provide direction and clarity regarding the organization's vision, mission, and strategy. The problem is that these plans are not actionable. The staff does not have the time to read, let alone develop, pages and pages of information that experience has shown will most likely sit on a shelf. Additionally, many traditional strategic plans often include numerous unclear and even contradictory statements about the organization is, what it does, and how.

To become and remain effective, an organization needs three things:

- A framework that identifies and supports the organizational strategy
- A common language in which to express strategy
- A well-developed habit of using the framework and language to continually evaluate the organization's strategic progress

Most importantly, a strategic plan needs to be kept simple. Strategic insight must be, and can be concentrated into, a powerful, useable, and post-able format. A one-page strategic planning approach, outside of the municipal and county construct, at the Administrative Board level would provide a simple yet powerful tool that will help edit a vision and strategy down to a single, action-oriented page that could provide alignment between the stakeholders, providing an effective and executable strategic plan with the intention to help improve public safety emergency response.

Change Management Workflow

The more complex the ecosystem gets and the faster it expands, the more difficult it is to maintain an understanding of the relationships that will be impacted and the downstream implications of implementing new or cutting-edge technology. Regardless of the solution being contemplated, several considerations exist that are common across the board. Based on the knowledge acquired during this project, there are actions that both communications centers' managers can take to build relationships and trust between the agencies.

- Provide further clarity of roles and responsibilities by developing an accountability matrix
- Engage in strength-based leadership to help staff excel by finding the right roles for the right people
- Implement a change management plan to address the impacts of change (an example process is shown below)

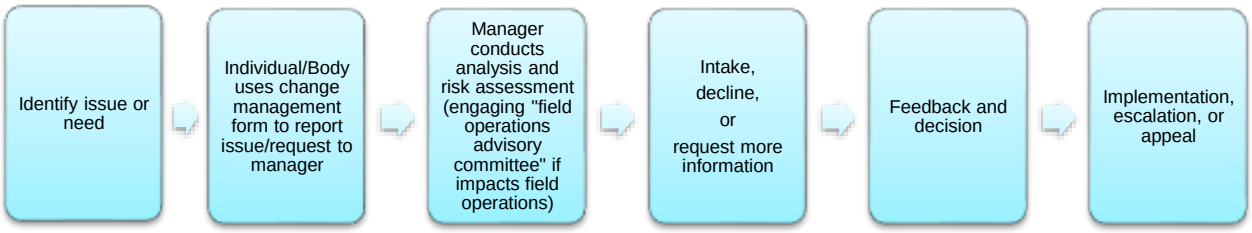

Figure 11: Example Change Management Workflow

Future public safety communications systems will be IP-based and, as such, will enable data sharing between agencies that have the potential to enhance emergency response and keep field responders safer. A change management framework is critical for supporting effective decision-making and determining whether to implement any solution. A change management framework provides the opportunity to critically explore the pros, cons, and requirements of any new implementations. A change management framework to address transformational change should include analysis of the following considerations each time a solution is presented to an organization:

- Technology policy requirements
- Technology infrastructure constraints
- Workforce implications (both inter- and intra-agency)
- Operational workflows, policies, and procedures
- Training needs
- Administrative oversight and governance policies
- Regulatory and legislative constraints
- Funding
- Facility structural constraints
- Metrics for measuring success

The outcomes of the change management workflow should generate positive responses that align with the priorities of the organization—usually based on a strategic plan—focused on improving emergency response outcomes. If those proposing an implementation cannot articulate how the solution aligns, it may be in the best interest of the organization to say no to the solution at that time.

For those implementations that are completed, it is essential to have predetermined metrics to ensure that the solution provides the anticipated functionality and outcomes. If the metrics are not being realized, the change management team will need to work to determine whether something can be done to improve the solution's functionality, or whether the solution or service should be removed. Keeping ineffective technologies and/or services in play is wasteful and can have a negative impact on emergency response services.

A best practice would be to compile the outcomes of this analysis in a document that identifies the following:

- Project scope
- Objectives and risks
- Organization and staffing
- Decision-making structure and approach
- Initial resource requirements

This document essentially would be an executive summary that also can serve as a business case for the suggested solution. Once compiled, the joint change management review team would review the document and make an educated go/no-go decision. This is an opportunity—before anything is inked and time and money are committed—for stakeholders to evaluate the solution's feasibility and value for improving emergency response outcomes.

Executive Recruiting

Skepticism and uncertainty routinely exist regarding the level of success that will be realized in a joint operational environment based on administrative and management oversight. Even though well-intended, it is MCP's experience that it is not necessarily the oversight of the division but rather placing the right person in the right role. Without a focus on that, any leader will become ineffective as time elapses as the root causes of the issues begin to creep back into day-to-day activities, which will at some point begin to erode trust and any progress that has been made. For these reasons, MCP encourages elected officials not to discount the option of placing a PSAP under full civilian leadership.

While continuing to work on the recommended evolutionary phases associated with building joint operations, MCP recommends that the City consider enhancing its recruiting strategy to include the concept of Topgrading, a methodology that was developed by Dr. Brad Smart.[68] MCP recommends that the City consider using the same concept not only for future director positions but when hiring key leadership positions for both LSPD Communications and LSFD Communications.[69]

Additionally, once identified, rather than a traditional employment relationship, MCP recommends the City executes a thoughtful and comprehensive employment agreement with the successful candidate. Such an approach can increase both the quantity and diversity of the candidate pool by providing a candidate with a level of economic security associated with executive public safety positions that are inevitably subject to public scrutiny and politics. The City is simultaneously provided the opportunity to clearly define core expectations and articulate potential incentives—not necessarily monetary—that can transfer to a future environment through the success of the director's ability to meet or exceed goals and objectives that are to be mutually defined and agreed upon.

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[68] "TOPGRADING: The Most Proven Hiring Method," Topgrading, Inc., 2019. https://www.topgrading.com/.
[69] "How to Find 'A' Players: An Intro to 'Topgrading' for Public Safety Leaders," MCP Insights. https://resources.missioncriticalpartners.com/insights/how-to-find-a-players-an-introduction-to-topgrading.

Appendix H – Cost-sharing Models

As noted, the method selected should provide a level of predictability and fairness upon which all member jurisdictions can agree. Several funding models currently utilized by other communication centers are described below.

Population

The population-based cost-allocation model involves assessing a share of operational costs based upon the population within each jurisdiction. Using this method, member jurisdictions would be assessed a portion of the operational cost on a per-capita basis. The projected operating budget is divided by the total population to determine an average-per-person assessment. While several adaptations of a population-based model are possible, MCP recognizes that this model may be more suitable in areas where population data and response agencies are defined clearly by municipal boundaries.

Activity Volume

Cost assessment based upon activity is a common method that is used to fund shared services communications centers. Routine communications center activities may be tracked and documented including:

- Incoming 9-1-1 calls
- Incoming 9-1-1 and 10-digit calls
- Dispatched incidents
- Field-originated calls
- Radio transmissions

Activity-based costs can be derived using two methods. The first involves tracking the activity volume associated with each member agency. The entity is assessed the cost of provisioning specific services based upon actual use. The second method involves averaging the volume of an activity across all participating jurisdictions or agencies. As an example, PSAPs would document the number of 9-1-1 calls received annually. The annual operating budget can be divided by the number of 9-1-1 calls to derive a per-call cost. Each entity then would contribute a share of the cost based upon the average of overall system usage.

Maintenance of Effort

In this model, each agency contributes an equal portion of the operating budget based upon the straight division of the total costs among all member agencies. Though rarely used as a standalone model, this model is the most simplistic in terms of cost distribution. The governing entity must determine the basis of the cost allocation, similar to the activity-based method.

Ad Valorem

This method uses the tax valuation of properties located within each jurisdiction as the basis to determine the level of contribution. This is generally accomplished utilizing an equalized assessed value (EAV), which is the application of the state's equalization factor to the assessed value of a parcel of property. Tax bills are calculated by multiplying the EAV (after any deductions for homesteads) by the tax rate.

This method fails to account for the taxing overlay of the EMS and municipal jurisdictions. Additionally, some municipalities do not levy a tax on the EAV and, subsequently, would not have a revenue source to contribute without a push for a local legislative change.

Also, an ad valorem basis model would not accurately account for activity in the case of a distressed municipality. If there is an area that has a higher than normal call volume due to higher crime or an increased workday population, it may not necessarily be reflected in property values. It is possible in this case to have a suburban bedroom community with higher property values, yet less of a demand for service, paying more than another municipality that has a higher demand for service.

Resource

This method is based upon the number of public safety resources (e.g., personnel, apparatus, stations) that each member agency possesses. This method is based upon the assumption that resources are closely aligned with activity and demands on the communications system.

When determining personnel resources agencies typically use salary mid-points of communications personnel, whereas when field responders are used the total number of personnel is used for the calculations.

Hybrid

Any of the methods described could be combined, either by discipline (law, fire/EMS) or by jurisdiction if it is advantageous to the governance body; for instance, a hybrid of the Activity (call volume) method that also separates access charges and divides them among the law enforcement entities (Maintenance of Effort).

Another scenario is to use a multi-phased approach with a funding formula that considers several factors and divides the funding needs first by discipline (law or fire/EMS), then utilizes an Ad Valorem method for fire protection districts and the Resource method for law enforcement agencies.

Appendix I – Regional PSAP Comparison

Regional PSAP Comparison				
Area of Comparison	Kansas City, MO Police Department Communications	Kansas City, KS Police Department Communications	Independence, MO Police Department Communications	Johnson County, MO Sheriff's Office Communications
Approximate service area and population size.	• Service Area: Approx. 300 sq. mi. • Population: Approx. 492,000	• Service Area: 128.38 sq. mi. • Population: Approx. 153,000	• Service Area: 77 sq. mi • Population: Approx. 117,300	• Service Area: Approx. 416 sq. mi. (reported as half of the county) • Population: Approx. 230,000
2018 Call[70] / Incident Statistics	• 9-1-1 Calls: 551,402 • Admin Calls: 412,334 • Law Enforcement: • Fire: 17,326 (transfers to Kansas City Fire Department [KCFD]) • EMS: 55,268 (transfers to EMS)	• 9-1-1 Calls: 137,660 • Admin Calls: 140,468 • Law Enforcement: 136,303 • Fire: 32,291 • EMS: N/A (dispatched by fire)	• 9-1-1 Calls: 119,830 • Admin Calls: 189,836 • Law Enforcement: 90,020 • Fire: 21,349 • EMS: N/A (dispatched by secondary PSAP)	• 9-1-1 Calls: 80,486 • Admin Calls: 184,258 • Law Enforcement: 98,858 • Fire: N/A (dispatched by secondary PSAP) • EMS: N/A (dispatched by secondary PSAP)
Number of Telecommunicators	• Total: 107 (civilian) • Per Shift: 13 – 17	• Total: 40 (including 13 current vacancies) • Per Shift: 4 (6 when fully staffed)	• Total: 31 (civilian) • Per Shift: 5 – 7	• Total: 35 (sworn deputies) • Per Shift: 8

[70] "Mid-America Regional Council Regional Call Volume 2018". Mid-America Regional Council. https://app.powerbi.com/view?r=eyJrIjoiMGNiYWJmNDAtMWMwZC00NmI4LTljMWMtYjdiNTdmNmU3YWNjIiwidCI6IjAzMzIxYzRmLTA2YTItNDNmMy04N2FjLTNlZWE3MDJiZjhkOSIsImMiOjN9

Regional PSAP Comparison				
Area of Comparison	Kansas City, MO Police Department Communications	Kansas City, KS Police Department Communications	Independence, MO Police Department Communications	Johnson County, MO Sheriff's Office Communications
System Setup	• PSAP handles all calls for law enforcement • Fire and EMS calls are transferred to KCFD-operated secondary PSAP located within the previous Metropolitan Ambulance Service Trust (MAST) (which was absorbed by the KCFD) dispatch facility.	• PSAP is a fully consolidated center; all law enforcement, fire and EMS calls are received and processed within this PSAP.	• PSAP handles all calls for law enforcement, fire and animal control. • EMS calls are transferred to American Medical Response (AMR).	• PSAP handles all calls for law enforcement for the county and 12 independent cities within the county. • Fire and EMS calls are transferred to the County-operated secondary PSAP located within the same facility.
System Management and Operational Structure	• Management and oversight provided by the Kansas City Police Department (KCPD). • KCFD operates a secondary PSAP that handles all fire/EMS calls, with management and oversight provided by the KCFD.	• Management and oversight provided by the Kansas City, Kansas, Police Department (KCKPD). • All personnel are cross-trained for call taking and are trained for police or fire dispatching (but not both). Personnel rotate disciplines between dispatching and call taking.	• Management and oversight provided by the Independence Police Department (IPD). • All personnel are cross-trained, and rotate disciplines daily.	• Management and oversight provided by the Johnson County Sheriff's Office (JCSO). • The County operates a secondary PSAP that handles all fire/EMS calls, with management and oversight provided by the County Manager's Office.

Regional PSAP Comparison				
Area of Comparison	Kansas City, MO Police Department Communications	Kansas City, KS Police Department Communications	Independence, MO Police Department Communications	Johnson County, MO Sheriff's Office Communications
Technological Components	• CAD: Hexagon (Intergraph) CAD [KCPD] CentralSquare CAD [KCFD] • Radio: Motorola P25 system (shared with all disciplines)	• CAD: New World Tyler Technologies CAD • Radio: Motorola P25 system (shared with all disciplines)	• CAD: New World Tyler Technologies CAD • Radio: Motorola radio system (shared with all disciplines)	• CAD: Hexagon (Intergraph) CAD [JCSO] Unknown CAD system for fire/EMS • Radio: Motorola P25 system (shared with all disciplines)
Common Perspective	• PSAPs are in separate facilities, with separate management structures. • Fire/EMS dispatch is provided by a secondary PSAP (KCFD operated).	• Call taking and both dispatch disciplines are in the same facility (police and fire dispatch are separate sections).	• Call taking, law enforcement, fire and animal control are all located within the same facility. • EMS dispatch is provided by a secondary PSAP (private entity).	• Both PSAPs are in the same facility, the County Communications Center, but operated by different entities. • Fire/EMS dispatch is provided by a secondary PSAP (County-operated).
Technological and/or Physical Co-location	Strengths			
	• N/A (separate entities; no technological or physical co-location)	• N/A (single entity)	• N/A (single entity)	• All county agencies migrated to a common radio system--much stronger operation than three separate systems.
	Challenges			
	• N/A (separate entities; no technological or physical co-location)	• N/A (single entity)	• N/A (single entity)	• None provided

Regional PSAP Comparison				
Area of Comparison	Kansas City, MO Police Department Communications	Kansas City, KS Police Department Communications	Independence, MO Police Department Communications	Johnson County, MO Sheriff's Office Communications
Outcome of Migrating to Current Operational Configuration	Strengths			
	• Prior to KCFD moving to vacated MAST facility due to space constraints, supervisors and managers of either KCPD or KCFD could communicate face-to-face.	• Consolidated separate KCKPD and Kansas City, Kansas, Fire Department (KCKFD) PSAPs about 2007. Created a very positive work environment, especially for major incidents.	• Longevity – the organization has operated successfully in this manner for at least 30 years.	• More fiscally responsible (i.e., cheaper) to operate a single communications facility for both entities than separate facilities.
	Challenges			
	• The relationship between the KCPD and KCFD PSAPs was much better when both were co-located in the same facility.	• None provided	• None provided	• Not having direct control of certain building functions due to the secondary PSAP manager overseeing the building (reported as being a very rare occurrence and the only challenge).