MissionCriticalPartners
Because the Mission Matters

Operational Efficiency Study

Final Report

PREPARED JULY 2021 FOR
THE 9-1-1 ASSOCIATION OF
CENTRAL OKLAHOMA GOVERNMENTS

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Table of Contents

Table of Figures

Table of Tables

Executive Summary

The 9-1-1 Association of Oklahoma Governments (9-1-1 ACOG) tasked Mission Critical Partners, LLC (MCP) with conducting an operational efficiency study that strategically analyzed operations, capital and ongoing operational costs, governance models, and cost-sharing systems. The goal was to identify where efficiencies—operational, technical, or other—could be gained in the 9-1-1 ACOG service area to improve emergency response and support the delivery of a consistent level of care to field responders and citizens.

With the support of 9-1-1 ACOG Executive Director Mark W. Sweeney, 9-1-1 & Public Safety Director Brent L. Hawkinson, and public safety answering point (PSAP) staff and stakeholders, MCP conducted 21 virtual PSAP tours, four regional town halls, four focus groups, and numerous individual interviews.[1] Information garnered through data collection, research, and observations provided a view of the current state. The analytical portion of the study measures findings to national standards and best practices, as well as MCP's industry experience and knowledge.

The current and historical data MCP elicited from each PSAP and interviews and town halls focused on the areas outlined below.

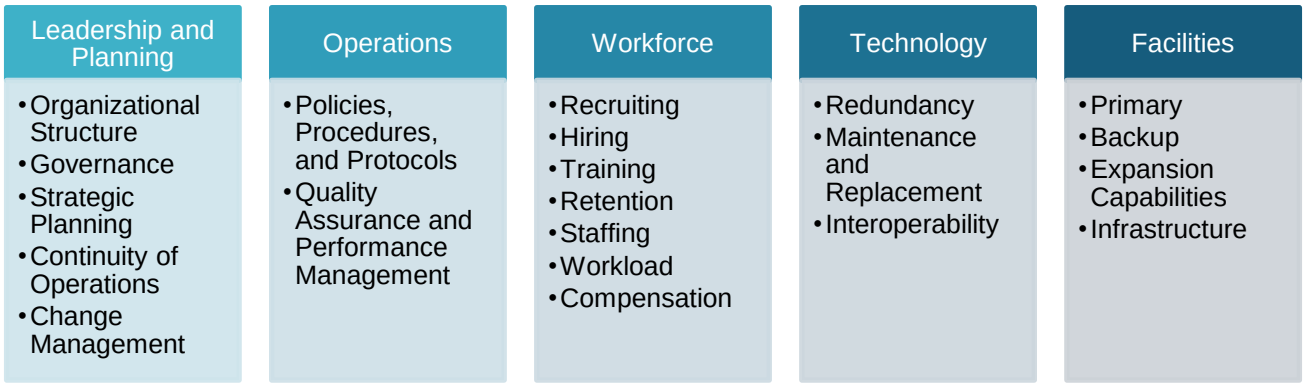


Figure 1: Operational Efficiency Study Focus Areas

Each area is a critical component of a PSAP and, when reviewed, opportunities to reduce risk and improve operational efficiencies often can be identified.

[1] Due to restrictions and risks presented with COVID-19, each PSAP tour, town hall, focus group, and individual interview was virtual.

Findings and Observations

Leadership and Planning

- Most PSAPs are under the organizational structure of law enforcement.
- PSAPs are in direct competition with municipal priorities for funding resources.
- Many PSAPs have flat organizational structures without much opportunity for career advancement.
- There is a lack of industry knowledge regarding emergency communications (Next Generation 9-1-1 [NG9-1-1]).
- A need for strategic planning exists.
- Very few PSAPs have formal continuity of operations (COOP) plans; if they exist, they are not exercised.
- A limited number of PSAPs have mission-critical equipment replacement plans.
- Most PSAPs do not have an adequate cybersecurity plan or have no cybersecurity plan.
- Several PSAPs are directly involved in physical consolidation planning with one or more neighboring agencies.
- Many smaller agencies have a need for short- and long-range financial planning directly related to PSAP needs (e.g., facilities, technology, and operations).

Operations

- Multiple PSAPs are in the same geographical area.
- Numerous PSAPs serve low population and small geographical areas.
- The majority of PSAPs have two workstations with a minimum of one telecommunicator on duty.
- Emergency medical dispatch (EMD) service level is inconsistent throughout the region.
- Calls transferred to private emergency medical services (EMS) dispatch centers do not include the respective location (automatic location identification [ALI]).
- Many PSAPs need to adopt formal standard operating procedures (SOPs) that align with emergency communications standards and best practices.
- There are some reported issues with multiple transfers, sometimes involving the same caller.
- Most PSAPs do not have a formal quality assurance/quality improvement (QA/QI) program.
- Most PSAPs have not established emergency communications center (ECC) or personnel performance metrics and monitoring.

Workforce

- Non-core duties are common in small PSAPs that are a division of a law enforcement agency.
- Pay disparity is common and, in some cases, causes hiring competition.
- Staffing and retention challenges are common.
- Most PSAPs experience their largest turnover in the first three to six months of a telecommunicator's employment.

- Many agencies take full advantage of 9-1-1 ACOG training offerings and certifications.
- Most PSAPs provide adequate training to new hires; however, statistics indicate a high turnover in the first three to six months.
- Continuing education is plentiful but complicated by staffing limitations.

Technology

- Automation is lacking.
- There are disparate systems.
- Gaps in interoperability (computer-aided dispatch (CAD) and radio) exist.
- There are maintenance and support challenges.
- Systems are redundant in small geographical areas.
- Call transfers in some areas are inefficient (misdirected, multiple transfers).
- Support is needed in many agencies to refine and enhance their geographic information system (GIS) capabilities.
- Cybersecurity protection and policies are lacking.

Facilities

- Almost all PSAPs are housed in a law enforcement facility.
- Many PSAP spaces are suitable for their respective current size and scope but nothing more.
- Most PSAPs are in good to excellent condition.
- Most agencies lack the ability to expand.
- Many primary agencies lack the ability to support staff from another agency for a prolonged period.

A holistic quantitative and qualitative analysis of the above findings identified numerous opportunities to improve operational efficiencies on an individual PSAP level throughout the 9-1-1 ACOG region. MCP also identified multiple areas within the 9-1-1 ACOG region in which service levels and operational efficiencies could be gained and improved on a broader level through organic regionalization.

Organic regionalization occurs naturally without external forces (e.g., funded or unfunded government mandate). It occurs when stakeholders work collaboratively toward a common goal focused on improving emergency response outcomes. Although some use the terms “regionalization” and “consolidation interchangeably, they are not the same. Regionalized 9-1-1 communications may involve consolidation of one or more PSAPs into a single facility, but it does not have to.[2]

There are three categories or levels of organic regionalization that would improve operational efficiencies within 9-1-1 ACOG: policy and operations, technology and shared systems, and physical.

[2] https://www.nasna911.org/911-regionalization

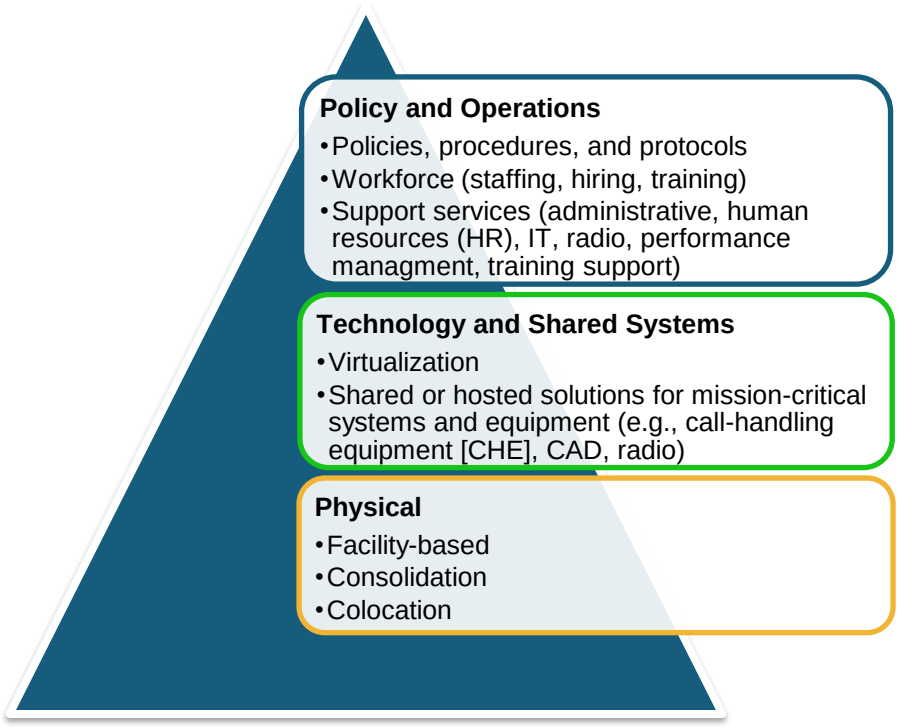


Figure 2: Organic Regionalization Categories or Levels

The three levels of organic regionalization can be executed concurrently or independently. Two levels (policy/operations and technology/shared systems) can be implemented as effective building blocks to full or physical regionalization.

Organic regionalization is not easy to accomplish and can often take years to achieve. Given the complexity of these opportunities, MCP recommends that 9-1-1 ACOG, with valued input from PSAP staff and stakeholders, consider developing a long-term strategic plan to help guide organic regionalization.

- A strategic plan is essential to an organization's ability to achieve its long-term goals proactively and incrementally.
- A concise and well-formatted strategic plan, which establishes annual commitments (initiatives) and maintains a rhythm for alignment and accountability, can mitigate distractions that do not enhance emergency response.
- 9-1-1 ACOG and local stakeholders can benefit from an effective and executable strategic plan, factoring in MCP's findings and recommendations, to help improve public safety emergency response in the region.

Without regionalization, many PSAPs within the 9-1-1 ACOG region are bound to the current state and constrained in their efforts to provide a higher, more efficient level of service. The most prevalent constraints throughout the 9-1-1 ACOG region are a lack of interoperability and increasing technology costs.

PSAPs across the country, including in Oklahoma, are following similar paths as 9-1-1 ACOG to explore regionalization as agencies recognize the value and efficiencies of sharing technologies, services, and common practices. Organic regionalization, especially technology and physical, has the potential to:

- Leverage shared resources
- Eliminate duplicate costs
- Improve coordinated responses
- Increase interoperability
- Create effective and efficient service levels
- Improve emergency response outcomes

MCP acknowledges that organic regionalization is initiated at the local level, outside of the purview of 9-1-1 ACOG; however, 9-1-1 ACOG supports using this information and approach to promote the achievement of standards and best practices while advocating for actions that will result in efficiencies and provide consistent emergency communications throughout the region.

1 Background

Mission Critical Partners, LLC (MCP) was asked to perform a comprehensive operational efficiency study of the 21 public safety answering points (PSAPs) within the 9-1-1 Association of Central Oklahoma Governments (9-1-1 ACOG), their operations, capital and ongoing operational costs, governance models, and cost-sharing systems models—all from a strategic level. The goal of the study was to identify where opportunities exist to achieve operational and technological efficiencies within the 9-1-1 ACOG region.

9-1-1 ACOG provides funding, planning, technical, training, and educational outreach assistance to 21 PSAPs throughout the four-county region (Oklahoma, Canadian, Logan, and Cleveland, and portions of McClain and Grady counties), which serves 47 communities and covers over 2,500 square miles. Within 9-1-1 ACOG, and within the purview of this study, MCP created four regions: Northeast, Central, Southeast, and Southwest, which provided more focused findings within smaller segments of the 9-1-1 ACOG region.

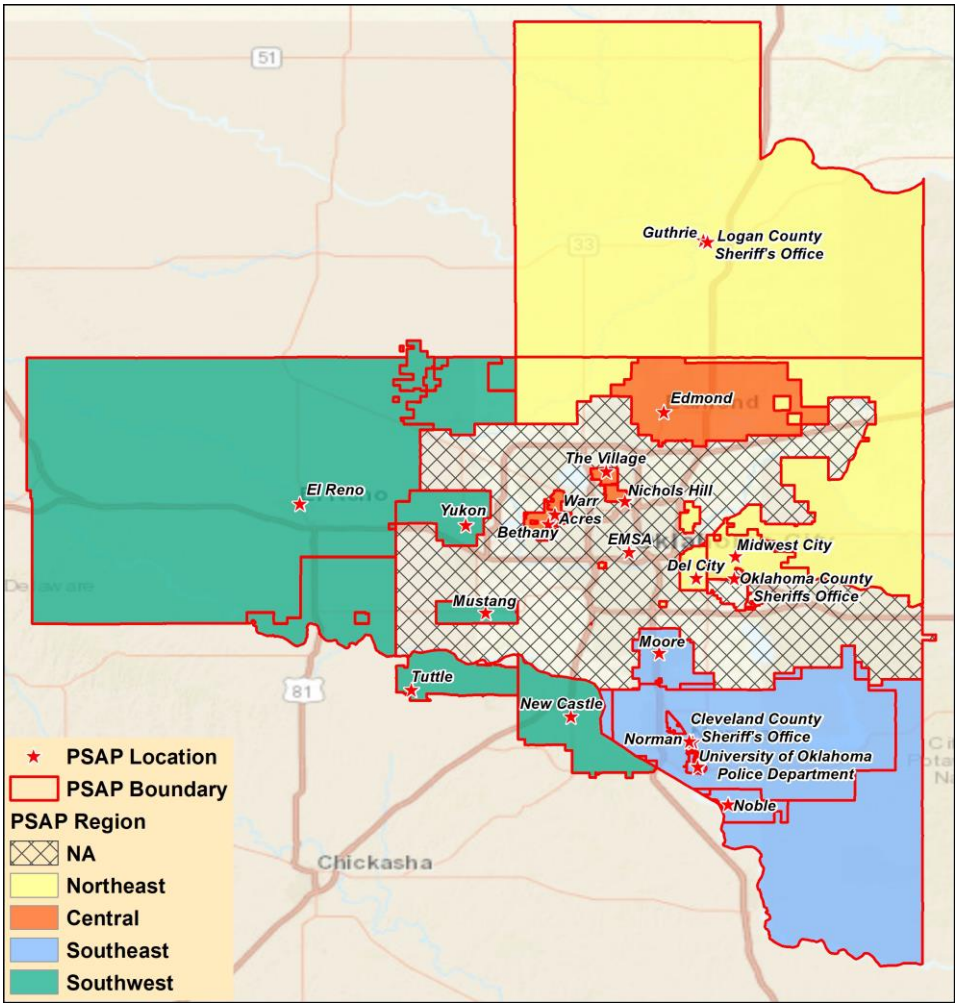


Figure 3: 9-1-1 ACOG PSAPs by Region

Collectively, these 21 primary PSAPs serve more than 700,000 residents, thousands of field responders, and countless visitors. A primary PSAP is the initial point of entry for all 9-1-1 calls that originate within its service area. Typically calls requiring law enforcement, fire, or emergency medical services (EMS) response are received and then directly dispatched by the PSAP without the need for call transfers or, as in the case of some medical calls, are transferred to what is known as a secondary PSAP.

Emergency Medical Services Authority (EMSA) is a secondary PSAP as well as a 9-1-1 ACOG member agency that receives transfers from Oklahoma City, The Village, Nichols Hills, Mustang, and Edmond, as well as parts of Oklahoma, Logan, Canadian, and Cleveland counties. While other secondary PSAPs also handle medical call transfers, EMSA is the largest. Secondary PSAPs are not considered a focus of this study; however, as it pertains to the success of the public safety communications ecosystem, the symbiotic relationship between them must be taken into consideration. The table below provides demographic information for the 21 PSAPs, by region, alphabetically.

Table 1: PSAP Demographics

PSAP Location	Primary Positions	Secondary[3] Positions	Annual 9-1-1 Volume	Population	Square Miles
Northeast					
Del City	2	0	20,805	21,822	7.52
EMSA	0	6	104,212	N/A	N/A
Guthrie	2	0	15,109	11,376	19.32
Logan County Sheriff's Office	0	2	Secondary	48,011	749
Midwest City	5	0	54,487	57,288	24.44
Oklahoma County Sheriff's Office	4	0	29,023	797,434	718
Central					
Bethany	2	0	15,749	19,366	5.23
Edmond	8	0	53,127	92,009	87.86
Nichols Hills	2	0	3,479	3,891	1.98

[3] A secondary PSAP is a PSAP to which 9-1-1 calls are transferred from a primary PSAP.

PSAP Location	Primary Positions	Secondary[3] Positions	Annual 9-1-1 Volume	Population	Square Miles
The Village	2	0	5,263	9,452	2.56
Warr Acres	2	0	15,865	10,180	2.84
Southeast					
Cleveland County Sheriff's Office	2	0	9,378	284,014	558
Moore	4	0	34,803	60,943	22.16
Noble	2	0	4,697	6,837	12.88
Norman	6	0	75,801	122,837	189.4
University of Oklahoma Police Department (OUPD)	3	0	435	31,501	4.85
Southwest					
El Reno	3	0	15,817	19,095	80.4
Mustang	4	0	9,078	21,459	12.01
Newcastle	2	0	6,607	9,967	29.37
Tuttle	2	0	3,678	7,294	29.37
Yukon	4	0	16,131	26,943	26.58

Based on the size categories described in the National 911 Program's *Next Generation 911 Cost Estimate A Report to Congress*, published in 2018, except for Edmond, each PSAP included in this study is considered small. The small category, representing 85% of PSAPs in the country, assumes a minimum of two and maximum of six workstation positions, with three being the most likely. Edmond, with its eight positions, is representative of 12% of the country's PSAPs—medium. The medium category assumes a minimum of seven and maximum of 20 workstation positions, with 12 being the most likely. While there are no large PSAPs in the 9-1-1 ACOG region, the number of positions for a large PSAP assumes a minimum of 21 and maximum of 50, with 30 being most likely.

2 Methodology

9-1-1 ACOG leadership recognized the need for a comprehensive regional operational efficiency study of several aspects of the communications functions of member agencies. Serving as the project core team for this engagement, members of 9-1-1 ACOG leadership assisted MCP in its assessment by coordinating introductions, supporting data gathering efforts and overcoming obstacles. During the study, MCP focused on five factors, shown to the right, with special attention toward determining opportunities to achieve efficiencies that would mutually benefit the 21 PSAPs as well as field responders and citizens.

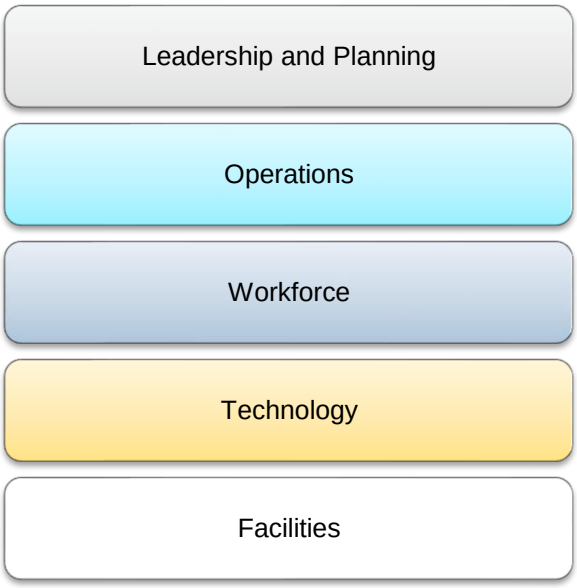


Figure 4: Study Focus Areas

This operational efficiency study spanned eight months. During this time, MCP collected data, thoughts, and ideas in several manners, including: a review of historical 9-1-1 ACOG data, individual stakeholder interviews, regional town hall sessions, focus group sessions, virtual PSAP tours, and online data discovery collection tools.

Individual Interviews with Stakeholders

To gain an in-depth understanding of key issues, MCP invited select stakeholders and staff, identified below, with subject-matter specific responsibilities from each member agency to participate in remote interviews.

- 9-1-1 ACOG and PSAP executive leadership
- PSAP managers and supervisors
- PSAP operations
- IT
- Budget and finance

Follow-up sessions were conducted periodically with staff to clarify data.

Regional Town Hall Sessions

MCP invited PSAP staff and stakeholders from each member agency to participate in four regional town hall sessions. Using a virtual video conferencing platform, participants were guided through introductions, an overview of the project, and keys to success. Each session was led by an MCP facilitator who worked with participants from the four regions to identify areas where opportunities exist for efficiencies.

Information gained from the town hall sessions was balanced with other data and information outlined in this section to identify realistic recommendations.

Focus Group Sessions

Over five days, MCP conducted a series of focus group sessions targeting leadership, operations, workforce, technologies, and facilities that involved a cross-section of PSAP personnel from each member agency within the 9-1-1 ACOG service area. The goal of these focus groups was to engage staff—directly or indirectly involved with PSAP operations—in information gathering sessions.

Focus groups participant included:

- PSAP executive leadership
- Managerial and supervisory personnel
- Front-line staff
- Training personnel

Using a virtual video conferencing platform, participants were guided through introductions, an overview of the project, and keys to success. Each session was led by an MCP facilitator who worked through a series of exercises with the intent of identifying themes and trends that could be balanced against the statistical data and used to uncover practical and realistic recommendations. A productive exercise identified strengths, weaknesses, opportunities, and threats (SWOT).

Virtual PSAP Tours

Using a virtual video conferencing platform, PSAP staff from each member agency provided a live narrated tour of their respective PSAP facility. The tours included the control room (operations floor), administrative (outer) offices, telecommunications and radio equipment rooms, and other adjacencies such as training and quiet rooms and break areas. During the tours, MCP staff asked questions, when necessary, to confirm what was being viewed.

Although productive, MCP was unable to spend time observing PSAP operations.[4] To accommodate for this, MCP took additional time asking clarifying questions and engaging PSAP representatives leading each tour.

Online Data Collection and Analysis

Data was requested from the members of 9-1-1 ACOG so that conclusions could be drawn, and recommendations made. Data requested included financials, workforce statistics, technologies, facilities, and call volume statistics.

[4] Due to in-person restrictions because of COVID-19.

MCP reviewed the data to assess current conditions and lay the foundation for developing a plan with executable recommendations. Data collected and reviewed focused on identifying those areas where operational efficiencies within the 9-1-1 ACOG region could be gained.

The information acquired ranged from hard numbers (quantitative data) to opinions and anecdotal input (qualitative data). Where data was more quantitative in nature, MCP relied on established public safety and private industry metrics to assess and evaluate the PSAPs. Where data was qualitative in nature or metrics have not previously been established, MCP drew on its collective industry experience and awareness of best practices to create those metrics and assess the status.

- Standard – something set up and established by authority as a rule for the measure of quantity, weight, extent, value, or quality[5]
- Best Practice – a procedure that has been shown by research and experience to produce optimal results and that is established or proposed as a standard suitable for widespread adoption[6]
- Industry Experience – primarily involves a minimum of ten years of combined education, work experience, and specialization in a respective industry or market segment

Throughout this report, MCP will identify where analysis and findings are based on measurable, quantitative data, and findings are drawn from inherently more subjective evaluations. MCP's years of experience have demonstrated that subjective assessments, backed by thoughtful and unbiased comparisons with public safety and private industry best practices, combined with industry exposure, are just as meaningful and important as hard, quantitative evaluations. Subjective input is properly utilized when the assessors critically review its substance rather than settling for regurgitation of unsubstantiated opinions.

Section 3 contains information garnered through data collection, research, and observations and summarizes the current state of the PSAPs. Each section also includes the analytical portion of the study that measures findings to national standards and best practices, as well industry experience and knowledge. The intent is not to directly compare the 21 PSAPs or for them to compete with others based on these findings. The task is to identify themes and trends and understand if there can be efficiencies introduced to the entirety of the 911 ecosystem and to identify any challenges there may be in doing so.

Section 4 discusses how the PSAPs in 9-1-1 ACOG could achieve efficiencies through organic regionalization. it is important for the PSAPs to understand that some regionalization-based initiatives can take more time than others to materialize. To bridge the gap, the recommendations in Sections 3.1 through 3.5 are, if adopted, capable of laying the foundation for organic regionalization while resulting in operational efficiencies at the individual PSAP level.

[5] "Standard," Merriam-Webster, 2020. https://www.merriam-webster.com/dictionary/standard
[6] "Best Practice," Merriam-Webster, 2020. https://www.merriam-webster.com/dictionary/best%20practice

3 Findings, Analysis, and Recommendations

3.1 Leadership and Planning

Key Findings

- Eighteen of the PSAPs within 9-1-1 ACOG are a division under a law enforcement agency, which means they are governed at the municipal or county level and directed by a police chief or sheriff.
- Three PSAPs are directed by a department head other than a police chief or sheriff.
- There are many competing public safety and other municipal and county initiatives that impact leadership planning.
- The PSAPs are well supported by 9-1-1 ACOG.
- Many PSAPs have flat organizational structures with little or no opportunity for career advancement.
- Many PSAPs in the 9-1-1 ACOG region lack formal planning, such as strategic, continuity of operations, disaster recovery, change management, and cybersecurity.

An organization's leadership and planning have a direct and crucial effect on the success or failure of a public safety entity. Leadership and planning go hand-in-hand—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.

Management, administrative oversight, and governance of public safety communications operations and systems 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, involves an even higher level of supervision, generally in a multi-jurisdiction environment.

Leadership:

- Establish a clear vision
- Share the vision
- Provide information, knowledge, and methods
- Coordinate and balance conflict

In a 9-1-1 system serving multiple jurisdictions, management, in whatever form it takes, must be able to allocate funds, prioritize operations, and generally carry out the PSAP's mission and vision. To assure this is possible, some form of governance is necessary.

These factors become important as the nation moves away from analog technology and towards a Next Generation 9-1-1 (NG9-1-1) environment where strategies for virtual regionalization focus on sharing data and services.

3.1.1 Governance and Organizational Structures

9-1-1 ACOG is a voluntary association with membership open to all units of local government within the 9-1-1 ACOG region and adjacent local governments. 9-1-1 ACOG exists to implement and administer, on behalf of the public and 9-1-1 ACOG members, 9-1-1 service in the region. Each member is a separate legal and administrative entity apart from its membership in 9-1-1 ACOG. "The 9-1-1 Regional Planning and Advisory Committee (9-1-1 RPAC) consists of 9-1-1 managers and other public safety officials from the region. This body also advises both the Board of Directors and staff on policies that impact the operations of the regional system."[7] Each member public safety agency is responsible for providing 9-1-1 service to its respective community through the operation and management of a PSAP, also known as a 9-1-1 center, dispatch center, or emergency communications center (ECC). All PSAP personnel, radios, computer-aided dispatch (CAD) systems, and facilities are managed and funded locally.

MCP found the PSAPs to be well supported by 9-1-1 ACOG, which exerts strong leadership influence by virtue of its Board, which is comprised of "elected officials appointed by county commissions and city/town councils of the communities in which 9-1-1 ACOG serves."[8] ACOG's 9-1-1 & Public Safety Division has direct control over its offerings of PSAP training, geographic information system (GIS) services, and delivery of emergency telephone system and related technology to its member agencies. It can encourage but cannot require member PSAPs to participate outside of that purview with commitments such as joining a unified radio system, requiring emergency medical dispatch (EMD) certification, or sharing a CAD system. It can encourage and support PSAPs by providing operational best practices and guidelines but cannot require member agencies to change how they operate.

At the local level, 18 of the PSAPs within 9-1-1 ACOG are within the organizational structure of law enforcement, which means they are governed at the municipal or county level and directed by a police chief or sheriff. Three PSAPs within 9-1-1 ACOG are standalone entities within and are directed by a non-sworn department head.

Table 2: PSAP Authority

Authority	PSAP
Police Chief	Bethany, Del City, El Reno, Guthrie, Moore, Mustang, Newcastle, Nichols Hills, Noble, Norman, OUPD, The Village, Tuttle, Warr Acres, Yukon
Sheriff	Cleveland County, Logan County, Oklahoma County
Other (Department Head)	Edmond, Midwest City, EMSA

[7] 9-1-1 in Oklahoma | ACOG (acogok.org)
[8] Ibid.

PSAPs that are divisions or units within law enforcement are generally supervised by a sworn member of the command staff. Even with supervisory support provided by civilian dispatch supervisors, this structure can be challenging at times because field resource needs usually take priority over PSAP needs. PSAP organizational structures in smaller agencies, or within another department, are generally flat, with little or no opportunity for career advancement. Alternatively, PSAP organizational structures like Edmond, Midwest City, and EMSA, are more vertical, with more internal support and growth opportunities. A lack of growth opportunities can result in high turnover and loss of experienced staff as individuals desiring advancement and higher levels of financial compensation seek employment elsewhere.

Through governance and the organizational structures, MCP found a broad range of leadership influence within the 9-1-1 ACOG region. Leadership influence in a PSAP is impacted by many competing public safety priorities. There are several active initiatives in the region where there is clear leadership influence: technological advancements, physical consolidation initiatives, and continuity of operations planning. The outcomes of these initiatives, and others, are the result of effective relationships between management, administration, and the governing body, which can result in operational efficiencies:

- 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

Governance and Organizational Structure Best Practices
PSAP leaders support effective implementation of quality care by achieving buy-in from stakeholders, building trust as leaders, and using local data to support their decision-making processes. Although it may be challenging for these leaders to stay engaged and be effective in persuading executives, getting buy-in for PSAP needs such as staffing, funding, technology, facilities, and access to external resources is critical. It is common for PSAPs to be in competition with other priority public safety needs that are more visible to the public. The modern public safety communications ecosystem is a technologically sophisticated environment that is essential to effective emergency response operations. With the direction in which the public safety communications ecosystem is headed, more than ever before, consistent, stable, and dedicated leadership is essential to PSAP success. Dedicated leaders possess qualities that allow them to overcome barriers faced in leadership efforts. Placing individuals in positions of oversight to gain experience across all levels of an organization can be problematic, especially for a PSAP.

3.1.2 Leadership Planning

An essential prerequisite to leadership and planning is a shift from passive to active governance. Active governance is an ideal that is often difficult to achieve. The governmental process characteristically involves people who bring their ideas, experiences, preferences, and other strengths to the policy-making table. Active governance is achieved through an ongoing discourse that attempts to capture all considerations involved in assuring that stakeholder interests are reasonably addressed and reflected in policy. The table below summarizes various planning and related policies in place throughout the 9-1-1 ACOG region.

Table 3: Leadership Planning Summary

PSAP Location	SOPs	Strategic Plan	Change Management Policy	COOP Plan	DR[9] Plan	Cybersecurity Plan
Northeast						
Del City	Yes	No	No	Yes – Jail Only	No	Yes
EMSA	Yes	Yes	Yes	Yes – EMA[10]	Yes	Yes
Guthrie	Yes	Unknown	Yes	Yes	Yes	Yes
Logan County Sheriff's Office	No – Training Manual Only	No	No	No	Yes	Yes
Midwest City	Yes	Unknown	No	Yes	No	Yes
Oklahoma County Sheriff's Office	Yes	No	Yes	No	No	No

[9] Disaster recovery
[10] Emergency Management Agency

PSAP Location	SOPs	Strategic Plan	Change Management Policy	COOP Plan	DR[9] Plan	Cybersecurity Plan
Central						
Bethany	No – Training Manual and City Policies Only	No	No	No	No	No
Edmond	Yes	Yes	Yes	Yes	Yes	Yes
Nichols Hills	Yes – PSAP, Law, and Fire	Unknown	Yes	Yes	Yes	Yes
The Village	No	No	No	No	No	No
Warr Acres	Yes – Law and PSAP	Unknown	Yes	No	Yes	Yes
Southeast						
Cleveland County Sheriff's Office	Yes – Law	Unknown	Yes	No	No	Yes
Moore	Yes	Yes	Yes	Yes	Yes	Yes
Noble	No – Call Guides Only and Fire Policies	Unknown	Yes	Yes	Yes	Yes
Norman	Yes – Law and PSAP	Yes	Yes	Yes	Yes	Yes
OUPD	Yes	Unknown	Yes	No	Yes	Yes

PSAP Location	SOPs	Strategic Plan	Change Management Policy	COOP Plan	DR[9] Plan	Cybersecurity Plan
Southwest						
El Reno	Yes – Law and PSAP	Unknown	No	No	No	Yes
Mustang	No	Unknown	Yes	No	No	Yes
Newcastle	Yes – Law and PSAP	Unknown	No	No	No	Yes
Tuttle	Yes	Unknown	Yes	Yes	No	No
Yukon	Yes – Law	Unknown	Yes	No	Yes	Yes

Formal planning for the PSAP includes but is not limited to strategic (including short- and long-term financial planning), change management, and continuity of operations. The figure below defines change and identifies the related steps to achieving desired outcomes.

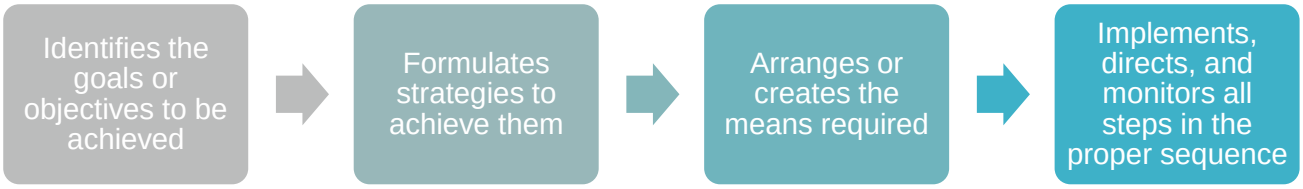


Figure 5: Planning

Strategic Planning

A strategic plan is essential to an organization's ability to achieve, proactively and incrementally, its long-term goals. Of the 21 PSAPs interviewed, four had a formal written strategic plan for their organization.[11] The public safety communications ecosystem is a technologically sophisticated environment that is essential to effective emergency response operations. The more complex the ecosystem becomes and the faster it expands, the harder it is to maintain clarity of direction and alignment. There are multiple components of PSAP operations that should be included in short- and long-range planning to sustain

[11] Key staff members from 12 PSAPs were interviewed, and they were unaware if a strategic plan exists for their organization.

current operations, and plan for and meet future budgetary needs (e.g., facility, technology, equipment, etc.).

Change Management Planning

The change management process is a series of tasks outlined for a seamless transition from a current state to future state without obstructing the workflow or suffering any damages. Of the PSAPs interviewed, 14 had formal change management plans for technology and security upgrades, but not for operational and policy changes.

A change management plan is an essential tool that helps determine if initiatives will provide value to the organization. While providing clarity, it also maintains alignment of projects and initiatives with the organization's strategic goals and objectives and helps mitigate mission creep and change fatigue.

Strategic Planning and Change Management Best Practices
Except for managing initiatives within established budgets, on schedule, and providing the outcomes established in the scope, much of what is considered best practice from an organizational leadership perspective is subjective. The ability to execute initiatives is partly due to leadership's influence and effectiveness in navigating the political landscape to meet mission-critical needs, such as approvals for additional employees, technologies, facilities, funding, and access to support resources. If using effective organizational leadership tools such as a strategic plan and a change management workflow, leaders should have the foundation to effectively execute initiatives. The absence of these tools does not mean that leaders cannot be effective; however, introducing ideas in alignment with an organization's strategic plan and an established change management plan help staff view initiatives as positive to their mission performance with minimal disruptions, keep mission creep to a minimum, and protect staff from change fatigue. To garner commitment and support, leaders that are effective typically engage a diverse group of staff, including line-level personnel, to review initiatives.

Continuity of Operations and Disaster Recovery Planning

Continuity is defined as *the ability to provide uninterrupted services and support, while maintaining organizational viability before, during, and after an event that disrupts normal operations.*[12] A Continuity of Operations Plan (COOP) is a tool that is intended to aid an organization in preparing for, responding to, and recovering from a disruptive event.

Continuity of operations and disaster recovery planning identifies how critical operations will continue under a broad range of circumstances. Among the 21 PSAPs interviewed, eight had a formal COOP plan and 11 had a Disaster Recovery (DR) plan; most had phone reroutes and limited evacuation plans. Of those with plans, most had jurisdictional plans that were not exclusive to the PSAP. The plans are not regularly exercised, and staff interviewed had little working knowledge of the plan(s). Several PSAPs have

[12] *Federal Continuity Directive 1 (FCD-1)*. U.S. Dept. of Homeland Security (DHS), January 2017

no or very limited mission-critical capabilities at their evacuation locations, requiring a reroute of 9-1-1 phones by 9-1-1 ACOG to a 10-digit wireless or Voice over Internet Protocol (VoIP) phone. Seven PSAPs have full backup facilities.

A COOP plan supports the internal operations of respective departments during an emergency or disaster. A COOP plan typically includes the following elements:

- Basic Plan – provides explanatory information regarding the planning process and use of the plan
  - Introduction
  - Situation and Assumptions
  - Concept of Operations
  - Incident Management
  - Recovery and Reconstitution
  - Training and Exercises
  - Plan Administration

- Plan Appendices – supplementary information including additional illustrative content
  - Mission-essential Functions (MEFs)
  - Staff Succession and Delegations of Authority
  - Alternate Worksite(s) and Devolution/Reconstitution Procedures
  - IT Systems
  - Crisis Communications
  - Pandemic Disease Preparedness and Response Procedures
  - Statutes, Ordinances, Standards, and References
  - COOP Plan Terms and Glossary

Because no two jurisdictions are the same—in terms of resources, capabilities, socioeconomics, geography, topology, and other differentiating factors—a cookie-cutter approach to developing a COOP plan is not advised—rather, it should be customized based on an organization's specific needs and circumstances. First and foremost, the plan must be scalable (e.g., the process for a full evacuation may not be necessary if backup resources can be utilized in the current location). This may require a tiered or phased-in approach, where partial implementation of the plan may be the most appropriate course of action for the situation. A COOP plan always must anticipate and plan for the worst scenario, while also being useful when less severe emergency events occur.

Continuity of Operations and Disaster Recovery Planning Standards and Best Practices
Continuity of operations is an effort to provide assurance of the stability of critical government functions during a wide range of potential emergencies or disruptive events. Communities place a high level of trust in 9-1-1 systems and the ability of public safety agencies to deliver services regardless of emergency circumstances. Unfortunately, as with other essential services, public safety personnel, facilities, equipment, and communication infrastructure are susceptible to a wide range of digital and physical threats. As such the public

safety sector is one of 16 critical infrastructure sectors defined under Presidential Policy Directive (PPD) 7 and PPD 21 and addressed by the National Infrastructure Protection Plan (NIPP).

NENA Communications Center/PSAP Disaster and Contingency Plans Model Recommendation provides general guidelines for circumstances that may adversely impact a PSAP's ability to receive, process, dispatch, and monitor emergency calls for assistance.

As a result of the current coronavirus global health crisis, a new level of awareness has emerged regarding the need for COOP and disaster recovery plans that require considerations beyond evacuation to a neighboring ECC.

Appendix C includes a list of standards and other resources developed by NENA, the National Fire Protection Association (NFPA), and the Federal Emergency Management Agency (FEMA) that may be used in planning.

Cybersecurity Planning

Cybersecurity threats have increased exponentially in recent years. It is no longer a matter of if but when an agency will be directly or indirectly involved in a cyberattack. PSAPs are a vulnerable and valuable target for attacks; effective and strategic cybersecurity planning, in addition to proper training, mitigation strategies, and protections, is necessary to sustain operations. Cybersecurity planning should be supported and initiated at the top of any organization, as it impacts all aspects of the organization. Of the 21 PSAPs in the 9-1-1 ACOG region, seventeen have a cybersecurity plan. The level of cybersecurity planning, however, varies greatly between PSAPs. Given the condition and age of some of the mission-critical systems and equipment in use, there are likely vulnerabilities that could be mitigated through additional planning, policies, and protections.

Although 9-1-1 ACOG has robust cybersecurity measures in place to protect the CHE, there is a line of demarcation where cybersecurity from 9-1-1 ACOG services ends, and city or county services begin; it is in this space that the PSAPs are vulnerable to various cyberthreats.

There may be a greater need for cybersecurity awareness training, which is a component of planning. The National Institute of Standards and Technology (NIST) identifies awareness training as a key component in building an effective IT security program and notes that "a strong IT security program cannot be put in place without significant attention given to training agency IT users on security policy, procedure, and techniques."[13]

Cybersecurity Planning Standards and Best Practices
A cyber assessment can uncover vulnerabilities and exploitations that will assist with developing a cybersecurity plan.

[13] Wilson, M. and Hash, J. (2003). Building an Information Technology Security Awareness and Training Program. National Institute of Standards and Technology, Special Publication 800-50 (p. ES-1)

Given the level of threat to public safety from cyberspace, there are numerous standards and best practices that may be used for cybersecurity planning. These can be found in Appendix B.

3.1.3 Recommendations

While 9-1-1 ACOG is not directly responsible for PSAP operations, it encourages PSAPs to follow industry standards and best practices. As such, the recommendations below have been identified to improve the emergency response outcome for all 9-1-1 ACOG member PSAPs. 9-1-1 ACOG is encouraged to facilitate discussions that support PSAPs in the execution of these recommendations.

Table 4: Leadership and Planning Recommendations and Outcomes

Recommendations	Outcomes
Establish a change management workflow	• Facilitates interdepartmental collaboration. • Improves 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. • Improves decision-making. • Increases project success (projects that stay within scope, time, and budget for required functions and features). • Decreases opportunities for unexpected and planned system downtime.
Develop a strategic planning process	• Provides oversight of strategic goals and strategy modifications. • Coordinates and leverages funding opportunities and helps maintain the availability of funds. • Facilitates jurisdictional and interdepartmental collaboration. • Improves 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.
Develop and implement COOP/DR plan(s) and exercise the plans regularly	• Enhances a PSAP's ability to maintain normal operations using SOPs during disaster and/or emergency situations.

Recommendations	Outcomes
In addition to 9-1-1 ACOG's own plan, cybersecurity plans at the local level (including an audit) should be in place and regularly updated	• Reduces or eliminates risk. • Improves continuity of operations. • Protects mission-critical systems, including 9-1-1 ACOG equipment and systems.

3.2 Operations

Key Findings

- The PSAPs in the 9-1-1 ACOG region serve the same geographical areas, especially those in the same region (designated by MCP).
- Some PSAPs have contiguous borders and overlapping jurisdictions between the three disciplines.
- The majority of PSAPs reside in and support a law enforcement agency.
- Non-core (ancillary) functions that are not commonly found in standalone PSAPs include detention/jail duties, a walk-up window, triaging administrative calls for law enforcement agency, and other law enforcement-related administrative and records support duties.
- PSAPs average 16 weeks to fully train a new hire.
- Eighteen of the PSAPs have a structured new hire training program.
- On average, with support from 9-1-1 ACOG, the PSAPs provide 24 hours of continuing education annually, on average.
- The majority of PSAPs have formal SOPs, but many reside within the law enforcement or city policies and procedures and are not dedicated to the PSAP.
- Five of the PSAPs have a structured quality assurance/quality improvement (QA/QI) program that aligns with the national standard.
- Five of the PSAPs provide EMD.
- It is common in the 9-1-1 ACOG region to transfer EMS calls to a third party (e.g., private EMS or EMSA) for EMS dispatch and EMD.
- Private EMS companies are not traditional secondary PSAPs and do not receive automatic number identification (ANI) or automatic location identification (ALI).
- The majority of PSAPs in the 9-1-1 ACOG region are cross trained to answer emergency calls and dispatch police and/or fire/EMS. Most of the PSAPs are performing call taker duties simultaneously with dispatching and there are no clearly defined functions.

3.2.1 Functions, Workload, and Duty Assignments

As highlighted in Figure 3, PSAPs in the 9-1-1 ACOG region serve the same geographical areas, especially those in the same region (designated by MCP). Some PSAPs have contiguous borders and overlapping jurisdictions between law enforcement, fire, and EMS.

The PSAPs process between 435 and 75,801 9-1-1 calls annually, as shown in Table 1, depending on the agency. In addition to core functions (emergency call processing and dispatching), the PSAPs also have non-core (ancillary) functions that range from administrative duties to booking and jail duties. Non-core functions that are being performed today include:

- *Jail Duties* include a range of duties, such as receiving and processing inmates into custody, pat-downs, serving meals, jail checks, and supervising inmates.
- *Security* includes monitoring interior and exterior security cameras, including remote city facilities, and lots.
- *Administrative Duties* include administrative call triaging and processing administrative-related requests and inquiries (internal or external).
- *Walk-Up Window* includes actively staffing the main lobby/walk-up window of the police department and handling requests, and processing transactions involving cash, requests for records, and fingerprinting.
- *Vehicle Releases* includes all administrative duties related to towed and impounded vehicles.
- *Support City/County Services* includes supporting the police department and other city departments (e.g., animal control, public works) and providing related services and/or making notifications (e.g., medical examiner, funeral homes, other county/city departments).
- *Tornado Sirens/Mass Notifications* includes activating the severe weather sirens, making related notifications, and conducting other mass notifications (e.g., OU campus mass notifications).
- *Warrants/Records* includes tasks related to entering, modifying, removing, and/or processing warrants, sex offender registries, other protective orders; processing bonds; issuing and logging court dates, and criminal history inquiries.

MCP found the non-core functions to be more prevalent in the PSAPs that are a division of a law enforcement agency. Non-traditional PSAPs, such as OUPD, have more unique (university-specific) non-core functions such as access control, increased camera monitoring, and campus public address notifications. The most common non-core duties in the region are administrative, warrants/records, security camera monitoring, walk-up window, and support services, as shown in the table below.

Table 5: Non-Core Duties

PSAP	Jail Duties	Security (Monitor)	Administrative Duties	Walk-Up Window	Vehicle Releases	Support City Services	Tornado Sirens	Warrants / Records
Northeast								
Del City	X	X	X		X	X		
EMSA								
Guthrie	X	X	X	X				X
Logan Co.			X		X	X		X
Midwest City		X	X			X		X
Oklahoma Co.		X	X			X		X
Central								
Bethany	X	X		X	X	X	X	X
Edmond						X		
Nichols Hills		X				X	X	
The Village	X			X	X		X	X
Warr Acres	X			X			X	X
Southeast								
Cleveland Co.	X		X					X
Moore		X		X				X
Noble			X	X		X		
Norman		X	X				X	X
OUPD		X			X		X	

PSAP	Jail Duties	Security (Monitor)	Administrative Duties	Walk-Up Window	Vehicle Releases	Support City Services	Tornado Sirens	Warrants / Records
Southwest								
El Reno	X	X	X	X	X	X	X	X
Mustang	X	X	X	X		X		X
Newcastle			X	X			X	X
Tuttle			X	X	X	X	X	
Yukon	X	X	X	X	X			

It is not unusual for PSAP staff to be assigned ancillary duties, especially when the PSAP is a division of a law enforcement agency; however, it can impact the utilization rate[14] of telecommunicators and, at times, be particularly challenging for telecommunicators to juggle the non-core duties with higher priority emergency communications. Further, agencies that require their telecommunicators to perform certain jail duties may create scenarios where the telecommunicator is taken away from their primary duties of answering emergency calls and dispatching field responders (e.g., direct inmate interaction). Several PSAPs that require telecommunicators to perform jail-related non-core duties operate at a minimum of one telecommunicator on duty at any given time.

The majority of PSAPs operate with a minimum of one to two telecommunicators per shift. Many PSAPs in the 9-1-1 ACOG region are cross-trained to answer emergency calls and dispatch police and/or fire/EMS. Cross-training can benefit PSAPs in many ways, including increasing productivity and allowing for more effective succession planning; however, PSAPs integrating call-taker duties simultaneously with dispatching are prone to mishaps due to the lack of clearly defined functions.

Functions, Workload, and Duty Assignments Best Practices
Numerous reasons exist why an organization elects to operate the way it does. PSAPs that can operate with a configuration where staff have clearly defined functions as call-takers and dispatchers during a shift (i.e., there are those that just call-take and those that just dispatch) are typically more efficient and have a lower rate of errors. Even if errors are caught before they impact a response, such as mistyping a unit number or license plate but backspacing and making the correction before being entered into a CAD record, it is still an error that reduces overall efficiency. Best practice models for PSAP operational configurations also indicate that a clear

[14] Utilization is the percentage of time each shift that staff are *available* to do their respective job.

configuration with identified separate responsibilities is more efficient in reducing the complexities and risks associated with multitasking (more accurately known as task-switching). Psychology Today[15], among others, concludes that an organization can lose up to 40% of staff productivity, listing numerous risks to the mind and body, from multitasking:

- Can lead to memory problems
- Can lead to increased distractibility
- Can harm relationships
- Increases chronic stress
- Increases depression and social anxiety
- Results in reduced productivity and efficiency

Another element related to clearly defined functions is that staffing is such that telecommunicators are not responsible for a secondary function simultaneously (i.e., the fire and/or police dispatcher does not receive ring overs from the call-taking section). While no standard exists regarding this common operational practice, there is an increased risk that an organization must consider when relying on this configuration to meet call-answering standards. That risk revolves around conflicts that may occur between emergency radio traffic and an emergency call of perceived equal priority. For instance, does the telecommunicator choose to delay transmitting for additional apparatus or pause cardiopulmonary resuscitation (CPR) instructions?

Any configuration that does not provide separate call-taking and dispatch positions inherently increases the risk exposure for the PSAP, its staff, and those it serves, which is why it is essential that the risks be known so that decisions can be made from an informed position.

3.2.2 Training

PSAPs in the 9-1-1 ACOG region reported an average of 16 weeks to train a new employee. Telecommunicators average 24 hours of continuing education annually, which aligns with the national standard and best practice.[16] Agencies generally reported that they are willing to send veteran employees to any available training; however, they are limited by staffing constraints. Many PSAPs are taking full advantage of the 9-1-1 Training Institute's offerings and reported that the online courses are more attainable for them due to staffing constraints; courses that involve a long commute or an overnight stay limits participation by 9-1-1 ACOG members.

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

[15] Weinschenik, Susan Ph.D., "The True Cost Of Multi-Tasking." Psychology Today, September 18, 2012. https://www.psychologytoday.com/us/blog/brain-wise/201209/the-true-cost-multi-tasking
[16] APCO ANS Minimum Training Standards for Public Safety Telecommunicators

The National 911 Program "facilitated a project to establish universally accepted minimum training guidelines to be used for aspiring and current 911 telecommunicators, and to provide the foundation for ongoing professional development."[17] The working group responsible for developing the guidelines was comprised of representatives from APCO, NENA, the Denise Amber Lee Foundation, and many other national organizations responsible for or involved in the training of public safety telecommunicators. These guidelines also can provide a foundation for a comprehensive training program.

Training Standards and Best Practices
A standard or best practice does not exist that indicates a successful training completion rate. However, based on MCP's practitioner experience and industry knowledge, agencies that achieve a training completion rate of 71% to 79% tend to also have a good recruiting and hiring workflow capable of identifying individuals with the right skill attributes. When the recruiting and hiring workflow can identify candidates that possess attributes that make them a cultural, core value, and behavioral fit, the trainee success rate tends to trend above 80% which is the benchmark MCP identifies as low risk. Even so, the nationwide norm unfortunately tends to rest in the 50% to 60% range for training completion. Numerous internal and external factors contribute to these low rates; one factor MCP has observed trending higher and higher on the scale is the increased complexity of the telecommunicator position, especially in PSAPs that subscribe to a vertical configuration, which is when the telecommunicator simultaneously serves as call- taker and dispatcher. This is the typical configuration in small PSAPs. In alignment with best practice, agencies should seek to achieve and maintain training program certification by a state agency or industry-recognized organization such as APCO, through its Training Program Certification, or the Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA). Having a universally recognized training program not only achieves this objective but also reduces the agency's risk exposure as well as its staff's when the agency can demonstrate they have taken steps to train their staff in alignment with nationally recognized standards. Achieving certification and/or accreditation of an agency's training program is not a simple task. It is a formal process that requires time and collaboration of numerous resources to meet the requirements to even apply. Both APCO and CALEA provide guidance on the rules and procedures that an agency must follow.

3.2.3 Standard Operating Procedures

As noted in Table 3 above, nine 9-1-1 ACOG member PSAPs reported they have formal SOPs that are dedicated exclusively to the PSAP). Five PSAPs reported having no SOPs and seven have SOPs that are for their host law enforcement agencies, and other served agencies, and are partially applicable to the PSAP. Many agencies interviewed also apply personnel policies to PSAP staff that were developed by the law enforcement agency and/or the respective municipality.

[17] Recommended Minimum Training Guidelines for the Telecommunicator." 911.gov. https://www.911.gov/project_recommended911minimumtrainingfortelecommunicators.html

A well-researched SOP is one that relies on information gathered from agencies or sources outside one's own. A well-designed SOP is one that covers the information it claims to and should be confined to a limited topic and not drift into other areas. A well-written SOP is one that is easy to understand and follow; it should have a logical flow and not use confusing language. A key to good SOPs is that they must be well-trained to be effective. Training on SOPs can take several forms, including using software programs that track the status of employee reviews, and can vary depending on the level to which an agency is already trained.

Current and accurate are the final two components of good SOPs. Even the best-written SOP manual will become obsolete if it is not regularly reviewed and updated, which necessitates a policy that defines the timeframe and how SOPs will be reviewed and updated, if necessary. An annual review of every policy is generally a best practice. Relevancy, content, accuracy, and applicability should be considered, as should changes in the organization's technology, structure, and size.

It is essential to risk management that a PSAP has clearly defined SOPs that present a set of uniform procedures for every member of the agency to follow. In addition to being well-researched, well-designed, well-written, well-trained, current, and accurate, it is important the SOPs are readily available and accessible to all staff, preferably online.

PSAPs are unique and require SOPs that are applicable to actual PSAP operations, technologies, and facilities. SOPs are directly tied to performance management, service levels, and risk mitigation. Efficiencies may be gained in the 9-1-1 ACOG region by developing model templates that can be easily adapted and applied to PSAPs in need of SOPs.

Standard Operating Procedures Standards and/or Best Practices
Throughout the country, PSAPs align SOPs with industry standards and best practices to assure the effectiveness of the center and the best possible service is provided to citizens and field responders. Measurable standards create an objective view of 911 operations and provide for consistent interactions with the public and field responders. Appendix C Standards, Statutes, Accrediting Organizations, and State Rules, provides information on industry organizations that set standards applicable to a PSAP, as well as some of the standards.

3.2.4 Use of Call Processing Protocols

Four PSAPs utilize structured protocols for emergency medical incidents: EMSA, Edmond, Norman, and El Reno. Moore reported that they are in the process of expanding their services to include EMS dispatch and are implementing EMD. Several PSAPs transfer callers to a private EMS service (e.g., Pafford) or EMSA for EMS dispatch and the EMS dispatch agencies utilize EMD protocols. A few PSAPs noted that they have a real need to provide EMD but do not have the resources, financial, or operational means, to implement and support the program. The figure to the right shows the areas that provide EMD in the region. Outside of the few agencies that transfer to Pafford, this shows a disparity in EMD services offered to callers.

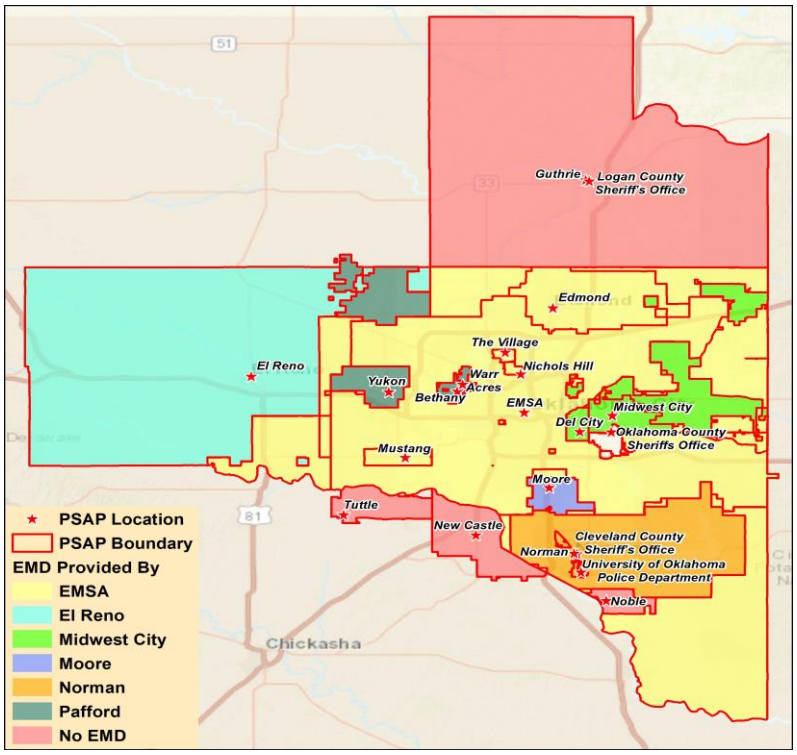


Figure 6: EMD Service Area

None of the PSAPs utilize structured protocols for law enforcement and fire incidents but several reported using informal call guides to aid with call processing questions on certain law enforcement and fire incidents.

A clearly defined, standard procedure for call taking is important to PSAP operations as it promotes uniformity of process, reinforces training, and reduces errors. Standardized protocols were first developed for EMD to provide consistent zero medical-response-time guidance by asking questions in the proper order, thereby maximizing caller information and improving field response, while also providing pre-arrival instructions until field responders arrive.

In April 2021, Oklahoma enacted Senate Bill 687 (SB687) requiring the development of a training program for telecommunicators to include guidelines for Telecommunicator Cardiopulmonary Resuscitation (T-CPR). This is an area where service levels could be more consistently provided across the region; the newly signed T-CPR requirement is a step in the right direction.

Call Processing Protocol Standards and/or Best Practices
Provision of EMD has become an expected standard of care by the public. Whether an organization utilizes a third-party set of protocols or has developed its own, it is important that the protocols and any pre-arrival instructions are clearly defined and in alignment with standards, even voluntary standards such as those developed by the American Society for Testing and Materials (ASTM).[18]

3.2.5 Quality Assurance and Performance Management

Five PSAPs within 9-1-1 ACOG use metrics and/or QA to monitor and improve the performance of their overall operation and personnel. Of the agencies that have an established performance management program, almost all of them were larger agencies with more advanced systems and additional support staff in place to manage the programs. The vast majority of PSAPs noted that they do conduct random call reviews, but predominately only review calls when there is an investigation, and the program is not structured.

Performance management, including QA, provides for holistic organizational success and includes everyone in a PSAP from telecommunicators to managers and directors. The process is cyclical and is a means to assure that everyone understands their 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.

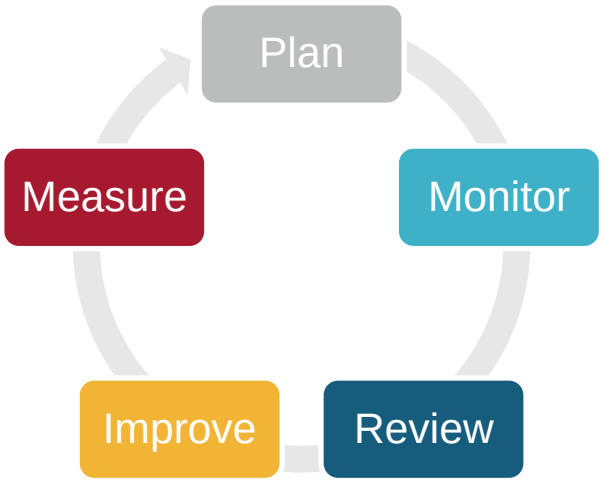


Figure 7: Performance Management Cycle

One of the easiest ways to evaluate an organization using this cycle is to review key performance indicators (KPIs). KPIs are a set of quantifiable performance measures used by an agency to gauge progress toward meeting their strategic and operational goals. KPIs such as abandoned call rate, 911 call wait times, pick up to queue, queue to dispatch, non-emergency call-wait times, and total call processing times, can all be used to measure the performance of the PSAP. Using these measurements, an organization's leadership can begin to evaluate if emergency and non-emergency requests for service are processed in a timely manner. If the numbers fall outside of what would be considered the norm for a PSAP—NENA and NFPA call answering standards, for example—leadership can establish processes or procedures to help move these values more towards the norm. Once implemented, leadership can re-evaluate the statistics to determine if there has been improvement.

[18] ASTM F1258-95(2014), Standard Practice for Emergency Medical Dispatch, ASTM International, West Conshohocken, PA, 2014, www.astm.org. ASTM standards are voluntary in that their use is not mandated. However, government regulators often give voluntary standards the force of law by citing them in laws, regulations, and codes.

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."[19] In a PSAP, this equates to "all actions taken to ensure that standards and procedures are adhered to and that delivered products or services meet performance requirements."[20]

Other key performance indicators should be integrated into a QA program to monitor and improve the overall performance of personnel and the PSAP as a whole.

Performance Management Standards and/or Best Practices
It is important for PSAPs to monitor and measure various KPIs with the intent of improving performance. It is also important to establish a standardized QA and effective feedback process for telecommunicators. This is a best practice that can identify areas that are consistently meeting the expectations of the organization and those that are falling short. Performance measurements and QA can improve the efficiencies of the PSAPs and the overall service levels of the region by providing agencies with quantifiable and qualifiable data and information on where adjustments are needed. There are several national standards that can be used to establish and support performance measurement and QA programs: • APCO/NENA ANS 1.107.1.2015: *Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points* – This standard requires that at least 2% of all calls for service are reviewed (call-taking and dispatch for a single incident are conducted under separate review processes), unless prohibitive. • APCO ANS 3.106.2-2017: *Core Competencies and Minimum Training Standards for Public Safety Communications Quality Assurance Evaluators (QAE)* • APCO ANS 1.118.1-2020: *Key Performance Indicators for Public Safety Communications Personnel* • APCO 1.117.1-2019: *Public Safety Communications Center Key Performance Indicators*

[19] "Quality Assurance vs. Quality Control." American Society for Quality. https://asq.org/quality-resources/quality-assurance-vs-control

[20] "Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points." APCO/NENA ANS 1.107.1-2015. https://cdn.ymaws.com/www.nena.org/resource/resmgr/Standards/APCO-NENA_ANS_1.107.1.2015_Q.pdf

3.2.6 Recommendations

Table 6: Operations Recommendations and Outcomes

Recommendations	Outcomes
Consider expanding the number of remote (online) courses offered (9-1-1 ACOG)	• Enables PSAP staff to attain the national standard of 24-hours annual continuing education. • Improves the competency level of personnel. • Enables personnel to remain current with training topics and trends.
(Encouraged to) Re-evaluate non-core (ancillary) job duties of telecommunicators (PSAPs)	• May reduce the workload of PSAP staff and shift focus to core duties (911 call processing and dispatching). • Enables the agency to assign proper staff to non-core duties.
Seek to achieve, and maintain, training program certification by a state agency or industry-recognized organization (PSAPs)	• Advances the training and professional development of public safety communications personnel. • Reduces agency risk exposure.
Continue to support and expand foundational training for new hires that aligns with the National 911 Program and other national standards (APCO, NENA, etc.)	• May reduce new hire turnover rates. • Improves competency levels of telecommunicators in the region. • Creates a baseline of minimum training in the region.
With support from ACOG staff, consider developing sample SOPs based on national standards and best practices (Region)	• Reduces agency risk exposure. • Improves the consistency of services delivered throughout the 9-1-1 ACOG region. • Provides objective content for training programs.
Consider utilizing protocols to support 911 call handling and dispatching (PSAPs)	• Provides pre-arrival instructions to callers. • Improves service level consistency throughout the 9-1-1 ACOG region (e.g., EMD). • Reduces errors and risk exposure. • Promotes uniformity of call processing and dispatching procedures and processes. • Maximizes caller information and enhances field response.

Recommendations	Outcomes
With support from ACOG staff, implement QA and other performance management programs (PSAPs)	• Reduces agency risk exposure. • Improves the consistency of service levels in the 9-1-1 ACOG region. • Targets training areas for continuing education and new hire training programs. • Validates adherence to SOPs. • Establishes objective and measurable performance benchmarks (e.g., KPIs) for the PSAP.

3.3 Workforce

Key Findings

- The majority of PSAPs in the 9-1-1 ACOG region are small, with one to two positions and a minimum of one or two employees per shift.
- The low staffing limits the capacity potential of the majority of PSAPs in the 9-1-1 ACOG region and creates an environment that may challenge a PSAP to effectively manage a workload surge and/or call overflow from neighboring agencies.
- The majority of PSAPs experience challenges related to hiring and retaining qualified applicants.
- The most common timeframe for an employee to washout is during initial training within the first three to six months of employment.
- The average top salary of telecommunicators in the 9-1-1 ACOG region is $25,002 (low), $50,375 (middle), and $84,916 (high).

Today, organizations throughout the world over face many challenges in the management of their personnel—their human capital—and public safety agencies are no exception. Personnel management is different than organizational leadership and involves a variety of functions that encompass more than just staffing, including personnel planning, development, and compensation to name a few.

The human resources (HR) function in any organization is important and, without proper attention, even the best organizations can falter. One of the most critical HR functions within any PSAP organization is that of personnel management. Personnel are an agency's greatest asset, and proper management must be exercised to maintain an effective and efficient operation. Personnel management is a specialized aspect of an organization's overall HR management practices that focuses on those policies and practices by which the agency hires and develops its workforce.

Many PSAPs across the country are struggling with staffing shortages. Tenured employees are retiring, while others simply leave for any number of reasons—shift work, the hours, childcare issues, stress, and

better pay in the private sector. Generally, while there is no lack of applicants for open positions, the often-stringent job qualifications (e.g., background checks, prior drug usage) disqualify many, as do the lengthy application processes; it is not unusual for many PSAPs to have processes that take upwards of six months from application to start date. Thus, PSAPs 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.

3.3.1 Staffing

In total, PSAPs in the 9-1-1 ACOG region employ 175 telecommunicators and 33 supervisors, as shown in the table below.

Table 7: Telecommunicator and Supervisor Counts

PSAP	Telecommunicators	Supervisors
Northeast		
Del City	8	1
EMSA	15	
Guthrie	4	4
Logan County	6	1
Midwest	6	
Oklahoma County	10	1
Total	49	7
Central		
Bethany	5	1
Edmond	15	3
Nichols Hills	5	1
Warr Acres	3	3
The Village	3	3
Total	31	11

PSAP	Telecommunicators	Supervisors
Southeast		
Cleveland County	8	1
Moore	11	1
Noble	4	1
Norman	24	6
OUPD	9	1
Total	56	10
Southwest		
El Reno	12	
Mustang	6	1
Newcastle	4	2
Tuttle	5	1
Yukon	12	1
Total	39	5
Grand Totals	175	33

Anywhere from 32 to 38 telecommunicators are on duty at any given time in the 9-1-1 ACOG region, and most PSAPs have one telecommunicator on duty on any given shift, as shown in the figure below.

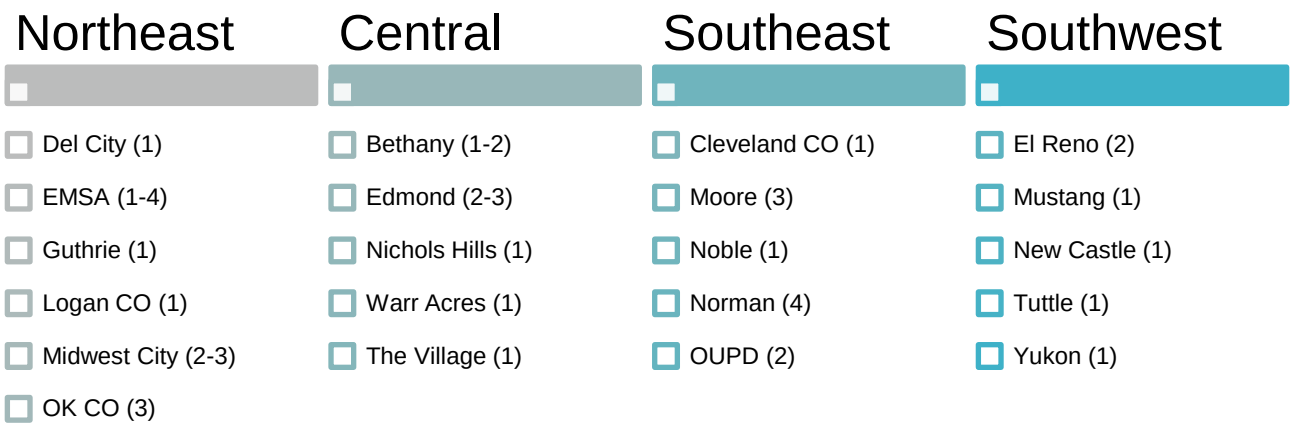


Figure 8: Minimum Staffing by Region

The telecommunicators working throughout the 9-1-1 ACOG region are mostly cross-trained and there are very few with a separation between the call-taker and dispatcher roles. In other words, most often the call-taker also is responsible for dispatching the call and handling other non-core duties. The low staffing limits the capacity potential of the majority of PSAPs in 9-1-1 ACOG and creates an environment that may be challenging if a PSAP needed to manage a workload surge and/or call overflow from neighboring agencies. This issue was raised in numerous interviews related to evacuation procedures; PSAPs can reroute their 9-1-1 calls to another agency, but that backup location may not have the capacity to manage the increased workload.

Any configuration that does not provide separate call-taking and dispatching positions inherently increases the risk exposure for the PSAP, its staff, and those it serves, which is why it is essential that the risks be known so that decisions can be made from an informed position.

Staffing Standards and/or Best Practices
NFPA standard 1221, section 7.3.1, states a minimum of two telecommunicators shall be on duty and present in the communications center at all times.[21]

3.3.2 Supervision and Span of Control

In the 9-1-1 ACOG region, supervision is most commonly the responsibility of law enforcement command personnel supported by a frontline supervisor or lead telecommunicator. Direct report span of control, without question, is satisfactory; however, with only one telecommunicator per shift in many instances and limited available supervisors, there are telecommunicators without the benefit of direct supervision.

Unfortunately, this leaves the responsibility for handling problems to the lone telecommunicator, no matter their experience. When supervisors are not available, opportunities for training, performance monitoring

[21] NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems

and feedback, and correction are inhibited. This puts undue stress on employees and leaves the organization vulnerable to risk due to lapses in service. This is particularly important where the telecommunicator has other ancillary duties.

The effectiveness of supervision in a PSAP is impacted by its operational configuration. Depending on the size of the organization, it is not unusual for small PSAPs to have working supervisors who are not only responsible for operational oversight of a shift or organization, but simultaneously perform as a telecommunicator. Likewise, it is also not unusual for small agencies to fall under the command structure of a law enforcement agency.

Span of Control Standards and/or Best Practices
NFPA 1221, *Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems*, section 7.3.4, states: "Supervision shall be provided when more than two telecommunicators are on duty."[22] The annex notes: "The supervisor position(s) in the communications center are provided in addition to the telecommunicators positions. Although supervisory personnel are intended to be available for problem solving, the supervisor position is permitted to be a working position."[23] NFPA 1221, section 7.3.4.2, allows the supervisor to provide short-term relief. "The supervisor shall be allowed to provide short-term relief coverage for a telecommunicator, provided that the telecommunicator does not leave the communications center and is available for immediate recall …"[24]

3.3.3 Recruiting

It is becoming increasingly more difficult to recruit candidates to the position of telecommunicator within the state of Oklahoma and across the nation. There is great concern that the staffing shortages in public safety communications will increase in the NG9-1-1 environment and will be exasperated by a workforce that desires more work-life balance. Many PSAP managers and staff interviewed reported low interest in the position and reduced viable applicant pools from which to hire. This is a common issue in all sectors of public safety and is exacerbated by the sheer number of PSAPs competing for a limited number of candidates in the 9-1-1 ACOG region.

The process of hiring is often long and arduous, especially when compared to the private sector, and many 9-1-1 ACOG members reported that they are trying to streamline the hiring process and reduce the application to hiring time. Each PSAP is approaching this independently and at significant cost when considering that those who leave typically do so within three to six months, at which point the PSAP must do it all over again. This causes considerable strain on the communications training officers (CTOs) as well.

[22] Ibid.
[23] Ibid.
[24] Ibid.

Recruiting Standards and/or Best Practices
While there are no recruiting or hiring standards, several best practices can help PSAPs achieve success in choosing the right applicant for the position and onboarding them. NENA and APCO both offer courses, staffing and retention reports, and related occupational standards geared toward PSAP staffing. An effective recruiting program engages a broad spectrum of outreach sources, is reflective of the community's makeup, and considers external influencers, particularly those along municipal and jurisdictional lines. When assessing recruiting practices, agencies should consider: • Use of social media and external websites • Application source tracking • Currency of eligibility requirements • Response to job postings • Dedicated and staffed recruiting program • Pipeline approach to recruitment • Use of self-elimination tools • Use of value propositions • Diversity of recruiting opportunities • Continual posting strategies

3.3.4 Retention

Employee retention is a very real challenge that continues to strain PSAPs across the nation and the 9-1-1 ACOG region is no exception. Less than half of the PSAPs interviewed reported stable staffing, and the ones that reported stable staffing indicated that staffing was not consistent year to year. PSAP staff indicated that the two most common reasons for the attrition is that employees cannot master the job and/or they are unwilling or unable to meet the demands of a 24x7x365 position.

A recent update to APCO's previous staffing and retention study[25] concluded that the average retention rate for PSAPs is 71%. This same study identified nine factors that drive employee commitment and have a direct impact on retention, including supportive supervision, co-worker support, and opportunities for promotion. The attrition, however, affects other areas of the organization, as noted in *Managing Employee Turnover*:

- Lower organizational morale
- Lower organizational engagement
- Lower organizational performance
- Additional training for new employees
- Loss of knowledge retention[26]

[25] "Project RETAINS: Staffing and Retention in Public Safety Answering Points (PSAPs): A Supplemental Study." APCO Project Retains, APCO International. https://www.apcointl.org/resources/staffing-retention/project-retains/
[26] "Managing Employee Turnover." BambooHR │ PayScale Human Capital.

The long-term implications of continued attrition open the door for more people to leave. Unfortunately, smaller PSAPs often are impacted to a greater degree than larger centers with more staff to absorb the resulting vacancy.

The more work demanded, the less desirable the working conditions, the more turnover created. When more turnover is created, this leads to more work demanded from existing staff and less desirable working conditions. It can increase to the point that a PSAP may never see a “full staff” level again. However, not all turnover is bad. "Some turnover is healthy because it weeds out the disengaged ..."[27]

Retention Standards and/or Best Practices
An earlier APCO Project RETAINS report stated, “The strongest and best predictor of a high retention rate was having all authorized positions filled and being fully staffed.” Based on MCP’s experiences and numerous interactions with PSAPs and industry professionals, an effective retention program is one in which the organization is consistently within 5% of filling all authorized positions and can achieve an outcome where 80% of employees still are on the job three years later.

3.3.5 Salaries and Benefits

According to the U.S. Bureau of Labor Statistics and U.S. Department of Labor, the median wage for police, fire, and ambulance dispatchers is $43,290 (2020).[28]

The top tier salaries for telecommunicators in the 9-1-1 ACOG region average $50,136, which is above the median wage. Six PSAPs in the 9-1-1 ACOG region are below the national average, 12 are above the average, and three did not disclose their top tier telecommunicator salary.

[27] Fox, Adrienne. “Drive Turnover Down.” SHRM. July 1, 2012. https://www.shrm.org/hr-today/news/hr-magazine/pages/0712fox.aspx
[28] Police, Fire, and Ambulance Dispatchers : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics (bls.gov)

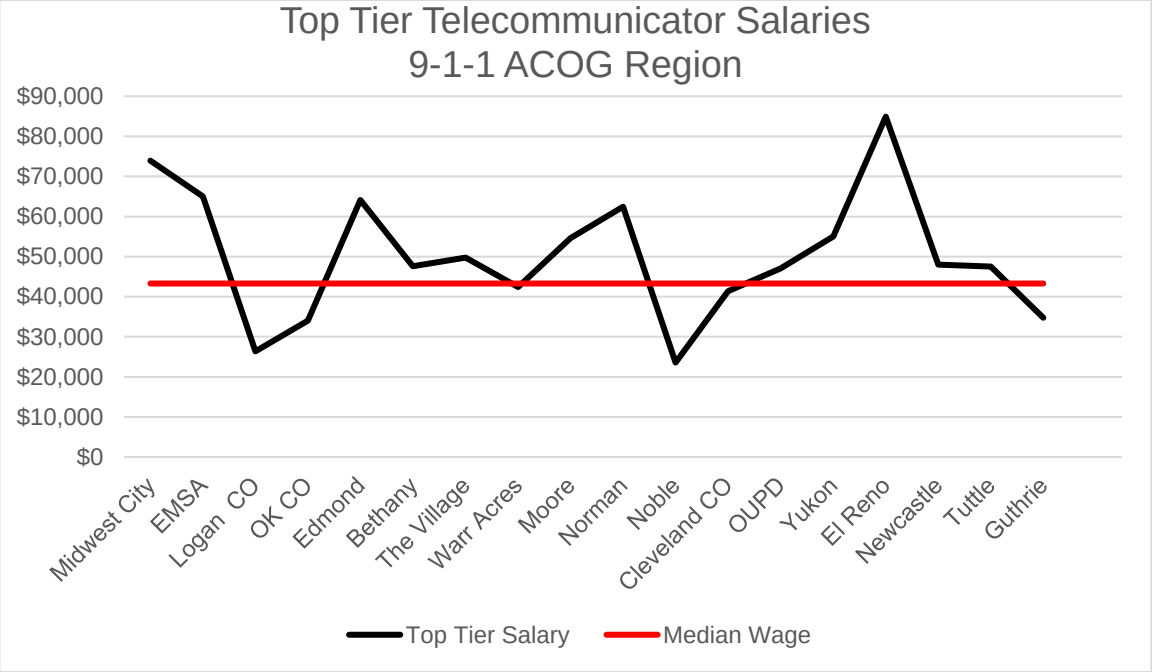


Figure 9: Top Tier Salary by PSAP

Given the proximity of the PSAPs, there is competition between them when it comes to hiring. Those agencies that lag below the average are prone to losing employees to other centers that may pay more or have more desirable benefits. This highlights the importance of regular compensation studies that determine comparative salaries and benefits within the 9-1-1 ACOG region as well as an opportunity for 9-1-1 ACOG members to establish common compensation ranges.

Salaries and Benefits Best Practices
Although salary and benefits are not the primary reason employees choose to leave an agency, it may rank high especially in areas where there is disparate pay grades and benefits for the same job. It is a best practice for agencies to conduct routine salary compensation and benefits studies with neighboring comparable PSAPs. Consideration also should also be given to the U.S. Bureau of Labor Statistics and U.S. Department of Labor median wage noted in this report.

3.3.6 Recommendations

Table 8: Workforce Recommendations and Outcomes

Recommendations	Outcomes
• Leverage support from 9-1-1 ACOG for hiring screening processes	• Streamlines the hiring process. • Makes the process more efficient. • Competes with private sector hiring timelines.
• Develop a recruitment repository for sharing recruiting materials among jurisdictions	• Provides support to the 9-1-1 ACOG region and expands the recruiting capabilities of those PSAPs that currently have no access to resources. • Reduces costs for advertisements and recruiting material.
• Develop a regional recruiting consortium	• Creates a larger candidate pool. • Improves efficiencies in the recruiting process.
• Have a state campaign to recruit telecommunicators including billboards, commercials, and advertisements	• Reduces costs for recruiting advertisement. • Expands candidate pool potential by reaching more applicants.
• Develop a regional outreach program to educate residents about current job openings across the state, the responsibilities of telecommunicators, PSAP support staff, and administrative staff	• Expands the candidate pool and educates applicants on the job requirements and qualifications.
• Continue to support state, federal, and national partners with telecommunicator job reclassification	• Cost-neutral impact that more accurately aligns the telecommunicator position with protective services occupations. • Expands professionalism of the position.
• Commit to resolving pay disparity between PSAPs and strive to be at or above the 50% percentile for pay in the region	• Increases staff morale. • Limits hiring competition between PSAPs. • Increases retention rates. • Improves probability that future regionalization can be successfully implemented under any model.

3.4 Technology

Key Findings

- Interoperability gaps were recognized, especially with CAD and radio systems.
- There are many disparate mission-critical systems across the region.
- All 21 PSAPs are using either ODIS or another CAD system to track incidents and facilitate other dispatch and records activities; 10 are on the same CAD system or ODIS.
- Some PSAPs lack automation and advanced systems to support emergency communications.
- There are some challenges with maintenance and support of mission critical systems.
- Call transfers in some areas are inefficient (misdirected, multiple transfers).
- Support is needed in many PSAPs to refine and enhance GIS capabilities.

Public safety dispatch operations are heavily dependent on IT infrastructure, computer systems, and multiple applications. Mission-critical systems include 911 CHE, CAD systems, radio dispatch consoles, GIS databases and mapping, and data/voice logging recorders. This IT infrastructure is critical to the daily public safety mission and provides interoperability with other PSAPs and field responders.

Interoperability: The ability of two or more systems or components to exchange information and to use the information that has been exchanged.

Critical systems and infrastructure can be very costly to acquire and maintain. Increasing technology costs have become a primary issue, often driving dispatch regionalization efforts in the United States. Officials in many jurisdictions have pursued PSAP regionalization to reduce capital expenditures and operating costs. A typical CAD system can cost several million dollars. Software maintenance agreements and upgrades increase the total cost of ownership over the life of the system. Reducing the number of communications centers often is intended to eliminate the need to purchase and maintain multiple systems within the same geographic area.

The major technology systems in use within the 9-1-1 ACOG region by member PSAPs can be found in Appendix D. Of importance is the significant number of disparate systems across the spectrum of mission-critical technology.

3.4.1 Call-Handling Equipment

Today, 9-1-1 ACOG provides a hosted Intrado VIPER® call-handling solution to all its member agencies. It maintains the CHE at two secure data centers connected by two separate networks owned by AT&T and

Cox Communications. As part of its transition to NG9-1-1 and in partnership with Solacom, 9-1-1 ACOG intends to replace the legacy VIPER solution with an i3-compliant Guardian CHE.

A common issue reported by the PSAPs is wireless calls misrouting to Oklahoma City 911 rather than the PSAP that borders the metro area. It also was reported that Oklahoma City will transfer calls to a 10-digit administrative line, which is not capable of providing ANI/ALI information for the caller.

Sometimes, due to disparate maps, calls are sent back and forth because of geographical boundary discrepancies. This centerline addressing issue is an ongoing problem in Bethany, Edmond, Newcastle, Tuttle, and Warr Acres.

3.4.2 CAD and Records Management Systems

The smaller PSAPs do not have CAD systems; however, they input call information into the Offender Data Information System (ODIS), which is the statewide law enforcement and municipal court record keeping system. None of the PSAPs reported having CAD-to-CAD capability, which would allow for the exchange of CAD information and data across agencies. EMSA uses a portal to share information with the agencies for which they provide EMS dispatch services. It was reported during interviews that the portal has enhanced communications between EMSA and certain PSAPs.

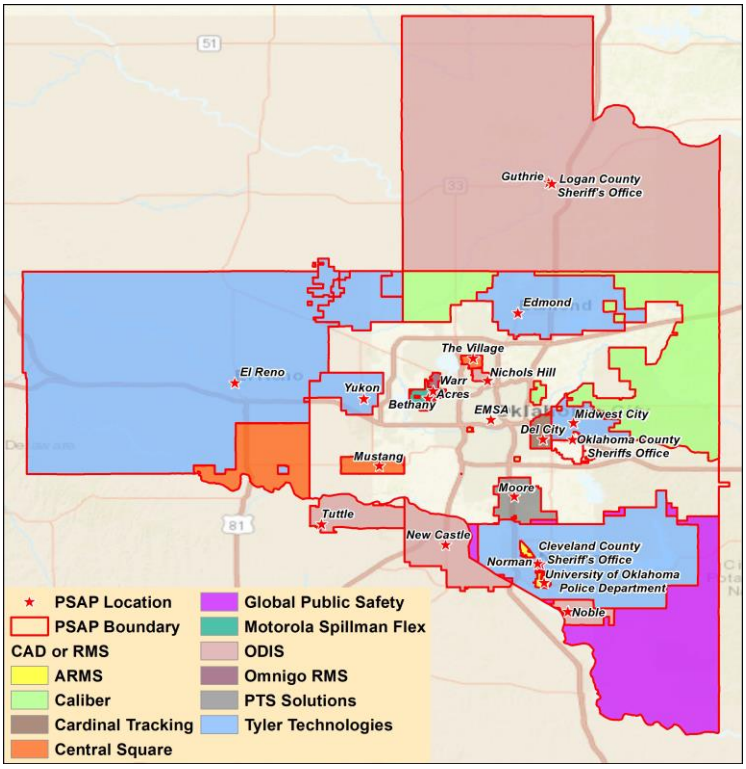


Figure 10: CAD Systems by PSAP

CAD systems provide a platform for a multitude of interfaces, including a records management system (RMS). Seven PSAPs interface with or directly use ODIS for RMS and nine PSAPs interface with a law enforcement RMS other than ODIS. Those agencies that did not report a police RMS are Bethany, Cleveland County Sheriff's Office, Del City, The Village, and Yukon.

EMSA interfaces with ESO Electronic Health Record (EHR) Patient Care.

Four PSAPs (Edmond, El Reno, Mustang, and Norman) interface with a fire RMS.

For those PSAPs with a CAD system, there was wide disparity with mapping integrating to CAD and/or the CHE. The figure to the left shows the disparate CAD systems in use today in the 9-1-1 ACOG region.

3.4.3 Geographic Information Systems

The PSAPS use varying methods for their jurisdictional maps. All agencies have CHE mapping as part of the Intrado VIPER solution. Some choose to integrate that data with their CAD and others have separate CAD maps. There appears to be no uniform approach to mapping or map display among the PSAPs. 9-1-1 ACOG may handle all or some of the GIS updates and maintenance for the smaller PSAPs. The larger municipalities have GIS or IT departments that maintain and support their mapping data in concert with ACOG's 9-1-1 GIS team.

3.4.4 Radio

There are various radio systems in use throughout the 9-1-1 ACOG region today, as shown in the figure to the right. 9-1-1 ACOG agencies are radio system subscribers on either Oklahoma Wireless Interoperability Network (OKWIN) or Oklahoma City (OKC) Metro Public Safety P25 system[29]. OKWIN is the statewide Motorola system and OKC Metro is Oklahoma City's Harris radio system.

These systems are both multi-site, trunked systems on the 800-megahertz (MHz) frequency band with P25 standards for interoperable digital two-way radio equipment. In theory P25-compliant equipment is interoperable. The practical reality is that interoperable communications is only achieved with backroom radio programming of shared talkgroups, standardized operating procedures, training and regular drills, and effective governance and inter-jurisdictional coordination.

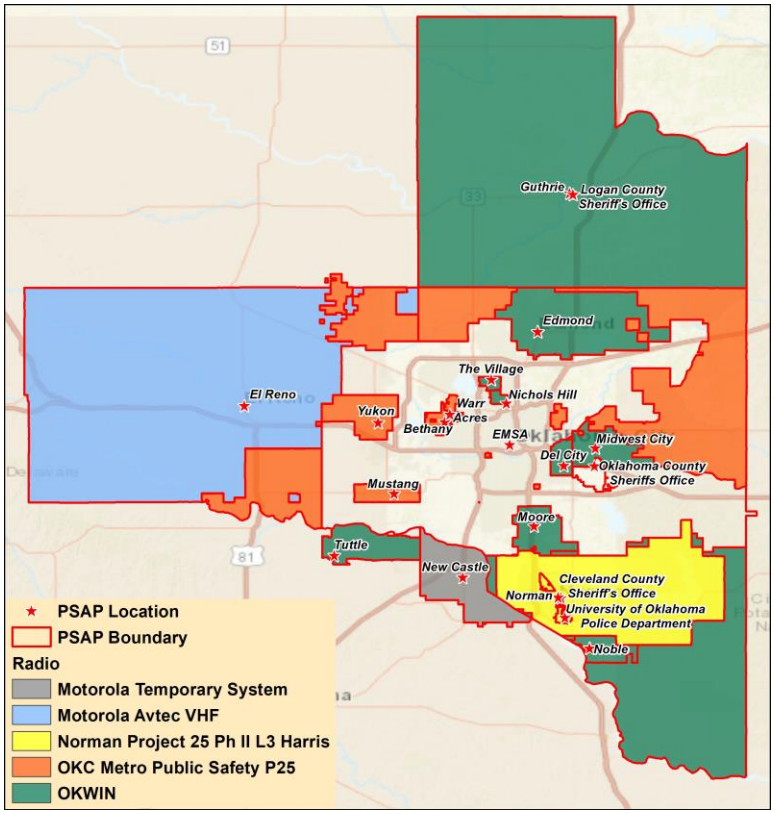


Figure 11: Radio Systems by PSAP

Many PSAPs' radio consoles have links to the other radio system for interoperable communications with nearby PSAPs. This includes links to the East Central Oklahoma Emergency Communications Network, which is a radio system serving state, county, local, and tribal agencies in Oklahoma's Pottawatomie and Oklahoma counties. This is particularly important for multi-jurisdictional incident response, and for

[29] P25 is a suite of standards for North American digital radio communications for federal, state, and local public safety organizations, field responders, and utilities, allowing for interoperable multi-agency communications during emergency situations.

continuity of operations when evacuation is required and the nearby PSAP must take the evacuated agency's 911 calls and dispatch their field responders.

Moore has had equipment issues after recent P25 radio system upgrades but has good coverage and interoperability. While most agencies either subscribe to the OKWIN radio system or have links to it, Del City, Midwest City, Newcastle, Noble, Oklahoma County Sheriff's Office, and Tuttle have reported difficulty reaching field responders that use analog radios, non-P25 compliant radios, or are on another radio system.

El Reno's use of a Motorola very high frequency (VHF) system has prevented communications with Yukon or other agencies on the OKC Metro (Harris) radio system. El Reno has plans to move to 800 MHz P25 as its fire and EMS agencies are already on 800 MHz.

3.4.5 Logging Recorder

9-1-1 ACOG member PSAPs use a variety of logging recorders. The logging recorders are procured by the PSAPs for their specific agency needs and are used to record administrative lines, 10-digit emergency lines, call transfers to administrative lines, and field responder radio traffic. Most solutions record both phone and radio and most are digital; five solutions are analog only.

The VIPER call-handling system logs all 9-1-1 calls and provides instant recall recorder (IRR) functionality at the call-taking consoles within the PSAPs.

3.4.6 Other Software

Although there were some commonalities, there are various other software applications that the PSAPs utilize to support operations. Some common applications include:

- GeoSafe – software application for field responders that provides global position system (GPS) tracking and CAD integration for law enforcement, fire, and EMS. GeoSafe includes messaging between units and dispatch.
- Mobile Cop – similar mobile CAD with messaging and automatic vehicle location (AVL).
- ProQA – EMD protocol software interface to CAD.
- Active 911 – mobile application that allows dispatchers to send notifications to field responders. It is often used to coordinate with volunteer fire responders.
- RapidSOS and Rave 911 – send enhanced location and sensor information from connected devices to dispatch, improving caller information capture including location.

3.4.7 Fire Station Alerting and Paging

Eighteen of 21 PSAPs page fire responders and send alerts to fire stations in their respective jurisdictions. Guthrie has the largest number (12) of fire stations to alert. El Reno, Mustang, and Norman have the greatest number of devices to page—40, 200, and 60, respectively.

3.4.8 Technical Support

Edmond, Logan County, Nichols Hills, and Norman reported having onsite technical support; the remaining agencies either contract out or share support with municipal or county departments. Lack of support services staff is common in smaller agencies that have limited staffing and budgets to provide staff support (IT, radio, and other operational support positions).

Technologies Standards and/or Best Practices
Public safety applications must operate at a high level of availability, which is measured in uptime. The acceptable standard is 99.999% (referred to as five nines). Five nines reliability means that a system should not experience more than five minutes and 26 seconds of downtime every year. To maintain this level, IT infrastructure and applications require redundancy and resiliency of the network and systems and routine maintenance and periodic upgrades.

3.4.9 Recommendations

Table 9: Technology Recommendations and Outcomes

Recommendations	Outcomes
Improve radio interoperability between PSAPs and between field responders of other agencies using shared system keys, backroom programming of disparate radio channels, and Communications Leader (COML) expertise to train field responders how to switch to a mutual channel	• Eliminates the need to communicate by phone, which ties up another device and line. • Safer multi-agency incidents because all can communicate on interoperable talkgroups.
Consider using GeoSafe Mobile or a CAD portal to locate ambulances	• Faster dispatch of medical calls. • Ability to monitor medical response.
Solve the Oklahoma City 911 transfer to 10-digit lines. (Are tandem transfers possible? Is it a GIS mapping issue?)	• Dispatcher has ANI/ALI information with a tandem transfer. • Improves answer time. • One or two call-takers instead of caller dealing with round-robin call-taking.

Recommendations	Outcomes
Upgrade PSAP analog logging recorders to digital format	• Guardian CHE and P25 radio standard will require digital recording as they are Internet Protocol (IP) standard. • Limits liability and provides for QA monitoring.
Develop a uniform approach to integration and display of CHE and CAD maps	• Synchronized GIS map data. • Improves accuracy of call location determination and routing.
Perform a technology audit at each PSAP to identify issues	• Checklist of suggested solutions for technology issues. • Improves dispatcher performance when they are not working around technology glitches.
Consider additional shared service opportunities in the region and the potential for cost savings when combining equipment maintenance	• Leverages economies of scale. • Eliminates call transfers for misrouted calls. • Provides an additional level of redundancy / failover.

3.5 Facilities

Key Findings

- The majority of PSAPs are not in standalone buildings, rather they are located inside a law enforcement facility.
- Many PSAPs are in public-safety-grade facilities suitable for essential services.
- The majority of PSAPs are at capacity for current operations.
- The majority of PSAPs have no viable long-term backup facility that could house mission-critical equipment and staff.
- Generators and uninterruptible power supply (UPS) equipment was observed at all PSAPs.
- Many of PSAPs lack the ability to support staff from another agency for a prolonged period.

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.*[30]

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, and continuity of operations/disaster recovery planning. The 9-1-1 ACOG region is susceptible to a wide range of natural, technological, and human-induced hazards and threats.

3.5.1 Primary Facilities

The majority of PSAPs in the 9-1-1 ACOG region appear to have sufficient space to support current operations. Several PSAPs are in modern mission-critical facilities. The majority of PSAPs are housed inside a law enforcement facility with limited or no potential to expand to accommodate municipal growth or serve as a host site if physical consolidation were sought. Most PSAPs are adjacent to the lobby so telecommunicators can provide walk-up services to the public. Some facilities have jails or holding facilities for inmates.

[30] 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

Of the 21 PSAPs that were virtually toured, four (Edmond, Logan County Sheriff's Office, Moore, and Oklahoma County Sheriff's Office) have any potential for expansion; another four (Bethany, El Reno, OUPD, and Yukon) could add one or two workstations. (With typical minimum staffing of one or two telecommunicators per shift, most PSAPs in the 9-1-1 ACOG region have two to four workstations, as shown in the figure to the right.)

Norman is in preliminary planning for a new, larger facility, while exploring funding sources. Warr Acres is nearly complete with a new upgraded facility that has an additional workstation, which would provide Bethany a backup facility for most scenarios, except exposure to a contagion.

Most PSAPs have adequate security measures.

All PSAPs have adequate backup power in the form of a generator and workstation UPS.

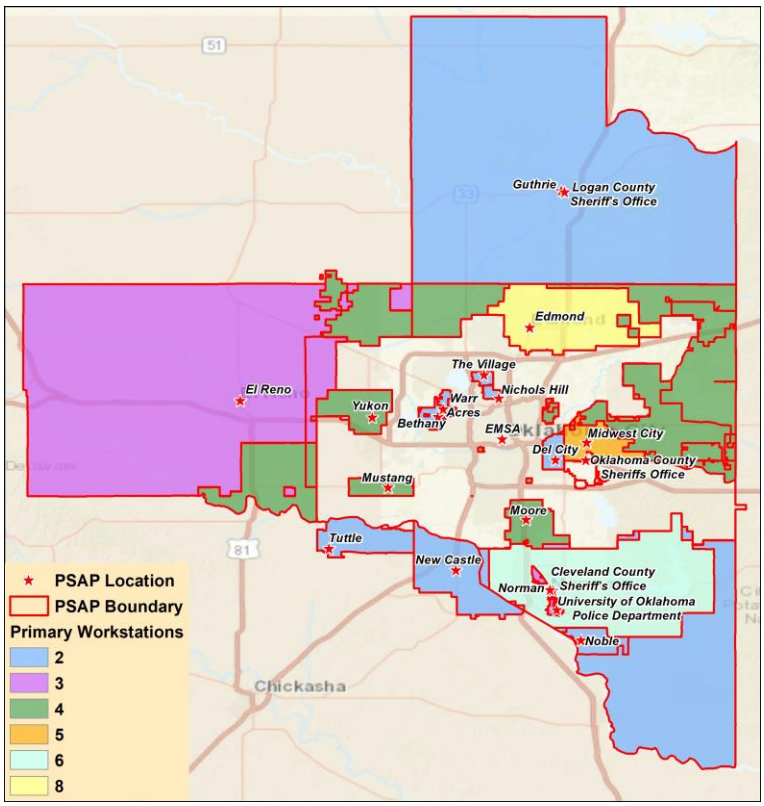


Figure 12: PSAP Workstations

3.5.2 Backup Facilities

Suitable backup facilities are lacking in the 9-1-1 ACOG region, with 50% of PSAPs reporting that they have no viable backup facility to which they could relocate if needed. The vast majority of 9-1-1 ACOG member PSAPs rely on neighboring PSAPs to handle their 9-1-1 calls in the event of an evacuation. Neighboring PSAPs have limited capacity and technology to effectively manage additional calls for service for a prolonged period. In fact, many neighboring communities can receive the 9-1-1 call but do not share common radio frequencies to be able to dispatch field responders. Hence, the neighboring PSAP would have to reroute or relay the call to the primary PSAP for dispatch. Often, the relay or reroute involves an administrative line with no location display capability.

Some backup facilities lack phones yet had CAD and a radio console. The plan is to have 9-1-1 ACOG route their respective 9-1-1 lines to a cell phone.

A truly reliable backup scenario requires not only the receipt of a redirected 9-1-1 call, but also the ability to deliver (dispatch) a resulting incident to the appropriate field responders. To manage this effectively and efficiently, the backup facility must have the technological means and appropriate staffing levels to manage the workload.

Facilities Standards and/or Best Practices
NFPA 1221 provides fundamental guidance for PSAP facilities. The standard highlights the following requirements that are appropriate for PSAP facilities: • Site adequacy and accessibility • Security issues (see threats/hazards below) • Electrical power and utilities • Telecommunications availability/access The National Infrastructure Protection Plan (NIPP) *Emergency Services Sector-Specific Plan* identifies communications facilities as critical infrastructure and recommends agencies perform a physical vulnerability assessment. At a minimum, the following types of threats/hazards should be reviewed: • Natural threats—weather, seismic/geological, service interruptions • Civil threats—terrorism, vandalism, cybersecurity, general environmental • Accident hazards—internal, external (vicinity), personnel safety

3.5.3 Recommendations

Table 10: Facilities Recommendations and Outcomes

Recommendations	Outcomes
Conduct a hazard vulnerability assessment (HVA) for existing PSAP locations	• Confirms needs for immediate mitigation of risks.
Find a backup facility or upgrade the current one with complete mission-critical equipment.	• Peace of mind when the next disaster occurs.
Perform a physical security audit for each PSAP	• Identifies security gaps.

4 Future Opportunities and Considerations

Since 9-1-1's inception in 1968, public safety officials have continued to leverage technology advancements to make emergency response more efficient and effective. The counterbalance is these advancements occurred in distinct silos that unintentionally developed within the emergency communications ecosystem such as enhanced 9-1-1 service, CAD, and digital radio networks.

Today, we stand on the precipice of another technology transformation—NG9-1-1. As public safety moves through this transformation to NG9-1-1 over the next several years and beyond, it is more critical than ever before that PSAPs begin thinking of the ecosystem from a holistic perspective.

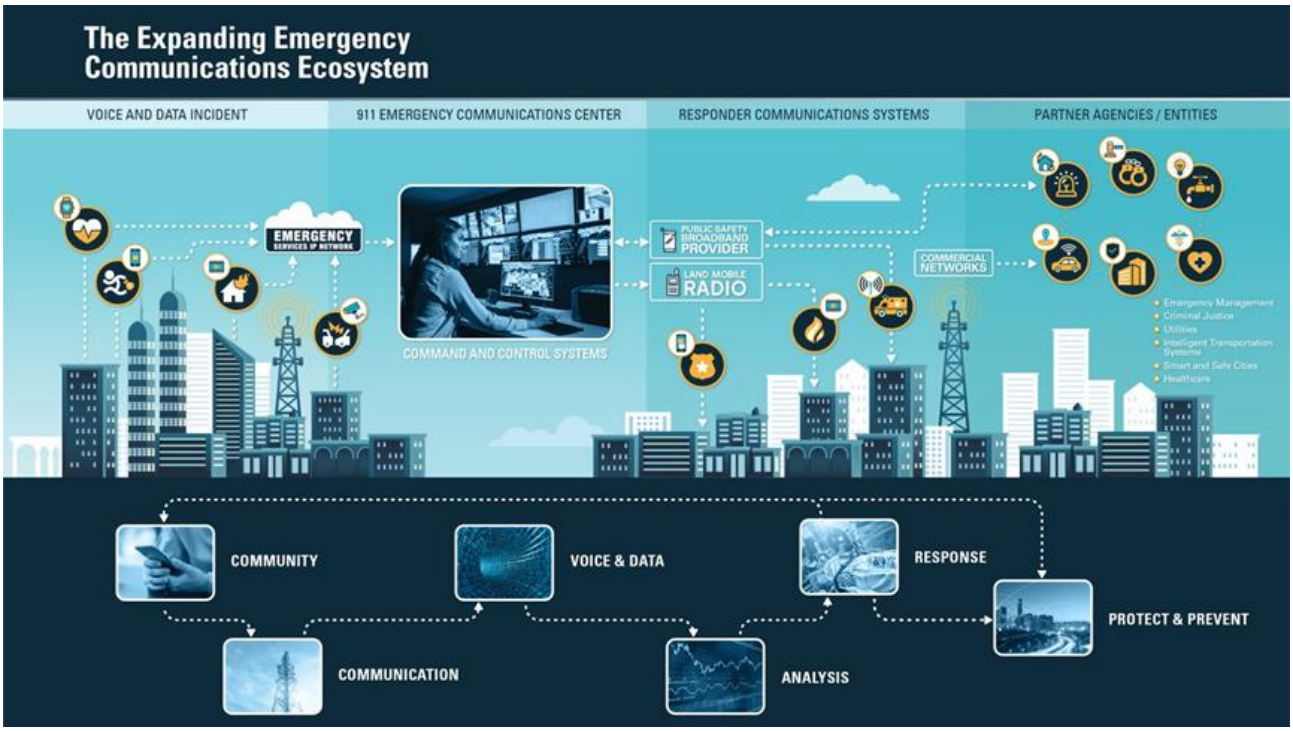


Figure 13: Emergency Communications Ecosystem

In many instances, data is evolving faster than agencies can keep up, resulting in smaller PSAPs continuously getting left behind. Regardless of size, those that are unwilling to explore their options run the risk of exacerbating the problem by creating holes in the ecosystem, increasing risk exposure, and introducing points of failure into an otherwise efficient and effective system.

9-1-1 ACOG is currently executing on its vision of "being at the forefront of NG9-1-1 solutions through proactive collaboration with member agencies in order to provide the highest level of emergency service and reliability to the Central Oklahoma community and its visitors."[31] This changing technology creates opportunities for regional partnerships between 9-1-1 ACOG member PSAPs as NG9-1-1 functionality supports a larger platform of interoperability than the legacy phone system could. NG9-1-1 will be a facilitating factor for the operational advantages that regionalization affords, such as improved roaming profiles, better COOP and DR plans, and increased sharing of data, software, radio channels—possibly resulting in a reduction in the number of PSAPs in the 9-1-1 ACOG region. This will require a greater amount of group participation, collaboration, administrative oversight, and governance.

Just by the fact that 9-1-1 ACOG and member PSAPs included in this study recognize the value of exploring alternative operating solutions, and even though the process of being assessed can be uncomfortable, benefits will be realized. Benefits include the opportunity to learn where PSAPs currently reside within the ecosystem, receive insight into where the ecosystem is going from local and national

[31] ACOG NG9-1-1 Strategic Plan_22APR2020_Final (MCP>EgnyteDrive>Shared>Projects>19-133 ACOG 911 Support>Deliverables>Final Deliverables)

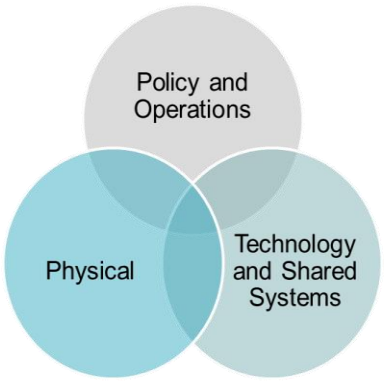
perspectives, and discover how 9-1-1 ACOG and member PSAPs can best leverage each agencies' strengths to provide a best-in-class solution to serve the constituents and field responders across the 9-1-1 ACOG region.

Findings and recommendations to offer operational efficiencies for the PSAPs within the 9-1-1 ACOG region have been explained throughout this report. A holistic analysis of the findings and recommendations has identified additional opportunities within the 9-1-1 ACOG region to improve service levels and operations through organic rather than mandated regionalization. MCP acknowledges that organic regionalization is initiated at the local level and it is outside of the purview of 9-1-1 ACOG; however, it is in the member agencies' best interest that 9-1-1 ACOG promote standards and best practices and advocate for actions that will result in more efficient emergency communications and 9-1-1 services throughout the 9-1-1 ACOG region.

Regionalization has the potential to reduce operating costs by improving economies of scale and reducing redundant and duplicate services, equipment, and facilities, including the reduction or elimination of ongoing maintenance and replacement costs. There are three symbiotic elements of organic regionalization that, based on the findings and recommendations contained in this report, would offer operational efficiencies within the 9-1-1 ACOG region:

- Policy and operations
- Technology and shared systems
- Physical (facility-based)

The three elements of regionalization are inter-related and may be executed sequentially or concurrently. As more initiatives are deployed within each element, the benefits will be experienced exponentially.



4.1 Organic Regionalization

"Regionalization can be defined as two or more communities (or organizations, or agencies) that join together in a formal, mutually-beneficial working relationship to optimize services provided to the customers of their communities (or organizations, or agencies)."[32] This can be achieved inorganically, which occurs when there are outside forces at play (e.g., state mandate such as in Illinois and Ohio) or it can occur organically. Organic regionalization is more natural and evolves out of a voluntary, cooperative effort to improve the emergency response, such as in Nebraska and Palm Beach County, Florida, where no mandates exist.

A federal study conducted in 2010 by the Communications, Security, Reliability and Interoperability Council (CSRIC)[33] identified five values of consolidation, shown in the figure below; regionalization has the same values These values not only hold true today, but they are also areas identified in this report where

[32] NASNA - 911 Regionalization - Tools and Information (nasna911.org)
[33] WORKING GROUP 1A (fcc.gov)

opportunities exist to gain efficiencies and improve services throughout the 9-1-1 ACOG region. The values highlighted below can be leveraged through organic regionalization in the form of policies and operations, technologies, and facilities.

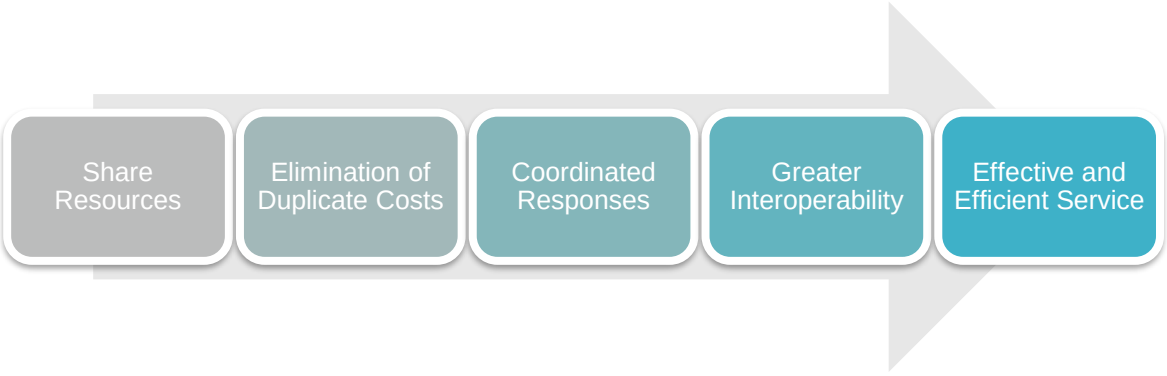


Figure 14: Values of Organic Regionalization

- Shared Resources – Shared resources include policies, operations, and any other support services (e.g., IT, GIS, administration, human resources).
- Elimination of Duplicate Costs – Duplicate costs related to administration, operations, technologies, and facilities may be eliminated through organic regionalization.
- Coordinated Responses – Coordinated responses address joint responses, including automatic and mutual aid, and other shared responses that would be coordinated from the same PSAP. Examples include multi-jurisdictional responses to grass fires, pursuits, and mass casualty incidents, all of which require a coordinated response.
- Greater Interoperability – Interoperability expands with regionalization, enabling the sharing of mission-critical equipment and technologies (e.g., CHE, CAD, radio).
- Effective and Efficient Service – Efficiencies will often occur, and service levels improve, when regionalization is properly executed. Call transfers are often reduced, and situational awareness is improved through regionalization. There are often improvements that can be gained in all functional areas of a PSAP (workforce, operations, personnel and workforce, training, performance management, leadership and planning, technology, facilities, and organizational structure).

A key to organic regionalization is recognizing that there are efficiencies to be gained, and then working to establish shared and common practices throughout the 9-1-1 ACOG region. 9-1-1 ACOG members—the PSAPs and their respective agencies—must realize the benefits far outweigh any perceived losses. Developing a strategic plan can be a first step in garnering buy-in.

4.1.1 Policy and Operations-based Regionalization

There are three elements of policy and operations-based regionalization: operations, support, and the workforce. Based on the findings highlighted in this report, MCP determined multiple areas where policy and operations-based regionalization could offer operational efficiencies in the 9-1-1 ACOG region.

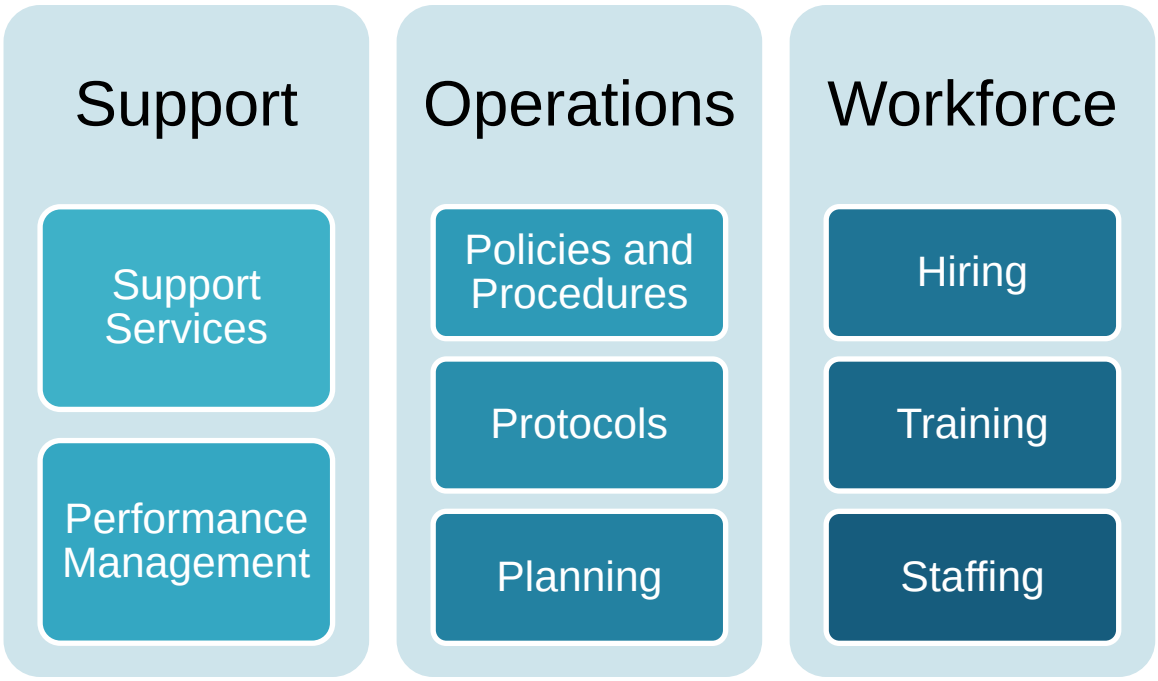


Figure 15: Policies and Operations-based Regionalization

4.1.1.1 Support

Support Services

Support services are those tasks that are outside of the primary operation of answering emergency calls and dispatching field responders, such as:

- IT – hardware and software support for systems that are not already supported by 9-1-1 ACOG.
- GIS – support for mapping systems outside of 9-1-1 ACOG.
- Radio systems – support for the radio systems and infrastructure.
- Performance management – QA and other performance areas related to the PSAP, including personnel.
- Training – any initiatives related to training new or veteran telecommunicators and support staff.
- Administrative, Clerical, and Facilities – HR, administrative, facilities maintenance, and other services not covered above.

Two key success factors noted by stakeholders for this project were the goal of improving service levels and regional technical and operational cooperation. Support services is an area where collaboration and cooperation can be leveraged to centralize responsibilities and achieve both goals. Shared support services opportunities include the following:

- IT support for the technology that is not currently supported by 9-1-1 ACOG would improve performance and security.
- Support for mapping systems and GIS outside of 9-1-1 ACOG would enhance a PSAP's ability to locate incidents and field responders.
- Support for radio systems and infrastructure would improve a PSAP's ability to deliver 9-1-1 call information and communicate with field responders. There is the potential to improve interoperability also.
- Support for performance management may provide a consistent level of services throughout the 9-1-1 ACOG region as PSAPs work cooperatively together.
- Support for training would enhance the knowledge and performance of telecommunicators and supervisors.
- Administrative support, including facilities, may address gaps that currently exist.
- Any regionalization involving support services has the potential to reduce operating costs.

Performance Management

Performance management focuses on improving a PSAP's output through continual improvement of internal processes. QA programs and other programs that establish and measure KPIs are essential in a PSAP. As noted in Section 3.2.5 of this report, there is a need to improve performance management, particularly QA, in the 9-1-1 ACOG region. Examples of how performance management can be regionalized include the following:

- Regional performance management policies and procedures, based on industry standards and best practices, can establish benchmarks throughout the 9-1-1 ACOG region that could make service delivery levels more consistent and reduce risk.
- Performance management templates, including rating criteria, would provide PSAPs with an objective means to measure operational performance and personnel. This also would provide more statistical data on how the 9-1-1 ACOG system performs as a whole (e.g., call handling statistics).
- Other performance management opportunities exist that are related to shared support services.

4.1.1.2 Operations

Policies and Procedures

Effective policies and procedures are essential to PSAP risk management. There are opportunities in the 9-1-1 ACOG region to establish more uniform policies and procedures based on industry standards and best practices. Developing regional policies and procedures in common operating areas, especially those that involve overlapping service areas and mutual aid, may provide the following opportunities:

- Improved coordinated responses and service levels.
- Close or narrow the gap for agencies in the 9-1-1 ACOG region that do not currently have SOPs.
- Increased consistency of services throughout the 9-1-1 ACOG region.
- Reduced errors and risk exposure.

Memoranda of understanding (MOUs) or similar type of agreements to support organic regionalization will be necessary to reach intended outcomes.

Protocols

Establishing regional protocols is another example of policy and operations-based regionalization. Protocols or call guides support the call-handling process. These tools, especially EMD, provide pre-arrival instructions when warranted and, in some cases, improve the safety of citizens and field responders. The use of protocols provides structure that can be objectively assessed by the agency through a QA program. Regionalizing and establishing uniform protocols may provide the following opportunities:

- Improved service level consistency and standards of care throughout the 9-1-1 ACOG region (e.g., citizen and responder safety, pre-arrival instructions).
- Reduced errors and risk exposure.
- Decreased trainee washout rates.
- Uniform call processing procedures that can be objectively measured.

Planning

Regionalized planning and development of regional templates have the potential to benefit multiple agencies. Such actions may provide the following opportunities:

- Developing regional COOP plans in common operating areas, especially operational areas that involve overlapping jurisdictions and mutual aid, may improve coordinated responses.
- Developing regional templates in common operating areas would close or narrow the gap for PSAPs in the 9-1-1 ACOG region that do not currently have a COOP plan.

4.1.1.3 Workforce

Hiring and retaining an adequate workforce to effectively manage the workload remains one of the greatest challenges in public safety communications today. Cost impacts of benefits such as Family Medical Leave Act (FMLA) compliance, healthcare and pensions, and steady turnover has crippled PSAPs across the country. Hiring and onboarding processes are time-consuming and costly; in most PSAPs, these processes are a revolving door. As detailed in Section 3.3, it is anticipated that challenges related to sustaining a stable workforce in the PSAP will only increase as technology advances and public expectations continue to grow. These challenges, especially for smaller agencies with a limited workforce and resources, are detrimental.

In analyzing the current state of the PSAPs within the 9-1-1 ACOG region, MCP identified several areas where regionalization may bring operational efficiencies.

Recruiting and Hiring

Using best practices for recruiting, selection, and hiring can improve retention and, thus, reduce costs of onboarding. Maintaining starting pay in a similar range within a region could deter job hopping. A “one-stop shop” for recruiting and selecting applicants, including development of a common regional application that can be submitted online, could be considered as a shared and/or outsourced resource with the final hiring and progression left to a respective PSAP. Examples of how the PSAPs can improve hiring efficiencies include the following:

- Develop a recruitment repository for sharing recruiting materials among jurisdictions.
- Develop a regional recruiting consortium**,** including shared services for hiring (e.g., joint applicant testing/screening).

Training

There is consistency among PSAPs regarding training. Although the number of hours may vary, common operating environments and structures exist, as well as common training content. Regionalizing and consolidating the already robust training offered through 9-1-1 ACOG is an area that can be expanded throughout the region, with the goal of a more centralized approach. Improving the training approach would provide the following opportunities:

- Establishing minimum training requirements based on standards and best practices can provide a foundation in the 9-1-1 ACOG region to establish regionalized policies and operations.
- Leveraging the training provided by 9-1-1 ACOG and developing joint training curriculums and other training resources can improve the overall success rate and performance of telecommunicators.
- Joint training initiatives can reduce cost impacts on individual PSAPs through shared staff and by combining resources to administer training (e.g., shared classes).
- Centralized training can reduce duplicate training efforts that currently occur in the 9-1-1 ACOG.

Staffing

Although internal policies, procedures, and tools may vary, the job of a telecommunicator is similar throughout the 9-1-1 ACOG region. Other components of policy and operations-based regionalization can provide a foundation for efforts related to staffing.

Many PSAPs in the 9-1-1ACOG region operate with minimal staffing, which can be a challenge when unforeseen vacancies occur. PSAPs rely on neighboring PSAPs to support their operation in the event of an evacuation or other significant event resulting in call surge, with little to no training on agency-specific procedures.

Staffing opportunities exist in the region to improve operational efficiencies and continuity of operations. At least one PSAP noted that they assume primary responsibilities for a neighboring PSAP after hours because that agency does not employ enough staff to maintain one telecommunicator on duty 24x7. This

scenario would be very possible in the region, especially if the technology were more consistent (or virtualized).

Policy and operational regionalization may provide the following staffing-related opportunities:

- Shared staff can provide a level of consistency that does not exist today.
- Shared staff could offer a cost-savings when there are unforeseen vacancies or surges in workload required supplemented staff.
- Where supported by technology, shared staff may provide an opportunity to supplement staffing in centers with a very low call volume.

4.1.2 Technology and Shared Systems-based Regionalization

Critical systems and infrastructure can be costly to acquire and maintain. Increasing technology costs have become a primary issue, often driving physical dispatch consolidation and regionalization efforts. Officials in many jurisdictions have pursued consolidation and regionalization to reduce capital and operating costs.

Technology and shared systems-based regionalization can occur through virtual regionalization. Virtual regionalization has already occurred in the state of Oklahoma with the statewide radio system and on a smaller level in 9-1-1 ACOG with the CHE, which will be further enhanced with the implementation of NG9-1-1. Virtualization can include other systems such as CAD and logging/recording systems. The cost of a CAD system varies greatly depending on the size of the organization being served, the functional requirements, and any additional features such as integration with CHE, GIS, radio, and RMS. Annual software maintenance agreements typically cost 20% to 25% of the total cost and, along with upgrades, increase the total cost of ownership over the life of the system.

Cloud technologies and hosted software eliminate the need for in-house servers and the associated building space, utilities expense, and IT maintenance and support.

Technology and shared systems-based regionalization enables the sharing of technology at separate and respective PSAP locations. In this configuration, a governance structure generally is established that identifies cost-sharing allocations to each entity for the provisioning of capital purchases and maintenance of shared equipment. A host agency is determined, which will house core technology that each entity will share. This configuration works well for those jurisdictions that are aligned geographically, which would be the case throughout any of the four 9-1-1 ACOG regions. The figure below illustrates the diversity (and commonalities) of mission-critical systems in the region.

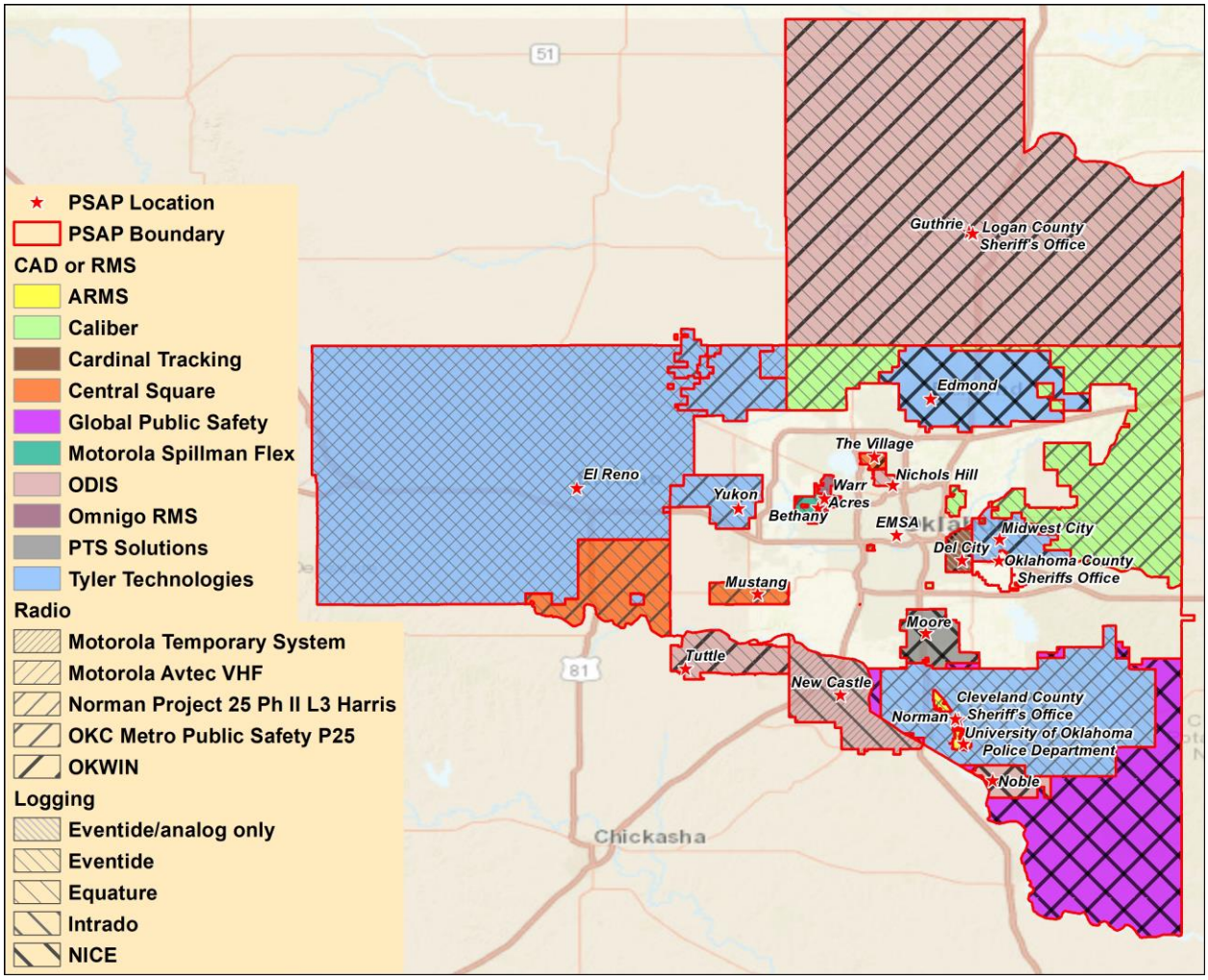


Figure 16: Mission-critical Technologies (CAD, Radio, Loggers)

Where multiple PSAPs share similar technologies, there are potential opportunities for regionalization.

In a virtual or shared systems environment, the operational configuration would not change. Rather, operations would be enhanced by allowing the PSAP operational design to remain the same, with an additional layer of failover and redundancy. For example, PSAP #1 evacuates due to a natural disaster and operational procedures are implemented that enable PSAP #2 to seamlessly assume operations for PSAP #1. Staff from Yukon reported that they have an agreement with Piedmont to dispatch for them after business hours 7-days a week. In this scenario, the PSAPs have similar operational configurations and they share CHE and radio. This could be further expanded to included CAD if the agencies had similar CAD systems.

Technology and shared systems regionalization offers the following opportunities:

- Reduce costs and improve economies of scale.

- Provide a higher level of support for mission-critical systems that does not exist today.
- Improve continuity of operations and disaster recovery.

4.1.3 Physical (Facilities-based) Regionalization

Very few PSAPs in the 9-1-1 ACOG region, although adequate for their current functions, offer an easy path to host a larger, regional center. While 9-1-1 calls are rerouted in the event of a surge or evacuation, many PSAPs do not have sufficient backup centers for full operations during extended periods if their primary PSAP is compromised. Some PSAPs, however, have the potential capacity to expand operations within their current footprint:

- Edmond
- EMSA (equipment and technology only)
- Logan County Sheriff's Office
- Moore
- Norman (future facility)
- Oklahoma County Sheriff's Office

Several other smaller PSAPs reported that they have capacity to expand by one or two additional workstations and/or retrofitted furniture:

- El Reno
- OUPD
- Tuttle (future facility)
- Warr Acres (future facility)
- Yukon

According to staff interviewed, there are several initiatives in the early planning process or in progress that would improve operational efficiencies in the region.

- El Reno is currently expanding their current workstation layout in the existing footprint of the PSAP to add one additional position for Pafford EMS, which will serve El Reno, Mustang, Warr Acres, and Yukon.
- Nine PSAPs, including Oklahoma County Sheriff's Office, are discussing a potential consolidation initiative at Metro Technologies Centers.
- Bethany and Warr Acres have been discussing a potential PSAP consolidation after Warr Acres moves into a new facility.
- Cleveland County and Moore have been assessing a physical consolidation. Moore also is taking on Norman Regional Hospital for EMS dispatching services.

4.2 Organic Regionalization Strategic Plan

Organic regionalization is not easy to accomplish and can often take years to achieve. Given the complexity of these opportunities, it is recommended 9-1-1 ACOG, with valued input from PSAP staff and stakeholders, consider developing a long-term strategic plan to guide organic regionalization.

Collaborative development of a regionalization strategic plan can effectively establish goals for results focused on improving emergency response outcomes throughout the region. A regionalization strategic plan will:

- Establish commitment to regionalization.
- Align 9-1-1 ACOG member PSAPs with industry best practices.
- Provide accountability.
- Improve transparency and relationships.
- Develop consensus among the leadership for any participating PSAPs.
- Promote stability of purpose and priorities.
- Memorialize the vision and direction beyond current leadership. Provide support and direction for the development and execution of any policy and operations, technology and shared services, and physical regionalization initiatives.

The most prevalent constraints throughout the 9-1-1 ACOG region are a lack of interoperability and increasing technology costs. Without regionalization, many PSAPs within the 9-1-1 ACOG region are bound to the current state and constrained in their efforts to provide a higher, more efficient level of service.

PSAPs across the country, including in Oklahoma, are following similar paths as 9-1-1 ACOG to explore regionalization as agencies recognize the value and efficiencies of sharing technologies, services, and common practices. Organic regionalization, especially technology and physical, has the potential to:

- Leverage shared resources
- Eliminate duplicate costs
- Improve coordinated responses
- Increase interoperability
- Create effective and efficient service levels
- Improve emergency response outcomes

MCP acknowledges that organic regionalization is initiated at the local level, outside of the purview of 9-1-1 ACOG; however, 9-1-1 ACOG supports using this information and approach to promote the achievement of standards and best practices while advocating for actions that will result in efficiencies and provide consistent emergency communications throughout the region.

5 Conclusion

Daily, dedicated communications staff in each of 9-1-1 ACOG's 21 member PSAPs work to assure that all field responders and members of the community are served when emergencies arise. For years, staff have done this under more than challenging conditions. Based upon MCP's interaction with the PSAPs during the course of this study, it is clear that leadership at all levels desires a public safety communications system that provides reliable and consistent services to the community and field responders.

Organic regionalization will take time but can help the 9-1-1 ACOG region achieve shared reliable and consistent services. The tasks currently being worked on, along with the overall recommendations presented, lend themselves well to support the current activities and future regionalization planning efforts in the 9-1-1 ACOG region. To help guide success over the long term, MCP encourages 9-1-1 ACOG and its member PSAPs to move forward with the next steps expeditiously. For the PSAPs, this includes reviewing the recommendations articulated in Section 3 of this report and engaging in efforts to explore efficiencies at the local level; for 9-1-1 ACOG, it includes working with PSAPs and stakeholders to develop a regionalization strategic plan.

While there are great strides being made in various aspects of the public safety communications systems in 9-1-1 ACOG, there are many areas where improvements will be beneficial for the continued success of the region. Acting on the areas of improvement will move the region towards the "regionalized" state and improve emergency response outcomes.

Appendix A – Continuity of Operations Planning Resources

FCC, *Emergency Planning: Public Safety Answering Points*, August 23, 2016. https://www.fcc.gov/research-reports/guides/emergency-planning-public-safety-answering-points

NENA, *NENA Communications Center/PSAP Disaster and Contingency Plans Model Recommendation*, NENA-INF-017.3-2018, September 28, 2018. https://www.nena.org/page/PSAPDisasterContingencyPlans

NENA, *NENA Security for Next-Generation 9-1-1 Standard (NG-SEC)*, NENA 75-001, Version 1, February 6, 2010. https://www.nena.org/page/NG911_Security

NFPA, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, NFPA 1221, 2019. https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1221

NFPA, *Standard on Continuity, Emergency, and Crisis Management*, NFPA 1600, 2019. https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1600

FEMA, *Continuity of Operations Plan Template and Instructions for Federal Departments and Agencies,* July 2011. https://www.fema.gov/pdf/about/org/ncp/coop/continuity_plan_federal_d_a.pdf

FEMA, *Developing and Maintaining Emergency Operations Plans,* Comprehensive Preparedness Guide (CPG) 101, Version 2, November 2010. https://www.fema.gov/emergency-managers/national-preparedness/plan#cpg

Appendix B – Cybersecurity Resources and Standards

APCO, *An Introduction to Cybersecurity: A Guide for PSAPs,* Version 1.0, July 2016. https://www.apcointl.org/download/introduction-to-cyber-security-a-guide-for-psaps/

APCO, *APCO Updated Cybersecurity Guidance,* April 2018. https://www.apcointl.org/download/apco-cybersecurity-guidance/

APCO, *Broadband Implications for the PSAP: Analyzing the Future of Emergency Communications*. https://www.apcointl.org/download/apco-p43-report/?wpdmdl=5984&ind=0

APCO, *Cybersecurity Training for Public Safety Communications Personnel,* APCO 3.110.1-2019. https://www.apcointl.org/standards/standards-to-download/

FBI, FBI Tech Tuesday: Protecting Against PII Theft. https://www.fbi.gov/contact-us/field-offices/phoenix/news/press-releases/fbi-tech-tuesday-protecting-against-pii-theft

FCC, Task Force on Optimal PSAP Architecture (TFOPA), *Final Report*.https://www.fcc.gov/about-fcc/advisory-committees/general/task-force-optimal-public-safety-answering-point

Federal Trade Commission (FTC) Consumer Information, Computer Security. https://www.consumer.ftc.gov/articles/0009-computer-security

FTC Consumer Information, Tips for Using Public Wi-Fi Networks. https://www.consumer.ftc.gov/articles/0014-tips-using-public-wi-fi-networks

Information Technology Laboratory, Security for Enterprise Telework and Remote Access Solutions. https://ws680.nist.gov/publication/get_pdf.cfm?pub_id=903007

National Institute of Standards and Technology (NIST), *Framework for Improving Critical Infrastructure Cybersecurity*, Version 1.1, April 16, 2018. https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.04162018.pdf

NIST, Guide for Cybersecurity Event Recovery. https://csrc.nist.gov/publications/detail/sp/800-184/final

NIST, National Cybersecurity Center of Excellence, Mobile Device Security: Cloud and Hybrid Builds. https://www.nccoe.nist.gov/projects/building-blocks/mobile-device-security/cloud-hybrid

Appendix C – Standards, Statutes, Accrediting Organizations, and State Rules

Throughout the country, PSAPs adopt and use industry standards and best practices to promote the effectiveness of the center and that the best possible service is provided to citizens and field responders. Measurable standards create an objective view of 9-1-1 operations and provide for consistent interactions with the public and field responders.

Standards and best practices most often used in PSAPs are from APCO and NENA as well as NFPA, 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 American National Standards Institute (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."[34] APCO has undertaken many projects over the years. Two notable projects are 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."[35]

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."[36] NENA's mission is to improve "9-1-1 through research, standards development, training, education, outreach, and advocacy."[37] 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.

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

NENA-STA-020.1-2020, *NENA Standard for 9-1-1 Call Processing*, states, “Ninety percent (90%) of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) SHALL be answered within (≤) fifteen (15) seconds. Ninety-five (95%) of all 9-1-1 calls SHOULD be answered within (≤) twenty (20) seconds.”[38]

Also a non-profit organization, NFPA “delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach, and advocacy …”[39] NFPA 1221, 2019 version, 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."[40]

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)."[41] 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.*

Section 7.4.3 states: "Emergency alarm processing for the highest prioritization level emergency events … shall be completed within 60 seconds, 90 percent of the time."[42] 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.

NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* (Edition 2016), Chapter 7 sets forth the standards for PSAP operations; Section 1 of Chapter 7 addresses management.

NFPA 1221, 7.1.1 states, “All system operations shall be under the control of a manager, director, or supervisor of the jurisdiction served by the system.

7.1.3 states, “Personnel in supervisory roles shall receive supervisory training as defined by the AHJ.” (AHJ is defined as the Authority Having Jurisdiction.)

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[38] “NENA Standard for 9-1-1 Call Processing,” National Emergency Number Association,” April 16, 2020, https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/nena-sta-020.1-2020_911_call.pdf, page 8 of 26. The NENA standard and the NFPA standard are now in alignment.
[39] “NFPA Overview,” National Fire Protection Association, 2017, http://www.nfpa.org/about-nfpa/nfpa-overview.
[40] “NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems,” National Fire Protection Association*, 2019.
[41] Ibid.
[42] Ibid.

7.1.4 states, “The AHJ shall be responsible for initial and ongoing training in supervisory skills of personnel in supervisory roles.”

Section 3 of Chapter 7 addresses staffing.

NFPA 1221, 7.3.4 states, “Supervision shall be provided when more than two telecommunicators are on duty.”

Annex A of NFPA 1221 provides further explanation. A.7.3.4 states, “The supervisor position(s) in the communications center are provided in addition to the telecommunicators [sic] positions. Although supervisory personnel are intended to be available for problem solving, the supervisor position is permitted to be a working position.”

7.3.4.1 states, “Supervision shall be provided by personnel located within the communications center who are familiar with the operations and procedures of the communications center.”

7.3.4.2 states, “The supervisor shall be allowed to provide short-term relief coverage for a telecommunicator, provided that the telecommunicator does not leave the communications center and is available for immediate recall as defined in the policies and procedures of the AHJ.”

Accrediting Organizations

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

CALEA, a “credentialing authority through the joint efforts of law enforcement's major executive associations”[43] accredits law enforcement agencies and 9-1-1 communications centers. CALEA’s accreditation programs "provide public safety agencies with an opportunity to voluntarily meet an established set of professional standards, which require:

- Comprehensive and uniform written directives that clearly define authority, performance, and responsibilities
- Reports and analyses to make fact-based and informed management decisions.
- Preparedness to address natural or man-made critical incidents
- Community relationship-building and maintenance
- Independent review by subject matter experts
- Continuous pursuit of excellence through annual reviews and other assessment measures”[44]

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

[43] “About Us,” CALEA, https://www.calea.org/
[44] "What is Accreditation," CALEA, http://www.calea.org/what-accreditation.

CALEA accreditation for law enforcement requires active participation from the respective communications center serving the agency as there is an entire chapter (Chapter 81) dedicated to communications.[45]

Table 11: CALEA Accreditation Standards

Chapter	Subchapter	
81.1 Administration	81.1.1	Agreements, Shared/Regional Facility
	81.1.2	Operations Meet FCC Requirements
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	Calls for Service Information Victim/Witness Calls
	81.2.7	Recording and Playback
	81.2.8	Local/State/Federal CJI Systems
	81.2.9	Alternative Methods of Communication
	81.2.10	Emergency Messages
	81.2.11	Misdirected Emergency Calls
	81.2.12	Private Security Alarms
	81.2.13	First Aid Over Phone
81.3 Facilities and Equipment	81.3.1	Communications Center Security
	81.3.2	Alternate Power Source
	81.3.3	Mobile/Portable Radios

Communications centers also can seek independent accreditation through CALEA's Public Safety Communications Accreditation Program.

> *The Public Safety Communications Accreditation Program provides a communications center, or the communications unit of a public safety agency, with a process to systemically review and internally assess its operations and procedures.*
>
> *This program requires organizations to collect and analyze important data for the purpose of making sound operational and administrative business decisions, creating leadership and practitioner-accountability.*

[45] "Law Enforcement Standards Titles," CALEA, https://www.calea.org/node/11406

In addition, the focus is on quality assurance, interoperability, emerging technologies, risk analysis, asset security, resources access, contemporary training, and a range of other operational functions.[46]

The Commission on Fire Accreditation International (CFAI) administers the Center for Public Safety Excellence (CPSE)'s accreditation program for fire and emergency service organizations. 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."[47] The CFAI has noted that its accreditation process provides a well-defined benchmark system to measure the quality of fire and emergency services.

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 develops a numerical grading called a Public Protection Classification."[48] Ten points are available for emergency communications. The review focuses on the community's facilities and support for handling and dispatching alarms for structure fires.

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 enough well-trained telecommunicators can make all the difference when responding to an emergency, and our evaluation gives this component the weight it deserves.

Emergency communications systems should effectively, efficiently, and reliably receive and process alarms and notify emergency responders. Our field analysts evaluate:

- *the emergency reporting system and response to 9-1-1 calls*
- *the communications center, including the number of telecommunicators and their training and experience*
- *computer-aided dispatch (CAD) facilities*

[46] Communications | CALEA® | The Commission on Accreditation for Law Enforcement Agencies, Inc.
[47] "CPSE Over," Center for Public Safety Excellence, 2018, https://cpse.org/cpse-overview/.
[48] "ISO's Public Protection Classification (PPC™) program measures and evaluates the effectiveness of fire-mitigation services in communities throughout the country. For each fire protection area, ISO assigns a Public Protection Classification code — a number from 1 to 10. Class 1 represents exemplary fire protection, and Class 10 indicates that the area's fire-suppression program doesn't meet ISO's minimum criteria." http://www.iso.com/isoPassportHelp/reading_loc_ppc_reports.htm

- *dispatch circuits and how emergency responders are notified about the location of the incident*[49]

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

The Commission on Accreditation of Ambulance Services (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."[50] The CAAS standards 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 ECCs, 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."[51] 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

The International Academies of Emergency Dispatch (IAED) "sets and maintains a set of universal standards for emergency responders to ensure consistent, high-quality care worldwide. It supports the advancement of certified emergency dispatchers who, with proper education and training, can serve their communities with utmost technical competence and integrity."[52]

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

Protocols

The IAED defines a protocol as "a highly-defined procedure placed into a reference system…designed to lead the call-taker through a predictable, repeatable, and verifiable process for a specific situation."[53] "Protocols have become an integral part of modern day, emergency dispatch operations. Protocols reduce

[49] "Emergency Communications," ISO Mitigation, 2018, https://www.isomitigation.com/emergency-communications/.
[50] "About CAAS," Commission on Accreditation of Ambulance Services, 2017, http://www.caas.org/about/.
[51] "Standard Summaries," Commission on Accreditation of Ambulance Services, 2017, http://www.caas.org/caas-standards/content-summaries.
[52] "About the IAED - IAED (emergencydispatch.org)
[53] The National Academies of Emergency Dispatch® (2011) *Emergency Telecommunicator Course Manual,* Edition 3. Salt Lake City, Utah: Priority Press.

variance, ensure a continuity of care, reduce liability, standardize response decisions, and provide a basis for performance measurement and quality improvement efforts."[54]

Protocols involve a set of scripted questions designed to elicit as much information from the caller as possible.[55] At case entry, 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 or chief complaint 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 provide for responders' and the caller's safety. If necessary, pre-arrival instructions—potentially lifesaving, scripted instructions—are provided.

> *The pros of dispatch protocol include standardization, the ability to provide uniformed instructions and the ability to prioritize responses. A structured protocol can provide consistent answers to pre-determined questions that may improve the way dispatchers communicate with units in the field. Even more importantly, it has been shown to save lives.*
>
> *Yet some industry experts prefer to rely on a dispatcher's experience when handling a situation. They feel that stringent use of protocols may lead dispatchers to becoming more of a robot— or at least feeling like … a robot— than a skilled professional. Increased scrutiny of a dispatcher's performance can also lead to negative morale issues.*[56]

Oklahoma State Statutes and Rules on Communications

The Oklahoma Emergency Telephone Act of 1979 legislated for basic and enhanced 9-1-1 services, thereby establishing the framework for a statewide emergency E9-1-1 communications system. The Act was updated in November 2016, creating the Oklahoma 9-1-1 Management Authority (OK911MA) whose responsibilities are overseeing the development and regulation of 9-1-1 emergency systems in the state and managing the distribution of all 9-1-1 telephone fees collected under the Act.

Some of the primary duties of OK911MA are "directing the distribution of fees for the support of public safety answering points (PSAPs) throughout the state, ensuring PSAP compliance with safety standards regarding receiving and processing 9-1-1 calls, and administering grants to PSAPs for the purpose of upgrading technology."[57]

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[54] "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.
[55] 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.
[56] Scott, Mike. "Dispatch Protocol Systems, The Good the Bad and the Ugly." 9-1-1 Magazine. February 2003.
[57] Title 145. Oklahoma Department of Emergency Management. Chapter 15. Oklahoma 9-1-1 Management Authority. Finding of Emergency. https://www.ok.gov/911/documents/Emergency_Rule_Document_%28EME%29.pdf

In addition to establishing the role of OK911MA and its committees, the Act provides guidelines for annual reporting requirements and provides for audits of service providers. The rules identify that the local jurisdiction now submits a 9-1-1 plan and its budget to OK911MA for approval. OK911MA "may award grants to eligible entities for the purposes of assisting public agencies with funding for consolidation of facilities and services, deployment of Phase II technology or successor technology, development of next-generation 9-1-1 regional emergency service networks, or for other purposes it deems appropriate and necessary."[58]

Per Title 63, Public Health and Safety, §63-2871, Regional Emergency Nine-One-One Services Act, I.

> *I. An emergency communication district shall have power to make all contracts to carry out the purposes of the Regional Emergency 91-1 Services Act, purchase and convey real property, impose service fees authorized for public agencies for the provision of 9-1-1 service, appoint a manager of the district, and adopt rules and policies for the operation of the district.*[59]

The funds could be used for services, equipment, and operations related to 9-1-1 emergency telephone systems. The purpose of this Act is to "encourage formation of emergency communication districts in order to provide efficient delivery of emergency 9-1-1 service throughout the state."[60] The intent was to form local agreements to provide emergency services to areas without 9-1-1 service. The legislature also recognized that cooperative agreements to share personnel, equipment, and operations provides overall better service at lesser cost.

Legislative mandates pertaining to 9-1-1 are shown in the table below.

[58] Ibid. 145:15-9-1. Purpose
[59] Title 63, Public Health and Safety, Section 63-2871 (I). https://law.justia.com/codes/oklahoma/2017/title-63/section-63-2871/
[60] Ibid., B.

Table 12: State of Oklahoma Legislative Mandates

Statute	Title
§63-2801	Oklahoma Emergency Telephone Act
§63-2861	Oklahoma 9-1-1 Management Authority Act
§63-2864	Oklahoma 9-1-1 Management Authority Powers and Duties
§63-2868	Oklahoma 9-1-1 Management Authority Annual Audit & Report
§63-2871	Oklahoma Regional Emergency Nine-One-One Services Act

Appendix D – Technology Systems in Use

Table 13: Technology and Systems by Region

PSAP	CAD or RMS	Radio System & Dispatch Consoles	Other Software	Logging Recorder	Mapping & GIS	Fire Station Alerts & Paging
Northeast						
Del City	Cardinal Tracking – CAD911	OKWIN	GeoSafe	Eventide (analog – phone only)	ACOG & City GIS – separate maps for CHE & CAD	2 stations, 1 device
EMSA	Central Square – InformCAD 5.8	OKWIN (encrypted) & Motorola MCC7500	Priority Dispatch ProQA	NICE Inform	Intrado West Safety Systems – (CAD)	n/a
Guthrie	ODIS[61], GeoSafe	OKWIN[62] & Motorola APX 8500	US Fleet Tracking, Rave911	Eventide	ACOG – integrated CHE & CAD	12 stations, 2 devices
Logan County Sheriff's Office	ODIS, GeoSafe	OKWIN & Motorola Astro consolette	GeoSafe, US Fleet Tracking	unknown	ACOG	n/a

[61] Oklahoma State Bureau of Investigation's Offender Data Information System is a law enforcement and court records management application. https://osbi.ok.gov/services/law-enforcement-programs/odis

[62] Oklahoma Wireless Interoperability Network (OKWIN) is a forty-three site, 800 MHz trunked public safety communications radio system. OKWIN is a partnership between the city of Edmond, city of Norman, city of Shawnee, city of Tulsa, city of Owasso and the Oklahoma Department of Public Safety (DPS). All infrastructure equipment is owned and maintained by the OKWIN partners. https://www.ok.gov/okwin/About_Us/index.html

PSAP	CAD or RMS	Radio System & Dispatch Consoles	Other Software	Logging Recorder	Mapping & GIS	Fire Station Alerts & Paging
Midwest City	Tyler Public Safety	OKWIN – Tait P25 800MHz & Zetron MAX (links to ECOECN[63])	GeoSafe, RapidSOS	Eventide 2.8.4	ACOG & City GIS	Zetron M26
Oklahoma County Sheriff's Office	Caliber CAD	OKC Metro Public Safety P25 – Motorola – (links to OKWIN & ECOECN)	GeoSafe, RapidSOS, Rave MNS	Eventide Mediaworks IV	ACOG – separate maps for CHE & CAD	0 stations, 5 devices
Central						
Bethany	Motorola Spillman Flex	OKC Metro Public Safety P25 & Navigator ICP9000	none noted	Equature 1.73.1.0 (analog)	ACOG – separate maps for CHE & CAD	2 stations, 1 device
Edmond	Tyler New World Systems	OKWIN & Motorola MCC7500	Tyler Police & Fire RMS, EMSA Portal	NICE	ACOG & City IT – integrated maps for CHE & CAD	Zetron MAX for 9 stations, 9 devices
Nichols Hills	ODIS	OKWIN - Motorola 800MHz P25	EMSA Portal, GeoSafe, US Fleet Tracking	Eventide 2.8.4	ACOG – integrated CHE & CAD	2 stations, 2 devices

[63] ECOECN – East Central Oklahoma Emergency Communications Network is a radio system serving state, county, local and tribal agencies in Oklahoma's Pottawatomie and Oklahoma Counties. https://wiki.radioreference.com/index.php/East_Central_Oklahoma_Emergency_Communications_Network

PSAP	CAD or RMS	Radio System & Dispatch Consoles	Other Software	Logging Recorder	Mapping & GIS	Fire Station Alerts & Paging
The Village	Central Square IMC 6.10	OKWIN - Motorola 800MHz & Motorola 2.0.1.2	none noted	Equature 1.73.1.0 (analog)	No maps for CHE or CAD	1 station, 24 devices
Warr Acres	Omnigo RMS	OKC Metro Public Safety P25 – Harris 800MHz & Zetron 4010	none noted	Eventide 2.8.4 (analog)	ACOG – No CAD map used	Zetron 4010 – 1 station, 2 devices
Southeast						
Cleveland County Sheriff's Office	Global Public Safety TAC.10 CAD	OKWIN & Motorola APX 4500	GeoSafe, US Fleet Tracking, Rave911	NICE Inform 9.03.75	CAD mapping	2 stations, 2 devices
Moore	PTS Solutions	OKWIN	GeoSafe, Priority Dispatch EMD	NICE Inform 9.0.3.75	CAD map updated by Moore GIS Dept.	4 stations, 2 devices
Noble	ODIS	OKWIN	GeoSafe, RapidSOS, Rave Messaging	NICE Mirra IV	ACOG – 911 map	Yes, no numbers given
Norman	Tyler New World Systems – New World Enterprise CAD	Norman Project 25 Ph II L3 Harris 800 MHz & Harris Symphony – (links to OKWIN)	Tyler Police & Fire RMS, Tyler Shield Force, EMSA Portal, GeoSafe, Rave911	Eventide NexLog 2.8.6	ACOG & Norman Planning Dept. – separate maps for CHE & CAD	Zetron IPFSH for 9 stations, IPFSA, Active 911, Crew-force for 200 devices

PSAP	CAD or RMS	Radio System & Dispatch Consoles	Other Software	Logging Recorder	Mapping & GIS	Fire Station Alerts & Paging
OUPD	ARMS RMS – End2End	Norman Project 25 Ph II 800 MHz & Harris Symphony – (links to OKWIN)	Rave Mobile Safety	Eventide MediaWorks	ACOG – separate maps for CHE & CAD	n/a
Southwest						
El Reno	Tyler Technologies Incode Public Safety 2020.4.6	Motorola Avtec VHF & Avtec Scout 4.11	GeoSafe, ODIS	Eventide MediaWorks 2.8.4	ACOG & CAD vendor – integrated CHE & CAD	Motorola AVTEC for 2 stations, Emergency Reporting Rover – 40 devices
Mustang	Central Square Public Safety Professional Suite 20.3	OKC Metro Public Safety P25 – Harris 800MHz and VHF & Avtec consoles	Getac Garmin AVL	Eventide NexLog 740 MediaWorks Plus 2.8.5	ACOG & City – CHE map, Cowan Group for CAD map	Spotted Dog Technology Emergency Reporting Rover for 1 station, 60 devices
Newcastle	ODIS	Motorola (temporary system)	Textmagic	Intrado 5.5	No CAD map	2 stations, 2 devices
Tuttle	ODIS	OKWIN – Motorola	GeoSafe, Active 911	Eventide MediaWorks Plus 2.5	No CAD map	2 stations, 3 devices using ODIS, Active 911 and radio

PSAP	CAD or RMS	Radio System & Dispatch Consoles	Other Software	Logging Recorder	Mapping & GIS	Fire Station Alerts & Paging
Yukon	Tyler New World Systems	OKC Metro Public Safety P25 – Motorola 800MHz & Motorola MIP 5000 v1.0.018	GeoSafe. RapidSOS	Eventide NexLog 740 MediaWorks Plus 2.8.5 (analog)	ACOG & City IT – integrated CHE & CAD	3 stations, 4 devices

Appendix E - Acronyms

Acronyms	
9-1-1 ACOG	9-1-1 Association of Oklahoma Governments
9-1-1 RPAC	9-1-1 Regional Planning Authority Commission
ACE	Accredited Center of Excellence
ALI	Automatic Location Identification
ANI	Automatic Number Identification
ANSI	American National Standards Institute
APCO	Association of Public-Safety Communications Officials-International
ASQ	American Society for Quality
ASTM	American Society for Testing and Materials
AVL	Automatic Vehicle Location
CAD	Computer-aided Dispatch
CALEA	Commission on Accreditation for Law Enforcement Agencies
CAAS	Commission on Accreditation of Ambulance Services
CFAI	Commission on Fire Accreditation International
CHE	Call-handling Equipment
CI	Critical Infrastructure
COML	Communications Leader
COOP	Continuity of Operations
CPR	Cardiopulmonary resuscitation
CPSE	Center for Public Safety Excellence
CSRIC	Communications, Security, Reliability, and Interoperability Council
CTO	Communications Training Officer

Acronyms	
DHS	U.S. Department of Homeland Security
DR	Disaster Recovery
ECC	Emergency Communications Center
ECOECN	East Central Oklahoma Emergency Communications Network
EHR	Electronic Health Record
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
EMSA	Emergency Medical Services Authority
ERU	Emergency Response Unit
FCD-1	Federal Continuity Directive 1
FEMA	Federal Emergency Management Agency
FMLA	Family Medical Leave Act
FSRS	Fire Suppression Rating Schedule
FTC	Federal Trade Commission
GIS	Geographic Information System
GPS	Global Positioning System
HVA	Hazards and Vulnerability Assessment
HR	Human Resources
IAED	International Academies of Emergency Dispatch
IP	Internet Protocol
IRR	Instant Recall Recorder
ISO	Insurance Services Office
IT	Information Technology
KPI	Key Performance Indicators

Acronyms	
MCP	Mission Critical Partners, LLC
MEF	Mission Essential Functions
MHz	Megahertz
MOU	Memorandum of Understanding
NASNA	National Association of State 911 Administrators
NENA	National Emergency Number Association
NFPA	National Fire Protection Association
NG9-1-1	Next Generation 911
NIPP	National Infrastructure Protection Plan
NIST	National Institute of Standards and Technology
ODIS	Offender Data Information System
OK911MA	Oklahoma 9-1-1 Management Authority
OKC	Oklahoma City
OKWIN	Oklahoma Wireless Interoperability Network
OUPD	University of Oklahoma Police Department
P25	Project 25
PDC	Priority Dispatch Corporation
PPC™	ISO's Public Protection Classification
PPD	Presidential Policy Directive
PSAP	Public Safety Answering Point
QA	Quality Assurance
QAE	Quality Assurance Evaluator
QI	Quality Improvement
RMS	Records Management System

Acronyms	
SB687	Senate Bill 687
SDO	Standards Development Organization
SOP	Standard Operating Procedure
SWOT	Strengths, Weaknesses, Opportunities, Threats
T-CPR	Telecommunicator Cardiopulmonary resuscitation
TFOPA	Task Force on Optimal PSAP Architecture
UPS	Uninterruptible Power Supply
VHF	Very High Frequency
VoIP	Voice over Internet Protocol