STATE OF SOUTH DAKOTA
PSAP EFFICIENCY STUDY

January 2025

Prepared by

911 Authority

Table of Contents

Executive Summary

South Dakota's Public Safety Answering Points (PSAPs) are critical to ensuring timely and effective emergency responses across the state's diverse geographic and demographic landscape. This study, commissioned by the South Dakota 911 Coordination Board and conducted by 911 Authority, LLC, evaluates the feasibility, benefits, and challenges of consolidating PSAP operations. Using a robust, data-driven methodology incorporating qualitative and quantitative analysis, the study explores opportunities to optimize service delivery, address operational inefficiencies, and improve resource utilization.

Key Findings

1. **Performance and Potential for Consolidation**:
    - PSAPs with lower call volumes and higher costs per 911 call exhibit lower efficiencies in the Key Performance Indicator (KPI), as they often face financial and staffing challenges.
    - Centers with strong staffing stability and efficient operations may act as regional hubs, supporting PSAPs through shared resources or overflow call handling.
    - Despite operational variability, all South Dakota PSAPs meet or exceed national call-answer standards, showcasing a solid baseline of service delivery.
2. **Operational Challenges**:
    - Staffing shortages exist in urban and rural PSAPs, with vacancy rates as high as 42.86%. These gaps strain operations, notably smaller PSAPs with limited resources.
    - Technological disparities, including inconsistent CAD and radio system interoperability, hinder seamless multi-jurisdictional coordination.
    - Financial constraints and facility limitations remain barriers to comprehensive consolidation efforts.
3. **Stakeholder Perspectives**:
    - Stakeholders highlight concerns over the potential loss of local control and geographic knowledge in consolidated models.
    - There is widespread support for leveraging South Dakota's robust Next Generation 911 (NG911) and State Radio Communications System (SRC) infrastructure to improve interoperability and reduce redundancy.
    - Recruitment and retention challenges were consistently identified as critical issues requiring targeted intervention.

Recommendations (Comprehensive list in Section 6)

The report outlines a range of actionable recommendations aimed at improving South Dakota's 911 system through strategic consolidation, workforce development, and enhanced technological integration:

- **Consolidation**:
  - **Physical**: Incentivize low-performing PSAPs for regional consolidation, supported by phased implementation and state-level funding.
  - **Technological:** Incentivize PSAPs to consolidate into a single technology solution (i.e., CAD) to reduce overall costs and promote interoperability.
  - **Co-Location:** Promote the co-location of PSAPs within shared facilities to optimize resource utilization, reduce operational costs, and foster greater collaboration among agencies. This approach allows PSAPs to maintain operational independence while benefiting from shared infrastructure, streamlined communication, and enhanced interoperability.

  Note: PSAPs with substantial operational efficiencies should be considered strong candidates for the consolidation point of other PSAPs.
- **Technological Integration:** Implement statewide CAD-to-CAD systems and ensure all PSAPs integrate with the SRC core to enhance communication and reduce operational barriers. Prioritize funding for consolidated PSAPs to establish direct connections to the SRC radio core, eliminating radio interference and expanding their ability to serve geographically distant jurisdictions.
- **Workforce Development**: Introduce targeted state-funded recruitment and retention grants and develop telecommunicator certification programs in partnership with educational institutions.
- **Operational Improvements**: Expand NG911 capabilities, formalize mutual aid agreements, and establish regional telecommunicator pools to manage staffing gaps and fluctuating demand.

Conclusion

South Dakota's PSAP network demonstrates commendable service delivery but faces operational and financial inefficiencies that consolidation and targeted investments can address. By implementing the recommendations outlined in this report, the state can create a resilient, efficient, and future-ready emergency communication system. Achieving these objectives will require collaboration among the 911 Coordination Board, local stakeholders, and public safety agencies to balance statewide goals with community needs.

1. Introduction

Emergency communication systems are the backbone of public safety, ensuring that residents and visitors receive timely assistance during crises. The PSAPs in South Dakota are crucial in connecting individuals in need with first responders across the state's vast and diverse landscape. As technology advances and operational challenges grow, leaders statewide face an opportunity to evaluate whether consolidating PSAP operations can enhance service delivery, improve resource utilization, and address persistent staffing and funding issues.

This study explores the potential for consolidation and regionalization of South Dakota's PSAPs, presenting a data-driven approach to understanding how the state can optimize its 911 system for the future.

1.1 Purpose of the Study

The South Dakota 911 Coordination Board (911 Board) partnered with 911 Authority, LLC, to conduct a study evaluating if the potential consolidation of some PSAPs within the state's 911 system could have positive operational and fiscal outcomes. This study aims to explore potential models for consolidating, regionalizing, or otherwise enhancing 911 operations to improve emergency response capabilities across South Dakota.

The primary goal of this effort is to assess whether reorganizing or combining PSAP resources in one or more models can enhance the speed, consistency, and quality of emergency services. Key criteria for evaluating consolidation models include:

Operational Efficiency: Assessing the potential for streamlined call routing, shared training programs, and coordinated resource allocation to deliver faster response times and better outcomes.

Service Delivery Improvements: Measuring how consolidation can enhance interoperability, standardize operating procedures, and improve system reliability and resiliency.

Cost-Effectiveness: Evaluating whether shared administrative functions, standardized technology platforms, and reduced duplication can yield financial benefits.

Staffing and Retention: Considering whether a unified structure can address staffing shortages, reduce turnover, and foster a more stable workforce.

Adherence to Industry Standards: Reviewing alignment with benchmarks set by the 911 Board and national standards established by the National Emergency Number Association (NENA).

The study's findings will serve as a roadmap for policymakers, public safety leaders, and other stakeholders. They will guide decisions that ensure South Dakota's 911 System remains effective, resilient, and capable of adapting to future challenges.

1.2 Current PSAP Operations

South Dakota's 911 operations reflect the unique challenges posed by its vast geography and dispersed population. With a total area of 77,116 square miles and an average population density of just 11.92 people per square mile, the state's PSAPs must deliver high-quality emergency response services across diverse rural and urban environments. With only two major metropolitan hubs in Sioux Falls and Rapid City, most of South Dakota's residents live in small towns and rural communities. This creates operational complexities, including long distances between communities, limited cellular coverage in remote areas, and prolonged emergency response times.

There are 33 PSAPs in South Dakota, 28 of which receive funding from the state's 911 program. The other five (5) PSAPs serve Tribal, Department of Defense (DoD), or Department of the Interior (DoI) jurisdictions. 39% of local PSAPs currently take calls for multiple communities or operate with some level of consolidation.

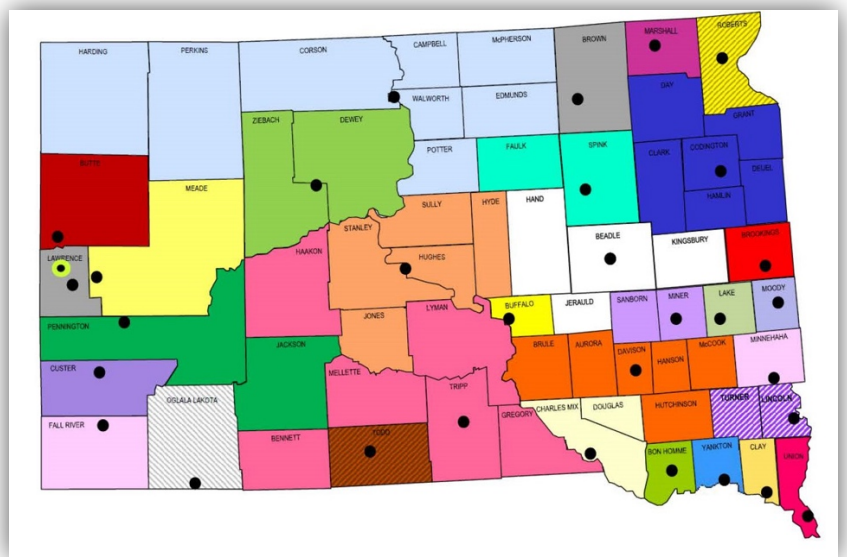

Figure 1 South Dakota Local & Tribal PSAPs

Technological alignment among South Dakota's PSAPs provides a strong foundation for future integration efforts. 85% of local PSAPs utilize a CAD system that supports interoperability, which can streamline call-taking and dispatch processes. Additionally, 75% of PSAPs operate on or maintain interoperability with the SRC, enabling effective communication during multi-jurisdictional incidents. These commonalities in technology

infrastructure create opportunities for greater collaboration and resource sharing, which are essential for enhancing statewide service delivery.

Despite the technological alignment, many PSAPs face significant operational challenges, with 25% reporting vacancy rates equal to or greater than 20%. These staffing shortages and high turnover place immense pressure on telecommunicators, particularly in rural areas where limited economies of scale exacerbate operational strain. This combination of factors often leads to burnout among staff and challenges in maintaining consistent, high-quality service delivery.

This study seeks to address these challenges by evaluating consolidation models that could optimize resource utilization, enhance resilience, and provide a sustainable path forward for 911 services in South Dakota.

1.3 Role and Authority of the 911 Coordination Board

The South Dakota 911 Board oversees the state's 911 System and ensures its effectiveness and efficiency. Established under South Dakota Codified Laws (SDCL 34-45-20), the Board is tasked with implementing a uniform statewide 911 system and assessing the operational efficiencies of PSAPs. While the Board cannot mandate consolidation, it has the authority to facilitate improvements and guide voluntary efforts to enhance service delivery.

1.3.1 Legal Framework

The authority of the 911 Board is established based on South Dakota's legislative framework, which empowers local governments to collaborate through joint agreements to enhance 911 services. Joint agreements (SDCL 1-24-2) allow local governments to combine resources and share responsibilities, creating more efficient service delivery opportunities. Funding restrictions (SDCL 6-12-14) stipulate that 911 operations must be funded using general revenues, prohibiting the imposition of additional fees without state approval. The 911 Board is also responsible for establishing operational standards to ensure consistency and compliance with state and federal guidelines and provide standardization for PSAP operations.

1.3.2 Support for Consolidation

The 911 Board is vital in supporting consolidation efforts across the state. It actively facilitates joint agreements, encouraging local governments to leverage statutory provisions for merging or regionalizing PSAP operations. By leveraging NG911 infrastructure, the Board promotes the adoption of advanced technologies, such as GIS-based call routing and centralized cybersecurity measures, which enable seamless integration across PSAPs. The Board also provides technical guidance, offering expertise and resources to support transitions to consolidated models. This includes assisting with

technology upgrades and other operational needs, ensuring the process is efficient and sustainable.

1.3.3 Challenges and Opportunities

The 911 Board is instrumental in coordinating consolidation initiatives, but there are challenges to ensure their success. A key consideration is local autonomy, as maintaining statewide efficiency often requires balancing the preservation of local control and community-specific services. Stakeholder engagement is another critical factor, requiring the 911 Board to address concerns from local PSAPs regarding funding, staffing, and the potential loss of geographic knowledge. Lastly, the 911 Board must advocate for legislative adaptation, promoting updates to statutes and administrative rules to clarify its role in guiding consolidation efforts and aligning the legal framework with evolving operational needs.

By fostering collaboration among stakeholders and leveraging existing statutory and technological frameworks, the 911 Coordination Board is well-positioned to lead South Dakota's emergency communication system into a more unified and resilient future.

2. Methodology

The South Dakota PSAP Consolidation Study utilized a structured and balanced methodology to evaluate the feasibility, benefits, and challenges of consolidating the state's PSAPs. This methodology combined quantitative metrics and qualitative insights to provide a comprehensive and data-driven analysis of PSAP operations and consolidation scenarios.

2.1 Data Collection

Quantitative data formed the foundation of the study, offering objective, measurable metrics to compare the operational and financial performance of each PSAP. Metrics such as total call volume, cost per 911 call, staffing levels, and response times were collected through custom surveys distributed to all 28 local PSAPs. This data was supplemented by state databases and publicly available sources, ensuring a complete and accurate dataset. Quantitative metrics allowed the study to identify disparities in performance, highlight operational inefficiencies, and determine which PSAPs were most likely to benefit from consolidation. For example, high vacancy rates or low call volumes pointed to PSAPs that could gain from shared resources, while high costs per call indicated financial inefficiencies that regionalization might address.

Complementing the quantitative data, qualitative insights captured the nuanced perspectives of PSAP personnel and key stakeholders. Open-ended survey questions provided essential context to the metrics, revealing challenges like local knowledge gaps, unique community needs, and operational concerns. Interviews and email

correspondence with the 911 Coordination Board and other stakeholders added depth to the analysis, offering firsthand accounts of existing challenges and potential opportunities for collaboration. Together, quantitative and qualitative data ensured a holistic view of the current state of PSAP operations and informed the evaluation of potential consolidation models.

2.2 KPI Scoring Framework

To analyze and prioritize PSAPs for consolidation, the study employed a weighted scoring framework based on Key Performance Indicators (KPIs). This framework allowed diverse metrics to be evaluated on a standard scale, ensuring equitable comparisons across PSAPs. KPIs included total 911 calls, percent of 911 call volume, staffing vacancy rates, CAD interoperability, call answer time ≤ 15 seconds, call answer time ≤ 20 seconds, and cost per 911 call. Each KPI was assigned a weight reflecting its importance to consolidation feasibility and operational efficiency. For example, staffing levels and call volumes were weighted more heavily than other factors due to their direct impact on service delivery. The weighted scores for each KPI were aggregated into a total score, normalized on a scale of 1 to 100, providing a clear and actionable ranking of PSAPs for consolidation prioritization. This approach ensured that the analysis was comprehensive and focused, addressing operational, financial, and service delivery considerations.

2.2.1 Scales Used

Three types of scales were used to normalize KPI data:

Direct Scale: Higher values indicated a higher potential for consolidation. For example, vacancy rates and cost per 911 call were scored directly, as higher values reflect inefficiencies that could benefit from consolidation.

Inverted Scale: Lower values indicated a higher potential for consolidation. Metrics such as total 911 call volume and compliance with call answer times were scored inversely, with lower values representing reduced economies of scale or operational inefficiencies.

Binary Scale: Metrics with binary outcomes, such as CAD interoperability, were scored as either “0” (no interoperability, indicating higher potential for consolidation) or “1” (interoperability present, indicating lower potential).

2.2.2 Weights and Normalization

The study evaluated each KPI using a weighted scoring framework, where raw data was normalized to a 1–100 scale. Minimum and maximum values for each KPI were used to create a consistent basis for comparison, ensuring equitable evaluation across all PSAPs. The table below outlines the updated scales, weights, and raw data ranges for each KPI.

The individual KPI weighted scores per PSAP can be found in Appendix A: KPI Weighted Scores by PSAP:

KPI	Scale	Weight	Minimum	Maximum	Scale Explanation
Total Calls	Inverted	20%	785	110,424	Lower call volumes indicate reduced economies of scale.
% of 911 Call Volume	Inverted	10%	6.72%	38.96%	Lower percentages suggest inefficiencies in call-handling capacity.
Vacancy Rate	Direct	20%	0%	42.86%	Higher rates suggest staffing challenges and operational strain.
CAD Interoperability	Binary	10%	Yes = 0	No = 10	"No" interoperability indicates higher consolidation need.
Call Ans ≤ 15s	Inverted	15%	93.92%	99.90%	Lower compliance highlights slower response times.
Call Ans ≤ 20s	Inverted	10%	95.61%	99.97%	Lower compliance highlights slower response times.
Cost per 911 Call	Direct	15%	$18.95	$64.14	Higher costs reflect financial inefficiencies.

Figure 2 Key Performance Index Scale

By applying these scales, the study ensured that PSAPs with widely varying operational contexts could be evaluated relatively. For instance, the inverted scales used for metrics like call volume and response times prioritized PSAPs with lower values, which often correlate with reduced economies of scale or operational inefficiencies. Conversely, direct scales for vacancy rates and cost per 911 call highlighted centers with higher challenges in staffing and financial sustainability. The binary scale for CAD interoperability provided a straightforward assessment of technological integration, assigning higher scores to PSAPs with established interoperability capabilities.

2.3 Sensitivity Analysis

To ensure the robustness of the weighted scoring framework, the study included a sensitivity analysis. Sensitivity analysis is a statistical technique used to test how variations in input variables, such as KPI weights, affect the overall results. For this study, KPI weights were adjusted within a ±5% range, and the total scores for each PSAP were recalculated under these new scenarios. The analysis demonstrated that the rankings remained consistent across different weightings, verifying the reliability of the study's recommendations. It also identified which KPIs influenced PSAP rankings most, providing valuable insights for future evaluations and decision-making. The analysis verified the study's findings by validating that the results were not overly reliant on any metric.

2.4 Validation and Cross-Referencing

Validation and cross-referencing ensure the accuracy and reliability of the study. Quantitative data collected from surveys was reviewed and compared against state databases and third-party reports to identify and resolve discrepancies. Qualitative

responses from surveys and interviews were analyzed to corroborate recurring themes and align feedback across stakeholders. Statistical methods, including comparative and trend analysis, were applied to ensure consistency and highlight any data anomalies. By thoroughly verifying the data and analysis, the study minimized the risk of errors and misinterpretations, providing stakeholders with reliable and actionable recommendations.

This methodology provided a balanced framework for evaluating PSAP performance and consolidation feasibility. By integrating quantitative metrics, qualitative insights, and statistical techniques, the study delivered a comprehensive and impartial analysis.

3. Consolidation

3.1 Defining Consolidation

In public safety communications, consolidation refers to combining the operations of multiple PSAPs to achieve greater efficiency, effectiveness, and consistency. A PSAP is the center that receives 911 calls and dispatches law enforcement, fire, and emergency medical services responders. Traditionally, each city or county may operate a stand-alone facility with independent staff, equipment, and procedures. Consolidation means shifting away from this localized approach in favor of more unified models and can take several forms. **Physical consolidation** involves merging two or more facilities into one location and unifying staff, equipment, and operations. **Technological consolidation** allows separate PSAPs to remain in different places but share common technology platforms, such as a single CAD system or interconnected radio networks, to function collaboratively. **Co-location** is a hybrid approach, housing multiple PSAPs in the same building while still allowing each to maintain its identity and operational independence to some degree.

Each of these approaches to consolidation aims to improve service delivery, reduce duplication of efforts, and strengthen the overall 911 infrastructure. By working under common guidelines and leveraging shared technology, PSAPs can respond more effectively to emergencies and meet or exceed national standards for performance.

3.2 Reasons for Considering Consolidation

When evaluated as a matrix, several benchmarks or indicators signal consideration for consolidation. One factor is low call volume. Operating a full-scale PSAP can be costly, and if a center handles very few emergencies, it may not be the best use of resources. Operational effectiveness can be compromised when administrative tasks overshadow emergency response activities within PSAPs. Consolidation provides an opportunity to centralize support functions, reduce duplication of effort, and strengthen the efficiency of emergency operations.

Another consideration is high vacancy rates and staff turnover, which are nationwide challenges in the 911 profession. PSAPs often struggle to retain enough qualified telecommunicators, leading to staffing shortages, long shifts, and burnout. A consolidated center can attract and maintain a robust talent pool, facilitate more consistent training, and offer better opportunities for professional growth. This, in turn, can improve staff morale, reduce turnover, and ensure calls are handled promptly and professionally.

Lack of interoperability is another driving factor. PSAPs currently operate with various CAD systems, radio networks, and data-sharing platforms. When these systems cannot communicate effectively, it slows down emergency responses and complicates coordination between agencies. A consolidated or technologically integrated environment can standardize these tools, streamlining communication, which helps ensure that when a 911 call comes in, critical information such as location data, incident details, and response units is shared seamlessly across multiple agencies.

Non-compliance with industry-recognized performance benchmarks is an indicator for consolidation. The National Emergency Number Association's (NENA) call answering standard requires PSAPs to answer ninety percent (90%) of all 911 calls within (≤) fifteen (15) seconds, and ninety-five (95%) of all 911 calls answered within (≤) twenty (20) seconds. Under-resourced PSAPs often struggle to meet these targets. By consolidating, PSAPs can pool resources, leverage shared expertise, and achieve or surpass these standards, ultimately delivering improved service to the public.

3.3 Potential Benefits of Consolidation

When executed thoughtfully, consolidation can yield multiple benefits, the most evident being improved efficiency. By uniting staff and systems, PSAPs can reduce duplication of effort and streamline workflows. Incoming calls can be answered more quickly, vital information can be dispatched to responders more accurately, and emergencies can be managed more effectively. Over time, these operational efficiencies can result in stronger emergency response outcomes, potentially saving lives and property.

Cost savings are another notable benefit. While initial investments may be required, such as upgrading technology or constructing new facilities, consolidation can lead to long-term financial advantages, including lessening the overall cost of 911 in South Dakota. Instead of each PSAP purchasing and maintaining separate infrastructure, a consolidated model shares these expenses across a broader base of users. This can reduce overall operational costs and free up resources for additional training, improved technology, or community outreach efforts.

Staff support and professional development can also benefit as consolidated centers can create clearer career paths for telecommunicators, invest more deeply in staff training, and ensure balanced workloads. The result is a more stable workforce that is better prepared to handle emergency communications challenges.

On a larger scale, consolidated PSAPs can more easily adapt to technological changes and public expectations. Unified centers are better positioned to adopt these new tools as communication methods evolve from traditional phone calls to text messaging, video calls, and sophisticated data-sharing applications. This future-focused perspective helps ensure that 911 services remain effective, reliable, and resilient in the face of change.

3.4 Challenges and Considerations

While consolidation offers many potential advantages, it has challenges. Initial planning and investments may be significant, and merging different organizational cultures, policies, and procedures requires careful change management. Communities may also have concerns about losing local control or identity, fearing that a larger, consolidated PSAP might not fully understand local geography, community needs, or public safety priorities.

Addressing these concerns through clear communication, community outreach, and performance tracking is essential. Ensuring that every community served by a consolidated center experiences equal or improved service is key to maintaining public trust. By setting measurable performance goals, regularly reviewing outcomes, and remaining transparent about the decision-making process, stakeholders can help ensure that consolidation leads to sustained improvements in public safety.

4. Data Analysis and Findings

This section examines the performance of PSAPs across South Dakota using the weighted Key Performance Indicators (KPIs) outlined in the methodology. By analyzing each KPI and its relationship to operational and fiscal metrics, the study identifies patterns and opportunities for potential consolidation. These evaluations provide a data-driven foundation for understanding how PSAPs align with the state's objectives for enhanced efficiency, service delivery, and resource utilization.

4.1 Total 911 Calls

The total volume of 911 calls is a foundational KPI for assessing PSAP demand and identifying candidates for consolidation. This metric was evaluated using an inverted scale, where lower call volumes were assigned higher scores, indicating a higher potential for consolidation. The normalization process ensured consistent evaluation across PSAPs of varying sizes and operational complexities, aligning the analysis with South Dakota's unique geographic and demographic challenges.

PSAPs **equal to or greater than the 75th percentile** recorded annual 911 call volumes ranging from **785 to 3,212 calls**. These centers are predominantly located in rural areas with dispersed populations and lower overall demand for emergency services. Such low

call volumes often correlate with higher costs per 911 call due to the fixed operational and administrative expenses required to maintain a fully staffed and equipped PSAP. While these centers handle fewer emergencies, they still incur significant staffing, technology, and infrastructure costs, resulting in reduced economies of scale. Additionally, these PSAPs frequently struggle with staffing shortages, as rural locations and lower call volumes make recruitment and retention more challenging. Consolidation for these centers could provide access to shared resources, streamlined administration, and improved financial sustainability.

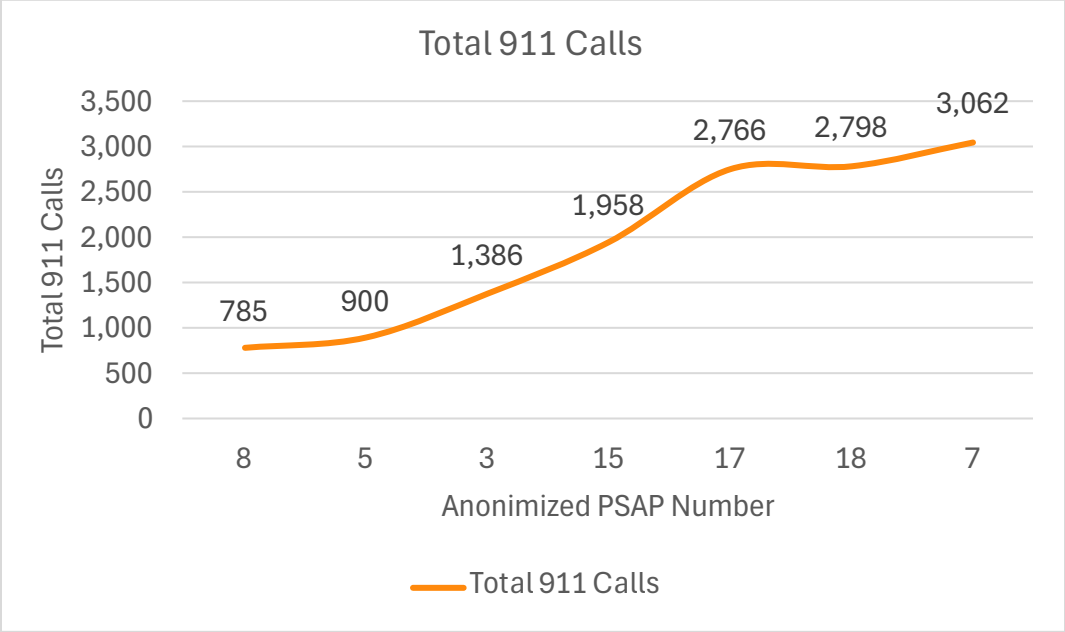

Figure 3 Total 911 Calls

PSAPs in the **middle percentile ranged** between **3,722 and 9,959 annual 911 calls**. These centers often serve mixed rural and urban areas, acting as regional hubs that handle moderate call volumes. Operationally, they benefit from slightly greater economies of scale compared to lower-volume PSAPs, but inefficiencies may still arise due to fluctuating demand and resource allocation. Geographic and demographic data indicate that these PSAPs are located in areas with mid-range population densities, averaging 18 residents per square mile[1]. While not immediate candidates for consolidation, these centers could benefit from targeted regional collaborations, such as sharing specialized staff or technology platforms, to enhance operational efficiencies further.

PSAPs in the **less than or equal to the 25th percentile** handled between **10,029 and 110,424 annual 911 calls**, representing the highest-volume centers in the state. These PSAPs often exhibit greater cost efficiencies due to economies of scale but face the challenge of maintaining consistent service quality during peak demand. Higher call volumes may also increase administrative complexity, requiring robust staffing and

[1] The data had one (1) significant outlier was 728 residents per square mile.

technological support to sustain effective operations. While consolidation may not be necessary for these centers, they could support regionalized systems, absorbing overflow calls or providing specialized services to PSAPs with lower capacities.

Across all percentile ranges, transient populations contribute to variations in 911 call volume. There are PSAPs serving areas with colleges or summer travel destinations that experience seasonal or event-driven surges in call volume. These transient dynamics add complexity to PSAP operations, necessitating flexible resource allocation and strategic planning to accommodate fluctuating demand. Transient populations impact PSAPs in rural, mid-range, and urban areas, underscoring the need for adaptable solutions across all percentile ranges.

South Dakota's robust NG911 infrastructure is an added source of assistance to all PSAPs. The statewide Managed Emergency Call Handling (MECH) system provides seamless redundancies and policy-based routing capabilities. This infrastructure allows PSAPs to divert calls to other centers during high-call volume events, evacuations, local emergencies, or community isolation. Such capabilities reduce the risk of service disruptions, enabling even lower-volume PSAPs to operate effectively as part of a regionalized system. NG911 technology also supports efficient call routing based on GIS data, offering additional resiliency for managing routine and peak demand.

4.2 Percentage of 911 Call Volume

The percentage of 911 call volume is a KPI for evaluating a PSAP's focus on emergency response compared to its overall call-handling responsibilities. This metric, evaluated using an inverted scale, prioritizes PSAPs with lower percentages of 911 call volume as having higher consolidation potential. Centers with a significant proportion of non-emergency calls often face operational inefficiencies, with resources dedicated to administrative or informational tasks that may dilute their capacity for emergency calls.

PSAPs equal to or **greater than the 75th percentile** had 911 call percentages **ranging from 6.72% to 11.97%**. These centers often handle a majority of calls on their administrative or non-emergency lines, including tasks such as managing local agency communications, processing non-urgent law enforcement assistance requests, and handling animal control inquiries. This operational dynamic is typically seen in smaller, rural PSAPs that must serve as catch-all contact points for local services. When correlated with total call volume, these centers often process fewer overall calls and operate in areas with lower population densities. The combination of reduced call volume and high administrative demand can lead to increased per-call costs and a lack of specialization, making them strong candidates for resource-sharing models that redistribute administrative responsibilities internally within jurisdictions.

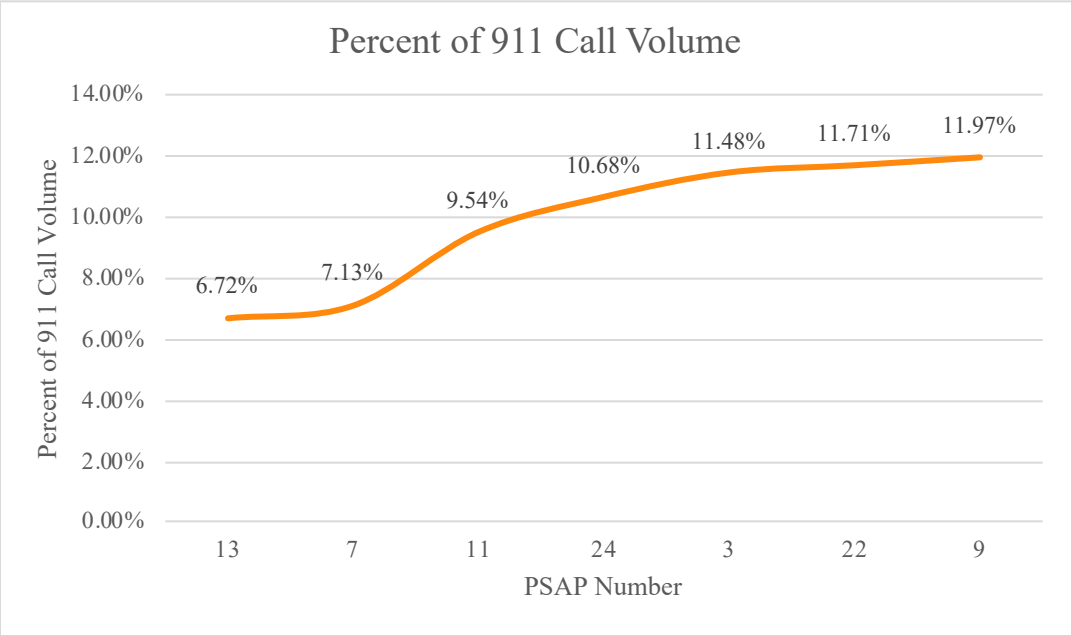

Figure 4 Percentage of 911 Call Volume

In the **middle percentile range**, PSAPs had 911 call percentages **between 12.24% and 26.78%,** reflecting a more balanced distribution between emergency and non-emergency call handling. These centers often serve communities with mixed population densities and varying service demand levels. While these PSAPs are not immediate consolidation candidates, they may benefit from exploring local strategies to optimize administrative workflows. For example, creating dedicated teams for non-emergency call handling, enhancing internal policies for managing administrative requests, or adopting technology solutions, such as Automatic Call Distribution (ACD), to streamline non-emergency call handling and focus on core 911 operations, reducing strain on telecommunicators.

PSAPs **less than or equal to the 25th percentile** recorded 911 call percentages **between 27.61% and 38.96%**, indicating a stronger focus on emergency call handling. These centers are typically located in more populated areas or regions with transient populations, major highways, commercial/industrial campuses, or tourism hubs generating more 911 calls. Their operational alignment with emergency services suggests that they are less likely candidates for consolidation. However, these PSAPs could consider internal process reviews to streamline non-emergency call handling or adopt technology solutions, such as Automatic Call Distribution (ACD), ensuring their emergency call-handling capacity remains optimized during peak demand periods.

Operational data reveals important correlations between the percentage of 911 call volume and other metrics. Centers with lower percentages of 911 calls often correspond to higher costs per call due to the administrative workload required to handle non-emergency calls. These centers are also more likely to experience telecommunicator burnout, as staff must frequently transition between emergency and non-emergency call

types, creating additional cognitive and emotional demands. Conversely, centers with higher percentages of 911 calls often benefit from a clearer operational focus but may encounter staffing challenges during periods of elevated demand.

Given the diversity of challenges associated with the percentage of 911 call volume, addressing inefficiencies within existing local frameworks offers the most feasible path forward. Streamlining administrative processes, enhancing telecommunicator training for multi-tasking, and exploring jurisdictional partnerships for shared internal resources are potential strategies to improve efficiency without requiring external support. These approaches ensure that each PSAP can maintain its operational integrity while optimizing resource allocation for emergency and non-emergency responsibilities.

4.3 Staffing Vacancy Rates

Staffing levels are another factor in the effective operation of PSAPs, directly influencing their ability to manage call volumes and maintain compliance with call-answering standards. The vacancy rate KPI was evaluated using a direct scale, with higher vacancy percentages indicating higher consolidation potential. This analysis highlights the impact of staffing challenges across PSAPs and explores strategies to address these issues.

PSAPs in the **75th percentile** for consolidation exhibited vacancy rates ranging from **20.00% to 42.86%**. These centers face significant challenges in maintaining adequate staffing levels, which can lead to increased workloads for existing telecommunicators and operational strain. While rural centers are commonly associated with higher vacancy rates due to smaller labor pools, the data confirms that urban and suburban PSAPs are also struggling with recruitment and retention. Factors contributing to these challenges include long hours, high-stress environments, and competition from private-sector opportunities.

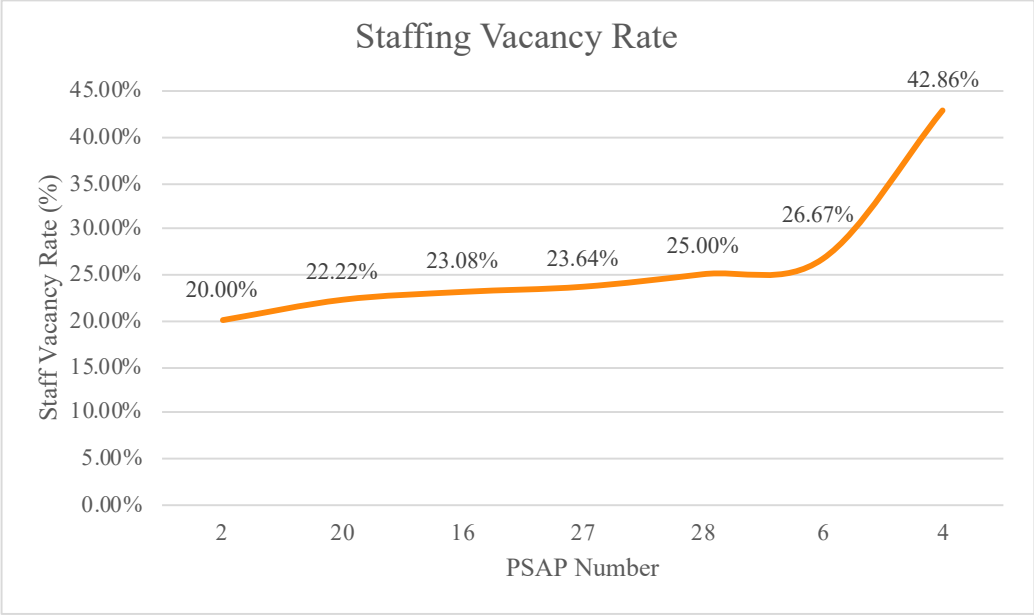

Figure 5 Staffing Vacancy Rates

Low vacancy rates within the same geographic area can create a phenomenon known as "wage wars," where jurisdictions compete to attract and retain telecommunicators by offering increasingly higher wages, enhanced benefits, or other incentives. While this can temporarily stabilize staffing levels for individual PSAPs, it often destabilizes the broader system by creating unsustainable cost pressures and uneven compensation practices. Smaller jurisdictions may struggle to keep pace, exacerbating existing disparities and furthering staffing shortages in less resource-rich PSAPs. Over time, this cycle undermines regional collaboration and increases financial strain across the system, highlighting the need for coordinated recruitment and retention strategies to address systemic challenges.

The **median percentile range** includes PSAPs with vacancy rates between **8.33% and 15.25%**. These centers demonstrate better staffing stability than the 75th percentile, but vacancies remain a notable concern. Feedback suggests that centers in this range often experience seasonal staffing fluctuations or difficulty retaining experienced personnel due to limited career advancement opportunities. Offering professional development programs and enhanced training opportunities could serve as practical retention tools, ensuring these centers can maintain their operational efficiency.

PSAPs in the **25th percentile** reported a **vacancy rate of 0%**, reflecting exceptional staffing stability. These centers often benefit from proactive recruitment strategies, attractive compensation packages, and strong employee retention practices. While consolidation is not a priority for these centers, they could play a valuable role in addressing statewide staffing challenges by sharing effective practices or collaborating with neighboring PSAPs experiencing higher vacancy rates. This approach could help balance staffing disparities across the system while maintaining operational excellence.

Vacancy rates are a shared challenge across South Dakota PSAPs, regardless of geographic or operational context. While rural centers may face unique hurdles due to labor pool limitations, urban and suburban PSAPs also encounter significant recruitment and retention difficulties. Addressing these issues requires both localized strategies and state-level interventions.

One potential solution is to introduce targeted recruitment and retention grants to support PSAPs that are struggling with vacancies but otherwise are operationally efficient. These grants could be used for recruitment campaigns, tools, or telecommunicator wellness programs to reduce burnout and turnover. Another creative approach involves developing partnerships with local educational institutions to create pipelines for new hires, such as specialized certification programs for high school or community college students interested in emergency communications careers.

Additionally, PSAPs in the middle and 25th percentiles could explore collaborative staffing models, such as creating regional telecommunicator pools to manage fluctuating demand across multiple jurisdictions. This approach could alleviate staffing pressures in centers with high vacancies while providing cross-training opportunities for telecommunicators to enhance their skills and flexibility.

By addressing vacancy challenges through innovative local initiatives and strategic state-level programs, South Dakota can enhance staffing stability across its PSAPs. These efforts will ensure consistent service delivery and support the state's operational efficiency and resource optimization goals.

4.4 Interoperability

4.4.1 Computer Aided Dispatch (CAD)

Computer-aided dispatch (CAD) interoperability is critical in ensuring seamless communication and coordination among PSAPs, particularly during multi-jurisdictional incidents. This KPI was assessed using a binary scale, where PSAPs with interoperable CAD systems were assigned higher scores, reflecting their enhanced ability to share information and resources. South Dakota's PSAPs demonstrate significant alignment in this area, with 82% of centers on an interoperable CAD platform, providing a strong foundation and decreasing the barrier to achieving interoperability.

PSAPs without an interoperable CAD or without a CAD system scored high for consolidation potential. These centers face operational challenges that hinder efficient call handling and coordination with neighboring jurisdictions. The lack of shared CAD information limits their ability to seamlessly transfer call data, share situational awareness, and provide mutual aid during events.

PSAPs with interoperable CAD systems can enhance their capacity to operate effectively within regional and statewide networks. These centers benefit from the ability to share real-time data, allocate resources dynamically, and provide mutual aid during emergencies. Their strong technological alignment reduces administrative burden and supports a coordinated approach to public safety. With limited barriers to interoperability, it's highly important to adopt a standardized statewide CAD-to-CAD solution as part of broader consolidation or resource-sharing strategies.

4.4.2 State Radio Communications System (SRC) (Not Scored)

South Dakota Bureau of Information and Technology's State Radio Communications System (SRC) was established in 2003 to provide a unified communication platform for public safety agencies. Over the years, the system has significantly expanded its coverage and capabilities, now serving over 90% of the state's first responders. Recently upgraded to a P25-compliant system, SRC ensures modern, reliable, and interoperable communications across the state. This compliance aligns with national public safety communication standards, enhancing the system's functionality and ability to support multi-agency operations.

75% of the state's PSAPs operate entirely on or maintain SRC interoperability. This level of integration facilitates seamless multi-agency coordination during large-scale emergencies or cross-county incidents, ensuring information flows efficiently between dispatchers and responders. However, the remaining PSAPs operate on separate radio platforms, which

limits their ability to coordinate effectively with other agencies. This fragmentation can result in delays, miscommunications, and inefficiencies, particularly in situations requiring rapid, coordinated responses across jurisdictions.

To address this disparity, the state should consider implementing a statewide migration plan to bring all PSAPs onto the SRC network. This initiative could be supported through targeted funding, grants, or technical assistance to ensure that PSAPs with limited resources can participate. By achieving full integration, South Dakota's PSAPs would benefit from enhanced interoperability, reduced operational barriers, and improved overall efficiency in emergency communications.

Despite the advancements in SRC, several consolidated PSAPs face challenges related to their connection to the state's radio system. Without direct connections from their dispatch systems to the radio core, these PSAPs are forced to use multiple antennas to broadcast to distant jurisdictions. This workaround often creates significant radio interference and limits the centers' ability to take on additional jurisdictions during consolidation efforts. The lack of direct connectivity affects operational efficiency and hampers the potential for further regionalization of services.

The state should prioritize funding for consolidated PSAPs to establish direct connections to the SRC radio core. By allowing dispatch systems to broadcast directly from state-operated towers, these centers could eliminate interference and expand their capacity to serve geographically distant jurisdictions. This investment would not only enhance the functionality of consolidated PSAPs but also support the state's broader goals of operational efficiency and improved public safety outcomes.

In summary, South Dakota's statewide radio system is critical for enabling effective communication and coordination across its public safety network. Expanding the system's reach through targeted funding and strategic planning would enhance interoperability, reduce inefficiencies, and support the evolution of the state's emergency communication infrastructure. Through these efforts, South Dakota can ensure that its PSAPs are equipped to meet the demands of modern public safety communication.

4.5 Call Answer Time ≤ 15 seconds

Call answer time measures a PSAP's ability to manage incoming calls promptly, directly influencing emergency response outcomes. This KPA was analyzed using a direct scale. South Dakota has adopted the NENA Standard for 911 Call Processing (NENA-STA-020.1-2020), establishing that **90% of all 911 calls should be answered within 15 seconds**. This study builds on the state's robust compliance with this standard by using a weighted analysis to evaluate PSAP performance further and identify operational patterns relevant to potential consolidation. It is important to note that **all PSAPs in South Dakota meet or exceed NENA's 15-second standard**, demonstrating a strong baseline of service delivery across the state.

PSAPs **equal to or greater than the 75th percentile** for consolidation exhibited compliance rates ranging from **93.92% to 96.71%**. These centers include rural and densely populated jurisdictions, demonstrating that lower compliance percentages are not exclusive to any geographic or operational context. The data reveals that challenges in this range may stem from high call volumes and/or staffing vacancies in urban centers, necessitating additional telecommunicator capacity to maintain service levels. Rural PSAPs, on the other hand, may face staffing shortages or infrastructure constraints that marginally impact compliance.

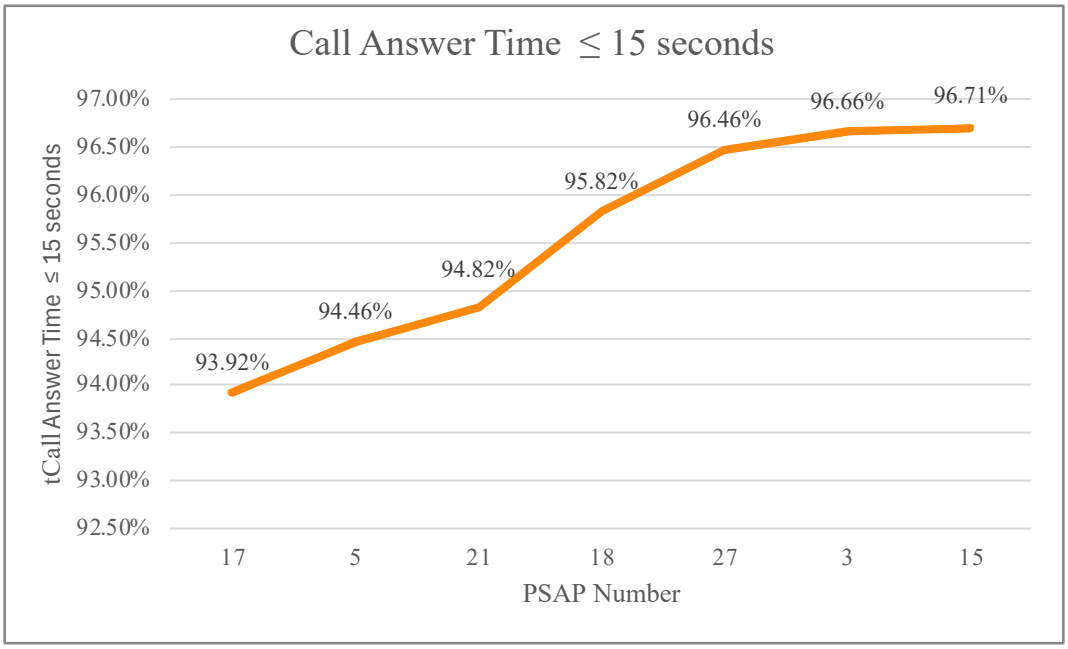

Figure 6 Call Answer Times ≤ 15 Seconds in the 75th Percentile

PSAPs in **the middle percentile range** achieved compliance rates **between 97.25% and 99.25%**, indicating moderate alignment with call-answering benchmarks. These centers generally serve jurisdictions with mixed urban and rural characteristics, balancing mid-level call volumes with varied resource availability. While their performance is within compliance targets, they may experience delays during peak demand or staff shortages. Regional collaboration or targeted investments in technology and staffing could help improve their response times without requiring consolidation.

PSAPs in the **less than or equal to the 25th percentile** demonstrated compliance rates **ranging from 99.31% to 99.90%**, reflecting exceptional efficiency in promptly answering calls. Their strong performance suggests they are less likely candidates for consolidation. They could support a regionalized system, providing overflow call-handling capacity for PSAPs during emergencies or surges in demand.

Qualitative data underscore the role of transient populations in influencing call-answering efficiency across all percentile ranges. PSAPs in urban centers often manage increased call volumes during peak travel seasons, while rural centers serving tourism destinations

or colleges face similar seasonal surges. Addressing these dynamics may involve targeted resource allocation, such as temporary staffing adjustments or cross-jurisdictional collaborations.

Future efforts to enhance compliance should focus on optimizing staffing models, expanding training programs, and adopting call-handling Artificial Intelligence (AI) that assists the calltaker in selecting the correct protocol or procedure path. These strategies will ensure continued adherence to NENA standards while positioning South Dakota's PSAPs for sustainable operational success.

4.6 Call Answer Time ≤ 20 seconds

The 20-second benchmark serves as an additional measure of compliance, using the NENA standard, which requires 95% of all 911 calls to be answered within 20 seconds. This KPI was analyzed using a direct scale, with higher compliance percentages indicating better performance. As with the 15-second benchmark, all PSAPs in South Dakota meet or exceed the 20-second NENA standard, reflecting a high baseline of service delivery across the state.

PSAPs in the **75th percentile** exhibited compliance rates between **95.61% and 98.39% compliance rates**. These centers display consistent service quality, though slightly lower performance compared to peers may stem from operational constraints such as staffing or surges in call volume. Similar to the 15-second analysis, these centers represent opportunities for targeted resource optimization rather than broad consolidation.

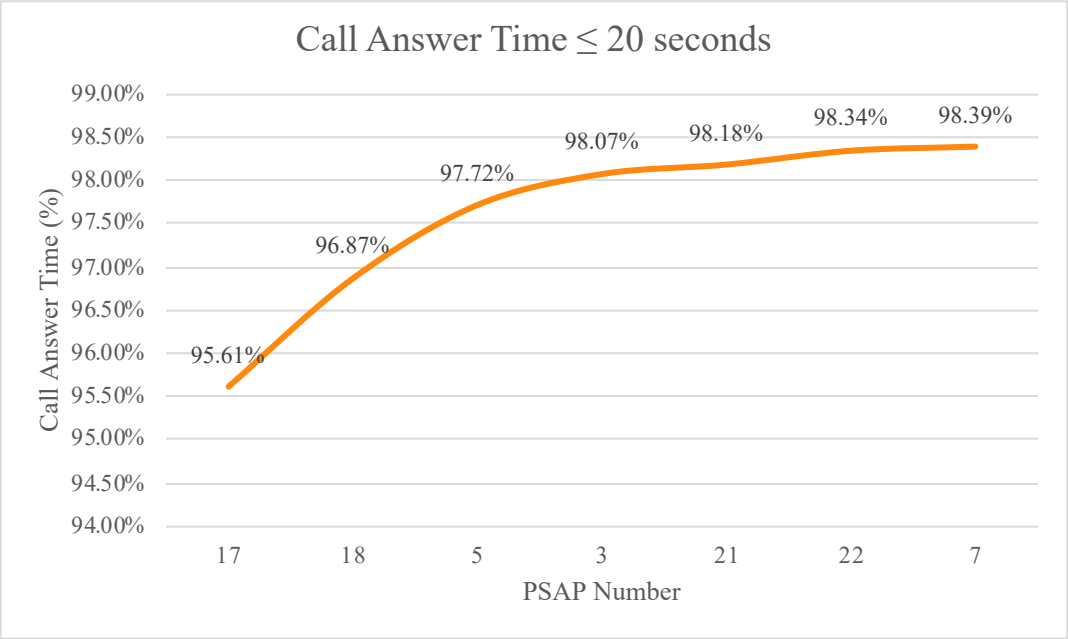

Figure 7 Call Answer Time ≤ 20 Seconds

The **median percentile range** includes compliance rates from **98.49% to 99.67%**. These PSAPs adhere strongly to the NENA standard, indicating effective processes and resource allocation. Centers in this range show little operational variability, reinforcing the overall stability of call-handling performance across the state.

PSAPs in the **25th percentile** achieved compliance rates between **99.70% and 99.97%**, reflecting exceptional efficiency. These centers consistently maintain response times well above NENA's requirements, emphasizing their operational excellence. Their strong performance is aligned with the trends observed in the 15-second compliance analysis, further supporting their role as high-performing centers in South Dakota's 911 system.

As with the 15-second benchmark, compliance with the 20-second standard demonstrates South Dakota PSAPs' overall effectiveness in managing emergency calls. The patterns observed in this section closely mirror those in the previous analysis, with minimal variation between percentile groups. Efforts to maintain or improve compliance should focus on sustaining existing best practices, optimizing call-routing mechanisms, and providing ongoing training for telecommunicators. While the data show little distinction between rural and urban dynamics, the operational resilience of PSAPs across all percentile ranges highlights the importance of continuous investment in both technology and personnel.

4.7 Cost per 911 Call

Cost per 911 call is a key performance indicator (KPI) intended to highlight how efficiently PSAPs utilize their 911 system funding relative to the volume of emergency calls they manage. In broad terms, lower cost-per-call figures may indicate economies of scale or focused spending. In contrast, higher cost-per-call values can arise from high fixed costs, serving multiple low-density jurisdictions, or maintaining more robust staffing than call volume alone might require.

PSAPs **at or above the 75th percentile** have a range for cost per 911 call between $44.52 and $64.14, reporting higher-than-average expenses relative to their emergency call volume. Such figures can stem from unique operating environments where lower call volumes must still be served 24/7, causing fixed costs to escalate on a per-call basis. Sometimes, these centers serve large rural regions with low populations, prompting investment in extra radio infrastructure or expanded coverage footprints. Staffing arrangements with high vacancy rates, overtime reliance, or a substantial part-time workforce can also inflate per-call figures. While cost challenges do not inherently compromise service quality, especially if performance indicators such as call-answer time remain strong, PSAPs in this category often represent prime candidates for additional regional collaboration, whether through consolidation, shared administrative services, or other partnerships.

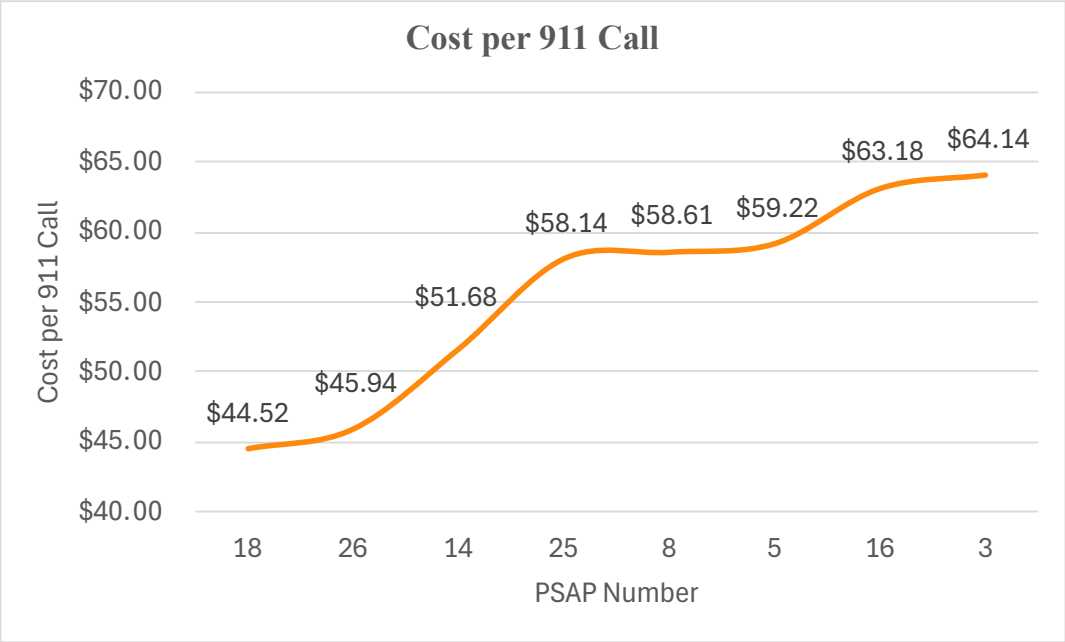

Figure 8 Cost Per 911 Call

The **middle range of PSAPs** has a cost per 911 call **between $27.26 and $44.18**, encompassing organizations around the statewide median for cost per 911 call. They typically balance their budgets in proportion to the size and complexity of their coverage areas. Centers in this category handle moderate call volumes and maintain staffing levels that sufficiently meet operational needs without substantial excess capacity. They may split administrative or non-emergency duties alongside 911 workloads, striving to keep overhead in check through shared services or technology integration. Although these agencies do not exhibit the extreme efficiencies seen among the 25th-percentile group, they generally avoid the high-cost burdens in more resource-intensive settings. In short, the middle range reflects the bulk of South Dakota's PSAPs, which often demonstrate stable cost-efficiency metrics.

PSAPs falling in **the 25th percentile** have a cost per 911 call that **ranges from $18.95 to $26.72.** These centers generally exhibit streamlined operations or benefit from high emergency call volumes that help distribute overhead more effectively. These efficiencies sometimes stem from consolidated operations encompassing multiple jurisdictions, spreading facility and personnel costs across a larger taxpayer base. Other potential factors include well-established recruitment pipelines that keep vacancy rates low,and reduce training and overtime expenses. While low cost per call often indicates strong operational efficiency, it does not automatically translate to high call-answer performance or an absence of staffing challenges. Contextual factors such as regional partnerships or long-standing cost-sharing arrangements can significantly influence a PSAP's position in this range.

Cost per 911 call provides insight into how each PSAP's expenditure levels align with its emergency volume. As a standalone measure, it does not capture the nuances of local geography, staffing models, or unique service requirements. It can prompt deeper analysis into why specific centers maintain relatively high or low-cost structures. For those PSAPs already operating near the lower range, consolidation may be unnecessary unless they face other performance pressures. In contrast, centers near the higher bound might achieve more sustainable per-call costs by partnering with adjacent agencies, especially if they also report lower 911 call percentages or elevated vacancy rates. Keeping this metric in view and tracking how shifts in budgets, call volumes, or staffing affect it allows stakeholders to evaluate whether steps toward consolidation or enhanced resource sharing can further optimize South Dakota's 911 services.

4.8 Total Score Analysis

The total score analysis integrates the weighted Key Performance Indicators (KPIs) to evaluate PSAP performance and their relative consolidation potential. By combining operational, fiscal, and technological metrics, the total scores offer a balanced perspective on how PSAPs align with the state's efficiency, resource utilization, and service delivery objectives.

The scores were normalized on a 1–100 scale to ensure comparability across diverse operational contexts. Using the weighted scoring framework, PSAPs were categorized into percentile ranges, with those in the 75th percentile identified as prime candidates for consolidation consideration. The analysis below outlines the characteristics and implications for each range.

4.8.1 75th Percentile: Scores 49.06 to 70.28

PSAPs in this range demonstrate varying characteristics contributing to their high consolidation potential. These centers scored lower on key operational metrics, such as CAD interoperability and compliance with call-answer benchmarks, reflecting improvement opportunities. However, the data shows that not all PSAPs in this range face the same challenges, indicating that consolidation considerations must be nuanced and data driven.

While two of the PSAPs in this range experience notable vacancy issues, others have vacancy rates at 0%, demonstrating that staffing is not uniformly a driver of consolidation potential for this group. Instead, their scores are influenced by other factors, such as higher costs per 911 call, lower percentages of 911 call volume, and the lack of CAD interoperability. This diversity highlights the need for targeted, individualized approaches when addressing challenges within these centers. For example, PSAPs with 0% vacancy rates but low CAD interoperability scores could prioritize technology upgrades to enhance operational efficiency. In contrast, those with high vacancy rates, but otherwise efficient, might benefit from targeted recruitment and retention grants to stabilize their workforce. Strategic resource sharing, technology standardization, or regional collaboration could help address inefficiencies without undermining the strengths of individual centers. These

tailored interventions would support the broader goals of improving service delivery and resource utilization across the state.

4.8.2 Middle Percentile: Scores 34.59 to 48.92

PSAPs in the middle percentile range present a mix of operational strengths and areas for improvement, with scores influenced primarily by cost per 911 call, vacancy rates, and total 911 call volume. These centers tend to maintain adequate performance on call-answer benchmarks, with only three PSAPs in this range scoring lower on compliance within the 15-second and 20-second columns combined. This suggests that call-answering efficiency is not a significant driver of consolidation potential for this group.

The most notable trends in this range are the higher concentrations of PSAPs with elevated 911 call costs and vacancy rates. Centers with high 911 call costs often struggle to achieve economies of scale, which is commonly observed in PSAPs serving areas with lower call volumes. Vacancy rates also emerge as a prominent challenge, with several PSAPs in this range experiencing moderate to high staffing gaps. These gaps can strain operations and impact service delivery. These factors highlight the need for targeted interventions that address fiscal inefficiencies and workforce stability.

Despite these challenges, PSAPs in the middle percentile moderately align with consolidation criteria. Centers in this group may benefit from state-supported programs, such as Recruitment and Retention grants, to stabilize staffing levels and investments in cost management strategies, such as shared services or technology enhancements. These measures could help mitigate operational inefficiencies, but this group should consider technological consolidation with some potential for full consolidation.

This range also showcases several centers with lower costs and vacancy rates but higher scores on other KPIs, such as CAD interoperability and call-answering compliance. These outliers suggest that PSAPs with stronger operational practices may act as regional hubs, offering opportunities for collaboration or resource sharing with neighboring jurisdictions.

The variability within this range underscores the importance of a tailored approach. By focusing on PSAPs' unique operational and fiscal challenges, South Dakota can implement strategic improvements that enhance performance and resource utilization while maintaining local autonomy.

4.8.3 25th Percentile: Scores 25.29 to 32.93

PSAPs in the 25th percentile range demonstrate the strongest overall operational performance across the evaluated KPIs, with scores reflecting consistent alignment with benchmarks for call-answer compliance, CAD interoperability, and cost efficiency. These centers typically exhibit low vacancy rates, stable resource utilization, and robust technological integration, positioning them as leaders within South Dakota's 911 system.

Despite their high performance, specific observations provide nuanced insights into this group. Vacancy rates are minimal, with only one center experiencing a moderate staffing gap. Most centers in this range also achieve exceptional compliance with 15- and 20-second call-answer standards, reflecting their ability to manage incoming call volumes effectively. Additionally, costs per 911 call are controlled and balanced, further emphasizing these centers' operational stability.

The qualitative and quantitative data suggest that centers in this percentile are well-resourced and capable of maintaining service delivery independently. However, their performance does not preclude opportunities for collaboration or shared service models. These centers could act as regional support hubs, offering overflow call-handling capacity or sharing best practices to enhance operations in neighboring jurisdictions with challenges. For instance, centers in this group could lead efforts in standardized training or provide mutual aid during periods of high call volume or emergency events. While they are not candidates for consolidation, their stability and capacity make them valuable contributors to a resilient statewide emergency response framework. South Dakota's 911 network can maintain consistent service quality across all PSAPs by leveraging their strengths to support broader system goals.

5. Stakeholder Feedback

The stakeholder feedback gathered for this study provides valuable insights into the operational challenges, opportunities, and concerns surrounding South Dakota's 911 system, specifically consolidation. Responses were collected from PSAP administrators, law enforcement leaders, and other public safety stakeholders, offering diverse perspectives.

5.1 Interagency Coordination

Stakeholders consistently emphasized the importance of effective communication and collaboration between PSAPs, particularly for managing cross-jurisdictional incidents. While many centers utilize informal communication methods, such as phone or radio, a few have established more advanced systems, including CAD-to-CAD integration or mutual aid agreements. However, they report challenges in handling incidents spanning multiple jurisdictions, particularly where dispatchers lack local geographic knowledge. **Strengthening interagency coordination through formal agreements and interoperable technologies emerged as a shared priority.**

5.2 Consolidation

The prospect of PSAP consolidation raised concerns about the potential loss of local autonomy and geographic knowledge. Many respondents worry that regionalized dispatch centers may not have the familiarity with local landmarks necessary for effective emergency response. **Additionally, integrating diverse operational processes and technologies is perceived as a significant challenge, with smaller agencies expressing**

fears of being overshadowed or receiving diminished service. Operational complexity and the potential for service gaps are frequently cited as obstacles that must be carefully addressed in consolidation efforts.

5.3 Benefits of Consolidation

While concerns are present, several stakeholders also identified potential benefits of consolidation. **Resource optimization was viewed positively through shared systems, such as unified CAD platforms and standardized training programs.** Some respondents anticipate cost savings by reducing administrative overhead and shared technology investments. Additionally, there is optimism that larger, regionalized centers could reduce response times by centralizing call processing and routing, particularly in areas with higher call volumes.

5.4 Staffing and Training

Staffing challenges emerged as a recurring theme, with stakeholders citing high turnover rates and difficulties recruiting qualified personnel. These issues are not confined to rural areas; urban centers also report significant recruitment and retention challenges. Stakeholders emphasized the importance of providing targeted recruitment and retention incentives, such as state-supported grants, to stabilize staffing levels. Training needs were another priority, particularly if consolidation efforts move forward, as substantial investments in training would be required to ensure interoperability and service consistency across jurisdictions.

5.5 Technological Advancements

The importance of technological interoperability was a common theme, with many respondents recognizing the need for integrated CAD systems to enhance coordination and communication. **Stakeholders also highlighted the potential of emerging technologies, including AI and remote dispatching, to transform PSAP operations.** South Dakota's NG911 infrastructure was frequently mentioned as a critical asset, enabling advanced call routing and redundancy. Stakeholders expressed optimism that leveraging this existing infrastructure could address some operational challenges associated with consolidation.

5.6 Infrastructure and Funding

Facility limitations and funding concerns were identified as significant barriers to consolidation. Some PSAPs indicated a need for new or expanded facilities to accommodate increased demand or regionalized operations. Additionally, stakeholders expressed uncertainty about how consolidation would affect funding structures, with some fearing that local tax burdens could increase. **The financial burden of transitioning to unified systems and upgrading infrastructure was highlighted as a key concern requiring careful planning and state-level support.**

5.7 Future Outlook

Looking ahead, stakeholders identified both challenges and opportunities for South Dakota's PSAPs. **Rural centers expressed concerns about maintaining operations in areas with declining populations and limited funding sources.** At the same time, several PSAPs are planning expansions or technological upgrades to meet future demands. **Larger PSAPs indicated readiness to absorb neighboring jurisdictions, provided they receive adequate resources and support.** These responses underscore the importance of balancing local needs with statewide goals to ensure a sustainable, efficient emergency response system.

6. Recommendations

This section provides actionable recommendations derived from the analysis of South Dakota's PSAP performance, stakeholder feedback, and the three primary types of consolidation: physical consolidation, technological consolidation, and co-location. Additional recommendations focus on state-level programs, funding mechanisms, and operational strategies to enhance the state's 911 system.

Physical Consolidation

1. **Targeted Assistance for Consolidated PSAPs:** Consider providing assistance to challenged consolidated PSAPs that target the specific area(s) of need.
2. **Targeted Consolidation of Low-Performing PSAPs:** Incentivize consolidation of PSAPs in the 75th percentile with persistent challenges such as low call volumes, high costs per 911 call, and staffing shortages. This would create regional hubs capable of pooling resources and reducing operational redundancies.
3. **Build on Successful Consolidations:** For PSAPs that are already multi-jurisdictional, continued support in staff development, flexible staffing models, and integrated training can refine processes and further solidify their role as regional hubs.
4. **Incremental Consolidation Model:** Pilot a consolidation project with a phased approach, starting with a smaller regional consolidation to demonstrate benefits and refine processes before statewide implementation.

Technological Consolidation

5. **Statewide CAD-to-CAD Initiative:** Implement a CAD-to-CAD initiative that first prioritizes PSAPs in the middle range that wouldn't benefit from physical consolidation.
6. **Standardized Technology Platforms:** Implement shared technology solutions, such as integrated CAD systems and mapping solutions, to improve coordination, reduce costs associated with maintaining separate systems, enable standardized training, and allow for more frequent cross-utilization of staff.

7. **Advanced Analytics and AI Integration:** Explore using standardized AI and predictive analytics tools to enhance call routing, improve resource allocation, and support real-time decision-making.
8. **Implement a Statewide Migration Plan to SRC:** A migration plan to bring all PSAPs onto the SRC network through targeted funding, grants, or technical assistance.
9. **Consolidated PSAPs Connection to SRC Core:** Provide funding for consolidated PSAPs to establish direct connections to the SRC core to eliminate interference and expand capacity to serve distant jurisdictions.

Co-Location

10. **Shared Facilities for Resource Optimization:** Encourage PSAPs in the middle range to co-locate in shared facilities while maintaining operational independence, reducing facility costs, and fostering collaboration. This could be interchanged with or in addition to recommendation 5.
11. **Interagency Training and Collaboration:** Use Large PSAPs, consolidated regional PSAPs, or co-located centers to host joint training sessions and foster a culture of collaboration across agencies, improving interoperability and consistency.

Workforce Development

12. **Recruitment and Retention Grants:** Provide state-funded grants to PSAPs facing high vacancy rates but are otherwise efficient in supporting recruitment campaigns, recruitment tools, wellness programs, and other retention initiatives.
13. **Recruitment Pipeline Development:** Partner with high schools and community colleges to create certification programs and career pathways for telecommunicators, addressing long-term staffing shortages.
14. **Professional Development Programs:** Offer statewide training and career advancement opportunities to retain experienced staff and improve telecommunicator performance. For example, PSAP leader, technical specialist, and financial specialist tracks.

Funding and Program Support

15. **Consolidation Funding Program:** Develop a funding grant program that allows smaller jurisdictions to participate in consolidation or technology upgrades without undue financial strain.
16. **Transition Cost Support:** Provide financial assistance to cover costs associated with technology upgrades, facility modifications, and administrative transitions for PSAPs undergoing consolidation or co-location.
17. **Performance-Based Incentives:** Introduce performance-based funding incentives for PSAPs that meet or exceed statewide efficiency and service quality benchmarks.

Operational and Strategic Planning

18. **Formalized Mutual Aid Agreements:** Assist PSAPs in strengthening interagency coordination through formalized agreements that outline roles, responsibilities, and procedures for cross-jurisdictional incidents.
19. **Leverage Existing NG911 Capabilities:** Expand the use of NG911 infrastructure to improve redundancy and enhance routing capabilities during emergencies or high-call-volume periods.
20. **Stakeholder Engagement Initiatives:** Regularly engage local leaders, PSAP administrators, and other stakeholders to align recommendations with community needs and build consensus for implementation.

Innovative Approaches

21. **Regional Telecommunicator Pools:** Establish regional pools of telecommunicators to manage fluctuations in call volume and staff shortages across multiple jurisdictions. This would be ideal when implemented in conjunction with recommendation 6.
22. **Data-Driven Decision-Making:** Use advanced analytics to continuously evaluate PSAP performance, identify opportunities for improvement, and adapt strategies as needed.

Conclusion

This study highlights the importance of leveraging data-driven approaches to optimize the operation of PSAPs in South Dakota. Through comprehensive analysis and stakeholder engagement, the study highlights the potential of consolidation, enhanced technology, and strategic resource allocation to address operational inefficiencies, staffing challenges, and funding constraints.

The recommendations offer a balanced approach, addressing immediate needs and long-term goals. Proposals for physical and technological consolidation, workforce development initiatives, and innovative funding mechanisms reflect the diverse operational realities across PSAPs. These strategies aim to strengthen the statewide 911 system while maintaining local autonomy and ensuring all communities receive high-quality emergency services.

The findings emphasize that successful implementation will require collaboration among the 911 Coordination Board, PSAP administrators, and local stakeholders. The state can create a more resilient, efficient, and responsive 911 system by aligning shared goals with community needs and leveraging South Dakota's robust NG911 infrastructure.

Appendix A: KPI Weighted Scores by PSAP

The table below references Section 2.2.2: Weights and Normalization. It provides the parameters used to calculate weighted scores for each KPI.

KPI	Scale	Weight	Minimum	Maximum	Scale Explanation
Total Calls	Inverted	20%	785	110,424	Lower call volumes indicate reduced economies of scale.
% of 911 Call Volume	Inverted	10%	6.72%	38.96%	Lower percentages suggest inefficiencies in call-handling capacity.
Vacancy Rate	Direct	20%	0%	42.86%	Higher rates suggest staffing challenges and operational strain.
CAD Interoperability	Binary	10%	Yes = 0	No = 10	"No" interoperability indicates higher consolidation need.
Call Ans ≤ 15s	Inverted	15%	93.92%	99.90%	Lower compliance highlights slower response times.
Call Ans ≤ 20s	Inverted	10%	95.61%	99.97%	Lower compliance highlights slower response times.
Cost per 911 Call	Direct	15%	$18.95	$64.14	Higher costs reflect financial inefficiencies.

Figure 9 Key Performance Index Scale

KPI Scores for Total 911 Calls

PSAP	Total 911 Calls
Bon Homme	19.79
Brookings PD	18.59
Brown County Communications	18.25
Butte County Dispatch Center	19.58
Central South Dakota Communications	18.65
Charles Mix County 911	19.42
Clay Area Emergency Services Communication Center	19.46
Custer County Communications Center	19.56
Fall River County Sheriff's Office	19.40
Huron Police Department DPS	18.84
Lake County 911 Communications	19.63
Lawrence County Sheriff's Office	19.02
Lincoln County Communications	18.31
Marshall County 911	20.00
Meade County Telecom	18.55
Metro Communications Agency	0.00
Miner County Dispatch	19.98

KPI Scores for Total 911 Calls (continued)

PSAP	Total 911 Calls
Mitchell Regional 911	17.49
Moody County 911	19.64
North Central Regional E911 Center	18.33
Pennington County 911	6.53
Roberts County Sheriff's Office	19.45
Spearfish Police Department	19.46
Spink County Sheriff's Office	19.89
Union County Sheriff's Office	19.31
Watertown Police Department	17.47
Winner Police Department	18.24
Yankton Police Department	18.75

KPI Scores for 911 Call Volume

PSAP	911 Call Volume
Bon Homme	3.38
Brookings PD	2.27
Brown County Communications	6.59
Butte County Dispatch Center	9.87
Central South Dakota Communications	6.18
Charles Mix County 911	9.12
Clay Area Emergency Services Communication Center	6.72
Custer County Communications Center	8.36
Fall River County Sheriff's Office	8.27
Huron Police Department DPS	2.65
Lake County 911 Communications	7.42
Lawrence County Sheriff's Office	6.31
Lincoln County Communications	5.57
Marshall County 911	4.99
Meade County Telecom	6.76
Metro Communications Agency	0.00
Miner County Dispatch	8.13
Mitchell Regional 911	3.32
Moody County 911	7.54
North Central Regional E911 Center	4.81
Pennington County 911	2.08
Roberts County Sheriff's Office	10.00
Spearfish Police Department	8.17
Spink County Sheriff's Office	8.49
Union County Sheriff's Office	8.44
Watertown Police Department	3.76
Winner Police Department	2.51
Yankton Police Department	8.77

KPI Scores for Vacancy Rate

PSAP	Vacancy Rate
Bon Homme	0.00
Brookings PD	3.89
Brown County Communications	10.37
Butte County Dispatch Center	6.67
Central South Dakota Communications	12.45
Charles Mix County 911	0.00
Clay Area Emergency Services Communication Center	0.00
Custer County Communications Center	0.00
Fall River County Sheriff's Office	20.00
Huron Police Department DPS	0.00
Lake County 911 Communications	6.67
Lawrence County Sheriff's Office	0.00
Lincoln County Communications	0.00
Marshall County 911	0.00
Meade County Telecom	5.83
Metro Communications Agency	11.03
Miner County Dispatch	0.00
Mitchell Regional 911	3.89
Moody County 911	5.83
North Central Regional E911 Center	0.00
Pennington County 911	7.12
Roberts County Sheriff's Office	0.00
Spearfish Police Department	11.67
Spink County Sheriff's Office	0.00
Union County Sheriff's Office	0.00
Watertown Police Department	10.77
Winner Police Department	9.33
Yankton Police Department	0.00

KPI Scores for CAD Interoperability

PSAP	CAD Interoperability
Bon Homme	10.00
Brookings PD	0.00
Brown County Communications	0.00
Butte County Dispatch Center	0.00
Central South Dakota Communications	0.00
Charles Mix County 911	0.00
Clay Area Emergency Services Communication Center	0.00
Custer County Communications Center	0.00
Fall River County Sheriff's Office	0.00
Huron Police Department DPS	0.00
Lake County 911 Communications	0.00
Lawrence County Sheriff's Office	0.00
Lincoln County Communications	0.00
Marshall County 911	0.00
Meade County Telecom	0.00
Metro Communications Agency	0.00
Miner County Dispatch	10.00
Mitchell Regional 911	0.00
Moody County 911	0.00
North Central Regional E911 Center	0.00
Pennington County 911	0.00
Roberts County Sheriff's Office	0.00
Spearfish Police Department	0.00
Spink County Sheriff's Office	10.00
Union County Sheriff's Office	0.00
Watertown Police Department	0.00
Winner Police Department	10.00
Yankton Police Department	0.00

KPI Scores for Call Answer (≤ 15 sec)

PSAP	Call Answer (≤ 15 sec)
Bon Homme	8.00
Brookings PD	1.63
Brown County Communications	0.00
Butte County Dispatch Center	6.65
Central South Dakota Communications	0.18
Charles Mix County 911	3.34
Clay Area Emergency Services Communication Center	0.75
Custer County Communications Center	1.48
Fall River County Sheriff's Office	4.44
Huron Police Department DPS	1.10
Lake County 911 Communications	10.23
Lawrence County Sheriff's Office	2.18
Lincoln County Communications	2.11
Marshall County 911	2.56
Meade County Telecom	3.11
Metro Communications Agency	8.63
Miner County Dispatch	13.65
Mitchell Regional 911	2.93
Moody County 911	15.00
North Central Regional E911 Center	2.31
Pennington County 911	12.74
Roberts County Sheriff's Office	2.61
Spearfish Police Department	2.48
Spink County Sheriff's Office	8.13
Union County Sheriff's Office	4.99
Watertown Police Department	1.68
Winner Police Department	1.33
Yankton Police Department	0.58

KPI Scores for Call Answer (≤ 20 sec)

PSAP	Call Answer (≤ 20 sec)
Bon Homme	2.75
Brookings PD	0.69
Brown County Communications	0.00
Butte County Dispatch Center	3.62
Central South Dakota Communications	0.14
Charles Mix County 911	1.42
Clay Area Emergency Services Communication Center	0.18
Custer County Communications Center	0.55
Fall River County Sheriff's Office	2.36
Huron Police Department DPS	0.62
Lake County 911 Communications	7.11
Lawrence County Sheriff's Office	1.31
Lincoln County Communications	1.26
Marshall County 911	1.42
Meade County Telecom	2.11
Metro Communications Agency	3.39
Miner County Dispatch	5.16
Mitchell Regional 911	1.74
Moody County 911	10.00
North Central Regional E911 Center	1.03
Pennington County 911	4.11
Roberts County Sheriff's Office	1.33
Spearfish Police Department	1.72
Spink County Sheriff's Office	4.36
Union County Sheriff's Office	3.74
Watertown Police Department	0.55
Winner Police Department	0.78
Yankton Police Department	0.41

KPI Scores for Cost per 911 Call

PSAP	Cost/911 Call (KPI Score)
Bon Homme	4.35
Brookings PD	13.01
Brown County Communications	7.68
Butte County Dispatch Center	3.95
Central South Dakota Communications	8.10
Charles Mix County 911	5.37
Clay Area Emergency Services Communication Center	2.58
Custer County Communications Center	2.99
Fall River County Sheriff's Office	0.11
Huron Police Department DPS	8.37
Lake County 911 Communications	8.49
Lawrence County Sheriff's Office	7.97
Lincoln County Communications	8.96
Marshall County 911	13.16
Meade County Telecom	2.76
Metro Communications Agency	2.24
Miner County Dispatch	13.37
Mitchell Regional 911	10.86
Moody County 911	1.18
North Central Regional E911 Center	3.38
Pennington County 911	0.00
Roberts County Sheriff's Office	1.20
Spearfish Police Department	5.56
Spink County Sheriff's Office	15.00
Union County Sheriff's Office	4.53
Watertown Police Department	14.68
Winner Police Department	1.25
Yankton Police Department	3.71

KPI Scores for Total Score (1-100)

PSAP	Total Score (1-100)
Bon Homme	48.27
Brookings PD	40.08
Brown County Communications	42.89
Butte County Dispatch Center	50.34
Central South Dakota Communications	45.69
Charles Mix County 911	38.66
Clay Area Emergency Services Communication Center	29.70
Custer County Communications Center	32.93
Fall River County Sheriff's Office	54.58
Huron Police Department DPS	31.58
Lake County 911 Communications	59.56
Lawrence County Sheriff's Office	36.78
Lincoln County Communications	36.21
Marshall County 911	42.13
Meade County Telecom	39.12
Metro Communications Agency	25.29
Miner County Dispatch	70.28
Mitchell Regional 911	40.24
Moody County 911	59.20
North Central Regional E911 Center	29.85
Pennington County 911	32.58
Roberts County Sheriff's Office	34.59
Spearfish Police Department	49.06
Spink County Sheriff's Office	65.87
Union County Sheriff's Office	41.02
Watertown Police Department	48.92
Winner Police Department	43.45
Yankton Police Department	32.22

Appendix B: Definitions & Acronyms

CAD (Computer-Aided Dispatch) - A software system that assists telecommunicators in managing emergency response resources and dispatching first responders to incidents.

Co-Location - A form of consolidation where multiple PSAPs operate from the same physical facility but maintain independent operational control.

Consolidation - The process of combining operations, technology, or facilities of multiple PSAPs to improve efficiency, reduce costs, and enhance service delivery. It can be physical consolidation, technological consolidation, or co-location.

Interoperability - The ability of PSAPs and public safety agencies to communicate and share information seamlessly across different systems, platforms, or jurisdictions.

KPI (Key Performance Indicator) - A measurable value used to evaluate the performance of a PSAP, such as call-answer times, vacancy rates, or cost per 911 call.

MECH (Managed Emergency Call Handling) - South Dakota's NG911 system that provides redundancy, policy-based call routing, and enhanced capabilities for 911 call handling.

NENA (National Emergency Number Association) - A professional organization that establishes standards and best practices for 911 systems, including call-answer time requirements.

NG911 (Next Generation 911) - A modernized 911 system that uses digital, IP-based infrastructure to enable advanced call routing, multimedia communication, and enhanced redundancy.

P25 (Project 25) - A set of standards for digital radio communications used by public safety organizations to ensure interoperability between agencies and systems.

PSAP (Public Safety Answering Point) - A call center responsible for answering 911 calls and dispatching emergency responders.

SRC (South Dakota Law Enforcement Telecommunications System) - The statewide radio system used for public safety communications, providing a unified platform for first responders.

Vacancy Rate - The percentage of unfilled positions within a PSAP, often used as an indicator of staffing challenges.

Appendix C: PSAP Survey Questions

1. General Information

What is the name and location of your PSAP?

What is the population served by your PSAP?

How many calls for service does your PSAP handle annually (911 calls, non-emergency calls, administrative calls)?

What is your PSAP's current budgeted staffing level (full-time and part-time)?

What is your PSAP's current actual staffing level (full-time and part-time)?

What is the organizational structure of your PSAP?

2. Operational Data

Does your PSAP operate 24/7, if not what are your hours of operation?

How many dispatch consoles does your PSAP have, and how many are typically staffed at peak times?

What is your average call processing time (from call receipt to dispatch)?

How do you handle overflow calls during high-volume periods?

How do you manage and prioritize different types of calls (emergency vs. non-emergency)?

3. Technology and Systems

What Computer-Aided Dispatch (CAD) system does your PSAP use?

What radio system is in place at your PSAP?

How often are your systems upgraded (i.e., CAD, radio, CHE), and what is the process for doing so?

Are your systems interoperable with other nearby PSAPs (i.e., CAD, radio)?

4. Facilities and Infrastructure

What is the square footage of your current facility? Do you have room for expansion and/or additional staff?

Do you have backup power and redundant communication lines in case of an outage?

Are there any plans to upgrade or expand your facility in the near future?

5. Staffing and Training

How are staff shifts scheduled, and what is your staffing model (i.e., fixed shifts, rotating shifts)?

What is the current turnover rate among your PSAP staff?

What training programs do you use for new telecommunicators?

What continuing education programs do you have for ongoing training of your telecommunicators?

Do you have any specialized roles within your PSAP (i.e., language interpreters, tactical dispatchers)?

Are your telecommunicators cross-trained? (i.e., calltaker, fire dispatcher, police dispatcher, EMS dispatcher)

6. Budget and Funding

What is your PSAP's annual budget, and how is it funded (i.e., local government, state grants, user fees)?

What percentage of your budget is allocated to

a. Staffing
b. technology
c. training
d. facilities

Are there any financial challenges your PSAP is currently facing?

Have you received any recent funding for upgrades or improvements?

Do you receive funding from other jurisdictions that you take calls or dispatch for?

7. Service and Performance

What are your current performance metrics (i.e., response times, call answer times)?

How do you measure and report on service quality?

Have there been any significant changes in service demand in recent years?

What challenges do you face in meeting service level agreements (SLAs) or performance standards? (including call answer times, dispatch times, etc.)

8. Interagency Coordination

How do you coordinate with other PSAPs and emergency service agencies in your area?

What mutual aid agreements or partnerships are in place?

How do you handle cross-jurisdictional incidents?

Are there any challenges or gaps in interagency communication?

9. Experience with Consolidation

What are your concerns or potential barriers regarding PSAP consolidation?

What benefits do you see in consolidation (i.e., cost savings, improved service)?

What would your PSAP need to successfully participate in a consolidation?

10. Future Outlook

Do you have future projects or priorities planned for your PSAP? (i.e., new CAD, relocation, expansion, increased staffing levels, etc.)

What emerging technologies or trends do you think will impact your PSAP in the coming years?

How do you see your PSAP evolving in the next 5 to 10 years?

How could consolidation benefit your PSAP and the communities you serve?