

Overview of Final Report - Working Group 1A

Public Safety Consolidation Effective Practices and Recommendations

CSRIC WORKING GROUP 1A - OVERVIEW OF FINAL REPORT

Charter Directive

Public safety radio systems and communications/dispatch centers were historically designed to meet unique local requirements, often led to incompatibility, inefficient use of scarce resources, and higher costs for specialized equipment and procedures with little opportunity to benefit from economies of scale. Clear trend over the last 20 years towards public safety system consolidation, the consolidation process poses numerous challenges, however, from operational, governance, funding and technical perspectives. This Working Group defined challenges and developed recommendations and effective practices for CSRIC's consideration.

Methodology

Working group participants identified agencies representing the various categories of consolidation and developed a set of interview questions. These projects were representative of the spectrum of consolidation types, ranging from 9-1-1 network or infrastructure only, to full consolidation of 9-1-1 and dispatch, communications systems and related technology.

Approach

After collecting data on each of the consolidation projects, each survey result was analyzed according to the consolidation drivers - political, economic, or service related. Working group members conducted parallel reviews of technology and operational issues related to consolidation efforts broadly. Also working group completed a review of recent reports, standards, previous recommendations and best practices developed by public safety practitioners, industry, and past advisory committees.

Drivers

Public safety agencies choosing consolidation stated that their decisions were often driven by: service quality levels, operational concerns, technology obsolescence, and funding. The challenges practitioners reported included: transferring 9-1-1 calls among multiple communications centers, difficulty in coordinating multi-agency/multi-jurisdictional responses among different dispatch centers, concerns about sustainable funding, tracking emerging technologies (LMR, NG9-1-1, CAD, etc.), critical systems and/or facilities in need of refreshing/ replacement at multiple sites, performance and service levels below expectations.

Finding #1 - Successful consolidations require that a trusted and secure governance structure be established, a champion must lead the project and the political leadership must be in place to support the effort.

In some cases there will be tremendous resistance to consolidate operations from key stakeholders and lobbying groups within individual jurisdictions as it might mean fewer jobs and less control for participants. The political leaders must objectively determine if consolidation can better serve their citizens and this should be the overriding factor in their decision making process.

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Finding #2 - Securing “agency buy-in” was the next biggest challenge.

A primary issue for the partner agencies is to overcome the fear from loss of control and shared responsibility. Agencies need to be convinced that loss of control is more than offset by the benefits of joining a consolidated system, such as access to technology they could not afford on their own, standardized procedures, and interoperability.

Finding #3 - Legislation may be necessary to create a sustainable funding mechanism or codify relationships between the parties.

Although the technology and training requirements have changed drastically over the past 20 years, most of the funding legislation has not kept pace. Funding legislation has been altered in many states, these changes in the law have rarely taken into account the additional burdens being placed on 9-1-1 centers throughout the United States.

Finding #4 - Formalize the arrangement through some sort of legal agreement and to establish strong and clear membership structures.

The agreement can take many forms; the most important being that the agreement be clear, well defined, and should define major responsibilities, expectations and dispute resolutions procedures.

Finding #5 - Personnel issues are difficult and troubling in any consolidation and require a great deal of thought at the policy level early on.

The responsibility for fostering of an organizational cultural that enhances the ability of the participating entities to succeed falls on the shoulders of the governance model chosen and adopted by the partner agencies.

Finding #6 - Well defined communication channels among stakeholders and the governing body is critical to successful consolidation.

Consolidation efforts are often met with seemingly unforeseen challenges, open communications and frequent discussions to identify and address issues of concern will help to alleviate the perceived threats and problems.

Finding #7 - Consolidation can produce long term cost efficiencies by reducing operations and technology duplication.

Not all consolidations result in cost savings, the realization of savings may not occur for several years due to capital and other start-up costs.

Finding #8 - Consolidation results in better trained and more focused work force, increasing the level of public safety.

Consolidation has a positive impact on staff training and professionalism, which improves service level overall.

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Finding #9 - The technical infrastructure has become increasingly complex over the last decade, translating into both higher maintenance costs as well as increased training requirements.

Next generation features, such as NG9-1-1, video, converged voice, messaging, data, and video will introduce multimedia to current workflows.

Finding #10 - Interoperating across technologies is critical.

Using a common technology platform approach in developing public safety applications and building on a standards-based technology enables common user experiences across the operator positions with meaningful interactions across the applications.

Finding #11 - Shared, standards based systems lead to technical, operational, and financial advantages.

Shared radio systems support multiple Federal, State, local, and tribal agencies, and consolidate the communications of multiple agencies, leading to technical, operational, and financial advantages gained by combining multiple agencies onto a common shared radio system.

Finding #12 - The traditional revenue streams to fund capabilities are not keeping pace with the costs to refresh and maintain technology.

As technology has evolved consumers have migrated from traditional wireline services to new communications services. Typically, PSAPs are self-funded and provide 9-1-1 services to their citizens without having to turn to local, state or federal governments for the appropriation of funds.

Finding #13 - Successful implementation of technology is supported by a secure governance structure is highly dependent on effective operational procedures and consistent training of practitioners.

Consolidation is a complex, multi-dimensional issue that involves a technological, strategic, tactical, and cultural change.

Finding #14 - SOPs must be developed reviewed and vetted by operations personnel prior to consolidation to ensure they are consistent.

Communication center and customer standard operating procedures (SOPs) may conflict and cause confusion for command and field personnel.

Finding #15 - Uniform training is required to ensure agencies coordinate training personnel, standards, policies, procedures and systems.

A heavy burden is placed on the center operation if the operators are not trained in all disciplines.

Finding #16 - Training among the consolidated agencies should be supplemented with exercises that provide reinforcement and practical firsthand experience in handling disasters and other situations that are not routine.

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New personnel do not have the luxury of learning from their mistakes, so all personnel must receive sufficient supervised training to insure that learning has occurred and that they have been responsibly prepared to perform their assignments.

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Summary of Findings and Effective Practices

Finding #1 - Successful consolidations require that a trusted and secure governance structure be established, a champion must lead the project and the political leadership must be in place to support the effort.
Effective Practice 1.1 - Consolidation efforts cannot begin until the political ‘will’ exists to see the process through to completion.
Effective Practice 1.2 - Successful consolidations usually have one trait in common, a well-respected champion to spearhead the process from beginning to end.
Finding #2 - Securing “agency buy-in” was the next biggest challenge.
Effective Practice 2.1 - All participants, regardless of size, have a sense of equal status in both governance and service delivery.
Effective Practice 2.2 - Communicate honestly, meet to resolve issues often, anticipate turf battles and unforeseen problems, allow for contingencies, and treat all stakeholders equally.
Finding #3 - Legislation may be necessary to create a sustainable funding mechanism or codify relationships between the parties.
Effective Practice 3.1 - More often than not, legislation was required to establish a sustainable funding mechanism and in some cases define structure.
Effective Practice 3.2 - In each case, an education campaign for all stakeholders and the public was necessary to gain approval of the legislation.
Finding #4 - Formalize the arrangement through some sort of legal agreement and to establish strong and clear membership structures.
Effective Practice 4.1 – Agreements must be clear, well defined, and should define major responsibilities, expectations and dispute resolution procedures.
Effective Practice 4.2 - Whatever governance structure is agreed upon, it is essential that an individual is appointed or hired who is responsible for executing according to the policies and direction given by the Board.
Effective Practice 4.3 - A consolidation that provides the supporting functions to its members has many benefits and can easily be expanded to a complete consolidation as needed.
Effective Practice 4.4 - Emergency communication regions should be aligned with other governance regions, e.g. EMS, Fire, Public Health, for maximum efficiencies in governance.
Finding #5 - Personnel issues are most difficult and troubling in any consolidation and require a great deal of thought at the policy level early on.
Effective Practice 5.1 – Employees at all levels affected by the consolidation should be advised well in advance how the consolidation will impact their income and benefits.
Effective Practice 5.2 – Personnel policy and structure should be created at the beginning and codified in official agreements.
Effective Practice 5.3 – Personnel cannot be effectively managed by a committee so one entity needs to step up and assume this role for the

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consolidation.
Finding #6 - Well defined communication channels among stakeholders and the governing body is critical to successful consolidation.
Effective Practice 6.1 – Stakeholder communication can be facilitated through board members who represent stakeholder groups.
Effective Practice 6.2 –Mandated meetings for stakeholder groups or user group meetings are necessary to keep staff informed.
Effective Practice 6.3 –Communications tools are used to update stakeholders including policy-level officials.
Effective Practice 6.4 – Open communications and frequent discussions to identify and address issues of concern.
Finding #7 - Consolidation can produce long term cost efficiencies by reducing operations and technology duplication.
Effective Practice 7.1 – Having an emphasis on improving service with cost saving as a result was a much more realistic goal than placing the emphasis on cost savings and hoping for service improvements as a result.
Effective Practice 7.2 – The benefit of technology consolidation is the shared infrastructure that improves quality of service and interoperability enabling collaboration between different agencies during an incident.
Effective Practice 7.3 –Stakeholders define what is equitable for their particular type of consolidation and that the established funding mechanism or cost allocation structure be sustainable.
Effective Practice 7.4 – Incentivizing consolidation will bring more benefit and eliminate more challenges than mandating a consolidation. Rather than just providing incentive for countywide consolidation, there should be incentives for multicounty/ state consolidations.
Effective Practice 7.5 – Capital costs should be planned and budgeted for by the stakeholders and based on an equitable formula that is codified in the organizations governing agreements
Finding #8 - Consolidation results in better trained and more focused personnel, increasing the level of public safety.
Effective Practice 8.1 – Set standards for trained and certified personnel employed by local agencies.
Effective Practice 8.2 – Career path planning for staff aids in employee retention.
Finding #9 - The technical infrastructure has become increasingly complex over the last decade, translating into both higher maintenance costs as well as increased training requirements.
Effective Practice 9.1 – Technology must reduce the complexity in how solutions integrate and interface to the public safety operator.
Effective Practice 9.2 – Integrated command and control through a standardized / common technology platform can reduce the cost of ownership, maintenance, training, and operational efficiencies.
Effective Practice 9.3– It is not practical to attempt the migration to NG9-1-1 systems on less than a major metropolitan area, regional (multi-County), state, , or even multi-state basis, as applicable, due to economic and overall system and operational management considerations.

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Recommendations

1. The Federal Communications Commission (FCC) should consider promoting the development of new funding strategies to assist public safety agencies in their consolidation efforts. Absent new and sustainable funding solutions, local government leaders will be truly challenged to discard legacy systems and their investments via local tax dollars, in favor of new and more capable technology. Some funding approaches for consideration:
 - a) The FCC should work in collaboration with the relevant federal agencies, specifically the Department of Homeland Security and Department of Transportation, to determine if public safety infrastructure projects can be eligible under any new or existing public infrastructure funding programs being considered, such as Critical Infrastructure / Key Resources (CI/KR), National Infrastructure Bank, and other infrastructure investment programs as applicable.
 - b) The FCC should issue a public notice to receive comments on the funding status of Public Safety Answering Points (PSAPs) to fully understand the extent that 9-1-1 funds are used for purposes other than 9-1-1 as noted in National Broadband Plan (NBP) recommendation 16.14 and to understand the impact of IP-based NG9-1-1 services will place on PSAPs as noted in NBP recommendation 16.15.
 - c) As a complementary component to existing grant programs, the FCC should also consider creating or recommending a revolving loan fund for public safety system consolidation efforts.
 - d) The FCC should work with federal agencies and explore developing grant guidance that creates incentives for consolidation efforts.
2. The FCC should consider the development of concepts of operation and requirements, technical and operational standards (human factors, training) to provide a roadmap for public safety agencies as they migrate to next generation solutions. New technology will enable consolidation, in the future, it will be necessary to aggregate voice, data, and video information to optimize real-time decision making. Potentially this can be considered under recommendation 16.14 of the National Broadband Plan.
3. The FCC should consider the establishment of a repository of effective practices with respect to Policies, Practices, Procedures, Technology, Training and Exercises to guide consolidation efforts from lessons learned. A longer term plan is required for gathering data on consolidated public safety operations in order to obtain a sufficient/larger sampling to draw more substantiated conclusions on consolidation and the accompanying best practices.

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4. The FCC should collaborate with the Department of Homeland Security as it updates the National Emergency Communications Plan (NECP). The FCC and its supporting advisory committees can be used as a source for feedback to include new types of technology, to review gaps in the current plan, and to create an updated integrated emergency communications planning strategy.
5. The FCC should issue guidance to agencies contemplating consolidation to undertake a comprehensive study. The consolidation process poses numerous challenges from operational, governance, funding and technical perspectives, the study should include:
 - a) Benchmarks current services by examining a wide variety of issues. These issues include mission critical communications capability, staffing, call processing and dispatching, budget, technology, political environment, and facilities.
 - b) Determines if consolidation makes sense from a service level, political, technological, and financial perspective.
 - c) Makes recommendations for consolidation models, governance, funding, staffing, technology and facilities.
6. The FCC should consider the reevaluation of CSRIC Working Group #1A findings, effective practices and recommendations as other working groups complete their areas of study.
7. The FCC should consider establishing a future work group to consider the findings of CSRIC Working Group #1A in addressing longer term transition to networks that are owned or operated, at least in part, by non-public safety entities. This would advance the findings of the current work group that focused on the transition to consolidated systems that continue to be operated and controlled by public safety entities.

Summary

The CSRIC group #1A recognized early on that the very large national aspects of the consolidation process and the diversity of implementation strategies made the compilation of best practices very challenging. In fact, the level of resources to further advance the maturity of the consolidation best practices analysis is significant and exceeded the capacity of this study. However, the working group captured important findings and relevant effective practices that led to several specific recommendations. Upon completion of presentation we ask that the CSRIC vote to approve the report findings and recommendations



WORKING GROUP 1A

Key Findings and Effective Practices for Public Safety Consolidation

Final Report

October 2010

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- Hamilton County, Ohio
- Intrado
- L.R. Kimball
- Metropolitan Emergency Services Board
- Motorola
- National Emergency Number Association (NENA)
- Pacific County, Washington
- State of Michigan
- State of Minnesota
- State of Vermont
- State of Washington
- City of Walla Walla, Washington

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1 Results in Brief

1.1 Executive Summary

Public safety radio systems and communications dispatch centers were historically built and operated by single agencies for their own users. Systems were designed to meet unique local requirements, but often led to incompatibility, inefficient use of scarce resources, and higher costs for specialized equipment and procedures with little opportunity to benefit from economies of scale. There has been a clear trend over the last two decades towards public safety system consolidation, with radio networks developed to cover counties, regions, and even states. Similarly, jurisdictions have merged their communications dispatch centers across agencies and political boundaries.

In the vast majority of cases, there are clear benefits to consolidation. The sharing of resources allows for the elimination of duplicate costs, supports coordinated responses, provides greater interoperability, and ultimately leads to more effective and efficient service. Driving forces from political, economic and service quality factors are increasingly demanding public safety officials consider consolidation with neighboring communities of interest. The consolidation process often poses numerous challenges from operational, governance, funding and technical perspectives.

Consolidation is a complex, multi-dimensional issue and an effective governance structure allows the entities to successfully navigate the technological, strategic, tactical, and cultural change brought about by consolidation. Establishing a common governing structure will improve the policies, processes, and procedures of any major project by enhancing communication, coordination, and cooperation. Since consolidation efforts are often met with many unforeseen challenges, it is important that the political ‘will’ exist and that one or more effective champion(s) leads the project. Securing “agency buy-in” is a significant challenge but a necessary component for a successful consolidation. Agencies need to be convinced that loss of control is offset by the benefits realized in joining a consolidated system. Personnel issues can be some of the most problematic in any consolidation and require a great deal of thought at the policy level early on in the project. Well defined communication channels among stakeholders are critical to success. Open communications and frequent discussions to identify and address issues of concern will help to alleviate any perceived threats and problems.

During consolidations, the successful implementation of technology is highly dependent on effective operational procedures and consistent training of practitioners, but first and foremost is the establishment of a trusted and secure governance structure. Gaining access to technology individual agencies could not afford on their own and better trained personnel are significant benefits. The technical infrastructure supporting public safety communications and dispatch operations has become increasingly complex over the last decade, translating into both higher maintenance costs as well as increased training requirements. At the same time, the traditional revenue streams to fund capabilities are not keeping pace with the costs to refresh and maintain

technology. Absent new and consistent funding solutions, local government leaders will be truly challenged in acquiring new and more advanced technology to keep pace with citizen demand and expectations. Recent trends towards regional, multi-jurisdictional and multi-disciplinary solutions with standards based shared systems have demonstrated that they can lead to technical, operational, and financial advantages for the participants. The creation of new legislation or changes to existing legislation may be necessary to codify relationships between the parties or to create a sustainable funding mechanism.

Successful consolidation efforts allow the entities to establish policies and procedure and set priorities that are fair and equitable for all stakeholders. The consolidations process further allows for a broad analysis of issues and opportunities to ensure that performance meets expectations resulting in measurable improvements for all the stakeholders participating in the effort.

1.2 Charter Directive

While public safety radio systems and communications dispatch centers were historically built and operated by single agencies, there has been a clear trend towards public safety system consolidation, the result has been more efficient and effective operations. The consolidation process is fraught with numerous challenges, from operational, governance, funding and technical perspectives. A key issue is how to assist agencies in the transition from system operator to system user. The initial focus of the work group will be on a transition to consolidated systems that continue to be operated and controlled by public safety entities, but on a larger scale. This Working Group will attempt to define these challenges and propose recommended effective practices for overcoming them for CSRIC's consideration. A future work group may consider the findings of this group in addressing longer term transitions to networks that are owned or operated, at least in part, by non-public safety entities.

1.3 CSRIC Structure

The Federal Communications Commission (FCC) created the Communications Security, Reliability and Interoperability Council (CSRIC) to provide recommendations to the FCC to ensure optimal security, reliability and interoperability of communications systems, including telecommunications, media and public safety communications. The scope of the Council's recommendations includes facilitating the operability and interoperability of wireline, wireless, satellite, cable and public data networks as well as the operability and interoperability of public safety communications systems. The Council's recommendations will also facilitate the security, robustness and reliability of broadcast and Multichannel Video Programming Distribution facilities. The Council's recommendations will also address: (1) ensuring the security, sustainability and resiliency of telecommunications and media infrastructure and public safety communications, throughout the United States; (2) ensuring the availability of communications capacity during natural disasters, terrorist attacks or other events that result in exceptional strain on the communications infrastructure; and (3) ensuring and facilitating the rapid restoration of communications services in the event of widespread or major disruptions.

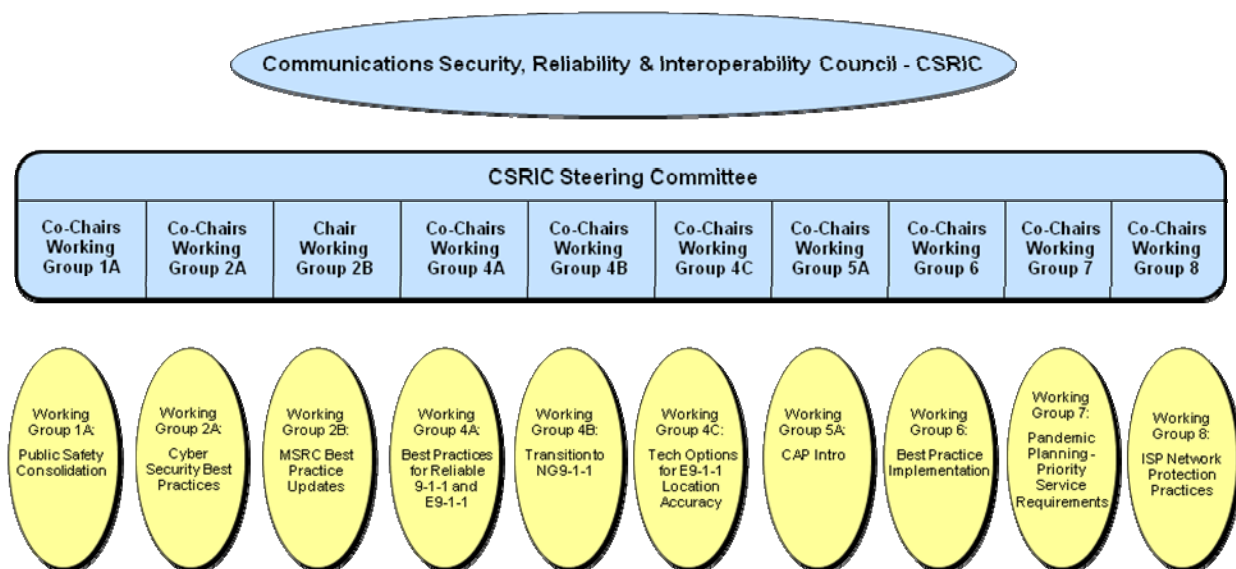


Figure 1 – CSRIC Structure

1.4 Working Group 1A Team Members

The working group consisted of members knowledgeable in Public Safety Answering Points (PSAPs), the 9-1-1 and public safety communication systems. Working Group 1A consists of the members listed below.

Table 1 - List of Working Group Members

Name		Organization
Martha Carter	Chair	Caddo Parish 9-1-1 District, Shreveport, Louisiana
Mike Alagna	Co-Chair	Motorola
Robert "Gil" Bailey Jr.		Harrison County, MS ECC
James Dennis Baucom	Technology Lead	National Assoc. of Telecom Officers and Advisors
Kevin Bostrom	Operations Lead	NORCOM 9-1-1 Bellevue, WA
Charles Brennan		PA Public Safety Radio Services
Don Brittingham		Verizon
John J. Brown Jr.		International Association of Fire Chiefs
Bill Brownlow		NPSTC
John Ellison		NENA
Steve Figved		Will County, IL 9-1-1 Emergency Telecom System
Bob Finney III		Collier County, FL Sheriff's Office
Barry T Furey		Raleigh-Wake 9-1-1 Center
Arun Handa		Telcordia Technologies
William Hinkle		Intrado
Jeff Hubbard	Technology Lead	Qwest
Rick Jones		NENA
Veronica Lancaster		ATIS Manager of Standards Development
Tanya Lin		Sprint Nextel

Jim Lipinski	Governance Lead	State of Vermont/E9-1-1 Board
John Merklinger		City of Rochester/County of Monroe Emergency Dept
Terry Miller		Washington State DOT
Susan Moore		USDA
Glen Nash		CA 9-1-1 Emergency Communications Office
Nancy Pollock	Governance Lead	APCO
Janice Quintana		DC OUC
Stephen Rauter		Western Will County, IL Communications
Scot Smith		Sprint Nextel
Mike VanDermyden		OCIO-AI
Trinh Vu		ATIS
Thomas Wahl	Operations Lead	Liberty County, GA Public Safety Communications
Stephen Washburn		HHS
Steve Wisely		APCO

2 Objective, Scope, Methodology and Approach

2.1 Objective

Consolidation means many things to many people, so what is consolidation? Consolidation efforts typically result in one organization, in one facility, utilizing common systems and serving multiple response agencies and/or jurisdictions.¹ The objective of Working Group 1A was to identify challenges to public safety consolidation efforts and develop recommended best practices for overcoming them.

2.2 Scope

Broadly defined, the public safety community performs emergency first-response missions to protect life, health, property, natural resources and to serve the public welfare. Emergency responders—police officers, fire personnel, emergency medical technicians, transportation and utility workers and others need to share vital voice and data information across disciplines and jurisdictions to successfully respond to day-to-day incidents and large-scale emergencies. Public safety operations require effective command, control, coordination, communication, and sharing of information via dispatch centers or Public Safety Answering Point (PSAP) responsible for answering emergency calls for police, firefighting, and ambulance services.

¹ Consolidation is possible even if the agencies exist in multiple facilities, for example, agencies can use the same technology and share the costs across agencies even though they may be physically separate.

2.3 Methodology

Working group participants identified agencies representing the various categories of consolidation and then developed a set of interview questions (Interview Questionnaire - Appendix 1) to compare and contrast efforts. These projects were representative of the spectrum of consolidation types, ranging from 9-1-1 network or infrastructure only, to full consolidation of 9-1-1 and dispatch, communications systems and related technology. The goal was to have as many different examples of consolidation types as reasonably possible given the timeframe allotted for the study.

2.4 Organization

To develop the contents of this report, Working Group 1A divided the problem of public safety consolidation into three separate areas of study—Technology, Governance and Operational concerns (Figure 2 – Work Breakdown Structure). Leadership was solicited for each topic and working group members affiliated with the subgroup that matched their area of expertise or interest.

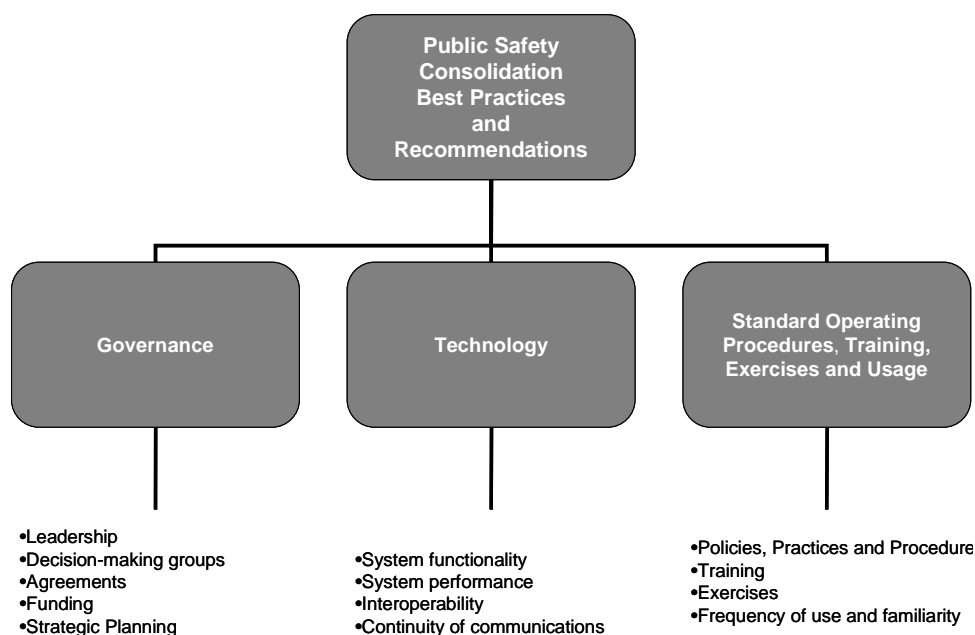


Figure 2 - Work Breakdown Structure

2.5 Approach

The interview questionnaire was distributed to a key representative of each of the selected consolidation projects. A working group member worked with those responsible for the consolidation to answer the template questions. After collecting data on each of the consolidation projects, the subgroup went through the documentation and extracted the important points. Each data point was categorized by the identified key drivers—political, economic, or service related. The resulting Interview Questionnaire Summary Data is included in Appendix 2. In addition, working group members conducted a review of recent reports, standards, previous recommendations and best practices developed by public safety practitioners, industry, and past advisory committees.²

3 Background

Public safety operations require effective command, control, coordination, communication, and sharing of information between the numerous criminal justice and public safety agencies and the public. Thousands of incidents requiring mutual aid and coordinated response occur every day. High-profile incidents test the ability of public safety service organizations to collaborate on many levels in order to mount well-coordinated responses.

“In times of emergencies, the public looks to government, particularly their Public Safety officials, to act swiftly and correctly, and do the things which must be done to save lives, help the injured, and restore order. Most disasters occur without warning, but people still expect a rapid and flawless response on the part of government. There is no room for error. Whether involving a vehicle accident, crime, plane crash, special event, or any other Public Safety activity...”³

There are more than 18,000 law enforcement agencies and 32,000 fire and 17,000 EMS agencies and there are approximately 7,000 primary and secondary Public Safety Answering Points (PSAPs) across the Nation.⁴ While Public Safety Answering Points (PSAPs) were built to give the public fast and easy access to emergency services through a single point of contact within a defined jurisdiction, over time the PSAP became far more than just centers receiving 9-1-1 calls.⁵ As new responsibilities were added, new computer systems were created to handle them. This was occurring at the same time that existing systems were growing in complexity.

² Department of Homeland Security Office of Emergency Communications, Association of Public Safety Communications Officials (APCO), National Emergency Number Association (NENA), Alliance for Telecommunications Industry Solutions (ATIS), FCC’s Network Reliability and Interoperability Council (NRIC), Kimball & Associates, State of Minnesota PSAP Consolidation Guidebook.

³ Public Safety Wireless Advisory Committee (PSWAC) Final Report, presented to the Chairman of the Federal Communications Commission (FCC) and the Administrator of the National Telecommunications and Information Administration (NTIA).

⁴ FCC registry shows 7666 PSAPs but some are no longer active.

⁵ For example, PSAPs also handle 3-1-1 calls (social services help line) and alerting functions for the public (reverse 9-1-1).

The communication center is at the heart of a public safety organization's ability to respond to emergency situations requiring the dispatch of police, fire and emergency medical services. Utilizing 9-1-1 as a single nationwide emergency number has revolutionized the way citizens reach these services for assistance. According to the National Emergency Number Association (NENA), in the U.S. alone, a staggering 240 million 9-1-1 calls are received by Public Safety Answering Points (PSAPs) annually across the nation and this volume of calls continues to increase.⁶ Fueling this growth has been an increasing portion from cellular callers and a disproportionate amount of non-emergency calls received by these 9-1-1 centers. It is estimated that some 25 to 60 percent of all calls received by PSAPs come from wireless phones.

The success and acceptance of 9-1-1 brings new challenges forcing these communications centers to address both current and emerging technology issues. Many PSAPs were implemented using technology prevalent during the 1970s to 1990s wireline communications based on analog circuit switched technologies. Many of these centers are now hard pressed to deal with growing call volumes, providing the most effective and efficient emergency communications possible, enhancing coordination between responding agencies, delivering reliable 24x7 services, embracing new communication center technologies and moving to next generation solutions.

It is important that emergency response personnel at all levels of government, and across disciplines, can communicate as needed, on demand, and as authorized. Most government owned wireless infrastructure that supports emergency response exists at the State and local levels. While many State and local agencies have modernized and expanded their systems through mechanisms such as Federal grant programs, or they are currently in the process of doing so, the communication challenges for those working on the front lines in public safety have not been eliminated.

3.1 Technical Architecture

As a society, we place many demands on the emergency responders who safeguard our communities; this means the mission critical technologies our public safety officials use every day must meet exceedingly high standards as well. Central command and communications, whether on scene or back at the main dispatch center, is a critical cornerstone to any public safety mission. Multiple solutions including Next Generation 9-1-1, mapping, radio systems, and computer aided dispatch; records, video, and location services provide access to information leading to safer and smarter decisions and faster and more positive outcomes.⁷

⁶ According to the National Emergency Number Association (NENA)

⁷ Technical support was provided by Intrado who has pioneered improvements to the 9-1-1 network, helping to enhance the quality of emergency response in the United States and Motorola known around the world for innovation in communications from broadband communications infrastructure, enterprise mobility and public safety solutions to mobile and wireline digital communication devices.

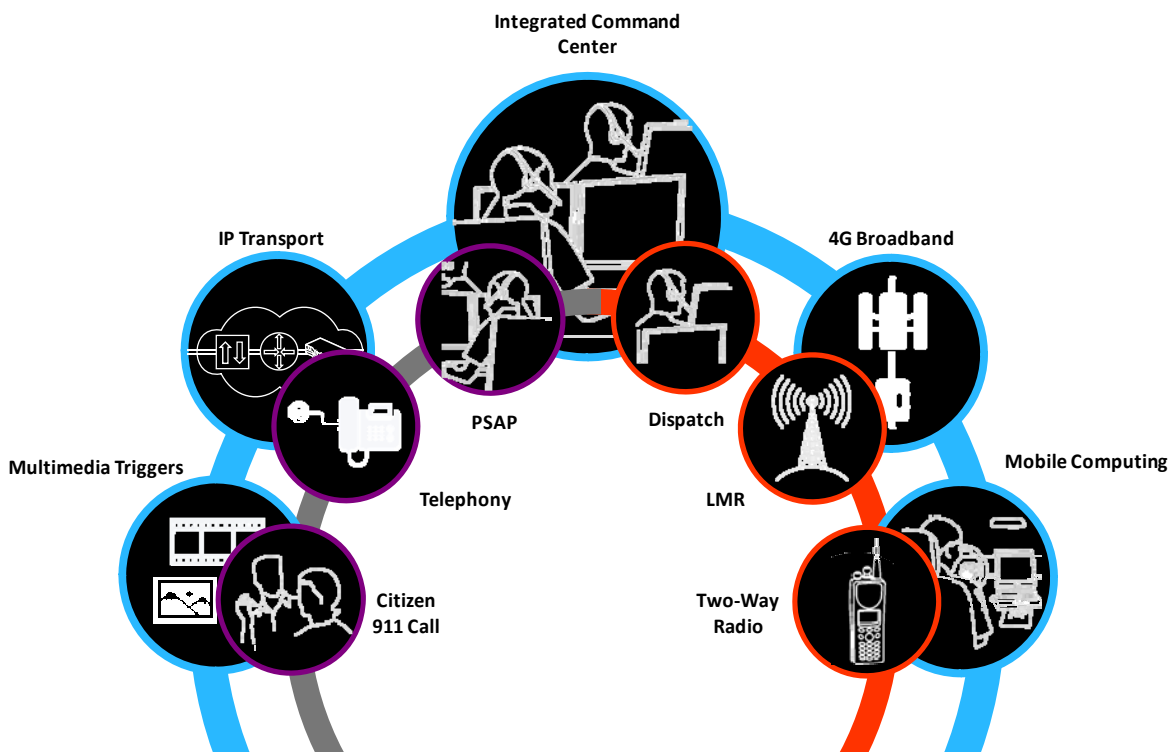


Figure 3 - Technical Architecture Integrated Command Center

On one hand, technology often times brings complexity and solutions must be engineered on how individuals react in stressful situations. Equipment and systems must be designed and tested to be simple and intuitive for the operator. As the sheer volume of interactions continues to increase, the challenge is to integrate all communications, applications and data to and from a command center. The increased complexity has translated into both higher costs to procure and maintain the technology as well as increased training requirements for employees. The traditional revenue streams relied on by 9-1-1 centers is not keeping pace with the costs to refresh and maintain the technology. The convergence of technical systems when combined with the escalating costs of maintaining those same systems makes consolidation a serious consideration for decision makers. Past technology drivers were the transition from analog to digital systems. Current technology roadmaps are moving towards standardization, convergence, common technology platforms, and common protocols.

As technology continues to transition, telecommunicators will need to assimilate, assess and integrate applications using available voice, data and video streams for incident response. Examples include computer aided dispatch (CAD), emergency calls, law enforcement databases, video cameras, historical records and more. In the immediate future, it will be necessary to converge voice, data, and video information to optimize real-time decision making. New data sources based on the location, type of incident, and assigned personnel will stress resources as telecommunicators will need to prioritize and distribute only the most relevant data to responders in the field. At the heart of every public safety mission is the ability to communicate in an instant, each and every time using basic voice and data communications. Database queries over

today's narrowband radio networks are supporting a wide variety of applications. Consolidation of radio systems in the long term can significantly increase communications interoperability by placing first responders on the same platform. Next generation broadband wireless networks promise to enable powerful and innovative solutions that will add real-time awareness to emergency responder communications. These new broadband networks will need to meet the demanding requirements of the public safety community. The long term technological challenge is to assure that public safety's requirements drive development of next generation solutions. Next generation technology will require a more regional approach to deployments and effective partnerships across agencies and regions will become more critical. Technology is a critical element in advancing consolidation efforts, but it is not the sole element. Consolidation is a complex, multi-dimensional issue that involves technological, strategic, tactical, and cultural change.

4 Analysis, Findings and Recommendations

4.1 Analysis

The working group agreed to explore consolidation issues by interviewing experts who had been involved in successful consolidations to glean lessons learned that produced the richest understanding of the challenges and effective practices each consolidation project required. The group developed a set of interview questions so that all data would be collected in a similar manner making it easier to compare and contrast the studies. The group members own experiences provided a starting point from which the group went on to identify consolidation efforts from across the country and representatives willing to share their experiences. The following Table 2 identifies the list of organizations interviewed as case study participants with reference to the specific consolidation discipline.

Table 2 - Case Study Participants

Case Study	Discipline
Arlington, Virginia	PSAP & Communications
Dakota County, Minnesota	PSAP
Denco - area (Dallas, TX)	PSAP
DHS Office of Emergency Communications	Communications
Hamilton County, Ohio	PSAP
Metropolitan Emergency Services Board	PSAP Management & Oversight; Regional Emergency Communications System
Pacific County, Washington	PSAP & Communications
State of Michigan	Communications
State of Minnesota	Communications
State of Vermont	9-1-1 Network Infrastructure
State of Washington	9-1-1 Network
Walla Walla, Washington	Operations and Facility Technology Consolidation

4.2 Abbreviated Interview Questionnaire

The abbreviated interview questionnaire below and included in full as Appendix – 1 was developed by the group and piloted with work group representatives and fine tuned to assure the interview tool addressed key issues.

- Describe the type of consolidation.
- How long has organization been consolidated?
- Describe the demographics of the consolidation.
- How was the consolidation effort initiated?
- Describe the initial goals of this consolidation, e.g. reduce costs, improve efficiency, etc.
- What threats to consolidation arose at the time of consolidation or in the planning stages?
- Please elaborate on any Legislative changes that were needed to allow for consolidation.
- How was governance established?
- Please describe the governance model used in this consolidation.
- How is (are) the governance/oversight committee(s) structured?
- Was the consolidation participation mandated or one where you had to entice folks to participate?
- How are elected officials involved either in the finalized consolidation or in the process to establish the consolidated entity?
- Are user agencies/stakeholders involved?
- How are decisions made?
- How were conflicts in standards resolved?
- Please describe the Management & Oversight function of this consolidation.
- How are Administrative Services for the consolidated agency handled?
- Please describe how Fiduciary oversight/responsibility is handled?
- How do you handle Operational Cost Distribution?
- How do you handle Capital Cost Distribution?
- How is Funding structured?
- Specifically, describe the formula, if any that is used to allocate costs between the various participants.
- How is communications between the consolidated agency and the stakeholder groups handled?
- Please describe the compensation program for the consolidated agency.
- Was it necessary to integrate various work groups in the consolidation process and how was this handled?
- How has consolidation impacted operations?
- What are the strengths/benefits of consolidation? What are the challenges?
- What worked and what would you do differently?
- For each of the initial goals listed describe how well that goal was met.
- Is there the potential to expand the scope of this consolidation further? If so, please describe.
- Please describe if there are currently any threats to continuing this consolidation?
- Based on your experience, please provide three effective practices that make for a successful consolidation.

4.3 Agency Case Study Participants

Working Group #1A gratefully acknowledges the assistance of the case study participants in preparing this report. The following summarize participants experiences in consolidation efforts and highlight challenges and effective practices used in preparing this report.

Arlington, Virginia

Starting in 1981 the county board, police and fire chiefs began the consolidation of police, fire and emergency medical dispatch services with the motivation to reduce fire department costs. The fire department reduced costs by returning the firefighters to the stations and increasing the number of station personnel on duty. A fully trained emergency communications technician is cross-trained as a police, fire and EMS telecommunicator, providing the necessary staff to handle the growing workload. Improving efficiencies were met by providing a centralized dispatch service, common technology platforms, such as one computer aided dispatch (CAD) system serving police/fire/EMS over a common radio system. The strengths are delivery of service from central location, and cross-trained personnel. The most significant ongoing challenge is the length of time required to train personnel in all functions.

Improving efficiencies were met by providing a centralized dispatch service through common technology platforms.

Dakota County, Minnesota

Unifying dispatch services in Dakota County, Minnesota has been discussed and dismissed several times since 1973. Consolidating five public safety answering points (PSAPs) into one centralized dispatch center became a reality in 2007 due to a partnership forged between twelve local governments with the collective desire to provide efficient services and save taxpayers' dollars. Dakota County has a population of approximately 388,000 and covers an area of 587 square miles. It is comprised of one-third urban and two-thirds rural population areas. The urban areas include first ring suburbs to the metropolitan Minneapolis/St. Paul area. This area is densely populated with a large commuting population. The Dakota Communication Center serves twelve law enforcement agencies.

The need to obtain operational and economic efficiencies, address regulatory factors, increase interoperability between agencies, coupled with the support of the public and the political will to act, led to the establishment of the Dakota Communications Center.

In 2004, Dakota County and the eleven cities (with populations over 10,000) within the County formed the High Performance Partnership (HiPP) program. The purpose of HiPP is to identify and analyze potential collaboration opportunities between the twelve local governments that may result in cost efficiencies and improved services. A citizen forum conducted as a part of the initial HiPP analysis found that 61% of the participants would support shared arrangements among local units of government in providing police services and 75% in providing fire services. The HiPP evaluation determined that the unification of five PSAPS into one, centralized PSAP had the greatest opportunity for both economic and operational efficiencies.

During the same time, the Federal Communications Commission (FCC) mandated local government to convert to narrow band radio systems by 2013, rendering most public safety systems in Dakota County obsolete. The public safety agencies (police, fire, EMS) in Dakota County recommended migration to the Twin Cities metropolitan 800MHz communications system to improve interoperability between each other. The high cost to equip five PSAPs with

800 MHz technology was a potential barrier to the participation of the individual local governments. Preliminary HiPP estimates showed considerable cost savings would be possible by equipping a single PSAP for 800 MHz as opposed to five separate PSAPs.

The Dakota Communications Center (DCC) was officially established with the signing of the Joint Powers Agreement (JPA) in September 2005 by the twelve DCC Members (Dakota County; Apple Valley, Burnsville, Eagan, Farmington, Hastings, Inver Grove Heights, Lakeville, Mendota Heights, Rosemount, South St. Paul, and West St. Paul). In June 2006, the groundbreaking was held for the state-of-the-art facility, with occupancy in August 2007. The Dakota Communications Center was open for business on December 27, 2007 only two years after the signing of the JPA.

Denco (Denton County, TX)

The Denton County Area 9-1-1 District (Denco) is a special purpose emergency communication district created by a voter referendum in 1987. The sole purpose was to install and maintain 9-1-1 emergency communication services throughout Denton County, Texas its thirty-four cities and some areas overlapping into adjacent counties. Denco since its creation in 1987 has provided 9-1-1 services at eleven sites. Services that Denco provides include 9-1-1 call taking equipment and training, database maintenance and accuracy performance, routing and equipment maintenance. Denco also provides a broad training program for telecommunicators, public education, legislative and regulatory advocacy and technology planning and coordination for the agencies within its region. It also provides screening and testing for potential telecommunicators. Denco does not provide PSAP dispatch operation services. The desire for consistent service levels across the county and continued local control drove City and Fire Department Leaders to initiate discussion on how best to achieve the goals without intervention by State government. A single, district wide user service fee was envisioned so that no local taxes by participating cities and county would be necessary or be a part of the county or state appropriation process thereby protecting the funds. There also was a Public Safety initiative to keep the effort as non-political as possible while seeking a design for consistent service under local control.

Denco district found numerous threats to consolidation arose at the time of consolidation and during the planning stages.

DHS Office of Emergency Communications

The Department of Homeland Security Office of Emergency Communications (OEC) supports and promotes the ability of emergency responders and government officials to communicate in the event of natural disasters, acts of terrorism, or other catastrophic events, and works to ensure, accelerate, and attain interoperable and operable emergency communications nationwide. OEC offers States and territories Technical Assistance (TA) and Grant Coordination through the Interoperable Emergency Communications Grant Program (IECGP) and focuses on the coordination activities required to improve interoperable communications. IECGP funds focus on Governance, Training and exercises and SOP development. The Office of Emergency Communications also is responsible for the National Emergency Communications Plan (NECP). The NECP outlines an integrated emergency communications strategy for local, tribal, State and Federal public safety support and response organizations and the citizens they

The Office of Emergency Communications (OEC) establishes coordination through partnerships with State, local, and tribal organizations, the public safety community and federal agencies to improve alignment of strategic and operational emergency communications planning across all levels of government.

serve. The update of the NECP will build upon the purpose, scope and vision of NECP 2008, will reference and continue to focus on mission critical wireless technologies, the use of broadband by the Nation's emergency responders and will provide a roadmap to help the migration to an integrated communications environment.

Hamilton County, Ohio

The Hamilton County Department of Communications consists of two divisions. The Public Safety Division is a consolidated 9-1-1 center that serving the emergency communications needs of over 105 police, fire and EMS agencies in forty-seven political jurisdictions. The Telecommunications

The Hamilton County Department of Communications operates on the premise that there is “nothing we have to offer but service”.

Division supports the telephone, data, and Wireless Area Network infrastructure and security needs for all Hamilton County departments. The Communication Center handles an average of 800,000 calls annually; serving a population of over 500,000 residents. The Department was established as a consolidated communication center in 1949 by the Board of County Commissioners (BOCC). Prior to 1949 communications were operated by the Sheriff's Department. Due to the length of time that has passed since the Department was formed, there is no definitive historical record that clearly explains the drivers were that led to the department's formation.

For most of the department's history, governance was the sole purview of the Board of County Commissioners. Since consolidation evolved over a 60 year period under the continuous authority of the BOCC, it was never necessary to integrate other work groups into the consolidation process. The BOCC did establish a Board of Advisor's (BOA) made up of representative constituent user groups in the mid 1980's. The BOA was given policy and procedure oversight and could make budgetary recommendations to the Board of County Commissioners who retained final authority. A set of By-Laws were developed spelling the BOA's responsibilities and authority. A membership formula was structured beginning with representation from the largest political subdivision based on population. The remaining seats were filled by the following constituent groups; Police Chief's Association, Fire Chiefs Association, Municipal League, Township Trustees, Sheriff's Department, Valley Users Group, and County Administrator. To insure that there is continual dialogue and input from the user agencies, the Hamilton County Police Chiefs and Fire Chiefs each have communications committees that regularly meet with the Department's staff to discuss operational and procedural issues.

All participation by jurisdictions in the county is voluntary. The department has grown over the years based on the quality of service, access to state of the art communications technology, and value. The only incentive that a prospective community receives is a waiver of their first year's fee for service. This is offered to insure that police, fire, and EMS agencies have the needed funds to purchase the required compatible radio equipment. Participation requires a contractual agreement between the political jurisdiction and the Board of County Commissioners. The agreement spells out the fee formula that is assessed to the community based on a per detail cost.

The department operates on the premise that there is “nothing we have to offer but service”. The Department is committed to insuring that every user agency or constituent group should not have to settle for less than the highest standards in a public safety communication center. Currently the average 9-1-1 call answering time is 2 seconds. And the average in-house call processing time

for emergency medical services is 60 seconds. The department strives to create a culture of caring about people. The department has demonstrated this commitment by adopting all established state and national standards. The department was the first PSAP in the nation to become a certified Partner with the National Center for Missing & Exploited Children (NCMEC). This partnership is testament to the department's commitment of creating a "Child Centered PSAP". The department's Employee Evaluation Program is based on the proposition that exceptional performance is the expected norm. All serious incidents and a percentage of EMS calls are reviewed for quality assurance and adherence to performance standards. A percentage of EMD calls are also reviewed monthly by the Department's Medical Director.

The department recognizes that new personnel do not have the luxury of learning from their mistakes, so all Communications Officers receive six months of supervised training. All Communications Officers are cross trained in all positions i.e.; Call Taker, Police Radio Dispatcher, Fire & EMS Radio Dispatcher, and Teletype Services. All personnel must complete the APCO Emergency Medical Dispatch Training Program. And all personnel receive formal training that meets the ANSI standard for processing calls reporting missing and abducted children. Staffing and retention continues to be a challenge. On average, due the geographical size of the department and the large number of jurisdictions served, it takes approximately two years for a Communication Officer to become fully competent. The department requires that a candidate for an entry level supervisory position have a minimum of five years of experience. There are total of 49 political jurisdictions in Hamilton County and a total of four PSAPs. Currently there are discussions underway to explore the possibility of combining the Hamilton County Department of Communications and the City of Cincinnati Communications Division.

Metropolitan Emergency Services Board Minneapolis and St. Paul, Minnesota

In 1982 the Metropolitan Emergency Services Board was formed within the greater metropolitan area of Minneapolis and St. Paul, Minnesota. Prior to this, each metro area city or county handled law enforcement, fire and emergency medical services notification and response independently. With the implementation of 9-1-1 as the single number to dial for police fire or medical taking hold across the

country, several key leaders came together to advocate for a single entity to manage 9-1-1 services, deal with the single telephone company of the day, and accept responsibility for managing the quality of the 9-1-1 database used to provide telephone number, subscriber name and address location information to the call taker at the 32 PSAPs in the metro area. It was determined by this grassroots group of metro area public safety leaders that a single board of County Commissions from the seven metro counties should form the Metropolitan 9-1-1 Board and take on the management of these services on behalf of all the PSAPs.

The MESB consolidation supports public safety elements provided to a region of counties. The regional approach provides greater influence in dealing with the State, the 9-1-1 service provider, and stakeholders in general and is positioned for the transition to Next Generation of 9-1-1.

In the 1995-96 timeframe, the Metropolitan 9-1-1 Board absorbed fiscal oversight for regional EMS programming and became full-time manager of a regional EMS program in 1998, receiving grant funds to provide a forum for regional EMS planning, mass casualty incident coordination, training, EMS research and public education. In 2005, the existing Metropolitan Radio Board (MRB), which had been responsible for implementing a region-wide 800 MHz public safety radio system, was due to sunset and needed to either turn over responsibilities to the State of

Minnesota or find a new oversight agency to manage its funds and responsibilities on behalf of the metro region users. It was logical that the MRB look to an existing board like the Metropolitan 9-1-1 Board to continue its work. The differences in the board composition, funding structure, and operations between the boards were negotiated between the two boards prior to a full merger which occurred at the end of 2006. The name of the new organization is the Metropolitan Emergency Services Board (MESB).

The Metropolitan Emergency Services Board is a Joint Powers Association of nine counties. The Board is responsible for the management and oversight of the metro area 9-1-1 network, 9-1-1 database and metro area GIS, regional 800 MHz public safety communications radio system, and regional EMS program. The consolidation of administrative and technology management for related services within the nine county regions provide an efficient and consistent approach to that management and oversight responsibility. The bringing together of the 3 areas (9-1-1, radio, and EMS) and the associated Technical Operations Committees under the governance of the MESB has allowed a broader and more thorough analysis of issues impacting the MESB, and better recommendations for the basis of technical and policy decisions by the Board.

Pacific County, Washington

The key driver for this consolidation was Washington state mandate for the provision of 9-1-1 services which did not exist in the county prior to this effort. Consolidation began in 1994. The initial goals of Pacific County Communications and Emergency Mgmt consolidation was to offer 9-1-1 service county-wide with dependable 24/7 operation. All aspects are consolidated – the facility, operations, communications – telephone, radio, and data. PACCOC serves all public safety agencies in the county. Political issues posed threats to consolidation and participation by elected officials was most important to the process as each represented their jurisdiction. Legislative changes were needed to allow for consolidation, as all jurisdictions signed on to an Interlocal Agreement. Consolidation brought about changes in the administrative approach and increased workload for dispatch staff. The challenge is trying to make everyone happy, while recognizing that not everyone is going to be happy with the manner in which service is provided – particularly at the outset of the consolidation.

Participation by elected officials was most important to the process as each represented their jurisdiction

State of Michigan State Police

In 1984, and again in 1989, the Michigan State Police (MSP) contracted feasibility studies to evaluate two basic dispatch configurations—dispatching from each individual post or consolidating dispatch at the district level. The study projected a \$6.8M savings in personnel costs and \$3.4M in equipment requirements, and cited standardized equipment, uniform procedures, and specialized training of dispatch personnel as advantages of consolidation. As a result of budget restrictions and closure of 24 x 7 posts, the department moved forward with the consolidation project in 1991, bringing 65 separate post dispatch operations to seven district centers. To achieve further budgetary savings, two of the seven district centers were closed in 2008, and their activity transferred to the other five centers.

The goals of the MSP consolidation were:

- **Reduce costs**
- **Support operational services**
- **Need to leverage the investment in communication systems and E9-1-1 technologies**

The Michigan State Police (MSP) initiated a statewide radio project, the Michigan Public Safety Communications System (MPSCS) in the 1990s that has grown to include 50,000 users at 1,500 local agencies, 21 state agencies, and 16 federal agencies. Michigan encompasses a wide variety of locales, from dense urban areas to rural and wilderness areas. The MPSCS is designed to serve the entire state of Michigan, with a population of approximately 10 million residents and an area of 57,800 square miles. Some agencies use the MPSCS as their primary radio system, while others use it for inter-agency interoperability. The ability to communicate seamlessly with any public safety agency, regardless of geographic location, has supported dispatch consolidation efforts in Michigan.

State of Minnesota Statewide Radio ARMER Project

The Statewide Radio Board was created by the Minnesota legislature in 2004 to implement the Statewide Interoperable Public Safety Radio and Communication System Plan. That plan evolved out of the implementation of a region-wide interoperable radio system in the Minneapolis/St. Paul metropolitan area in 2001. At the time the Statewide Radio Board was created the Statewide Interoperable Public Safety Radio and Communication System was given the name of Allied Radio Matrix for Emergency Response (ARMER). The ARMER system is a major element of Minnesota's long term interoperable communication planning, but not the only element. There is an immediate and pressing need for interoperable public safety communication planning among all emergency responders and the Statewide Radio Board is a broad forum representing all public safety disciplines from across the state.

The mission of the Statewide Public Safety Radio System Planning Committee is to be responsible for developing and implementing a project plan for a statewide, shared, trunked public safety radio communications system in Minnesota, to develop and apply statewide standards and guidelines for interoperability and to initiate an education plan to stakeholders.

The State of Minnesota ARMER program is a statewide interoperable emergency communications 800 MHz radio system consolidated under one unit of government which owns and operates the backbone of the system. Local agencies are permitted to use the backbone network and at their choosing enhance their local communications for portable and in-building coverage. The ARMER system is a joint operation and shared structure in a number of significant ways. The system is technically owned and operated by the Minnesota Department of Transportation under the direction of the Statewide Radio Board which dictates the plan, while the Department of Public Safety manages the funding for the system. All three elements are important to the checks and balances of the project. A fundamental element of the ARMER plan is that it provides the opportunity for all public safety/service entities to achieve the highest level of interoperability by operating upon a shared platform. That platform is a scalable 700/800 MHz trunked Motorola Smart Zone radio system that can address the expanding roles of public safety/service entities and their interoperability needs.

Minnesota's strength in cooperative governing is reflected in the governance structure developed around the ARMER plan. The governance structure actually began in 1995 when the Metropolitan Radio Board (MRB) was established by the Minnesota legislature to oversee the implementation of the ARMER backbone in the Twin Cities metropolitan area. As that regional plan was implemented, the basic structural design of a multidiscipline board with regional representation provided a model for the evolution to the current Statewide Radio Board (SRB). This governance structure addresses the need for local and regional planning and participation

throughout the State by the existence and ongoing development of regional advisory committees (RAC) and regional radio boards (RRB). The RAC/RRB members represent local government and provide for participation of tribal and NGO public safety and service providers.

Local participation played a critical role in the development of Minnesota's regional governance structure. In 2005, Minnesota's Statewide Radio Board instructed local interoperable communications practitioners to identify the State's governance regions. Five years later, local practitioners had identified seven regions that spanned the state from Northeastern to Southwestern Minnesota. In general, practitioners identified regions that aligned with the State's Homeland Security regions. In one instance, however, locals determined that it was best for their region to align to an emergency services region instead.

State of Vermont Enhanced 9-1-1 Board

The State of Vermont has a single entity, the Vermont Enhanced 9-1-1 Board that operates a single 9-1-1 system covering the entire state. The enabling statute does allow for municipalities to apply for a waiver and opt-out if they provide a 9-1-1 system that meets all the requirements set by the Board; however, only the University of Vermont has chosen this route. Since the University has discontinued supplying phones in dorms, and students using cell phones to call 9-1-1 would be routed into the statewide 9-1-1 system, the statewide system handles virtually all but a small fraction of a percent of 9-1-1 calls made in Vermont.

The success of Vermont's 9-1-1 system is largely due to the foresight of the enabling legislation that was written in 1994 and has proven to be visionary.

In 1994 the Vermont Legislature established the Vermont Enhanced 9-1-1 Board and tasked it with developing and operating a single statewide enhanced 9-1-1 system. Initially, the system was comprised of ten PSAPs and approximately thirty Limited Secondary PSAPs (LSPs). LSPs were dispatch points that had the ability to receive ANI/ALI information from a PSAP. The single statewide system went live in November of 1998. In February of 2007, the original circuit based ISDN system was replaced with a packet switched TCP/IP system that was arguably the first statewide "Next Generation" 9-1-1 system. At that time, the LSPs were decommissioned. Due to the efficiencies provided by an IP based 9-1-1 system, two of the original ten PSAPs also have been decommissioned in recent years, leaving eight PSAPs. Vermont is now in the process of replacing this system, and by July of 2011 expects to have a system that closely resembles what is envisioned in the next generation 9-1-1 standards (NENA i3)⁸.

The state of Vermont has a population of approximately 621,000 people and an area of 9,250 square miles. Due to its close proximity to major east coast metropolitan areas, Vermont receives 13 million visitors each year. The state is primarily rural, with several population centers. For the past several years, the 9-1-1 system has handled approximately 185,000 calls per year. In 2009, 54% of 9-1-1 calls were made from non-wireline devices, such as cell phones or VoIP devices. This is up from 52% in 2008 and 47% in 2007. There are sixty-seven law enforcement agencies, 127 EMS agencies, and 242 fire departments in the state of Vermont.

Vermont's 9-1-1 system currently has twenty-eight call-taking positions in eight physical PSAPs,

⁸ The National Emergency Number Association (NENA) is developing a set of standards to support the development of Next Generation, TCP/IP-based, 9-1-1 systems. Collectively, these are known as the NENA i3 standards. More information can be found on the NENA website, at <http://www.nena.org/taxonomy/term/129>.

plus four positions in the Board's training room that can be used as a standby PSAP. All of these positions operate as a single virtual PSAP; any 9-1-1 call made in the state of Vermont can be answered and handled equally well from any of the eight PSAPs, or in the training room when it activated as a standby PSAP. While the Board operates the system, it does not operate any PSAPs. Instead it has MOUs with five other agencies; the Vermont Department of Public Safety, which operates four PSAPs; and three local police departments, and a county sheriff department, each operating a single PSAP.

The Board trains and certifies call-takers, but does not employ them. All call-takers are employed by the department that hosts their PSAP. All of the call-handling equipment is provided by the Board. This consolidation only involves 9-1-1 call-taking. Radios and dispatch are handled individually by each agency. The Board has a staff of ten who manage the contract with the system provider, work with the telephone companies, train call-takers, manage the ALI database, and maintain the GIS data, among other duties.

At the time the enabling legislation was passed, 9-1-1 was not widely available in Vermont. Due to Vermont's rural nature, local emergency responder agencies were not large enough to implement a 9-1-1 system. Creating a single statewide system was seen as the only feasible way to bring 9-1-1 service to all Vermonters. The establishment of a statewide 9-1-1 agency was driven by the Vermont Legislature. Privacy advocates had a significant role while the legislation was crafted, which is reflected in the privacy provisions of the statute. Anecdotally, the creation of an independent board was in partially in response to concerns some had at that time about trusting a state agency, such as the Department of Public Safety, with information such as addresses and phone numbers for all Vermonters.

State of Washington

The entire structure of the state E9-1-1 operations is geared toward being able to implement statewide operational changes while maintaining local control over the PSAP operations. The state provides the network that was actually consolidated from direct fragmented management by the counties, and that consolidation is a critical element in the capability to implement NG9-1-1. The implementation of the state program also was done with incentives for counties to consolidate their 9-1-1 call answering, and dispatch, into one PSAP per county which resulted in major consolidation efforts on the parts of the counties to eliminate hundreds of answering points. The trend of technology in 9-1-1 has been toward systems that demand a greater degree of consolidation to be successful. Basic 9-1-1 with the links to the local telephone company's central office was quite simple. Enhanced 9-1-1 required wide area management of network and routing data systems if calls were to be routed correctly. Wireless 9-1-1 entered the picture and obliterated the concept of geographic boundaries on the carrier side creating the need on the operations side to be able to transfer calls across state lines or even international boundaries. NG9-1-1 continues that trend with issues such as security that we in the industry must learn to manage with no thought of boundaries, and we do have the opportunity to consolidate much of the operations that manage calls totally without regard to traditional geopolitical considerations.

The State of Washington found a trend of technology in 9-1-1 is toward systems that demand a greater degree of consolidation to be successful.

WESCOM (Walla Walla, Washington)

In 1984 the Walla Walla Fire Department and County Fire District 4 consolidated, with the remaining agencies joining between 1994 and 1997, with the exception of the Walla Walla Airport (which is now contracting services through the Walla Walla County Fire District 4), and the US VA Medical Center (which joined in 2010). WESCOM is a dispatch consolidation for 17 agencies - the Walla Walla Police Dept, the Walla Walla Fire Department, Walla Walla County Sheriff's Office, College Place Fire Department, College Place Police Department, US VA Medical Center, Walla Walla County Fire Districts 1, 3, 4, 5, 6, 7, and 8, Walla Walla County Coroner's Office, Public Work agencies within Walla Walla County. WESCOM provides digital data communications for the law enforcement agencies serving a population of approximately 58,000.

The primary challenges to consolidation relate to basic human nature and a fear of both loss of control and decrease in responsibility. Once these challenges can be effectively met, the benefits quickly outweigh the negative aspects by allowing for more cost effective staffing and equipping and training of emergency call receiving personnel.

When 9-1-1 services were implemented in Walla Walla, discussions were held to see if public dollars could be saved by combining dispatch services for the police and fire departments. The initial combination was the Walla Walla Fire Department and Walla Walla Police Department, and soon afterwards the County Fire Districts all joined into a single dispatch operation which was administered by the Walla Walla Police Department. This eliminated the need for every agency to have separate dispatch personnel and equipment. Centralized dispatch has allowed for cost savings both in equipment and personnel, and has resulted in a better trained and more focused staff that is able to handle the needs of all local agencies and at levels that increase public safety and services to the community.

4.4 Findings

Based upon the interviews and case studies conducted, the public safety agencies choosing consolidation stated that their decisions were often driven by service quality levels, operational

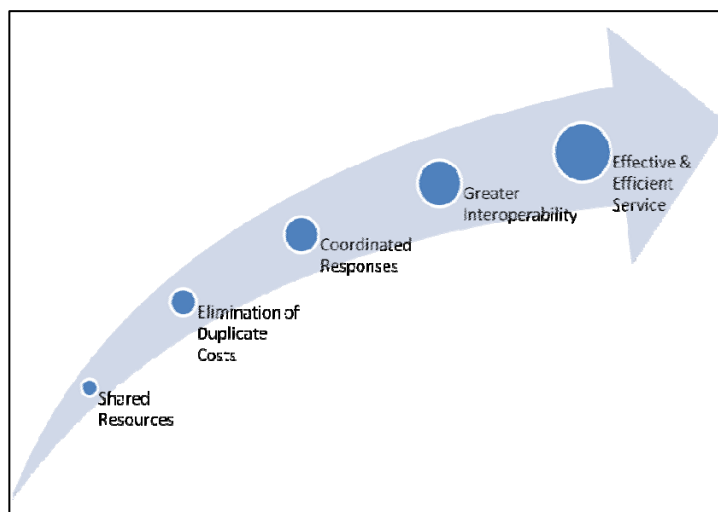


Figure 4 - Value of Consolidation

concerns, technology obsolescence and funding. The challenges practitioners reported included transferring 9-1-1 calls among multiple communications centers, difficulty in coordinating multi-agency/multi-jurisdictional responses among different dispatch centers, concerns about sustainable funding, tracking emerging technologies (LMR, NG9-1-1, CAD, etc.), critical systems and/or facilities in need of refreshing/ replacement at multiple sites, and performance and service levels below expectations.

Key process initiation strategies, consolidation benefits, the process for consolidation, challenges, and lessons learned suggests that consolidation can be a lengthy and complex process, with a value of consolidation leading to more effective and efficient service (Figure 4).⁹ The common experience shared by case study participants suggests a typical consolidation process includes the following six phases:

- Identification of an Effective Champion - Successful consolidations usually have one trait in common, a well-respected champion to lead and spearhead the process from beginning to end. Respondents stated consolidation represents a major culture change and is often threatening to participating agencies long accustomed to having complete control of their services.
- Interest Building – The process of developing interest in consolidation among decision-makers and stakeholders is often met with skepticism and rejection. The champion must meet with the affected parties and answer their initial questions with enough clarity to address these concerns and doubts in order to build a body of trust leading to interest. If enough interest exists, the process moves to the next phase of conducting a feasibility study.
- Feasibility Study – A comprehensive study that:
 - Benchmarks current 9-1-1 and dispatch services by examining a wide variety of issues. These issues include staffing, call processing and dispatching, budget, technology, political environment, and facilities.
 - Determines if consolidation makes sense from a service level, political, technological, and financial perspective.
 - Makes recommendations for consolidation models, governance, funding, staffing, technology and facilities.
- Planning Phase – Decisions regarding participation, funding formulas, organizational structure, governance model, and human resources issues, facility and technology needs and planning for procurements occurs in this phase.
- Implementation / Transition Phase – Technology procurement, installation and training, facility construction or renovations, and procurement of furnishings all occur in this phase.
- Post-Consolidation Phase – This is the time immediately after activation of the new service. Service and technology issues are common during this phase. These issues are not usually indicative of the success of the consolidation. Keeping these issues in proper perspective is vital.

Another source that was utilized in the development of this report was data collected by the APCO Consolidated Center Directors Network (CCDN). The CCDN has been working to gather non-proprietary information about the consolidation of public safety communications centers. One of the tools was the creation of a survey which was developed by the members of the

⁹ Graphic provided by L.R. Kimball is a professional services firm that provides fully integrated project design and planning across architecture, civil and environmental engineering and communication technology services.

network, who are Directors of consolidated centers from across the nation.¹⁰ The survey was open for approximately two months and was completed by 198 individuals nationwide. For the purposes of the survey, consolidation was defined as combining two or more Communications Centers into a single facility and/or organization using one of several existing models. The survey was comprised of questions that focused on areas of demographics, governance, operational issues, staffing, and funding.

- Over 47% of respondents stated that they were motivated to consolidation because research suggested economic benefits and 45% of the respondents stated that they were motivated by suggested operational benefits.
- 69% of respondents stated that the largest challenge to consolidation was related to personnel issues such as training, mingling of different staffs and unions, with 68% of the respondents stating that securing “agency buy-in” was the next biggest challenge.
- Respondents were asked to rank benefits of consolidation, and over 84% of the respondents stated that single point of contact and control was the biggest benefit. Drawbacks to the consolidation process included interagency rivalry and politics.
- The organizational structure of the consolidated centers varied; however, over 72% of the centers were civilian based, and the majority of consolidated centers are funded through telephone surcharge fees (76%).
- Based upon the results of the survey, consolidated centers are diverse in their makeup and populations served, with 29.6% of the centers having a population between 100,001 and 250,000, with over 27.5% who process between 250,001 and 500,000 calls for service annually.

The findings and effective practices as outlined in the following section are based upon the results of interviews with public safety communications agencies and through the development of the twelve case studies and survey data. Although this is a small sampling and it is not intended to be representative of all, it became apparent that there are central themes, which inform key findings and effective practices for the consolidation process.

¹⁰ On April 20, 2010, the APCO International Consolidated Communications Center Survey was released; results are published here with permission.

4.5 Effective Practices

There are clear benefits to consolidation, the sharing of resources allows for the elimination of duplicate costs, supports coordinated responses, greater interoperability, and ultimately leads to more effective and efficient service. Whether public safety radio networks consolidation trends towards regional, multi-jurisdictional and multi-disciplinary solutions or by consolidating communications center PSAPs, these consolidations improve interoperability, operational response and effectiveness and ultimately faster emergency response to a citizens' call for assistance.

The working group used its own technical and operational judgment to extract key findings and effective practices from the case study analysis. Due to the wide variety of public safety consolidation efforts, the working group found that consolidation strategies are most effectively applied by leaving specific implementation decisions to individual participants. The working group suggests that consolidation participants will find the case study findings helpful, and should determine where and when to employ the highlighted effective practices.

Finding #1

Successful consolidations require that a trusted and secure governance structure be established, a champion must lead the project and the political leadership must be in place to support the effort.

The consideration of possible consolidation models offers unique opportunities to create the desired organization, not necessarily the one inherited from previous administrations or one which has resulted because of numerous evolutions of various management styles. It is an opportunity that can be both challenging and enlightening as the agencies involved explore how they might collectively improve service levels for their constituencies—both the public and the public safety response agencies they serve. Consolidation efforts cannot begin until the political 'will' exists to see the process through to completion. In some cases there will be tremendous resistance to consolidate operations from key stakeholders and lobbying groups within individual jurisdictions as it might mean fewer jobs and less control for participants. The political leaders must objectively determine if consolidation can better serve their citizens and this should be the overriding factor in their decision making process. The champion or project manager must be respected and knowledgeable and must have the support of all parties. Since consolidation projects can take a considerable amount of time, the person for this job should be prepared to see the job through to the end and may be the one constant in the project as others, especially those in decision making positions, will tend to be transitory.

- *Effective Practice 1.1 - Consolidation efforts cannot begin until the political ‘will’ exists to see the process through to completion.*
- *Effective Practice 1.2 - Successful consolidations usually have one trait in common, a well-respected champion to spearhead the process from beginning to end.*

Finding #2

Securing “agency buy-in” was the next biggest challenge.

Support for stakeholder defined goals and objectives, operational plans and the ability to ensure understanding of stakeholder objectives is a critical component of a consolidation effort. A primary issue for the partner agencies is to overcome the fear from loss of control and shared responsibility. Agencies need to be convinced that loss of control is more than offset by the benefits of joining a consolidated system, such as access to technology they could not afford on their own, standardized procedures, and interoperability. The ability to prioritize sometimes competing stakeholder goals and to balance risk with desired outcomes can be complicated but, if well executed, rewarding to the organizations’ mission of shared and collaborative governance. The ability to identify and pursue opportunities to work collaboratively with stakeholder partners is essential when the success of the consolidated entity is a commonly shared vision.

- *Effective Practice 2.1 - All participants, regardless of size must have a sense of equal status in both governance and service delivery.*
- *Effective Practice 2.2 - Communicate honestly, meet to resolve issues often, anticipate turf battles and unforeseen problems, allow for contingencies, and treat all stakeholders equally.*

Finding #3

Legislation may be necessary to create a sustainable funding mechanism or codify relationships between the parties.

Although the technology and training requirements have changed drastically over the past 20 years, most of the funding legislation has not kept pace. Funding legislation has been altered in many states by adding provisions for cellular surcharges and, in some cases, how 9-1-1 monies can be spent. These changes in the law have rarely taken into account the additional burdens being placed on 9-1-1 centers throughout the United States. Often times, consolidation was created by voter referendum and legislative changes were needed to address the relationship between key stakeholders. Typically, the legislative body established an independent board to provide oversight and act in an advisory capacity. A concerted outreach effort has to be done to get smaller agencies to participate in consolidation, especially when one of the partners is very large.

- *Effective Practice 3.1 - More often than not, legislation was required to establish a sustainable funding mechanism and in some cases define structure.*
- *Effective Practice 3.2 - In each case, an education campaign for all stakeholders and the public was necessary to gain approval of the legislation.*

Finding #4

Formalize the arrangement through some sort of legal agreement and to establish strong and clear membership structures.

The agreement can take many forms; the most important being that the agreement be clear, well defined, and should define major responsibilities, expectations and dispute resolutions procedures. In a typical scenario, local officials sign formal agreements outlining roles and responsibilities, funding mechanisms and execute MOUs with participating agencies. Each signatory must agree to adhere to the standards set by the board. A well-defined structure is crucial for mitigating disputes. Establishment of specific structures for operation of the entity such as voting by the stakeholders helps to define member roles and participation are crucial items within the agreements.

- *Effective Practice 4.1 – Agreements must be clear, well defined, and should define major responsibilities, expectations and dispute resolution procedures.*
- *Effective Practice 4.2 - Whatever governance structure is agreed upon, it is essential that an individual is appointed or hired who is responsible for executing according to the policies and direction given by the Board.*
- *Effective Practice 4.3 - A consolidation that provides the supporting functions to its members has many benefits and can easily be expanded to a complete consolidation as needed.*
- *Effective Practice 4.4 - Emergency communication regions should be aligned with other governance regions, e.g. EMS, Fire, Public Health, for maximum efficiencies in governance.*

Finding #5

Personnel issues are difficult and troubling in any consolidation and require a great deal of thought at the policy level early on.

The responsibility for fostering of an organizational cultural that enhances the ability of the participating entities to succeed falls on the shoulders of the governance model chosen and adopted by the partner agencies. Communicating organizational values is a key mission of the policy makers and the promotion of their practice and execution is the charge of the leadership. Employees at all levels affected by the consolidation should be advised well in advance how the consolidation will impact their income and benefits. Collective bargaining agreements may need to be modified and ratified by those covered under them before decisions can be made. Personnel policy and structure should be created at the beginning and codified in official agreements. Importantly, personnel cannot be effectively managed by a committee so one entity

needs to step up and assume this role for the consolidation. Empowering personnel to develop successful work styles and take initiative which allows the agency to achieve maximum effectiveness and the ability to facilitate an organizational culture in which a sense of common purpose for achieving the goals and objectives of the agency is encouraged and has been demonstrated in the case studies reviewed.

- ***Effective Practice 5.1 – Employees at all levels affected by the consolidation should be advised well in advance how the consolidation will impact their income and benefits.***
- ***Effective Practice 5.2 – Personnel policy and structure should be created at the inception of consolidation planning and codified in official agreements.***
- ***Effective Practice 5.3 – Personnel cannot be effectively managed by a committee so one entity needs to step up and assume this role for the consolidation.***

Finding #6

Well defined communication channels among stakeholders and the governing body is critical to successful consolidation.

A high degree of communication is necessary when dealing with multiple agencies and political entities. Consolidation efforts are often met with seemingly unforeseen challenges, open communications and frequent discussions to identify and address issues of concern will help to alleviate the perceived threats and problems. Stakeholder communication is a critical component for successful consolidations efforts and can be facilitated through board members who represent stakeholder groups. Often there are mandated meetings for stakeholder groups or bi-monthly user group meetings to keep managers and staff informed and to give them a voice. Various communications tools, such as a website is used to post meeting information, minutes, planning documents, regular newsletters are used to update stakeholders including policy-level officials. Successful consolidation efforts allow the entities to establish policies and procedures and set priorities that are fair and equitable to all stakeholders. It further allows for a broad analysis of issues and opportunities to ensure that performance meets expectations and results in measurable improvement in the standard of care for all the stakeholders participating in the effort.

- ***Effective Practice 6.1 – Stakeholder communication can be facilitated through board members who represent stakeholder groups.***
- ***Effective Practice 6.2 – Mandated meetings for stakeholder groups or user group meetings are necessary to keep staff informed.***
- ***Effective Practice 6.3 – Communications tools are used to update stakeholders including policy-level officials.***
- ***Effective Practice 6.4 – Open communications and frequent discussions help to identify and address issues of concern.***

Finding #7

Consolidation can produce long term cost efficiencies by reducing operations and technology duplication.

While cost savings are possible, two points are critical. First, not all consolidations result in cost savings. Second, in those scenarios where cost savings are achievable the actual realization of the savings may not occur for several years due to capital and other start-up costs. If done after careful study, consolidations can reduce long term costs to the respective agencies even if the short term costs may increase. In most cases, having an emphasis on improving service with cost saving as a result was a much more realistic goal than placing the emphasis on cost savings and hoping for service improvements as a result. The benefit of technology consolidation is the shared infrastructure that helps speed up communication, information access and dissemination yielding lower response time, improved quality of service and enabling collaboration between different agencies during an incident.

Lack of sustainable funding, especially in rural areas provide strong incentives to consolidate. Conversely, higher funding levels tend to hinder consolidation efforts. As local funding decreases, agencies are willing to consolidate greater portions of their functionality, and accept the often incorrect perception that they have to give up local control. Mandated technology changes often create a fiscal burden that could only be addressed through consolidation. Budget restrictions inhibit the ability to keep pace with technology is another key driver for consolidation; individual agencies cannot afford new technology on their own.

Allocation of costs between participating stakeholders can take many forms. Stakeholders must define what is equitable for their particular type of consolidation and that the established funding mechanism or cost allocation structure be sustainable. Incentivizing consolidation will bring more benefit and eliminate more challenges than mandating a consolidation. Capital costs and reserves should be planned and budgeted for by the stakeholders and based on an equitable formula that is codified in the organizations governing agreements. The stakeholders should collaboratively define fiscal responsibilities and reporting mechanisms to establish a path toward cost effectiveness, joint participation, and demonstrated fiscal accountability. Finally, it is important to develop a realistic funding method that seeks sustainable funding source(s) which may be separate and different from normal appropriation mechanisms.

- ***Effective Practice 7.1 – Having an emphasis on improving service with cost saving as a result was a much more realistic goal than placing the emphasis on cost savings and hoping for service improvements as a result.***
- ***Effective Practice 7.2 – The benefit of technology consolidation is the shared infrastructure that improves quality of service and interoperability enabling collaboration between different agencies during an incident.***
- ***Effective Practice 7.3 – Stakeholders define what is equitable for their particular type of consolidation and that the established funding mechanism or cost allocation structure be sustainable.***

- ***Effective Practice 7.4 – Incentivizing consolidation will bring more benefit and eliminate more challenges than mandating a consolidation. Rather than just providing incentive for countywide consolidation, there should be incentives for multicounty/ state consolidations.***
- ***Effective Practice 7.5 – Capital costs should be planned and budgeted for by the stakeholders and based on an equitable formula that is codified in the organizations governing agreements.***

Finding #8

Consolidation results in better trained and more focused work force, increasing the level of public safety.

Consolidation has a positive impact on staff training and professionalism, which improves service level overall. Typically, the independent state board set call taker standards and trains and certifies call takers employed by local agencies. Consolidation has had a positive effect on the professionalism of the staff. Standardized training provided by consolidation positively impacts service level and consistency across the region or service area. In many cases, consolidation provides a better career path for staff in smaller agencies, which aids in employee retention.

- ***Effective Practice 8.1 – Set standards for trained and certified personnel employed by local agencies.***
- ***Effective Practice 8.2 – Career path planning for staff aids in employee retention.***

Finding #9

The technical infrastructure has become increasingly complex over the last decade, translating into both higher maintenance costs as well as increased training requirements.

Users are negotiating so many disparate and often proprietary solutions in the command center (NG9-1-1, Radio Console, CAD, Records, Mapping, Logging, Video) technology must reduce the complexity in how these solutions integrate and foster collaboration. Next generation features, such as NG9-1-1, video, converged voice, messaging, data, and video will introduce multimedia to current workflows. It is expected that the NG9-1-1 functional systems and networks will be directly managed by a wider set of organizations and vendors than is the case today, heightening the practical need to further concentrate the planning and operations management for non-PSAP functions at regional and higher level points. The primary issue is to avoid local, uncoordinated migration and cost impacts. As part of a national emergency communications process the objective of NG9-1-1 is to form a seamless state and national 9-1-1 capability. Given the knowledge base requirements to accomplish this not trivial, it seems advisable to continue to concentrate management of responsibilities at regional or higher levels.

- *Effective Practice 9.1 – Technology must reduce the complexity in how solutions integrate and interface to the public safety operator.*
- *Effective Practice 9.2 – Integrated command and control through a standardized / common technology platform can reduce the cost of ownership, maintenance, training, and operational efficiencies.*
- *Effective Practice 9.3– It is not practical to attempt the migration to NG9-1-1 systems on less than a major metropolitan area, regional (multi-County), state, , or even multi-state basis, as applicable, due to economic and overall system and operational management considerations.*

Finding #10

Interoperating across technologies is critical.

Using a common technology platform approach in developing public safety applications and building on a standards-based technology enables common user experiences across the operator positions with meaningful interactions across the applications. Consolidation of radio systems can significantly increase communications interoperability by placing first responders on the same mission critical wireless system. A key enabler for interoperability are recent trends towards regional, multi-jurisdictional and multi-disciplinary radio systems that can meet the needs of city, county and local users while improving day-to-day mission effectiveness and incident response. These consolidated public safety radio networks offer a high degree of interoperability within their geographic coverage areas and can be linked with other networks through gateways.

- *Effective Practice 10.1 – Standards-based technology enables common user experiences across the operator positions with meaningful interactions across the applications.*
- *Effective Practice 10.2 – Recent trends towards regional, multi-jurisdictional and multi-disciplinary approaches improve day-to-day mission effectiveness and incident response.*

Finding #11

Shared, standards based systems lead to technical, operational, and financial advantages.

Much of the communications equipment used by emergency responders is being upgraded to the Project 25 (P25) suite of standards-based digital equipment. The DHS Nationwide Summary of Communications Plans suggests shared radio systems provide the optimal level of interoperability. Shared radio systems support multiple Federal, State, local, and tribal agencies, and consolidate the communications of multiple agencies, leading to technical, operational, and financial advantages gained by combining multiple agencies onto a common shared radio system. Standards based public safety wireless communications systems are becoming increasingly important for grant funding. “All new digital voice systems must be compliant with

the Project 25 (P25) suite of standards...absent compelling reasons, P25 equipment will be required for Land Mobile Radio (LMR) systems to which the standards apply.”¹¹

- *Effective Practice 11.1 – Much of the communications equipment used by emergency responders is being upgraded to the Project 25 (P25) suite of standards based digital equipment.*
- *Effective Practice 11.2 – Shared radio systems provide the optimal level of interoperability.*
- *Effective Practice 11.3 – Standards based public safety wireless communications systems are becoming increasingly important for grant funding.*

Finding #12

The traditional revenue streams to fund capabilities are not keeping pace with the costs to refresh and maintain technology.

The most common funding source for 9-1-1 systems is through an assessment or a surcharge fee on telephone service. This funding mechanism dates back to the late 1970s early 1980's and was based upon wireline telephone tariff rates. As technology has evolved consumers have migrated from traditional wireline services to new communications services. Wireless, prepaid wireless service offerings and to Voice over Internet Protocol (VoIP) are typically not addressed within original legislative authority of 9-1-1 fee assessment. Typically, PSAPs are self-funded and provide 9-1-1 services to their citizens without having to turn to local, state or federal governments for the appropriation of funds. That history of self-sufficiency is becoming more and more difficult to sustain in the light of regulatory trends, declining wireline usage and rapidly emerging technology. If public safety is not able to develop new and sustainable sources of funding, the existing revenue base will continue to erode.

- *Effective Practice 12.1 – Developing a sustainable funding mechanism that is separate from the normal appropriation mechanism is needed.*
- *Effective Practice 12.2 – A state by state review of enabling legislation is required to update the policies and regulatory environment to keep pace with new technology.*
- *Effective Practice 12.3 – A review of current fiscal regulations and practices is required to assure that public safety has the necessary control over potential funding sources.*

¹¹ FY 2010 SAFECOM Recommended Guidance for Federal Grant Programs

Finding #13

Successful implementation of technology is supported by a secure governance structure is highly dependent on effective operational procedures and consistent training of practitioners.

Technology is a critical element in advancing interoperability, but it is not the sole element. Technology may be a big hurdle to consolidation but experience has shown that governance and political issues are harder to solve. Consolidation is a complex, multi-dimensional issue that involves a technological, strategic, tactical, and cultural change. There is never a “silver bullet” solution in the form of any piece of innovative voice or data equipment.

- ***Effective Practice 13.1 – Technology may be a big hurdle to consolidation but experience has shown that governance and political issues are harder to solve.***
- ***Effective Practice 13.2 – A monthly survey of the participating agencies is used to ensure that performance meets expectations.***
- ***Effective Practice 13.3 – Metrics, such as average time to answer, is tracked regularly to ensure high performance.***

Finding #14

SOPs must be developed reviewed and vetted by operations personnel prior to consolidation to ensure they are consistent.

Communication center and customer standard operating procedures (SOPs) may conflict and cause confusion for command and field personnel. It is advised that all administrative and operational SOPs be drafted by management with input from field operational personnel. SOPs should be reviewed and approved by police and fire operational boards then the governance board. Inconsistent SOPs across disciplines lead to training challenges and increased chance of errors during times of high call volume or disaster periods.

- ***Effective Practice 14.1 – Administrative and operational SOPs be drafted by management with input from field operational personnel.***
- ***Effective Practice 14.2 – SOPs should be reviewed and approved by operational boards then the governance board.***

Finding #15

Uniform training is required to ensure agencies coordinate training personnel, standards, policies, procedures and systems.

A training blueprint having clear expectations should be determined prior to consolidation. A heavy burden is placed on the center operation if the trainers are not trained in all disciplines. The unified training concept improves efficiency by eliminating the need to transfer calls to other call takers with the require skill set. Centers will see an overall improvement in operational efficiency, specifically in staffing, utilization of overtime, call handling performance, and

morale. Whether personnel are crossed trained in all positions i.e. Call Taker, Police Radio Dispatcher, Fire & EMS Radio Dispatcher, and Teletype Services or training is limited to specific services, the appointing authority should be committed to insuring that training meets or exceeds recognized industry standards.

- ***Effective Practice 15.1 – A training blueprint should be determined and have clear expectations prior to consolidation.***
- ***Effective Practice 15.2 – The unified training concept improves operational efficiency, specifically in staffing, utilization of overtime, call handling performance, and morale.***
- ***Effective Practice 15.3 – All personnel entrusted with the responsibility for answering 9-1-1 calls should at a minimum complete the APCO Basic Telecommunicator Training Program. If call takers are also responsible for processing calls for medical assistance they should be required to be trained in an approved Emergency Medical Dispatch Training Program. And all call takers should receive formal training that meets the ANSI national standard for processing calls reporting missing and abducted children.***

Finding #16

Training among the consolidated agencies should be supplemented with exercises that provide reinforcement and practical firsthand experience in handling disasters and other

These exercises not only reinforce training but will provide extremely valuable lessons that will improve performance and efficiency during unanticipated catastrophic events. New personnel do not have the luxury of learning from their mistakes, so all personnel must receive sufficient supervised training to insure that learning has occurred and that they have been responsibly prepared to perform their assignments.

- ***Effective Practice 16.1 – Exercises not only reinforces training but provide extremely valuable lessons that improve performance and efficiency during unanticipated catastrophic events.***

Table 2 – Summary – Findings and Effective Practices

Finding #1 - Successful consolidations require that a trusted and secure governance structure be established, a champion must lead the project and the political leadership must be in place to support the effort.
Effective Practice 1.1 - Consolidation efforts cannot begin until the political ‘will’ exists to see the process through to completion.
Effective Practice 1.2 - Successful consolidations usually have one trait in common, a well-respected champion to spearhead the process from beginning to end.
Finding #2 - Securing “agency buy-in” was the next biggest challenge.
Effective Practice 2.1 - All participants, regardless of size, have a sense of equal status in both governance and service delivery.
Effective Practice 2.2 - Communicate honestly, meet to resolve issues often, anticipate turf battles and unforeseen problems, allow for contingencies, and treat all stakeholders equally.
Finding #3 - Legislation may be necessary to create a sustainable funding mechanism or codify relationships between the parties.
Effective Practice 3.1 - More often than not, legislation was required to establish a sustainable funding mechanism and in some cases define structure.
Effective Practice 3.2 - In each case, an education campaign for all stakeholders and the public was necessary to gain approval of the legislation.
Finding #4 - Formalize the arrangement through some sort of legal agreement and to establish strong and clear membership structures.
Effective Practice 4.1 – Agreements must be clear, well defined, and should define major responsibilities, expectations and dispute resolution procedures.
Effective Practice 4.2 - Whatever governance structure is agreed upon, it is essential that an individual is appointed or hired who is responsible for executing according to the policies and direction given by the Board.
Effective Practice 4.3 - A consolidation that provides the supporting functions to its members has many benefits and can easily be expanded to a complete consolidation as needed.
Effective Practice 4.4 - Emergency communication regions should be aligned with other governance regions, e.g. EMS, Fire, Public Health, for maximum efficiencies in governance.
Finding #5 - Personnel issues are most difficult and troubling in any consolidation and require a great deal of thought at the policy level early on.
Effective Practice 5.1 – Employees at all levels affected by the consolidation should be advised well in advance how the consolidation will impact their income and benefits.

Effective Practice 5.2 – Personnel policy and structure should be created at the beginning and codified in official agreements.
Effective Practice 5.3 – Personnel cannot be effectively managed by a committee so one entity needs to step up and assume this role for the consolidation.
Finding #6 - Well defined communication channels among stakeholders and the governing body is critical to successful consolidation.
Effective Practice 6.1 – Stakeholder communication can be facilitated through board members who represent stakeholder groups.
Effective Practice 6.2 –Mandated meetings for stakeholder groups or user group meetings are necessary to keep staff informed.
Effective Practice 6.3 –Communications tools are used to update stakeholders including policy-level officials.
Effective Practice 6.4 – Open communications and frequent discussions to identify and address issues of concern.
Finding #7 - Consolidation can produce long term cost efficiencies by reducing operations and technology duplication.
Effective Practice 7.1 – Having an emphasis on improving service with cost saving as a result was a much more realistic goal than placing the emphasis on cost savings and hoping for service improvements as a result.
Effective Practice 7.2 – The benefit of technology consolidation is the shared infrastructure that improves quality of service and interoperability enabling collaboration between different agencies during an incident.
Effective Practice 7.3 –Stakeholders define what is equitable for their particular type of consolidation and that the established funding mechanism or cost allocation structure be sustainable.
Effective Practice 7.4 – Incentivizing consolidation will bring more benefit and eliminate more challenges than mandating a consolidation. Rather than just providing incentive for countywide consolidation, there should be incentives for multicounty/ state consolidations.
Effective Practice 7.5 – Capital costs should be planned and budgeted for by the stakeholders and based on an equitable formula that is codified in the organizations governing agreements
Finding #8 - Consolidation results in better trained and more focused personnel, increasing the level of public safety.
Effective Practice 8.1 – Set standards for trained and certified personnel employed by local agencies.
Effective Practice 8.2 – Career path planning for staff aids in employee retention.
Finding #9 - The technical infrastructure has become increasingly complex over the last decade, translating into both higher maintenance costs as well as increased training requirements.
Effective Practice 9.1 – Technology must reduce the complexity in how solutions integrate and interface to the public safety operator.
Effective Practice 9.2 – Integrated command and control through a standardized / common technology platform can reduce the cost of ownership, maintenance, training, and operational efficiencies.
Effective Practice 9.3– It is not practical to attempt the migration to NG9-1-1 systems on less than a major metropolitan area, regional (multi-County), state, , or even multi-state basis, as applicable, due to economic and overall system and operational management considerations.

Finding #10 - Interoperating across technologies is critical.
Effective Practice 10.1 – Standards-based technology enables common user experiences across the operator positions with meaningful interactions across the applications.
Effective Practice 10.2 – Recent trends towards regional, multi-jurisdictional and multi-disciplinary approaches improve day-to-day mission effectiveness and incident response.
Finding #11 - Shared, standards based systems lead to technical, operational, and financial advantages.
Effective Practice 11.1 – Much of the communications equipment used by emergency responders is being upgraded to the Project 25 (P25) suite of standards based digital equipment.
Effective Practice 11.2 – Shared radio systems provide the optimal level of interoperability.
Effective Practice 11.3 – Standards based public safety wireless communications systems are becoming increasingly important for grant funding.
Finding #12 - The traditional revenue streams to fund capabilities are not keeping pace with the costs to refresh and maintain technology
Effective Practice 12.1 – Developing a sustainable funding mechanism that is separate from the normal appropriation mechanism is needed.
Effective Practice 12.2 – A state by state review of enabling legislation is required to update the policies and regulatory environment to keep pace with new technology.
Effective Practice 12.3 – A review of current fiscal regulations and practices is required to assure that public safety has the necessary control over potential funding sources.
Finding #13 - Successful implementation of technology is supported by a secure governance structure is highly dependent on effective operational procedures and consistent training of practitioners.
Effective Practice 13.1 – Technology may be a big hurdle to consolidation but experience has shown that governance and political issues are harder to solve.
Effective Practice 13.2 – A monthly survey of the participating agencies is used to ensure that performance meets expectations.
Effective Practice 13.3 – Metrics, such as average time to answer, are tracked regularly to ensure high performance.
Finding #14 - SOPs must be developed reviewed and vetted by operations personnel prior to consolidation to ensure they are consistent.
Effective Practice 14.1 – Administrative and operational SOPs be drafted by management with input from field operational personnel.
Effective Practice 14.2 – SOPs should be reviewed and approved by police and fire operational boards then the governance board.

Finding #15 - Uniform training is required to ensure agencies coordinate training personnel, standards, policies, procedures and systems.
Effective Practice 15.1 – A training blueprint should be determined and have clear expectations prior to consolidation.
Effective Practice 15.2 – The unified training concept improves operational efficiency, specifically in staffing, utilization of overtime, call handling performance, and morale.
Effective Practice 15.3 – All personnel entrusted with the responsibility for answering 9-1-1 calls should at a minimum complete the APCO Basic Telecommunicator Training Program. If call takers are also responsible for processing calls for medical assistance they should be required to be trained in an approved Emergency Medical Dispatch Training Program. And all call takers should receive formal training that meets the ANSI national standard for processing calls reporting missing and abducted children.
Finding #16 - Training among the consolidated agencies should be supplemented with exercises that provide reinforcement and practical firsthand experience in handling disasters and other situations that are not routine.
Effective Practice 16.1 – Exercises not only reinforce training but will provide extremely valuable lessons that will improve performance and efficiency during unanticipated catastrophic events.

4.6 Recommendations

1. The Federal Communications Commission (FCC) should consider promoting the development of new funding strategies to assist public safety agencies in their consolidation efforts. Absent new and sustainable funding solutions, local government leaders will be truly challenged to discard legacy systems and their investments via local tax dollars, in favor of new and more capable technology. Some funding approaches for consideration:
 - a. The FCC should work in collaboration with the relevant federal agencies, specifically the Department of Homeland Security and Department of Transportation, to determine if public safety infrastructure projects can be eligible under any new or existing public infrastructure funding programs being considered, such as Critical Infrastructure / Key Resources (CI/KR), National Infrastructure Bank, and other infrastructure investment programs as applicable. Statewide and large county/municipal public safety systems should be considered “infrastructure projects” in the same way that transportation and other public works projects are considered infrastructure. For example, public safety radio systems are sometimes not thought of as “infrastructure” in the traditional sense because only the handheld radios are visible to the average person, but the tower sites that constitute the backbone of such systems are infrastructure just as much as a road, bridge or building. A large public safety radio system can involve construction of tens or even hundreds of sites requiring the employment of engineers, technicians, general contractors, concrete crews, electrical crews, crane crews, and tower crews, among others.
 - b. The FCC should issue a public notice to receive comments on the funding status of Public Safety Answering Points (PSAPs) to fully understand the extent that 9-1-1 funds are used for purposes other than 9-1-1 as noted in National Broadband Plan (NBP) recommendation 16.14 and to understand the impact of IP-based NG9-1-1 services will place on PSAPs as noted in NBP recommendation 16.15. PSAPs are dependent on funding streams based on state legislation, although the technology and training requirements have changed drastically in 9-1-1 centers over the last 20 years, most of the funding legislation has not kept pace. Funding legislation has been altered in many states by adding provisions for cellular surcharges and, in some cases, how 9-1-1 monies can be spent. These changes in the law; however, have rarely taken into account the additional burdens being placed on 9-1-1 centers throughout the United States. These comments could be instrumental in assuring that PSAPs are funded adequately because they are truly the first line of defense in any emergency.

- c. As a complementary component to existing grant programs, the FCC should also consider creating or recommending a revolving loan fund for public safety system consolidation efforts. As Congress is considering legislation that would use spectrum auction revenues to fund a grant program for building out and maintaining a nationwide public safety broadband network, a loan program could also provide the flexibility for the federal government to make loans through a variety of loan structures available depending on what works best for a particular state or local governmental entity.
 - d. The FCC should work with federal agencies and explore developing grant guidance that creates incentives for consolidation efforts. In addition, many projects are partially funded with federal grants with a requirement for matching funds. Economic conditions make it increasingly difficult for state and local governments to meet requirements contained in federal government grant guidance policies. In conjunction with those efforts a short term stimulus program should be considered to reduce or relieve public safety consolidation projects from the grant matching requirements.
2. The FCC should consider the development of concepts of operation and requirements, technical and operational standards (human factors, training) to provide a roadmap for public safety agencies as they migrate to next generation solutions. New technology will enable consolidation, in the future, it will be necessary to aggregate voice, data, and video information to optimize real-time decision making. Potentially this can be considered under recommendation 16.14 of the National Broadband Plan.
3. The FCC should consider the establishment of a repository of effective practices with respect to Policies, Practices, Procedures, Technology, Training and Exercises to guide consolidation efforts from lessons learned. A longer term plan is required for gathering data on consolidated public safety operations in order to obtain a sufficient/larger sampling to draw more substantiated conclusions on consolidation and the accompanying best practices.
4. The FCC should collaborate with the Department of Homeland Security as it updates the National Emergency Communications Plan (NECP). The FCC and its supporting advisory committees can be used as a source for feedback to include new types of technology, to review gaps in the current plan, and to create an updated integrated emergency communications planning strategy.
5. The FCC should issue guidance to agencies contemplating consolidation to undertake a comprehensive study. The consolidation process poses numerous challenges from operational, governance, funding and technical perspectives, the study should include:

- a. Benchmarks current services by examining a wide variety of issues. These issues include mission critical communications capability, staffing, call processing and dispatching, budget, technology, political environment, and facilities.
 - b. Determines if consolidation makes sense from a service level, political, technological, and financial perspective.
 - c. Makes recommendations for consolidation models, governance, funding, staffing, technology and facilities.
6. The FCC should consider the reevaluation of CSRIC Working Group #1A findings, effective practices and recommendations as other working groups complete their areas of study.
7. The FCC should consider establishing a future work group to consider the findings of CSRIC Working Group #1A in addressing longer term transition to networks that are owned or operated, at least in part, by non-public safety entities. This would advance the findings of the current work group that focused on the transition to consolidated systems that continue to be operated and controlled by public safety entities.

5 Summary

The CSRIC group #1A recognized early on that the very large national aspects of the consolidation process and the diversity of implementation strategies made the compilation of best practices very challenging. In fact, the level of resources to further advance the maturity of the consolidation best practices analysis is significant and exceeded the capacity of this study. However, the working group captured important findings and relevant effective practices that led to several specific recommendations. While the initial focus of the work group was on the transition to consolidated systems that continue to be operated and controlled by public safety entities, a future work group should consider the findings of this group in addressing longer term transition to networks that are owned or operated, at least in part, by non-public safety entities.

6 Appendices & References

Appendix 1 – Interview Questionnaire

6.1 Appendix 1 - Interview Questionnaire

- a. **Describe the type of consolidation:**
 - i. PSAP
 - 1. Facility only (co-location)
 - 2. Operations and Facility Consolidation
 - 3. Technology/Infrastructure/Virtual Consolidation
 - 4. Other (please describe)
 - ii. Communications (radio, data)
 - iii. Technology
 - iv. Operations
- b. **How long has organization been consolidated?**
- c. **Describe the demographics of the consolidation**
 - i. Population served
 - ii. Geographical area
 - iii. Number of Agencies
 - iv. Types of Agencies
 - v. Description of locale
 - 1. Urban
 - 2. Rural
 - 3. Both
 - 4. Other
- d. **How was the consolidation effort initiated?**
 - i. What were the drivers?
 - ii. Who were the champions?
 - iii. How was the vision shared?
 - iv. What was the political or fiscal motivation?
- e. **Describe the initial goals of this consolidation, e.g. reduce costs, improve efficiency, etc.**
- f. **What threats to consolidation arose at the time of consolidation or in the planning stages?**
- g. **Please elaborate on any Legislative changes that were needed to allow for consolidation?**
- h. **How was governance established? Please describe the governance model used in this consolidation.**
- i. **How is(are) the governance/oversight committee(s) structured**
 - i. By political subdivision – x number of representatives per political subdivision
 - ii. By constituent groups – e.g. x number of representatives for law agencies, x for fire agencies, x for citizens, etc.
 - iii. Some other method – please describe
- j. **Was the consolidation participation mandated or one where you had to entice folks to participate?**
 - i. Describe incentives if any
 - ii. Describe the requirements if any
- k. **How are elected officials involved either in the finalized consolidation or in the process to establish the consolidated entity?**
- l. **Are user agencies/stakeholders involved?**
 - i. Describe the level of involvement
 - ii. Describe the decision making process and involvement of stakeholder groups
- m. **How are decisions made?**
 - i. Weighted voting

Appendix 1 – Interview Questionnaire

- ii. Consensus
- iii. Other? Please provide detail.
- n. **How were conflicts in standards (service levels, performance expectations, training requirements, compensation, benefits, etc.) resolved**
 - i. All participants accepted minimum standard
 - ii. Some arrangement where organizations were able to maintain their own standards.
 - iii. All participants compromised between highest and lowest standards
 - iv. All participants accepted highest standard
 - v. Other? Please elaborate.
- o. **Please describe the Management & Oversight function of this consolidation.**
- p. **How are Administrative Services for the consolidated agency handled?**
- q. **Please describe how Fiduciary oversight/responsibility is handled? How do you handle Operational Cost Distribution?**
- r. **How do you handle Capital Cost Distribution?**
- s. **How is Funding structured? Specifically, describe the formula, if any that is used to allocate costs between the various participants.**
- t. **How is communications between the consolidated agency and the stakeholder groups handled?**
- u. **Please describe the compensation program for the consolidated agency.**
 - i. Pay for Performance or Merit Pay Systems?
 - ii. Traditional
 - iii. Other? Please elaborate.
- v. **Was it necessary to integrate various work groups in the consolidation process and how was this handled?**
 - i. Collective Bargaining Issues? Unions vs. Non-Union environment?
 - ii. Employee benefits
 - iii. Work rules & practices
 - iv. Seniority systems
 - v. Retirement systems
 - vi. Other? Please describe.
- w. **How has consolidation impacted operations?**
- x. **What are the strengths/benefits of consolidation? What are the challenges?**
- y. **What worked and what would you do differently?**
- z. **For each of the initial goals listed under question e. describe how well that goal was met.**
- aa. **Is there the potential to expand the scope of this consolidation further? If so, please describe.**
- bb. **Please describe if there are currently any threats to continuing this consolidation?**
- cc. **Based on your experience, please provide three effective practices that make for a successful consolidation:**
 - i. _____
 - ii. _____
 - iii. _____

Appendix 2 - Interview Questionnaire Summary Data & Findings

6.2 Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
Describe the type of consolidation: PSAP, Communications Technology Operations	Operations and Facility Technology Consolidation PSAP Technology/Infrastructure/Virtual Consolidation Yes	Operations and Facility Technology Consolidation PSAP	Operations and Facility Technology Consolidation PSAP	Operations and Facility Technology Consolidation Communications, PSAP	Operations and Facility Technology Consolidation PSAP	Operations and Facility Technology Consolidation Communications, PSAP	Operations and Facility Technology Consolidation PSAP	Operations and Facility Technology Consolidation PSAP	Operations and Facility Technology Consolidation PSAP
How long has organization been consolidated?	Since 1981	Since 2007 (although it had been discussed since 1973)	Cutover its first PSAPs in 1990.	Consolidation began in 1994.	The Metropolitan 9-1-1 Board was formed in 1982.	Consolidation began in 1991	November of 1998	1993	In 1984 consolidated with the Walla Walla Fire Department County Fire District 4. The remaining agencies joined between 1994 and 1997
Describe the demographics of the consolidation	Population served 2009 – 217,483 Geographical area 26 square miles Number of Agencies 2 Types of	Population: 388,000 Area Covered: 587 Square miles. One third urban and two thirds rural population, including first	Population served: Approximately 650,000 Geographical area: Approximately 950 Square Miles Number	Population served 21,800 Geographical area 925 sq miles Number of Agencies 18 agencies Types of	Population served: approx. 2.7 million in a 9 county metropolitan area of St. Paul/Minneapolis. The local	The entire state of Michigan, population 10 million, area of 57,800 square miles, range of demographics	Ten PSAPs and approximately 30 Limited Secondary PSAPs 621,000 people and an area of 9,250	Serves the entire population of Washington, 6.6 million people and a geographic area of 66.5 thousand	Population served approximately 58,000 Geographical area most of Walla Walla County is farmland with

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
	Agencies Police and Fire/EMS Description of locale Urban	ring suburbs of St. Paul/Minneapolis.	of Agencies: 11 PSAPS, 34 Cities, 1 County Types of Agencies: All PSAPs are consolidated in that they provide all Dispatch services for Police, Fire, EMS Both Rural and Suburban	Agencies fire, EMS, law enforcement, tribal Description of locale rural	ranges from highly urban to very rural.	from dense urban to rural and wilderness.	square miles.	square miles. There are 64 PSAP's serving police, fire/rescue and EMS agencies, both urban and rural communities.	rolling hills and valleys Number of Agencies 17 Types of Agencies law enforcement, fire, EMS providers; Public Works, and coroner's offices WESCOM primarily serves a rural population.
How was the consolidation effort initiated?	County Board/ Police Chief/ Fire Chief Employees were told they were being combined Fiscal motivation to reduce Fire Department costs	12 local governments partnered together with the desire to provide efficient services and save taxpayers money. They implemented a plan that had been discussed since 1973	The Denco Area 9-1-1 District (Denco) is a special purpose emergency communication district created by a voter referendum in 1987.	WA State mandate for 9-1-1 services. 9-1-1 service did not exist in the county prior to this effort. It was also tied to funding County Commissioners were the local leaders vision shared Series of meetings	Key leaders advocated for a single entity to manage 9-1-1 services, deal with utilities, and accept responsibility for the quality of the 9-1-1 database. They advocated for a board of Commissioners from local counties.	Twice in the 1980's the Michigan State Police (MSP) contracted feasibility studies to evaluate two basic dispatch configurations . Consolidation was recommended , and the MSP moved forward with	In 1994 the Vermont Legislature established the Vermont Enhanced 9-1-1 Board	State leaders recognized that it would be impractical to build a Next Gen 9-1-1 system on anything less than a statewide basis, PSAP's recognized the need to upgrade and realize that this would best be done on a large area basis,	When 9-1-1 services were implemented in Walla Walla, discussions were held to see if public dollars could be saved by combining dispatch services for the police and fire departments. The initial combination was the Walla Walla Fire Department and

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
						the plan in 1991.		Telecomm companies wanted to deal with one infrastructure and lawmakers sought a uniform level of service. All of these factors combined to make it easy to form the current system.	Walla Walla Police Department, and soon afterwards the County Fire Districts all joined into a single dispatch operation which was administered by the Walla Walla Police Department. This eliminated the need for every agency to have separate dispatch personnel and equipment. It was a money saving approach
Describe the initial goals of this consolidation, e.g. reduce costs, improve efficiency, etc.	Improve efficiencies; provide more staff to handle calls by cross-training all employees. Fire chief wanted to	Initial goals included: The need to obtain operational and economic efficiencies, address regulatory factors, and	Desirous of consistent service levels across the county and continued local control drove City and Fire Department	Offer 9-1-1 service county-wide	To streamline government and the 9-1-1 system by simplifying the process and acting collectively. Provide a	Reduce costs, support operational services within MSP, need to leverage the investment in communicatio	Creating a single statewide system	To install the NG9-1-1 network and connect PSAP's to it at no degradation of service quality from the existing	Reduce personnel and equipment costs and improve efficiency

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
	reduce costs by bringing the firefighters back to the stations.	increase interoperability between agencies and save money.	Leaders to initiate discussion on how best to achieve the goals without intervention by State government. A single, District Wide user service fee was envisioned so that no local taxes by participating cities and county would be necessary or be a part of the county or state appropriation process thereby protecting the funds.		fiscal agent for the EMS program.	ns systems, need to leverage the investment in E9-1-1 technologies.		network. Secondary: to move the 9-1-1 database to an IP compatible format without loss of functionality.	
What threats to consolidation arose at the time of consolidation or in the planning stages?	Pay was a big issue, some people resigned. Employees were hired as police or fire dispatchers	Several issues could be perceived as threats. The financial impact was tricky, local government	Numerous threats to consolidation arose at the time of consolidation and during the planning	Political issues.	No specific threats are mentioned. The consolidation did eventually happen in three stages.	Local agencies were not easily convinced to join.	Privacy concerns	The state was a pioneer and early adopter of NG9-1-1; this led to a lack of expertise that has continued	Politics, turf wars, and a general assortment of whatever could go wrong did.

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
	and then required to do both.	aid to the cities from the State was decreasing, putting additional burdens on the municipalities. The concern for loss of local control also posed problems. Personnel transition was the third issue that arose.	stages. There were local politics in the selection of PSAP locations, who was to be appointed to the Board, pressure from the 9-1-1 Service Provider on local governance, standard training and operational requirements. There was also pressure to use funds for local services not part of mission. This continues to still be a threat today.		First, in 1982, the Metro 9-1-1 Board was established. Second, in 1995 the Board absorbed responsibility for EMS programming. Finally, in 2005 an existing Metropolitan Radio Board (MRB) was worked into the board. At this time, a name change occurred: Metropolitan Emergency Services Board (MESB)			to cause issues. Lack of industry standards added risk to the project.	
Please elaborate on any Legislative changes that were needed to allow for	No data or records available	No legislative changes were needed. A Joint Powers Agreement (JPA) was	The option to create a District was approved by state statute in 1985. It	All jurisdictions signed on to an Interlocal Agreement	No specific legislative changes were mentioned. Consolidation arose as a	Legislative changes were necessary to establish a funding model. A	Established an independent board that would be responsible for operating the	Statewide 9-1-1 was originally established by a popular vote as a	Local legislative changes between the city council's and county

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
consolidation?		signed between the jurisdiction, and consolidation began shortly thereafter.	provided a deadline for the vote by locals and those not part of a “District” by the established deadline, September 1987, would only have the option to become part of the state plan. Thus far, Districts have been successful since in keeping operations, control and funds out of the State government.		result of grassroots movement in its favor.	State 9-1-1 board was established by statute to oversee funding and dispatch issues.	state’s 9-1-1 system	referendum from the legislature. The statutes provided for statewide assistance to counties and overall state guidance/management. The state was given authorities to adopt rules appropriate to a successful agency.	commissioners.
How was governance established? Please describe the governance model used in this consolidation.	No data or records available	A complex governance structure was established, consisting of three distinct committees with	Denco has two(2) At Large City government representatives, two(2) County Appointees, one(1) Fire	Through Interlocal agreement.	The Board is composed of elected County Commissioners and elected City Council Members who	The model is based on having a single representative for each county, with one vote	Statute created a nine-member board that represented the various constituent groups	Counties have authority to establish government over their PSAP’s. This model varies. Typically they	The final governance model was developed in a collaborative effort with all participating agencies, and

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
		representatives from all 12 Member jurisdictions, including the <i>Board of Directors</i> (elected officials), <i>the executive committee</i> (city administrators and managers) and <i>the Operations Committee</i> (public safety). These three were formed to address start up issues. The structure reflects the desire of members to maintain local decision making power.	Chief Association Representative, and one(1) Non-Voting Advisory Member (Appointed by Largest Incumbent Local Exchange Carrier)		are directly responsible to the public. Seats are allotted by population. Board leadership is rotated each year.	regardless of size. Governance is generally set up along county boundaries with regional dispatch/9-1-1 boards. Personnel is managed by the MSP, policy is managed with a committee approach.		have a board of directors consisting of elected officials who set the budget and who hire the PSAP director. For the state program authority is in a state agency to manage the program, there is an advisory committee with multiple constituent group representation.	resulted in the establishment of voting membership for all of the public safety agencies and non-voting membership for the non-first responder public safety agencies. All members serve on a board known as Emergency Management Communication s Advisory Board (EMCAB).
How is(are) the governance/oversight committee(s) structured	No data or records available	The Board of Governors provides policy leadership and approval of	The only political involvement is the board appointment	Constituent groups.	Elected Commissioners and Council Members sit on the board.	The committee is arranged by county. With each	One county law enforcement officer elected by the	Structured as a state agency with a large advisory group composed of	By constituent groups – e.g. x number of representatives for law

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
		<p>policies related to the budget, finance, and legal matters. They approve the operating budget.</p> <p>The Executive Committee provides direction and oversight of the DCC's operation. They carry out the policy decisions of the Board of Governors and make recommendations to the board.</p> <p>The Operations Committee provides advice on operations and procedures which impact daily operations.</p> <p>Administrative</p>	<p>and budget approval. There is no other "required" stakeholder involvement.</p>		<p>The number of seats afforded bears a direct relationship to the population represented. Board leadership rotates, and all members have leadership opportunities. The MESB generally operates by consensus, but each member has the right to request a specific vote. Voting is weighted by population. The Board has 3 functional groups (9-1-1, Radio and EMS) and each group has a Technical Operations Committee</p>	<p>participating county receiving one vote regardless of size. The MSP has eventually taken the lead on all personnel issues, while the whole committee deals with issues of policy.</p>	<p>membership of the Vermont State Sheriff's Association; one municipal law enforcement officer elected by the Chiefs of Police Association of Vermont; one official of a municipality not currently receiving 9-1-1 service; a firefighter; an emergency medical services provider; a department of public safety representative; and three members of the public</p>	<p>interested parties including PSAP's, elected officials and private industry representatives. County governments are ultimately responsible for assuring that 9-1-1 is functional, with state assistance.</p>	<p>agencies, x for fire agencies, x for citizens, etc. There is no citizen representation. Each voting member has a single vote, regardless of agency size or financial support.</p>

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
		services such as fiscal management, legal and facilities management are handled through contracts and member agencies			(TOC's). These committees generally make recommendations to the full board.				
Was the consolidation participation mandated or one where you had to entice folks to participate?	Mandated with almost no input from line employees.	People were recruited/enticed but were generally willing to participate. Issues were worked out in the planning process.	The option to create a District was approved by state statute in 1985.	Entice jurisdictions, although it was hard to turn down and not participate in the offer of 9-1-1 service.	The board was formed after a grassroots movement arose endorsing it. No enticement was mentioned.	Participation was not mandated. This caused problems at first because it became necessary to convince local agencies to buy in to the consolidation concept. After time local agencies realized that consolidation was an acceptable trade off and it became easier to	The state was without widespread 9-1-1 service prior to the establishment of the board. It is possible for municipalities to opt-out of the board, but only the University of Vermont has chosen to do so.	Participation is mandated, but with costs covered by the state for common use network components and reimbursement support for components whose costs could not be covered by local authorized taxes.	It was not mandated, but simply came together as the result of officials and elected legislators talking about cost savings. Others joined when they found out that the consolidated dispatch center worked.

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
						convince them to join.			
How are elected officials involved either in the finalized consolidation or in the process to establish the consolidated entity?	No data or records available	Elected officials serve on the Board of Governors.	City and county elected officials are involved in the governance of DENCO in two ways. First, each participating jurisdiction appoints the Board representatives as described above. Second, the annual operating budget must be approved by both the county government and the majority of the participating cities.	Elected officials were key to the process and each represented their jurisdiction.	County Commissioners and City Council Members sit on the MESB.	Elected officials were necessary to implement needed statutory changes so that the consolidation could be funded.	Board members are elected from a variety of sources. The Governor technically appoints the board members, but they are mostly chosen by civic groups, associations etc. The Governor gives consideration to different Geographic regions within VT.	Elected officials serve on the advisory group. They also introduced a referendum to help bring about the NG9-1-1 system.	The elected parties of each political subdivision were involved in that they had to sign formal agreements establishing the rights and responsibilities of the parties and of the communications center and of the funding process.

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
How are decisions made?	Very little if any involvement user agencies/stake holders	Decisions are made based on jurisdiction spread out over the three operating committees, as described in question I.	Denco chooses to involve the PSAPs in its planning. PSAP operational decisions are made at PSAP level, but District-Wide decisions are made by the Denco Board. The Board follows Roberts Rules of Order and functions by majority vote.	Each agency is a separate jurisdiction with representation by their elected officials.	District wide decisions are made by the board. They generally operate under consensus, but sometimes record votes on certain issues. Meeting minutes are kept and posted or emailed to interested parties. Meeting information is posted on a Board maintained website.	The MSP handles personnel decisions. The committee handles policy and other decisions.	The board hires an executive director who manages the day-to-day operations of the board. The board generally meets quarterly.	Ultimately the State has decision making authority, but the advisory committee does vetting to reach consensus on recommendations.	Each agency has representation on the governing board, which is known as EMCAB. Concerns are brought before the board for handling, the budget is reviewed and approved by the board, and it generally works quite well.
How were conflicts in standards (service levels, performance expectations, training requirements, compensation,	No data or records available	Committees were established during the planning process to work through each operational	Denco staff works with all stakeholders to resolve issues. It has a PSAP Management and a PSAP User working group that	Majority rule.		Local employees were made state employees. This allowed for standardized training and	Because there was no widespread system before the adoption of the E9-1-1 board, few conflicts arose. The board	The state mandates few standards, by those that exist are the highest achievable. PSAP's traditionally share	Consensus. Each agency that is a law, fire, or EMS agency that uses WESCOM as its primary dispatch provider has a

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
benefits, etc.) resolved		issue. This resulted in one set of operational directives. Wage and benefit plans were developed early in the project to ensure personnel retention and job security. There was a minimal loss of personnel.	meet every other month to discuss and resolve issues. In addition, on an as needed basis, Denco staff meets with other stakeholders to resolve issues. The only issues that are brought to the board for consideration involve additional appropriation of funds or policy issues.			operational procedures. State salaries are generally higher and formerly local employees found greater career path options once they were made state employees.	started with a clean slate.	information and operational protocols. Most PSAP's have well developed protocols to assure acceptable levels of performance.	single vote. Subcommittees were formed for law enforcement, fire and EMS to develop single standardized protocols for each type of service. Each agency has a bit of leeway for specialized needs, but all general dispatch protocols were set by committee.
Please describe the Management & Oversight function of this consolidation.	The police and fire chiefs each had their expectations which were mandates for ECC employees.	The three oversight committees have allowed local jurisdictions to maintain a high level of control. The three committee structure also	The statute that governs Denco provides for the Board to appoint a Director of Communications (Executive Director) who manages the District and is given broad	All participants accepted minimum standard	The board is made up of representative s from member counties. It is broken down into Technical Operations Committees (TOC's) that oversee its		The board is elected from a variety of sources that represent a geographic and demographic sampling of interested parties. They hire an	These functions are handled by the Advisory Committee. In addition, the agency is part of a larger state agency with copious planning and management	WESCOM is managed by the Walla Walla Police Department, which employs, recruits, trains, and administers all of the dispatch functions. General

Appendix 2 - Interview Questionnaire Summary Data & Findings

	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
		allows for an oversight cycle, with each committee responsible checking and balancing the others.	powers to interpret the goals of the Board and oversee the function of the operation. Oversight of the Executive Director is by the Board.		three operational areas. They deliberate and initiate actions and program activities.		executive director to run day-to-day operations of the system, and meet quarterly.	oversight requirements.	oversight is provided by the EMCAB Board.
How are Administrative Services for the consolidated agency handled?	No data or records available	They are contracted out.	Administrative services such as payroll, benefit administration for Denco employees, budgeting, accounts receivable and accounts payable are handled by Denco staff.	There is both an “Administrative Board” and an “Operations Board”. The Admin Board oversees fiscal issues, while the Ops Board oversees operational issues. The Sheriff’s Office (and the Sheriff in particular) was designated for day-to-day oversight of	Members split administrative tasks between them. For example, one member does payroll and healthcare administration, another handles finance, to provide legal counsel, etc.	MSP handles personnel issues; the larger board handles other issues.	An Executive Director, and staff of 9, handles day to day operations.	State Administrator has authority for administrative items and utilizes the services of the parent agency.	General operational matters are handled by a Communications Manager; Administrative Secretary; or the Chief of the Walla Walla Police Department. Day to day supervision is handled by three staff supervisors.

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	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
				the entire agency and staff.					
Please describe how Fiduciary oversight/responsibility is handled? How do you handle Operational Cost Distribution?	ECC handles all its own administrative services. Supervisors and dispatchers were responsible for it all.	The Board of Directors determines the annual operating budget. The Executive Committee oversees direction and oversight of the day-to-day operation of the DCC.	Denco is charged with fiduciary oversight and responsibility and owns the entire system as one system. It does not, in any way, distribute funds to single jurisdictions. Denco receives funds via the emergency service fee established by resolution of board of managers. The fee is uniform across the District and collected and remitted from users of telecommunica	The Sheriff appoints an agency Director who is responsible for both admin and operations (small rural county).	Initiatives proposed by the TOC's are voted on and funded by the full MESB.	There is no single funding model used consistently, but in general the state handles capital costs and all participants split the operational costs roughly based on call volume and/or population and area served.	The Board has MOU's with other agencies to use their facilities and personnel for 9-1-1 call-talking. Staffing and scheduling decisions are made at the local agency level. The MOU sets service level agreements for staffing.	The total appropriation is provided by the legislature. Cost distribution is from payment of 9-1-1 costs or by a set of rules that define assistance to counties. Contract process provides guidance for performance expectations. Reporting of expenditures and statistics is required monthly with reimbursement of expenses linked directly to these	Annually, the user fees are established for each agency based upon a formula that reviews the total calls for service by each agency and also factors in current budget needs. Agencies that have a limited usage of the system pay a flat minimum fee, which is also established by the EMCAB Board. These fees may be adjusted from time-to-time by the EMCAB Finance Subcommittee

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	Arlington, VA	Dakota County, Minnesota	DENCO area (Dallas, TX)	Pacific County, WA	Metropolitan Emergency Services Board (MESB)	State of Michigan	State of Vermont	State of Washington	WESCOM Walla Walla, WA
			tion services by the service provider. The board sets the wireline and voice over Internet Protocol (VoIP) fees by resolution.					requests.	based upon current budget requirements, special needs, etc.
How do you handle Capital Cost Distribution?	No data or records available		All capital costs are determined by the Executive Director acting on the goals established by the Board and borne by Denco and are part of its operating budget. Each year, the Denco Area 9-1-1 District Fiscal Year Financial Plan, approved by participating jurisdictions, includes annual projections of	The Admin Board approves the budget. The expenditures are split among participating agencies based on a formula weighting population and assessed value.		Capital costs have largely been borne by the State. Grants have been used in some cases.	The Board uses set aside funds to pay for capital improvements.	Counties submit annual requests for assistance, they are reviewed and approved appropriate to the agency need.	Capital items are brought before the EMCAB Board for review and approval, based upon current and projected budget allowances.

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			anticipated revenues and estimated expenditures.						
How is Funding structured? Specifically, describe the formula, if any that is used to allocate costs between the various participants.	No data or records available	The center gets 8% of its funding from State 9-1-1 fees and 92% from member fees. The member fees are based on a three year average of assigned calls for services. It was designed to level out unusually high calls for services resulting from any single event (such as a major storm).	Denco does not receive any funds from its participating jurisdictions and provides the same level of service to all its PSAPs and participating jurisdictions, regardless of size.	Assets are owned by an Equipment Reserve and Replacement Fund that rents the equipment to the agency. This fund then is used to replace capital equipment. The funding sources for PACCOM are outlined in Article XV of the PACCOM Interlocal Agreement. Any balance of required revenue, after all other revenue sources are exhausted will	The MESB program is funded by several means. Board activities are primarily funded by assessments to member Counties and Cities. These assessments are calculated via a population based formula. Some of the Regional Radio Program is supported by user fees. Grants are also secured from a variety of sources, including	All participants split the operational costs roughly based on call volume and area served. The state handles most capital costs.	The Board is %100 funded through contributions to the State Universal Service Fund, which is set at %2 of a subscribers phone bill.	Funding is appropriated by the legislature. Counties apply for reimbursement of funds.	Please see above.

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				hereby be called the “Member Budget” and will be funded according to the terms and conditions of this document.	from the EMS Regulatory Board of Minnesota, which helps fund the Regional EMS Program.				
How is communications between the consolidated agency and the stakeholder groups handled?	No data or records available	Regular communication is maintained through meetings and the DCC website. Monthly surveys seek feedback on DCC services. Monthly reports are distributed to committee members, staff, and other interested parties. The DCC also tracks comments and concerns	Stakeholders are engaged through regular User Group meetings with the Executive Director and appropriate Denco staff. Written communication with stakeholders is handled via Email and more formal Written Correspondence. In addition, two Newsletters (a quarterly publication	Member agencies have direct communication with the Director. They are discouraged from calling the dispatch floor.	Cities and Counties are represented on the board, which meets monthly. The Finance Committee meets as needed and is more engaged in the budget process. The TOC’s meet monthly. Interested members of the public are kept up to date through emails and postings on the MESB’s	The agency consists of members from stakeholder groups. There power is evenly split. They participate through an equal vote on the governing board.	The board consists of members of the various stakeholder groups. Thus, board members accomplish most communication. The board staff also directly communicates with the PSAP’s on a day to day and quarterly basis.	Normal tools for communication are utilized along with mandated meetings for all stakeholders to be present to assure common knowledge level and adequate inter-stakeholder interaction.	Monthly meetings between the EMCAB Board and the Communications Manager, with special meetings as needed.

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		through an inquiry system. Ongoing communication is maintained through newsletters and electronic updates.	targeted to governing bodies and targeted bi-monthly newsletter for Telecommunicators.		website (www.mn-mesb.gov)				
Please describe the compensation program for the consolidated agency.	Poorly – was communicated as a mandate	Compensation and benefit plans were merged as consolidation happened. Any downsizing happened by normal attrition, this lack of layoffs helped sway employees to accept the new compensation and benefit package.		Traditional – Union agency	Compensation is based on a Merit Compensation Plan designed to reward high quality performance. Salary ranges are adjusted annually and reflect market trends in similar technical and admin positions in the government and private sector. Benefit compensation is administered	As consolidation happens local employees have been made state employees. This has benefited labor as state compensation packages are generally more attractive than local ones. This has helped reduce bargaining unit issues.	Because of the collaborative model (MOU's) there is no need to consider compensation and benefits.		The dispatchers are paid based upon the established pay protocols for the City of Walla Walla. In the past it has been based upon a step system, the City has recently transferred into a market based compensation approach.

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					by one of the participating counties, Payroll is handled by another participating county etc. this allows MESB to remain lean and focused and eliminates the need for each county to have duplicate administrative functions.				
Was it necessary to integrate various work groups in the consolidation process and how was this handled?	Consolidation was completed with no pay change for employees. Within a few years dispatchers were reclassified to earn more pay.	Yes, before consolidation there were 4 separate unions and 5 human resources services. These were consolidated into 1 human resource service and 1 union. This was planned early, and staff		Agencies other than law enforcement were all volunteer at the time, including dispatch and telephone services. Those volunteers were replaced with paid Sheriff's	3 work groups were brought together under this consolidation (9-1-1, radio, and EMS). No major problems arose during consolidation and the merger has allowed a broader and	Merging of personnel was one of the biggest issues with consolidation. When there is a regional consolidation all dispatch and call-taking staff become state employees. This will	The decentralized nature of the consolidation results in some problems with competency and training between different agencies. This has required vigilance. This may also affect career	Not particularly, local PSAP's operated relatively independently, but defer to the Advisory group for funding and larger policy matters.	The Local Bargaining Unit was advised of each change as it developed and agreed to the changes as it occurred. We did not experience any specific labor issues during the consolidation process.

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		loss was kept to a minimum. All 62 employees were offered employment, and staff reduction has happened only through normal attrition. Staff had a full year to transition and train with their new co-workers before the consolidation was completely operational.		Office staff.	more thorough analysis of issues impacting the MESB and all 3 groups.	generally result in some positions being eliminated because of duplication. This and other issues have not been insurmountable.	advancement opportunities and call-taker retention.		
How has consolidation impacted operations?	No data or records available	Consolidation has streamlined operation and saved money. Service quality has increased, and response times have decreased.	The Denco area consolidated services model has provided a consistent level of service across the district that does not suffer from a "lot" of political	Increased workload for what was Sheriff's Office dispatch staff. Change in administrative approach.	The original goals of the MRB, EMS and Metro 9-1-1 were sustained through the formation of the MESB, and some benefits were seen. The	Impact has been positive on staff. Professionalism is up as staff is presented with greater career options. Standardized training and	It is difficult to say because 9-1-1 service was mostly unavailable prior to the consolidation. However, benefits are obvious.	Consolidation has complicated the state program, but permitted the carriers to better focus staff on 9-1-1 issues while freeing the locals from the	Centralized dispatch has allowed for cost savings both in equipment and personnel, and has resulted in a better trained and more focused staff that is able to handle the

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			pressure. It also provides a predicted stream of revenue to fund services that is absent local budgeting constraints.		focus was broadened to include 9-1-1 call, EMS response and Public Safety communications. Technical Operations Committees (TOC) for 9-1-1, Radio, and EMS provide venues for the JPA member experts to compare, discuss, and solve problems.	operations procedures have resulted in better constituent service.		efforts necessary to manage the network.	needs of all local agencies and at levels that increase public safety and services to the community.
What are the strengths/benefits of consolidation? What are the challenges?	Over 30 years the service delivery has definitely improved but it was a rough transition.	Strengths: Decreased costs, improved efficiency.	The recognized strengths of this type of consolidation are the legislative statute that provides local funding and local control governed by a local board	Dependable 24/7 operation. The challenge is trying to make everyone happy, while recognizing that not everyone is going to be	The MESB has helped streamline and simplify the 9-1-1, EMS, and Public Safety oversight process. Funding continues to be a challenge.	Consolidation has raised professionalism and customer service levels and local agencies have been able to access technology that they	Strengths: Has made 9-1-1 possible, provides adequate resources for Vermont to be a leader in 9-1-1 implementation. Weakness: lack of	Strengths: better operations with greater level of redundancy and diversity while keeping costs under control. Weakness: complication	The primary challenges to consolidation relate to basic human nature and a fear of both loss of control and decrease in responsibility. Once these challenges can

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			appointed by local jurisdictions.	happy with the manner in which service is provided – particularly at the outset of the consolidation.		could not afford otherwise.	enforcement provisions in the statutes.	of state program.	be effectively met, the benefits quickly outweigh the negative aspects by allowing for more cost effective staffing and equipping and training of emergency call receiving personnel.
What worked and what would you do differently?	The strengths are delivery of service from central location, and cross-trained personnel. The challenges were the length of time required to train personnel in all functions. More communication with employees	Worked: Setting out a clear mission, proactively integrating staff, maintaining dialogue, Measuring performance.	The standard level of service across the District has kept the District free from fund raiding or competing priorities for limited dollars. The challenge is keeping it that way.		The regional approach has positioned the MESB well for the transition to Next Gen 9-1-1. The formation of individual boards for 9-1-1 and Radio was beneficial. Expansion to include two additional counties has been	Consolidation has been mostly positive and there isn't a strong sense that things would be done differently.	Following changes: Give the E9-1-1 board statutory authority to enforce reasonable service requirements. Create policy, rules, and procedures that do not make assumptions about who operated the 9-1-1 system, or where the	Staff is better focused on 9-1-1 issues, locals are freed from efforts necessary to manage network. Operations are better with a greater level of redundancy and diversity, costs have been controlled. The state could have put more incentives for	Communicate honestly, budget realistically, meet and resolve issues often.

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					successful.		system resided. Placing a bright line distinction between 9-1-1 and dispatch. Also, privacy provisions were fine at the time, but are somewhat outdated today.	multi-county consolidations.	
For each of the initial goals listed under question e. describe how well that goal was met.	Improving efficiencies was met by providing a centralized service dispatch. Providing more staff by cross-training all employees is a continuing effort, cross-training has provided increased, but still insufficient, staff to handle	All goals were met.	All goals have been met and the model continues to work well.	All goals were met.	All goals have been met; the model has been adapted to add new counties and organizational groups, and continues to work well.	All initial goals have been met and surpassed expectations.	All of the original goals have been met and surpassed.	Goals have been met and costs are controlled.	All the above, reduce personnel and equipment costs and improve efficiency.

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	the growing workload. The Fire Department reduced costs by returning the firefighters to the stations and increasing the number of station personnel on duty.								
Is there the potential to expand the scope of this consolidation further? If so, please describe.	None at this time.	There are no current expansion plans, but the DCC remains open to exploring the addition of 311 to its services. DCC is also open to exploring the possibility of sharing equipment with neighboring centers. Consolidation	Current state statute allows for adjacent jurisdictions to become part of a District by joint resolution. There have been several attempts for that but it has never happened because the individual jurisdiction did not want to relinquish	No – there are no agencies /jurisdictions that are not involved.	The consolidation added two new counties since its inception. It could conceivably expand to include more jurisdictions.	There are still many areas that have not joined in consolidation. It is likely that consolidation will continue as the economy reduces funds for these holdout areas. Agencies will be more likely to collaborate when trying to upgrade their systems.	Probably not since it covers the entire state of Vermont, less one municipality.	There is great potential for consolidation at the local level since the NG9-1-1 network when combined with the VoIP system permits local government to go almost anywhere to collaborate for 9-1-1 call answering and dispatch.	Currently we are serving all but one fire district within Walla Walla County. There are no plans in effect which would expand this beyond county borders at this time.

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		is expected to continue.	control.						
Please describe if there are currently any threats to continuing this consolidation?	None at this time.	No obvious threats.	Each legislative session there is the threat of the legislature changing the statute and taking the entire state under its control and therefore the funding and control of operations. In this tight economic time, it is expected that there will possibly be an attempt the next session as well. There is also the same threat of local government stacking the board to use	No threats, however the formula is currently under consideration for change to include a call based element.	Funding continues to be an issue to maintain the status quo. The business model is based on wireline, which is rapidly decreasing. In addition, Public Safety is facing the costs of preparing for, and moving to a Next Gen 9-1-1 system.	There are no current threats to the overall consolidation. The weak economy is only making continued consolidation more viable.	There has been some discussion of merging the Board with another State agency. This probably won't happen; instead talks are in progress about how to integrate dispatch into the 9-1-1 model.	There was potential for fund diversion by the Legislature but this has been contained by developing close working relationships with key legislators who understand the impact of the program.	

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			funds for their purpose.						

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6.2.1 Summary of Survey Results

Political Drivers

- Consolidation was not mandated. It was the result of local leaders coming together to find cost savings.¹²
- There has to be concerted marketing effort to get smaller agencies to participate in consolidation, especially when one of the partners is very large.¹³
- Consolidation was initiated as a grass roots effort by county officials.¹⁴
- This consolidation grew to its present form through the merger of two existing consolidations, one for radios, and one for 9-1-1.¹⁵
- Consolidation was created by voter referendum with the sole purpose to provide 9-1-1 communication service.¹⁶
- Consolidation started when local officials tried to find a way to meet their goals of providing consistent service without state assistance.¹⁷
- There was a state mandate to provide 9-1-1, which did not exist. The mandate required consolidation to ensure funding.¹⁸

Legislation

- Legislative changes were needed to address the relationship between the city council and the county commissioners. An independent board was established.¹⁹
- Legislature established an independent board to provide a state-wide 9-1-1 system.²⁰
- Establishment of an independent board addressed the concerns of privacy advocates that no single large agency such as the state police should have information of every citizen.²¹
- Legislation provides for statewide governance of backbone elements and county governance of PSAPs. County participation in the statewide network is mandatory.²²

¹² WESCOM – question j

¹³ Michigan – 1.1.3

¹⁴ MESB – 1.1.2

¹⁵ MESB – 1.1.2

¹⁶ Denco – 1.1.1

¹⁷ Denco – 1.1.2

¹⁸ Pacific – question d

¹⁹ WESCOM – questions g and h

²⁰ Vermont – 1.1.2

²¹ Vermont – 1.1.3

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- Legislation was required to create the funding mechanism, with a State 9-1-1 Board to provide oversight in an advisory capacity.²³
- Legislation created a funding model to support the development of a statewide radio system.²⁴
- A marketing campaign was necessary to get the voters to approve the referendum creating the consolidation.

Voting Structure

- Votes are allocated one per agency, without regard to size. Only responding agencies have votes, there is no citizen representation.²⁵
- An independent board with nine members representing various constituencies and the public, with one vote per member.²⁶
- Statewide advisory committee with membership based on representation of constituencies. Decisions are made by the state, usually with the consensus of the advisory committee²⁷
- At the region level, where the actual consolidation occurs, governing boards are created with one vote per agency. One vote per agency is seen as critical to getting buy in from the smaller agencies that stand to lose the most in way of local control.²⁸
- Votes are based on the population served.²⁹
- Votes are allocated by constituent groups. An industry representative serves in a non-voting, advisory role.³⁰
- No single method of allocating votes is predictive of success – The case studies used for this report show that many different methods of allocating votes are in use, and there has been success with all of them. The evidence shows that it is important to match the methods of allocating votes with the local political environment. In Michigan, each agency participating in a consolidation has a single vote. This addresses the concerns of the smaller rural agencies that their voice would be drowned out by the Michigan State Police.³¹ The MESB consolidation allocates their votes based on the population served by the participating agency.³² This seems to work because the participants have a longer history of working together and there were fewer concerns about one group taking over. Denco and Vermont allocate votes based by constituent group, that is there are votes allocated to law enforcement, fire, cities, counties, etc.^{33,34} In all of these varied forms of

²² Washington – 1.1.5

²³ Michigan – 1.1.5

²⁴ MESB – 1.1.3

²⁵ WESCOM – question i

²⁶ Vermont – 1.1.5

²⁷ Washington – 1.1.5

²⁸ Michigan – 1.1.5

²⁹ MESB – 1.1.4

³⁰ Denco – 1.1.4

³¹ Michigan State Police case study 1.1.3

³² MESB case study 5.1.1.1.4

³³ Denco case study 1.1.4

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governance there doesn't seem to be one form that has a clear advantage over another. All case studies show that the governance model in place is well accepted.

Agreements

- Local officials had to sign formal agreements outlining roles and responsibilities, including funding.³⁵
- Independent board enters into MOUs with agencies, with the Board providing the system and the agency providing the facilities and call-takers. Agency must agree to adhere to the standards set by the board.³⁶
- It is essential to establish strong and clear membership agreements that outline each party's responsibilities early on.³⁷

Conflicts

- Conflicts were handled through subcommittees arriving at consensus.³⁸
- State mandates standards that are typically the highest among conflicting standards.³⁹
- A well-defined structure is crucial for mitigating complaints.⁴⁰
- Most issues are handled through consensus but any member can request a vote.⁴¹
- Conflicts between pre-consolidation standards were resolved by accepting the minimal standard.⁴²

Personnel Issues

- A single agency manages personnel, under oversight of the joint governing board.⁴³
- By involving the bargaining unit early on, labor issues related to consolidation have been avoided.⁴⁴
- Independent board provides and operates the system, but contracts with local agencies to provide facilities and call takers.⁴⁵

³⁴ Vermont case study 1.1.5

³⁵ WESCOM – question k

³⁶ Vermont – 1.1.6

³⁷ Michigan – 1.1.12

³⁸ WESCOM – question n

³⁹ Washington – 1.1.5

⁴⁰ Michigan – 1.1.12

⁴¹ MESB – 1.1.4

⁴² Pacific – question n

⁴³ WESCOM – question o

⁴⁴ WESCOM – question v

⁴⁵ Vermont – 1.1.2

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- Call-takers work for different agencies but training and certification is provided by the independent board to ensure consistency.⁴⁶
- By not consolidating call takers into a single agency the career path for call takers is reduced, and this likely affects call taker professionalism.⁴⁷
- Personnel cannot be effectively managed by a committee so one entity needs to step up and assume this role for the consolidation.⁴⁸
- Consolidation is usually going to result in lost positions; this is one of the places where the savings are found. The consolidation groups needs to face this reality.⁴⁹
- Moving consolidated staff into the pay/benefit plan of the best group before the consolidation will minimize bargaining unit issues.⁵⁰
- Issues caused by the need to merge four union contracts were addressed by offering each employee a position working for the consolidation, and assuring that positions would only be cut through attrition.⁵¹

Operations

- An executive director that answers to the independent board is allowed to hire staff and manage system operations.⁵²
- There was no one-size-fits-all model used in this consolidation. In some cases only radios were consolidated, in others, all call-taking and dispatch functionality was consolidated. Local political considerations drove the model used.⁵³
- Most operational decisions are made by Technical Operation Committees, who make recommendations to the Board.⁵⁴
- Operation decisions are made at the PSAP level, with district-wide decisions made by the Executive Director who answers to the Board.⁵⁵
- Board of director's are responsible for policy level decisions regarding budget, finance and legal.⁵⁶

Stakeholder Communications

- Stakeholder communication is facilitated through the board members who represent stakeholder groups.⁵⁷

⁴⁶ Vermont – 1.1.2

⁴⁷ Vermont – 1.1.9

⁴⁸ Michigan – 1.1.5

⁴⁹ Michigan – 1.1.9

⁵⁰ Michigan – 1.1.9

⁵¹ Dakota – 1.1.10

⁵² Vermont – 1.1.6

⁵³ Michigan – 1.1.2

⁵⁴ MESB – 1.1.4

⁵⁵ Denco – 1.1.4, 1.1.5

⁵⁶ Dakota – 1.1.7

⁵⁷ Vermont – 1.1.8

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- There are mandated meetings for stakeholder groups.⁵⁸
- Giving each participant an equal vote facilitates shareholder communication.⁵⁹
- A website is used to post meeting information, minutes, planning documents, etc.⁶⁰
- Stakeholder involvement is limited to Board appointments and budget approval.⁶¹
- Bi-monthly user group meeting are used to keep managers and PSAP staff informed and to give them a voice.⁶²
- A quarterly newsletter is used to communicate with policy-level officials, while telecommunicators receive a bi-monthly newsletter.⁶³
- Regular newsletters are used to update stakeholders.⁶⁴

Problems/Threats

- Had to overcome the fear of a loss of control and decreased responsibility.⁶⁵
- Agencies need to be convinced that loss of control is offset by the benefits of joining a consolidated system, such as gaining access to technology they could not afford on their own.⁶⁶

Operations Best Practices/Lessons Learned

- Communicate honestly⁶⁷
- Meet to resolve issues often⁶⁸
- Anticipate turf battles and unforeseen problems. Allow for contingencies.⁶⁹
- Strong governance allows the 9-1-1 agency to focus on providing and improving service.⁷⁰
- The 9-1-1 agency needs to have enforcement authority to ensure that regulations related to 9-1-1 are adhered to.⁷¹

⁵⁸ Washington – 1.1.8

⁵⁹ Michigan – 1.1.8

⁶⁰ MESB – 1.1.7

⁶¹ Denco – 1.1.4

⁶² Denco, 1.1.4

⁶³ Denco – 1.1.7

⁶⁴ Dakota – 1.1.9

⁶⁵ WESCOM – question x

⁶⁶ Michigan – 1.1.3

⁶⁷ WESCOM – question cc

⁶⁸ WESCOM – question cc

⁶⁹ WESCOM – question e

⁷⁰ Vermont – 1.1.10

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- Many laws/rules created for legacy 9-1-1 system may prove to be inadequate to address NG 9-1-1 systems.⁷²
- Everyone needs to have an equal seat at the table.⁷³
- Emergency communication regions should be aligned with other governance regions, e.g. EMS, Fire, Public Health, for maximum efficiencies in governance.⁷⁴
- A consolidation that provides the supporting functions to its members has many benefits and can easily be expanded to a complete consolidation as needed. It has proven to be scalable both horizontally and vertically.⁷⁵
- Consolidations pave the way for transition to NG9-1-1.⁷⁶
- Treat all stakeholders equally.⁷⁷
- Have a clear mission to keep everyone focused.⁷⁸
- Clear agreements outlining responsibilities are essential – Though this did not come up in the narrative, a majority of the case studies listed the need for clear agreements in their lessons learned section.

Economic Drivers

- Consolidation was not mandated. It was the result of local leaders coming together to find cost savings.⁷⁹
- Consolidation was initiated to provide service to rural areas where no single agency was sufficiently sized to provide 9-1-1 on its own.⁸⁰
- Budget restrictions were a key driver for this consolidation.⁸¹
- Trying to keep pace with technology changes was a driver for consolidation; individual agencies could not afford new technology on their own.⁸²
- Lack of funding, especially in rural areas provide strong incentives to consolidate.⁸³ Conversely, more available funding tends to hinder consolidation efforts.⁸⁴

⁷¹ Vermont – 1.1.10

⁷² Vermont – 1.1.10

⁷³ Michigan – 1.1.12

⁷⁴ MESB – 1.1.5

⁷⁵ MESB – 1.1.11

⁷⁶ MESB – 1.1.12

⁷⁷ Denco – 1.1.11

⁷⁸ Dakota – 1.1.13

⁷⁹ WESCOM – question j

⁸⁰ Vermont – 1.1.3

⁸¹ Michigan – 1.1.1

⁸² Michigan – 1.1.3

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- As local funding decreases, agencies are willing to consolidate more and more of their functionality.⁸⁵
- Mandated technology changes created a fiscal burden that could only be addressed through consolidation.⁸⁶
- Attain operational efficiencies.⁸⁷
- Lack of funding can be leveraged as an opportunity for consolidation – In several instances there is evidence that a difficult fiscal climate is conducive to efforts to consolidate 9-1-1 and dispatch systems. The report on the State of Michigan consolidation repeatedly mentions that lack of funds drove agencies, especially those in rural areas to combine their resources through consolidated systems.⁸⁸

Cost Allocation

- Based on annual call volume, with small users paying a flat fee. All charges are determined by the joint governing board.⁸⁹
- All funding is provided by payments into the state's universal service fund. Agencies hosting a PSAP receive a \$45k/position/year contribution.⁹⁰
- Funds are appropriated by legislature and counties make annual requests.⁹¹
- Statewide 9-1-1 agency provides network and database which are used by county based consolidated 9-1-1 systems.⁹²
- Assessments for operational costs are based on the population served.⁹³
- Consolidation is funded through district-wide user fee. No local taxes are used, which keeps funding out of the normal politicized appropriation process.⁹⁴
- Additional fees come from a State 9-1-1 fund.⁹⁵
- A detailed formula is used to allocate operation costs that rely upon population and grand list.⁹⁶

⁸³ Michigan – 1.1.3

⁸⁴ Michigan – 1.1.11

⁸⁵ Michigan – 1.1.5

⁸⁶ Dakota – 1.1.1

⁸⁷ Dakota – 1.1.3

⁸⁸ Michigan State Police case study 1.1.3

⁸⁹ WESCOM – question q

⁹⁰ Vermont – 1.1.7

⁹¹ Washington 1.1.7

⁹² Washington – 1.1.2

⁹³ MESB – 1.1.6

⁹⁴ Denco – 1.1.2

⁹⁵ Denco – 1.1.6

⁹⁶ Pacific – question s

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- Local portion of costs are based on three year average of call volume.⁹⁷

Capital Costs

- Capital costs are approved by the joint governing board, and funded through the normal funding process, with charges based on call volume.⁹⁸
- Capital costs are covered with set-aside funds from the annual budgets.⁹⁹
- Capital costs are borne by the State with operational costs handled by the participants, with costs allocated by call volume or population served.¹⁰⁰
- Grants for capital expenditures are easier to get when a group of agencies applies together.¹⁰¹
- Capital costs are budgeted into the annual operating budget.¹⁰²
- Initial capital costs for consolidation center were funded by issuing bonds.¹⁰³
- Capital costs are best covered by the State or other large entity – Each of case study showed that capital costs were covered either by the State, or by the large group formed by the consolidation. It is clear that a primary advantage of consolidating is the pooling of resources, and it makes sense to use the large pool to cover capital costs, with some other method of dividing the operating costs among the participants.

Fiscal Results

- There have been savings in both equipment and personnel since consolidation.¹⁰⁴
- Partnering with other agencies to collaboratively staff call taker positions has proven to be very cost effective for all parties.¹⁰⁵
- Having a statewide backbone has provided for savings at the local level and ensured better integration.¹⁰⁶
- There have been significant savings from the first year of the consolidation.¹⁰⁷

⁹⁷ Dakota – 1.1.8

⁹⁸ WESCOM – question s

⁹⁹ Vermont – 1.1.7

¹⁰⁰ Michigan – 1.1.7

¹⁰¹ Michigan – 1.1.7

¹⁰² Denco – 1.1.6

¹⁰³ Dakota – 1.1.4

¹⁰⁴ WESCOM – question w

¹⁰⁵ Vermont – 1.1.9

¹⁰⁶ Washington – 1.1.6

¹⁰⁷ Dakota – 1.1.8

Appendix 2 - Interview Questionnaire Summary Data & Findings

Economic Best Practices/Lessons Learned

- Budget realistically.¹⁰⁸
- Competition in the telecommunication marketplace is driving down USF contributions making USF an unsustainable funding source over the long term.¹⁰⁹
- A robust funding source allows the 9-1-1 agency to focus on providing and improving service.¹¹⁰
- There is likely to be no savings from consolidation unless a champion stands up and builds a backbone network to eliminate duplication of resources to serve smaller areas.¹¹¹
- The lack of NG standards adds risk to NG projects.¹¹²
- Funding that is based on wireline service faces pressure from consumer trends toward wireless.¹¹³
- Funding that is based on wireline service faces pressure from consumer trends toward wireless.¹¹⁴
- Developing a funding mechanism that is separate from the normal appropriation mechanism has been effective in ensuring adequate 9-1-1 funds.¹¹⁵
- Consolidation improved the bargaining power with vendors – Many of the consolidation reports mentioned that the larger group resulting from the consolidation was better able to work with vendors and communication companies. Although not directly mentioned, it seems that the increased bargaining power of the consolidated agencies would result in lower costs.

Service Drivers

- It is impossible for small agencies in rural areas to provide 9-1-1 service due to their small size, making consolidation the only way to provide 9-1-1.¹¹⁶
- Creation of statewide 9-1-1 backbone was done in response to the realization that NG systems are facilitated by and facilitate consolidated systems.¹¹⁷

¹⁰⁸ WESCOM – question cc

¹⁰⁹ Vermont – 1.1.7

¹¹⁰ Vermont – 1.1.10

¹¹¹ Washington – 1.1.3

¹¹² Washington – 1.1.3

¹¹³ MESB – 1.1.10

¹¹⁴ MESB – 1.1.10

¹¹⁵ Denco – 1.1.9

¹¹⁶ Vermont 1.1.3

¹¹⁷ Washington – 1.1.1

Appendix 2 - Interview Questionnaire Summary Data & Findings

- Trying to keep pace with technology changes was a driver for consolidation; individual agencies could not keep up on their own.¹¹⁸
- An initial goal of consolidation was to streamline government by having a single entity manage issues that were duplicated among all participating agencies.¹¹⁹
- The increasing burden of keeping up with new technologies drove the consolidation effort.¹²⁰
- Increase interoperability between agencies.¹²¹

Personnel Matters

- Consolidation has resulted in better trained and more focused personnel, increasing the level of public safety.¹²²
- Training is provided by the state for county PSAPs.¹²³
- Independent state board sets call taker standards and trains and certifies call takers employed by local agencies.¹²⁴
- Consolidation has had a positive effect on the professionalism of the staff.¹²⁵
- Consolidation provides a better career path for staff in smaller agencies.¹²⁶
- Standardized training provided by consolidation positively impacts service.¹²⁷
- Consolidation staff is limited to a small group of professionals who manage the consolidation activities. The call-taker and dispatch staff works for the participating agencies.¹²⁸
- Existing personnel needed to be reassured that they would still have jobs after consolidation. New compensation package was created early on to assist with employee retention.¹²⁹
- It took a lot of effort to develop protocols to ensure that calls are handled consistently and effectively.¹³⁰
- Consolidation had a positive impact on staff training and professionalism, which improved service overall.¹³¹

¹¹⁸ Michigan – 1.1.3

¹¹⁹ MESB – 1.1.3

¹²⁰ MESB – 1.1.3

¹²¹ Dakota – 1.1.3

¹²² WESCOM – question w

¹²³ Washington 1.1.2

¹²⁴ Vermont – 1.1.9

¹²⁵ Michigan – 1.1.10

¹²⁶ Michigan – 1.1.10

¹²⁷ Michigan – 1.1.10

¹²⁸ MESB – 1.1.8

¹²⁹ Dakota – 1.1.4

¹³⁰ Dakota – 1.1.10

Appendix 2 - Interview Questionnaire Summary Data & Findings

Methods to Increase Efficiency

- IP based next generation systems provide an economy of scale throughout the system allowing for significant (>20%) reductions in PSAPs while improving service.¹³²
- Virtual consolidation, where agencies maintain facility and staff but participate in unified network is an emerging trend.¹³³
- Each member of the consolidation uses their existing resources to provide an area of functionality to the group, e.g. one agency manages payroll, another provides legal, etc.¹³⁴

Service Best Practices/Lessons Learned

- Overly strict privacy rules can inhibit data sharing that would increase responder effectiveness.¹³⁵
- Initial policy that required the separation of 9-1-1 and dispatch were later seen as creating inefficiencies, and the policies were reversed to encourage the merging of 9-1-1 and dispatch.¹³⁶
- It is not practical to attempt the migration to NG9-1-1 systems on less than a state, or even multi-state basis.¹³⁷
- Consolidation has provided better redundancy and diversity without increasing costs.¹³⁸
- Rather than just providing incentive for countywide consolidation, there should be incentives for multicounty consolidation.¹³⁹
- Bringing together 9-1-1, dispatch, and EMS under a single governance has allowed for a more broad analysis of issues
- Consolidation also involved reconciling the differing business practices among the participating agencies.¹⁴⁰
- A monthly survey of the participating agencies is used to ensure that performance meets expectations.¹⁴¹
- Metrics, such as average time to answer, are tracked regularly to ensure high performance.¹⁴²
- An inquiry system is used to track complaints.¹⁴³

¹³¹ Dakota – 1.1.10

¹³² Vermont – 1.1.2

¹³³ Michigan – 1.1.2

¹³⁴ MESB – 1.1.5

¹³⁵ Vermont – 1.1.4

¹³⁶ MESB – 1.1.3

¹³⁷ Washington – 1.1.3

¹³⁸ Washington – 1.1.10

¹³⁹ Washington – 1.1.10

¹⁴⁰ Dakota – 1.1.4

¹⁴¹ Dakota – 1.1.9

¹⁴² Dakota – 1.1.9

¹⁴³ Dakota – 1.1.9

Appendix 2 - Interview Questionnaire Summary Data & Findings

- EMD training has resulted in reduced costs for the fire services.¹⁴⁴
- Consolidation resulted in a significant reduction in response times.¹⁴⁵
- Personnel matters are best managed through a single entity – A common theme in the case studies was the needs to have a single entity manage the personnel. In some cases this was done by having the personnel work for the entity created by the consolidation, in others there was an agreement that one agency would take the lead on personnel matters.

Technology Drivers

- The technical infrastructure within Public Safety Answering Points (9-1-1 centers) has become increasingly complex over the last decade.
- Technology Trends Yesterday Analog to Digital Today Standardization Tomorrow Convergence
- Common Platforms Common Protocols
- IP architecture is scalable and interoperable
- P25 the standard for Digital Communications Project 25 Is Becoming Increasingly Important for Grant Funding
- Advances in technology now provide significant call routing and dispatching flexibility.
- “Land Mobile Radio Systems - All new digital voice systems must be compliant with the Project 25 (P25) suite of standards.”
- FY 2010 SAFECOM Recommended Guidance for Federal Grant Programs, “Absent...compelling reasons, P25 equipment will be required for LMR systems to which the standards apply.”
- The increased complexity has translated into both higher costs to maintain the technology as well as increased training requirements for 9-1-1 center employees
- The traditional revenue streams relied on by 9-1-1 centers to fund costs is not keeping pace with the costs to replace and maintain the technology.
- The convergence of technical systems combined with the escalating costs of maintaining those same systems makes consolidation of PSAPs a serious consideration for decision makers.
- Consolidation can occur physically where agencies share the same physical space or virtually where agencies share technical systems like CAD, Radio, RMS, etc.
- Technology may be a big hurdle to consolidation but experience has shown that governance and political issues may be harder to solve.
- Consolidation of radio systems in the long term can significantly increase communications interoperability by placing first responders on the same platform.
- Inability of centers on their own to fund new technologies like Next Generation 9-1-1.

¹⁴⁴ Dakota – 1.1.9

¹⁴⁵ Dakota – 1.1.10

Appendix 2 - Interview Questionnaire Summary Data & Findings

- 9-1-1 calls being transferred among multiple 9-1-1 centers delaying assistance to the public
- Inability of centers to maintain adequate staffing and/or training levels.
- Short term technology solutions can revolve around existing systems and their scalability to accommodate multiple agencies.
- Initial technical consolidation efforts should capitalize on existing standardized technologies, practices and processes.
- Long term technology investments should adhere to established standards published by reputable public safety organizations like APCO, NENA, etc.
- Consolidation of multiple 9-1-1 centers should be seriously considered if jurisdiction is experiencing some or all of the following: Multiple centers or locations in need of technical upgrades or technology refreshment, service levels slip below expectations; centers experience an increase in multi-jurisdictional responses which might better be handled by one center than several.

Appendix 3 - Consolidated Communications Center Survey Results

6.3 Appendix 3 - Consolidated Communications Center Survey Results

The APCO Consolidated Center Directors Network (CCDN) is comprised of public safety communications center directors representing our nation's consolidated, multi-jurisdiction or multi-agency centers. The CCDN was established to advise APCO and the industry at-large and to make recommendations to the Board of Officers on public safety communications issues. In an effort to provide tools to those APCO members, who may be contemplating consolidation, the CCDN has been working to gather non-proprietary information about the consolidation of public safety communications centers. One of these tools was the creation of a survey, which was developed by the members of the network, who are Directors of consolidated centers from across the nation.

On April 20, 2010, the APCO International Consolidated Communications Center Survey was released via the APCO Home page, sent to the APCO Governing Bodies for dissemination and members of the network shared the survey with the consolidated counterparts in their states, as well. The survey was open for approximately two months and was completed by 198 individuals nationwide. Included herein are the results of the survey. For the purposes for this survey, consolidation was defined as the combining of two or more Communications Centers into a single facility and/or organization using one of several existing models. The survey was comprised of questions that focused on areas of demographics, governance, operational issues, staffing, and funding.

- Over 47% of respondents stated that they were motivated to consolidation because research suggested economic benefits and 45% of the respondents stated that they were motivated by suggested operational benefits.
- 69% of respondents stated that the largest challenge to consolidation was related to personnel issues such as training, mingling of different staffs and unions, with 68% of the respondents stating that securing “agency buy-in” was the next biggest challenge.
- Respondents were asked to rank benefits of consolidation, and over 84% of the respondents stated that single point of contact and control was the biggest benefit. Drawbacks to the consolidation process included interagency rivalry and politics.
- The organizational structure of the consolidated centers varied; however, over 72% of the centers were civilian based, and the majority of consolidated centers are funded through telephone surcharge fees (76%).
- Based upon the results of the survey, consolidated centers are diverse in their makeup and populations served, with 29.6% of the centers having a population between 100,001 and 250,000, with over 27.5% who process between 250,001 and 500,000 calls for service annually.

The CCDN is pleased to present the survey and its findings and hope that the following provides APCO members with information that will assist their organizations as they contemplate the concept of consolidation. Should you want to obtain additional information regarding the survey or have questions regarding consolidation, please contact the Consolidated Center Directors Network (CCDN) through APCO's Professional Networking Platform, PSConnect.

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6.4 Appendix 4 - Consolidated Communications Center Guide

Communications Center Consolidation Considerations¹⁴⁶

A guide for those contemplating the consolidation of one or more Public Safety Answering Points

Determine Type of Consolidation Desired

- ☐ **Co-Location Only:** Multiple agencies share common facility but maintain separate call taking/dispatch capability.
- ☐ **Single Discipline Call taking:** Multiple agencies of common discipline (i.e. police only) share common facility and consolidate call taking operations.
- ☐ **Single Discipline Dispatch:** Multiple agencies of common discipline (i.e. police only) share common facility and consolidate dispatch operations.
- ☐ **Consolidated Call taking:** Multiple agencies share common facility and consolidate call taking operations for more than one discipline.
- ☐ **Full Consolidation:** Multiple agencies share common facility and consolidate call taking and dispatch operations across multiple disciplines.
- ☐ **Virtual Consolidation:** Variation of scenarios 2-5 listed above wherein PSAP maintains separate physical locations but share common call taking and/or dispatch capabilities over a secure managed network.
- ☐ **Dual Mode Consolidation:** Variation of scenarios 1-5 listed above whereby both public safety and non-public safety agencies share a common facility and potentially a degree of shared technology (i.e. 9-1-1 and 3-1-1 sharing common facility and common CAD system).

Check the Legal Requirements

- ☐ What is and what is not required to conduct a consolidation?
- ☐ How does state law speak to this issue?
- ☐ Will simple memoranda of understanding or intergovernmental agreement suffice, or is a referendum required?
- ☐ If so, what steps are required to place it on the ballot?
- ☐ Are there restrictions as to what unit of government can operate or manage a PSAP?
- ☐ Are there mandates requiring consolidation?
- ☐ Do external requirements such as NCIC have a bearing?

¹⁴⁶ On April 20, 2010, the APCO International Consolidated Communications Center Survey was released; checklist published here with permission.

Appendix 4 - Consolidated Communications Center Guide

Identify Requirements-(Develop a case for consolidation)

- ☐ How do you know if consolidation is right for an agency?
- ☐ Are calls being transferred among or between agencies?
- ☐ Are multiple agency responses having to be coordinated between and among different dispatch centers?
- ☐ Are critical systems or facilities having to be upgraded or replaced?
- ☐ Are there performance or service levels below desires or expectations?
- ☐ Are there concerns about sustainable funding for operations or for communications systems, CAD, radio, NG 9-1-1?
- ☐ What makes consolidation a viable alternative?
- ☐ What are the perceived benefits?
- ☐ What improvements can be expected?
- ☐ How do proposed costs compare with current expenditures?
- ☐ Upon what research/data are these conclusions based?

Identify Requirements-(Continued)

- ☐ Note that consolidations may not save a significant amount of money especially during

“start-up”. Given this, what are other “selling factors?”

- Improved services to the citizens
- Consistent and uniform services
- Improved coordination and interoperability (i.e. cross jurisdiction, officer safety, etc.)
- Major incident coordination
- Economies of scale
- Potential long term cost effectiveness.

Identify Interested Agencies

- ☐ What agencies are likely participants?
- ☐ What services do they expect?

Identify Challenges

- ☐ What agencies are against the proposal?
- ☐ What are their objections?
 - Local distrust
 - Trying to please all and do all for all agencies

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- Creating and sustaining political commitment
 - Overcoming perception of loss of local touch or specialized services
 - Overcoming fear of decreased level of services
 - Fear of job loss (dispatchers and/or first responders)
- ☐ Can these be overcome? How?
- ☐ Get buy-in and participation not only from PSAP and communications managers, but
- from public officials and CEOs of participating agencies and municipalities, as well.
- ☐ When and if appropriate, seek public support.

Identify Best Governance For Your Situation

- ☐ How will the center likely be managed?
- ☐ Will it be managed by one participating agency?
- ☐ Controlled by a joint powers agreement and report to a board?
- ☐ Will there be separate operations (fire, law, EMS) and governance boards or a single body?
- ☐ Will the structure be civilian versus uniform or some hybrid thereof?

Appendix 4 - Consolidated Communications Center Guide

Develop Participation Projections

- ☐ How many agencies will participate?
- ☐ What is their total call volume?
- ☐ What services are expected?
- ☐ Are current policies and procedures reasonably compatible or could they be so?
- ☐ How many telecommunicators will be required (using Project RETAINS, Erlang formulae, etc.)
- ☐ How many support personnel?
- ☐ Are there a minimum number of agencies required to make the project work?
- ☐ Are any singular agencies critical to the success?

Determine Facility Projections

- ☐ What are the political and operational concerns associated with PSAP location?
- ☐ How can these be defined and addressed?
- ☐ What features are desired?
- ☐ Are there any special levels of protection needed, such as seismic or wind?
- ☐ How will the facility be furnished?
- ☐ What are the security needs?
- ☐ Can an existing PSAP fill these needs or is construction required?
- ☐ Can this PSAP be expanded or does this construction require a new location?
- ☐ Is there Government land available if a new build is necessary?
- ☐ If no Government land exists, is another suitable property available?
- ☐ If so, at what cost?
- ☐ Will a backup center be required?
- ☐ Can an existing PSAP easily become a backup Center?

Investigate Technology Needs

- ☐ Can CAD, phone, radio, recording and other systems in place be used?
- ☐ Upgraded?
- ☐ Is all new technology required to support consolidation?
- ☐ Does radio interoperability exist?
- ☐ At what level?
- ☐ How can this be improved, if needed?
- ☐ Are there ways of phasing in new technology?
- ☐ If so, how, and over what time period?
- ☐ Do any agencies have major technology upgrades (such as narrow banding or the addition of AVL or MDTs) in their future?
- ☐ How will this be managed?

Resolve Staffing Issues

- ☐ Will all current employees keep their jobs?
- ☐ If not, how will selections be made?
- ☐ How will new vacancies be filled?
- ☐ Are any personnel unionized?
- ☐ Are they all represented by the same bargaining agent?
- ☐ How is this addressed?

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- ☐ How will past accrued time be honored?
- ☐ Will seniority matter?
- ☐ How will supervisors be chosen?
- ☐ Are all potential participants at or near the same pay scale?
- ☐ If not, what are the acceptable options for handling this?
- ☐ In multi-discipline centers will all employees be expected to handle all agencies, or will “specialized” dispatchers (fire only, law only, etc.) be used?
- ☐ How does this impact salary?
- ☐ What schedule will be used?
- ☐ Are there enough existing employees to handle this? Too many?

Address Management Issues

- ☐ How will an SOP be generated?
- ☐ Can pieces of existing SOPs be used or will a new document be required?
- ☐ Will one user agency be responsible for management of personnel and budgetary processes, or will center adopt its own best practices?
- ☐ If so, does this require the filing of additional documents with any governing agency?
- ☐ How will salary and benefits be determined?
- ☐ Will uniforms be provided?
- ☐ What about retirement?
- ☐ Will legal counsel for the center be required, or can it be provided by a user agency?
- ☐ What accreditations are mandated? SCIC/NCIC?
- ☐ Will voluntary accreditations such as CALEA be sought?
- ☐ If so, when, by whom, and at what cost?
- ☐ Does the State have basic requirements for PSAPs or personnel?
- ☐ Look into legacy issues such as agencies relying on their PSAP to provide

non-traditional services, or serving as a “pick up point” for hard-copy information.

How will this change?

Develop Cost Estimates

- ☐ What are the start-up costs?
- ☐ Annual cost of operation?
- ☐ Recurring capital expenses (what are system life-cycles?)
- ☐ Make sure that ALL expenditures are carefully identified and documented. For example, personnel will require at least some training regarding the new organization and/or facility. Determine if this will be part of the consolidated budget, or if future

users be responsible for supporting these costs directly prior to the official start-up.

Create a Funding Model

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- ☐ Upon creation of a budget, determine how first year costs will be funded.
- ☐ Will this be different for future fiscal years?
- ☐ If so, how?
- ☐ If the plan calls for work to begin in the middle of a fiscal year, how will this be addressed?
- ☐ Are all participants on the same fiscal cycle?
- ☐ If not, identify how the consolidated budget can best interface with these.
- ☐ Are funds from other than user agency sources available such as state 9-1-1 fees or federal or state grants?
- ☐ If so, how much can be guaranteed?
- ☐ What type of auditing procedure is required by law and how will this be accomplished?
- ☐ Determine upon what factors contributions will be based. Gather information on many models before deciding.
- ☐ Involve the CFOs of participants in this process.

Review “Best Practices” Documentation on the Subject

Remember – you are not the first person to undertake a consolidation!

- ☐ Check APCO and other resources for timely information.
- ☐ Identify other similar sized centers that have successfully consolidated and make a few calls, perhaps even visit.
- ☐ Get one-on-one advice from people who have “been there and done that.”
- ☐ Incorporate these suggestions into your plan.

Create a Transition Plan

- ☐ Make a “to do” list of everything that must be done to get from where you are now to where you want to be. Don’t expect to get it perfect the first time as it will become a living document. Consider using project management software such as Microsoft Project to track your timeline and resources.
- ☐ The timelines are also a critical ‘selling’ point early on.
- ☐ Identify dependencies.
 - What has to be done first?
 - What can’t be done until other actions are accomplished?
- ☐ Make sure communications are frequent and remain open. Briefings need to occur more often closer to cutover, and needs to continue for some time thereafter. Leave sufficient time to adequately complete the tasks at hand.
- ☐ Develop a realistic transition budget with contingency.
- ☐ Identify any “deal breakers” or “drop dead dates” that may exist.
- ☐ Create a committee to oversee the transition (and even individual critical components) with key players assigned to manage key tasks.

Training

- ☐ Identify and analyze all existing training including any specialty training (such as EMD, EMT, teletype, etc.).

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- ☐ Conduct a needs assessment as part of the process to assist in determining training standards

Create a Business Plan

- ☐ Using input from all of the above, generate the first draft of a business plan.
- ☐ In addition to normal operational concerns, attention should be given to the need for potential consulting services as well as the identification of alternate sources of funding.
- ☐ Examine not only the start-up of the center, but its long-term management.
- ☐ Address continuity of operations.
- ☐ Identify the perceived challenges during the first five years and address them.
- ☐ Use available data to chart projected demands and community growth.
- ☐ Address technology life-cycles and personnel needs starting at day one and moving

toward the future.

Do you need a consultant?

- ☐ A consultant can independently review the facts and figures and then keep needs and budgets "realistic".
- ☐ Some political issues revolving around consolidation may be better served by a third-party consultant.
- ☐ It is imperative that the selection of a consultant be agreed upon by all major players. This can preemptively addresses issues.
- ☐ In the end this decision rests with the localities involved.

Effect the Consolidation

- ☐ Set a firm but flexible time line or schedule for the milestones of implementation. Conduct all needed tests (more than once!).
- ☐ Verify that all systems are in place and working and that all employees have been trained.
- ☐ Implement the final stages of the transition plan.
- ☐ Identify participants.
 - Will all agencies participate from hour one, day one, or will there be a gradual ramping up?
- ☐ Ensure sufficient staffing and vendor technical support is onsite before and after the cut.
- ☐ Notify the media of the event.

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Effect the Consolidation

- ☐ Periodically update them during the project to maintain public and user interest. Have an ‘open house’ ahead of cutover.
- ☐ Publicize any seven digit numbers that may have changed.
- ☐ Decommission those facilities no longer needed.
- ☐ Address major issues immediately.
- ☐ Consider “pooling” minor issues to deal with when the dust settles as they may not be issues at all.
- ☐ Hold plenty of debriefing sessions to identify the good, bad, and ugly of the experience.
- ☐ Then, **relax!**

Appendix 5 - APCO Standards

6.5 Appendix 5 - APCO Standards

Even before APCO International became an ANSI-accredited Standards Developer, the association strove to ensure that standards and effective practices were developed to address the needs of our members and the public safety communications industry at large. Led primarily in these activities by the APCO Call Center Standards Committee, in the development of these standards, APCO has produced some of the industry's most recognized and respected standards and effective practices.

- PSAP-Service Capability Criteria Rating Scale This standard is intended to assist Public Safety Answering Point (PSAP) Managers and their governing authorities to identify their current level of service capability. An assessment tool is provided to objectively assess capabilities of the PSAP against models representing different levels of preparedness, survivability and sustainability amidst a wide range of natural and man-made events.
- Wireless 9-1-1 Deployment and Management Effective Practices Guide
- APCO International's Project LOCATE (Locate Our Citizens At Times of Emergencies) developed the content of the Wireless 9-1-1 Deployment and Effective Practices Guide. These Effective Practices (EPs) are designed to increase the PSAP Managers' understanding of the technology application and the ability to better manage wireless calls, as well as public and responder expectations.
- Core Competencies for Public Safety Communications Manager/Director This standard outlines the core competencies that define the basic functions, duties, responsibilities, knowledge, abilities and expertise attributable to individuals who manage public safety communication functions. It respects the diverse nature of public safety communications, competencies may vary dependent upon the size of the agency, service demographics and types of services provided. Areas identified include: managing self and personal skills, providing direction, facilitating change, working with people, using resources and achieving results.
- Minimum Training Standards for Public Safety Communications Training Officer The focus of the Minimum Training Standards for the Public Safety Communications Training Officer is to provide training necessary to foster levels of consistency for training officers providing on-the-job training to active 9-1-1 operators and telecommunicators, as well as to promote the leadership role of the CTO in a public safety communications center.
- Minimum Training Standards for Public Safety Communications First-Level Supervisors. This standard identifies the minimum training requirements for First-Level Public Safety Communications Supervisors. This position is typically charged with overseeing the daily operations of a public safety answering point and the actions of telecommunicators.
- Project 33 Revised – Minimum Training Standards for Public Safety Telecommunicators. This standard identifies the minimum training requirements for

Appendix 5 - APCO Standards

public safety telecommunications officers, telecommunicators, call takers and/or dispatchers.

- Americans with Disabilities Act (ADA) Training Standard for Communications Officers Through the use of this standard, APCO International is encouraging all of its chapters and members to develop timely, up-to-date and comprehensive training programs that will prepare communications officers to effectively and appropriately interact with people with disabilities during emergencies and non-emergency encounters.
- APCO Recommended Best Practices Telematics Call Processing Telematics Service Providers (TSP) offer a wide variety of programs to vehicle owners, including location-based services and automatic collision notification. While many of these services do not affect public safety, emergency caller situations clearly do. Today, Public Safety Answering Points (PSAPs) receive consumer-initiated requests for emergency assistance which are routed through a TSP.
- Project 25: Public Safety Radio Communications Project 25 (P25) is supported by industry, government agencies and public safety communications officials alike, including the Department of Homeland Security's National Communications System (NCS), the Department of Defense, and the National Telecommunications and Information Administration (NTIA). Recognizing the need for common standards for first responders and homeland security/emergency response professionals, representatives from the Association of Public Safety Communications Officials International (APCO), the National Association of State Telecommunications Directors (NASTD), selected federal agencies and the National Communications System (NCS) established Project 25, a steering committee for selecting voluntary common system standards for digital public safety radio communications. P25-compliant systems are being increasingly adopted and deployed. Radios can communicate in analog mode with legacy radios and in either digital or analog mode with other P25 radios. Additionally, the deployment of P25-compliant systems will allow a high degree of equipment interoperability, compatibility and economy of scale. Specifically, P25 systems can be maintained and upgraded cost effectively over the system's life cycle, thus meeting user requirements, achieving interoperability and security, promoting committed manufacturers to provide compliant products, fostering competition and achieving cost-effective emergency/safety communications solutions.
- Information Exchange Package Documents (IEPDs) an Information Exchange Package document (IEPD) is a collection of artifacts that describe the structure and content of information exchange. It describes that data involved in an exchange, but does not specify other interface layers (such as web services). IEPDs are typically created using the GJXDM and/or NIEM data models. [Include a copy of any actual instruments.]

Appendix 6 - References

6.6 Appendix 6 - References

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http://www.dhs.gov/xlibrary/assets/national_emergency_communications_plan.pdf

National Summary of SCIPs. February 2009. This document is a summary of the 56 SCIPs submitted to DHS in December 2007.
http://www.safecomprogram.gov/NR/rdonlyres/C6C0CD6A-0A15-4110-8BD4-B1D8545F0425/0/NationalSummaryofSCIPs_February2009.pdf

Virtual PSAP Management National Emergency Number Association
<http://www.nena.org/sites/default/files/NENA%20Virtual%20PSAP%20Management%2053-507%20V1%2020090526.pdf>

The System of Systems Approach for Interoperable Communications The brochure describes effective technology planning from a system of systems approach and provides real-life examples of how the system of systems methodology has improved interoperability.
http://www.safecomprogram.gov/NR/rdonlyres/FD22B528-18B7-4CB1-AF49-F9626C608290/0/SOSApproachforInteroperableCommunications_02.pdf