

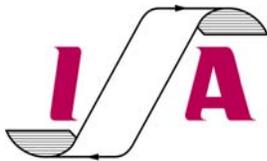
# Barnstable County E911 Regional Feasibility Study

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## Final Report

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**Table of Contents**

**EXECUTIVE SUMMARY ..... 3**

**Conclusions and Recommendations..... 6**

**Background and Project Objectives ..... 9**

**Research Findings ..... 10**

**Local Benchmarks ..... 14**

**Feasibility and Financial Summary Analysis ..... 16**

**Current and Proposed Staffing ..... 26**

**Governance Summary ..... 34**

**Technology ..... 41**

**Facility Options ..... 52**

**Appendices:**

**Appendix A: Town Funding Allocations ..... 58**

**Appendix B: Detailed Staffing and Salary Data Assumptions ..... 91**

**State 911 Grant Data ..... 92**

**Appendix C: Senate Bill 1256 (Pending) ..... 94**

**Summary of 560 CMR State 911 Department ..... 97  
    (EMD Regulations)**

**Appendix D:**

**City of Parma Report, Center for Public Management Maxine  
Goodman Levin College of Urban Affairs Cleveland State University  
Case Studies for Consolidated Public Safety Dispatch Center  
Feasibility**

**Communications Security, Reliability and Interoperability Council  
Final Briefing Report**

## Executive Summary

The practice of studying regionalization of public safety services in Massachusetts has evolved as has the acceptance of the feasibility of regionalized dispatch. The 'Home Rule' premise that each region is unique has eroded. More recently, thoughtful consideration has been given to operational efficiencies, service enhancements and economics to determine the impact and challenges of regionalizing first responder services on a community by community basis.

Our findings show that the development of a regional emergency PSAP and dispatch solution is not only feasible for Barnstable County, but practical and necessary to meet the imminent future demands of communications and information sharing technologies. From our research and findings, we have identified the following:

- ♦ 67% of the responding agencies staff their primary PSAP's and/or dispatch centers with one dispatcher
- ♦ There were a total of 426,330 calls for service on Cape Cod in 2010 supported by 102 full time and 25 part time telecommunicators. A combination of civilian, sworn police and fire fighters were assigned to these functions.
- ♦ Cape Cod communities received a combined \$1.3M in State Grant funding for PSAP services.

There is an inherent risk factor in the 'single dispatcher model' used by local police or fire departments. This risk has been acceptable as no grave situation has emerged.

However, with the rapidly approaching 2012 EMD deadline to provide EMD-specific response to every medical call by these same telecommunicators, the service delivery model needs reevaluation with a more critical eye. Now, compound this new requirement with the actual cost to staff and operate a single dispatcher PSAP and the costs and risks skyrocket when compared to alternatives. (Refer to State 911 EMD Regulations, Appendix C)

The opportunity to regionalize the services which can more efficiently save lives and provide a more rapid and educated response should be considered with an eye towards changing the way emergency communications services are delivered in this day of 'doing more with less'

Emergency dispatch requires a paradigm shift from the legacy way of doing business to a more structured and refined model that offers *better service*:

- ♦ The regional model takes into account the efficiencies of multiple emergency calls handled by a staff of consistently trained telecommunicators.
- ♦ The legacy model presumes that a single dispatcher is capable of handling the emergency calls as well as town-business requests, permits, forms and directions to residents as well as a full-spectrum of police-business activities while remaining proficient in the complexities of dispatching multiple agencies

- ♦ The regional model eliminates the local ‘risk’ factor of having a single dispatcher on duty by staffing to the ‘critical mass’ of emergency calls and a full complement of supervisory and support personnel to address the technology and business of dispatch.
- ♦ The legacy model offers inherent risks to 67% of Barnstable County towns providing single-telecommunicator services and accepts the possibility of delayed response or possibility of a dropped call due to workload or experience-related gaps.
- ♦ The regional model encourages towns to re-evaluate the support services previously thought to be ‘sacred cows’ and considered the domain of the dispatcher. This change-opportunity creates more efficient use of technology and existing personnel to improve services to residents and employees
- ♦ The legacy model assumes a ‘why change if it isn’t broken’ mentality.

These contrasting positions are provided to make the point that a regional delivery model will offer substantially more service than the single dispatcher-PSAP model now in use. More compelling is that when combined with inevitability of regionalized services as is the direction of the Commonwealth and the financial comparisons, regionalized dispatch services become a ‘when’ not an ‘if’.

The financial justification for a regional dispatch model is overwhelming for Barnstable County. The County’s current cost of dispatch based upon budgetary data provided by each agency is **\$10.6m**. The two primary models under consideration offer **savings in excess of \$4.5m for a multi-center configuration and \$5.8m for a single-center configuration**. Our research identified six concepts and identified three realistic models that address the following points:

- ♦ *A center would be required to support PSAP call answering, EMD services, fire and police dispatch to meet each first responder discipline. If multiple centers were implemented, mutual aid and CMED would need to be provided through a primary center.*
- ♦ *Each center would have a full complement of technical and administrative management and staff sufficient to provide initial and on-gong start-up support.*
- ♦ *Any new regional center would be in the form of a quasi-government agency (501- C (3) or (12) formed for the purpose of managing, maintaining and administering a Cape-wide communications service*
- ♦ *The governance must allow for independent and objective management of the issues and concerns affecting those communities participating*
- ♦ *Development of executive level boards who have the authority to provide organizational, operational, financial and functional oversight of services that are required across a region.*

There is general agreement that the Sheriff’s Communications Center provides quality levels of PSAP call answering and dispatch services to their current customer base. Despite the good standing relationships with the current E911 Communications Center management and outstanding service delivery provided to over 50% of Barnstable County towns, broad areas of

concern on a variety of levels have resulted in the expressed need for the Cape Cod First Responder Chiefs to develop their own governance structure and operations.

However, due to the large number of agencies now being supported by the Sheriff's Communications Center and the large financial savings identified in the multi-center configuration, we are recommending a **multi-center configuration** for the following reasons:

- ◆ Agencies and towns now aligned with the existing Center can remain status quo.
- ◆ The current Sheriff's Communications Center cannot expand beyond the physical space now occupied at the OTIS Fire Station on the Massachusetts Military Reservation to add new towns or agencies in the current center. A multi-center configuration (more than one center) would reduce the load on the current center and decrease the immediate need to build a new facility.
- ◆ There are expressed concerns over the current governance arrangement between the Sheriff's Communications Center and most of the agencies with whom we met. The concerns revolve around the dichotomous relationship of having a State agency orchestrate, manage and operate a county-level operation without the input from the local first responder community. While the current Sheriff has made in-roads to mitigate these concerns, there is general consensus that Barnstable County Emergency Communications must be managed and operated from an independent, non-political, service-agnostic environment. A second center has been studied that would be managed under the guidelines and management of this independent organization: *The Barnstable County Public Safety Communications Corporation*
- ◆ Our research has shown that *regions with call volumes in excess of 400,000-600,000 calls are handled by more than one (up to three) centers*<sup>1</sup>. Our findings are consistent with this characteristic. A recent report published by the City of Parma Center for Public Management, Cleveland State University established that regions with calls for service in excess of 400,000 have either two or three centers. It is estimated that Barnstable County responded to over 426,000 calls for service in 2010.
- ◆ Looking forward, there is an operational need to establish a level of redundancy and back-up between primary/regional PSAP's. In today's environment, the Barnstable County Sheriff's Communications Center is backed-up by the Town of Barnstable. In a multi-center configuration we are recommending that the two centers provide back-up support for each other.

The staffing and costs for each model studied are in the Financial Summary section of this report. It is assumed that a separate Steering Committee/Project Planning Committee will be given the authority and direction to proceed with identifying interested towns for the purpose of refining the feasibility by securing Memorandum of Understanding (MOU). These town-by-town commitments are critical to engaging the State 911 Department to develop timely grant allocations that address the specific towns seeking involvement.

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<sup>1</sup>. "The City of Parma, Center for Public Management, Cleveland State University report on Consolidated Public Safety Dispatch Feasibility Study"

## Conclusions and Recommendations

The following are our recommendations and transition planning for the Barnstable County Regional Emergency Planning Committee (REPC):

### **Recommendation 1:**

***The REPC should consider a multi-center (more than one center) emergency communications environment for Barnstable County***

A multi-center configuration is supported on a variety of levels. Given the political climate, it is unlikely that full consensus will support a single-Sheriff's Department run RECC or independently run RECC at this time. More likely there are a number of towns willing to establish a 'proof of concept' support of a multi-center environment.

The multi-center concept offers financial, operational and technologic value to the Cape for a variety of reasons:

- *A multi-center solution offers the greatest flexibility without requiring full participation of all communities. This configuration provides optimal financial and service incentives.*
- *A multi-Center solution offers Cape communities a minimum savings of \$4.5m over their current spend before adding the estimated State Incentive Grant of \$1.2M. All estimates will require modification based upon actual Town participation.*
- *The current Sheriff's Communications Center is unable to support any growth in its current location at OTIS Air Force Base. A new facility would be required to be built to take on any new towns or agencies.*
- *Current customers will have the option of choosing a service provider which is unavailable in the current configuration*
- *A multi-center configuration provides immediate redundancy and back-up capabilities*

The recommendation for a multi-center configuration anticipates the continued operation of the Sheriff's Communications Center but does not require full participation of all fifteen towns as it has become clear that there are extenuating circumstances among many of the agencies and towns that will limit their involvement.

### **Recommendation 2**

#### **Transition Planning:**

The most immediate steps for the REPC should be the establishment of a Steering Committee/Project Planning Committee to take this project to the next level. The Steering/Project Planning Committee should be comprised of two police chiefs, two fire chiefs, a CMED representative, Sheriff's Communications Center representative and a County representative. The goal of this Committee should be to initiate discussions with communities for the purpose of determining interest and invite their further participation in orchestrating the change management process that will impact the delivery of dispatch services for the Cape.

The first step in this process is the development of memoranda of understanding that formalizes the commitments of Towns interested in exploring regional options. The resulting conclusions will drive the Steering Committee in a direction regarding configuration, size and facility availability. Continued support and commitment from the State 911 Department will be required to ascertain the approximate support grant funding the new Center could anticipate.

**Recommendation 3:**

***The Steering /Project Planning Committee should initiate the process of establishing the policy, procedures, operational and strategic direction that will impact the delivery of emergency communications on Cape Cod.***

As identified in the governance section of this document, the core tasks required to address the future operation of a Center will require a division of labor amongst participating towns and agencies. We recommend the following Subcommittees be formed with regular reporting back to the Steering/Project Planning Committee:

- ♦ Procedural and Operational Subcommittee
- ♦ Legislative and Regulatory Subcommittee
- ♦ Finance Subcommittee
- ♦ Facility Subcommittee
- ♦ Labor Subcommittee
- ♦ Technology Subcommittee

**Recommendation 4:**

***The Steering Committee/Project Planning Committee research the creation of supporting legislation and ultimately the options to become a recognized independent 501- c(3) or c(12) corporation.***

The establishment of a 501-C(3) or (12) corporation for the purpose of developing a regional 911 emergency communication district planning board and the associated subcommittees and operations has become a recognized best practice in Massachusetts to the extent that legislation has been proposed and is now pending in the Massachusetts State Senate (Senate Bill 1256). The leadership of the new organizations mission, charter and vision will need to foster a governance structure that offers stakeholders the opportunity for equal participation and partnerships for increased agency buy-in and support. Through an elected Executive Board or Board of Directors of an independent corporation, stakeholders will have the freedom to make decisions that they feel are representative of their interests without the ‘burden’ of politics that many today feel potentially cloud the discussion of emergency communications. Examples of other legislation supporting similar governance have been included in the Appendix C.

**Recommendation 5:**

***Seek the appropriate grant funding needed for the support planning, implementation and capital to operate a consolidated dispatch center. Development of a fair and understandable funding mechanism will be necessary for towns to agree to participation.***

The funding method used to calculate the potential financial impact on each town and agency was based upon a formula now used by the Barnstable County Sheriff's Communications Center which includes a \$20,000 base and a \$17 fee charged for each call. This is just one form of funding allocation. The City of Parma report went on to evaluate methods used by study participants and determined that call volume, population, real estate values and base user fees are other methods of establishing funding support.

Once a greater commitment is identified from towns seeking participation in an independent center – preferably four to six as a starting point – the State 911 Department will need to reestablish the anticipated State Incentive Grant allocation which will be reflective of the population and E911 calls within the intended Center.

Regional and Regional Secondary PSAP and RECC Development Grants are available to support the development and startup of Regional and Regional Secondary PSAP's and Regional emergency communication centers, including the expansion or upgrade of existing regional and regional secondary PSAP's to maximize effective emergency 911 and dispatch services as well as regional interoperability. These grants must be applied for annually and awarded based upon need.

## Background and Project Objectives

The Barnstable County Regional Emergency Planning Committee (REPC) has retained the services of Intertech Associates, Public Safety Consulting Engineers for a study and report on the current conditions of 911 and dispatch services across Cape Cod. The final report is intended to document the current state of the dispatch environment and provide recommendations while exploring **alternative configurations** to result in cost and operational efficiencies.

Presently there are thirteen (13) PSAP's providing the primary call answering function amongst the fifteen towns on Cape Cod. Police and Fire dispatch is split between local police or fire services and Barnstable County Sheriff's Communications Office (BCSO) who provides a combination of call answering and/or fire dispatch to ten (10) of the fifteen (15) first responder departments. Barnstable County towns received over \$1.3m in 911 Support Grant funding to provide the emergency call answering services associated with E911 in 2010.

The Commonwealth has instituted a series of financial incentives and legislative changes to facilitate the migration of the smaller PSAP's into regional partnerships of three communities or more. Financial incentives become exponentially larger when regional centers combine to support a minimum of three communities providing call answering and dispatch services for police and fire. Lesser incentives provide support for a regional secondary PSAP function and greater incentives are available for regional centers that provide full call answering and dispatch for all services and communities the center serves.

Recent legislative changes are in the process of being implemented that stipulate additional requirements to maintain compliance with State E911 criteria. These changes which are scheduled to be phased in beginning July 1, 2011 with full implementation by July 1, 2012 impact the delivery of services for Emergency Medical Dispatch (EMD). Effective July 1, 2012, all PSAP's must provide EMD service through in-house personnel or a certified EMD resource. If a PSAP does not have EMD certification it may not be eligible for E911 Support Grants or Training Grants.

The intent of this legislation is to streamline the delivery of E911 services fostered by a more efficient use of resources and services. However it may also create a financial burden on smaller PSAP's who have typically used a combination of sworn personnel (police or fire) and civilian dispatchers to support the dispatch function. To that end, the State has identified additional training grants that will provide for the certification and training of personnel for EMD and on-going education geared to professionalize the public safety telecommunicator's role.

**Research Findings:**

Intertech Associates prepared questionnaires and attended focus group meetings with all fifteen communities and fire departments over a one week period. Police and Fire departments were asked to respond to detailed questionnaires and submit dispatch-related budgets so that a baseline of services could be developed. Responses were submitted back from 80% of the communities; several communities opted not to participate at this time. The remaining communities provided baseline data for:

- Current Dispatch Staffing
- Dispatch Personnel Budgets and Operational Expense
- Questionnaire Responses detailing:
  - o Total Calls for Service and Call Volumes
  - o Shift Schedules
  - o Number of dispatchers per shift
  - o Call flows, operations and training
  - o Organizational Charts
  - o Labor Contracts
  - o Technology Systems and Challenges
  - o Operational Parameters

The following analysis is offered to outline the staffing and emergency communications call volumes and resources associated with the agencies responding to this effort.

- The thirteen (13) PSAPs handled a combination of 332,320 police, fire and medical calls for service during 2010. The Sheriff's Communications Center handled an additional 94,000 calls for a Cape total of 426,330 calls. There were over 88,000 wired and wireless E911 calls recorded by the State Department of 911 during 2010
- Of the responding communities, a total of 102 full time and 25 part time telecommunicators provided emergency call answering and dispatch services. A combination of civilian, sworn police and fire fighters were assigned to these functions.
- 67% of the responding communities staff their primary PSAP's and/or dispatch centers with one dispatcher. The requirement to provide EMD will impact these staffing levels as an effective EMD program will require a minimum of two trained dispatchers per shift. Recent legislation will require communities to secure EMD certification for their PSAP's through the State certification process or contract with a State certified EMD provider. *The estimated cost of contracted third party EMD services can range from \$5,000-\$67,000 per community depending upon the number of EMD dispatches initiated.*
- Dispatch personnel expense was used as the common cost factor across communities. The cost per Call for Service based upon dispatch personnel expense

ranges from a low of \$10 per call to a high of \$88 per call. The average cost per dispatched call for service was \$36 per dispatched call for service.

- Between Barnstable County Sheriff's Communications Center and COMM Fire District over 50% of the communities on the Cape have opted for some form of regional emergency communications services. This establishes precedents of service delivery consistent with State and regional best practices.
- Communities that optimize their dispatch through a regional or secondary dispatch provider have lower than average cost for dispatched calls for service.

Thematically consistent topics were discussed during the course of our meetings, conference calls and routine follow up with Barnstable County Senior Managers and Chiefs. Those concerns are captured below:

- ♦ *We offer community based services that are 24x365 often provided by dispatchers. Transitioning to regional services will disrupt this accessibility*

Town-based services that assumed 24x7 availability of personnel fall into two categories – emergency and non-emergency. Emergency availability can be accomplished through emergency ring-down lines, surveillance cameras and voice activated intercoms directly connected to the closest RECC or Regional Center. Dispatch of emergency personnel to the scene can be accomplished with greater efficiency of overall service than to have a resource dedicated to incidental traffic supporting low volume foot traffic.

Non-emergency public services such as blood pressure checking, emergency medical support or Senior Reassurance programs have become institutionalized programs often provided through police or fire dispatch personnel. These services may be impacted or even displaced for communities transitioning to a regional communications center. For communities that choose to continue to offer these public services, some solutions may include volunteers or other municipal departments stepping in. Communities have gotten creative and begun to offer these services at a 'joint' location with specific hours of operation. Changes to municipal services will be best received if provided with open dialogue resulting in frequent discussions to help identify and address areas of specific concern.

Other areas that will be impacted include prisoner monitoring, safe baby havens and domestic incidents. More often than not, dispatchers should not be interceding in these areas and yet – due to their availability and low emergency call volume they have become available personnel to assist in any of these matters. A greater number of communities facing financial and operating challenges have chosen to address alternative arrangements include sound activated cells and CCTV cameras viewable in any staffed location. Prisoner monitoring will require alternative staffing arrangements as periodic visual checks by an officer are still required.

**FINAL REPORT: Barnstable County Feasibility Study**

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The ultimate solution for prisoner holding would involve a regionalized service in communities large enough to support this function. Alternatively, the development of a regional holding and transport service under the Sheriff's organization would provide beneficial relief to most of the police departments on the Cape.

- ♦ *The Sheriff as a State employee with a State budget offers little protection and no local accountability for dispatch services.*

Through the published white paper findings on Public Safety Consolidation and Best Practices, prepared by the Communications, Security, Reliability and Interoperability Council (CSRIC) Working Group 1A it has been documented that it is necessary to formalize regionalization arrangements through some sort of legal agreement and to establish strong and clear membership structures that define major responsibilities for each participating entity. The report goes on to say that these formalized measures set expectations and establish dispute resolution procedures. In a typical scenario, local officials would sign formal agreements outlining roles and responsibilities, funding mechanisms and execute MOUs with participating agencies.

With these findings in mind, the consensus position of Barnstable County Police and Fire Chief's has been that local officials will have little if any say in a Barnstable County Dispatch Center under the current arrangement. In order to succeed in a regionalized setting they would require some mechanism through which the on-going governance and sustainability of emergency communications would not be bound by State or possible political interests. Therefore, legislation to establish a sustainable funding mechanism and to provide 'rules of engagement' between the parties would be required to establish an independent board for oversight and advisory support and may go so far as to identify organizational leadership under which the Board may interact with the Communications Center.

- ♦ *A regional dispatch center staff won't be as familiar with my residents or local issues.*

Contrary to the concern regarding local familiarity, the CSRIC Study found that consolidations result in a better trained, more focused work force that increases the level of public safety. This is largely due to the development of procedural standards and training curriculum, increased focused on standardization of training and professionalism that improves service levels overall. Lastly, the development of a career path provides improved morale and employee retention.

Communities that have used rotating sworn officers or fire fighters very often do not receive the consistency of service that comes from a dedicated professional telecommunicators due to the varying degrees in training, capability and frequency a rotating officer or fire fighter will have had on the desk. Further, police and fire fighters rely heavily on the expertise of the dispatcher to safely and effectively communicate and monitor dispatches as appropriate. As technology advances, keeping staff up to date on

procedural and equipment changes could significantly impact the level of service first responder personnel receive from their dispatchers.

To address concerns regarding familiarity with the 'local' environment, and to maintain continuity of service, we envision a large number of existing dispatch staff to be retained as primary staff in each of the models discussed. Many are highly trained and offer years of experience providing their services; others are already EMD Certified and will offer significant value as the July 2012 deadline approaches.

**Development of Consensus:**

There was general agreement on the following:

- *Development of a quasi-public/private entity could be formed for the purpose of managing, maintaining and administering a Cape-wide communications service*
- *Development of executive level boards who have the authority to provide organizational, operational, financial and functional oversight of services that are required across a region. An example of this type of Board includes Cape and Islands EMS.*
- *County should and could play a role in a new governance structure as an oversight function without having budgetary responsibility. The County already has assessment mechanisms in place and can provide resources as required.*
- *The governance must allow for independent and objective management of the issues and concerns affecting those communities participating. This will enable all agencies participating in a regional center full and equal standing to offer input into the policies, procedures, operational review and all other issues affecting a regional center.*
- *Agencies should be afforded the opportunity to participate as appropriate to their specific level of involvement in a regionalized center. Barnstable County Communications can continue to operate as a single unit as they operate today. Therefore all towns will need to have input into the technology, procedures and interoperable protocols whether or not there towns participate in the emergency communications aspect of regionalization.*
- *A broad-based description of a governance structure evolved upon discussion. The general structure included:*
  - *A separate regional emergency communications council for each portion of the Cape: Upper, Mid and Lower to reflect their specific and emergent needs. The regional councils would include representation of police, fire and Town Management*
  - *Each regional communications council would become a quasi public/private entity not operated by any one agency but rather a separate private agency. The regional communications center will be an independent, unaffiliated entity from police or fire that reports into the Executive Committee through independent center management.*
  - *A Barnstable County Emergency Communications Executive Board would be created that includes County representation. The Executive Board would consist of elected representatives from police, fire and town management from across the Cape.*

**Local Benchmarks**

The following regional communications initiatives are provided as alternative models for a future regionalized communications center on Barnstable County:

South Shore Regional Communications Center (SSRCC)

Cohasset, Hingham, Hull and Norwell have joined together to form the South Shore Regional Communications Center (SSRCC). This initiative began without the benefit of a feasibility study and through collaboration and agreement between the Police and Fire Chiefs as well as Town Management the Center is expected to open September 2011.

The South Shore Regional Communications Center is located on the second floor of the Hingham Town Hall, but will be run as a separate entity from all of the four towns involved. Its board of directors will consist of the town managers from each community; police and fire chiefs will have operational input. The development of the SSRCC has been funded by \$5 million in grant money which was awarded by the Commonwealth's 911 Board.

Dispatchers at the new center will be employees of SSRCC rather than town employees, and dispatchers from Hull, Hingham, Norwell, and Cohasset will be given first consideration in the hiring process. The Center will be managed by an outside firm whose services include consulting, design, installation, and operation of public safety facilities for the initial ramp up period.

Norfolk County

Norfolk County Fire Chief's Association has been awarded a 911 Feasibility Grant to study the various configurations and possible alternatives for developing a regional E911 Communications Center for Norfolk County Police and Fire agencies.

At the outset of the project the stakeholders opened up the study to include both police and fire agencies throughout the County and surrounding communities in Plymouth and Bristol to take advantage of the opportunity to define the services to be regionalized. The study was to determine the financial and operational impacts of establishing a regional center and the methodology to provide more efficient delivery of service for residents.

The Draft Report has been submitted for review with anticipated release by the end of October 2011.

Western Norfolk County

Wrentham, Plainville, Franklin and Norfolk are undergoing a study similar to the Norfolk County study, to regionalize emergency communications services in the western portion of the County. Participants in this study felt that there was tremendous synergy and immediate agreement between each of there police, fire and Town Managers which contributed to the development of a common regionalized approach for emergency communications. At the time of this writing, the plan was to utilize the Wrentham dispatch center as the PSAP which is intended to provide PSAP call answering, police and fire dispatch and EMD. Wrentham,

Plainville and Norfolk will be supported for all of their public safety needs; Franklin may choose to retain their PSAP and transfer fire calls out to Wrentham for dispatch.

### Bristol County

Bristol County has recently completed a study of 18 Bristol County communities and UMASS-Dartmouth to determine the feasibility of consolidating none, some or all of the 9-1-1 emergency dispatch centers and public safety communications functions serving the region. The Study, conducted with the oversight of the Bristol County 911 Steering Committee, resulted in eight recommendations and a conclusion that regionalization would be feasible and financially beneficial to participating communities. The Study went on to discuss the merits of establishing a long range vision and goal for public safety answering within the County as a first step in implementing the Study recommendations. Other critical pieces include the development of a regional advisory board, regional training program, regional governance and technology upgrades. The report also identified the financial feasibility and on-going sustainability of their two-RECC recommendation.

### Essex County

The first major regional call center is now being built to serve 215,000 people in 13 communities in Essex County.

The Essex Regional Emergency Communications Center (Essex RECC) will provide Public Safety dispatch services and 911 PSAP services for several police and fire departments within Essex County, MA including Amesbury, Beverly, Essex, Middleton, Topsfield and Wenham. The concept involves the consolidation of local Public Safety Answering Points (PSAPs) into one consolidated Regional Emergency Communications Center in Essex County. Currently, each municipality maintains the equipment and staffing for police and fire dispatch services – some independent of the other. This project establishes a regional emergency communications center that would include combined enhanced 911 services, police, fire and emergency medical dispatch for member communities.

In Essex County, MA, the origin of interest came from a group of municipal and other government officials. The idea behind the move was that a Regional Emergency Communications Center could service the collective needs in emergency services dispatch.

The proposed project has intermediate and long-term goals of developing and expanding a regional emergency communications center in Essex County. The final plan consolidates up to thirteen police and fire dispatch centers (PSAPs) under one roof at the Middleton site of the Essex County Sheriff's Department within the time-frame outlined in the grant. The Plan utilizes approximately 6,000 – 7,500 sq. ft. of modular office units, secure and redundant, to house the new RECC. This includes 14 PSAP call taker and dispatch positions to serve an estimated a population of 219,000. All of the equipment such as the CAD, radio consoles, console furniture, and radio systems that will be purchased for the intermediate center would be utilized when the permanent RECC is constructed.

## Feasibility and Financial Summary

Massachusetts defines its first responder communities as ‘home-rule’ and Barnstable County is no exception. However even as a region that is staunchly aware of its individual town borders, no single community on the Cape operates exclusively for its own self-interest. There are simply too many examples where systems, mutual cooperation, support and service are expected to be provided by regional and neighboring partners. Our findings show similar consideration in the communication technology (a single 800 radio system provides an interoperable environment) and Police data systems which are poised for ‘enterprise’ level data communications.

Based upon these findings we were keenly aware that development of a regional emergency PSAP and dispatch solution *is not only feasible for Barnstable County, but most practical on every level*. Decisions regarding the formulation of an equitable governance model and funding are still required however the following operational, technical, staffing and financial conclusions are the result of our observations, site visits, meetings and town-based data provided through Police and Fire Chief’s:

- There are existing relationships and areas of similar need for communities grouped along the Upper Cape (Bourne, Falmouth, Sandwich and Mashpee); Mid Cape (Barnstable, Yarmouth and Dennis) and Lower Cape (Brewster, Chatham, Eastham, Harwich, Orleans, Wellfleet, Truro, Provincetown)
- These communities have aligned themselves for mutual aid support and operational level protocols
- There are sub-regions within these groups that may be better aligned together (Provincetown and Truro) due to geographic proximity to each other and the resources they rely on for support.
- The Barnstable County Sheriff’s Communications Center already provides a combination of PSAP services and fire dispatch for over 50% of the towns on the Cape. The Center responded to 100% of the Town of Barnstable’s 911 calls during the recent storm, Hurricane Irene, and is eminently capable of providing this level of emergency communications service to all communities on the Cape.
- There are immediate service improvements that can be achieved for each town as there will be increased resources and facilities enabling communities to reallocate their public safety personnel in a more effective manner.
- Information sharing between police departments can be best achieved through regionalized dispatch functions. Information sharing databases are already in place and require an ‘enterprise’ level approach for consistency and use.
- Radio interoperability, communications and operations can become more efficient through the reallocation of RF resources. Dispatch personnel will become more effective and able to provide greater coordination through a consolidated channel management plan.
- The consensus position across first responder agencies that a multi-center or single site solution should be widely considered. All agreed that a long-term configuration

may be a County-wide PSAP that provides call answering, fire and police dispatch however agencies and towns may not be prepared to transition to this arrangement at this time.

From read-outs from our May site visits and subsequent meetings, numerous on-site and telephone discussions, we have evolved the initial data into three primary scenarios each of which incorporate all fifteen communities and various configurations. The Scenarios are based upon 'likely partnerships' and have been assigned funding allocations by the State Office of 911 based upon these combinations. Therefore, it is important to understand that while no one town is locked into these combinations, any change of participation in one configuration will impact the funding across all agencies in that Scenario. Generally, a RECC will receive the most funding while a Regional Secondary receives relatively little.

### **Explanation of Dispatch Scenarios:**

Each of the following options is operationally and financially viable however, it is important to note that a change in governance is assumed as part of the structure. The single-site solution may be the current Sheriff's Communications Center or an alternate operated under the independent leadership and management of a 501-(C3) or (12) Corporation.

#### **Scenario 1: Three RECC Solution:**

- ◆ Development of three (3) RECC's that incorporate the Upper Cape, Mid Cape and Lower Cape towns. This solution can also be applicable as a multi-center (two Centers) configuration that will reduce the operational costs to participating towns and not impact the State funding allocation.
- ◆ Estimated Operating and Personnel Costs for a Three RECC Solution are \$6.17m; estimated savings over current costs are \$4.65m
- ◆ Site and facility identification would be required based upon the identification of interested participants. Existing structures may be available for fit-out; land may be available in various towns for development of a regional center.
- ◆ The RECC's would provide the full PSAP capabilities as well as police, fire dispatch and mutual aid
- ◆ It is presumed that the Sheriff's Communications Center continue to offer emergency communications services to Cape Cod agencies as it currently does.
- ◆ The Sheriff's Communications Center and a new Center would be back-up PSAP's to each other
- ◆ A single location would be made responsible for CMED coordination and mutual aid response

#### **Scenario 2: Single Site Solution**

- ◆ A new facility would require construction as no existing facility can support the combined County-PSAP and regional dispatch center.

- ◆ Estimated operating and staffing costs for a single-site solution are \$5.01m; estimated savings over current costs are \$5.8m
- ◆ Sheriff's Communications Department is currently investigating land availability options as are several Towns
- ◆ Town of Barnstable would continue to be a back-up PSAP

Scenario 3: Formalized version of the Status-Quo to include:

*Regional PSAP; Two Regional Police Dispatch Centers and a RECC supporting Mid-Cape*

- ◆ Development of a County-wide PSAP function to support E-911 call answering; EMD response; mutual aid and CMED
- ◆ Fire dispatch could be provided from the county-wide center
- ◆ Development of two (2) secondary regional dispatch centers for police supporting the Upper Cape and Lower Cape. Dennis and Yarmouth may join in other configurations based upon geography and 'best-fit'.
- ◆ A new facility would be required for the PSAP and Fire Dispatch Center as no existing facility can support the combined staff and services to be served out of this facility. Two other facilities would need to be identified for regional police dispatch functions
- ◆ Estimated operating and staffing costs for this solution are \$9.4m; estimated savings over current costs are \$1.4m
- ◆ Town of Barnstable would continue to be a back-up PSAP
- ◆ Participating towns in a Mid Cape RECC include Dennis, Yarmouth and Barnstable police and fire departments as part of this configuration
- ◆ As an alternative within this solution, fire dispatch for Barnstable, West Barnstable and Hyannis could be provided from Centerville Fire Department who could also provide fire dispatch for Dennis and Yarmouth
  - Town of Barnstable PSAP may choose to maintain its stand alone status. We strongly encourage the fire districts of Barnstable, West Barnstable, Hyannis and COMM to consider consolidating the fire dispatch function into a single Center to increase service delivery and communication efficiencies not available in the current multi-center configuration.

## Financial Analysis Summary

**Table 1: Current Dispatch Costs for Barnstable County**

<u>Current Dispatch Costs for Barnstable County</u>	<b>Town Data: 2010 Budget Dispatch Salary Expense</b>	<b>Sheriffs Communications Center</b>	<b>Total Spend</b>
Cost of Dispatch Personnel	\$7,810,317*	\$1,992,679	\$9,802,996
Other Expenses (Overhead)	853,115**	311,171	\$1,164,286
MA State Grant	450,998	858,788	\$1,309,786
Amount Funded	\$8,212,434	1,445,062	\$9,657,490
<b>TOTAL:</b>	<b>\$8,212,434</b>	<b>\$1,445,062</b>	<b>\$9,657,490</b>
<b>Average cost of dispatch/town</b>	<b>\$643,832***</b>		

\* Support and other staff salary data not consistently available

\*\*This figure is calculated at 10% of dispatch salary expense; BCSO O/H is 15% of dispatch salary expense.

\*\*\*Average cost of dispatch/town is used here for illustrative purposes and is not inclusive of population or any other metrics

**Table 2: Comparison of Existing Costs to a Proposed Single Site**

<u>Proposed Single Site: Dispatch Costs for Barnstable County</u>	<b>Estimated Cumulative Data: Dispatch Salary, Support Staff and Overhead</b>	<b>Comparative Data from Current</b>	<b>Percentage Savings</b>
Cost of Dispatch Personnel	\$3,042,463	9,802,996	<b>69% less</b>
Cost of Support and Admin	\$1,316,900		
Other Expenses/Operational Costs (Overhead)	\$653,905*		
MA State Grant	\$1,423,986		
<b>Amount to be Funded</b>	<b>\$ 3,589,282**</b>	<b>\$9,657,490</b>	<b>63% less</b>
<b>Average cost of dispatch/town</b>	<b>\$239,285***</b>	<b>\$643,832</b>	<b>63% less</b>

\*This figure is assumed to be 15% of dispatch salary and support expense

\*\*Amount to be funded does not include facility construction, technology expense or professional service fees. This is assumed to be available through Regional Development Grant

\*\*\*Average cost of dispatch/town is used here for illustrative purposes and is not inclusive of population or any other metrics

## Financial Analysis: Staffing Models

### Current Staffing and Configuration across the Cape:

Current Staffing: All Centers and PSAP's	Full Time:	Part Time:	Per Shift	Annual Calls For Service
Dispatch Staff of Cape Towns	102	25	29	332,320
Dispatch Staff of BCSO	23		6	94,000
<b>Total</b>	<b>125</b>	<b>25</b>	<b>35</b>	<b>426,330</b>

Table 3: Current Dispatch Staffing and Calls for Service

### Proposed Staffing Options and Configurations:

Scenario 1: 3 RECC's	2010 Dispatch Budget Total	2010 Dispatch Salary Expense (actual)	Current Staff (2010)	2010 Calls For Service	Proposed Dispatch Staff	Proposed Dispatch Salary Expense (avg salary)	Proposed Support Staff Salary + Overhead
Upper Cape	\$1,604,466	\$1,523,621	29	90,976	15	951,045	\$929,027
Mid Cape	\$3,457,243	\$3,077,184	31	117,943	20	1,241,519	\$972,598
Lower Cape	\$3,601,723	\$3,209,512	42	123,401	18	1,125,330	\$955,169
BCSO Call Answering and Fire Dispatch*	\$2,303,850	\$1,992,679	23	94,000			
<b>Total Scenario 1</b>	<b>\$10,967,282</b>	<b>\$9,802,996</b>	<b>125</b>	<b>426,330</b>	<b>53</b>	<b>\$3,317,894</b>	<b>\$2,856,794</b>
<b>Current Total Dispatch Budget</b>	<b>\$10,967,282</b>				<b>Scenario 1 Total Proposed:</b>	<b>\$6,174,688</b>	

Table 4: Proposed Costs for Three-RECC Model

- ◆ **Three RECC solution results in an estimated cost of \$6.1m resulting in a \$4.8m estimated savings before applying State 911 Grant of \$1,218,095**
- ◆ *A three-RECC model was studied resulting in a proposed cost of \$6.1m; a two-center model will incur less operating expense resulting in greater overall savings and will receive comparable State Incentive Allocation of \$1.2m.*
- ◆ Staffing assumptions for our models are based upon APCO Project RETAINS which includes a 'fill factor' for vacation, break and sick leave. We validated this data against the more realistic staffing in place now at BCSO which is estimated to be 5,000 calls per position annually. We also evaluated the staffing using the 'industry' staffing figure of 4.28 staff per position to determine adequate staffing levels.
- ◆ BCSO provides Call Answering services for Falmouth, Brewster, Chatham, Harwich and Orleans resulting in approximately 63,114 Calls for Service. We included these calls for service and dispatch staff into the above equation for fair representation of current services.
- ◆ BCSO provides Fire Dispatch for Dennis, Brewster, Bourne, Mashpee, Orleans, Barnstable and West Barnstable generating approximately 18,071 CFS annually. We included these calls for service and dispatch staff into the above equation for fair representation of current services.
- ◆ Salary data based upon an average salary including benefits of \$58,095 for dispatchers and \$78,000 for supervisors. It was assumed that there would be three-eight hour shifts with separate supervisory staff available on two of the three shifts
- ◆ This configuration assumes an independent entity or the current Sheriff's Communications Center as one of the service providers which will be determined by the *Barnstable County Public Safety Communications Executive Board*.
- ◆ Proposed Support Staff and Other Expenses for Scenario 1 include various levels of technical and administrative staff that would be required in each Center. Support Staff total 12 per RECC and include: IT Support, IT Support Manager, Administrative Support, Radio Technician Support, Dispatch Supervisors and an Operations Manager.
- ◆ Local budgets may still require appropriate budgeting of on-going administrative and non-police/fire services now provided by local dispatchers as a separate line item.
- ◆ Overhead Expense has been calculated as 15% of Dispatch, Supervisory and Support Staff Expense for the column Proposed Support Staff Salary + Overhead Expense for Scenario 1.

**Single Cape-Wide RECC**

Scenario 2: Single Cape-Wide RECC	2010 Dispatch Budget Total	2010 Dispatch Salary Expense (actual)	Current Staff (2010)	2010 Calls For Service	Proposed Dispatch Staff	Proposed Dispatch Salary Expense (avg salary)	Proposed Support Staff Salary + Overhead
Cape-Wide RECC	\$8,663,432	\$7,810,317	102	332,320	51	3,042,463	\$1,970,805
BCSO Call Answering and Fire Dispatch*	\$2,303,850	\$1,992,679	23	94,000			
<b>Total Scenario 2 Including BCSO</b>	<b>\$10,967,282</b>	<b>\$9,802,996</b>	<b>125</b>	<b>426,320</b>	<b>51</b>	<b>\$3,042,463</b>	<b>\$1,970,805</b>
<b>Current Total Dispatch Budget</b>	<b>\$10,967,282</b>				<b>Scenario 2 Total Proposed:</b>	<b>\$5,013,268</b>	

**Table 5: Proposed Costs Single RECC /Center**

- ◆ **The Cape-Wide RECC solution results in an estimated \$5,013,268 cost. There is a \$5.95m estimated savings before applying State 911 Grant of \$1,423,986**
- ◆ Staffing assumptions for our models are based upon APCO Project RETAINS which includes a ‘fill factor’ for vacation, break and sick leave. We validated this data against the more realistic staffing in place now at BCSO which is estimated to be 5,000 calls per position annually. We also evaluated the staffing using the ‘industry’ staffing figure of 4.28 staff per position to determine adequate staffing levels.
- ◆ BCSO provides Call Answering services for Falmouth, Brewster, Chatham, Harwich and Orleans resulting in approximately 63,114 Calls for Service. We included these calls for service and dispatch staff into the above equation for fair representation of current services.
- ◆ BCSO provides Fire Dispatch for Dennis, Brewster, Bourne, Mashpee, Orleans, Barnstable and West Barnstable generating approximately 18,071 CFS annually. We included these calls for service and dispatch staff into the above equation for fair representation of current services.
- ◆ This configuration assumes an independent entity or the current Sheriff’s Communications Center as the service provider which will be determined by the *Barnstable County Public Safety Communications Executive Board*.
- ◆ Proposed Support Staff and Other Expenses for Scenario 2 include various levels of technical and administrative staff that would be required in each Center. Support Staff

total 18 for a Cape-Wide RECC and include: IT Support, IT Support Manager, Administrative Support, Radio Technician Support, Dispatch Supervisors and Operations Manager(s).

- ♦ Local budgets may still require appropriate budgeting of on-going administrative and non-police/fire services now provided by local dispatchers as a separate line item.
- ♦ Overhead Expense has been calculated as 15% of Dispatch, Supervisory and Support Staff Expense for the column Proposed Support Staff Salary + Overhead Expense for Scenario 2

**Scenario 3: Regional PSAP and Fire Dispatch Center; Two (2) Regional Police Dispatch Centers; Mid-Cape RECC**

Scenario 3: Regional PSAP, Fire Dispatch; Two Regional Police Dispatch Ctrs; Mid Cape RECC	2010 Dispatch Budget Total	2010 Dispatch Salary Expense	Current Staff (2010)	2010 Calls For Service	Proposed Dispatch Staff	Proposed Dispatch Salary Expense (avg salary)	Proposed Support Staff Salary + Overhead Expense
PSAP+Fire Dispatch	\$1,440,020	\$1,328,870	19	33,591	53	\$3,138,748	\$1,442,537
BCSO Call Answering and Fire Dispatch*	\$2,303,850	\$1,992,679	23	94,000			
Regional Police Dispatch: Upper	\$1,072,401	\$1,025,126	22	74,644	10	\$640,665	\$571,510
Regional Police Dispatch: Lower	\$2,693,768	\$2,379,137	30	106,142	13	\$814,950	\$597,652
Mid Cape RECC	\$3,457,243	\$3,077,184	31	117,943	20	\$1,241,519	\$972,598
<b>Total Scenario 3 including BCSO</b>	<b>\$10,967,282</b>	<b>\$9,802,996</b>	<b>125</b>	<b>426,320</b>	<b>96</b>	<b>\$5,835,882</b>	<b>\$3,584,297</b>
<b>Current Total Dispatch Budget</b>	<b>\$10,967,282</b>				<b>Scenario 3 Total Proposed:</b>	<b>\$9,420,180</b>	

**Table 6: Proposed Costs Regional PSAP, Fire Dispatch and Separate Regional Police Dispatch**

- ◆ **A Regional PSAP and Fire Dispatch Center with Two (2) Regional Police Dispatch Centers and a Mid-Cape RECC results in an estimated \$9.4m cost. There is a \$1.5m estimated savings before applying State 911 Grant of \$2,036,706**
- ◆ BCSO provides Call Answering services for Falmouth, Brewster, Chatham, Harwich and Orleans resulting in approximately 63,114 Calls for Service. We included these calls for service and dispatch staff into the above equation for fair representation of current services.

- ◆ BCSO provides Fire Dispatch for Dennis, Brewster, Bourne, Mashpee, Orleans, Barnstable and West Barnstable generating approximately 18,071 CFS annually. We included these calls for service and dispatch staff into the above equation for fair representation of current services.
- ◆ This configuration assumes an independent entity or the current Sheriff's Communications Center as the service provider which will be determined by the *Barnstable County Public Safety Communications Executive Board*.
- ◆ Proposed Support Staff and Overhead Expenses include various levels of technical and administrative staff that would be required in each Center. Support Staff of eight (8) for a Mid-Cape RECC include: IT Support, IT Support Manager, two (2) Administrative Support staff, three (3) Radio Technician Support and Operations Manager(s). Salary for Dispatchers and Dispatch Supervisors are included in Dispatch Salary Expense.
- ◆ Proposed Support Staff and Overhead Expenses for Scenario 3 include various levels of technical and administrative staff that would be required in each Center. Support Staff of ten for a Consolidated PSAP and Fire Dispatch Center includes: two (2) IT Support staff; IT Support Manager; two (2) Administrative Support; two (2) Radio Technician Support; Administrative Support Manager; Operations Manager and a Center Director.
- ◆ Proposed Support Staff for *each* of the Regional Police Dispatch Centers include: IT Support, two (2) Administrative Support staff; Radio Technician and an Operations Manager.
- ◆ Local budgets may still require appropriate budgeting of on-going administrative and non-police/fire services now provided by local dispatchers as a separate line item.
- ◆ Overhead Expense has been calculated as 15% of Dispatch, Supervisory and Support Staff Expense for the column Proposed Support Staff Salary + Overhead Expense for Scenario 3.

## Current and Proposed Staffing

Our staffing analysis is directly attributed to the dispatch budgets we received from 30 of the 33 agencies participating in the study. We have used the APCO Project RETAINS model and the staffing methodology within the Barnstable County Sheriff's Communications Center as guidelines to establish each model's staffing attributes. Calls for Service (CFS) were used as the primary activity factor rather than 911 call volumes or administrative call volume.

Average loaded dispatch salaries range from \$ 40,310 to \$ 66,911 throughout the Cape. The average loaded salary for a mid-step dispatcher is \$58,095; loaded average Dispatch Supervisor salary is estimated to be \$78,000. Both of these numbers were used to estimate future salary expense in each of the following models. Using dispatch personnel costs exclusively, the cost per emergency call for service ranges from a high of \$88 to a low of \$10 per call. These figures are based upon CFS and dispatch personnel salary expense. These numbers illustrate the inconsistency in salary, costs and in some cases inefficient use of financials assets.

We have identified the following as characteristics of existing PSAP and Dispatch Centers on Barnstable County:

- ♦ Paid fire fighters and sworn officers whose expertise is best used as incident commanders, fire and police service resources are being used as part of a rotation on the dispatch desk. Regionalizing emergency call answering and dispatch will redirect these valuable resources to agency-specific services while providing a consistency of emergency communications service delivery not in place now.
- ♦ The use of civilian dispatchers within a police PSAP to support both police and fire dispatch has resulted in operational inconsistencies depending upon training and experience levels of dispatchers. Inconsistent service delivery between dispatchers, lack of quality assurance oversight and in almost all cases, ancillary duties that are assigned to these staff further diminish the standard level of service that should be maintained as a minimum criteria for the dispatch function.
- ♦ The future impact of having a rotation of existing sworn personnel will create staffing as well as financial ramifications as EMD deployment becomes a reality. Costs of third party EMD providers can range from \$5,000 to costs as high \$67,000. Alternatively, police departments using sworn officers will be required to train all responsible for desk rotation creating staffing issues and inconsistencies in delivery of vital EMD medical support.
- ♦ A number of existing dispatch center models provide a combination of police and/or fire dispatch services effectively. The most often used configuration is for fire service to join into a regional center.
  - BCSO supports seven (7) fire departments;
  - COMM supports two (2) fire districts;
  - Harwich Communications Center is uniquely able to provide 'joint' police and fire dispatch that offers a precedent for future regional dispatch in a single facility.

- ♦ The average cost per CFS is \$36. Generally Towns that have their fire dispatch provided through BCSO generally have a lower cost per CFS than other communities.

**Proposed Communications Dispatch and Support**

**Scenario 1: Three RECC Model**

Mid Cape RECC includes the towns of Barnstable, Upper Cape RECC includes Falmouth Yarmouth and Dennis, Sandwich, Mashpee and Bourne,

Description of Employee Mid Cape RECC	Number of Employees
Dispatchers (to be assigned per Center Director)	11
Dispatch Managers	3
IT Support Managers	1
IT Support	1
Radio Technician	3
Administrative Support	2
Operations Manager (day/night)	1
<b>Total Employees</b>	<b>22</b>

Description of Employee Upper Cape RECC	Number of Employees
Dispatchers (to be assigned per Center Director)	16
Dispatch Managers	3
IT Support Managers	1
IT Support	1
Radio Technician	3
Administrative Support	2
Operations Manager (day/night)	1
<b>Total Employees</b>	<b>27</b>

Lower Cape RECC includes Brewster, Chatham, Harwich, Orleans, Wellfleet, Eastham, Truro and Provincetown

Description of Employee Lower Cape RECC	Number of Employees
Dispatchers (to be assigned per Center Director)	14
Dispatch Managers	3
IT Support Managers	1
IT Support	1
Radio Technician	3
Administrative Support	2
Operations Manager (day/night)	1
<b>Total Employees</b>	<b>25</b>

*This recommended solution can be combined into a two rather than three location configuration saving the operating expense of the third center and increasing the overall savings to participating communities.*

## **Scenario 2: Single Center Supporting 15 Towns**

<b>Description of Employee Single Center RECC</b>	<b>Number of Employees</b>
<b>Dispatchers (to be assigned per Center Director</b>	<b>47</b>
<b>Dispatch Managers</b>	<b>4</b>
<b>IT Support Managers</b>	<b>1</b>
<b>IT Support</b>	<b>2</b>
<b>Radio Technician</b>	<b>6</b>
<b>Administrative Support Mgr</b>	<b>1</b>
<b>Administrative Support</b>	<b>1</b>
<b>Operations Manager (day/night)</b>	<b>2</b>
<b>Center Director</b>	<b>1</b>
<b>Total Employees</b>	<b>65</b>

*A single center configuration is possible and will achieve the greatest efficiencies. Depending upon the number of participating towns, this model offers the greatest savings. The Project/Steering Committee would need to gain consensus from each town/agency for commitments to move towards this option.*

**Scenario 3 includes a Mid-Cape RECC; Regional PSAP and Fire Dispatch Center; Two Regional Police Dispatch Centers**

Description of Employee: Mid Cape RECC	Number of Employees
Dispatchers (to be assigned per Center Director)	11
Dispatch Managers	3
IT Support Managers	1
IT Support	1
Radio Technician	3
Administrative Support	2
Operations Manager (day/night)	1
<b>Total Employees</b>	<b>22</b>

Description of Employee: Regional PSAP and Fire Dispatch	Number of Employees
Dispatchers (to be assigned per Center Director)	50
Dispatch Managers	4
IT Support Managers	2
IT Support	1
Radio Technician	2
Administrative Support Mgr	1
Administrative Support	2
Operations Manager (day/night)	1
Center Director	1
<b>Total Employees</b>	<b>64</b>

**Mid-Cape RECC; Regional PSAP and Fire Dispatch Center; Two Regional Police Dispatch Centers**

Description of Employee: Lower Cape Regional Police Dispatch	Number of Employees
Dispatchers (to be assigned per Center Director)	10
Dispatch Managers	3
IT Support Managers	0
IT Support	1
Radio Technician	1
Administrative Support	2
Operations Manager (day/night)	1
<b>Total Employees</b>	<b>18</b>

Description of Employee: Upper Cape Regional Police Dispatch	Number of Employees
Dispatchers (to be assigned per Center Director)	7
Dispatch Managers	3
IT Support Managers	0
IT Support	1
Radio Technician	1
Administrative Support	2
Operations Manager (day/night)	1
<b>Total Employees</b>	<b>15</b>

*This scenario formalizes the current configuration in addition to providing for two regional police dispatch centers. There is substantial duplication of services, resources and costs and relatively little savings by*

*comparison to the two previous models. In order to cover the costs of this model, the current funding formula now used by the Sheriff's Communications Center would need to increase from a \$20k base and \$17 per call to \$40,000 base and \$45 per call. This increase essentially covers the funding deficit equivalent to \$1.4m now coming from the State Operating fund.*

**Descriptions of Dispatch Center, Administrative and Technical Support Staff**

The following positions and descriptions are offered as the initial staffing for the center:

**Dispatch Center Director/Manager:**

Management position responsible for establishing and maintaining an E911 regional fire, police, and medical central dispatch center which will serve up police and fire agencies in the region. The Manager will work under the general supervision of the Advisory Board and will work with the Advisory Boards to develop policies and procedures, annual budget and other related duties for the effective and efficient operation of the Center. The successful candidate should possess proven management skills and a strong technical background in radio communications and relevant computer systems and software.

*Average Compensation: Ranges from \$ 85,000 - \$125,000 based upon experience annually*

**Dispatch Center Shift Supervisor**

The Public Safety Dispatch Center Shift Supervisor will oversee the inbound and outbound public safety communications, radio signals and data communications including routine and emergency phone calls, alarm monitoring, video security, radio, and connections to state, regional and federal computer systems and radio networks. Reporting to the Director of the Communications Center, the Shift Supervisor oversees the personnel and technology of the Communications Center, and communications systems used department-wide. The most important function of the Supervisor is the implementation of standards and the continual monitoring of performance, reinforcing and recommending initial and ongoing training programs needed to ensure the excellence of the communication function.

*Average Compensation: Based upon average loaded salary of \$78,000*

**Dispatcher/Senior Dispatcher**

Receiving and dispatching emergency information messages over a combined public safety 911 communication systems to police and fire resources. Answers 911 calls, entering call information into a computer system, providing emergency medical dispatch for calls involving critical illness or injury, and dispatching these calls via radio, or computer aided dispatch system to the proper responding personnel. Dispatcher will make decisions in response to emergency calls involving medical emergencies, ambulance service, police and fire assistance and hospital calls. Operates an emergency communication system, receives radio calls from emergency responders and provides information to assist with the response. Logs all information received and dispatched. Obtains pertinent information such as the nature of incident, location, units needed complainant's information, etc. Must have previously held an Emergency Telecommunicator Certification with the ability to obtain a current certification within 6 months of certification to the position.

*Average Compensation: Ranges from \$51,000- \$65,000; Model assumes average loaded salary of \$58,594 annually*

**Radio/Data/IT Technical Support**

- Perform site integration support duties by validating and testing RF distribution, controllers, repeaters, and internal LAN connectivity hardware.
- Complete programming support functions and network equipment programming duties.
- Perform radio frequency spectrum management needs and complete interference analysis to identify sources of interference and intermodulation and then recommend corrective actions.
- Knowledge of conventional, trunked UHF and 800 systems to provide product and technical field support.
- Assist with ongoing IT projects; Coordinate with vendor and client on server and network related problems;
- Provide first level troubleshooting support
- Install operating systems and required software for employees
- Complete test technician functions for regular operations as needed.

Position requires technical background of at least 2 + years' experience as an engineering technician with previous RF site equipment training or knowledge of RF products lines. 2 years of college coursework (Associate's/Technical Degree or higher is preferred).

*Average compensation: Average salary of \$64,000*

**Administrative Support:**

The Administrative Services Coordinator performs a variety of administrative functions and provides administrative support to the entire Staff. The Administrative Services Coordinator reports to the Center Manager. During the start up phase of the Center, this function will provide record keeping support and coordination for training, staffing and other administrative support requirements as deemed necessary by Center Manager.

*Average Compensation: Based upon salary of \$40,000 - \$60,000 annually*

## Governance Summary

The communities of Barnstable County have shared with us concerns and their vision for the development and of a regional communications facility. There was general consensus across all fifteen communities that while the Sheriff's Communications Center offers a vital, highly professional service, police and fire officials question the long term viability of a State office – the Sheriff's Department - providing the umbrella-like services normally offered under the auspices of a County. The issue being the lack of accountability, control or input any individual town would have toward the management of emergency communications with a State agency as compared to the more balanced relationship that comes with a governmental agency more closely tied to its constituency.

Simultaneously though, a great number of communities have reached their financial limits and are seeking immediate solutions to address budgetary issues. The concerns with the current governance structure of the Barnstable County Sheriff's Office may require mitigation against the larger financial ones in the short term while communities acclimate to a regional dispatch environment. Communities considering migration toward the current BCSO Center will have the opportunity to address the impact to their local environment as well as financial and cultural impacts that may result from transition to a regional configuration.

BCSO currently provides PSAP call answering and fire dispatch services for thirteen communities and is in detailed discussion with several other communities to become their primary answering position and dispatch center. Assuming these discussions will move ahead, BCSO will be the primary for over 50% of the police and fire agencies on the Cape. Therefore, for the short term, we would anticipate the operation of BCSO to continue under the Sheriff's organization. However, the near term challenge for the Sheriff's Communications Center is the support of additional agencies in its current space as it is severely 'land locked' with no physical space to expand to.

The Sheriff's Communications Center acknowledges this and has stated that they may have access to additional land on the Massachusetts Military Reservation which will be necessary should a new Communication Center be developed. The Sheriff has expressed that he is ready, willing and able to secure land space and request the funding necessary for any construction or expansion project.

While there has not been any formal request for a change in the governance of the Sheriff's Office Communication Center, the Sheriff has clearly expressed his willingness to establish such an agreement to allow a more cooperative and inclusive governance model in the future.

### **Long Term Governance and Sustainability**

As a counter to the current governance and organizational challenges, we have developed the following recommendations and sample organizational charts as a paradigm shift toward a more dynamic and interactive partnership:

▪ *Development of 501(c)(3) or 501(c)(12).*

Cape Cod communities have a unique strength and history of working together forming a level of collaboration that rarely exists across jurisdictions much less County's. Cape Cod has set precedents in establishing executive level boards who have established authority to provide organizational, operational, financial and functional oversight of services that are required across a region. An example of this Board includes Cape and Islands EMS. Further, there has been precedent established through legislation specific to individual communities in Cohasset, Hingham, Hull and Norwell; Middlesex County and Essex County, MA that can stand as a template from which Barnstable County stakeholders can establish their own corporation and Executive Board for the purpose of having service agencies offer multi-jurisdictional communications services.

Using these precedents to their best advantage, we are advocating for the development of a Cape-wide Corporation and Executive Board. For purposes of this report we have called the regional corporation the *Barnstable County Public Safety Corporation*.

**Example: Barnstable County Public Safety Corporation** would be comprised of representatives from each participating town/agency including representation from the Sheriff's Communications Center. The Corporation will establish the rules of membership, the cost of membership assessed by town, policies, procedures, definitions and guidelines for the procurement and delivery of Emergency Communications Services on Cape Cod. The Corporation will establish the mission and vision – to provide organizational, operational, financial and functional oversight of emergency communications services that are required across the region.

- ♦ To allow for independent and objective management of the issues and concerns affecting those participating communities.
- ♦ The governance must reflect the agencies involved and offer full and equal participation and input regarding issues affecting a regional center

▪ *Establishment of a County-Wide Cross Jurisdictional Executive Committee*

Our recommendation is the creation of a multi-agency, county-wide emergency communications advisory and planning group whose responsibility is to: 1) Foster the development and implementation of regionalization on Cape Cod through the input and representation of sub-regional working groups. 2) Identify and solidify the governance requirements for the region on a short- and long-term basis, and 3) Provide on-going direction, input and oversight of issues impacting the delivery of emergency communications on Cape Cod.

Without exception, we found consensus for a regional dispatch operations model that offers equal participation of all agencies in a partnership arrangement with a separate dispatch organization. That environment does not exist today – however – it would be required to proceed.

With concurrence from the Executive Board to be comprised of elected/selected police, fire, financial representatives and county representatives the Board will take on the challenge of defining leadership roles, subcommittees and other formalized measures for the purpose of guiding this multi-jurisdictional working group toward consensus on the issues of developing regional communications center (s).

**Example: Barnstable County Public Safety Executive Board**

It would be anticipated that this high level board be held accountable and responsible for each of the subcommittee activities as well as the on-going financial health and operational wellness of emergency communications on Cape Cod. Representatives from each participating town/agency including representation from the Sheriff's Communications Center, CMED and possibly Barnstable County, and the newly developed Communications Center would 'elect' officials to the Board for a determined time so as to prevent the perception that one discipline/town could impact the policies/procedures or services to their advantage at the detriment of another discipline. The Executive Board will play a critical role in supporting the 'new' role of emergency communications services on Cape Cod as well as work with the Sheriff's Communications Center on providing similar consistencies in their service offerings.

- *The governance must allow for independent and objective management of the issues and concerns affecting those communities participating. The governance must reflect the agencies involved and offer full and equal participation and input regarding all issues affecting a regional center.*

Organizational alignment will increase information flow between regions, allow for operational and procedural consistency while organizing governmental issues and financial aspects of emergency public safety communications on the Cape. The Barnstable County Public Safety Corporation would then be a reflection of the issues within each region, through elected positions to the Executive Board. Through a liaison position – perhaps on the Procedural and Operational Subcommittee, the Corporation membership and Executive Board would have the oversight to work with an independent Center Director as well as the Sheriff's Communications Center representative responsible for the day-to-day operation and management of their respective Center(s). This liaison position would be accountable to the Executive Board.

**Example: Procedural and Operational Subcommittee:**

This subcommittee will establish the 'rules of engagement' between the Barnstable County Public Safety Corporation Executive Board, the Sheriff's Communications Center and when developed the independent Barnstable County Emergency Communications Center (BCECC). The intent being to standardize the delivery of emergency communications services on the Cape through agreed upon and documented processes and procedures. The Procedural and Operational Subcommittee will initially solicit input from each participating town agency as well as the Sheriff's Communications Center representative and representative from a newly formed, independent BCECC. With the combined input from each of those represented the Subcommittee will establish and

document the SOP's, guidelines, common practices and operational parameters under which it is expected that emergency communications services will operate on the Cape – regardless of which Center is delivering services.

- *Creation of legislation directing the on-going partnership between the Barnstable County Sheriff's Communications Center with the Barnstable County Emergency Communications Corporation*

The CSRIC findings state that, “*Legislation may be necessary to create a sustainable funding mechanism or codify relationship between the parties*”<sup>2</sup>. This finding validates the need to develop legislation to orchestrate the relationship between the participating agencies and the emergency communications center provider. The intent is to define and organize the details of a sustainable funding mechanism and in the case of Barnstable County, a mechanism to establish an organizational structure and independent board for the purpose of oversight and advisory input. There is pending legislation in the Massachusetts State Senate that offers an umbrella of generic measures for the purpose of establishing an emergency communication district planning board and all that is entailed to establish this entity. (Senate Bill 1296-Pending)

This legislation will be vital to establishing and defining the relationship between the Barnstable County Public Safety Communications Corporation, the new independent center and the Sheriff's Communications Department. This legislation will provide the formalized and on-going financial partnership as well as the concise rules of engagement that are typically considered. In fact, the legislation will become a replica of the type of mutuality one would anticipate between a County agency and its towns.

***Example: Legislative and Regulatory Subcommittee***

This subcommittee is focused on researching and formalizing the process to become a recognized State entity. Precedent by others shows that a 501-C3 or 12 corporation status may be the best suited entity as it would allow members certain government-based conveniences without the political overtones that Public Authorities often come with. This subcommittee would work directly with legal, financial and other related State and Local authorities to establish the Memorandum of Understanding (MOU) between the Center and individual towns, Center service offerings, Center Standard Operating Procedures and guidelines. Subcommittee will develop language for the legislation required to become a recognized State agency. Pending Legislation in the Massachusetts State Senate, Senate Bill 1296 has been identified by State 911 Department as a likely vehicle to achieve the proper status.

- *Establishment of Joint Goals and Objectives Relative to Regionalized Communications*

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<sup>2</sup> Communications Security, Reliability and Interoperability Council; Final Report Briefing Working Group 1A Public Safety Consolidation Effective Practices and Recommendations. October 7, 2010

Consolidation is a complex, multi-dimensional issue that involves a technological, strategic, tactical and cultural change best worked through in smaller groups who can embrace a vision to make it happen.

Through designated Subcommittees police, fire and town management representation will have direct participation to articulate the operational parameters and requirements, address technology direction, budgeting, personnel and staffing issues to be brought back to town leaders for discussion and financial input. Decision making, support and planning from each participating town and agency will drive the process in a collaborative, cooperative manner.

***The following are sample Subcommittees to provide the core support***

***Example: Finance Subcommittee***

This subcommittee's responsibility is to establish the immediate start-up and long term sustainable funding models that reflect the services expected to be delivered through the Sheriff's Communications Center and/or the a newly developed Center. Funding formula's incorporate a wide array of factors but most include basic elements such as percentage of population; percentage of call volume (or calls for service); base service charges (often the price of admission) and per unit charges. The funding example developed for this report includes some of these components. The finance subcommittee should be prepared to address the long-term financial issues surrounding NG 911 services and costs as they are identified and implemented at the State Level.

***Facility Subcommittee***

Depending upon the direction the Steering/Project Planning Committee identifies the Facility Subcommittee may need to identify existing infrastructure, facilities and/or land to support renovation/addition or new construction. The Facility Subcommittee would be engaged over the long term with a professional design team and will establish the dispatch center footprint for new and future expansions.

***Labor Subcommittee***

Labor Subcommittee will have significant role initially as the existing labor contracts are reviewed, compared and new agreements reached as part of the new BCECC. Special attention will be paid to pension, longevity, pay scale, career path and other personnel related concerns. The Labor Subcommittee may be involved in the vetting of a new Center Director and the preparation of job descriptions for each area of expertise required within a new Center.

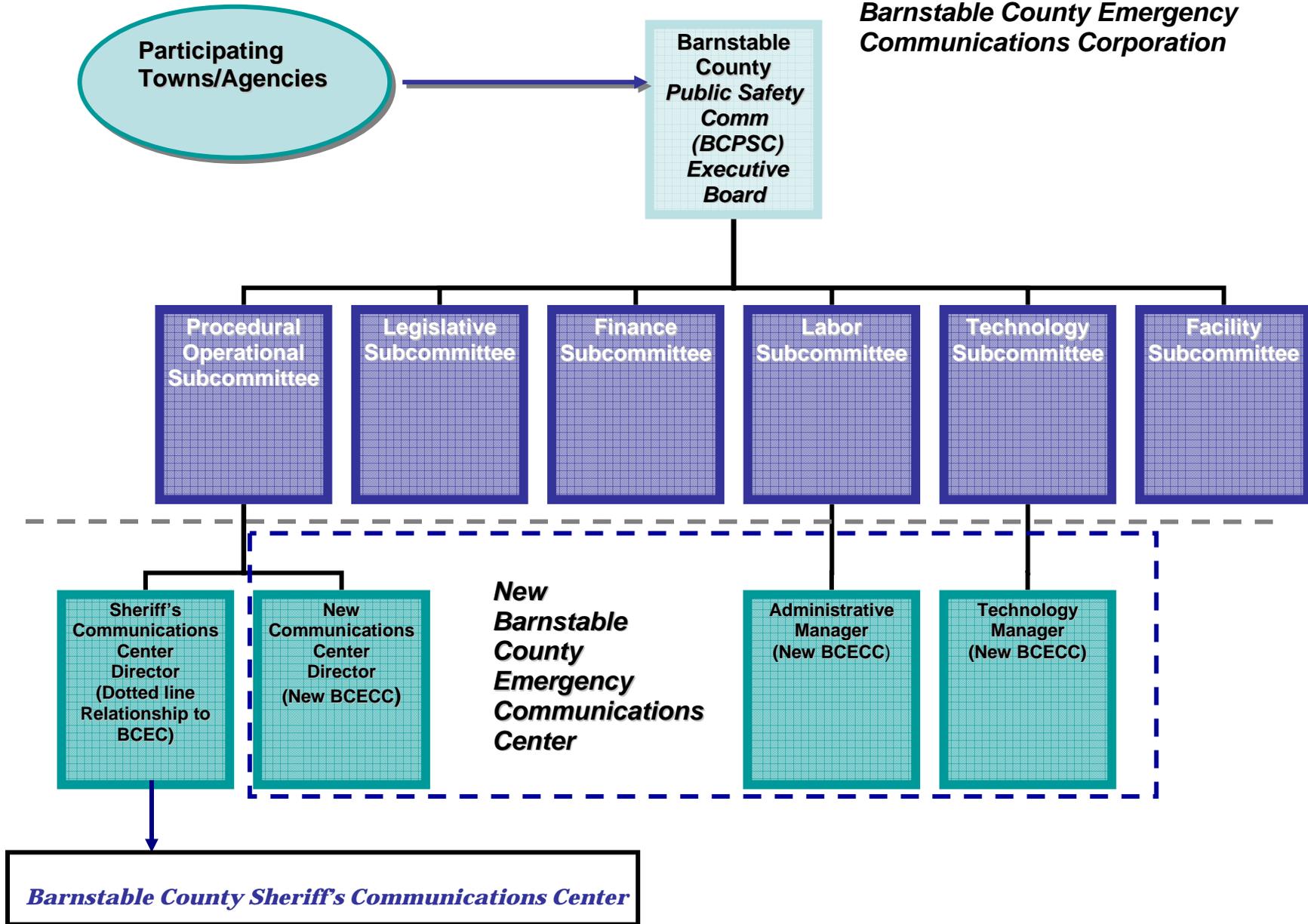
***Technology Subcommittee***

Technology Subcommittee will provide strategic direction, consistency and unified interoperable communications solutions between any new BCECC Communications Center, the Sheriff's Communications Center and the fifteen towns on Cape Cod. This subcommittee will establish the future for collaborative records management between and across disciplines so that the 'silo' effect is minimized or done away with. The Technology

Subcommittee will establish the continued service requirements for maintenance of the radio communications network; evaluate backhaul and future data transmission/video communications to and within the proposed Centers. This subcommittee will be the interface to NG 911 regulatory and deployment projects as well as seek to identify grants and other funding instruments.

We have identified the following governance structure as the initial 'straw man' template to begin the organizational development of the new Barnstable County Emergency Communications Corporation:

**Barnstable County Emergency Communications Corporation**



**INTERTECH ASSOCIATES, INC.**

**PUBLIC SAFETY CONSULTANTS AND ENGINEERS**

Use or disclosure of information contained on this sheet is subject to the restrictions on the title page.

## Technology

First responders throughout Barnstable County have established a pattern of mutual support and interoperable communications well before this project's beginnings. There is a history of regionalized fire dispatch, interoperable fire and police radio communications and most recently, initial steps toward web-based access to Cape-wide fire data. While there can be areas of improvement, Barnstable County and Cape Cod first responders have cooperated to develop and implement a core set of systems that can be used as a platform towards more sophisticated regionalized and interoperable voice and data systems.

Regionalization will impact data management and data communications most on both a local and regional level as the need for expanded data interoperability and implementation of next generation (NG) E911 services begins.

Barnstable County and its first responders have already set the tone for the future of technology through their forward thinking partnership with OPENCape, a non-profit 501-C-3 corporation that has established the business and operational plan to rollout a ubiquitous, reliable, redundant, and cost competitive telecommunications infrastructure for commercial and residential technology growth on Cape Cod. Key to this network is the development of a separate public safety Wide Area Network that will be constructed to connect every police department, fire station, municipal structures (including libraries) and schools onto a core fiber backbone. Once lit, this backbone will provide data connectivity from Provincetown to the Bourne Water Tower on the Cape, Brockton, MA and Providence, RI.

Another area of progress is that each of the Cape's fifteen police departments currently utilizes versions of the IMC CAD/RMS package while Fire agencies use versions of IMAGE Trend. Both operations require an 'enterprise' management view of the data, storage, access (remote and local), procurement and operations however the building blocks for relevant data exchange exist. Data management systems will also require a robust and interactive Mapping and Automatic Vehicle Location System capable of integrating with a future E911 dispatch system.

The immediate view though is that with the best practices already implemented on the Cape, Barnstable County has established a baseline of technology services from which Next Generation 911 Systems, data communications, data management and exchange can become achievable.

### **Data Infrastructure Connectivity – OPENCape**

Intertech Associates has evaluated the use this fiber optic backhaul system to provide the IP communications path as the transmission network to support the public safety data communications requirements on Cape Cod.

A pair of single mode fibers is planned to provide an effective broadband link to carry digital voice, data video and control information. It will shield the signals from radio frequency interference as well as facilitate effective long haul networking. The transmission path utilizes

both the underground and aerial infrastructure available along the route. The predominant installations are on power or communications poles open to both weather events and road hazard incidents.

### **E911 and NG 911 System Technologies**

A recently released FCC Cost study identified two possible models from which NG911 services would be made available. Both models assumed that delivery of NG911 services would be offered over an ESI-net - an IP-based inter-network (network of networks) shared by all agencies which may be involved in any emergency; however last mile connectivity would be determined by the PSAP with a minimum of dual-10 mg bandwidth as the baseline. Barnstable County would be in a prime position to connect with the ESI-net from a single or multi-location configuration using OPENCape facilities as the backbone infrastructure. These large bandwidth facilities will provide the basis of transporting voice and data rich feature services to facilitate the delivery of emergency information during the processing of an E911 call.

Both models also assumed that future services would be offered through either a 'hosted' or dedicated solution to be determined by the number of dispatch 'seats' within a PSAP. PSAP's with greater than 50 seats would opt for a dedicated solution; those facilities with seats to support 6-49 dispatchers were thought to be split between a hosted and dedicated solution. The report points out those facilities with the greater the number of seats would have an increased need for highly customized feature requirements and operations and therefore would opt for the dedicated NG solution.

The report concludes that:

- Of the two cost models studied, the *Hosted Model* (named Cost Effective Model) was most cost effective. It assumes PSAP consolidation will result as part of the transition to NG911 resulting in a total of 35% fewer PSAPs at the end of the migration.
- While a dedicated NG911 solution offers greater flexibility toward the deployment of customized features, there is an underlying assumption in the report that hosted providers may offer similar services.
- A substantial number of large (facilities with seats over 50) and medium centers (facilities with 6-49) will opt for the hosted solution as it offers substantial financial savings over dedicated options.
- *Large PSAPs* are assumed to require 100 Mbps IP transport facilities, with a MRC of \$8,750. *Small and Medium PSAPs* are assumed to require 10 Mbps IP transport facilities with a MRC of \$1,150-1,200. In the case of Barnstable County transport costs may be even less due to the working arrangement with OPENCape
- For Medium Centers, the Non-Recurring Charge for a hosted solution and additional equipment cost is assumed to be \$25,000
- For Small PSAP's, the Non-Recurring Charge for a hosted solution and additional equipment is assumed to be \$10,000
- Assuming no network connectivity charges to be incurred as part of the OPENCape arrangement, PSAP's would not have to incur the \$750,000-\$1,500,000 non-

recurring network charges associates with building out a fiber-based network infrastructure

The report concludes that provisioning the next generation network and equipment across the current 6,861 active PSAPs registered nationwide as of July 2011, is an expensive proposition one that will require these PSAP's to regionalize in order to take advantage of the most cost. The two cost models presented will likely undergo scrutiny and refinement however, the data is offered here as directional for Barnstable County as its first responders evaluate the merits of regionalized dispatch communications.

**Radio:**

The Barnstable County radio communications system is one of the most robust interoperable communications systems in Eastern Massachusetts spanning 15 communities from Provincetown to the Bourne Bridge with additional coverage into Plymouth County.

The system, owned by the Commonwealth of Massachusetts and maintained by the State Police with the local assistance of BCSO radio technicians, by and large offers unique levels of cross-jurisdictional communications for mutual aid, CMED and other multi-agency responses. While there are specific locations that require additional radio engineering to mitigate interoperability issues such as Bourne's ability to communicate with adjoining Plymouth County communities the Barnstable County radio system is widely held as a standard for regional first responder communications.

The Barnstable County Sheriff's Office and the State Police have a long-term Memorandum of Understanding allowing Barnstable County police and fire agencies to utilize the system. System maintenance is provided through the Sheriffs Communications Office for municipal police departments' radio consoles and police and fire subscriber units.

All police and fire departments have programmed talk groups into their radios for Cape-wide interoperable voice communications. Bourne, Mashpee, Sandwich, Falmouth, Barnstable and Yarmouth each has their own single channel 800 MHz system and uses that for primary dispatch along with operating on the trunked system for interoperability. Additionally, the fire departments in Hyannis, Centerville and Harwich also have their own 800 conventional systems that are used to augment in-building coverage as well as fire ground communications.

Two talk groups have been assigned to each municipality on the Cape along with three (3) common county-wide police "admin" channels that each of the Police Departments have. The State has 10 common Local Public Safety channels statewide and Barnstable County operates on Local Public Safety channels 5 and 6 for interoperability. Each Fire Department has a dedicated talk group on the trunked system. There are 3 Fire OPS talk groups common countywide that can be used by any of the Fire Departments.

In addition to the 800 MHz Cape-wide system, several fire agencies on Mid and Lower Cape use a new UHF fire alerting system that provides a "talk-back" capability to Dispatch, for the users in the field. The UHF paging system and back up radio system which will support the communities of Brewster (lead agency), Dennis, Orleans, Eastham and Wellfleet was funded through the

Firefighter Assistance Grant Program. The UHF paging system and a back up radio system were operational late summer 2011 on a 400 MHz repeater based system and could ultimately provide Cape-wide paging and back-up radio services. .

These additional systems illustrate the collaborative partnerships that exist between communities and agencies towards achieving interoperable communications capabilities across the region.

**Recommendations:**

**Radio**

Based upon the current radio facility placement many of the County fire departments are experiencing dead spots and poor radio system performance on the Massachusetts State Police 800 Mhz Trunked System. This poor performance is most evident in the talk back in building mode of operation. This talk back mode of operation is more evident in the fire service than in police operations.

Based on the standards of fire operation it is required to establish an incident command position outside the facility and maintain operational communications with both dispatch and local fire command. This operation requires a means of communications that is locally repeated or monitored.

Due to the nature of trunked communications all radio traffic must get back to a repeater site in order for the communications link to be established.

Therefore a fire fighter in a building cannot communicate with another fire fighter in that building if the radio signal doesn't reach the repeater site.

In order to correct this situation two solutions are available. The first and more expensive solution would be to increase the repeaters on the Trunked system to a point of saturation and continue to add repeaters as dead spots appear due to new construction. A second option would be to utilize the conventional 800 channels available in various towns as Fire Ground communications for the purpose of communicating to a local incident command position while using the second frequency in the pair as a simplex talk-a-round. This type of communications would also be used on designated conventional channels throughout the County with voted receivers linked by means of an IP backbone.

In addition to the dispatch and call taking functions it is vital that the communities share talk channels across the County on the same operating band. This can be accomplished by allocating conventional channels by region, with conventional channels from all the regions operational in all radios this will facilitate mutual aid and interoperability. In this way both police tactical operations and fire ground operations will have improved their tactical communications capabilities through the most efficient use of RF resources.

**Final Report: Barnstable County Feasibility Study**

**Table 7: Sample Channel Management Plan for Police and Fire in Barnstable County**

<b>Barnstable County Frequency Recommendation – All Scenarios</b>			
Towns	Function	Recommended Frequency or Talk Group	Present Use of Talk Group or Frequency and Licensee
Barnstable Dennis Yarmouth	Police primary dispatch	Talk Group 38096 now assigned to Barnstable Police	Barnstable police secondary and backup
	Police secondary dispatch	Talk Group 38554 now assigned to Yarmouth Police	Yarmouth police secondary and backup
	Police in-building on scene tactical	856.2125	Barnstable police primary dispatch
	Fire alerting	33.04/453.1500 simulcasted	33.04 West Barnstable fire alerting/453.150 Yarmouth fire alerting
	Fire dispatching – command and control	Talk Group 37488 now assigned to Dennis fire	Unused talk group assigned to Dennis fire
	Fire in-building fire ground	453.5125	Dennis fire
Harwich Brewster Chatham Orleans Eastham	Police primary dispatch	Talk Group 38320 now assigned to Harwich police	Harwich police primary and secondary dispatch
	Police secondary dispatch	Talk Group 38120 now assigned to Brewster police	Brewster police primary and secondary dispatch
	Police in-building on scene tactical	857.4375	Harwich fire dispatch
	Fire alerting	33.52/460.5500 simulcast	33.52 Brewster fire/460.5500 Harwich fire
	Fire dispatching – command and control	Talk Group 37584 now assigned to Harwich	Harwich fire
	Fire in-building fire ground	460.5250	Brewster fire dispatch
* Indicates frequency sharing between towns required.			

**Final Report: Barnstable County Feasibility Study**

<b>Barnstable County Frequency Recommendation – All Scenarios</b>			
Wellfleet Truro Provincetown	Police primary dispatch	Talk Group 38416 now assigned to Provincetown police	Assigned to Provincetown police but not used
	Police secondary dispatch	Talk Group 38512 now assigned to Wellfleet police	Wellfleet police primary and secondary dispatch
	Police in-building on scene tactical	855.4625*	Falmouth police dispatch
	Fire alerting	33.54/400.xxxx* or 460.6250* simulcasted	33.54 Wellfleet fire/400.xxxx to be licensed within 1 year by Wellfleet/Hyannis fire ground
	Fire dispatching – command and control	Talk Group 37776 now assigned to Truro fire	Assigned to Truro fire but unused
	Fire in-building fire ground	400.yyyy* or 453.3875*	400.yyyy to be licensed within 1 year by Eastham fire/Contuit fire dispatch
Sandwich Bourne Falmouth Mashpee	Police primary dispatch	Talk Group 38448 now assigned to Sandwich police	Assigned to Sandwich police but not used
	Police secondary dispatch	Talk Group 38128 now assigned to Bourne police	Assigned to Bourne police but not used
	Police in-building on scene tactical	854.9375	Mashpee police dispatch
	Fire alerting	33.78/484.8250 simulcast	33.78 Falmouth fire dispatch/484.8250 Sandwich fire dispatch
	Fire dispatching – command and control	Talk Group 37296 now assigned to Bourne	Assigned to Bourne fire but unused
	Fire in-building fire ground	460.6375	Sandwich fire secondary
* Indicates frequency sharing between towns required.			

**CAD and Records Management:**

The need to have better cross jurisdictional information and resource sharing has become a costly and difficult part of the data interoperability equation. To share information and coordinate the sharing of agency resources requires either the consolidation of all agency applications to a single system, or integrating the disparate agency applications into a single interoperable solution.

Regardless of the type of record management system or CAD currently used in each department, there will be a need for single integrated CAD/RMS mechanism through which data can be entered, saved and reported on while participating agencies retain the ability to enter data locally or even remotely through MDT's.

There is a long history in the first responder world to attempt to implement a single system that provides universal data, record and reporting services across police, fire and medical services. Typically there is difficulty in selecting a single system as manufacturers tend to support police or fire/medical – seldom both. For those that do support the CAD/RMS requirements of both, the systems tend to be expensive and the conversion of data from legacy systems to any one new system is costly and difficult.

With the advocacy of organizations such as SAFECOM and other federal standards organizations who offer research and advisory support for interoperability protocols, the use of XML translation capabilities in CAD/RMS products has made the transitioning to ‘universal’ CAD/RMS platforms a bit more feasible. One such product technology has had substantial success in large scale operations throughout the west in Colorado, Missouri, Utah and California.

Because of the investment into existing agency systems, including the tacit investment of people and training, it is unlikely that all of the cooperating agencies will agree on a single solution. Therefore, integrating the disparate applications into a single interoperable solution is the most viable solution.

We have researched both the point to point solutions and the development of customized integration platforms and both require substantial time and money with questionable results for the legacy data. With the evolution and development of new translation languages such as XML or even more traditional query languages such as SQL options have emerged that allows for multiple platforms to connect together without the need to change legacy systems. These integration platforms or middleware become the active translator of data between themselves and those systems connected to it.

**Barnstable County Data Solution:**

Barnstable County Sheriff's Communications Center has developed a relatively seamless and by comparison to other options, cost effective means of supporting the integration of data coming from a myriad of CAD/RMS systems operating on Cape Cod. The Communications Center supports fire agencies today that use local fire CAD/RMS programs that include IMAGE Trend, Firehouse/FirePro and EmergiData. Integration programs have been developed or are in the process of being developed that provide a ‘portal’ or ‘intranet’ access for

Communications Center dispatchers document a 911 call while enabling the local community to still access the incident data, prepare and run local reports, view location information and mapping without a tremendous investment or change in technology.

By using the Alpha Software as middleware, customized interfaces can be made with the use of standardized templates. Data is partitioned and secured to be used in mutual aid events required by fire agencies or can be segregated and used/viewed by individual agencies.

The data is viewable from any location using MDT's, Smartphone's as well as traditional laptop as well as wired computers. By virtue of the Checkpoint software, the data is secured over the internet and viewable through the portal. The Sheriff's office is currently using it for CMED applications to email status reports prior to ambulances arrivals; reporting capabilities for the Sheriff's Bureau of Criminal Investigation and K-9 units as well as mutual aid. Further, the State is using this platform for its Emergency Management Departments.

Future enhancements to the Alpha Software package include a more 'real-time' mapping function that provides GPS coordinates based upon the 911 call data.

Sample page views are included.

**Police Records Management and CAD Solution:**

From questionnaire responses, we have identified that 100% of the responding police agencies utilize the IMC CAD product for police dispatch and related record management functionality. While each community is 'stand alone' in its own operation, there is a 'cross agency check' database capability that can be used as the basis for inter-agency database interoperability. When combined with future integration now being planned with IMC through the Barnstable County Sheriff's Office, the result will offer police a Cape-wide intelligence through a single database interface.

The migration away from a 'silo' environment and toward a more community-based approach to information sharing within the public safety sector is unique to Cape Cod and underscores the importance for first responder agencies to actively participate in the next level of dialogue that is certain to occur between Towns Administration and Public Safety agencies.

Future technology considerations should be addressed through a tactical level Technology Sub-Committee that can organize and coordinate procurements for greater purchasing power, consistency of services and in particular to Police data systems, develop an enterprise level view of police incidents and historical events. This is where the benefits of regionalized dispatch will be best seen as more services are driven through the eyes of a consolidated environment.

**Alternatives to SQL Data Systems**

**XML Based Systems**

The need to have better cross jurisdictional information and resource sharing has become a costly and difficult part of the interoperability equation. To share information and coordinate the sharing of agency resources requires either the consolidation of all agency applications to a

single system, or integrating the disparate agency applications into a single interoperable solution.

In the Justice and Public Safety market, the Global Justice XML Data Model (JXDM) is the federal standard from which a common translation protocol has emerged. These industry standards help define common protocols that must be supported by the interface between multiple disparate applications.

To that end, FATPOT Technologies, an industry leader in the development of these standards based systems will be working with the Brookline Police Department on the launch of a pilot program supporting two local hospitals and four police and fire departments in Cambridge, Brookline , Boston and Chelsea. The intent is to initially support the exchange of medical triage information prior to the ambulance arriving at the hospital. The intent is to decrease the amount of time and redundant efforts involved in securing the accident related data and to provide emergency room doctors with sufficient data prior to arrival. The trial is intended to begin before Labor Day, 2011.

### **Data Management and Operations Recommendations**

The development, oversight and implementation to an enterprise-wide Police CAD and Fire CAD will require the input and representation from each of the participating agencies in the consolidation. As the Technology Subcommittee re-evaluates the existing IMC and IMAGE Trend systems and the features/services offered under each it may be necessary to consider new systems rather than reuse of existing or retain the existing for local viewing, records management and administrative records review and purchase a Cape-wide police CAD, Fire CAD, mapping and AVL system. In either case, we would recommend that the Technology Subcommittee provide the guidance and direction toward achieving the objective of Cape-wide data and record management.

Regardless of the particular system several points will be useful in the regionalized environment:

- **Local access to data and systems will still be required**

Each local fire and police department will still require the intelligence of a centralized data management tool(s) with an ever expanding need to identify location and mapping information only available now in a handful of department to a limited capacity. This will require planning and evolution of a data network, network security and access controls to enable local agencies to monitor, track incidents, personnel and resources as well as status updates as allowed across the Cape. We would recommend a web-based tool be developed for the purpose of information sharing to each participating agency.

- **Review existing local update process for GIS and mapping systems to achieve a more ubiquitous source of 'local intelligence'**

One of the issues surrounding regionalized dispatch is that the dispatcher represents a core of 'local intelligence' not able to be duplicated through a regional

configuration. While active debate will continue on this point, one of the ways technology can mitigate some of these concerns is by revamping, modernizing and maintaining local GIS maps to a standard across the Cape. There are County-level efforts underway to provide updated GIS data to all Cape communities. The updated GIS data should contain detailed road network, building locations, floor plans, (where available), and other information quickly viewable from the multi-center PSAP as well as local agency and ultimately through mobile devices. Central administration is required so that updates can be entered 'on the fly' to include road closures, construction sites and other emergency and time sensitive information that could impact a response.

– **Development of an enterprise-wide network security philosophy that includes an assessment of participating agencies IT inventory and security protocols:**

Perform a network assessment and document review of the existing network environment and equipment. Review and/or document the physical and logical layout of each network; document and review the status and health of the following IT services in each agency:

- WAN infrastructure
- Information security
- Physical environment
- Servers
- Storage and backup
- Redundancy

Technology budget below anticipates the continued operation of Sheriff's Communications Center. New and upgraded equipment requirements have been accounted for below. We estimate an additional \$1.5M will be required for Surveillance/CCTV system, Administrative Telephone and Internal/External Network Wiring/Wireless Access Points. State 911 Department Regional and Regional Secondary PSAP and RECC Development Grant can be applied toward these costs.

**Table 8: DISPATCH TECHNOLOGY BUDGET**

<b>Fifteen (15) position (4) Channel 800 Conventional System + MSP 800 Trunked System</b>			
ITEMS	QTY	UNIT PRICE	TOTAL PRICE
Console Furniture (1 Position) including monitor mounts:	15	\$ 18,000.00	\$ 270,000.00
PC's at Console (4 per position):	60	\$ 1,800.00	\$ 108,000.00
911 Systems:	15	\$ 50,000.00	\$ 750,000.00
AVL/Mapping System:	1	\$ 250,000.00	\$ 250,000.00
CAD/RMS System Upgrades	1	\$ 500,000.00	\$ 500,000.00
Radio Repeaters 800:	4	\$ 30,000.00	\$ 120,000.00
Radio Repeaters UHF:	4	\$ 30,000.00	\$ 120,000.00
MSP 800 Consolettes:	4	\$ 20,000.00	\$ 80,000.00
800 Conventional System Antennae Site:			
800 Conventional Antennae	1	\$ 1,000.00	
800 Conventional (8) Channel Multi-couplers	1	\$ 20,000.00	
800 Conventional (8) Channel Combiners	1	\$ 20,000.00	\$ 41,000.00
800 UHF Conventional System Antennae Site:			
800 UHF Conventional Antennae	1	\$ 1,000.00	
800 UHF Conventional (8) Channel Multi-couplers	1	\$ 20,000.00	
800 UHF Conventional (8) Channel Combiners	1	\$ 20,000.00	\$ 41,000.00
Video Wall System:	1	\$ 350,000.00	\$ 350,000.00
IP Microwave Link:	1	\$ 30,000.00	\$ 30,000.00
UPS System:	1	\$ 500,000.00	\$ 500,000.00
Grounding & Surge Protection:	1	\$ 55,000.00	\$ 55,000.00
<b>SYSTEM SUBTOTAL</b>			<b>\$ 3,215,000.00</b>
<b>CONTINGENCY</b>	<b>15%</b>		<b>\$ 482,250.00</b>
<b>DISPATCH SYSTEM TOTAL</b>			<b>\$ 3,697,250.00</b>

## Facility Options

The following facilities have been considered as potential sites in the development of regionalized PSAP and Dispatch models. Each existing facility has its own benefits and challenges and can be used as part of the near term solution. At present, the County does not have a single facility that can sustain the anticipated dispatch staffing and support functions anticipated for use in a single RECC. We have estimated that a single RECC would require the following staffing and space:

- ♦ 13 position dispatch center plus Supervisory Position : 1,800 sf
- ♦ Support spaces (offices, conference room etc) for 16: 1,550 sf
- ♦ Center Director: 144 sf
- ♦ Equipment and Utility Rooms: 800 sf
- Estimated square feet: 4,294**
- ♦ Training Room: 400 sf
- ♦ EOC: 1000 sf
- ♦ Additional Office Space and Common Areas: 2,000 sf

Estimated cost per square foot for interior renovation: \$200/sf

Further, decisions regarding additional functionality in the Center such as inclusion of an Emergency Operations Center will require consideration of any future site.

The following sites have been visited and/or reviewed and are available for further analysis as regional emergency dispatch centers:

### **Harwich Police/Fire Communications Center**

Harwich represents an opportunity for some type of regionalization in the short term to interested communities as it has an established police and fire dispatch center with operational equipment with newer facilities.

The Harwich Communications Center is in an area approximately 20x30. Four (4) console positions provide access to the public window for walk-in traffic. There are 2 primary, 2 back up consoles with room to add at least one additional operator position in the main center. The area includes a break room IT room and UPS for whole room, independent of the rest of the facility. While the current dispatch room is comprised of four (4) positions Harwich could expand to accommodate six (6) additional positions by using the lower truck bays.

During recent site visits our staff noted that the new facilities were equipped and capable of both Police and Fire Call Taking and dispatch. Each position is equipped with 5 screens, 2 for CAD, 1 radio. 1 LEAPS, 1 911 screen. The facility is self supporting as it contains a separate break room, IT room, Bathroom with radios and phone, and kitchenette.

Two (2) independent generators plus a four (4) hour UPS for communications room.

### **Dennis Public Safety Dispatch Center**

The Dennis PSAP is a relatively new facility (less than five years old) with recent security measures, new furniture, equipment and dispatch-position layout. A security proximity card is needed to enter into the hallway from the public lobby, and the Prox Card is needed to enter into the secured Dispatch Center, The Dispatch Center currently contains 3 Dispatch positions and could support expansion of two more positions in the 24' by 18.5' or 444 square foot room. Also contained in the Dispatch Center room is a small eating area with lockers, kitchen area and a bathroom, Dispatch Center is on the first floor of the Police Department- Animal Control office is also within the Police Department to the right of the public lobby, Parking Layout- parking for staff in rear of building with extra parking spaces.

Each dispatch position has six (6) total screens which include 911 + 911 mapping screen, radio dispatch screen, 3-screens for CAD system, one keyboard for CAD and one keyboard for 911. There are portable UPS back ups for each Dispatch Console position and a 300 kw generator for the Police Department which runs on diesel fuel, which went online October 2007.

During our discussions in Dennis there was mention of the possibility that the Town of Dennis could make land available for the development and construction of a centralized PSAP/Dispatch Center and Emergency Communications Center.

### **Yarmouth Fire Station 3**

Our Project Team initially reviewed the facilities that could be made available at the Yarmouth Police Department which had an unused conference room and office comprising approximately 1,500 square feet. While the area included separate bathroom facilities, it did not compare to the 5,000 square feet of available space within Yarmouth Fire Station 3.

Yarmouth Fire Station 3 was built in 2007, the second floor of the two-story facility that has never been fitted out for interior completion and has never been occupied. It is estimated to be approximately 5,000 sf, and is equipped with power, basic environmental systems, grounding and lightning protection which would provide upward of 12 console positions for both 911 Call taking and Radio Dispatch. This space would be able to house back-room electronic equipment to support these positions as well as office and training areas.

Another key feature of the site is a self-supporting antenna tower of about 60 ft capable of carrying short haul IP microwave antennas to link with the antenna tower at the nearby Police Headquarters which is connected by a fiber ring to the County. This would then link to the County's microwave and Open Cape's fiber optic backbone, with the cost of a microwave link only.

### **Sandwich 'Joint' Public Safety Center**

The Town has appropriated money for the development of a joint (Sandwich) public safety building with a combined dispatch center. Sandwich will soon be selecting an architectural firm to provide the preliminary design for this Center.

With this development, and the interest expressed during the Focus Group readouts by the Chiefs attending from Sandwich, Falmouth, Mashpee and Bourne it would be beneficial to begin preliminary discussions regarding a possible regionalized dispatch center for the Upper Cape that could support some or all of the emergency communications services from PSAP call answering, EMD as well as police and fire dispatch.

**Barnstable County Jail Site**

A similar facility could be provided at the at the old County Jail facility in Barnstable which offers approximately 3,500 square feet of space on one floor with added space within the building. This facility would require a total interior renovation. This site is centrally located and is adjacent to a 200 foot radio tower and is also accessible to the Open Cape Fiber Network.

The total area needed to support not only 911 call taking, dispatching, administration/ support and EOC for county and municipal support would involve a building of approximately 12,000 to 15,000 square feet at a minimum. This type of center should have tower facilities, generators and be fully self sustaining and functional under adverse conditions of weather or the environment.

**Town of Barnstable Police Department**

The Town of Barnstable Police Department has one of the largest communications centers operating out of a police department. The department has two spaces that can be used as the Mid-Cape RECC or as an expanded primary PSAP. The current space supports a 4 position console system built using the old style steel furniture. The department purchased new Watson dispatch furniture but the funding to upgrade the dispatch room with a raised floor and the new furniture was terminated.

There is room for expansion in both the 911 equipment area and the radio equipment area. With the use of newer style furniture such as the purchased Watson there is room for additional operator positions.

The According to the Chief, the department will always be manned because of the amount of activity going on in the building and the fact that 5,000 prisoners are processed through his department annually.

The Center is the designated back up for the Barnstable County Communications Center transferring calls to the respective fire departments dispatch point for fire and medical related services, mutual aid and CMED (Centralized Medical Emergency Dispatch) coordination.

As a possible facility for the Mid Cape RECC, the Town of Barnstable Police Department would need to agree on creating a more independent center environment whose function would be focused on professional dispatch functions and not the ancillary additional services that support the public as well. In particular, due to the large number of prisoners that are processed through this department, strong consideration would need to be given to alternative personnel to provide those services.

**COMM Fire Dispatch Center**

The Centerville, Osterville, Marston Mills (COMM) Fire District operates as one of the five independent fire companies within Barnstable Township. In addition to the three communities and their respective fire stations, COMM dispatch provides emergency fire dispatch for the Cotuit Fire Department as well.

The current arrangement of fire dispatching within the Town of Barnstable has inherent inefficiencies due to the duplication of services now provided through three disparate agencies in multiple facilities for five fire districts. It would be an improvement to have a single provider support Fire dispatch provided through a single entity for the Town of Barnstable's fire districts. The COMM dispatch center is an available facility that can immediately support a second dispatcher and with minimal renovation at least one other position.

The 550 sf square foot dispatch area is equipped with hurricane windows along the outside perimeter. It has a separate 'dorm', kitchen and bathroom facilities as well as new equipment and systems. The communications towers are located at the COMM Fire Communications Center and include back up generators as well.

This facility could support the five fire districts 12,500 annual calls for service and possibly the additional volume of other communities.

**OTIS Air Force Base, Barnstable County Sheriff's Communications Center**

The Barnstable County Sheriff's Communications Center is located on OTIS Air Force Base in a separately located building adjacent to the air field. The current dispatch and support spaces occupy approximately 5,000 sf and include dispatch facilities for 8 full time dispatchers and associated back office equipment. .

The Center will need to expand to other facilities in order to provide its current and expanded services to the 11 existing towns it now supports and any new communities it is considering. The Center is thought to be 'land locked' as there is no physical space to expand to. The Center Director believes that they can support a few other communities for call answering however; they would require additional staff to support fire and possibly police dispatch.

The Sheriff's Communications Center management is seeking other spaces outside the efforts of the study to continue to provide current and expanded emergency call answering and dispatch for Cape Cod agencies.

**Marconi Maritime Center, Chatham**

Chatham Fire Chief suggested another location for consideration as the new location of the dispatch center. It is in Chatham and known as the Chatham Marconi Maritime Center. This is a 13 acre campus on Pleasant Bay consisting of an Operations Building, Hotel, Powerhouse and several residences. This was the location of a wireless telegraph station from the 1920's that provided global wireless communications. During the war, the center was an important link in the intelligence chain of the Allied listening posts. Presently, the operations building is

a museum for the history of the center including ship to shore communications and the home of an amateur radio association operating out of a radio room. The Hotel building next door is vacant and has been for several years. The building and complex are owned by the Town of Chatham and they are looking for ways to use it. The vacant building is a solid brick on brick structure built in 1914 and is in very good condition. There is 2,500 square feet on the first floor, second floors and also in the basement.

**Provincetown Public Safety Building**

The proposed building site is located at the intersection of Route 6 and Race Point Road. The address is actually 24 Race Point Road. The requests for proposals just went out and will be evaluated on November 9<sup>th</sup>, 2011.

The proposal is for a proposed 12,000 + square foot state of the art facility that will include a three console dispatch center. The facility will also be designated the town's EOC. The facility will also host the National Park Service in some capacity in regards to a small office space for booking and holding of their prisoners. The rough time line for completion would be 2013.

## Appendices

**Appendix A: Town-by-Town Funding Allocations**

**Appendix B: Detailed Staffing and Salary Data Assumptions**

**State 911 Grant Data**

**Appendix C:**

**City of Parma Report**

**Communications Security, Reliability and Interoperability**

**Council Final Briefing Report**

## **Appendix A: Town-by-Town Funding Allocations and Assumptions**

### **Town Funding Allocation**

The following tables illustrate the current dispatch staffing expense, proposed personnel expenses under each of the three center configurations. We have developed two different funding allocations for discussion and illustrative purposes only. The first funding allocation is based upon a flat rate and a cost per dispatched call for service (CFS). The second allocation uses a flat rate and a percentage of call volume as compared to the total within a configuration.

We made the following assumptions in developing these allocations:

- ◆ For towns that did not provide specific data estimated CFS and staffing were estimated based upon like-sized towns.
- ◆ None of the models include the \$1.4m budget associated with the Barnstable County Sheriff's Communications Center
- ◆ Models do not include the dispatch staff count within the Barnstable County Sheriff's Communications Center. Models do include the cost of fire dispatch charged by the Sheriff's Office.
- ◆ Funding model 1 assumes a flat rate charge per town/fire district (\$15,000) anticipated to provide a funding basis for future maintenance and support of equipment. It was assumed the CFS charge (\$10 in models 1 and 2) would partially fund the cost of dispatch personnel.
- ◆ Funding model 2 assumes a flat rate charge per town/fire district (\$15,000) anticipated to provide a funding basis for future maintenance and support of equipment. It was assumed that each towns percentage of CFS volume would be applied against the unfunded expense for the purpose of sharing the cost of dispatch personnel.
- ◆ Scenario 3 uses higher flat rate (\$50,000 per town) to cover the cost of call answering and EMD now assumed to be part of the service offered within the PSAP. The higher per CFS cost (\$25 per CFS) is largely used to cover the increased number of telecommunicators required to support the higher call volumes in the PSAP.
- ◆ Scenario 3 requires a calculation for Police Dispatch only for the Upper and Lower Cape police departments. The flat rate assumed in this model for Upper and Lower Cape dispatch is \$15,000 per town; the per CFS cost is \$10.
- ◆ Each Scenario and funding solution has some type of surplus – some more than others – intended to be used toward the ongoing expense of operating each of these Centers.

**Funding Allocations Summary: Town by Town Review**

	Police Impact	Fire Impact	Town-Wide Impact
	% Savings/(Cost)	% Savings/(Cost)	Savings(Cost); %
Barnstable	47%		\$750,000; 42%
BFD		(260%)	
WBFD		(260%)	
COMM		75%	
HFD		**	
Bourne*		(39%)	(\$171,026); (62%)
Brewster	10%	32%	\$48,421; 15%
Chatham	16%	85%	\$238,847; 52%
Dennis		(4%)	\$6,817; 1.5%
Eastham	46%	63%	\$169,478; 48%
Falmouth	15%	57%	\$200,445; 33%
Harwich	34%	69%	\$327,566; 45%
Mashpee	**	32%	
Orleans	3%	34%	\$31,055; 9%
Provincetown		(76%)	(\$222,469); (77%)
Sandwich	29%	35%	\$115,433; 30%
Truro	31%	75%	\$149,519; 40%
Wellfleet	53%	63%	\$171,516; 54%
Yarmouth		(15%)	\$261,229; 17%

\*The actual cost of Fire Dispatch services to Bourne Fire Department is offset by other services provided to the Sheriff's Department

\*\* Information not available

- 66% of Police (10 of 15); 72% of Fire Departments (13 of 18) and 80% of towns (12 of 15) show savings based upon the funding formula used and configurations identified for Scenarios 1 and 2
- Average estimated reductions: 29% Police; 54% Fire and 32% Town-wide
- Scenario 3 is the least efficient and least financially advantageous of any of the models studied. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget from funds received as part of the General Fund

- *Funding Model used is for reporting purposes only*; funding models will require a more complete review in order to capture financial aspects not available for this report.
- Towns of Dennis and Yarmouth Police can achieve more substantial financial benefits through reallocation of surpluses and detailed consideration of funding formulas. Strong consideration should be given by both Towns to the additional benefits in a consolidated environment.
- Provincetown and Bourne Police may not benefit financially from emergency communications consolidation based upon the model data used and dispatch budgets provided.
- Fees now charged for dispatch services in Barnstable and West Barnstable are extremely aggressive. Consideration of longevity of this arrangement should be considered.

**Town of Barnstable Cost Analysis**

Barnstable Township Dispatch	2010 Dispatch Salary Expense	Current Full-Time Dispatch Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Barnstable Twp)
Barnstable Township Police	\$1,364,479	8	41,303	\$33	\$177,282
Barnstable Fire	\$10,000	BCSO	941	\$11	n/a
COMM + Cotuit	\$390,094	4	5,265	\$88	\$0*
Hyannis / Hyannis Port Fire**	n/a	4	6,114	n/a	n/a
West Barnstable Fire	\$10,000	BCSO	881	\$11	n/a
<b>TOTAL:</b>	<b>\$1,774,573</b>	<b>16</b>	<b>53,804</b>		<b>\$177,282</b>

**\*COMM may be eligible for State 911 Grants as a Secondary Fire Dispatch Center**

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
<b>Proposed Dispatch, Support Salary and O/H Expense</b>	<b>\$2,214,117 (Mid Cape RECC)</b>		<b>\$5,013,268</b>		<b>\$2,214,117 (Mid Cape RECC)</b>	
<b>Proposed Dispatch Staffing (Total)</b>	<b>20</b>		<b>51</b>		<b>20</b>	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Barnstable Township Police	\$722,151	47%	\$722,151	47%	\$722,151	47%
Barnstable Fire	\$35,997	(260%)	\$35,997	(260%)	\$35,997	(260%)
COMM /Cotuit Fire	\$97,605	75%	\$97,605	75%	\$97,605	75%
Hyannis Fire	\$123,938	n/a	\$123,938	n/a	\$123,938	n/a
West Barnstable Fire	\$34,977	(250%)	\$34,977	(250%)	\$34,977	(250%)
<b>State Grant Allocation/Scenario</b>	<b>\$606,811</b>		<b>\$1,423,986</b>		<b>\$699,082</b>	
<b>Operating Surplus/Scenario</b>	<b>\$537,725</b>		<b>\$2,440,158</b>		<b>\$629,996</b>	

\*\* Data not available

- The Town of Barnstable and its associated agencies could save as much as **\$750,000 (42%)** over its current expenditures for emergency communications and fire dispatch services.
- Town of Barnstable Police Department would gain back the services of sworn officers now providing dispatch services on selected shifts.
- Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.
- Barnstable and West Barnstable Fire will incur a 250% increase in dispatch costs due to current aggressive BCSO fee schedule.
- Hyannis Fire Department did not submit related data; costs/savings could not be determined

**Bourne Cost Analysis**

Bourne	2010 Dispatch Salary Personnel Expense	Current Full-Time Dispatch Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Bourne)
Police Department	\$272,223	4	21,168	\$13	\$47,496
Fire Department	\$0	BCSO	3,729	\$0	\$0
<b>TOTAL:</b>	<b>\$272,223</b>	<b>4 + BCSO</b>	<b>24,897</b>	<b>\$6.50</b>	<b>\$47,496</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$1,880,071 (Upper Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286  Upper Cape Regional Police Dispatch: \$1,212,174	
Proposed Dispatch Staffing (Total)	15		51		PSAP+ Fire Dispatch: 53 U/C Police Dispatch: 10	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Bourne Police Department	\$379,856	(39%)	\$379,856	(39%)	\$327,520	(20%)
Bourne Fire Department	\$63,393	note	\$63,393	note	\$207,805	note
State Grant Allocation/Scenario	\$433,871		\$1,423,986		PSAP + Fire Dispatch: \$1,007,952  U/C Police Dispatch: \$204,403	
Operating Surplus/Scenario	\$160,392		\$2,440,158		PSAP: \$255,223  U/C Police Dispatch: \$309,998	

- ◆ **NOTE:** The cost of Fire Dispatch services to Bourne Fire Department is offset by services they provide to the Sheriff's Department so that an actual cost comparison cannot be calculated.
- ◆ Bourne Police may not benefit financially from emergency communications consolidation based upon the model data used and dispatch budgets provided.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ The current schedule requires Town of Bourne to either outsource their EMD service or train civilians and sworn officers for compliance with July 2012 EMD requirements.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

**Brewster Cost Analysis**

Brewster	2010 Dispatch Salary Expense	Current Full-Time Dispatch Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Brewster)
Police Department	\$249,800	4	12,022	\$21	\$0
Fire Department	\$70,000	BCSO	2,765	\$25	\$0
<b>TOTAL:</b>	<b>\$319,800</b>	<b>4 + BCSO</b>	<b>14,787</b>	<b>\$23</b>	<b>\$0</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$ 2,080,499 (Lower Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286 Lower Cape Regional Police Dispatch: \$1,412,602	
Proposed Dispatch Staffing (Total)	18		51		PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13	
Proposed Funding Allocations	Base & Cost/Call	Savings/Co st	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/Co st
Brewster Police Department	\$224,374	10%	\$224,374	10%	\$190,330	23%
Brewster Fire Department	\$47,005	32%	\$47,005	32%	\$119,125	(70%)
<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>L/C Police Dispatch: \$125,269</b>	
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>		<b>\$2,440,158</b>		<b>PSAP+ Fire: \$ 255,223</b> <b>Reg. L/C Police Dispatch: \$ 569,049</b>	

- ◆ Town of Brewster can expect a **\$48,421 (15%)** town-wide reduction in emergency communications costs based upon the above funding model. Significantly greater savings can be seen with reassessment of surplus requirements.
- ◆ Cost of dedicated support staff for radio, technology and related services have been included in costs models and would be provided through consolidated centers.
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Chatham Cost Analysis

Chatham	2010 Dispatch Salary Personnel Expense	Current Full-Time Dispatch Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Chatham)
Police Department	\$216,455	4	9,491	\$23	\$0
Fire Department	\$284,000	4	2,500	\$114	\$0
<b>TOTAL:</b>	<b>\$ 500,455</b>	<b>8</b>	<b>11,991</b>	<b>\$39.50</b>	<b>\$0</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$ 2,080,499 (Lower Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286  Lower Cape Regional Police Dispatch: \$1,412,602	
Proposed Dispatch Staffing (Total)	18		51		PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/Cost
Chatham Police Department	\$181,347	16%	\$181,347	16%	\$389,640	(80%)
Chatham Fire Department	\$42,500	85%	\$42,500	85%	\$112,500	60%
<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952  Reg. Police Dispatch: \$125,269</b>	
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>		<b>\$2,440,158</b>		<b>PSAP+ Fire: \$ 255,223  Reg. L/C Police Dispatch: \$ 569,049</b>	

- ◆ Town of Chatham can expect a **\$238,847 (52%)** town-wide reduction in emergency communications costs based upon the above funding model. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Chatham Fire Service will realize service improvements by reallocating resources now used for fire dispatch back to regular manning schedule gaining the equivalent of four (4) firefighters.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only

**Town of Dennis Cost Analysis**

Town of Dennis	2010 Dispatch Salary Expense	Current FT Dispatch Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Dennis)
Police Department	\$355,663	4	20,628	\$17	\$45,871
Fire Department	\$98,925	BCSO	4,535	\$22	\$0
<b>TOTAL:</b>	<b>\$454,588</b>	<b>4</b>	<b>25,163</b>	<b>\$19.50</b>	<b>\$45,871</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
	Proposed Dispatch, Support Salary and O/H Expense	\$2,214,117 (Mid Cape RECC)		\$5,013,268		\$2,214,117 (Mid Cape RECC)
Proposed Dispatch Staffing (Total)	20		51		20	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Police Department	\$370,676	(4%)	\$370,676	(4%)	\$370,676	(4%)
Fire Department	\$77,095	22%	\$77,095	22%	\$77,095	22%
<b>State Grant Allocation/Scenario</b>	<b>\$606,811</b>		<b>\$1,423,986</b>		<b>\$699,082</b>	
<b>Operating Surplus/Scenario</b>	<b>\$537,725</b>		<b>\$2,440,158</b>		<b>\$629,996</b>	

- ◆ Town of Dennis can expect a **1.5% decrease** in town-wide emergency communications costs based upon the above funding model however significantly greater savings can be seen in Scenario 2 with redistribution of surplus. Cost of dedicated support staff for radio, technology and related services have been included in costs models and would be provided through consolidated centers.
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Town of Eastham Cost Analysis

Town of Eastham	2010 Dispatch Budget Expense	Current FT Dispatch Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Eastham)
Police Department	\$296,034	5	8,223	\$36	\$20,111
Fire Department	\$52,241	0	1,118	\$47	\$0
<b>TOTAL:</b>	<b>\$348,275</b>	<b>5</b>	<b>9,341</b>	<b>\$42</b>	<b>\$20,111</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$ 2,080,499 (Lower Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286 Lower Cape Regional Police Dispatch: \$1,412,602	
Proposed Dispatch Staffing (Total)	18		51		PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Eastham Police Department	\$159,791	46%	\$159,791	46%	\$133,345	55%
Eastham Fire Department	\$19,006	63%	\$19,006	63%	\$77,950	(49%)
<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>L/C Police Dispatch: \$125,269</b>	
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>		<b>\$2,440,158</b>		<b>PSAP+ Fire: \$ 255,223</b> <b>L/C Police Dispatch: \$ 569,049</b>	

- ◆ Town of Eastham can expect a **169,478 (48%)** town-wide savings on emergency communications service based upon the above funding model. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

**Falmouth Cost Analysis**

Falmouth	2010 Dispatch Budget Expense	Current Full-Time Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Falmouth)
Police Department	\$471,974	6	22,321	\$21	\$0
Fire Department	\$223,434	3	5,618	\$40	\$0
<b>TOTAL:</b>	<b>\$695,408</b>	<b>9</b>	<b>27,939</b>	<b>\$30.50</b>	<b>\$0</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$1,880,071 (Upper Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286 Upper Cape Regional Police Dispatch: \$1,212,174	
Proposed Dispatch Staffing (Total)	15		51		PSAP+ Fire Dispatch: 53 U/C Police Dispatch: 10	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Falmouth Police Department	\$399,457	15%	\$399,457	15%	\$344,815	27%
Falmouth Fire Department	\$95,506	57%	\$95,506	57%	\$190,450	14%
<b>State Grant Allocation/Scenario</b>	<b>\$433,871</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>U/C Police Dispatch: \$204,403</b>	
<b>Operating Surplus/Scenario</b>	<b>\$160,392</b>		<b>\$2,440,158</b>		<b>PSAP: \$ 255,223</b> <b>U/C Police Dispatch: \$ 309,998</b>	

- ◆ Town of Falmouth can expect town-wide savings of **\$200,445 (29%)** in emergency communications service based upon the above funding model. Significantly greater savings can be identified with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

**Town of Harwich Cost Analysis**

Harwich	2010 Dispatch Budget Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Harwich)
Police Department	\$508,571	4	18,337	\$28	\$0
Fire Department	\$217,959	4	3,955	\$55	\$0
<b>TOTAL:</b>	<b>\$726,530</b>	<b>8</b>	<b>22,292</b>	<b>\$42</b>	<b>\$0</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$ 2,080,499 (Lower Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286 Lower Cape Regional Police Dispatch: \$1,412,602	
Proposed Dispatch Staffing (Total)	18		51		PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Harwich Police Department	\$331,729	34%	\$331,729	34%	\$285,055	44%
Harwich Fire Department	\$67,235	69%	\$67,235	69%	\$148,875	31%
<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>L/C Police Dispatch: \$125,269</b>	
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>		<b>\$2,440,158</b>		<b>PSAP+ Fire: \$ 255,223</b> <b>L/C Police Dispatch: \$569,049</b>	

- ♦ As one of the few Town's with a joint dispatch Harwich offers a baseline of service however costs to support their configuration are difficult to sustain. Harwich can realize a **\$327,566 (45%)** or better reduction in dispatch costs. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ♦ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ♦ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ♦ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ♦ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ♦ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ♦ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Mashpee Cost Analysis

Mashpee	2010 Dispatch Budget Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Mashpee)
Police Department	n/a	4	20,628	n/a	\$0
Fire Department	\$70,592	BCSO	2,813	\$25	\$0
<b>TOTAL:</b>	<b>\$70,592</b>	<b>4 + BCSO</b>	<b>23,441</b>	<b>\$25</b>	<b>\$0</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$1,880,071 (Upper Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286  Upper Cape Regional Police Dispatch: \$1,212,174	
Proposed Dispatch Staffing (Total)	15		51		PSAP+ Fire Dispatch: 53 U/C Police Dispatch: 10	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Mashpee Police Department	\$370,676	n/a	\$370,676	n/a	\$319,420	n/a
Mashpee Fire Department	\$47,821	32%	\$47,821	32%	\$120,325	(70%)
<b>State Grant Allocation/Scenario</b>	<b>\$433,871</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>U/C Police Dispatch: \$204,403</b>	
<b>Operating Surplus/Scenario</b>	<b>\$160,392</b>		<b>\$2,440,158</b>		<b>PSAP: \$ 255,223</b> <b>U/C Police Dispatch: \$ 309,998</b>	

- ◆ Town of Mashpee can expect service and financial improvements through the development of mutually beneficial funding allocations that represent the cost of consolidated emergency call answering and fire dispatch services for their community. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Town of Orleans Cost Analysis

Orleans	2010 Dispatch Salary Expense	Current FT Staff	CFS	Current Cost /Call	MA State Grant 2011 (Orleans)
Police Department	\$280,952	4	14,784	\$19	\$0
Fire Department	\$62,350	BCSO	2,407	\$26	\$0
<b>TOTAL:</b>	<b>\$343,302</b>	<b>4</b>	<b>17,191</b>	<b>\$23</b>	<b>\$0</b>

Proposed Scenarios	Scenario 1 3 RECCs	Scenario 2 1 RECC	Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC
Proposed Dispatch, Support Salary and O/H Expense	\$ 2,080,499 (Lower Cape RECC)	\$5,013,268	PSAP + Fire Dispatch: \$4,581,286 Lower Cape Regional Police Dispatch: \$1,412,602
Proposed Dispatch Staffing (Total)	18	51	PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13

Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Orleans Police Department	\$271,328	3%	\$271,328	3%	\$231,760	17%
Orleans Fire Department	\$40,919	34%	\$40,919	34%	\$148,315	(137%)

<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>	<b>\$1,423,986</b>	<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>L/C Police Dispatch: \$125,269</b>
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>	<b>\$2,440,158</b>	<b>PSAP+ Fire: \$ 255,223</b> <b>L/C Police Dispatch: \$ 569,049</b>

- ◆ Town of Orleans can expect a town-wide decrease in emergency communications costs estimated at **\$31,055 (9%)** based the above funding model however significantly greater savings can be seen with redistribution of surplus.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Provincetown Cost Analysis

Provincetown	2010 Dispatch Salary Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Provincetown)
Police Department	\$265,803	5	26,492	\$10	\$17,747
Fire Department	\$23,113	0	2,413	\$10	\$0
<b>TOTAL:</b>	<b>\$288,916</b>	<b>5</b>	<b>28,905</b>	<b>\$10</b>	<b>\$17,747</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$2,080,499 (Lower Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286  Lower Cape Regional Police Dispatch: \$1,412,602	
Proposed Dispatch Staffing (Total)	18		51		PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Cal 1	Savings/ Cost	Base & Cost/Cal 1	Savings/ Cost
Provincetown Police Department	\$470,364	(76%)	\$470,364	(76%)	\$407,380	(53%)
Provincetown Fire Department	\$41,021	(77%)	\$41,021	(77%)	\$148,875	(544%)
<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b>  <b>L/C Police Dispatch: \$125,269</b>	
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>		<b>\$2,440,158</b>		<b>PSAP+ Fire: \$255,723</b>  <b>L/C Police Dispatch: \$569,049</b>	

- ◆ Based upon the funding model above and the data provided by Provincetown consolidation of emergency communications services may result in a 77% increase for Provincetown emergency communications services. While funding examples here do not provide compelling evidence for the Town to participate in a consolidated 911 emergency communications solution at this time, we believe that a smaller effort with one or two communities may be more effective.
- ◆ The Town is proceeding with the architectural design and plans on constructing a 12,000 sf Public Safety facility that will include a three-position dispatch center that would support Provincetown's own emergency communications and public safety needs as well as another similarly sized community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Alternative funding solutions would be required to make these options financially viable for Provincetown. Service efficiencies can be realized though with a smaller consolidation.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Sandwich Cost Analysis

Sandwich	2010 Dispatch Salary Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Sandwich)
Police Department	\$280,929	8	10,527	\$27	\$43,219
Fire Department	\$204,469	4	4,172	\$49	\$0
<b>TOTAL:</b>	<b>\$485,398</b>	<b>12</b>	<b>14,699</b>	<b>\$38</b>	<b>\$43,219</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
<b>Proposed Dispatch, Support Salary and O/H Expense</b>	<b>\$1,880,071 (Upper Cape RECC)</b>		<b>\$5,013,268</b>		<b>PSAP + Fire Dispatch: \$4,581,286</b>  <b>Upper Cape Regional Police Dispatch: \$1,212,174</b>	
<b>Proposed Dispatch Staffing (Total)</b>	<b>15</b>		<b>51</b>		<b>PSAP+ Fire Dispatch: 53</b> <b>U/C Police Dispatch: 10</b>	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Sandwich Police Department	\$198,959	29%	\$198,959	29%	\$167,905	40%
Sandwich Fire Department	\$70,924	65%	\$70,924	65%	\$227,740	(11%)
<b>State Grant Allocation/Scenario</b>	<b>\$433,871</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b>  <b>U/C Police Dispatch: \$204,403</b>	
<b>Operating Surplus/Scenario</b>	<b>\$160,392</b>		<b>\$2,440,158</b>		<b>PSAP: \$255,223</b>  <b>U/C Police Dispatch: \$309,998</b>	

- ◆ Town of Sandwich can expect town-wide reduction in expenses related to emergency communications service estimated to be **\$115,433 (30%)** over current spend. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

### Town of Truro Cost Analysis

Truro	2010 Dispatch Salary Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Truro)
Police Department	\$294,014	4	10,596	\$28	\$12,758
Fire Department	\$73,504	0	1,051	\$70	\$0
<b>TOTAL:</b>	<b>\$367,518</b>	<b>4</b>	<b>11,647</b>	<b>\$49</b>	<b>\$12,758</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$2,080,499 (Lower Cape RECC)		\$5,013,268		PSAP + Fire Dispatch: \$4,581,286 Lower Cape Regional Police Dispatch: \$1,412,602	
Proposed Dispatch Staffing (Total)	18		51		PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Truro Police Department	\$200,132	31%	\$200,132	31%	\$168,940	42%
Truro Fire Department	\$17,867	75%	\$17,867	75%	\$87,295	(18%)
<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>		<b>\$1,423,986</b>		<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>L/C Police Dispatch: \$125,269</b>	
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>		<b>\$2,440,158</b>		<b>PSAP+ Fire: \$255,723</b> <b>L/C Police Dispatch: \$569,049</b>	

- ◆ Town of Truro can expect town-wide reduction in expenses related to emergency communications service estimated to be **\$149,519 (40%)** over current spend. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## Town of Wellfleet Cost Analysis

Wellfleet	2010 Dispatch Salary Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Wellfleet)
Police Department	\$267,508	4	6,197	\$43	\$15,632
Fire Department	\$47,207	0	1,050	\$45	\$0
<b>TOTAL:</b>	<b>\$314,715</b>	<b>4</b>	<b>7,247</b>	<b>\$43</b>	<b>\$15,632</b>

Proposed Scenarios	Scenario 1 3 RECCs	Scenario 2 1 RECC	Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC
Proposed Dispatch, Support Salary and O/H Expense	\$2,080,499 (Lower Cape RECC)	\$5,013,268	PSAP + Fire Dispatch: \$4,581,286 Lower Cape Regional Police Dispatch: \$1,412,602
Proposed Dispatch Staffing (Total)	18	51	PSAP+ Fire Dispatch: 53 L/C Police Dispatch: 13

Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Wellfleet Police Department	\$125,349	53%	\$200,132	53%	\$102,955	61%
Wellfleet Fire Department	\$17,850	63%	\$17,867	63%	\$87,250	(84%)

<b>State Grant Allocation/Scenario</b>	<b>\$177,413</b>	<b>\$1,423,986</b>	<b>PSAP + Fire Dispatch: \$1,007,952</b> <b>L/C Police Dispatch: \$125,269</b>
<b>Operating Surplus/Scenario</b>	<b>\$1,802,132</b>	<b>\$2,440,158</b>	<b>PSAP+ Fire: \$255,723</b> <b>L/C Police Dispatch: \$569,049</b>

- ◆ Town of Wellfleet can expect town-wide reduction in expenses related to emergency communications service estimated to be **\$171,516 (54%)** over current expenditures. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

**Town of Yarmouth Cost Analysis**

Yarmouth	2010 Dispatch Salary Expense	Current FT Staff	CFS	Current Cost Per Call	MA State Grant 2011 (Yarmouth)
Police Department	\$510,229	7	32,282	\$16	\$70,872
Fire Department	\$337,794	4	6,694	\$50	\$0
<b>TOTAL:</b>	<b>\$848,023</b>	<b>11</b>	<b>38,976</b>	<b>\$22</b>	<b>\$70,872</b>

Proposed Scenarios	Scenario 1 3 RECCs		Scenario 2 1 RECC		Scenario 3 PSAP + Fire Dispatch; Regional Police Dispatch; Mid-Cape RECC	
Proposed Dispatch, Support Salary and O/H Expense	\$2,214,117 (Mid Cape RECC)		\$5,013,268		\$2,214,117 (Mid Cape RECC)	
Proposed Dispatch Staffing (Total)	20		51		20	
Proposed Funding Allocations	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost	Base & Cost/Call	Savings/ Cost
Police Department	\$586,794	(15%)	\$586,794	(15%)	\$586,794	(15%)
Fire Department	\$113,798	66%	\$113,798	66%	\$113,798	66%
<b>State Grant Allocation/Scenario</b>	<b>\$606,811</b>		<b>\$1,423,986</b>		<b>\$699,082</b>	
<b>Operating Surplus/Scenario</b>	<b>\$537,725</b>		<b>\$2,440,158</b>		<b>\$629,996</b>	

- ◆ Town of Yarmouth will see a town-wide reduction in emergency communications costs of **\$261,229 (17%)** as result of the above funding model. Significantly greater savings can be seen in Scenario 2 with reassessment of surplus requirements.
- ◆ Model data includes professionalized and trained dispatchers and dedicated support staff for radio, technology and related services which may not be available or accounted for in budget data provided. Salary and benefit data has been averaged for both police and fire dispatch. Actual fire service benefits are 43% not the 30% average metric used to calculate salary related costs.
- ◆ Service efficiencies can be realized in each of the configurations with greatest financial and service efficiencies in the single or multi-center models. The projected surplus in each configuration is significant and re-evaluation of funding methods after determination of surplus requirements can result in greater savings to each community.
- ◆ Although not expressly studied, the state funding allocation for a Lower Cape Regional PSAP may be of equal or greater financial benefit to that of a three (3) RECC configuration. Model not studied as it was not defined which community or agencies would choose to opt out.
- ◆ Base and Cost/Call funding allocations for Scenario's 1 and 2 utilize the current fee structure of BCSO which is a \$20,000 base fee and \$17 per call. Scenario 3 includes inherent duplication of services, staff and redundancy of functions that limit any of the financial or service benefits possible in the other two options. In order to realize positive funding for this configuration an increase in the modeled base and cost per call from \$20k base/\$17 per call to \$40k base and \$45 per call is required. This increase essentially covers the deficit in the funding scenario that is now compensated for by the Sheriff's budget through the general fund.
- ◆ Surplus may need to cover the current stabilization rate applied to government service agencies which could impact each of the allocations.
- ◆ Actual funding methodology will require agreement between participating communities. Examples in this report are directional only.

## **Appendix B: Detailed Staffing and Salary Data Assumptions**

### **PSAP and Dispatch Staffing Model Assumptions**

To develop the following staffing configurations we used the following assumptions and data:

- ◆ Dispatch Personnel Expense that included overtime and benefits for all communities providing dispatch budgets.
- ◆ For towns whose call answering and dispatch services are provided by BCSO we included the 'cost of dispatch' as the cost charged by the Communications Center. For towns whose fire dispatch is provided by BCSO we did not include the staff within the Center as there is no logical way to break-out these personnel by town.
- ◆ Staffing assumptions for our models was based upon APCO Project RETAINS which includes a 'fill factor' for vacation, break and sick leave. We validated this data against the more realistic staffing in place now at BCSO which is estimated to be 5,000 calls per position annually. We also evaluated the staffing using the 'industry' staffing figure of 4.28 staff per position to determine adequate staffing levels.
- ◆ Salary data is averaged using an average salary of \$58,095 for dispatchers and \$78,000 for supervisors. It was assumed that there would be three-eight hour shifts with separate staff supervisory staff available on two of the three shifts.
- ◆ Scenarios 1 and 2 dispatch services are based upon a combined call answering and dispatch function. These models offer substantially more savings than Scenario 3. Scenario 3 requires a duplication of personnel as call answering and fire dispatch is provided out of one facility and police calls are transferred to a secondary regional facilities located on the Upper and Lower Capes. Scenario 3 assumes that 80% of the call volume will be transferred out to regional police dispatch which requires fewer positions than full police/fire dispatch or EMD support. This data is based upon CFS provided by each town.
- ◆ Calculations do not include the various levels of technical and administrative staff that would be required in each Center. It is anticipated that each Center will require a complement of IT, Voice Radio support staff, administrative support staff and a Center Director depending upon the size and function of each Center.
- ◆ State funding is based upon estimated call volumes for Falmouth, Mashpee, Harwich, Brewster, Chatham and Orleans. State funding projections are calculated based upon anticipated RECC configurations at the time of the calculation. Timelines impacting current project(s) may impact these projections.

While changes within any one of these models are anticipated, this will impact State funding allocations which are not calculate-able for all possible combinations

## State 911 Grant Allocations

Scenario One	Support	Regional	RECC	Total Grant Funding
Mid Cape RECC (Barnstable, Yarmouth, & Dennis)	\$286,999	\$ -	\$ 319,812	\$606,811
Upper Cape RECC (Bourne, Falmouth, Mashpee, Sandwich)	\$201,130	\$ -	\$ 232,741	\$433,871
Lower Cape RECC PSAP (Harwich, Brewster, Chatham, Orleans, Eastham, Wellfleet, Truro, Provincetown)	\$83,217	\$ -	\$ 94,196	\$177,413

<b>Call volume for Falmouth, Mashpee, Harwich, Brewster, Chatham, &amp; Orleans were estimated.</b>
<b>Note: Barnstable County Sheriffs Department's funding would be reduced as they would lose population and call volume for Falmouth &amp; Mashpee and they would no longer be the only Regional in the 3-9 Category</b>
<b>Grant funding provided are projections only and do not guarantee any level of funding.</b>
<b>Calculations assume configurations are as noted. Changes to the communities included/excluded will impact funding levels.</b>
<b>Projections are calculated based upon anticipated RECC configurations; timelines impacting current project(s) may impact these projections. Allocation amounts are further subject to change in compliance with the following excerpt from the S&amp;I grant guidelines "The percentages in clauses i to iv, inclusive, and the percentages of the total amounts allocated to each grantee eligible within such clauses i through iv may be adjusted by the State 911 Commission to ensure a proper allocation of incentive funds as more regional PSAPs and regional emergency communication centers are added. The amount allocated to a grantee may be adjusted or capped."</b>
<b>Note: An additional (RECC Revere/Winthrop) has been added since providing the last projections.</b>

Scenario Two	Support	Regional	RECC	Total Grant Funding
CAPE RECC (Barnstable, Yarmouth, Dennis, Bourne, Falmouth, Mashpee, Sandwich, Harwich, Brewster, Chatham, Orleans, Eastham, Wellfleet, Truro, Provincetown)	\$622,595	\$ -	\$ 801,391	\$1,423,986

<b>Call volume for Falmouth, Mashpee, Harwich, Brewster, Chatham, &amp; Orleans were estimated</b>
<b>Note: Barnstable County Sheriffs Department's funding would be greatly reduced as they would lose population and call volume for all current communities except OTIS; Lose regional status.</b>
<b>Grant funding provided are projections only and do not guarantee any level of funding.</b>
<b>Calculations assume RECC configuration is as noted. Changes to the communities included/excluded will impact funding levels.</b>
<b>Projections are calculated based upon anticipated RECC configurations; timelines impacting current project(s) may impact these projections. Allocation amounts are further subject to change in compliance with the following excerpt from the S&amp;I grant guidelines "The percentages in clauses i to iv, inclusive, and the percentages of the total amounts allocated to each grantee eligible within such clauses i through iv may be adjusted by the State 911 Commission to ensure a proper allocation of incentive funds as more regional PSAPs and regional emergency communication centers are added. The amount allocated to a grantee may be adjusted or capped."</b>
<b>Note: An additional (RECC Revere/Winthrop) has been added since providing the last projections.</b>

**FINAL REPORT: Barnstable County Feasibility Study**

<b>Scenario Three</b>	<b>Support</b>	<b>Regional</b>	<b>RECC</b>	<b>Total Grant Funding</b>
Barnstable County Sheriff -Expanded to include Bourne, Sandwich, Eastham, Wellfleet, Truro, Provincetown	\$331,647	\$676,305	\$ -	\$1,007,952
Regional Secondary Upper Cape (Sandwich, Bourne, Falmouth, Mashpee)	\$204,403	\$ -	\$ -	\$204,403
Regional Secondary Lower Cape (Brewster, Chatham, Orleans, Eastham, Wellfleet, Truro, Provincetown)	\$125,269	\$ -	\$ -	\$125,269
Mid Cape RECC (Barnstable, Yarmouth, & Dennis)	\$ 281,323	\$ -	\$ 417,759	\$ 699,082.00

<b>Call volume for Falmouth, Mashpee, Harwich, Brewster, Chatham, &amp; Orleans were estimated</b>
<b>Grant funding provided are projections only and do not guarantee any level of funding.</b>
<b>Calculations assume configurations are as noted. Changes to the communities included/excluded will impact funding levels.</b>
<b>Projections are calculated based upon anticipated RECC configurations; timelines impacting current project(s) may impact these projections. Allocation amounts are further subject to change in compliance with the following excerpt from the S&amp;I grant guidelines "The percentages in clauses i to iv, inclusive, and the percentages of the total amounts allocated to each grantee eligible within such clauses i through iv may be adjusted by the State 911 Commission to ensure a proper allocation of incentive funds as more regional PSAPs and regional emergency communication centers are added. The amount allocated to a grantee may be adjusted or capped."</b>
<b>Note: An additional (RECC Revere/Winthrop) has been added since providing the last projections.</b>

**Grant Allocation estimates provided as of July 26, 2011**

## **Appendix C: Senate Bill 1256 (Pending)**

### **SENATE BILL 1256**

SECTION 1. Chapter 6A of the General Laws, as appearing in the 2006 Official Edition, is hereby amended by inserting after section 18L the following new sections:-.

Section 18M. Regional emergency communication center defined

A regional emergency communication center is defined as stated in chapter 6A, section 18A of the General Laws.

Section 18N. Regional public safety answering point defined

Section 18N. A regional public safety answering point is defined as stated in chapter 6A, section 18A of the General Laws.

Section 18O. Regional 911 emergency communication district planning committee

Section 18O. A city or town, by vote of the council in the case of a city or by vote of the board of selectmen or town council in the case of a town, may create a special unpaid committee to be known as a regional 911 emergency communication district planning committee consisting of three persons to be appointed by the chairman of the board of selectmen or town council in a town and by the mayor in a city.

Section 18P. Regional 911 emergency communication district planning board; study of creation of district; expenses of board; regional 911 emergency communication district defined

Section 18P. Regional 911 emergency communication district planning committees from any two or more cities or towns may join together to form a regional 911 emergency communication district planning board. Such 911 regional emergency communication district planning board shall study the advisability and feasibility of establishing a regional 911 emergency communication district, its organization, operation and control, and of selecting, constructing, maintaining and operating a regional 911 emergency communication center to serve the needs of the district, and shall estimate construction and operating costs and study methods of financing such district. Each city or town comprising such board may appropriate a sum not in excess of one dollar per capita for the purpose of meeting the expenses of the board. Such board may expend any such sums so appropriated and may employ such expert assistance as it deems necessary. Such board may apply for, accept and expend, without appropriation, grants or gifts of funds from the federal or state government or any other source. As used in this section and in sections eighteen M through eighteen Z, inclusive, the term "regional 911 emergency communication center" shall mean a facility housing or otherwise supporting a regional emergency communication center or regional public safety answering point as approved by the state 911 department.

Section 18Q. Regional 911 emergency communication district planning board; agreement for establishment of district

Section 18Q. The regional 911 emergency communication district planning board, consisting only of the regional 911 emergency communication district planning committees which vote in favor of the establishment of a regional 911 emergency communication district, shall draw up a proposed written agreement for the purpose of establishing, constructing, equipping, operating, and maintaining a regional 911 emergency communication center.

The said agreement shall contain provisions describing and providing for the financial terms and conditions of membership, sharing of construction and operating costs, the number, method of selection and terms of office of the members of the regional 911 emergency communication district committee, the general area in which the regional 911 emergency communication center shall be constructed or located, the terms by which another city or town may be admitted to the district, the terms by which a city or town may withdraw from the district, the method by which the agreement may be amended, the methods of termination of the district, the procedure for the preparation and adoption of the annual budget and any other matters, not incompatible with law, which said board may deem advisable; provided, however, that the regional emergency communication center or the regional public safety answering point shall be subject to the approval of the state 911 department.

Section 18R. Report of board

Section 18R. The regional 911 emergency communication district planning board shall report its findings and recommendations to city council and the board of selectmen or town council, as the case may be, of each city or town comprising the board. If the board recommends that a regional 911 emergency communication district be established, a copy of the proposed agreement shall accompany the report to each such city or town.

Section 18S. Acceptance of recommendation; election; establishment of district

Section 18S. The city councils of the several cities or the boards of selectmen or town councils of the several towns, upon receipt of a recommendation that a regional 911 emergency communication district be established, shall vote on the question of

***FINAL REPORT: Barnstable County Feasibility Study***

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accepting such plan within forty-five days after receipt of the recommendation. In the case of either a town or a city, the question to be voted on shall be:—"Shall the city (town) accept the provisions of sections 18M to 18Z, inclusive, of chapter 6A of the General Laws providing for the establishment of a regional 911 emergency communication district, together with the towns of \_\_\_\_\_ and the cities of \_\_\_\_\_, and the construction, maintenance and operation of a regional 911 emergency communication center by said district in accordance with the provisions of a proposed agreement filed with the board of selectmen, town council or the city council?"

If a majority of the members of each city council, board of selectmen or town council voting on the question shall vote in the affirmative, the proposed regional 911 emergency communication district shall be deemed to be established forthwith in accordance with the terms of the proposed agreement.

Section 18T. General powers of district

Section 18T. A regional 911 emergency communication district, established under the provisions of section eighteen S, shall be deemed to be a public employer and shall be a body politic and corporate with the following powers and duties:—

(a) To adopt a name and a corporate seal, and the engraved or printed facsimile of such seal appearing on a bond or note of the district shall have the same legal effect as such seal would have if it were impressed thereon.

(b) To sue and be sued, but only to the same extent and upon the same conditions that a city or town may be sued.

(c) To purchase, lease, or take by eminent domain under chapter seventy-nine land within the cities and towns which have accepted the provisions of sections sixty A to sixty L, inclusive, for the purposes of the district, to enter into contracts for the purchase of equipment, buildings, supplies, materials, and services and to construct, equip, and maintain a regional 911 emergency communication center for the benefit of the members of the district, and to make any necessary contracts in relation thereto.

(d) To incur debt for the purpose of acquiring land, buildings, and equipment and constructing, equipping, and maintaining a regional 911 emergency communication center for a term not exceeding twenty-five years; and provided, further, that written notice of the amount of the debt and of the general purposes for which it was authorized shall be given to the city council of each city, and to the board of selectmen or town council of each town, comprising the district not later than seven days after the date on which said debt was authorized by the district committee; and no debt may be incurred until the expiration of thirty days from the date said debt was authorized by the district committee. If, prior to the expiration of said period, the city council of any member city or the board of selectmen or town council of any member town expresses disapproval of the amount authorized by the district committee, the said debt shall not be incurred and the regional 911 emergency communication district planning committee shall thereupon prepare another proposal which may be the same as any prior proposal and an authorization to incur debt therefor.

(e) To issue bonds and notes in the name and upon the full faith and credit of said district; said bonds or notes shall be signed by the chairman and the treasurer of the district committee, except that said chairman by a writing bearing his written signature and filed in the office of said treasurer, which writing shall be open to public inspection, may authorize said treasurer to cause to be engraved or printed on said bonds or notes a facsimile of said chairman's signature, and such facsimile signature so engraved or printed shall have the same validity and effect as said chairman's written signature, and each issue of bonds or notes shall be a separate loan.

(f) To receive and disburse funds for any district purpose.

(g) To incur short term debt in anticipation of revenue to be received from members.

(h) To assess member cities and towns for any expenses of the district.

(i) To apply for and receive any grants or gifts for the purposes of the district.

(j) To engage legal counsel.

(k) To submit an annual report to each of the member cities and towns, containing a detailed financial statement, and a statement showing the method by which the annual charges assessed against each city and town were computed.

(l) To employ an executive director and such other employees as it deems necessary to operate such district and to establish the duties, compensation, benefits, and other terms and conditions of employment of personnel.

(m) To adopt an annual operating budget.

(n) To enter into contracts for 911 emergency communication center services with non-member cities and towns and

governmental bodies as well as other bodies politic, the United States of America and other persons.

**Section 18U. Exercise of powers; officers of committee**

Section 18U. The powers, duties and liabilities of a regional 911 emergency communication district shall be vested in and exercised by a regional 911 emergency communication district committee organized in accordance with the agreement. The committee shall choose a chairman by ballot from its membership. It shall appoint a secretary and a treasurer, who may be the same person, but who need not be members of said committee. The treasurer shall receive and take charge of all money belonging to the district and shall pay any bill of the district which shall have been approved by the committee. The treasurer may, by vote of said committee, be compensated for his services. The treasurer of said district shall be subject to the provisions of sections thirty-five, fifty-two and one hundred and nine A of chapter forty-one, to the extent applicable.

**Section 18V. Maintenance and operating expenses; debts; determination and apportionment**

Section 18V. The regional 911 emergency communication district committee shall annually determine the amounts necessary to be raised to maintain and operate the district during the ensuing fiscal year, and the amounts required for payment of debt and interest incurred by the district which will be due in the said year, and shall apportion the amount so determined among the several member cities and towns in accordance with the terms of the agreement. The amounts so apportioned for each city or town shall, prior to March thirty-first in each year, be certified by the regional district treasurer to the treasurers of the several cities and towns. The obligation of each member city or town to pay apportionments pursuant to the agreement shall be included in the amounts to be assessed annually in such city or town under section twenty-three of chapter fifty-nine without appropriation and the city or town treasurer shall pay to the district the amounts so apportioned at the times specified in the agreement. The amounts apportioned or to be apportioned pursuant to the agreement shall not be included in the statutory limit of indebtedness of any city or town.

**Section 18W. Audits and reports**

Section 18W. The regional 911 emergency communication district shall maintain accurate and comprehensive records of services performed, costs incurred, and reimbursements and contributions received; shall issue annual and quarterly financial statements to all members; and shall perform regular audits of the accounts of the records of the district. Upon the completion of each audit, a report thereon shall be made to the chairman of said district committee, and a copy thereof shall be sent to the mayor and to the chairman of the board of selectmen or town council, respectively, of each city and town which is a member of said district.

**Section 18X. Sale, lease or license of lands or facilities to regional 911 emergency communication districts**

Section 18X. The agreement made under section eighteen Q, or any amendment to such an agreement, may contain provisions authorizing any member city or town to sell, lease or license to the regional 911 emergency communication district any emergency communication center facility, building, and any land appurtenant thereto or used in connection therewith or any other property useful for the purposes of the district, and any such city or town may authorize such sale, lease or license accordingly, notwithstanding the provisions of section three of chapter forty or any other provisions of law to the contrary. In case of a sale, the price and time or times of payment and the method by which the cities and towns other than the selling city or town shall be assessed for such payment shall be set forth in the agreement or amendment; but in no case shall payments be made which shall extend over a period in excess of twenty-five years. In the case of a lease or license, the rental or license fee and terms of payment and assessment shall be set forth in the agreement or amendment. The lease or license may be for a term not in excess of twenty-five years, and may contain provisions for the extension of the lease or license for an additional term not in excess of twenty-five years at the option of the regional 911 emergency communication district committee.

**Section 18Y. Bonds and notes; limit of indebtedness**

Section 18Y. The provisions of sections sixteen to twenty-eight, inclusive, of chapter sixty shall, so far as apt, apply to regional 911 emergency communication districts, but the provisions of section sixteen relating to the countersigning of bonds and notes and the provisions of section twenty-four relating to the countersigning and approval of notes and the certificates of the clerk relating thereto shall not apply to such districts. Any debt incurred by a regional 911 emergency communication district shall not be subject to the limit of indebtedness prescribed in section ten of chapter sixty.

**Section 18Z. Issuance of debt obligations to pay for project costs**

Section 18Z. The rights and powers granted to cities and towns by the provisions of section twenty-eight C of chapter sixty shall apply to regional 911 emergency communication districts and for the purpose of said section twenty-eight C the chief executive officer of a regional 911 emergency communication district shall be the regional 911 emergency communication district committee.

SECTION 2. This Act shall take effect upon its passage.

## **Appendix C: State 911 Department EMD Regulations Summary**

**SUMMARY AND OVERVIEW OF PROPOSED REGULATIONS ESTABLISHING  
CERTIFICATION REQUIREMENTS FOR ENHANCED 911 TELECOMMUNICATORS, GOVERNING  
EMERGENCY MEDICAL DISPATCH, AND  
ESTABLISHING 911 CALL HANDLING PROCEDURES**

**Certification Requirements:**

- Apply to full-time and part-time E911 telecommunicators at primary PSAPs, regional PSAPs, regional secondary PSAPs (except if operated by a private safety department), secondary PSAPs (except if operated by a private safety department), RECC, and wireless state police PSAPs, effective 7/1/2011.
- New E911 telecommunicators: 2 day 911 equipment and basic telecommunicator training offered by the Department; 40 hours of Department-approved basic telecommunicator training, and 16 hours of Department-approved continuing education annually.
- Existing Certified E911 telecommunicators: 16 hours of Department-approved continuing education annually commencing 7/1/2012.

**Emergency Medical Dispatch Requirements:**

- By 7/1/2012, PSAPs/RECCs must provide EMD either through certified EMD dispatchers at the PSAP/RECC or through a certified EMD resource.
- The PSAP/RECC or certified EMD resource must use a single EMD Protocol Reference System (EMDPRS) on every request for medical assistance; have policies and procedures for use of EMDPRS, and establish a continuous quality assurance (QA) program.
- In order to act as a certified EMD dispatcher for a PSAP/RECC, must be certified E911 telecommunicator; obtain and maintain CPR certification; and obtain and maintain EMD certification.
- In order to act as a certified EMD resource for a PSAP/RECC, must submit request for approval to the Department that includes the EMDPRS that will be used and documentation that each EMD dispatcher has met training and certification requirements.

**Call Handling Procedures:**

- Updated to allow for third transfer and to conform to current practices.

**Recordkeeping:**

- PSAPs/RECCs required to ensure that E911 telecommunicators are certified as required by regulations and to annually submit documentation of same.
- PSAPs/RECCs required to annually certify to the Department that they meet the EMD requirements of the regulations.
- Certified EMD resource required to annually certify to the Department that it meets the requirements of the regulations.

**Appendix D:**

**City of Parma Report, Case Studies for Consolidated Public Safety  
Dispatch Center Feasibility**

**Communications Security, Reliability and Interoperability Council  
Final Briefing Report**

# **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.

**Overview of Final Report - Working Group 1A**  
**Public Safety Consolidation Effective Practices and Recommendations**

**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.

**Overview of Final Report - Working Group 1A**  
**Public Safety Consolidation Effective Practices and Recommendations**

**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.**

**Overview of Final Report - Working Group 1A**  
**Public Safety Consolidation Effective Practices and Recommendations**

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.

**Overview of Final Report - Working Group 1A  
Public Safety Consolidation Effective Practices and Recommendations**

**Summary of Findings and Effective Practices**

<b>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.</b>
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.
<b>Finding #2 - Securing “agency buy-in” was the next biggest challenge.</b>
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.
<b>Finding #3 - Legislation may be necessary to create a sustainable funding mechanism or codify relationships between the parties.</b>
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.
<b>Finding #4 - Formalize the arrangement through some sort of legal agreement and to establish strong and clear membership structures.</b>
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.
<b>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.</b>
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

**Overview of Final Report - Working Group 1A  
Public Safety Consolidation Effective Practices and Recommendations**

consolidation.
<b>Finding #6 - Well defined communication channels among stakeholders and the governing body is critical to successful consolidation.</b>
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.
<b>Finding #7 - Consolidation can produce long term cost efficiencies by reducing operations and technology duplication.</b>
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
<b>Finding #8 - Consolidation results in better trained and more focused personnel, increasing the level of public safety.</b>
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.
<b>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.</b>
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.

## **Overview of Final Report - Working Group 1A**

### **Public Safety Consolidation Effective Practices and Recommendations**

#### **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.

## **Overview of Final Report - Working Group 1A Public Safety Consolidation Effective Practices and Recommendations**

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**

## Acknowledgements

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- Dakota County, Minnesota
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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

## Table of Contents

<b>1</b>	<b>Results in Brief .....</b>	<b>4</b>
1.1	Executive Summary .....	4
1.2	Charter Directive.....	5
1.3	CSRIC Structure .....	5
1.4	Working Group 1A Team Members.....	6
<b>2</b>	<b>Objective, Scope, Methodology and Approach .....</b>	<b>7</b>
2.1	Objective.....	7
2.2	Scope.....	7
2.3	Methodology.....	8
2.4	Organization.....	8
2.5	Approach.....	9
<b>3</b>	<b>Background .....</b>	<b>9</b>
3.1	Technical Architecture.....	10
<b>4</b>	<b>Analysis, Findings and Recommendations .....</b>	<b>12</b>
4.1	Analysis.....	12
4.2	Abbreviated Interview Questionnaire.....	13
4.3	Agency Case Study Participants .....	14
4.4	Findings.....	22
4.5	Effective Practices .....	25
4.6	Recommendations.....	39
<b>5</b>	<b>Summary.....</b>	<b>41</b>
<b>6</b>	<b>Appendices &amp; References.....</b>	<b>42</b>
6.1	Appendix 1 - Interview Questionnaire.....	43
6.2	Appendix 2 - Interview Questionnaire Summary Data & Findings .....	45
6.2.1	Summary of Survey Results.....	71
6.3	Appendix 3 - Consolidated Communications Center Survey Results .....	84
6.4	Appendix 4 - Consolidated Communications Center Guide.....	85
6.5	Appendix 5 - APCO Standards.....	93
6.6	Appendix 6 - References.....	95

## 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.

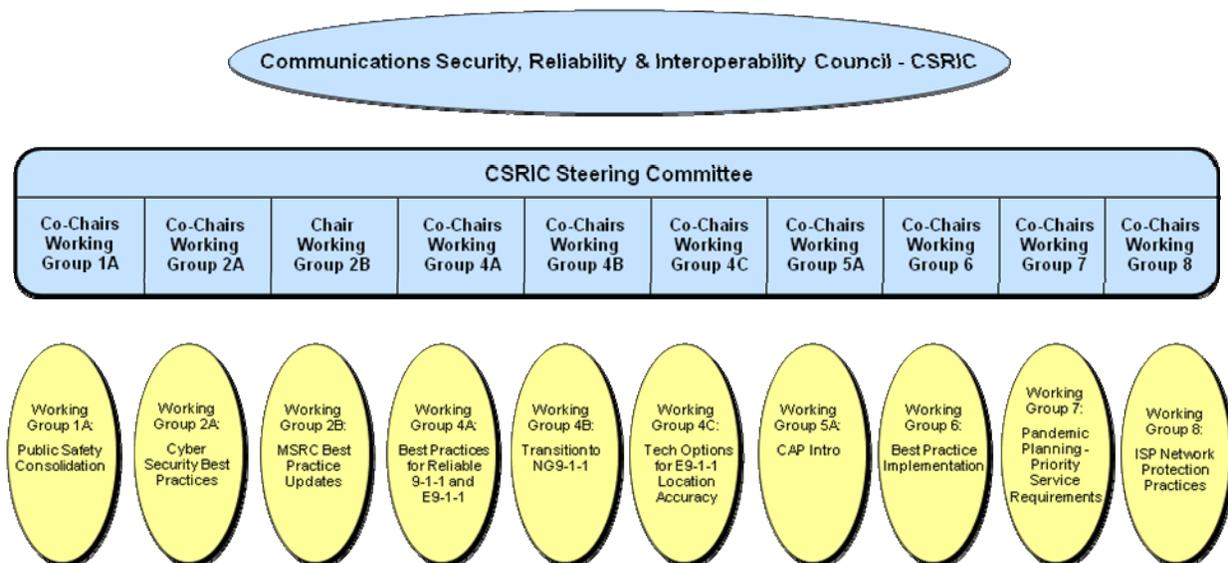


Figure 1 – CSRIC Structure

#### 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.<sup>1</sup> 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.

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<sup>1</sup> 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.

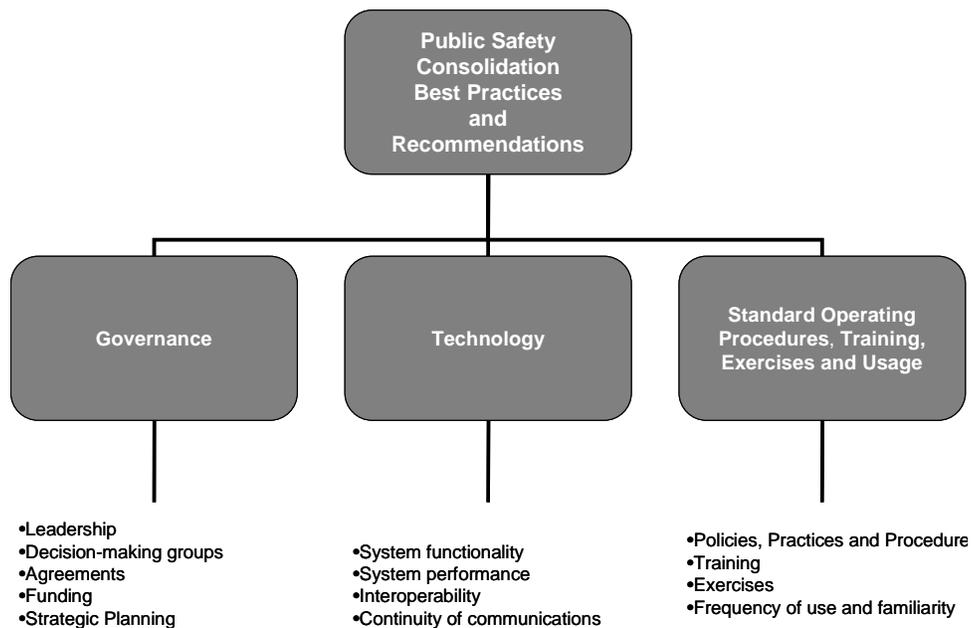


Figure 2 - Work Breakdown Structure

## 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.<sup>2</sup>

## 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...”<sup>3</sup>*

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.<sup>4</sup> 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.<sup>5</sup> 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.

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<sup>2</sup> 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.

<sup>3</sup> 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).

<sup>4</sup> FCC registry shows 7666 PSAPs but some are no longer active.

<sup>5</sup> 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.<sup>6</sup> 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.

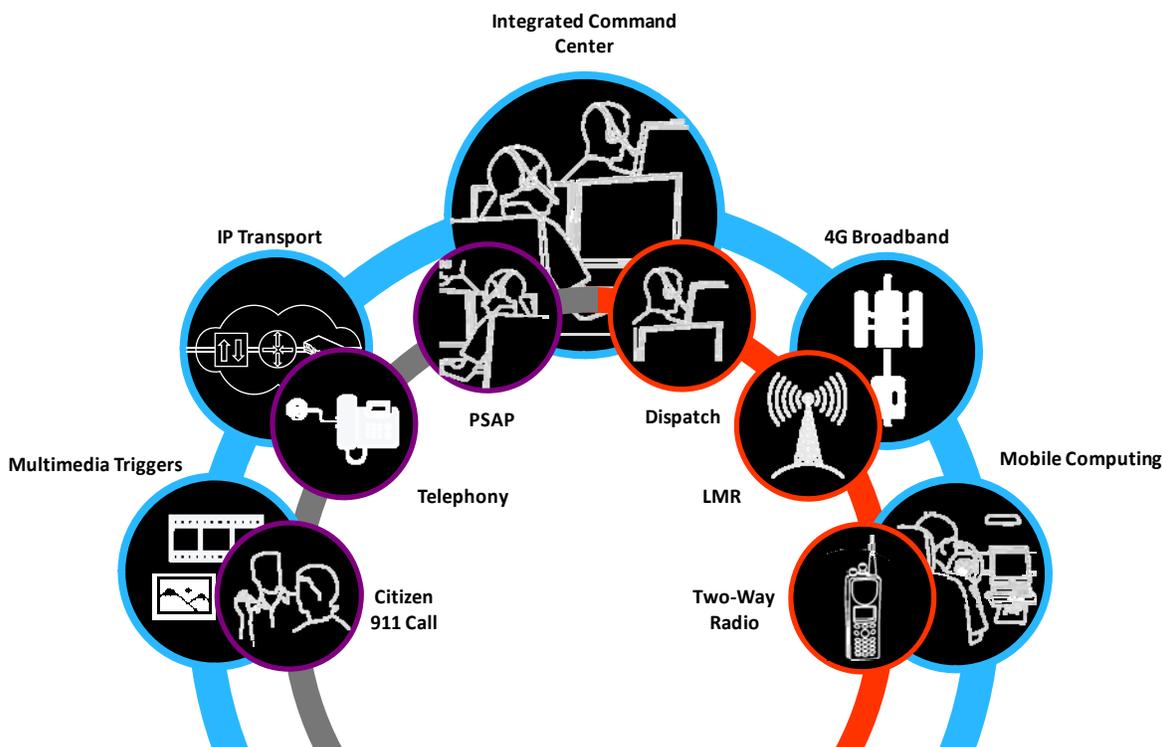
### **3.1 Technical Architecture**

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.<sup>7</sup>

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<sup>6</sup> According to the National Emergency Number Association (NENA)

<sup>7</sup> 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**

<b>Case Study</b>	<b>Discipline</b>
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

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.

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

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 crossed 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. PACCOM 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)<sup>8</sup>.

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,

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<sup>8</sup> 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)**

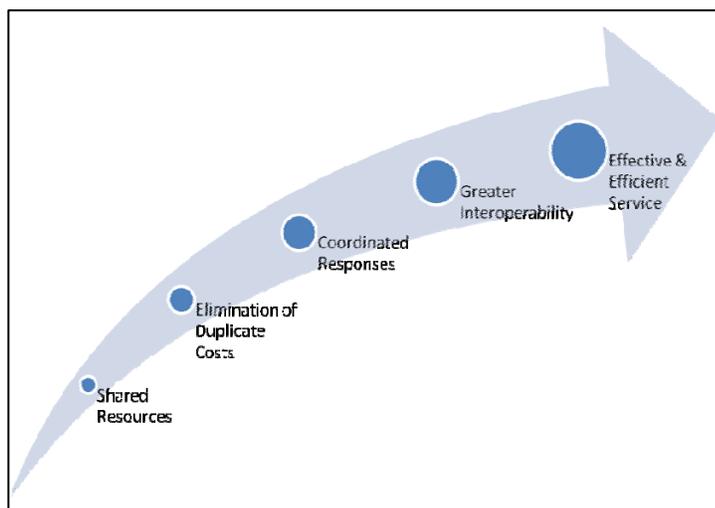
In 1984 the Walla Walla Fire Department and County Fire District 4 consolidated, with the remaining agencies joining between 1994 and 1997, with the exception of the Walla Walla Airport (which is now contracting services through the Walla Walla County Fire District 4), and the US VA Medical Center (which 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).<sup>9</sup> 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

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<sup>9</sup> 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.<sup>10</sup> 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.

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<sup>10</sup> 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.”<sup>11</sup>

- ***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.***

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<sup>11</sup> 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

<b>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.</b>
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.
<b>Finding #2 - Securing “agency buy-in” was the next biggest challenge.</b>
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.
<b>Finding #3 - Legislation may be necessary to create a sustainable funding mechanism or codify relationships between the parties.</b>
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.
<b>Finding #4 - Formalize the arrangement through some sort of legal agreement and to establish strong and clear membership structures.</b>
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.
<b>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.</b>
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.
<b>Finding #6 - Well defined communication channels among stakeholders and the governing body is critical to successful consolidation.</b>
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.
<b>Finding #7 - Consolidation can produce long term cost efficiencies by reducing operations and technology duplication.</b>
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
<b>Finding #8 - Consolidation results in better trained and more focused personnel, increasing the level of public safety.</b>
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.
<b>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.</b>
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.

<b>Finding #10 - Interoperating across technologies is critical.</b>
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.
<b>Finding #11 - Shared, standards based systems lead to technical, operational, and financial advantages.</b>
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.
<b>Finding #12 - The traditional revenue streams to fund capabilities are not keeping pace with the costs to refresh and maintain technology</b>
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.
<b>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.</b>
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.
<b>Finding #14 - SOPs must be developed reviewed and vetted by operations personnel prior to consolidation to ensure they are consistent.</b>
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
<b>Describe the type of consolidation: PSAP, Communications Technology Operations</b>	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
<b>How long has organization been consolidated?</b>	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
<b>Describe the demographics of the consolidation</b>	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 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**

	<b>Arlington, VA</b>	<b>Dakota County, Minnesota</b>	<b>DENCO area (Dallas, TX)</b>	<b>Pacific County, WA</b>	<b>Metropolitan Emergency Services Board (MESB)</b>	<b>State of Michigan</b>	<b>State of Vermont</b>	<b>State of Washington</b>	<b>WESCOM Walla Walla, WA</b>
	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.
<b>How was the consolidation effort initiated?</b>	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
<b>Describe the initial goals of this consolidation, e.g. reduce costs, improve efficiency, etc.</b>	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**

	<b>Arlington, VA</b>	<b>Dakota County, Minnesota</b>	<b>DENCO area (Dallas, TX)</b>	<b>Pacific County, WA</b>	<b>Metropolitan Emergency Services Board (MESB)</b>	<b>State of Michigan</b>	<b>State of Vermont</b>	<b>State of Washington</b>	<b>WESCOM Walla Walla, WA</b>
	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.	
<b>What threats to consolidation arose at the time of consolidation or in the planning stages?</b>	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.	
<b>Please elaborate on any Legislative changes that were needed to allow for</b>	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
<b>consolidation?</b>		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.
<b>How was governance established? Please describe the governance model used in this consolidation.</b>	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).
<b>How is(are) the governance/oversight committee(s) structured</b>	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. 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. The Operations Committee provides advice on operations and procedures which impact daily operations. 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.				
<b>Was the consolidation participation mandated or one where you had to entice folks to participate?</b>	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.			
<b>How are elected officials involved either in the finalized consolidation or in the process to establish the consolidated entity?</b>	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
<b>How are decisions made?</b>	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.
<b>How were conflicts in standards (service levels, performance expectations, training requirements, compensation,</b>	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
<b>benefits, etc.) resolved</b>		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.
<b>Please describe the Management &amp; Oversight function of this consolidation.</b>	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 representatives 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.
<b>How are Administrative Services for the consolidated agency handled?</b>	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.

**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 entire agency and staff.					
<b>Please describe how Fiduciary oversight/responsibility is handled? How do you handle Operational Cost Distribution?</b>	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

**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
			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.
<b>How do you handle Capital Cost Distribution?</b>	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.

**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
			anticipated revenues and estimated expenditures.						
<b>How is Funding structured? Specifically, describe the formula, if any that is used to allocate costs between the various participants.</b>	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.

**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
				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.				
<b>How is communications between the consolidated agency and the stakeholder groups handled?</b>	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.

**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
		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 ( <a href="http://www.mn-mesb.gov">www.mn-mesb.gov</a> )				
<b>Please describe the compensation program for the consolidated agency.</b>	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.

**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
					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.				
<b>Was it necessary to integrate various work groups in the consolidation process and how was this handled?</b>	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.

**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
		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.		
<b>How has consolidation impacted operations?</b>	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

**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
			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.
<b>What are the strengths/benefits of consolidation? What are the challenges?</b>	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

**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
			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.
<b>What worked and what would you do differently?</b>	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.

**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
					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.	
<b>For each of the initial goals listed under question e. describe how well that goal was met.</b>	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.

**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 growing workload. The Fire Department reduced costs by returning the firefighters to the stations and increasing the number of station personnel on duty.								
<b>Is there the potential to expand the scope of this consolidation further? If so, please describe.</b>	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.

**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
		is expected to continue.	control.						
<b>Please describe if there are currently any threats to continuing this consolidation?</b>	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.	

**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
			funds for their purpose.						

## Appendix 2 - Interview Questionnaire Summary Data & Findings

### 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.<sup>12</sup>
- There has to be concerted marketing effort to get smaller agencies to participate in consolidation, especially when one of the partners is very large.<sup>13</sup>
- Consolidation was initiated as a grass roots effort by county officials.<sup>14</sup>
- This consolidation grew to its present form through the merger of two existing consolidations, one for radios, and one for 9-1-1.<sup>15</sup>
- Consolidation was created by voter referendum with the sole purpose to provide 9-1-1 communication service.<sup>16</sup>
- Consolidation started when local officials tried to find a way to meet their goals of providing consistent service without state assistance.<sup>17</sup>
- There was a state mandate to provide 9-1-1, which did not exist. The mandate required consolidation to ensure funding.<sup>18</sup>

#### Legislation

- Legislative changes were needed to address the relationship between the city council and the county commissioners. An independent board was established.<sup>19</sup>
- Legislature established an independent board to provide a state-wide 9-1-1 system.<sup>20</sup>
- 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.<sup>21</sup>
- Legislation provides for statewide governance of backbone elements and county governance of PSAPs. County participation in the statewide network is mandatory.<sup>22</sup>

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<sup>12</sup> WESCOM – question j

<sup>13</sup> Michigan – 1.1.3

<sup>14</sup> MESB – 1.1.2

<sup>15</sup> MESB – 1.1.2

<sup>16</sup> Denco – 1.1.1

<sup>17</sup> Denco – 1.1.2

<sup>18</sup> Pacific – question d

<sup>19</sup> WESCOM – questions g and h

<sup>20</sup> Vermont – 1.1.2

<sup>21</sup> Vermont – 1.1.3

## Appendix 2 - Interview Questionnaire Summary Data & Findings

- Legislation was required to create the funding mechanism, with a State 9-1-1 Board to provide oversight in an advisory capacity.<sup>23</sup>
- Legislation created a funding model to support the development of a statewide radio system.<sup>24</sup>
- 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.<sup>25</sup>
- An independent board with nine members representing various constituencies and the public, with one vote per member.<sup>26</sup>
- Statewide advisory committee with membership based on representation of constituencies. Decisions are made by the state, usually with the consensus of the advisory committee<sup>27</sup>
- 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.<sup>28</sup>
- Votes are based on the population served.<sup>29</sup>
- Votes are allocated by constituent groups. An industry representative serves in a non-voting, advisory role.<sup>30</sup>
- No single method of allocating votes is predictive of success – The case studies used for the 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.<sup>31</sup> The MESB consolidation allocates their votes based on the population served by the participating agency.<sup>32</sup> 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, cites, counties, etc.<sup>33,34</sup> In all of these varied forms of

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<sup>22</sup> Washington – 1.1.5

<sup>23</sup> Michigan – 1.1.5

<sup>24</sup> MESB – 1.1.3

<sup>25</sup> WESCOM – question i

<sup>26</sup> Vermont – 1.1.5

<sup>27</sup> Washington – 1.1.5

<sup>28</sup> Michigan – 1.1.5

<sup>29</sup> MESB – 1.1.4

<sup>30</sup> Denco – 1.1.4

<sup>31</sup> Michigan State Police case study 1.1.3

<sup>32</sup> MESB case study 5.1.1.1.4

<sup>33</sup> Denco case study 1.1.4

## Appendix 2 - Interview Questionnaire Summary Data & Findings

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.<sup>35</sup>
- 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.<sup>36</sup>
- It is essential to establish strong and clear membership agreements that outline each party's responsibilities early on.<sup>37</sup>

### Conflicts

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

### Personnel Issues

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

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<sup>34</sup> Vermont case study 1.1.5

<sup>35</sup> WESCOM – question k

<sup>36</sup> Vermont – 1.1.6

<sup>37</sup> Michigan – 1.1.12

<sup>38</sup> WESCOM – question n

<sup>39</sup> Washington – 1.1.5

<sup>40</sup> Michigan – 1.1.12

<sup>41</sup> MESB – 1.1.4

<sup>42</sup> Pacific – question n

<sup>43</sup> WESCOM – question o

<sup>44</sup> WESCOM – question v

<sup>45</sup> Vermont – 1.1.2

## Appendix 2 - Interview Questionnaire Summary Data & Findings

- Call-takers work for different agencies but training and certification is provided by the independent board to ensure consistency.<sup>46</sup>
- By not consolidating call takers into a single agency the career path for call takers is reduced, and this likely affects call taker professionalism.<sup>47</sup>
- Personnel cannot be effectively managed by a committee so one entity needs to step up and assume this role for the consolidation.<sup>48</sup>
- 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.<sup>49</sup>
- Moving consolidated staff into the pay/benefit plan of the best group before the consolidation will minimize bargaining unit issues.<sup>50</sup>
- 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.<sup>51</sup>

### Operations

- An executive director that answers to the independent board is allowed to hire staff and manage system operations.<sup>52</sup>
- 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.<sup>53</sup>
- Most operational decisions are made by Technical Operation Committees, who make recommendations to the Board.<sup>54</sup>
- Operation decisions are made at the PSAP level, with district-wide decisions made by the Executive Director who answers to the Board.<sup>55</sup>
- Board of director's are responsible for policy level decisions regarding budget, finance and legal.<sup>56</sup>

### Stakeholder Communications

- Stakeholder communication is facilitated through the board members who represent stakeholder groups.<sup>57</sup>

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<sup>46</sup> Vermont – 1.1.2

<sup>47</sup> Vermont – 1.1.9

<sup>48</sup> Michigan – 1.1.5

<sup>49</sup> Michigan – 1.1.9

<sup>50</sup> Michigan – 1.1.9

<sup>51</sup> Dakota – 1.1.10

<sup>52</sup> Vermont – 1.1.6

<sup>53</sup> Michigan – 1.1.2

<sup>54</sup> MESB – 1.1.4

<sup>55</sup> Denco – 1.1.4, 1.1.5

<sup>56</sup> Dakota – 1.1.7

<sup>57</sup> Vermont – 1.1.8

## Appendix 2 - Interview Questionnaire Summary Data & Findings

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

### Problems/Threats

- Had to overcome the fear of a loss of control and decreased responsibility.<sup>65</sup>
- 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.<sup>66</sup>

### Operations Best Practices/Lessons Learned

- Communicate honestly<sup>67</sup>
- Meet to resolve issues often<sup>68</sup>
- Anticipate turf battles and unforeseen problems. Allow for contingencies.<sup>69</sup>
- Strong governance allows the 9-1-1 agency to focus on providing and improving service.<sup>70</sup>
- The 9-1-1 agency needs to have enforcement authority to ensure that regulations related to 9-1-1 are adhered to.<sup>71</sup>

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<sup>58</sup> Washington – 1.1.8

<sup>59</sup> Michigan – 1.1.8

<sup>60</sup> MESB – 1.1.7

<sup>61</sup> Denco – 1.1.4

<sup>62</sup> Denco, 1.1.4

<sup>63</sup> Denco – 1.1.7

<sup>64</sup> Dakota – 1.1.9

<sup>65</sup> WESCOM – question x

<sup>66</sup> Michigan – 1.1.3

<sup>67</sup> WESCOM – question cc

<sup>68</sup> WESCOM – question cc

<sup>69</sup> WESCOM – question e

<sup>70</sup> Vermont – 1.1.10

## Appendix 2 - Interview Questionnaire Summary Data & Findings

- Many laws/rules created for legacy 9-1-1 system may prove to be inadequate to address NG 9-1-1 systems.<sup>72</sup>
- Everyone needs to have an equal seat at the table.<sup>73</sup>
- Emergency communication regions should be aligned with other governance regions, e.g. EMS, Fire, Public Health, for maximum efficiencies in governance.<sup>74</sup>
- 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.<sup>75</sup>
- Consolidations pave the way for transition to NG9-1-1.<sup>76</sup>
- Treat all stakeholders equally.<sup>77</sup>
- Have a clear mission to keep everyone focused.<sup>78</sup>
- 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.<sup>79</sup>
- Consolidation was initiated to provide service to rural areas where no single agency was sufficiently sized to provide 9-1-1 on its own.<sup>80</sup>
- Budget restrictions were a key driver for this consolidation.<sup>81</sup>
- Trying to keep pace with technology changes was a driver for consolidation; individual agencies could not afford new technology on their own.<sup>82</sup>
- Lack of funding, especially in rural areas provide strong incentives to consolidate.<sup>83</sup> Conversely, more available funding tends to hinder consolidation efforts.<sup>84</sup>

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<sup>71</sup> Vermont – 1.1.10

<sup>72</sup> Vermont – 1.1.10

<sup>73</sup> Michigan – 1.1.12

<sup>74</sup> MESB – 1.1.5

<sup>75</sup> MESB – 1.1.11

<sup>76</sup> MESB – 1.1.12

<sup>77</sup> Denco – 1.1.11

<sup>78</sup> Dakota – 1.1.13

<sup>79</sup> WESCOM – question j

<sup>80</sup> Vermont – 1.1.3

<sup>81</sup> Michigan – 1.1.1

<sup>82</sup> Michigan – 1.1.3

## Appendix 2 - Interview Questionnaire Summary Data & Findings

- As local funding decreases, agencies are willing to consolidate more and more of their functionality.<sup>85</sup>
- Mandated technology changes created a fiscal burden that could only be addressed through consolidation.<sup>86</sup>
- Attain operational efficiencies.<sup>87</sup>
- 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.<sup>88</sup>

### Cost Allocation

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

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<sup>83</sup> Michigan – 1.1.3

<sup>84</sup> Michigan – 1.1.11

<sup>85</sup> Michigan – 1.1.5

<sup>86</sup> Dakota – 1.1.1

<sup>87</sup> Dakota – 1.1.3

<sup>88</sup> Michigan State Police case study 1.1.3

<sup>89</sup> WESCOM – question q

<sup>90</sup> Vermont – 1.1.7

<sup>91</sup> Washington 1.1.7

<sup>92</sup> Washington – 1.1.2

<sup>93</sup> MESB – 1.1.6

<sup>94</sup> Denco – 1.1.2

<sup>95</sup> Denco – 1.1.6

<sup>96</sup> Pacific – question s

## Appendix 2 - Interview Questionnaire Summary Data & Findings

- Local portion of costs are based on three year average of call volume.<sup>97</sup>

### Capital Costs

- Capital costs are approved by the joint governing board, and funded through the normal funding process, with charges based on call volume.<sup>98</sup>
- Capital costs are covered with set-aside funds from the annual budgets.<sup>99</sup>
- Capital costs are borne by the State with operational costs handled by the participants, with costs allocated by call volume or population served.<sup>100</sup>
- Grants for capital expenditures are easier to get when a group of agencies applies together.<sup>101</sup>
- Capital costs are budgeted into the annual operating budget.<sup>102</sup>
- Initial capital costs for consolidation center were funded by issuing bonds.<sup>103</sup>
- 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.<sup>104</sup>
- Partnering with other agencies to collaboratively staff call taker positions has proven to be very cost effective for all parties.<sup>105</sup>
- Having a statewide backbone has provided for savings at the local level and ensured better integration.<sup>106</sup>
- There have been significant savings from the first year of the consolidation.<sup>107</sup>

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<sup>97</sup> Dakota – 1.1.8

<sup>98</sup> WESCOM – question s

<sup>99</sup> Vermont – 1.1.7

<sup>100</sup> Michigan – 1.1.7

<sup>101</sup> Michigan – 1.1.7

<sup>102</sup> Denco – 1.1.6

<sup>103</sup> Dakota – 1.1.4

<sup>104</sup> WESCOM – question w

<sup>105</sup> Vermont – 1.1.9

<sup>106</sup> Washington – 1.1.6

<sup>107</sup> Dakota – 1.1.8

## Appendix 2 - Interview Questionnaire Summary Data & Findings

### Economic Best Practices/Lessons Learned

- Budget realistically.<sup>108</sup>
- Competition in the telecommunication marketplace is driving down USF contributions making USF an unsustainable funding source over the long term.<sup>109</sup>
- A robust funding source allows the 9-1-1 agency to focus on providing and improving service.<sup>110</sup>
- 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.<sup>111</sup>
- The lack of NG standards adds risk to NG projects.<sup>112</sup>
- Funding that is based on wireline service faces pressure from consumer trends toward wireless.<sup>113</sup>
- Funding that is based on wireline service faces pressure from consumer trends toward wireless.<sup>114</sup>
- Developing a funding mechanism that is separate from the normal appropriation mechanism has been effective in ensuring adequate 9-1-1 funds.<sup>115</sup>
- 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.<sup>116</sup>
- Creation of statewide 9-1-1 backbone was done in response to the realization that NG systems are facilitated by and facilitate consolidated systems.<sup>117</sup>

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<sup>108</sup> WESCOM – question cc

<sup>109</sup> Vermont – 1.1.7

<sup>110</sup> Vermont – 1.1.10

<sup>111</sup> Washington – 1.1.3

<sup>112</sup> Washington – 1.1.3

<sup>113</sup> MESB – 1.1.10

<sup>114</sup> MESB – 1.1.10

<sup>115</sup> Denco – 1.1.9

<sup>116</sup> Vermont 1.1.3

<sup>117</sup> 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.<sup>118</sup>
- An initial goal of consolidation was to streamline government by having a single entity manage issues that were duplicated among all participating agencies.<sup>119</sup>
- The increasing burden of keeping up with new technologies drove the consolidation effort.<sup>120</sup>
- Increase interoperability between agencies.<sup>121</sup>

### Personnel Matters

- Consolidation has resulted in better trained and more focused personnel, increasing the level of public safety.<sup>122</sup>
- Training is provided by the state for county PSAPs.<sup>123</sup>
- Independent state board sets call taker standards and trains and certifies call takers employed by local agencies.<sup>124</sup>
- Consolidation has had a positive effect on the professionalism of the staff.<sup>125</sup>
- Consolidation provides a better career path for staff in smaller agencies.<sup>126</sup>
- Standardized training provided by consolidation positively impacts service.<sup>127</sup>
- 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.<sup>128</sup>
- 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.<sup>129</sup>
- It took a lot of effort to develop protocols to ensure that calls are handled consistently and effectively.<sup>130</sup>
- Consolidation had a positive impact on staff training and professionalism, which improved service overall.<sup>131</sup>

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<sup>118</sup> Michigan – 1.1.3

<sup>119</sup> MESB – 1.1.3

<sup>120</sup> MESB – 1.1.3

<sup>121</sup> Dakota – 1.1.3

<sup>122</sup> WESCOM – question w

<sup>123</sup> Washington 1.1.2

<sup>124</sup> Vermont – 1.1.9

<sup>125</sup> Michigan – 1.1.10

<sup>126</sup> Michigan – 1.1.10

<sup>127</sup> Michigan – 1.1.10

<sup>128</sup> MESB – 1.1.8

<sup>129</sup> Dakota – 1.1.4

<sup>130</sup> 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.<sup>132</sup>
- Virtual consolidation, where agencies maintain facility and staff but participate in unified network is an emerging trend.<sup>133</sup>
- 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.<sup>134</sup>

### Service Best Practices/Lessons Learned

- Overly strict privacy rules can inhibit data sharing that would increase responder effectiveness.<sup>135</sup>
- 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.<sup>136</sup>
- It is not practical to attempt the migration to NG9-1-1 systems on less than a state, or even multi-state basis.<sup>137</sup>
- Consolidation has provided better redundancy and diversity without increasing costs.<sup>138</sup>
- Rather than just providing incentive for countywide consolidation, there should be incentives for multicounty consolidation.<sup>139</sup>
- 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.<sup>140</sup>
- A monthly survey of the participating agencies is used to ensure that performance meets expectations.<sup>141</sup>
- Metrics, such as average time to answer, are tracked regularly to ensure high performance.<sup>142</sup>
- An inquiry system is used to track complaints.<sup>143</sup>

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<sup>131</sup> Dakota – 1.1.10

<sup>132</sup> Vermont – 1.1.2

<sup>133</sup> Michigan – 1.1.2

<sup>134</sup> MESB – 1.1.5

<sup>135</sup> Vermont – 1.1.4

<sup>136</sup> MESB – 1.1.3

<sup>137</sup> Washington – 1.1.3

<sup>138</sup> Washington – 1.1.10

<sup>139</sup> Washington – 1.1.10

<sup>140</sup> Dakota – 1.1.4

<sup>141</sup> Dakota – 1.1.9

<sup>142</sup> Dakota – 1.1.9

<sup>143</sup> Dakota – 1.1.9

## Appendix 2 - Interview Questionnaire Summary Data & Findings

- EMD training has resulted in reduced costs for the fire services.<sup>144</sup>
- Consolidation resulted in a significant reduction in response times.<sup>145</sup>
- 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.

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<sup>144</sup> Dakota – 1.1.9

<sup>145</sup> 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.

## Appendix 4 - Consolidated Communications Center Guide

### 6.4 Appendix 4 - Consolidated Communications Center Guide

#### Communications Center Consolidation Considerations<sup>146</sup>

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?

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<sup>146</sup> 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

## Appendix 4 - Consolidated Communications Center Guide

- 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?

## Appendix 4 - Consolidated Communications Center Guide

- 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

## Appendix 4 - Consolidated Communications Center Guide

- 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.).

## Appendix 4 - Consolidated Communications Center Guide

- 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.

## Appendix 4 - Consolidated Communications Center Guide

### 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

PSAP Consolidation Study – 2004 Report to the Minnesota Legislature. February 12, 2004.  
[http://www.9-1-1.state.mn.us/PDF/psap\\_final\\_report.pdf](http://www.9-1-1.state.mn.us/PDF/psap_final_report.pdf)

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[http://www.dhs.gov/xlibrary/assets/national\\_emergency\\_communications\\_plan.pdf](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/ronlyres/C6C0CD6A-0A15-4110-8BD4-B1D8545F0425/0/NationalSummaryofSCIPs\\_February2009.pdf](http://www.safecomprogram.gov/NR/ronlyres/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/ronlyres/FD22B528-18B7-4CB1-AF49-F9626C608290/0/SOSApproachforInteroperableCommunications\\_02.pdf](http://www.safecomprogram.gov/NR/ronlyres/FD22B528-18B7-4CB1-AF49-F9626C608290/0/SOSApproachforInteroperableCommunications_02.pdf)