



Washington Military Department

Emergency Management Division

Final Report

Jefferson/Clallam County Consolidation Alternatives Analysis and Recommendations

Prepared for
Washington State Military Department 9-1-1 Office

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Acronyms and Abbreviations

ADCOMM	ADCOMM Engineering Company
CAD	computer aided dispatch
CAPEX	capital expense investment
CTO	communications training officer
ESInet	Emergency Services IP Network
FTE	full-time equivalent
GEObase	geographical database
IP	Internet Protocol
JeffCom	Jefferson County Communications Center
NG9-1-1	Next Generation 9-1-1
PenCom	Peninsula Communications Center
PSAP	public safety answering point
RMS	records management system

Introduction

The Washington State Military Department 9-1-1 Office contracted with ADCOMM Engineering Company (ADCOMM) to review the possibility of dispatch center consolidation between JeffCom and PenCom. JeffCom and PenCom are similar in size, serve populations with similar demographics, and are both at the limits of their physical facilities. As a result, there is interest in these two entities and their associated user agencies to investigate the feasibility of dispatch center consolidation.

The project is divided into three phases: the first phase is to develop a baseline report, the second phase is to develop courses of action, and the third optional phase is to develop an implementation plan for the recommended option. The baseline report has been delivered and accepted and this courses of action report evaluates a variety of consolidation or shared services models. The implementation plan, if desired, will be requested by the State and regional stakeholders.

This document contains the following sections:

- Introduction: introductory text
- Executive Summary: high-level summary of the alternatives
- Alternatives Review: this section provides information and analysis on five shared services or consolidation alternatives:
 - Shared Management and Administration: integration of the management and administrative functions of the two organizations into a single management structure
 - Increased Interoperability: both operations remain separate entities and stay in their current facilities but increase their ability to interoperate, including increased CAD and radio system sharing
 - Full Technology Consolidation: combining and sharing equipment, technology, and system administration while continuing to operate two separate facilities
 - Colocation: JeffCom and PenCom remain as separate entities but move to a single facility, sharing facility, technology, and other management/support activities to the maximum extent possible
 - Full Consolidation/Regionalization: both organizations are merged into a new operating entity in a new facility
- Rankings and Recommendations: each alternative is ranked on its ability to achieve the goals identified in the RFP and a recommended course of action is provided

The optional third phase includes an implementation plan, costing, a work plan, schedule, recommended governance model, and a revenue plan to include a plan for assessment of user fees. A facility selection with comparisons of legal requirements, ongoing costs, infrastructure costs, and geographic location are also part of the third optional phase of the project.

Executive Summary

The RFP that launched this examination of consolidation alternatives identified the following Goal statement for the work:

The goal of this study is to determine the feasibility of providing regionalized 9-1-1 service to Clallam and Jefferson Counties, with the intent of improving efficiency while sustaining or improving effectiveness. "Improving efficiency" is defined as reducing operating costs, minimizing radio channel congestion and streamlining supervisory and administrative support channels. "Sustaining or improving effectiveness" is defined by sustaining or improving call-handling times, operator error rates, and radio coverage.

This report provides an evaluation of the five shared services or consolidation alternatives, each with its own set of characteristics and abilities to meet these goals. Three of these alternatives would be implemented within the current operating environment with separate facilities for the PenCom and JeffCom operations:

1. **Shared Management and Administration:** this alternative would allow the two organizations to gain deeper understandings of each other's operations, align operations and practices where possible, and achieve slight economic savings.
2. **Increased Interoperability:** this alternative would allow both organizations to share in upcoming capital investments in technology systems and take further steps towards aligning the operations and practices while also increasing the ability for each operation to back up the other when needed.
3. **Full Technology Consolidation:** this alternative would merge the two operations on to shared technology systems while continuing to operate out of two separate facilities.

The remaining two alternatives are predicated on the establishment of a new facility that would house the full operational environment for both counties:

4. **Colocation:** this alternative would have JeffCom and PenCom continuing to operate as separate entities but move to a single facility, sharing facility, technology, and other management/support activities to the maximum extent possible.
5. **Full Consolidation/Regionalization:** this alternative would fully combine the two organizations into a single regional public safety communications organization.

While full consolidation and regionalization of operations would make the most significant advances towards the identified goals, achieving these alternatives will require substantial capital investments in the new facility and technology systems for that facility. Therefore, it may require a substantial period of time to build the political and public support for the funding mechanisms necessary to bring this vision to completion.

But, while work continues on achieving a regionalized vision, it would be possible to move forward and implement alternative No. 1, Shared Management and Administration, and alternative No. 2, Increased Interoperability. These strategies would provide a number of near-term benefits to the two organizations including improving consistency of operations, increasing the level of mutual understanding of each other's organizations, sharing capital

expenditure costs as much as possible, and improving the ability of each center to interoperate and support the other. From this foundation, it seems as though it will be easier to then expand the relationships further and work to find the funding mechanism to create a regionalized facility and operation at a future date.

Alternatives Review

Each of the five shared services or consolidation alternatives has a mix of governance, operational, technological, facility, or fiscal characteristics that will influence and impact the ability of that alternative to meet the goals identified in the RFP.

Strategies Using Existing Facilities

1. Shared Management and Administration

In this alternative, steps would be taken to bring the two organizations closer together at the management and administrative levels while leaving operations, technology, and facility characteristics as they are today. This approach would allow both organizations to gain a better understanding of each other while also providing a mechanism for slightly reduced operational costs. In many ways, this may be a logical first step towards subsequent phased levels of technology and operational integration of the two organizations.

Governance Discussion

As noted in the *Baseline Report*, the governance structures for JeffCom and PenCom are different. JeffCom is established as a stand-alone intergovernmental organization governed by a five-member Administrative Board. In contrast, PenCom operates as an operational unit within the Port Angeles Police Department. Each organization has a communications director or manager position that oversees the day-to-day activities and organizational performance. At JeffCom, the director is supported administratively by an office manager position; while at PenCom these administrative functions are accomplished through a combination of manager and other organizational elements within Port Angeles.

The director at JeffCom reports to the JeffCom Administrative Board and the manager at PenCom reports to the Port Angeles police chief. PenCom has also established an Advisory Board to provide the manager and the City with recommendations on operational practices, services offered, new agency participation, and cost allocation mechanisms.

For this Shared Management and Administration alternative it is envisioned that JeffCom and the City of Port Angeles (representing the interests of PenCom) would enter into an interlocal agreement to allow them to jointly retain and share the services of a single individual to serve as the director of both organizations. This agreement could also define some mix of administrative duties such as budget development, expenditure processing, revenue tracking, and similar activities that could be supported by an office manager that could also be supported jointly by both organizations.

This new interlocal agreement would also need to define the cost-sharing relationship between the two entities for this shared management and administrative function. While quite similar, each organization has some unique differences. For example, the dispatching staff size at PenCom is larger than at JeffCom, but JeffCom has a larger and more diverse technology environment since it is in the business of owning and operating a radio network while PenCom is not.

Creation of this new interlocal agreement may also require minor revisions within the interlocal agreements that established JeffCom and PenCom themselves. No further governance changes are anticipated in this alternative, and both organizations would continue to operate as independent entities and the shared director would routinely interact with both the JeffCom Administrative Board and the PenCom Advisory Board just as occurs today. Consideration could also be given to periodically having these two Boards meet in some form of joint session to allow further knowledge and understanding of each other’s operational dynamics and organizational constraints. This could be a useful first step in moving towards higher levels of consolidation in the future.

Operational and Staffing Discussion

Operationally there would be no need to alter any of the staffing configurations of either JeffCom or PenCom under this alternative. JeffCom and PenCom would continue to operate as they do today and any future adaptations of operational approach would be coordinated through the independent governing structures of each organization.

If the decision were made to share a both the director and office manager functions, the staffing mix for this alternative would be as shown in Exhibit 1.

Category	JeffCom	PenCom
Director	1 director leading both organizations	
Office Manager	1 office manager supporting both organizations	
Dispatch Supervisor	2	3
Dispatcher — Full Time	9	15
Dispatcher — Part Time	1	0
Records / Warrant Staff	1	1
IT Staff — Full Time	2	2
IT Technician — Part Time	0	0

EXHIBIT 1
Staffing Configuration — Shared Management and Administration Alternative

All of the operational and technology support staff would continue to function as they do today in their respective communications centers. The director would need to split their time between the two locations and establish standing meetings and other processes to stay in close coordination with the other members of each organization’s staffing mix. The office manager would also likely need to spend some time at each facility, but much of the work of this position could still be accomplished at the JeffCom facility as it is today.

Technological Discussion

There would be no need to alter any of the core public safety technology infrastructure of either organization in this alternative. There would be a need to create file sharing and/or remote system access mechanisms for the director and office manager to have access to supporting systems and work materials for either organization regardless of which physical location they were at on any given day.

Facility Discussion

There would be no need to alter any of the facility characteristics at either communications center.

Fiscal Discussion

This alternative would allow for a slight overall reduction in the total cost of operations for the two organizations combined since the costs of the director position, and perhaps the office manager position, would be shared by the two organizations. The degree of savings to each organization will depend on the cost sharing model agreed to in the interlocal agreement. While likely nominal to each organization, these savings could provide some flexibility to each organization finding ways to move forward on other shared services or consolidation alternatives.

Further, reducing costs and streamlining supervisory and administrative support channels for each organization also helps make progress towards the "improving efficiency" goal identified for this study.

2. Increased Interoperability

While the term 'interoperability' is most often applied to radio communications issues, more and more public safety communications centers are finding that increasing interoperability of other core technology systems is also highly beneficial to operational service levels and potentially also system resilience. As an example, a certain degree of interoperability has already been utilized between JeffCom and PenCom in the linking of the currently independent CAD systems to allow either agency to enter incidents for each other. This improves situational awareness at each of the communications centers.

Increasing levels of technology interoperability between the two organizations will also allow progress to be made towards both the "improving efficiency" and "sustaining or improving effectiveness" goals identified for this study. Further, by coupling any system interoperability initiative with the concepts of shared management and administration, the agencies will likely improve their opportunities for identifying the best initiatives to achieve operational improvements. Shared management would also improve the opportunities for the planning, implementation, and operational success of these initiatives.

The most likely candidate technologies for further interoperability investments would be the CAD/RMS/mobile system environment, the 9-1-1 telephone systems, and the radio systems. Each would come with its own set of technology and operational issues.

Governance Discussion

Identifying and executing further technology interoperability measures should not require any alternation to the governance processes for either JeffCom or PenCom. More likely, relatively simple interlocal agreement(s) would be structured between the two entities to define the specific interoperability measures being established and define the maintenance and cost-sharing proportionality that would be used to support that interoperability.

Operational and Staffing Discussion

While there are no staffing changes anticipated with any of the potential interoperability strategies, there may be some operational adaptations needed depending on which interoperability

investments are made. For example, if the radio and radio console systems were interconnected to allow both communications centers to operate on any of each other's radio channels, operational protocols and training would need to be developed and implemented to support this use.

Technological Discussion

There are three technology areas that seem most likely to provide mutual benefit if further interoperability investments were made: the CAD/RMS/mobile systems, the 9-1-1 telephone systems, and the radio systems. Each will be discussed individually below.

CAD/RMS/Mobile Systems

The CAD systems are already linked and allow incident information to be entered by either agency for the other. However, each agency cannot see the other's CAD or RMS data. This eliminates the need to transfer a caller or otherwise interact on telephone or radio to get an incident entered and dispatched. Future changes will include a shared geographical database (GEObase) between both counties, shared RMS, and shared jacket information between all agencies on the Olympic Peninsula.

However, doing this would likely require the creation of a common call type strategy between the two centers, which would then drive corresponding operational and system changes into the RMS and mobile environments of both centers as well. It would also drive training requirements for both communications center and field personnel. Given the potential magnitude of these impacts, it is most likely that this level of CAD interoperability would not be initiated unless a full system integration were being undertaken, so this is discussed further in the *Full Technology Consolidation* section below.

9-1-1 Telephone Systems

PenCom and JeffCom have both recently purchased standalone VIPER 9-1-1 phone systems. They are compatible and allow each center to back the other up. During an outage, they can have the telephone provider automatically forward 9-1-1 calls to the other center. Both centers are already connected to the statewide Emergency Services IP Network (ESInet) for call transport.

Radio Systems

There are two major elements to any radio system environment. First, there are the sites, base stations, microwave links, wireline connections, and other equipment that make up the radio system infrastructure. Second are the radio console systems at the communications centers that are used by the telecommunicators to access this infrastructure. Creating increased interoperability between radio systems often requires investments and/or modifications to each of these elements.

The radio systems used by JeffCom and PenCom each come with their own complexities and characteristics, and these have been shaped over many years to best meet the needs of the law enforcement, fire service, and emergency medical personnel in the field. In JeffCom's case, the organization is responsible for both the radio system infrastructure and the radio console system. At PenCom, the communications center is responsible for their radio console system, but the various radio system infrastructures are the responsibility of the agencies being served. PenCom will soon be facing the need to replace their end-of-life radio console system and this may provide a good opportunity to implement additional radio system interoperability mech-

anisms between the two communications centers. In addition, it may also be a good time for PenCom to consider owning and operating their radio facilities as well so the JeffCom and the PenCom systems can complement each other.

If each center can establish the ability to talk over the other center's radio infrastructures, this will increase their ability to provide backup for each other. Coupling this with NG9-1-1 phone system interoperability and potentially expanded CAD interoperability and you approach an environment where the processing and dispatching of calls begins to become technologically independent of which communications center handles the call.

Facility Discussion

There will likely be no facility changes necessary to accommodate increased levels of interoperability.

Fiscal Discussion

Increasing interoperability in any of these technology environments will likely not result in any economic savings. In fact, it will at least require the initial capital outlays to create the interoperability mechanisms themselves and then will likely require a marginal (although likely nominal) increase in annual operating costs for each of the systems that is enhanced. These costs would need to be evaluated against the resulting increases in operational efficiency and flexibility to determine their ultimate value to each of the organizations.

Based on current knowledge and understandings of the system and operational settings in each of the centers, it seems most likely that enhancing NG9-1-1 and radio system interoperability will be the best investments for consideration since one or both organizations have a known need to make other technology investments in these areas in the near future.

3. Full Technology Consolidation

The advent of IP networking for most all public safety technologies (including systems such as CAD, RMS, telephony, logging/recording, and many radio links) is allowing public safety agencies all across the country to consider levels of technology integration and consolidation that have never been possible or practical. Further, advances in system designs and software flexibility are allowing systems to be configured for both redundancy and geographic diversity. These combinations are allowing neighboring as well as regional communications centers to consider establish shared and redundant systems at cost levels well within their reach, particularly when done through cooperative initiatives.

For this alternative, the likely systems that JeffCom and PenCom could consider merging together into a regional technology architecture could include CAD, RMS, NG9-1-1, and digital logging/recording. Coupling these strategies with IP linkages between radio system infrastructures and radio console systems could allow JeffCom and PenCom to create a virtually consolidated organization while still maintaining operations as separate organizations operating from separate facilities. Systems such as the alarm board system operated at PenCom would not need to be shared or merged and could remain in place as is.

Governance Discussion

Similar to the previous Increased Interoperability alternative, this alternative would likely not require modification to the core interlocal agreements that govern either JeffCom or PenCom. As in the previous alternative, an interlocal agreement would be needed between JeffCom and

PenCom to define the levels of system integration and consolidation that will be undertaken, define how participatory investment and ownership sharing will be divided, identify the operational management and maintenance responsibility for each organization, and define the cost-sharing relationships for each of these.

Unlike the Increased Interoperability alternative, this approach places these core systems into a joint ownership and operational model rather than having separately owned/operated systems interconnected with each other. This will require a closer level of agency interaction to assure that systems are planned, acquired, implemented, operated, and maintained to the mutual satisfaction and economic benefit for both participants. Each agency may take on different roles for these kinds of jointly owned/operated systems. For example, one agency may take the lead for the acquisition and management/maintenance of one system environment (for example the CAD system) while the other agency takes on this leadership role for another system (for example an NG9-1-1 system).

Even though more complex, shared systems and joint ownership strategies of this nature are becoming increasingly popular across the country. Public safety agencies recognize that the aggregate costs of acquiring, implementing, operating, and replacing technology systems is becoming an increasing burden on their budgets. Even though labor costs often drive the largest portion of the overall costs of a communications center operation, these technology system lifecycle costs are becoming an increasing burden, particularly in times when budgetary growth is not possible.

Operational and Staffing Discussion

As mentioned in the previous Increased Interoperability discussion, the most significant operational impacts of shifting to shared systems will be seen in the CAD and RMS systems. As a shared system supporting multiple jurisdictions and agencies, there will need to be a certain degree of standardization across all those agencies. This will become most evident in the underlying 'tables' used within the systems for everything from call type codes used at call entry to the disposition and action codes used during an incident and within the reporting environment. While this may sound like a fairly straightforward process, experience has shown that this can become a complex body of work since these codes and abbreviations permeate the entire organization since CAD, RMS, and mobile are at the core of most everything else that is done.

Shared systems can also sometimes create an opportunity to reduce technology support staffing or at least help manage any near-term growth in technology support staffing. Collectively, JeffCom's staffing model for technology support includes two full-time personnel; PenCom is also supported with two full-time personnel. Collectively, this represents four full-time equivalents (FTE) of technology support staff. If core communications center technologies were the only factors these personnel were supporting, it is conceivable that once all the integration work is completed and systems are stabilized the total staffing could be lowered to three or maybe 3.5 FTEs. However, given that JeffCom also has responsibility for radio infrastructure operation and maintenance, it is likely that staffing reductions in technology support roles would not be viable unless the agencies were to proceed to either the Colocation alternative or the Full Consolidation/Regionalization alternative.

Technological Discussion

As with the Increased Interoperability alternative, CAD/mobile, NG9-1-1, and certain radio system elements are the most likely candidates for technology consolidation at the current time. It is also reasonable to pursue a shared logging/recording environment at the point in time where recording of IP data streams is also required. In addition to these systems, a Full Technology Consolidation approach could include the RMS systems as well so that the complete CAD/RMS/mobile environment was embodied in a single system design, licensing, and operational model.

Since both organizations use the same CAD/RMS/mobile vendor, there will be increased opportunity to negotiate and work with that vendor to define and execute a system consolidation strategy that encompasses all the equipment, licensing, and maintenance issues in a comprehensive manner. Similarly, since both organization's 9-1-1 telephone systems need to be replaced, it will be easier to define and execute a system acquisition for both facilities at the same time compared to purchasing on different timelines and then trying to consolidate the systems at a later time.

The biggest technological challenge to planning and implementing fully consolidated technology systems will be the issue of providing highly reliable connectivity between the two communications centers. Single connectivity paths are susceptible to a variety of natural and man-made interruptions, and it is too risky in the public safety world to have connectivity for access to core systems as CAD, NG9-1-1, and radio dependent on that single connectivity path. Conversely, providing truly redundant and geo-diverse connectivity is often quite expensive or not even possible given physical and geographical obstructions. In ADCOMM's opinion, creating and maintaining truly redundant and diverse connectivity between JeffCom and PenCom would likely be a very challenging undertaking and costs would likely exceed any operational and economic benefits from operating on shared systems. However, as technology changes, there may be opportunities such as fiber optic networks available in the future that might be used if cost effective.

Where redundant and diverse connectivity is not an option, some public safety technology vendors have begun to offer systems with core system redundancy that can be operated at non-co-located sites. Often these systems are set up with redundant servers and core technology is set up at two separate sites that are part of a multi-site system network. For example, many NG9-1-1 systems are now being implemented with redundant systems cores at separate PSAP locations and this redundant core system then serving three or more PSAPs. This approach allows all of the PSAPs in the NG9-1-1 network to serve as a 9-1-1 backup for any of the other PSAPs in the network. Similar redundant core strategies are becoming available in CAD, RMS, and IP logging/recording systems.

Given the geographic separation of the JeffCom and PenCom facilities and the impartibility of either of these centers using the other as a long-term backup/alternate operational site, the implementation of consolidated technology systems would require either a redundant/geo-diverse connectivity strategy or a redundant-core strategy.

Facility Discussion

It is unlikely that pursuit of a Full Technology Consolidation strategy would require any significant modification to current facilities. While equipment moves, adds, or changes would

need to take place, these could be accomplished in the current equipment spaces with careful planning and execution.

Fiscal Discussion

The biggest challenge to a Full Technology Consolidation strategy will be the up-front cost to implement the strategy and any ongoing operational cost to maintain the strategy. Since either diverse-path connectivity or diverse-core strategies would be needed to assure reliable up-time for both facilities, the implementation and operations costs could be quite significant, particularly for diverse-path connectivity that would also come with ongoing vendor costs for at least one side of the diversity. While it is likely that some overall cost reduction in system licensing costs may also materialize after the system consolidations are complete, these will likely be rather marginal savings that would not recover the cost of implementation for several to many years.

Alternatives If a New Facility Were Constructed

Since neither the JeffCom nor PenCom facilities have sufficient space that could be used for expansion to become a regional communications center for both Jefferson and Clallam counties, a new facility will need to be constructed to house either the Colocation model or the Full Consolidation/Regionalization model.

4. Colocation

In this alternative, JeffCom and PenCom would continue as separate organizations that would share a common facility and an array of shared technologies. This strategy would also most ideally be coupled with the Shared Management and Administration strategy to provide the benefits and efficiencies described in that section as well. This sharing of management and administrative responsibilities should also be extended to include the technology support staff as well so that the shared systems and facilities operate under a single, cohesive management and operational structure. Dispatch operations would continue under the separate organizational entities of JeffCom and PenCom.

Governance Discussion

This alternative would likely create the most complex governance relationships of all the alternatives discussed in this report. While each organization would continue to exist as it does today, an interlocal agreement would need to be created to deal with the sharing of management and administrative responsibilities and with all the details needed to effectively plan, design, finance, construct, and operate a jointly owned facility and jointly owned technologies.

Given the complexity of these issues, it is likely that the governance relationship would need to proceed in phases. The first phase could be structured to cover the sharing of costs and responsibilities for the planning, design, and cost estimating of the facility itself and all the required technology systems. Then, with these firm cost estimates in hand, the final governance agreement could be structured to cover the cost sharing and other responsibilities of the parties for the facility, the new systems, and the shared management and administrative staffing.

Since both of the existing organizations would remain in place, and since the operations would not be merged together but only collocating their operations in a shared facility, the JeffCom

Administrative Board and the PenCom Advisory Board would also still remain in operation to guide the execution of their independent dispatch responsibilities.

Operational and Staffing Discussion

As discussed above, it would be advisable to combine the management, administrative, and technology support staffing for this Colocation alternative. This would allow these elements to be closely aligned and provide integrated support levels for the shared facility and technology systems. By operating in a common facility and on common systems, this will likely allow the total staffing for technology support to be reduced by 0.5 to one FTE overall. Staffing for dispatch and records activities would remain as they are for the separate operational activities of JeffCom and PenCom (see Exhibit 2).

Category	JeffCom	PenCom
Director	1 director leading both organizations	
Office Manager	1 office manager supporting both organizations	
Dispatch Supervisor	2	3
Dispatcher — Full Time	9	15
Dispatcher — Part Time	1	0
Records / Warrant Staff	1	1
Technology Support Staff	3 to 3.5 total tech support staff	

EXHIBIT 2
Staffing Configuration — Colocation Alternative

There will likely be some opportunities to align various operational processes and practices as a part of planning colocated operations, particularly when it comes to processes driven by working on a common CAD/RMS/mobile environment and using a common 9-1-1 and general telephony phone system. Since the Colocation alternative anticipates that a new building needs to be part of successfully pursuing this alternative, there will be ample time to identify and work out these operational adjustments during the planning and construction cycle for the facility.

Technological Discussion

Since this Colocation alternative is predicated on a new facility being constructed to have adequate space to fully support colocated operations, it is anticipated that some of the existing technology systems, particularly the 9-1-1 telephone systems and quite likely the CAD/RMS systems/workstations, will require certain degrees of replacement or refreshment prior to the new facility being ready for service. Therefore, technology strategies and cost estimates for the new facility are based on the assumptions that these refreshments proceed as needed prior to the new facility being readied for service.

9-1-1 and General Telephony

With recently purchased VIPER 9-1-1 telephone systems, a new center could use portions of the existing telephone systems assuming a transition plan could be worked out. For example, a minimum amount of new common equipment could be purchased and then the existing workstations moved to the colocated facility. This will require some planning since it is not cost effective to simply purchase a whole new telephone system and surplus the systems recently purchased. However, it also is not possible to simply shut down the existing 9-1-1 centers and move the equipment to the new facility either.

CAD/RMS/Mobile

A similar strategy is anticipated for the migration of the CAD/RMS/mobile environment, with an initial investment in system equipment and workstations to gain limited operational capacity and then use a workstation relocation strategy to populate the remaining positions at the new facility.

Radio Console System

If at all possible, it is recommended that the current radio console systems be used until the move to the new facility. This will allow the complete new radio console system to be implemented and tested at the new facility and made ready for colocated operations.

Logging Recording Systems

The existing Stancil logging recorder systems can be upgraded as required for regionalization.

Console Furniture Systems

The new facility will require new dispatch console furniture so that system installation and integration work can be accomplished effectively prior to occupying the facility. For the initial cost estimating, it has been assumed that there would be a total of 10 positions initially placed in the facility, four each to replicate the current environment at each of the separate facilities and two spare positions to support training, special events, or maintenance relocation needs. The facility would be sized for a total position count of 12 and the two extra furniture positions would be installed at time of construction and then populated with technology equipment when the future need required.

Backend Facility and Comm Room Systems

In addition to the core systems such as 9-1-1, CAD/RMS/mobile, radios, and logging recording, there will be a need to implement a variety of backend networking and supporting systems, servers, monitors, time synchronization, and similar systems to support the overall facility.

Overall, it is estimated that a full technological fit-out of a new facility will require an investment of just under \$2.1 million. Exhibit 3 shows how this number breaks down across the various technology systems and activities.

Facility Discussion

ADCOMM has worked with a number of agencies similar in size to the combined operations of JeffCom and PenCom and has developed a preliminary space plan estimate for a free-standing facility to meet the needs of the Colocation alternative. For this estimate, we have made several space-planning assumptions:

- We have assumed that in conjunction with a Colocation strategy the jurisdictions would also be pursuing the Shared Management and Administration strategy, so the administrative spaces have been sized with this smaller staffing in mind.
- Further, it is also assumed that the new colocated operation is operating on shared technology infrastructures, so this also helps reduce space needs since redundant systems do not need to be installed for each individual operation.
- Finally, it has been assumed that the current records and warrants work would continue to be conducted as part of the communications center operational mix, so space has been included for this staffing and their operational storage needs.

Technology Cost Estimates for a New Facility			
	System	Assumptions	CAPEX Estimate
	9-1-1 and General Telephony (10 positions)	Add 1 position and reconfigure existing systems and positions	\$ 35,000
	CAD/RMS/Mobile (10 positions)	New core equipment and 4 operational positions to begin operations then move operational positions from existing operations (would end up with 2 spare positions if 10 positions equipped initially)	\$ 350,000
	Radio Console System (10 positions)	Assume all new at \$50K per position all-in	\$ 500,000
	Radio System Links and Interconnections	Assume all new	\$ 250,000
	Logging/Recording System	Upgrade and reconfiguration of existing equipment	\$ 20,000
	Console Furniture Systems (12 positions)	Assume all new	\$ 180,000
	Large Screen Displays and integration system	Assume 8 screens for various CAD, 9-1-1, mapping, weather, TV or other use	\$ 23,000
	Networking and Organizational Servers/Systems including administrative	Assume all new	\$ 100,000
	Master Time Synch and Displays	Assume all new	\$ 15,000
	System integration planning and oversight	Assume 8 weeks of total effort	\$ 80,000
			\$ 1,553,000

EXHIBIT 3
Technology Cost Estimates for a New Facility

Exhibit 4 outlines the overall space requirements for a free-standing facility to support the Colocation alternative. If the new communications center were to be constructed as a part of a larger public safety facility development effort (such as for a new fire or police station), some of the facility infrastructure spaces could be integrated with the balance of the building and reduce to some degree the total square footage attributable to the communications center.

Since public safety communications centers are considered essential facilities from a building code perspective, there are a number of seismic and other risk mitigation measures required that can drive up overall facility construction costs. In addition, there are industry standards and best practices that influence their design and construction as well (most notably NFPA 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems) and typically these drive in costs as well. While specific construction cost estimates need to be informed and influenced by a wide variety of factors such as the actual parcel location, surrounding structures and hazards, and a plethora of utility accessibility considerations, it is very difficult to accurately estimate construction costs at this stage of a project development.

However, we have seen enough projects recently constructed in this region and across the country to form an educated estimate of facility design and construction costs reaching at least \$500 per square foot when external influencing factors do not bring extraordinary complexities and costs. At this estimated cost, the facility to house the Colocation alternative would likely cost just over \$3.6 million to establish (see Exhibit 5).

High-level Facility Cost Model for Colocation Alternative		
Administrative Spaces	Area in Square Feet	
Secure Entry and Lobby	100	
Directors Office	150	
Office Manager (or similar role needing confidentiality)	120	
Administrative Support Staff Office Area (open office area to accommodate multiple cubicles for future growth)	250	
Records / Warrants Staff	300	
Filing/Copy Work Room	250	
Conference Room	350	
Adhub Unisex Restroom	100	
Total Space in Administrative Functions		1620
Operational Spaces		
Communications Room (sized to accommodate growth up to 12 positions at 130 s.f. per position)	1560	
Shared office for Supervisors (to perform private work and conduct private conversations with employees)	250	
Men's and Women's Employee Restrooms	400	
Quiet Room	64	
Kitchen and Break Room	300	
Total Space for Operational Functions		2574
Technology and Facility Support Spaces		
Technology Equipment Room	600	
Technology Support Staff	350	
Facility Mechanical Room and Janitorial Space/Supplies	350	
Facility Electrical Room	300	
Total Space for Technology and Facility Support		1600
Total Estimated Net Facility Size		5794
Gross-up factor for circulation, MEP spaces and design/layout inefficiencies	25%	1449
Total Estimated Gross Facility Size		7243

EXHIBIT 4
High-Level Facility Cost Model for Colocation Alternative

Gross Facility Size for Cost Estimating	Cost per Square Foot	7243 Total Estimated Cost
Estimated construction cost for the facility including all A&E costs, general FF&E, escalation, and contingencies (operational console furniture included in technology systems cost estimate)	\$ 500	\$3,621,250

EXHIBIT 5
Estimated Construction Cost

Fiscal Discussion

Creating a new facility to house the Colocation alternative will require a total capital expense investment (CAPEX) of approximately \$5.7 million to fully construct and equip. The \$3.6 million in facility construction costs would likely need to be financed over at least a 20-year period of time and depending on interest rates at the time the project was funded could require something in the neighborhood of \$290,000 in annual debt service costs at an assumed 5 percent interest rate.

Capital investments in technology systems should typically not be financed over longer than 7 years since many of these systems will need to undergo equipment replacement cycles within this timeframe. A technology investment of approximately \$2.1 million financed over a 7-year period of time would require something in the neighborhood of \$363,000 in annual debt service costs at an assumed 5 percent interest rate. In addition, beginning in approximately the fifth year, there will be a need to make cyclical capital investments in technology system refreshments and workstation lifecycle replacements. These investments could be managed through establishing routine annual replacement reserve contributions through the annual operating budget and rate setting process or through cyclical debt funding mechanisms.

Collectively, the annual debt service costs estimates under these assumptions would be as shown in Exhibit 6, which reflects the expected debt service costs for the facility, the debt service costs for the initial technology deployment for the new facility, and the expected annualized costs for technology system refreshments.

5. Full Consolidation/Regionalization

In this alternative, JeffCom and PenCom would be merged into a single regionalized public safety dispatch organization. This alternative captures all of the facility and technology economies of the Colocation alternative while also allowing the new organization to plan and execute staffing models that are adapted to the combined workload of the regionalized operation rather than as separate individual entities each staffing to their own needs levels.

Governance Discussion

Creation of a newly constituted regionalized governing process for a two-county emergency communications organization will obviously have a number of complexities, but these will not be much more complex than the issues the parties have not already successfully faced in the creation of their existing organizations. As with any multi-government interlocal agreement, the keys to a successful relationship will need to be founded on clearly defined responsibilities for each of the participating jurisdictions, clearly defined responsibilities for the communications center director and their staff, and clearly defined financial models to guide the creation and sustainment of the organization.

The new governance model would likely mirror in some respects the processes currently used by each of the existing organizations, with a multi-layered governance structure that engages representatives from the participating agencies at both the policy and operational levels. The most successful models that ADCOMM has experienced in multi-jurisdictional settings typically are composed of three layers of organizational structure:

Estimated Debt Service Costs for CAPEX Investments to Establish a new Colocation Facility			
Year	Facility Debt Service Costs	Technology Debt Service Costs (See Note 1)	Total Debt Service Costs
1	\$290,578	\$268,389	\$558,968
2	\$290,578	\$268,389	\$558,968
3	\$290,578	\$268,389	\$558,968
4	\$290,578	\$268,389	\$558,968
5	\$290,578	\$268,389	\$558,968
6	\$290,578	\$268,389	\$558,968
7	\$290,578	\$268,389	\$558,968
8	\$290,578	\$40,000	\$330,578
9	\$290,578	\$40,000	\$330,578
10	\$290,578	\$40,000	\$330,578
11	\$290,578	\$40,000	\$330,578
12	\$290,578	\$40,000	\$330,578
13	\$290,578	\$40,000	\$330,578
14	\$290,578	\$40,000	\$330,578
15	\$290,578	\$40,000	\$330,578
16	\$290,578	\$40,000	\$330,578
17	\$290,578	\$40,000	\$330,578
18	\$290,578	\$40,000	\$330,578
19	\$290,578	\$40,000	\$330,578
20	\$290,578	\$40,000	\$330,578
Total Aggregate Costs with Interest	\$5,811,569	\$2,398,724	\$8,210,294

Note 1 - Estimates in Years 8 and beyond are for technology system refreshments and workstation lifecycle replacements.

EXHIBIT 6
Estimated Debt Service Costs

- A policy level board that would guide the creation and administration of the communications organization and assure that this organization is conducting its business in conformance with the needs and interests of the participating jurisdictions.
- An operations level board that would guide the creation and oversight of the operational policies and practices of the organization to assure that the operational needs of the Law Enforcement and Fire/EMS agencies are being met. It is also common to see this operations level body also have two subcommittees with one focusing on Law Enforcement issues and one focusing on Fire/EMS issues. Often these subcommittees can work on issues independently if they involve only their discipline area, but it is also advisable to have the

operational level board meet as a whole periodically to help assure that both disciplines better understand the needs and interests of the other.

- Finally, the organization itself would be led by an Executive Director. This individual, and the staff they lead, would be accountable to the policy level board for the overall administration and leadership of the organization and to the operations level board for the ongoing delivery of operational services to the agencies being served.

One of the biggest challenges in creating a governance structure for a large multi-jurisdictional communications entity, particularly one serving multiple counties, is establishing the size of the policy and operational boards. While there is a natural instinct to include all participating jurisdictions in the process, this often yields organizational structures that become too large to work effectively, particularly at the policy board level.

One strategy that has worked successfully in some circumstances is to constrain the size of the policy level board to a single representative from each of the counties, municipalities, or other participating governmental entities that are willing to take on an "ownership" role in the new organization. Often this ownership role is characterized by a deeper obligation in meeting the initial and ongoing capital expense requirements for the new organization compared to other jurisdictions that operate more as "subscribers" to the services of the organization on a fee-for-service basis but that have no core funding obligations other than this year-to-year fee-for-service relationship.

In circumstances such as Jefferson and Clallam counties, where there are a number of fire districts and other smaller jurisdictions in the mix, it is often the situation that these organizations do not have the fiscal capacity to step up to the challenges of funding the up-front or ongoing capital costs of a regionalized communications center. However, they still have a significant policy interest in how capital and operational expenses are established since these costs typically have direct impacts on the year-to-year costs of the service models of the organization which in turn directly impact the fees they are charged for services. Therefore, in addition to the policy level board being composed of the major jurisdictions with ownership interests in the organization, this board often includes one or more members from the community of 'subscriber' agencies to represent these interests in policy board matters.

At the operational governance level, it is most common to find a fully inclusive participation strategy with representatives participating from each of the agencies being served by the regionalized communications center. As mentioned earlier, it is often the case that a Law Enforcement subcommittee is formed to allow periodic meeting and consideration of operational issues directly affecting Law Enforcement dispatch and support activities. Similarly, the Fire/EMS community will have issues that are best addressed in their own subcommittee. But it is important to also have the full operational level board meet periodically to allow the issues and needs being faced in each of the discipline areas to be better understood by all of the operational leaderships of the participating jurisdictions.

Operational and Staffing Discussion

Since the Full Consolidation/Regionalization alternative would create a single new multi-county emergency communications organization, the previously discussed efficiencies related to shared administration and shared technology support would also be realized in this model as well. The key difference would be in how the operational staffing was organized to handle the

combined workload of the two current centers. To estimate what this future staffing model might look like, it is important to first look at what the 9-1-1 and other call receiving workloads would look like for the combined operations. While call receiving is certainly not the only workload that will influence overall staffing, it is an important first consideration since being able to quickly and efficiently answer incoming calls is the most important first step in an efficient call processing and dispatching workflow.

Based on total telephone call volume data recently received from PenCom and JeffCom and experiences from other jurisdictions, Exhibits 7 and 8 summarize the potential call volumes for each of the existing communications centers on a day-of-week basis.

With these insights on average call volumes for the busier days of the week, it is then possible to estimate hourly call volumes based on previously observed call volume proportionality in similar communications center settings. Exhibit 9 shows what the expected call volumes might look like during the busiest day of the week (in this case Fridays).

Exhibits 10, 11, and 12 show the estimated performance for various staffing levels versus call volumes. The call calculations are done using Erlang C basic calculations expanded to show the average wait times and other statistics plotted versus staffing. One important factor that is clearly shown is that the delays increase exponentially so increases in call volume have non-linear increases in delays. For example, with three staff, at the 25-calls-per-hour rate only about 3 percent of the calls will need to wait. At 50 calls per hour, the percentage rate jumps to 18 percent. Double the call volume resulted in the percentage that wait increasing by six. This is why a short-term increase in calls, such as during a storm or apartment fire, can result in very long delays in answering the phone at lower staff levels.

Estimating Daily and Hourly Call Volumes							
JeffCom Data			9-1-1 Emergency Phone Traffic		10-Digit Non-Emergency Phone Traffic		Combined Daily Average Phone Traffic
			2014 JeffCom 911 Total Calls	Average Per Day (Daily Total/52)	2014 JeffCom 10-Digit Total Calls	Average Per Day (Daily Total/52)	
Typical Day of Week Distribution			21,118		14,895		
Monday	14.2%		2,933	56	2,172	42	98
Tuesday	13.1%		2,773	53	1,939	37	91
Wednesday	13.8%		2,897	56	2,069	40	96
Thursday	14.9%		3,036	58	2,330	45	103
Friday	15.2%		3,149	61	2,333	45	105
Saturday	15.6%		3,388	65	2,223	43	108
Sunday	13.2%		2,942	57	1,829	35	92
	100%		21,118	406	14,895	286	693
							693

EXHIBIT 7
Estimating JeffCom Daily and Hourly Call Volumes

Estimating Daily and Hourly Call Volumes						
PenCom Data		9-1-1 Emergency Phone Traffic		10-Digit Non-Emergency Phone Traffic		Combined Daily Average Phone Traffic
		2014 PenCom 911 Total Calls	Average Per Day (Daily Total/52)	2014 PenCom 10-Digit Total Calls	Average Per Day (Daily Total/52)	
Typical Day of Week Distribution		36,350		129,734		
Monday	14.8%	5,347	103	19,242	370	473
Tuesday	15.0%	5,127	99	19,808	381	480
Wednesday	14.9%	5,142	99	19,659	378	477
Thursday	14.8%	5,163	99	19,484	375	474
Friday	15.4%	5,532	106	19,985	384	491
Saturday	13.4%	5,210	100	17,061	328	428
Sunday	11.6%	4,829	93	14,495	279	372
	100%	36,350	699	129,734	2,495	3,194

EXHIBIT 8
Estimating PenCom Daily and Hourly Call Volumes

Knowing the estimated hourly call arrival rates allow us to consider the potential call answering and waiting time experiences of callers. In the chart below, the expected performance at three, four, or five personnel available to answer calls is modeled against call volumes from 35 to 50 per hour. At busy-day/busy-hour call volumes in the 50 calls per hour range, having four personnel available to answer calls would result in about 10 percent of calls experiencing a wait time (see Exhibit 10).

In Exhibit 11, the average wait times for the same modeling scenarios are shown. Here, at the same 50 calls per hour and four personnel available to answer calls, the average wait time would be just under 6 seconds, which is well within the most often used industry standard of answering 90 percent of all calls within 10 seconds or less.

But it is also important to understand the potential worst case situation under the same modeling scenarios. Since average speed of answer and average wait times are made up of some calls that are answered either faster or slower than the average, it is important to understand the worst-case side of things as well. As shown in Exhibit 12, you can see that at the same 50 calls per hour having only four personnel answering calls could result in some calls having a wait time of 50 seconds or more.

Combined Estimated Busy-Day Telephone Call Volumes for Regionalized Model					
	Annual Calls per Hour	Combined Hourly Call Distribution	JeffCom	PenCom	Combined Total
Hour		%	105	491	596
0000	4,805	2.4%	2.59	11.67	14.17
0100	3,932	1.9%	2.05	9.55	11.60
0200	3,504	1.7%	1.83	8.51	10.34
0300	2,940	1.5%	1.53	7.14	8.67
0400	2,389	1.2%	1.25	5.80	7.05
0500	2,440	1.2%	1.27	5.92	7.20
0600	3,777	1.9%	1.97	9.17	11.14
0700	6,302	3.1%	3.29	15.30	18.59
0800	9,102	4.5%	4.75	22.10	26.85
0900	10,766	5.3%	5.62	26.14	31.76
1000	11,527	5.7%	6.01	27.99	34.00
1100	12,136	6.0%	6.33	29.47	35.80
1200	12,056	6.0%	6.29	29.27	35.56
1300	12,770	6.3%	6.66	31.01	37.67
1400	13,088	6.5%	6.83	31.78	38.61
1500	13,367	6.6%	6.97	32.46	39.43
1600	13,247	6.6%	6.91	32.17	39.08
1700	12,827	6.3%	6.69	31.15	37.84
1800	10,958	5.4%	5.72	26.61	32.33
1900	10,244	5.1%	5.34	24.87	30.22
2000	9,217	4.6%	4.81	22.38	27.19
2100	7,918	3.9%	4.13	19.23	23.36
2200	6,949	3.4%	3.63	16.87	20.50
2300	5,825	2.9%	3.04	14.14	17.18

EXHIBIT 9

Combined Estimated Telephone Call Volumes for the Regionalized Model

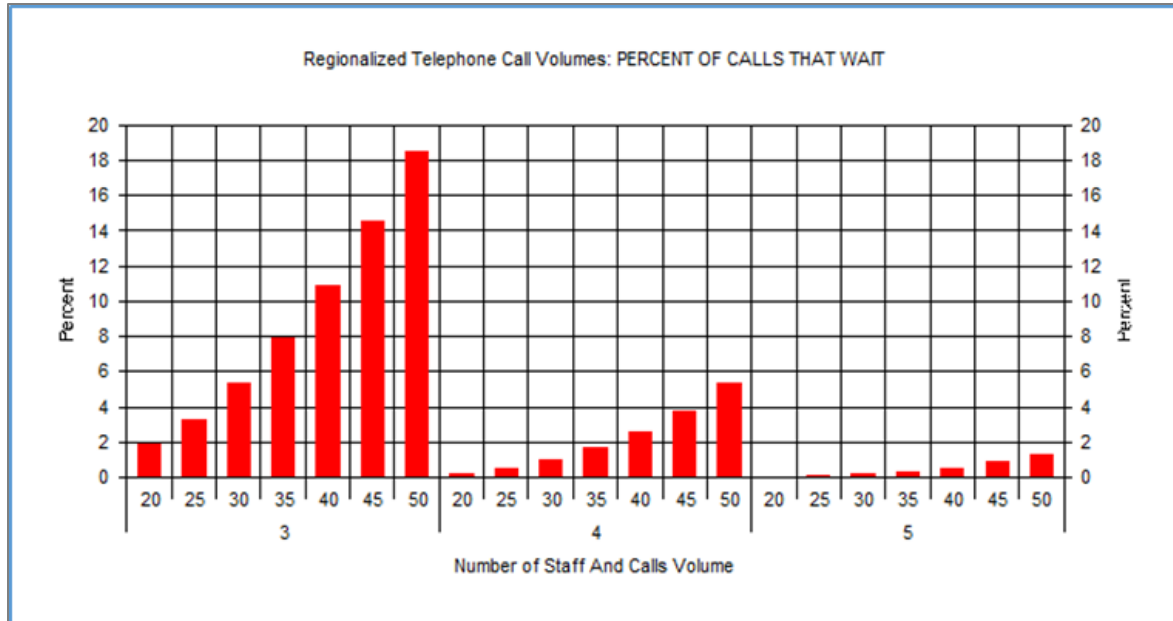


EXHIBIT 10
Regionalized Telephone Call Volumes — Percent of Calls That Wait

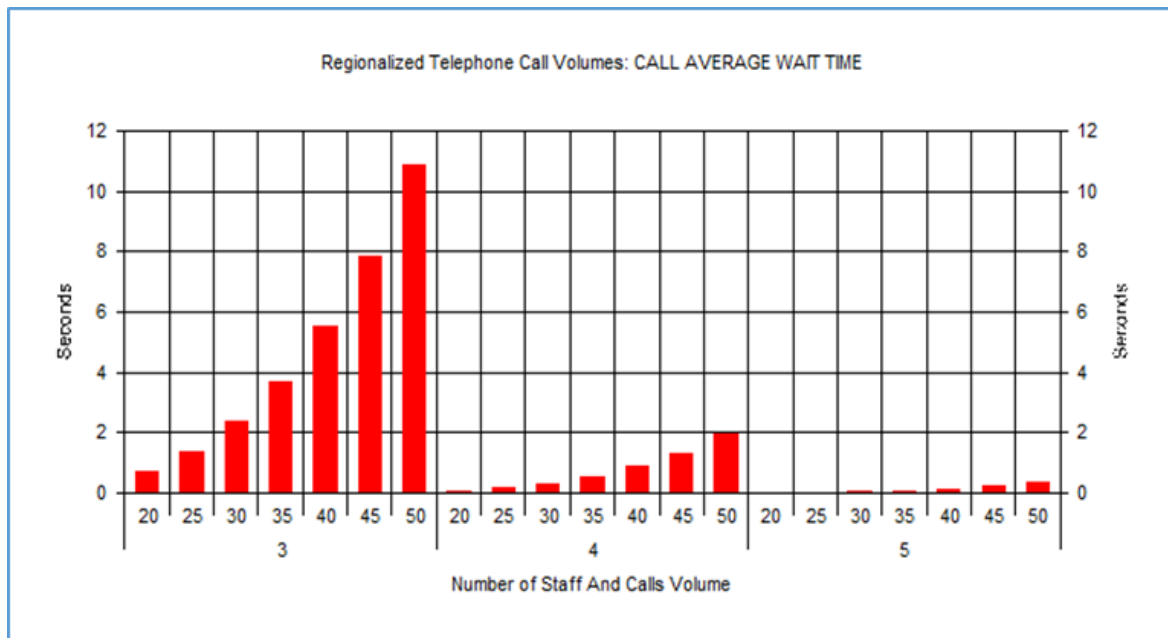
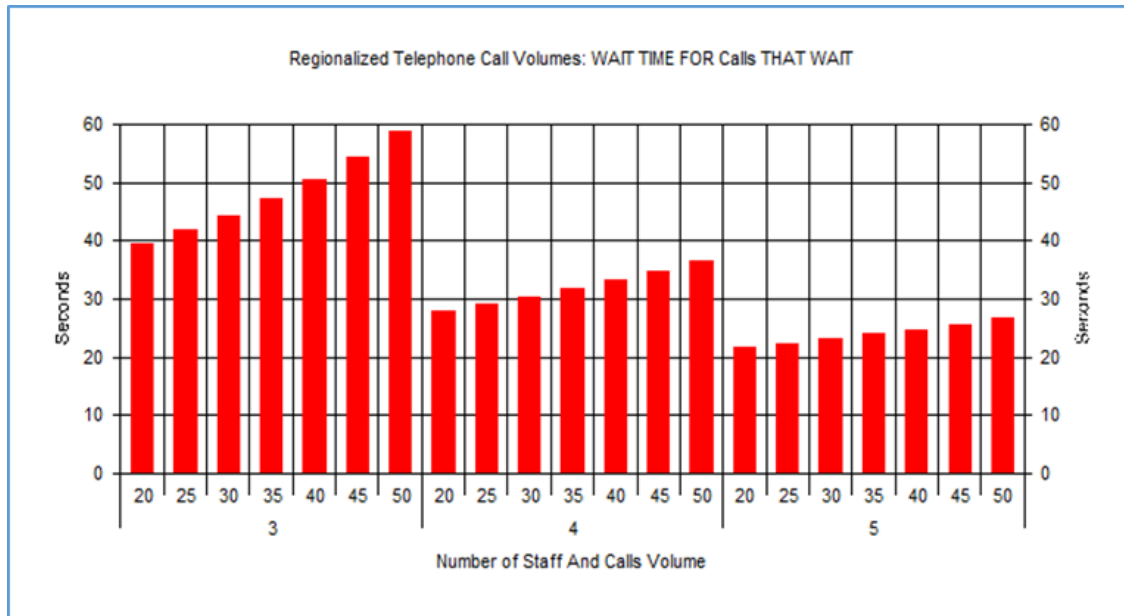


EXHIBIT 11
Regionalized Telephone Call Volumes — Average Wait Time

**EXHIBIT 12**

Regionalized Telephone Call Volumes — Wait Time for Calls That Wait

In all three of these models, having a fourth person available to answer incoming calls significantly improves overall busy-hour performance. For example, the percentage of calls that wait could drop below 6 percent and the average wait times would drop to about 2 seconds. Potential worst-case wait times could still reach something like 35 seconds, but this is significantly better than the experience if only three personnel were available to answer calls.

For the slower hours of any day of the week, for example when call volumes are in the 25-calls-per-hour range, having three personnel available to answer calls would likely result in about 4 percent of calls experiencing an average wait time of 2 seconds or less and worst-case waits of up to 40 seconds. In the very slow hours of the day when few calls are arriving, the required staffing levels will be more influenced by the dispatch position staffing patterns that are established rather than call answering performance.

The overall staffing model for a regionalized organization will also be influenced by the number of working hours each FTE can produce. This is influenced by a combination of annual leave, sick leave, and other off-duty times established for the new organization. Based on current conditions at both PenCom and JeffCom, it is estimated that for each dispatch position requiring 7X24 staffing the new organization will need to employ 5.5 FTEs, as shown in Exhibit 13.

Estimated Net Available Working Hours		
a	Compensated Hours Per FTE	2080
	Hours Away From Work	
b	Holiday Hours (PenCom CBA, JeffCom CBA is 88)	96
c	Average Vacation Hours (est based on ranges in both CBAs)	140
d	Sick Leave Hours (96 hours in both CBAs - assumes 70% utilization)	67.2
e	Training (8 per quarter - best practice)	32
f	Total Hours Away from Work (b+c+d+e)	(335)
g	Net Total Hours Available to be at Work (a-f)	1745
	Meals and breaks while on duty (assume 30 min meal and 2-15 minute breaks) for approx 143 working days with 12 hour shifts	(145)
	Net Available Hours Per FTE to cover a 24 Hour Position (g-h)	1599
j	Total Hours needed to cover a 24 Hour Position (24x365)	8760
k	Net Number of FTE's needed to cover a 24 Hour Position with no assumption for turnover, so vacancies often result in overtime (j / i)	5.5

EXHIBIT 13
Estimated Net Available Working Hours

With these assumptions in place, it is possible to estimate the overall staffing mix for a regionalized operation. To model overall staffing, several other assumptions have been made:

- The model shown in Exhibit 14 takes into consideration both the efficiencies in shared management and administration as well as efficiencies in technology support staffing.
- The model shown in Exhibit 14 also assumes that supervisors would not be on duty 7X24 but rather that a new position called something like a 'lead' or 'communications training officer' (CTO), or 'assistant supervisor' be created to pair with each supervisor so that between each pairing at least one of them is on duty 7X24 and when both are on duty they have added bandwidth to deal with other supervisory and training responsibilities. These supervisors and leads would also be responsible for working positions as needed so that staffing levels are sufficient to meet both the call answering goals established for the organization and the dispatching position minimums established for the organization.
- The model also assumes that minimum staffing for the communications center would be four personnel on duty (three telecommunicators and the supervisor/lead). Due to the cyclical nature of scheduling personnel, there will likely be times when more than four are on duty just with this minimum staffing available.
- Finally, the model also assumes that there would be an additional full FTE worth of staffing hours in the model to allow flexibly staffing the busiest hours of the busiest days with five or more personnel on duty. Given the high variability between slow days and busy days, and slow hours and busy hours within each of these day-to-day scenarios, it is important to not have all staffing tied to fixed 12-hour schedules so that the organization can staff to meet the actual workload challenges.

Exhibit 14 shows the estimated total staffing for a regionalized operation. At an estimated 38 total FTEs in the organization, this is a slight reduction for the 41 personnel in the currently separate operational models. The model would place 30 personnel in direct operations roles (supervisor, lead, or telecommunicator) whereas current staffing models at the two centers have a total of 31 personnel in these roles (counting part-time personnel at 50 percent of their actual body count).

Estimated Staffing Model for Regionalized Operation (41 total today counting PT staff at 50% of the actual body count)				
		# needed	Calculated Count for full 24X7 coverage	Suggested Actual Count
	Shift Supervisors	1	5.5	4
	Telecommunicators -Lead/CTO/Asst. Supv.	1	5.5	4
	Telecommunicators - Minimum Staffing	3	16.4	17
	Telecommunicators - Busy hours and relief	1	5.5	5
	Director	1	1	1
	Operations Manager	1	1	1
	Office Manager	1	1	1
	Records/Warrants Staff	2	2	2
	IT Staff	3	3	3
			40.9	38.0

EXHIBIT 14
Estimated Staffing Model for the Regionalized Operation

Technological Discussion

The technology assumptions for a fully consolidated/regionalized organizational strategy are essentially the same as for the Colocation alternative. The only notable difference is that the facility could probably be sized slightly smaller, with a dispatch operational area composed of only 10 positions rather than the 12 identified in the Colocation alternative (see Exhibit 15). This lower position count is the result of the ability to more fully integrate the operations in a regionalized operational strategy rather than having to maintain adequate position counts and flexibility to allow each individual organization to staff to their own individual level of need fully independent of the other colocation partner.

Facility Discussion

The facility characteristics for a fully regionalized organization are essentially the same as for the Colocation alternative. The only adaptation would be a slightly smaller footprint for the main communications operational space since the total number of console positions could be reduced from 12 to 10. The estimated facility space plan for the Regionalized alternative is shown in Exhibit 16.

Technology Cost Estimates for a New Facility			
	System	Assumptions	CAPEX Estimate
	9-1-1 and General Telephony (8 positions)	Add 1 position and reconfigure existing systems and positions	\$ 35,000
	CAD/RMS/Mobile (8 positions)	New core equipment and 3 operational positions to begin operations then move operational positions from existing operations (would end up with 3 spare positions if 8 positions equipped initially)	\$ 300,000
	Radio Console System (8 positions)	Assume all new at \$50K per position all-in	\$ 400,000
	Radio System Links and Interconnections	Assume all new	\$ 250,000
	Logging/Recording System	Upgrade and reconfiguration of existing equipment	\$ 20,000
	Console Furniture Systems (10 positions)	Assume all new	\$ 150,000
	Large Screen Displays and integration system	Assume 8 screens for various CAD, 9-1-1, mapping, weather, TV or other use	\$ 23,000
	Networking and Organizational Servers/Systems including administrative	Assume all new	\$ 100,000
	Master Time Synch and Displays	Assume all new	\$ 15,000
	System integration planning and oversight	Assume 8 weeks of total effort	\$ 80,000
			\$ 1,373,000

EXHIBIT 15
Technology Cost Estimates for a New Facility

Fiscal Discussion

Creating a new facility to house the Regionalized alternative will require a total CAPEX of approximately \$5.4 million to fully construct and equip. The \$3.5 million in facility construction costs would likely need to be financed over at least a 20-year period of time and depending on interest rates at the time the project was funded could require something in the neighborhood \$280,000 in annual debt service costs at an assumed 5 percent interest rate.

Capital investments in technology systems should typically not be financed over longer than 7 years since many of these systems will need to undergo equipment replacement cycles within this timeframe. A technology investment of approximately \$1.9 million financed over a 7-year period of time would require something in the neighborhood of \$323,000 in annual debt service costs at an assumed 5 percent interest rate. In addition, beginning in approximately the fifth year, there will be a need to make cyclical capital investments in technology system refreshments and workstation lifecycle replacements. These investments could be managed through establishing routine annual replacement reserve contributions through the annual operating budget and rate setting process, or through cyclical debt funding mechanisms.

Collectively, the annual debt service cost estimates under these assumptions would be as shown in Exhibit 17, which reflects the expected debt service costs for the facility, the debt service costs for the initial technology deployment for the new facility, and the expected annualized costs for technology system refreshments.

Regionalized operations could potentially produce a limited amount of compensation and benefit cost savings due to the slightly more efficient staffing model. Exhibit 18 shows how the

projected staffing model could produce approximately \$123,000 in annual operating savings compared to current cost profiles for the separate organizations.

High-level Facility Cost Model for Colocation Alternative		
Administrative Spaces	Area in Square Feet	
Secure Entry and Lobby	100	
Directors Office	150	
Office Manager (or similar role needing confidentiality)	120	
Administrative Support Staff Office Area (open office area to accommodate multiple cubicles for future growth)	250	
Records / Warrants Staff	300	
Filing/Copy Work Room	250	
Conference Room	350	
Adnub Unisex Restroom	100	
Total Space in Administrative Functions		1620
Operational Spaces		
Communications Room (sized to accommodate growth up to 10 positions at 130 s.f. per position)	1300	
Shared office for Supervisors (to perform private work and conduct private conversations with employees)	250	
Men's and Women's Employee Restrooms	400	
Quiet Room	64	
Kitchen and Break Room	300	
Total Space for Operational Functions		2314
Technology and Facility Support Spaces		
Technology Equipment Room	600	
Technology Support Staff	350	
Facility Mechanical Room and Janitorial Space/Supplies	350	
Facility Electrical Room	300	
Total Space for Technology and Facility Support		1600
Total Estimated Net Facility Size		5534
Gross-up factor for circulation, MEP spaces and design/layout inefficiencies	25%	1384
Total Estimated Gross Facility Size		6918

EXHIBIT 16
High-Level Facility Cost Model for Colocation Alternative

Year	Facility Debt Service Costs	Technology Debt Service Costs (See Note 1)	Total Debt Service Costs
1	\$277,539	\$237,282	\$514,821
2	\$277,539	\$237,282	\$514,821
3	\$277,539	\$237,282	\$514,821
4	\$277,539	\$237,282	\$514,821
5	\$277,539	\$237,282	\$514,821
6	\$277,539	\$237,282	\$514,821
7	\$277,539	\$237,282	\$514,821
8	\$277,539	\$40,000	\$317,539
9	\$277,539	\$40,000	\$317,539
10	\$277,539	\$40,000	\$317,539
11	\$277,539	\$40,000	\$317,539
12	\$277,539	\$40,000	\$317,539
13	\$277,539	\$40,000	\$317,539
14	\$277,539	\$40,000	\$317,539
15	\$277,539	\$40,000	\$317,539
16	\$277,539	\$40,000	\$317,539
17	\$277,539	\$40,000	\$317,539
18	\$277,539	\$40,000	\$317,539
19	\$277,539	\$40,000	\$317,539
20	\$277,539	\$40,000	\$317,539
Total Aggregate Costs with Interest	\$5,550,781	\$2,180,971	\$7,731,752

Note 1 - Estimates in Years 8 and beyond are for technology system refreshments and workstation lifecycle replacements.

EXHIBIT 17
Estimated Debt Service Costs

Estimated Staffing Model for Regionalized Operation (41 total today counting PT staff at 50% of the actual body count)						
	# needed	Calculated Count for full 24X7 coverage	Suggested Actual Count	Estimated Average Compensation per Position	Total Cost of Compensation for the Model	
Shift Supervisors	1	5.5	4	\$ 55,000	\$ 220,000	
Telecommunicators -Lead/CTO/Asst. Supv.	1	5.5	4	\$ 50,400	\$ 201,600	
Telecommunicators - Minimum Staffing	3	16.4	17	\$ 48,000	\$ 816,000	
Telecommunicators - Busy hours and relief	1	5.5	5	\$ 48,000	\$ 240,000	
Director	1	1	1	\$ 75,000	\$ 75,000	
Operations Manager	1	1	1	\$ 65,000	\$ 65,000	
Office Manager	1	1	1	\$ 40,000	\$ 40,000	
Records/Warrants Staff	2	2	2	\$ 48,000	\$ 96,000	
IT Staff	3	3	3	\$ 65,000	\$ 195,000	
		40.9	38.0		\$ 1,948,600	
Estimated Total Benefits Load at PenCom's Current Rate				40%	\$ 778,004	
Total Cost of Compensation					\$ 2,726,604	
Total Combined Compensation and Benefits Today is					\$ 2,849,875	
So the Regionalized Model saves approximately this amount per year compared to current Operations					\$ 123,271	

EXHIBIT 18
Estimated Staffing Model for Regionalized Operation

Rankings and Recommendations

Ranking of Alternatives

The RFP that launched this examination of consolidation alternatives identified the following goal statement for the work:

The goal of this study is to determine the feasibility of providing regionalized 9-1-1 service to Clallam and Jefferson Counties, with the intent of improving efficiency while sustaining or improving effectiveness. "Improving efficiency" is defined as reducing operating costs, minimizing radio channel congestion, and streamlining supervisory and administrative support channels. "Sustaining or improving effectiveness" is defined by sustaining or improving call-handling times, operator error rates, and radio coverage.

This report provides an evaluation of five shared services or consolidation alternatives, each with its own set of characteristics and abilities to meet these goals. The alternative that makes the largest strides to reaching the identified goals would be alternative No. 5, Full Consolidation/Regionalization. This approach would not only allow the currently separate operations to maximize their administrative and operational efficiencies but create a setting where future growth can be more easily adapted to and managed. Unfortunately, it is also one of the most complicated and expensive of the alternatives to implement since significant facility and technology investments would be needed to create the new operation.

Close behind this would be alternative No. 4, Colocation. This approach would allow the economic and administrative efficiencies of shared management and shared technology to be realized but not require the complex governance work needed to create a newly formed multi-count multi-jurisdictional dispatch organization. While slightly more expensive than the Consolidation/Regionalization alternative, the difference is marginal and it may be judged that the complexities of creating a new regionalized organization are just too challenging to tackle.

Alternative No. 2, Increased Interoperability, would rank third we believe. While this strategy does not capture the economic and operational efficiencies of operating out of a common facility and with common technology, it would create opportunities for improving and streamlining operations between the two existing centers. This could also create increased flexibility for each center to provide the other with backup or overflow support when needed in adverse conditions.

Alternative No. 1, Shared Management and Administration, would rank fourth, with the majority of the benefit coming on the cost savings potential rather than call handling or operational performance. While lower ranked than the three prior alternatives from the perspective of meeting the overall goal set, it could be seen as an important first step to putting in place a work strategy to chart a path to achieving any of the other alternatives.

We would place alternative No. 3, Full Technology Consolidation, as the lowest ranked alternative. Investing in a fully shared systems strategy would require significant investments in robust infrastructure and connectivity redundancies to meet the reliability requirements of emergency communications systems. Given current technologies and connectivity alternatives, these investments would be very expensive and in no way be offset by any savings in common

vendor licensing or other shared system efficiencies. This may change in the future as additional alternative connectivity options emerge, but in the near term this alternative would create significant cost challenges and result in only limited operational improvements.

Recommended Course of Action

It is ADCOMM's belief that pursuing a long-term strategy to establish a fully consolidated and regionalized communications center to serve both Clallam and Jefferson counties is an advisable goal. However, it is difficult to envision a path to achieving this goal in the near term. There will need to be considerable investments in time and energy to build the political support for this concept and a need to identify funding strategies to turn it into reality.

Therefore, it is our recommendation that the most important first steps to achieving this long-term goal would be to begin the process of implementing alternative No. 1, Shared Management and Administration, and alternative No. 2, Increased Interoperability. These actions would provide a number of benefits to the two organizations including improving consistency of operations, increasing the level of mutual understanding of each other's organizations, sharing capital expenditure costs as much as possible, and improving the ability of each center to interoperate and support the other. From this foundation, it seems as though it will be easier to then expand the relationships further and work to find the funding mechanism to create a regionalized facility and operation at a future date.