



World Wide Technology, Inc.

ALMR Feasibility Study

State of Alaska

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PRESENTED BY

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North Slope Telecom, Inc, in collaboration with
World Wide Technology, Inc

Acknowledgments:

World Wide Technology, Inc. is an IT systems integration organization and has extensive involvement and familiarity with the SOA's IT network as well as the SATS communications system. WWT does not have a vested interest in the determinations of ALMR and has verified sufficient neutrality in the selection of North Slope Telecom, Inc as the subcontractor performing the Feasibility Study at hand.

North Slope Telecom Inc. (NSTI) is a 100% Alaskan owned and operated firm. The company was established in 1980 as a general contracting and consulting firm specializing in the design, construction, and maintenance of telecommunication systems in the remote arctic and sub-arctic. NSTI is recognized throughout Alaska for the expertise in voice and data communications infrastructure via satellite, microwave, and fiber optics to urban and remote locations.

Prior to the ALMR Feasibility Study, North Slope Telecom has had a minor business relationship with ALMR as a local subcontractor. While the overall ALMR System Design contract was awarded to Motorola Inc., NSTI was involved in the design and construction of the ALMR Transportable/Deployable infrastructure and has provided deployment support. NSTI has also performed installation work at less than 20 ALMR sites. Over the last ten years, less than 1-2% of NSTI's total revenue has been related to Motorola contracts, usually for installation work. In 2011, NSTI entered into a partnership program with Motorola for Professional and Commercial Radio Solutions (Silver Channel Partner).

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Introduction

The purpose of this study is to evaluate the operational and economic impact of the U.S. Army Alaska (USARAK) equipment divestiture. An assessment of recent advances in technology was made to determine if feasible alternatives to ALMR exist. The evaluation includes an approximate cost/benefit analysis as well as feedback from a survey conducted among selected ALMR stakeholders. This report provides guidelines based on the information available and is not an audit of existing documents or budget figures.

Executive Summary

The State of Alaska, Federal and Municipal partners have recognized the necessity for an interoperable communications system for all-hazard emergency response. The lack of interoperable communications has historically proven to be a major issue of any catastrophic event, hindering disaster response and relief efforts. Such a situation not only increases recovery costs but also endangers the safety of first responders and citizens.

With the creation of the State Emergency Response Commission (SERC)¹ by Governor Cowper in 1987 and with the goals defined in the Alaska Statewide Communications Interoperability Plan (SCIP), the State of Alaska has set a standard to meet the needs of Alaska's public safety community. Governor Knowles further addressed the need for interoperability² in 1997 and under Authority of AS 26.23.020 the National Incident Management System / Incident Command System (NIMS/ICS) was mandated for the Executive Branch of State Government. The State Emergency Response Plan concept of operations specifically calls for Multi-Agency Coordination Groups to be established during emergency response operations. Furthermore, all localities requesting Homeland Security Grant Program and Emergency Management Performance Grant funding must demonstrate NIMS compliance³.

As a result of these considerations, the Alaska Land Mobile Radio Communications System was designed to facilitate the FCC-mandated migration to narrowband radio equipment and to improve public safety communications across all jurisdictions. Through the ALMR Cooperative partnership, the State of Alaska was able to offset substantial capital expenses for necessary equipment upgrades. In its present form ALMR is based on a Land Mobile Radio infrastructure compliant with FCC narrowband requirements⁴ and is designed to enable the highest degree of interoperability as defined by the SAFECOM⁵ guidelines.

¹ Alaska Governor Administrative Order No. 103, dated October 21, 1987 and further established in AS 26.23

² Alaska Governor Administrative Order No. 170, dated January 17, 1997

³ Alaska Statewide Communications Interoperability Plan (SCIP), prepared by Alaska Department of Military and Veteran Affairs, dated December 3, 2007 – For Official Use Only

⁴ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. <http://www.fcc.gov/narrowbanding>

⁵ Department of Homeland Security, <http://safecomprogram.gov/default.aspx>

The entire ALMR system build-out was largely funded by the U.S. Department of Defense to increase its ability to perform Defense Support of Civilian Authorities. About one third of the capital investment for shared ALMR infrastructure was funded by the State of Alaska. Until recently the cost for infrastructure equipment O&M was substantially shared between the respective owners, with the U.S. Department of Defense funding equipment maintenance at 50 sites and the State funding 30 sites. In addition, the State of Alaska is responsible for site maintenance at 71 sites, while DOD owns and maintains nine sites as well as both ALMR Transportable/Deployable Systems. The U.S. Army Alaska has also expressed interest in owning and maintaining Site Summit⁶, currently under State ownership.

On March 10, 2010, the U.S. Army Alaska (USARAK) notified the State of Alaska of the intent to divest itself of LMR radio equipment currently housed in 13 State of Alaska sites⁷. In a second phase, USARAK will divest itself of infrastructure equipment at 28 additional State-owned ALMR sites⁸. USARAK has proposed ownership transfer of the affected equipment at no cost to the State of Alaska over a two-year period to mitigate the impact of the divestiture but the time frame was revised during a meeting between Army and State of Alaska representatives in March, 2011. USARAK agreed to continue funding maintenance at the initial 13 sites, but at a reduced level (break/fix) through December 31, 2011. Funding for maintenance during the originally proposed second phase of the divestiture (July 1, 2012 – June 30, 2013) will not be available. Therefore, the final deadline for the State of Alaska to accept the USARAK equipment at the remaining 28 sites will be June 30, 2012⁹. After the equipment transfer the State would become the largest owner of shared ALMR infrastructure equipment and will be responsible for equipment maintenance and system upgrades under the current Cost Share Agreement¹⁰. The DOD has requested negotiations for future cost sharing agreements in its March 10, 2010 letter to the DOA Commissioner.

In the coming months, the State of Alaska will determine and defend budget allocations for ALMR expenditures. These costs have to be reasonable and justified. Furthermore, a renewed look at available alternative technologies is necessary to ensure whether a different system could deliver comparable service at lower cost.

In FY2011, the total cost for shared infrastructure equipment O&M was \$3 million, with the State absorbing approximately 40% of the cost. The SOA's share after the USARAK equipment transfer (FY2013) is \$2.6 million or nearly 80% of the annual cost. Per contract the total cost for infrastructure O&M will increase 5% annually to approximately \$6 million in 2025. Therefore, the total expense for the State to maintain ALMR until 2025 is expected to be approximately \$48.9 million for infrastructure O&M and \$16.5 million for system software and hardware upgrades unless a new cost share agreement is established. This is \$30.9 million more than the State had to contribute before the USARAK equipment divestiture.

⁶ Department of the Army letter to the Governor of Alaska, dated August 23, 2010

⁷ Alaskan Command (ALCOM) letter to the Commissioner, Department of Administration, dated March 10, 2010

⁸ Department of the Army letter to the Governor of Alaska, dated August 23, 2010

⁹ ALMR Insider Vol. 5, Issue 3, July 15, 2011: USARAK Site Divestiture

¹⁰ ALMR Communications System Cost Sharing Cooperative Agreement for Operations and Maintenance, 2011

Sustainment costs for alternative technologies and comparable scope are similar to those of ALMR. Operation and Maintenance is the largest factor after the capital expense and feasible alternative solutions would still require at least the same number of remote communication sites. When all cost factors are considered (including periodic system upgrades, oversight and coordination and exercise support) the total cost of ownership for all partners of the ALMR Cooperative is approximately \$137 million (FY2012 - FY2025) with SOA bearing up to 69% (approximately \$95M) under the current agreements.

Table 1: Cost-competitiveness potential of alternative technologies for FY2012

Total Cost of Ownership for Alternative Technology	Less than \$31M	\$31M - \$95M	\$95M - \$137M	Greater than \$137M
Potential to be cost-competitive with ALMR	Medium to high	Low to medium	Low	None

The following factors must be considered when determining the total cost of any alternative:

- Capital expenses for new infrastructure
- Capital expenses for periodic system upgrades (software and hardware)
- Capital expenses for new user equipment
- Transition cost until new system is available to users
- Decommissioning cost of residual ALMR equipment
- Training cost to familiarize users with new technology
- Operation & Maintenance costs of alternative system
- Exercise Support during system operation
- Cost to (re-)program communication devices
- Oversight and Coordination cost
- Circuit / volume / airtime usage costs
- Additional expenses due to increased user resistance caused by the lack of demonstrated leadership and poor coordination
- Impact on conditional Federal grants that have been used for the ALMR build-out

Table 1 and the factors listed above offer merely a first approach to evaluating the economic feasibility of alternative technologies. However, many alternative technologies that have become available in recent years do not provide the same reliability and fundamental dispatch functionality required for public safety operations. The vast geographic area and mountainous terrain in Alaska create additional challenges. ALMR was designed to provide wide-area coverage throughout the State along the road system and can be supplemented by other systems to increase coverage in more urban areas.

ALMR is a very effective system that greatly enhances wide area interoperable communications. Many of its current shortcomings are due to insufficient user training and lack of coordination between stakeholders. There is even greater potential for ALMR once all users become familiar with the system's capabilities. Strengths and weaknesses of the system, as well as the need for additional ALMR training have been addressed in the 2010 Business Case Update and ALMR Strategic and Operational Plan (2011).

Providing continued funding for ALMR and restoration of the original budget for the Operations Management Office to provide regular and agency-specific training across Alaska is essential to solving the current challenges. In addition, the State of Alaska could also consider a new cost share agreement, primarily with the Department of Defense. A timely response to the USARAK equipment divestiture is required to minimize the impact on all stakeholders. Without these efforts it is clear that the consequences – particularly the loss of interoperability – will be more expensive in the long run.

State of Alaska Interoperability Governance and Requirements

The State of Alaska has two principal governing bodies (for interoperable communications) in existence today. The first is the ALMR Executive Council. The second governing body is the State Emergency Response Commission (SERC). Governor Cowper established the SERC in 1987¹¹, which is co-chaired by a representative of the Department of Environmental Conservation (DEC) and of the Department of Military and Veterans Affairs (DMVA). Its mission is to ensure that State, Federal, and local emergency planning and preparedness is established, integrated and mutually supportive.

“The ALMR Executive Council, as a federal, State, and local government cooperative functioning under the same premise as a State Interoperability Executive Committee (SIEC) will provide the administrative and technical oversight of operations of the interoperability spectrum resource used by the ALMR system¹².” The SIEC is now re-established in the State Emergency Response Commission which has been identified as the governance structure to house statewide interoperable authority while the Department of Administration has been tasked with the development, oversight and management of ALMR.

The *Alaska Statewide Communications Interoperability Plan (SCIP)*¹³ was developed in a collaborative effort lead by the Department of Public Safety (DPS), the Alaska Division of Homeland Security & Emergency Management (DHS&EM) and the Department of Administration (DOA). Its purpose is to unify, synchronize, and integrate the State’s current and future interoperability efforts. The Alaska SCIP is written to address criteria for interoperability plans established by the U.S. Department of Homeland Security SAFECOM Program and the U.S. Department of Commerce Public Safety Interoperable Communications Program. Alaska’s SCIP is intended to be *subservient and supportive* of the following emergency response and operations plans:

- Alaska Emergency Response Plan
- Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases (the Alaska Unified Plan)
- Alaska Interagency Fire Management Plan
- Local, Regional and agency-specific Emergency Operations Plans
- State, Local, and Regional Continuity of Operations/Government Plans

In addition to these plans, the Alaska SCIP is intended to be *the unifying document* for numerous other plans, including ALMR System Maintenance and Operations Plans.

It is the mission of the Alaska Interoperable Communications Committee (AKICC), formed by the SERC, “to provide a statewide, sustainable, interoperable communications infrastructure to support multi-jurisdictional response(s) to all-hazard and terrorist related incidents by

¹¹ Alaska Governor Administrative Order No. 103, dated October 21, 1987 and further established in AS 26.23

¹² Interoperability Plan for the State of Alaska, prepared by ALMR Executive Council, dated April 2003

¹³ Alaska Statewide Communications Interoperability Plan (SCIP), prepared by Alaska Department of Military and Veteran Affairs, dated December 3, 2007 – For Official Use Only

overseeing the implementation of the Alaska SCIP¹⁴.” The strategy to accomplish this mission is described in detail in the SCIP.

“ALMR identified the need to achieve an economy of scale, reduce costs among agencies, and increase capability for interoperable communications among public safety entities. After determining the types of interoperability agencies engage in and the level of interoperability the user base defined as necessary, a system design was completed around these criteria, which resulted in a shared Project 25/TIA 102A standard based trunk system solution¹⁵.”

¹⁴ AK Div. of Homeland Security & Emergency Management, http://ak-prepared.com/SERC/committee_interop.htm

¹⁵ Interoperability Plan for the State of Alaska, prepared by ALMR Executive Council, dated April 2003



Interoperability Continuum

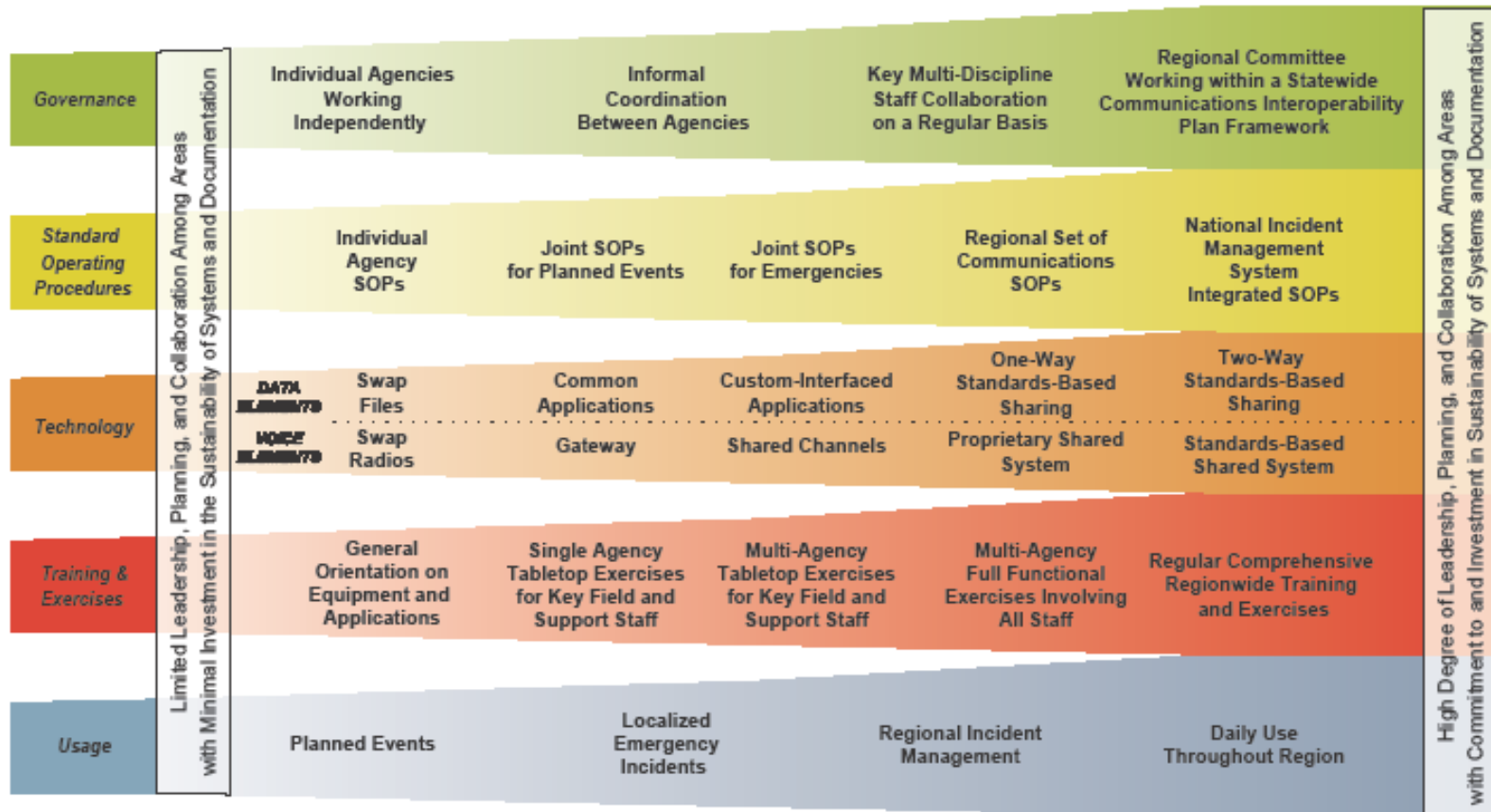


Figure 1: U.S. Department of Homeland Security Interoperability Continuum

Stakeholder Survey

The objective of the survey was to collect information about the utilization of ALMR by different stakeholders across the entire user spectrum. Strengths and weaknesses of the ALMR system as well as those related to system governance, coordination and oversight were identified. Information was collected about available alternative communication systems, both legacy and other systems currently in use. With this information in mind, a number of different scenarios were evaluated to determine the impact on each stakeholder.

Survey Process

Selected ALMR stakeholders were invited by email to fill out a questionnaire with seven questions. Phone interviews were arranged with each of these participants to go through the questionnaire and to collect additional comments. The questionnaire and the answers recorded during each interview are included in Appendix . Twenty-five ALMR stakeholders responded to the questionnaire and almost all participants have been available for a telephone interview. All interviewees have received a copy of their responses and have verified the recorded information.

Conditions

Table 2: Major ALMR Stakeholders within the State of Alaska, DOD, Federal (non-DOD) and the Alaska Municipal League

	10 Largest Agencies by SU count ¹⁶	Total SUs	Agency SU Count	% Total
DOD	U.S. Air Force U.S. Army Alaska	6,354	6,320	99.4%
SOA	Department of Transportation & Public Facilities Department of Public Safety Kulis Air National Guard	4,682	3,339	71.3%
AML	Anchorage Municipality (with ML&P) Matanuska-Susitna Borough	4,893	2,431	49.7%
FED	Federal Bureau of Investigation National Oceanic and Atmospheric Administration National Park Service	606	297	49.0%
ALMR Total		16,535	12,387	74.9%

The questionnaire was designed to allow for a high degree of freedom in the interviewee's answers. The organizations interviewed represent user groups of various sizes, ranging from less than 5 subscriber units to more than 2,000. Out of more than 100 stakeholders¹⁷, the ten largest agencies hold 75% of all subscriber units. Only two stakeholders, the US Army and

¹⁶ Subscriber unit counts are as of December 31, 2010 (provided by the SMO)

¹⁷ List of ALMR member agencies, August 2011, <http://www.alaskalandmobileradio.org/index.html>

the US Air Force, hold 99% of all subscriber units registered with the Department of Defense (see Table 2). The Anchorage Municipality is a major stakeholder in the ALMR Cooperative but conducts daily operations on the Anchorage Wide Area Radio Network (AWARN), a separate system which provides interoperability with ALMR in the AWARN coverage area. Among this mix of users are agencies that fall into different Mission Assurance Categories. While some have a supporting role, others use the system for Mission Critical operations.

These factors can easily skew the interpretation of the survey data. In addition, some questions do not apply to all stakeholders and some participants did not answer all questions. It was not within the scope of this report to use an advanced statistical approach to collect or analyze the data. The conclusions presented here are based on a simplified high-level approach and take into consideration both the quantitative and qualitative responses provided by the stakeholders.

Stakeholder Selection Process

ALMR stakeholders were selected with respect to the following parameters:

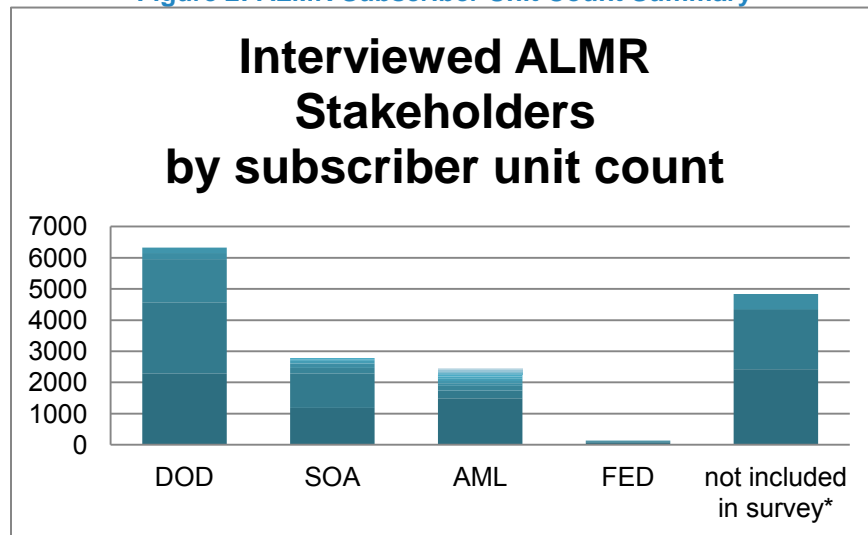
- Representative sample across State (SOA), Department of Defense (DOD), non-DOD Federal (FED) and Alaska Municipal League (AML) stakeholders.
- Representative sample across different public safety responsibilities
- Consideration of geographic distribution of stakeholders
- ALMR usage pattern assumptions
- Number of subscriber units. The agencies selected for the survey represent 71% of the total ALMR subscriber unit count (as of December 31, 2010)

Table 3: 2011 ALMR Survey Participation Statistics

	SOA	DOD	FED	AML	Total
Total No. of ALMR agencies	18	6	15	68	107
Total subscriber unit count	4,682	6,354	606	4,893	16,535
Number of agencies participating in survey	5	1 ¹⁸	4	15	25
% of total in category	28%	N/A	27%	22%	N/A
Subscriber unit count of participating agencies	2,752	6,320	131	2,469	11,702
% of total in category	59%	99%	22%	50%	71%

¹⁸ The Alaskan Command (ALCOM) was the single point of contact for both U.S. Air Force and U.S. Army Alaska

Figure 2: ALMR Subscriber Unit Count Summary



(*) Remaining State, DOD, Federal and AML stakeholder subscriber units. Consoles, Consolettes and radios for demonstration, testing and System Technicians are not included in this column.

Stakeholder Feedback: Usage profiles

Three user group categories with distinct ALMR usage profiles have been identified. Although the system is shared by numerous agencies which all have common public safety responsibilities, all agencies had communications systems prior to ALMR that met their daily operational needs. These legacy systems are used to various degrees.

Slightly more than half of the agencies interviewed use ALMR for day-to-day operations, emergency response, mutual aid and training. When the data is weighted by the total number of subscriber units registered with all agencies that participated in the survey, this represents 80% of the users interviewed. This group also includes several key agencies that represent other stakeholders in the ALMR User Council¹⁹. Comments from the agencies in this group are summarized in Table 4.

The remaining stakeholders use ALMR in support of other communication systems or use ALMR to provide a specialized type of response.

Six agencies use ALMR frequently for emergency/disaster response, training, events that require additional interoperability, Search and Rescue, periodic system tests, increased coverage and as a backup system. When the data is weighted by the total number of subscriber units registered with all agencies that participated in the survey, this represents 17% of the users interviewed. These agencies usually have another communications system

¹⁹ The State of Alaska currently has representatives for the Department of Public Safety and the Department of Transportation in the ALMR User Council. The position that represents all other SOA agencies is currently vacant.

available that is more specific to their mission or less complex and is used for day-to-day operations instead of ALMR. See Table 5 for additional comments.

The last category is comprised of 6 agencies (2% SU) that use ALMR only occasionally for increased interoperability with certain other agencies but heavily rely on another system for daily operations.

Most agencies in this group are experiencing issues with ALMR that have prevented a more complete transition to the system.

Table 4: Agencies with daily ALMR use for day-to-day operations, emergency response and law enforcement

ALMR use for day-to-day operations, emergency response and law enforcement (80% of surveyed users based on subscriber unit count)	Bear Creek Fire Service Area*	AML	Legacy conventional VHF
	ALMR has greatly increased the ability to interoperate. Responses are out of the service area, up the Seward Highway. Continued funding for communications in that area must be secured as the legacy system has a very limited coverage area. "This is a big public safety issue to the residents of Alaska."		
	Department of the Interior Bureau of Land Management*	FED	Operational conventional VHF, UHF, microwave
	ALMR is used together with alternative systems which provide extended coverage for remote regions in AK. Reducing the existing ALMR coverage area would create a severe safety issue for law enforcement personnel. State of Alaska funding issue: BLM is also concerned about the interoperability with DNR / Division of Forestry if their conventional system is decommissioned before ALMR coverage has increased. Not all firefighters carry ALMR-capable handheld radios and the radio cache has some older radios as well. BLM and DNR Division of Forestry have shared responsibilities and shared costs. Without ALMR, cooperation between agencies would be diminished leading to increased costs to provide these services.		
	Delta Rescue Squad	AML	No alternative communications available
	Delta Rescue Squad has replaced their legacy system with ALMR which provides better coverage and wide-area interoperability. It supports approximately 275 to 325 EMS calls and 10 to 15 fire calls per year.		
	US Air Force* / US Army*	DOD	No alternative communications available
	US Air Force and Army Alaska operational use of ALMR consist of: <ul style="list-style-type: none"> • Installation Security/Force Protection • Public Safety / First Responder Emergency Communications • Day-to-Day Operations • Radio Communications for Military Units and Convoys • Training Support and Transportation Management • Unit Deployments/Redeployments • Interoperability with other Federal, State and Local Agencies • Rescue Coordination Center Operations 		

	<p>Because of the shared system infrastructure and shared spectrum approach a separation of the system would require each agency to completely replace their entire portion of the system with an independent stand alone replacement²⁰. That cost analysis has already been accomplished and the cost impact to DoD is \$36M in initial capital investment, however operational costs may be collectively reduced for DoD from \$2.5M to \$2.2M annually. The trade off in savings in operational costs which primarily comes from there no longer needing to be Operations Management Services function such as the shared cost ALMR OMO, and the loss of operational capability most important of which is interoperability is severe and significant. There is a cost for interoperability but not having the interoperability when it is needed has historically proven to be much more costly.</p> <p>Extensive additional comments are included in Appendix B, ALMR Feasibility Study Interview Results / Raw Data.</p>		
	Department of Public Safety*	SOA	No alternative communications available
	<p>ALMR is used for all operations. All legacy repeater equipment has been decommissioned since the O&M and training costs for two systems would be prohibitive. Cellular or satellite phones are not an option as public safety operations rely on dispatch capability and a much more robust and secure infrastructure that is not shared with public users.</p> <p>The administrative support for the ALMR User Council and Executive Council is already very limited. Continued funding is critical to preserve the value and functionality of the ALMR system.</p> <p>Additional comments are provided on page 29 (Department of Public Safety Position).</p>		
	Department of Transportation & Public Facilities*	SOA	No alternative communications available
	<p>ALMR is used for all operations and the legacy repeater equipment has been decommissioned. It provides primary emergency and disaster response communications with both internal and external support agencies like AST, local law enforcement, National Forest Service, US Customs and Immigration, US Coast Guard, commercial trucking and bus companies.</p>		
	Fairbanks FD	AML	Legacy conventional VHF
	<p>The FFD recently investigated the operational and economic feasibility of using a conventional system in a similar fashion to ALMR (talkgroups for dispatch and tactical response). This would only be possibly with a significant capital investment to purchase the new equipment and to reprogram the radios.</p>		

²⁰ System Design & Implementation Document (SDID) for ALMR, 2008, Appendix A: ALMR Feasibility Analysis for DOD/SOA Separation – For official use only

	If necessary, the FFD could go back to its legacy system. However, this would have a negative impact on the department's operations and cause additional training challenges. With the introduction of ALMR the legacy system has not been used much and many people are unfamiliar with it. About half of the legacy equipment is not FCC narrowband compliant. Future legacy system upgrades are possible but the priorities have shifted towards ALMR.		
	Homer PD	AML	Legacy conventional VHF
	ALMR is used for all operations. Reverting back to the legacy system would have a small economic impact (increased maintenance costs). The legacy system is a viable option for ALMR backup.		
	North Pole FD	AML	Legacy conventional VHF
	The legacy system is not used anymore but could possibly serve as a backup. All agencies in Fairbanks North Star Borough were sharing the legacy system for interoperability before ALMR. However, the legacy system is not compliant with the FCC narrowband mandate and costly upgrades would have been necessary at some point. If ALMR became unavailable, a reduction in workforce would have to be considered in order to maintain basic communications		
	National Parks Service, Alaska Region	FED	Operational conventional VHF
	NPS is not dependent on ALMR to conduct business but it is used on a daily basis along with the communication system installed in the Parks. ALMR is used primarily for law enforcement coordination with AST and internal use (50/50). Since both systems have to be maintained, NPS could save money without ALMR but this would impact current Cooperative Use Agreements, Dispatch Center Agreements, etc.		
	Seward, City of	AML	Operational conventional VHF
Two City of Seward departments use ALMR on a daily basis. A legacy system is still available but it has less coverage and two new repeaters would be required at Mile 18 and Mile 23 (Seward Highway). Without ALMR, the capability for interoperations between the State of Alaska and the City of Seward would be diminished and the encryption capability would be lost.			

	Valdez FD	AML	Operational conventional VHF, UHF, Amateur Radio
	VFD will continue to use the conventional system in addition to ALMR. There is a concern that a user fee will be mandated for ALMR use and therefore the legacy system has been upgraded to become narrowband compliant. ALMR already comes at a higher cost: VFD could buy 5 to 6 conventional radios for the price of one ALMR radio. A subscriber unit fee is not affordable for VFD and the fire department would be forced to revert back to using the conventional system, making it much more difficult to interoperate (esp. with hospital, issues with secure communications).		
	Wasilla PD	AML	Legacy conventional VHF (analog)
	<p>Wasilla PD is not dependant on ALMR. However, the benefits of ALMR (e.g. man-down feature, wide-area coverage, interoperability with other agencies, ID transmission when keying the radio and ability to see who is calling) greatly outweigh the negatives of the system. Using a VHF system to provide ALMR coverage is a good choice because of the vast coverage area (other systems provide better penetration in buildings). Unfortunately, the ALMR system is complicated and has too many zones and talkgroups. A simplified system with less overhead would be preferred. WPD needs only 2 talkgroups and is reluctant to use channels that are not recorded on the voice logger.</p> <p>The legacy system provides an alternative to ALMR in the event that ALMR fails or if a user fee is introduced. In that case, manual console patches could provide interoperability with other agencies when necessary.</p>		

(*) ALMR User Council Member

Table 5: Agencies with frequent ALMR use for increased interoperability or coverage, Search and Rescue operations and disaster response

Frequent ALMR use for increased interoperability or coverage, Search and Rescue operations and disaster response (17% of surveyed users based on subscriber unit count)	Anchorage, Municipality of	AML	Primary: trunked UHF (AWARN ²¹)
	The Municipality of Anchorage uses the stand-alone 700/800 MHz AWARN system for daily operations. This also provides full interoperability between both systems in the AWARN coverage area. Therefore, the Municipality is not dependant on ALMR. Without ALMR the Municipality would have to make additional operational considerations when sending resources outside of the AWARN coverage area for disaster relief. The loss or reduction in interoperability among Anchorage, SOA and Federal agencies would result in lower public service and increased risk for first responders.		
	Alaska Army National Guard	SOA	Primary: HF, LOS VHF-FM, cell phones, satellite phones
	ALMR is used as a life safety support system while alternative communication methods are used for most daily operations.		
	Civil Air Patrol – Alaska Wing	SOA	Legacy conventional VHF (simplex only)
	ALMR has replaced the conventional repeater system. It would take at least 3 years to restore the original coverage and CAP could never provide the type of coverage available with ALMR. This puts CAP in a very vulnerable position if ALMR became unavailable.		
	Federal Emergency Management Agency	FED	HF, Conventional VHF (simplex only), UHF, Sat. phone
	FEMA has a very small footprint on the ALMR system. Several communications options are available to FEMA in addition to ALMR, however, without ALMR it would be more difficult to communicate with State of Alaska agencies. Additional planning and new communications plans would be required to determine all options to interoperate across all jurisdictions.		

²¹ The Anchorage Wide Area Radio Network (AWARN) was developed according to APCO Project 25 specifications and is integrated into the ALMR system as a separate zone. The ALMR zone controller provides interoperability between VHF ALMR users and UHF AWARN users.

	Matanuska-Susitna Borough	AML	Primary: Conventional VHF
	<p>ALMR is not the only system available nor is it the primary system. Uncertainty about a possible subscriber unit fee or other future costs to participate in the Cooperative was a factor in the decision not to make ALMR the only choice. The Borough is also concerned about how large stakeholders can change the ALMR landscape (e.g. USARAK equipment divestiture). Therefore, the conventional system is being upgraded to become compliant FCC narrowband compliant by 2013.</p> <p>ALMR provides the ability to communicate in more remote areas of the Mat-Su Borough, enables interoperability with other agencies when needed and serves as a backup option to the conventional VHF system.</p>		
	DHS / Transportation Security Administration	FED	Legacy conventional VHF
	<p>ALMR provides critical interoperable and long distance communication ability. Without ALMR, TSA's ability to reach other airports and mass transit locations would be virtually eliminated when standard lines of communication are inoperable.</p> <p>The legacy system is not narrowband-compliant.</p>		

Table 6: Agencies with occasional ALMR use for increased interoperability when needed

Occasional ALMR use for increased interoperability when needed (2% of surveyed users based on subscriber unit count)	Department of Natural Resources Division of Forestry	SOA	Primary: Conventional VHF
	<p>The Div. of Forestry (DOF) is piloting ALMR and has not transitioned its operations to the new system. Currently ALMR provides only logistical support. The ALMR network needs to be expanded to be a useful tool for DOF.</p> <p>The conventional system currently in use for operations is approximately 60% narrowband compliant across the State and the remaining equipment will not be upgraded due to budget cuts. Shutdown and full transition to ALMR is planned for January 1, 2013.</p> <p>The compliant part of the conventional system will run parallel to ALMR for approximately 3 years due to too much uncertainty about the future of ALMR. The lack of demonstrated leadership and commitment by the Administration has caused concerns that there will be no cost control over a communications system that is used for life support. There are still many problems related to DOF's seasonal demand for additional ALMR coverage and increased system availability. Also, some cooperators (esp. aviation resources from outside Alaska) do not use ALMR.</p>		
	Juneau PD*	AML	Primary: Conventional VHF
	<p>JPD uses a conventional system for daily operations. ALMR is exclusively used for coordination with other agencies (DOT, AST) and it is also tied into the dispatch console system. JPD takes over dispatching after 5 PM and all agencies (including AST and DOT) switch to conventional VHF channels until the next morning.</p> <p>The independence from ALMR allows for greater cost control than in a shared system. Uncertainty about available funding for future O&M and the potential of a subscriber unit fee make a full commitment to ALMR difficult to justify.</p>		
	Kenai FD	AML	Primary: Conventional VHF (analog)
	<p>Kenai FD uses a conventional system for daily operations. ALMR would only be used for a disaster response of such magnitude that the capabilities of the conventional system are exceeded. The ALMR membership merely extends KFD's ability to interoperate when needed and allows for additional grant funding. ALMR is too expensive for the benefits provided as none of the system's features are necessary to meet KFD's daily operational needs. There are no disadvantages to using the current conventional system. Aside from greater cost control, another benefit of the conventional system is that it requires less training.</p>		

	Kenai Peninsula Borough	AML	Conventional VHF
	The Borough does not depend on the use of the ALMR system as a primary means of communication as much as other agencies do. ALMR is primarily used for interagency communications during disaster events and exercises. Without ALMR the Borough would need to look for grant funding to provide for an alternative communications backbone and the ability to communicate during a widespread disaster would pose a real challenge. Although the conventional system has a high cost for upkeep and maintenance, the benefits of having an alternative system are redundancy with respect to interagency operability and economic security.		
	Kenai PD	AML	Primary: Conventional VHF
	<p>Kenai PD uses a conventional communications system which meets all requirements for daily operations and is much more cost-effective than ALMR. The conventional equipment is currently receiving a software upgrade (encryption) to become compatible with ALMR used by AST and Soldotna PD. ALMR is also needed to communicate with Seward PD and Homer PD which both no longer use the conventional system. The conventional system has better scanning capabilities and is also used by Nikiski, Kenai FD and Central EMS. It also has a very low maintenance cost and less overhead. ALMR is not the primary communications system, nor is it intended to be at any time in the future. The necessity to communicate with AST is the primary reason for KPD's membership.</p> <p>The lack of coordination between different agencies during the ALMR implementation and transition to the new system has created safety and efficiency issues. Inter-agency collaboration has become more difficult between ALMR users and conventional system users ALMR has impeded the ability to efficiently collaborate with other law enforcement agencies, especially when responding to immediate calls for service (e.g. armed robbery) where an office may need help immediately. With the multiple communications systems currently in place it can cause a delay of several minutes before someone gets the call.</p> <p>ALMR is oversized and more expensive for the tax payer due to the fact that additional grant money has to be spent to upgrade the conventional system (encryption support). A communications system designed for responses to 9/11-type events is reasonable for large metropolitan areas but not for a small community like Kenai. All PD units can easily operate on a single tactical channel and there is no need to communicate with distant communities (e.g. Fairbanks).</p> <p>ALMR has great potential but the uncertainty about the future cost (including a possible user fee), slower scanning capabilities, additional overhead, insufficient training and a lack of coordination to ensure that all agencies can transition to ALMR are major contributing factors to user resistance and low acceptance.</p>		

	Tok Area Emergency Medical Services	AML	Primary: Conventional VHF, UHF
	<p>Tok Area EMS uses a conventional system for primary communications due to insufficient ALMR coverage. The implementation of ALMR is not well coordinated between user agencies. This has led to a decreased ability to communicate with AST. Tok EMS cannot use the AST talkgroup and has to communicate using the conventional mutual aid channel. Transition to ALMR would work much better if new equipment was available for entire personnel and coverage issues were solved. Currently, dispatch is provided by courtesy of AST during normal business hours but switches to Fairbanks or Delta ALMR Dispatch after hours and Tok Area EMS has to initiate calls on a landline for that time. ALMR is also used rarely since the more expensive ALMR equipment is only available for core personnel.</p> <p>The conventional system, originally installed in the 1970s and maintained by the State, recently received a system upgrade with new narrow-band compliant repeaters, thus establishing a system that will serve Tok Area EMS for many years. The system upgrade technician also surveyed the area looking for places where new repeaters sites could be established to serve the area south of Tok.</p>		

(*) ALMR User Council Member

Stakeholder Feedback: Cost/Benefit Analysis

In order to evaluate some of the intangible benefits, ALMR stakeholders were asked to rate five different key elements of the system. The sixth row (Other) provided space for additional comments. A higher score indicates a greater benefit or value.

Table 7: Intangible Benefits

Score	1	2	3	4	5	
A) Improved safety and security	13%	4%	8%	29%	46%	100%
B) Improved training	13%	26%	26%	13%	22%	100%
C) Increased ability to interoperate	8%	4%	-	25%	63%	100%
D) Improved Protocols/Procedures/Standards	13%	29%	21%	25%	13%	100%
E) Greater ability to acquire federal grants	29%	12%	24%	24%	12%	100%
F) Other ²²	-	-	-	-	100%	100%

With the two highest scores combined, 75% of the participating agencies stated that ALMR has greatly improved the safety and security of their operations. Notable is also that 88% reported that ALMR has substantially increased the ability to interoperate.

The responses related to training were mixed, partly due to poor wording of the question. Some agencies gave high scores to emphasize the importance of additional training while others gave low scores to express the current lack of training. Additional comments collected during the phone interview consistently addressed the need for more ALMR training and explained the mixed scoring:

- “The Transportable/Deployable Systems should be made available to more ALMR stakeholders for training purposes” (Department of Public Safety)
- “Division of Forestry has had no training yet, would be very helpful”
- “Juneau PD has not had the opportunity to participate in any ALMR training. The importance of proper training needs to be emphasized as the system is not very useful otherwise”
- “There has been very limited training for ALMR and we are still figuring out the system as we go. [...] North Pole FD didn't really like the more complex system at first but now it is hard to imagine going back”
- “Training has been sporadic and is often only offered in Anchorage. Seward can only send a few people each time. The training offered is not frequent enough to learn all nuances of the system. ALMR emergency features (i.e. man-down button) and procedures can't be practiced often enough”
- “Tok Area EMS has not had an opportunity to participate in mutual aid training scenarios”
- “Additional training would be beneficial. Monthly or at least quarter-annually trainings would be best” (Valdez FD)

²² Only the U.S. Department of Defense, Alaska Department of Transportation and Public Facilities and the City of Seward provided feedback to question 2F.

All major ALMR stakeholders agree that the benefit of using a communications system for daily operations, which can also provide wide-area interoperability for disaster response, justifies the increased training requirements and the need for standardized protocols and procedures. However, a small percentage of users also noted that the trunked ALMR system is too complex and some agencies are reluctant to expend the time and resources necessary to become familiar with the system. There also appears to be a strong correlation between the level of training that agency users have received and the perceived value of ALMR to that organization. Several misconceptions about ALMR functionality contribute to the low acceptance. Building penetration and frequency scanning issues are addressed later in this section and additional commentary can also be found in ALMR and Alternatives, page 30.

The arising problems related to training do not come as a surprise. After a vote of the ALMR User Council many services were no longer funded for State FY 2010 and the following two years²³. The services cancelled include:

- Providing new equipment procurement assistance and temporary loaner administration
- Providing system familiarization to stakeholder/member agencies
- Performing scheduling services and training classes as required and requested
- Conducting Annual User Council Training Conference
- Providing training necessary to solve problems arising with operating on the System to include: operational differences between communication technologies and integration of trunked systems with legacy systems
- Providing outreach education and training for stakeholder/member agencies during exercise or real-world events; document and report training
- Providing ALMR training for new or existing member agencies

Another weakness of the current ALMR system is a lack of coordination between different stakeholders. Most of the agencies affiliated with the Alaska Municipal League, and many others, work in close cooperation with the Alaska State Troopers, which switched to the ALMR system when the legacy system was decommissioned. But not all agencies were in the position to transition to ALMR at the same time. This has led in several cases to situations where agencies that once were able to communicate with critical partners now face new communication challenges during the transition. Uncertainty about future funding of ALMR and the recent USARAK equipment divestiture has further contributed to the reservation of many agencies to commit additional funds towards ALMR. With the pending FCC narrowband deadline approaching, many agencies continue to invest in conventional VHF system upgrades to ensure that an operational backup to ALMR is available.

Funding for ALMR is generally provided through communications and interoperability grants. Nonetheless, many agencies struggle with the high capital cost for ALMR user equipment and would benefit from procurement guidance. ALMR performance issues are often linked to low-quality user equipment selected in an effort to reduce cost.

Additional comments were provided by the following agencies:

²³ ALMR Insider Vol. 3, Issue 4, October 15, 2009: New Operations Management Office (OMO) Contract

The *U.S. Department of Defense* greatly values the improved technology, capability and information Assurance of the ALMR system. “ALMR provides a complete and robust capability for interoperability that the status quo LMR systems typically provide. The system was designed and implemented to address the requirement to interoperate among Federal, State, Local, tribal and Non Governmental organizations (NGO) and Agencies involved in emergency support and response. ALMR provides in and above the normal LMR coverage from fixed towers, a robust gateway system that facilitates dispatch centric control and connectivity to disparate radio systems such as NGOs, air to ground, maritime, interstate system to system connectivity such as to the States of Washington and Oregon for interstate emergency response and support. ALMR addresses communications in critical infrastructure by specifically designing and implementing solutions to ensure communications into and out of critical infrastructure such as the Anniston Tunnel to Wittier, major airports, hospitals, federal buildings etc. Further ALMR provides a very robust transportable capability that can provide critical communications in an emergency when communications are lost, or are needed in areas where ALMR has no coverage. Critical communications such as LMR, maritime, air to ground, satellite radio, computers and MESH wireless LAN and WAN services, internet, telephones and Public switched telephone access, Video Teleconference, dispatch and gateway operations/management services can be provided to meet needs in an emergency when those services and or capabilities have been lost. The transportable can also be used to increase the capacity of the ALMR system to handle high volume communications needs typically found in an emergency response situation ensuring fluid communications and sustained quality of service levels to emergency responders. Finally, the transportable can also be used to restore communications to damaged or destroyed ALMR infrastructure ensuring continued communications when required.”

The *Alaska Department of Transportation & Public Facilities* has experienced significantly improved daily operational efficiency.

City of Seward: The MOTOBIDGE is a very important tool to establish communications between disparate radio systems. However, the MOTOBIDGE has not been available to the dispatcher because the installation is incomplete and additional training resources are necessary.

Stakeholder Feedback: Current ALMR System Coverage and Availability

ALMR has a greater coverage area across Alaska than prior systems. Additional communication systems can support operations outside of the ALMR coverage area as needed, such as conventional mobile base or repeater equipment.

In Table 8, additional weight was given to those agencies with a larger system footprint based on the number of subscriber units. The system availability is adequate for the majority of users, although some agencies have experienced significant busy periods during multi-jurisdictional emergency response. This was partly caused by old conventional systems utilizing ALMR frequencies and also by improper ALMR system use (e.g. repeatedly re-keying the PTT button).

Table 8: ALMR System Coverage and Availability (score weighted by subscriber unit count)

Score	Adequate					Significant gaps / System unavail.
	1	2	3	4	5	
SU count	6453	1367	769	1391	180	
Coverage	64%	13%	8%	14%	2%	100%
SU count	9214	290	479	22	69	
Availability	91%	3%	5%	0%	1%	100%

The argument was frequently made that citizens have an expectation that Public Safety will be able to respond effectively to emergencies. Therefore most stakeholders are primarily concerned with the requirements for their daily operations. If an existing system is available that performs better than ALMR, it will most likely remain the primary means for communications for that agency.

Along the road system, there are certain areas in which the safety of first responders and the operational efficiency of ALMR agencies are currently impaired:

- Steese Hwy and Dalton Hwy
- Tok Cutoff and Taylor Hwy
- Glennallen area
- Delta area
- Sutton, Knik-Goose Bay Road, Hatcher Pass, Pt. MacKenzie
- Hills and valleys around Fairbanks and Chena Hot Springs area
- Denali Hwy

For example, there is no ALMR coverage north or south from Tok. The Tanana River Bridge near Tok is a critical transportation link for goods shipped between Alaska, Canada and the Lower 48. The minimum response time for a HazMat team from Fairbanks is 8 hours and at least 12 hours for teams from Anchorage.

Building penetration issues

The frequency range used for ALMR as well as for conventional public safety VHF systems is nearly identical and there is no difference in the propagation characteristics of ALMR frequencies. Differences in signal attenuation are based on the distance to each repeater site, any obstructions in the signal path and the power output of the transmitter. Bidirectional amplifiers (BDA) can be used to supplement insufficient coverage in concrete or steel buildings where needed. Alternatively, a MOTOBRIDGE can be used to extend coverage by linking a system with better penetration characteristics (e.g. UHF) into the ALMR system. Agencies that were operating in close proximity on simplex channels prior to ALMR may also experience differences when using a repeated ALMR channel. Again, this is not a deficiency intrinsic to ALMR but a matter of available signal power and location.

Differences in audio quality between digital and analog radios are discussed in ALMR and Alternatives, page 30.

Frequency Scanning Issues

Use of the scan function on the ALMR system is available and operational, but is not recommended. The added benefits and functions of the ALMR system outweigh any benefits the scan function offers and in most cases should, and can be, resolved through changes in operational procedures / protocols²⁴.

Frequency scanning is particularly a poor choice when it is used to scan both conventional and trunked ALMR frequencies.

Stakeholder Feedback: ALMR Site Decommissioning Impact

Naturally, most stakeholders were most concerned about sites being decommissioned that provide coverage for their daily operations. Therefore any decommissioning of existing sites would negatively impact current ALMR users. There are no sites providing coverage in areas where coverage is not needed.

Table 9: ALMR Site Decommissioning Impact (score weighted by subscriber unit count)

	No Impact				Severe Impact	
Score	1	2	3	4	5	
SU Count	142	211	1635	548	2628	
Site Decommissioning Impact	3%	4%	33%	11%	51%	100%

Stakeholder Feedback: ALMR Termination Impact and Alternative Systems

Please reference Tables 4, 5 and 6 for a summary of ALMR Termination Impact and Alternative Systems.

²⁴ ALMR Insider newsletter, Volume 2, Issue 1, October 15, 2007

Stakeholder Feedback: Impact of Service Level Reduction

Comprehensive comment was provided by the Department of Defense:

ALMR provides primary and critical communications for Public Safety first responders whom rely for safety and security reasons on a quality of service that provides communications on demand and in real time when needed every time it is needed. For the Department of Defense, when critical operations are underway and LMR communications is one of the primary communications capabilities the highest quality of service is required and demand of by the operations community.

Where there is a mix of agencies using a shared system, there is also a mix of service level needs among the agencies operating on the shared system. In the case of ALMR, Federal, State and Local law enforcement, fire, and medical response personnel operate daily in performing Public Safety roles, missions and tasks. Other agencies are conducting critical services in which safety and security are paramount, while yet other agencies are performing non critical support functions. The ALMR User Council understands that the quality of service for the system must meet the demands of the agencies that have the highest need. There has been no change in the Public Safety roles, missions and tasks supported by the ALMR system, nor for the agencies performing other critical mission roles and tasks, as such the quality of service level has not changed and would not change unless the nature of the mission critical operations being supported by the ALMR system changed. The same is true for the Information Assurance and Security demands that federal and State agencies operating on the system must adhere to and insist be maintained on the system in order to gain an authority to operate on the system. Service level is also tied to Information Assurance levels. ALMR has a collective Mission Assurance Category (MAC) of "Mission Critical" and they type of communications passed over the ALMR system are sensitive in nature. On the same system are agencies that operate at a MAC level of "Mission Essential" and some operate at a "Mission Support" level. But because it is one system, it is maintained at the Mission Critical level.

Stakeholder Feedback: Additional Comments

Anchorage Municipality: To save cost and reduce turnover, the State of Alaska should consider bringing the ALMR system maintenance in-house, as was done with prior LMR systems.

BLM: As an ALMR User Council member the BLM has seen the progress of ALMR from the project phase to the current operational status. With ALMR, Alaska is ahead of the Nation with respect to interoperability. There has always been a culture of cooperative effort in AK. All agencies have benefited from the ALMR system and it would be a big step backwards if the current interoperability capabilities were diminished or lost. ALMR has become a very important tool for BLM's day-to-day operations in Alaska.

Fairbanks FD: A dedicated emergency communications system such as ALMR is necessary. Cell phone system regularly becomes overloaded whenever there is an earthquake. Local agencies have very limited operating budget and depend on additional financial support to

purchase equipment. In the past the FFD had fewer radios but historic events have proven that every user needs his own radio. A subscriber unit fee to use ALMR is not sustainable for FFD and was driving factor to investigate alternatives. FFD remembers the evolution of inter-agency communications. Daily operations and large-scale emergency responses are simplified and more effective when everyone is on the same system. ALMR is a significant development and a huge step forward.

North Pole Fire Department: The public expects that First Responders are available 24/7. Lives are at risk, both the public and NPFD employees, if the communications system is compromised. There is great uncertainty about future cost of ALMR. NPFD has heard of Subscriber Unit fees as high as \$100/month per SU. Currently there is no fee but it is difficult to budget for a potential unknown cost. It is also difficult to cooperate with other agencies that are not participating 100% in ALMR, although they are ALMR members. UAF FD and PD are still using legacy system for primary communications, as well as DNR/Division of Forestry.

Summary

ALMR is more complex than conventional LMR systems and users require more training to use it proficiently. Daily use would be ideal but in many cases agencies that have an alternative working system have not migrated to ALMR for daily use or have purchased only a very limited number of subscriber units.

Trunked communications systems, such as ALMR, are different from conventional systems. Digital LMR technology is replacing analog systems as technologies progress. The current problems are similar to the time when desktop computers became more prevalent and people transitioned away from using a typewriter. The use of computerized technology has great benefits, incomprehensible to the untrained user. However, it creates great challenges at first to use it efficiently and properly. The training issues are not specific to ALMR but due to advances in technology.

The ALMR implementation also needs improved coordination. Many agencies that once were on compatible systems cannot communicate as before unless they all switch to ALMR within a similar timeframe. In some cases, especially for SOA agencies such as the Department of Public Safety and the Department of Transportation, the legacy system was entirely replaced by ALMR. In many other cases, ALMR is competing with or is used supplemental to presently available communication systems. ALMR stakeholders throughout the state work in close cooperation with the DPS but without coordination, the transition to ALMR will take more time, will be more costly and new gaps of interoperability have been created in the interim.

Whenever there are technical or operational challenges that require a significant procedural or economic investment to resolve the issue, the conventional system is usually favored due to its simplicity, familiarity and greater cost control. The transition to ALMR is nowhere near complete for many agencies and additional uncertainty about the future of ALMR has been created by the USARAK equipment divestiture.

A renewed effort to coordinate the final implementation of ALMR with all stakeholders is necessary to ensure continued interoperability.

Department of Public Safety Position

The authors of the report met on September 6, 2011 with Commissioner Joe Masters and Major Matt Leveque at the request of the Department of Administration. This is a summary of the discussion:

- The DPS is using ALMR 100% and has no alternative legacy system. Statewide coverage along the road system is required. ALMR provides instantaneous, reliable communications and simple button (press-to-talk) operation.
- Periodic system (hardware/software) updates are necessary to maintain system integrity and data transfer capability will be required for long-term future. The most frequent complaints are related to insufficient training resources and the lack of coverage in certain areas. ALMR is currently underfunded and will not work very long without proper maintenance. The administrative support for the ALMR User Council and Executive Council is very limited. Functions such as equipment inventory and maintenance oversight are critical to preserve the value and functionality of the ALMR system.
- Transition to new system would cause more issues and requires additional time, planning and coordination. It would be best to focus on ALMR as it works well for DPS. System improvements should be made if funding is available.
- 700/800 MHz systems provide better building penetration but the VHF frequencies used for ALMR work well and are preferable for wide-area coverage. Cellular / satellite phones are not an option as Public Safety operations rely on dispatch capability and depend on a very reliable system (Mission Critical). Modifications to the current Service Level Agreement provide little savings (mostly reduction of overtime).
- Increased accessibility to the ALMR Transportable / Deployable Systems (currently maintained and operated by DOD) for training purposes would be beneficial.
- Many other ALMR stakeholders throughout the state work in close cooperation with the DPS and interoperability is essential. Small agencies add great value to the State if they are on the system. The Alaska State Troopers generally assume responsibility for Incident Command in the event of any major issue and rely on municipal resources as a backup. The DPS relies heavily on the interoperability provided by ALMR for the safety of its personnel.
- Fire and Police Departments often have large service areas and lack funds to increase staffing. ALMR helps to provide wide-area coverage and support between agencies.
- The DPS suggested to relocate the ALMR management from the DOA to DPS.

ALMR and Alternatives

A variety of communication options have been evaluated prior to this study. Relevant to the discussion of alternatives to ALMR are the systems and requirements already discussed in the Alaska Statewide Communications Interoperability Plan (SCIP, 2007) and the System Design & Implementation Document (SDID) for ALMR, 2008, Appendix A: ALMR Feasibility Analysis for DOD/SOA Separation. No unreasonable assumptions or obvious areas of concern were found in the referenced documents that would be affected by the USARAK equipment divestiture. A brief assessment of currently available technologies is provided in this section.

Available Frequency Spectrum

The ALMR system is configured such that radio frequency spectrum resources are paired in a 50/50 fashion between non-federal (FCC-regulated) and federal government (NTIA-regulated) resources to create 120 channel pairs (220 frequencies) to be used throughout the statewide trunked radio system infrastructure. The USARAK equipment divestiture has no impact on frequencies shared between the Department of Defense and the State of Alaska since there continues to be *substantial benefit*²⁵ to both entities.

In the event of a breakup of the current ALMR Cooperative, the State of Alaska could potentially license a sufficient number of FCC-regulated frequencies after Jan 1, 2013 and build a separate public safety network without the use of NTIA-regulated frequencies. At a minimum, this option would require substantial interference and intermodulation studies, significant effort and additional cost and time for frequency reallocation as well as reprogramming of all subscriber units and retuning of all infrastructure equipment.

Alternative Technology Assessment

Based on an evaluation of the recommendations outlined by the ALMR Executive Council²⁶, the necessary features of an interoperable communications system for public safety and emergency response are:

1. LMR backbone infrastructure, compliant with applicable FCC regulations
2. Operating mode primarily for voice communications
3. Dispatch capability
4. Wide Area capability
5. Communications across State, Federal, DOD and local jurisdictions
6. Secure communications
7. Compatibility with disparate radio systems, both digital and analog
8. Interface capability to aviation, maritime, and legacy LMR systems as required
9. High level of redundancy
10. P25/TIA-102A standard compliant

²⁵ ALMR Communications System Cooperative Agreement, Appendix A: Spectrum Sharing Memorandum of Agreement, November 2007

²⁶ ALMR Executive Council: Interoperability Plan for the State of Alaska (Region 2), 2003

Phone systems

All telephonic systems, including terrestrial, cellular, and satellite, have, at a minimum, the same deficiencies that prevent them from being the primary communications system to replace Land Mobile Radio (LMR). Specifically:

- there is no efficient one-to-many service
- placing calls in an emergency require too much attention from the user
- no single system has ubiquitous coverage
- audio quality of cell phones and satellite phones in high noise environments is very poor
- there is no direct mode (commonly called "talkaround") communications between handsets
- Cellular systems use higher frequencies than the current LMR system, requiring more sites for same coverage area

An evaluation of **Cellular Nationwide Wireless Priority Service (WPS)** was found not to be a viable solution for the State of Alaska for several reasons. WPS is intended for occasional and temporary emergency use, not for daily operational use. It also supports only a very limited user number, far from the current number of users and it has no dispatch capability required for public safety communications. Since a push-to-talk feature is not available, it is necessary to dial a special prefix in addition to the destination phone number in order to communicate with another resource via WPS. There is also no support for encryption, no man-down functionality and all cell service providers would have to participate across the State²⁷. There would also be no ownership of the system by the State of Alaska, which means that it is shared with any number of regular cell phone users who would impact the system performance, especially in the event of a major disaster.

Public Safety LTE Systems

LTE (Long Term Evolution) is a wireless broadband technology designed to support roaming Internet access via cell phones and handheld devices. Because LTE offers significant improvements over older cellular communication standards, some refer to it as a 4G (fourth generation) technology along with WiMax. With its architecture centered on Internet Protocol (IP), Long Term Evolution promises to have excellent support for browsing Web sites, VoIP and other IP-based services. LTE can theoretically support downloads at 300 Megabits per second (Mbps) or more based on experimental trials. However, the actual bandwidth available to an individual LTE subscriber will likely be significantly less. Long Term Evolution technology remains in a research and development mode, and industry specifications are not fully ratified²⁸. In general, LTE networks will cost more to build and to operate than LMR systems covering the same areas. Additional points to consider are:

- Initial Public Safety LTE systems are data only solutions and are not expected to provide one-to-many and push to talk functionality until at least 2013
- If 'talkaround' capability is ever implemented (not presently in the standard), the range for communications between handsets will be severely limited given the disparity between the transmit power of handsets and portable radios (typical handset transmit power is 0.2 Watt while portable radios typically transmit at 4-5 Watt)

²⁷ WPS may not be supported by cell service providers in Alaska and therefore be unavailable at this time

²⁸ <http://compnetworking.about.com/od/cellularinternetaccess/g/lte-broadband.htm>

- Commercial LTE systems do not incorporate mission critical voice capability
- When available, LTE will be in 700 MHz spectrum, requiring many more sites to duplicate ALMR coverage (typically on the order of 5-10 times as many sites compared to VHF highband sites)
- LTE systems require much higher backhaul bandwidths (typically 30 Mbps vs the existing ALMR site bandwidth of 1.5 Mbps or less).

Satellite-based Public Safety Communications are prohibitive for several reasons. Aside from the cost to build and operate a satellite network, there are several other operational issues:

- Long delay (latency) affecting especially Voice-over-IP applications
- Poor or unavailable signal in areas without line-of-sight to the satellite in the southern sky, inside of buildings, during times of severe weather (e.g. heavy snowfall) and in forested areas (especially with snow coverage)
- Very expensive user equipment, certain technology is not available for handheld use
- Limited number of users / limited bandwidth (especially if satellite services are leased)

IEEE 802.16m WirelessMAN-Advanced is the current evolution of what is commonly known as Mobile WiMAX. This data-only standard has essentially the same limitations as commercial LTE but operates at a much higher frequency for public safety (4900 MHz vs 700 MHz) and thus requiring even more sites to match the existing coverage.

High-Frequency (HF) and Low-band VHF communications

Since the ionosphere often refracts HF radio waves quite well, this range is extensively used for medium and long range radio communication. However, suitability of this portion of the spectrum for such communication varies greatly with a complex combination of factors²⁹:

- Sunlight/darkness at site of transmission and reception
- Transmitter/receiver proximity to terminator
- Season
- Sunspot cycle
- Solar activity
- Polar aurora

At worst, when a band is 'dead', no communication beyond the limited groundwave paths is possible no matter what powers, antennas or other technologies are brought to bear. Additional limitations such as the small number of available channels, poor voice quality and limited availability of suitable equipment make this technology not viable for day-to-day Public Safety communications.

Motorola proprietary iDEN equipment (used by Verizon for their "Nationwide Push to Talk" and by commercial users identified as the "Harmony" system) combines the features of two-way radio, cellular telephone, packet data and paging. However it has been declared 'end-

²⁹ http://en.wikipedia.org/wiki/High_frequency

of-life' by Motorola and is effectively being replaced by LTE, LTE Advanced and other 4G systems.

Radio-over-IP (RoIP) and Voice-over-IP (VoIP) are not in and of themselves communications systems. The primary functional difference is that VoIP is optimized for telephony (one-to-one communications) and RoIP is optimized to support radio based communications (one-to-many). The existing ALMR Motobridge system is a RoIP solution, allowing the interconnection of disparate communications systems. Other systems, such as TwistedPair's WAVE³⁰ or Cisco's IPICS³¹, offer similar interconnect capabilities.

Table 10 on the following page gives an overview of the discussed alternative technologies and their compliance with the defined interoperability requirements.

³⁰ <http://www.twistpair.com/inc/data/briefs/WAVE%20Technical%20Brief.pdf>

³¹ Cisco Land Mobile Radio over IP Solution Reference Network Design,
http://www.cisco.com/en/US/docs/wireless/lmr/design/guide/lmrsrnd_1.html

Table 10: Requirements Compliance Matrix for Public Safety Communications

	Public Switched Telephone Network / GETS ³²	Cellular Nationwide Wireless Priority Service (WPS)	Public Safety LTE network	Commercial Satellite Phone Service	IEEE 802.16m Mobile Wireless Networks (WiMAN ³³)	High-frequency (HF) and Low-band VHF	Motorola iDEN System ³⁴	Existing ALMR
LMR backbone infrastructure								
Operating mode primarily for voice communications								
Dispatch capability								
Wide Area capability								
Communications across State, Federal, DOD and local jurisdictions								
Secure communications								
Compatibility with disparate radio systems, both digital and analog								
Interface capability to aviation, maritime, and legacy LMR systems								
High level of redundancy								
P25/TIA-102A standard compliant								

Compliance Color Index:
YES
NO
³² Government Emergency Telecommunications Service, <http://gets.ncs.gov/index.html>
³³ commercially known as WiMAX

³⁴ Used for Prudhoe Bay wide area communication (discontinued by manufacturer)

Analog vs. Digital Audio Quality

Many users have reported performance issues with the P25 digital radios used on the ALMR system. While there are some differences in quality between equipment from different manufacturers, the issues are often related to the user's interaction with the device. The Operations Management Office used to provide new equipment procurement assistance, system familiarization and training related to the operational differences between communication technologies but these services are currently not funded³⁵.

Figure 3 shows the audio quality of analog and digital radios over the radio signal attenuation. Like light waves, radio waves are affected by the phenomena of reflection, refraction, diffraction, absorption, polarization and scattering which define the actual coverage area. With all things being equal, a digital radio will receive consistently high audio quality until it reaches the minimum signal level threshold along the boundary of the coverage area. Beyond this point, the audio quality decreases very rapidly and no more transmissions are received until the user re-enters the coverage area. The sudden drop-off occurs because the digital radio is capable of correcting for noise-induced errors even in fringe areas and thereby eliminating the characteristic increase in static noise that analog radio users are familiar with.

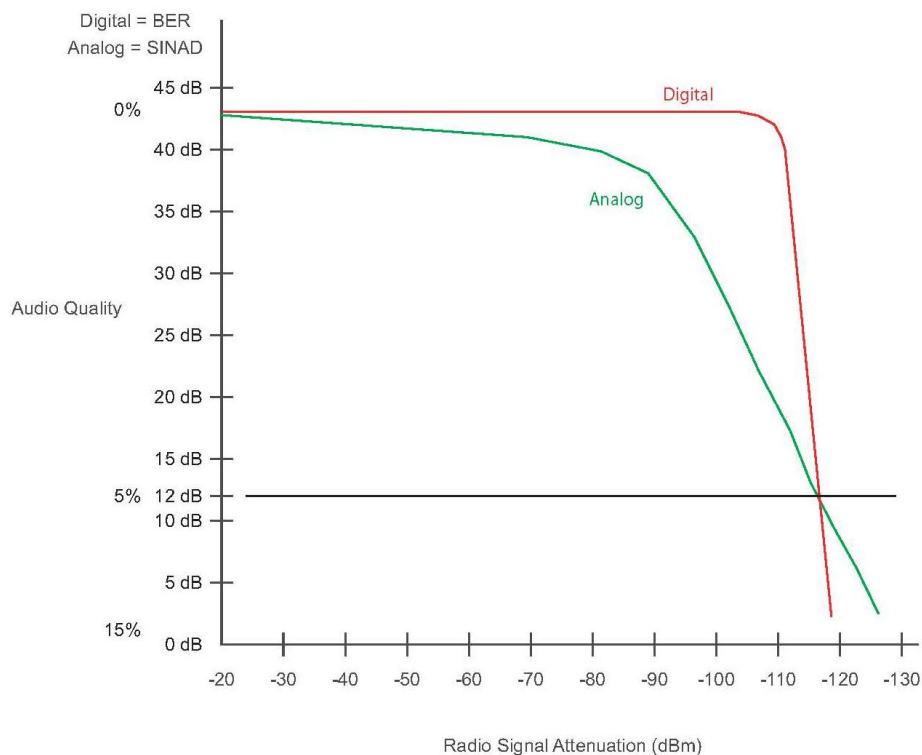


Figure 3: Analog vs. Digital Audio Quality (from Daniels Electronics LTD P25 Radio Systems Training Guide Rev 3-0-0, 2009)

³⁵ ALMR Insider Vol. 3, Issue 4, October 15, 2009: New Operations Management Office (OMO) Contract

Although digital radios provide a larger range of usable signal levels, the lack of indication of signal level decrease allows users to get closer to complete loss of communication without any advance warning.

Analog radios behave differently in which their audio quality slowly decreases as the user moves towards areas with lower signal level strength. Although the user experiences a lower audio quality it also provides feedback that one is moving into a fringe zone. Below the 12 dB SINAD line, squelch will occasionally break and although the transmission is unintelligible it gives an indication that there may have been a missed radio call, causing the user to reorient himself in an attempt to find the nearest location with better signal.

A valid concern however comes from P25 radio users in high-noise environments (e.g. fire fighting). Most of the problems have been associated with the development of voice encoders/decoders³⁶ resulting in unintelligible audio or broken audio with digitized noise artifacts. Many common fireground noises, including the Self-Contained Breathing Apparatus (SCBA) and alerting systems for low-air or inactivity and PASS (Personal Alert Safety System) devices have made the audio transmitted from digital radios unusable³⁷. Manufacturers as well as the workgroups behind the APCO P25 standard are working on this issue but at this time P25 radios transmitting from high-noise environments do not perform to the same levels as analog radios.

³⁶ Narrow Banding Public Safety Communication Channels,
<http://transition.fcc.gov/pshs/techtopics/techtopics16.html>

³⁷ Voice Radio Communications Guide for the Fire Service, <https://www.usfa.fema.gov/applications/publications/>

Economic Analysis

The cost of the ALMR system has been examined many times in the past. This section briefly summarizes relevant assumptions and findings of prior studies to provide a baseline for a comparison of predicted and actual expenses incurred. Subsequently, the future cost share for the State of Alaska is projected under consideration of the recent USARAK equipment divestiture and current cost share agreements. For simplicity, the analysis below considers all divestiture costs after July 1, 2012 (beginning of FY13) and does not include costs incurred during the second half of FY12 after the equipment divestiture at the initial 13 sites. For this period, the SOA will need to spend close to \$200,000 for additional equipment maintenance after the USARAK break/fix period expires on December 31, 2011.

Historic Cost and Development

A concise historical progression was presented in a 2010 White Paper³⁸ by the Department of Administration:

A Total Cost of Ownership (TCO) study conducted in March 2005, reported \$92 million expended through FY05. This study did not project a final all-in cost – only costs spent to that point in time. The SOA, working with the DoD, initiated a new TCO study in late 2007.

[...] The 2007 TCO study was completed and approved by the ALMR Executive Council in August 2008. The TCO estimated on-going annual O&M costs at \$5.4 million, of which \$2.5 million were costs to be shared by all ALMR users. The Executive Council approved a cost share methodology that apportioned the estimated shared costs equally across all ALMR users on a per-handset basis.

To allow municipal users of the ALMR system sufficient time to build shared cost allocations into their budgets, the Legislature approved FY10 funding for both the SOA and Municipal shared cost allocations. In 2009 the Legislature expressed its expectation that municipal users begin contributing their annual shared cost allocations in FY11. After discussion with users over the interim the municipal and SOA shared cost allocations are included in the Governor's FY11 budget request.

In May 2009, based on final budget authority for the SOA, DoD, and non-Federal DoD, the ALMR Executive Council adopted an agreement for FY10 that reduced the annual shared cost budget for the ALMR Operations Management Office and committed the SOA and DoD to divide the FY10 shared cost budget equally at 50% each.

On-going, competing demands for limited SOA and Federal DoD resources continue to challenge both with attempts to develop a long-term cost share methodology for the support of ALMR Operations and Systems Management. SOA has included funding in its FY11 budget to support both SOA and Municipal shared costs.

³⁸ State of Alaska Department of Administration: Alaska Land Mobile Radio Whitepaper, January 26, 2010

A few other reports pertaining to ALMR cost are not mentioned in the 2010 White Paper. The 2008 TCO and the 2008 System Design & Implementation Document (by Motorola, Inc.) were used as the source for the March 2009 ALMR Economic Analysis by Tecolote Research, Inc. This company also prepared the ALMR Independent Validation for Cost Reasonableness for ALCOM/J6 in February 2009. A summary of key findings from these documents is available in the ALMR Communications System 2010 Business Case Update.

There are two parts to the 2009 Economic Analysis (EA):

- a) Alternatives Analysis: Evaluation of ALMR Cooperative Partnership vs. Separate Systems. The System Design & Implementation Document provided data, costs and recommendations for a comparison of scenarios (maintain existing ALMR vs. separate systems), while the 2008 TCO report was the primary source for historical cost and predictions for future cost of the existing ALMR system.
- b) Benchmarking: Comparison of ALMR to two other (DOD-only) LMR systems.

As part of a “best value” analysis to determine intangible benefits in addition to cost factors a survey and interviews were performed in 2009. The DHS SAFECOM chart was used as a guideline which identifies five critical success elements for a sophisticated interoperability solution.

Economic Analysis assumptions (excerpt)³⁹:

- The ALMR Executive Council has approved the approach to allocate shared sustainment costs to ALMR stakeholders. However, the allocation method has not been finalized. In order to illustrate a cost comparison, this EA displays overall costs between both alternatives for collective stakeholders.
- While some capital replacement and exercise/training costs will be incurred during the ALMR life cycle, these costs were not identified in the SDID and therefore were excluded in the analysis of both alternatives.
- Sustainment costs to operate and maintain the ALMR system were reasonable based on an Independent Validation of Cost Reasonableness (IVCR) that benchmarked similar expenses of two other LMR systems.

2009 Economic Analysis Findings and Future Cost

All cost estimates in the 2008 TCO and 2009 EA were based on initial ALMR budget allocations and inflated at 2.83% per year to calculate the future cost⁴⁰. To date, this has been a reasonably accurate assumption: For the years 2008 through 2010 the average Anchorage CPI⁴¹ is 2.53% and for the six-year average (2005-2010) the CPI is 2.68%. The original CPI of 2.83% was used in this analysis for the calculation of future exercise support costs as well as for oversight and coordination. ALMR circuit O&M costs are based on the

³⁹ ALMR Economic Analysis, 5 March 2009, page 8. Further system requirements are outlined on page 11f of the System Design & Implementation Document, 2008.

⁴⁰ The inflation rate was based on the three year average Consumer Price Index for Anchorage, 2005-2007

⁴¹ Alaska Department of Labor and Workforce Development: <http://labor.alaska.gov/research/cpi/cpi.htm>

2008 TCO figures and equal 6.75% of the State of Alaska Telecommunications System⁴² (SATS) O&M cost which is also inflated at 2.83% per year for the purpose of the EA.

However, there is one major exception. Under the current contracts ALMR costs for infrastructure equipment maintenance and system management increase each year by 5%. This creates a significant cost difference over the system lifetime.

The matter of cost comparison is further complicated by the fact that the 2008 TCO calculated the equipment O&M too high due to an extrapolation error⁴³ between FY2009 and FY10. Therefore the total equipment maintenance cost over the system lifetime (FY2009 - FY2025) is shown as \$67.596M which is almost 9% above the proper amount (with the cost inflated at 2.83% per year). Corrected for the actual 5% annual increase in the SMO and infrastructure equipment maintenance budget, the remaining infrastructure equipment maintenance total for FY12-FY25 is \$61.9M. Due to the USARAK equipment divestiture and pending ownership transfer to the State of Alaska, this figure will be discussed later in further detail.

The Systems Management Office (SMO) budget is also subject to an annual 5% increase, invalidating the 2009 EA predictions. For the time period between FY2012 and FY2025 this will cause a cost difference of approximately \$4 million.

The predictions in the 2009 EA for the Operations Management Office (OMO) are also no longer true since the OMO budget has already been subject to cuts which led to significantly reduced training, limited travel and elimination of the user council conference funding⁴⁴. This has had a major impact on the usability of ALMR. This analysis assumes full restoration of the OMO budget for the projection of future costs as this will be a necessary step to alleviate the detrimental effects of inadequate training. Based on the FY2009 budget the 2009 EA predicted a cost of \$683,928 in FY2012 for the OMO but merely two-thirds of the amount was allocated.

The ALMR cost sharing agreement⁴⁵ allows for annual revisions. In its most current version the agreement reads as follows:

The Cost Share Approach will be that the owner of the infrastructure equipment will pay for the maintenance of that equipment in accordance with the requirements defined in the SLA.

The Cost Share Method will be that the costs of the Operations Management Office and the System Management Office will be shared 50/50 between the Federal government (meaning ALCOM and the AFEA) and State/Local government (meaning SOA and the Local

⁴² SATS provides the backbone for ALMR wide-area connectivity and many other services. See ALMR Insider Vol. 3, Issue 4, October 15, 2009: What is SATS and How Does It Relate to ALMR? Additional information can be found in: State of Alaska Department of Administration ALMR Whitepaper, January 2010

⁴³ ALMR Communications System Total Cost of Ownership Study, 2008, page 10

⁴⁴ ALMR Insider Vol. 3, Issue 4, October 15, 2009: New Operations Management Office (OMO) Contract

⁴⁵ ALMR Communications System Cost Sharing Cooperative Agreement for Operations and Maintenance, 2011

governments SOA represents). Federal agencies will develop a method to apportion the costs among themselves. State and Local governments will also develop their own method to apportion the costs among themselves.

The 50/50 cost sharing between the Federal government and State/Local government for the OMO and SMO is unaffected by the USARAK divestiture. However, the State of Alaska will be responsible for an increased share of the annual infrastructure equipment maintenance. This is illustrated in Table 11 and Table 12 below:

Table 11: SOA Fiscal Year 2012 Equipment Maintenance

	No. of Sites Maintained		FY12 Equip. Maintenance	
SOA	30	37.5%	\$1,265,718	40.1%
DOD	50	62.5%	\$1,891,853	59.9%
ALMR total	80	100.0%	\$3,157,571	100.0%

Table 12: SOA Fiscal Year 2013 Equipment Maintenance

	No. of Sites Maintained		FY13 Equip. Maintenance	
SOA (original)	30	37.5%	1,329,004	40.1%
SOA (from divestiture)	41	51.3%	1,288,855	38.9%
SOA (total)	71	88.8%	2,617,859	79.0%
DOD	9	11.3%	697,590	21.0%
ALMR total	80	100.0%	3,315,449	100.0%

After accepting the USARAK equipment transfer, the State of Alaska will be responsible for funding nearly 79% (up from 40%) of the total annual infrastructure equipment maintenance cost which ranges from approximately \$3M (FY11) to \$6M (FY25). The SOA differential cost will be close to \$1.3M in FY2013 and increases at 5% per year to \$2.3M in FY2025 for a total additional infrastructure equipment maintenance cost of \$22.8M. Periodic system upgrades will cost the SOA additional \$8.1M. Both differentials combined total \$30.1 million for the SOA over the ALMR system lifetime. This cost is minimal compared to the capital cost of a different system with comparable coverage that also provides interoperability levels similar to those currently achieved with ALMR.

Infrastructure equipment maintenance is the primary cost driver of the total annual ALMR system O&M cost. In addition to this component there also the shared costs for OMO, SMO and circuit O&M. The cost distribution for both shared and unshared O&M is broken down for FY2011 in Figure 4.

Total O&M Costs for FY2011: \$5.2M

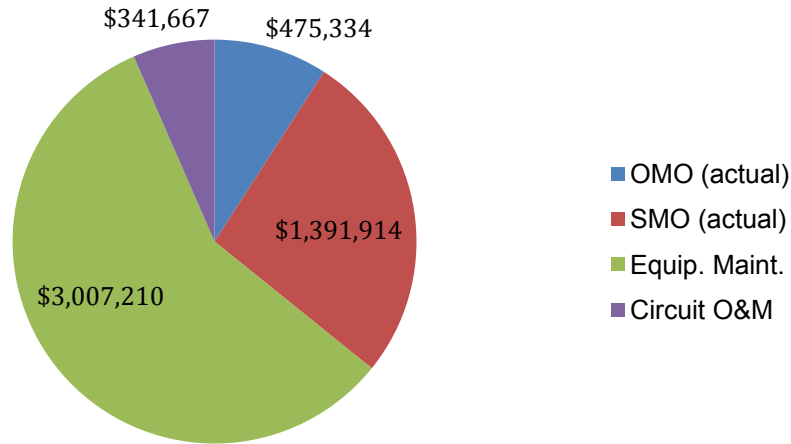


Figure 4: Cost distribution for shared and unshared (total) ALMR O&M costs (FY2011)

ALMR cost components FY09 - FY25

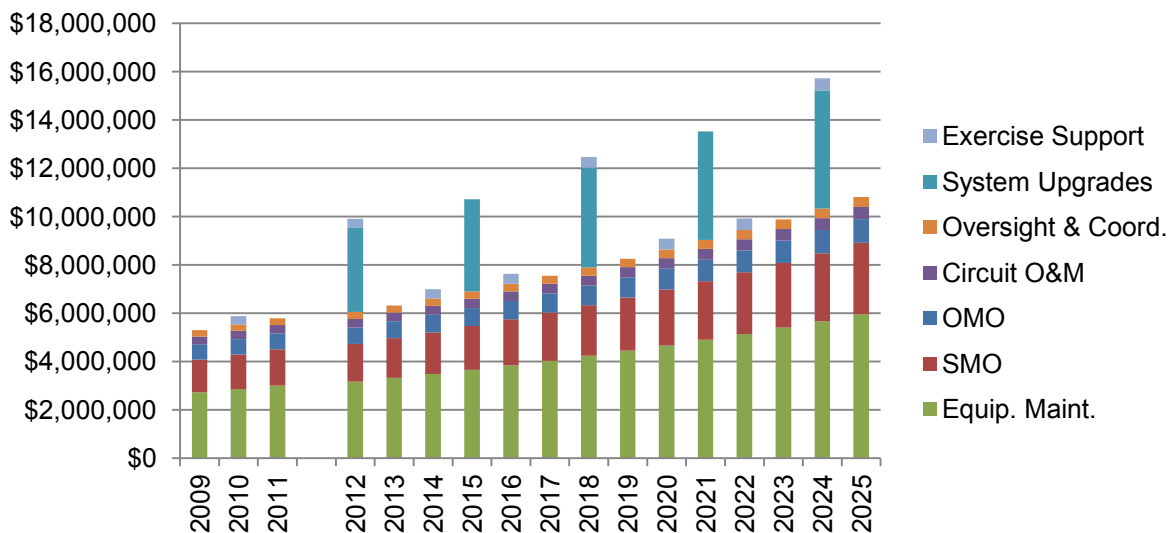


Figure 5: Increase of shared and unshared (total) ALMR O&M costs. Infrastructure Equipment Maintenance and SMO costs increase at 5% per year while all other cost components are inflated at 2.83%.

Figure 5 includes funding for oversight and coordination, biennial exercise support and for periodic system upgrades. Upgrades, or more appropriately, system updates include primarily Antivirus and system software updates for the computer-controlled radio system and are required for continued manufacturer support. Like all other aspects of conventional sophisticated computer systems and networks, many of the features, enhancements, and

newer developments are reliant on periodic upgrades of the operating systems. Version upgrades are often sequential and require the installation of all intermediary version upgrades; thus, it is imperative that the upgrades be installed in a timely manner to avoid extensive costs and potential downtimes⁴⁶.

ALMR Cost of Ownership (SOA share): \$94.7M FY2012-2025

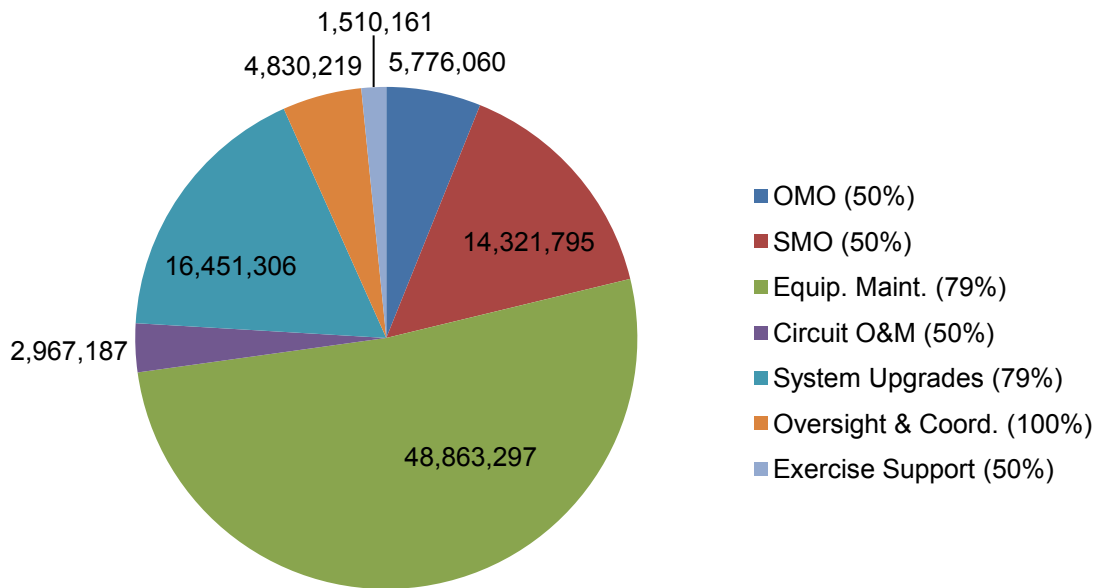


Figure 6: State of Alaska fraction of total cost of ownership (FY2012-2025). The total cost for all stakeholders is estimated at \$137.7 million whereof the SOA bears up to \$70 million.

The percentages in the index of Figure 6 reflect the predicted SOA share of the total cost of ownership. Shared system costs (OMO, SMO and circuit maintenance) are currently split 50/50. Large-scale statewide exercise support has historically been coordinated and funded by DOD. Additional State-funded and more frequent smaller-scale and agency-specific trainings would be very beneficial to non-DOD agencies. Therefore, 50% of the cost for exercise support was also included in the calculation of the future SOA share.

Besides training, there is a need for improved coordination between ALMR stakeholders. Perhaps a single key stakeholder should demonstrate clear leadership and commitment. For this reason, 100% of the cost for ALMR oversight and coordination is included in the SOA

⁴⁶ Department of Homeland Security: Emergency Communications System Life Cycle Planning Guide, August 2011

cost share, assuming the State has the greatest interest in countering the coordination issues of the past.

The percentages for infrastructure equipment maintenance and system upgrades are based on the ownership distribution of infrastructure equipment after the USARAK equipment transfer to the SOA.

From a SOA perspective, any qualifying alternative system that costs less than \$30 million would be less expensive than to proceed with the USARAK equipment transfer. However, sustainment costs for alternative technologies and comparable scope are similar to those of ALMR. Operation and Maintenance is the largest factor after the capital expense and feasible alternative solutions would still require at least the same number of remote communication sites. When all cost factors are considered (including periodic system upgrades, oversight and coordination and exercise support) the total cost of ownership for all partners of the ALMR Cooperative is approximately \$137 million (FY2012 - FY2025) with SOA bearing up to 69% (approximately \$95M) under the current agreements.

The following factors must be considered when determining the total cost of any alternative:

- Capital expenses for new infrastructure
- Capital expenses for periodic system upgrades (software and hardware)
- Capital expenses for new user equipment
- Transition cost until new system is available to users
- Decommissioning cost of residual ALMR equipment
- Training cost to familiarize users with new technology
- Operation & Maintenance costs of alternative system
- Exercise Support during system operation
- Cost to (re-)program communication devices
- Oversight and Coordination cost
- Circuit / volume / airtime usage costs
- Additional expenses due to increased user resistance caused by the lack of demonstrated leadership and poor coordination
- Impact on conditional Federal grants that have been used for the ALMR build-out

Perhaps under a future cost share agreement services could be leased to the DOD at a reasonable rate to share the cost between SOA and DOD. The DOD has indicated support of a new cost share agreement⁴⁷. With the consolidated ownership there might also be a synergy potential with combined maintenance trips to sites that were previously maintained on separate schedules. This however, would require new system maintenance contract negotiations as each site is currently charged at a certain flat rate per month.

⁴⁷ Alaskan Command (ALCOM) letter to the Commissioner, Department of Administration, dated March 10, 2010

Scenario: ALMR for SOA only

Currently the ALMR system supports more than 4,682 SOA subscribers (28.3% of the system total)⁴⁸. The system requirements⁴⁹ for the SOA are:

- The Alaska State Troopers and the Department of Transportation require continuous mobile voice coverage over the primary highway system and every available site in the State, as well as the potential for future data coverage. Since they do not have primary jurisdiction on military bases, state agencies do not need extensive coverage at these locations.
- Major interoperability requirements include inter-DOD and inter-SOA.
- SOA interoperability requirements also include first responder mutual aid and incident command operations that would include combined state/federal/local emergency response
- Remaining legacy frequencies and equipment used by some SOA agencies will not be usable in the new narrowband environment mandated by the FCC

Since this scenario does not reduce the number of required sites, potential cost savings are limited to a reduction of repeaters per site. Fewer users would also require less time spent for training and system configuration. It would require further analysis to determine if the reduction has any effect on current staffing levels. Marginal savings would also be experienced due to reduced power consumption and less preventative maintenance. The cost to physically remove any excess repeaters would exceed the cost savings.

Breakup of the DOD and SOA network would have major technical and operational impacts on all stakeholders. The separation from DOD would result in the loss of joint frequency assignments and therefore create significant additional costs⁵⁰.

⁴⁸ Figures are based on the 2010 subscriber unit count. The SU count in this report considers only chargeable subscriber units. System-wide there are nearly 3,500 additional Consoles and MOTOBRIDGE Consolettes. The percentage of SOA-owned non-chargeable equipment is unavailable.

⁴⁹ System Design & Implementation Document (SDID) for ALMR, 2008, page 11

⁵⁰ System Design & Implementation Document (SDID) for ALMR, 2008, Appendix A: ALMR Feasibility Analysis for DOD/SOA Separation

References

- i. ALMR Economic Analysis, 2009
- ii. ALMR Communications System 2010 Business Case Update, Version 4, 2010
- iii. ALMR Communications System Cooperative Agreement, 2007
- iv. ALMR Communications System Cooperative Agreement, Appendix D: Service Level Agreement, 2008
- v. ALMR Communications System Cooperative Agreement, Appendix A: Spectrum Sharing Memorandum of Agreement, 2007
- vi. ALMR Communications System Cost Sharing Cooperative Agreement for Operations and Maintenance, 2011
- vii. ALMR Communications System Total Cost of Ownership Study, 2008
- viii. ALMR Total Cost of Ownership (TCO), Detailed Briefing Report by Market Strategy Group LLC, 2005
- ix. ALMR Independent Validation for Cost Reasonableness, 2009. Prepared for ALCOM/J6
- x. System Design & Implementation Document (SDID) for ALMR, 2008 – For official use only
- xi. System Design & Implementation Document (SDID) for ALMR, 2008, Appendix A: ALMR Feasibility Analysis for DOD/SOA Separation – For official use only
- xii. Alaska State Governor Administrative Order No. 103, dated October 21, 1987 and further established in AS 26.23
- xiii. Alaska State Governor Administrative Order No. 170, dated January 17, 1997
- xiv. ALMR Executive Council: Interoperability Plan for the State of Alaska (Region 2), 2003
- xv. Alaska Statewide Communications Interoperability Plan (SCIP), 2007. Prepared by: Alaska Department of Military and Veterans Affairs – For official use only
- xvi. State of Alaska Department of Administration ALMR Whitepaper, January 2010
- xvii. Charter for the Alaska Land Mobile Radio Executive Council, 1995 and 2008
- xviii. ALMR Communications System User Council Charter, Version 7, 2011
- xix. ALMR User Council Meeting Minutes
- xx. ALMR Communications System Strategic and Operational Plan, Version 4, 2011
- xxi. Current budget snapshots, O&M contracts, Subscriber Unit counts, usage data and ALMR build-out documentation provided by the ALMR Operations Management Office and System Management Office

Appendix A

Table 13: ALMR Build-Out and Ownership

Color Index:

Initial USARAK break/fix period: ends 12/31/2011

Final USARAK divestiture deadline: 06/30/2012

SOA ownership prior to USARAK divestiture

	Site Name	FY 12 equipment ownership	FY 13 equipment ownership	SOA FY 12 Equipment Maint. Cost (*)	SOA FY 13 Equipment Maint. cost
1	Alcantra	SOA	SOA	0	34,509
2	Anchor River	SOA	SOA	33,682	35,366
3	Atwood Building	SOA	SOA	66,848	70,190
4	Auke Lake	SOA	SOA	33,017	34,668
5	Bailey Hill	SOA	SOA	0	48,120
6	Beaver Creek	SOA	SOA	28,616	30,047
7	Birch Hill	USARAK	DOD	0	0
8	Black Rapids	USARAK	DOD	0	0
8	Black Rapids: Connectivity and Charges	USARAK	DOD	0	0
9	Blueberry Hill	SOA	SOA	9,006	9,456
10	Byers Creek	SOA	SOA	0	44,108
11	Canyon Creek	SOA	SOA	0	27,563
12	Cathedral Rapids	SOA	SOA	0	37,135
13	Chulitna	SOA	SOA	0	37,135
14	Clear Air Force Station	USAF	DOD	0	0
14	Clear AFS: Tower, Power, Connectivity, Charges	USAF	DOD	0	0
15	Cooper Mountain	SOA	SOA	0	30,046
16	Cottonwood	SOA	SOA	33,682	35,366
17	Fort Greely	USARAK	DOD	0	0
18	Diamond Ridge	SOA	SOA	33,682	35,366
19	Dimond Courthouse (Juneau)	SOA	SOA	28,616	30,047
20	Divide	SOA	SOA	0	30,046
21	Donnelly Dome	USARAK	DOD	0	0
22	Dot Lake	SOA	SOA	0	30,046
23	Ernestine Mountain	SOA	SOA	0	31,609
24	Ester Dome	SOA	SOA	0	55,225
25	Fire Station 12	SOA	SOA	63,665	66,848
26	Garner	SOA	SOA	0	37,135
27	Independent Ridge	SOA	SOA	0	21,445
28	Girdwood	SOA	SOA	0	33,928

29	Glennallen	SOA	SOA	0	30,046
30	Haines	SOA	SOA	28,616	30,047
31	Harding Lake	SOA	SOA	0	27,563
32	Heney Range	SOA	SOA	28,616	30,047
33	High Mountain (Ketchikan)	SOA	SOA	28,616	30,047
34	Hill 3265	USAF	DOD	0	0
35	Honolulu	SOA	SOA	0	30,046
36	Hope	SOA	SOA	0	33,928
37	Hurricane	SOA	SOA	0	37,135
38	Kasilof	SOA	SOA	25,001	26,251
39	Kenai	SOA	SOA	33,682	35,366
40	Lena Point	SOA	SOA	43,354	45,522
41	Lion's Head (Sheep Mountain)	SOA	SOA	0	21,445
42	Money Knob	SOA	SOA	28,616	30,047
43	Moose Pass	SOA	SOA	0	19,472
44	Nenana	SOA	SOA	0	19,735
45	Nikiski	SOA	SOA	33,682	35,366
46	Ninilchik	SOA	SOA	33,682	35,366
47	Paxson	SOA	SOA	0	30,046
48	Peger Road	SOA	SOA	55,368	58,136
49	Pillar Mountain	SOA	SOA	28,616	30,047
50	Pipeline	SOA	SOA	25,001	26,251
51	Pole Hill	USAF	DOD	0	0
52	Portage	SOA	SOA	0	33,928
53	Quarry Hill	USAF	DOD	0	0
54	R1 North	USAF	DOD	0	0
55	Rabbit Creek	SOA	SOA	0	41,032
56	Reindeer Hills	SOA	SOA	0	30,046
57	Saddle Mountain	SOA	SOA	26,251	27,564
58	Sawmill	SOA	SOA	0	30,046
59	Seldovia	SOA	SOA	33,682	35,366
60	Seward	SOA	SOA	0	26,823
61	Silvertip	SOA	SOA	0	30,046
62	Site Summit	SOA	SOA	45,829	48,120
63	Skagway	SOA	SOA	28,616	30,047
64	Ski Hill	SOA	SOA	40,007	42,007
65	Sourdough	SOA	SOA	0	30,046
66	Sterling	SOA	SOA	40,007	42,007
67	Summit Lake	SOA	SOA	0	30,046
68	Tahnetā Pass	SOA	SOA	0	30,046
69	Tok	SOA	SOA	0	30,046

70	Tolsona	SOA	SOA	0	30,046
71	Trims	SOA	SOA	0	30,046
72	TSAIA (Anchorage Airport)	SOA	SOA	55,368	58,136
73	Tsina	SOA	SOA	0	30,046
74	Valdez	SOA	SOA	0	27,563
75	Whittier	SOA	SOA	0	21,445
76	Willow Creek	SOA	SOA	32,422	34,043
77	Willow Mountain	SOA	SOA	0	30,046
78	Wolcott Mountain	SOA	SOA	0	30,046
79	Woman's Bay	SOA	SOA	28,615	30,046
80	Yanert	SOA	SOA	0	30,046

SOA subtotal Infrastructure Equipment Maintenance
\$1,054,461 \$2,396,039

Microwave System Quarry Hill / Birch Hill		
Microwave System R1 North to Alcantra		
Microwave System Summit to ARRC		
Microwave System Summit to Tudor		
Microwave System Summit to Willow		

SOA FY 12 Equipment Maint. Cost (*)	SOA FY 13 Equipment Maint. cost
7,001	7,351
12,530	13,157
7,001	7,351
7,001	7,351
7,001	7,351

SOA subtotal Microwave System
\$40,534 \$42,561

Birch Hill Prime Controller Site	DOD	DOD
Tudor Road Prime Controller Site	SOA	SOA

0	0
170,723	179,259

SOA Total Prime Controller Sites
\$170,723 \$179,259
SOA Total Infrastructure Equipment Maint.
\$1,265,718 \$2,617,859

Appendix B

Table 14: ALMR Stakeholders selected for Interview and Questionnaire

	Organization	Interviewee
1	Alaska Army National Guard	Michael Grunst Phone: 907-428-6205 Email: michael.grunst@us.army.mil
2	ALCOM/J64 representing Eielson AFB, Joint Base Elmendorf-Richardson and US Army Alaska	Tim Woodall Phone: 907-552-8223 Email: timothy.woodall@elmendorf.af.mil
3	Anchorage, Municipality of	Trygve Erickson Phone: N/A Email: ericksontj@ci.anchorage.ak.us
4	Bear Creek Fire Service Area	Mark Beals Phone: 907-362-1213 Email: bearcreek@seward.net
5	Civil Air Patrol – Alaska Wing	Larry Sliger Phone: 907-351-1126 Email: lsliger@gci.net
6	Delta Rescue Squad	Angela Lentz Phone: 907-895-4356 Email: deltajunctionrescue@gmail.com
7	Dept. of Homeland Security – Transportation Security Administration	Paul Carter and Alvin Flowers Phone: 907-771-2935 / 907-771-2919 Email: ANCCoordinationCenter@dhs.gov
8	Dept. of Natural Resources – Division of Forestry	Jordan Halden Phone: 907-356-5847 Email: jordan.halden@alaska.gov
9	Dept. of Public Safety	Major Matt Leveque Phone: 907-269-5697 Email: matt.leveque@alaska.gov
10	Dept. of the Interior – Bureau of Land Management	Bev Fronterhouse Phone: 907-356-5591 Email: bfronter@blm.gov
11	Dept. of Transportation & Public Facilities	Ocie Adams Phone: 907-465-6940 Email: ocie.adams@alaska.gov
12	Fairbanks FD	Ernie Misewicz Phone: 907-450-6615 Email: edmisewicz@ci.fairbanks.ak.us
13	Federal Emergency Management Agency	Terry Knight Phone: 1-425-487-4758 (Seattle) Email: terry.knight@dhs.gov
14	Homer PD	Chief Mark Robl Phone: 907-235-3150 Email: mrobl@ci.homer.ak.us
15	Juneau PD	Cory Dodd Phone: 907-586-0629 Email: jcdodd@juneaupolice.com
16	Kenai FD	Chief Michael Tilly Phone: 907-286-7666 Email: mtilly@ci.kenai.ak.us

17	Kenai PD	Lt. Dave Ross and Chief Sandahl Phone: 907-283-7879 Email: dross@ci.kenai.ak.us
18	Kenai Peninsula Borough	Eric Mohrmann Phone: 907-262-2097 Email: emohrmann@borough.kenai.ak.us
19	Matanuska-Susitna Borough	Dennis Brodigan and Carl Hereford Phone: 907-373-8815 / 907-982-5558 Email: dennis.brodigan@matsugov.us
20	National Parks Service – Alaska Region	Tom Gillett Phone: 907-644-3721 Email: tom_gillett@nps.gov
21	North Pole FD	Chief Geoff Coon Phone: 907-488-0444 Email: gcoon@northpolefire.org
22	Seward, City of	David Squires Phone: 907-224-3445 Email: dsquires@cityofseward.net
23	Tok Area EMS	Asst. Chief Jack Rutledge Phone: 907-940-5148 Email: taems@aptalaska.net
24	Valdez FD	Chief George Keeney Phone: 907-834-3463 Email: gkeeney@ci.valdez.ak.us
25	Wasilla PD	Joel Butcher Phone: 907-352-5460 Email: jbutcher@ci.wasilla.ak.us



World Wide Technology, Inc.

ALMR Feasibility Study Interview Results / Raw Data

State of Alaska

October, 2011

PRESENTED BY

World Wide Technology, Inc.
Anchorage, Alaska

PREPARED FOR

State of Alaska Department of
Administration

DELIVERABLE UNDER CONTRACT

2007-0200-6775

WORK ORDER

02-2292

PREPARED BY

North Slope Telecom, Inc, in collaboration with
World Wide Technology, Inc



Dear ALMR Stakeholder,

North Slope Telecom, Inc. has been tasked by the Alaska Department of Administration to perform a brief interview with selected ALMR stakeholders. We are asking for your cooperation to provide feedback to the Administration for future decision-making.

Attached you will find a questionnaire. We would like to perform the interview during a phone call to ensure any questions or comments you may have can be addressed. Alternatively, you may also provide your answers by email if you prefer. The phone interview will take less than 20 minutes and we hope to complete the feedback process by August 26, 2011.

Background Information:

The United States Army Alaska (USARAK) is currently in the process of divesting itself from a large number of ALMR repeater sites¹. A transfer of the affected ALMR infrastructure to the State of Alaska has been proposed but further investigation is required before the Administration can accept the assets. North Slope Telecom will use the information collected from this interview to analyze the full impact on the system's users and to determine the economic aspects of the ALMR infrastructure equipment transfer.

Thank you for your participation and support.

Brian Aho
North Slope Telecom, Inc.
2020 E. Dowling Rd #3
Anchorage, AK 99507

Phone: (907) 751-8267
Fax: (907) 751-8272

email: baho@nstiak.com

¹ http://www.alaskalandmobileradio.org/Documents/Newsletters/2011/20110713_Vol5Iss3.pdf

Subject: RE: ALMR questionnaire
From: "Woodall, Timothy P Civ USPACOM ALCOM JTF-AK/J64"
<Timothy.Woodall@elmendorf.af.mil>
Date: 8/25/2011 2:48 PM
To: "Brian Aho" <baho@nstiak.com>
CC: "Del Smith" <delsmith@5starteam.net>

Brian

Below is the DoD response to the ALMR Questionnaire.

v/r
Tim

Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Daily 24/7 use: US Air Force Alaska operational use of ALMR consist of:

1. Installation Security/Force Protection: Used extensively by security forces for security operations and provides primary means of communications for quick reaction and rapid reaction forces
2. Installation Public Safety / First Responder Emergency Comms: Used extensively for conducting public safety activities (police, fire, and medical)
3. Day-to-Day Operations: Used to coordinate, synchronize and support maintenance, logistics, transportation and general base operations
4. Radio Communications for Military Units: Units traveling to/from USAF installations; over 750 miles of highway some in very remote areas
5. Training Support: provides administrative and training support for training support and range control operations
6. Unit Deployments/Redeployments: Used extensively to synchronize personnel and equipment movements for units by air, sea, and rail
7. Interoperability with other Federal, State and Local Agencies: Provides interoperable communications with other agencies for military support to civil authorities to include the National Guard
8. Rescue Coordination Center: Operations: Provides communications with military and civil rescue response teams and facilitates communications between ground response teams and airborne assets

Daily 24/7 use. US Army Alaska operational use of ALMR consist of:

1. Installation Security/Force Protection: Used extensively by police for security operations and provides primary means of communications for quick reaction and rapid reaction forces
2. Public Safety / First Responder Emergency Comms: Used extensively for coordinating public safety activities (police, fire, and medical) for garrisons
3. Radio Communications for Military Convoys: Units traveling to/from FRA, FWA, and FGA/DTA; over 750 miles of highway some in very remote areas
4. Unit Deployments/Redeployments: Used extensively to synchronize personnel and equipment movements for units by air, sea, and rail
5. Training Support: Effective for providing administrative and training support for training exercises and range control operations
6. Transportation Management: Used to coordinate and synchronize transportation assets in support of unit training
7. Interoperability with other Federal, State and Local Agencies: Provides interoperable communications with other agencies for military support to civil authorities to include the National Guard

B. Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

For both US Air Force and US army Alaska intra-agency communications is the primary use. Inter-agency communications is typically mutual aid, emergency and medical response support and exercises and occurs on an as needed basis but is critical to mission success.

C. Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

For both the Army and Air Force use is generally localized, however to meet mission needs coverage across a wide geographic area is optimal. Coverage along the roadway is also critical in Defense support to civil authority missions and roles.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

least important most important

A) Improved safety and security: (5)

B) Improved training: (5)

C) Increased ability to interoperate: (5)

D) Improved protocols/procedures/standards: (5)

E) Greater ability to acquire federal grants: (1)

F) Other: improved technology, capability and information Assurance (5)

3) How do you rate the current ALMR coverage and system availability?
(coverage and availability meets mission needs)

Are there existing areas in which your agency's operations are impaired due to the lack of system availability? (none)

Additional Comments: ALMR provides a complete and robust capability for interoperability that the status quo LMR systems typically provide. The system was designed and implemented to address the requirement to interoperate among Federal, State, Local, tribal and Non Governmental organizations (NGO) and Agencies involved in emergency support and response. ALMR provides in and above the normal LMR coverage from fixed towers, a robust gateway system that facilitates dispatch centric control and connectivity to disparate radio systems such as NGOs, air to ground, maritime, interstate system to system connectivity such as to the States of Washington and Oregon for interstate emergency response and support. ALMR addresses communications in critical infrastructure by specifically designing and implementing solutions to ensure communications into and out of critical infrastructure such as the Anniston Tunnel to Wittier, Major Airports, hospitals, federal buildings etc. Further ALMR provides a very robust transportable capability that can provide critical communications in an emergency when communications are lost, or are needed in areas where ALMR has no coverage. Critical communications such as LMR, maritime, air to ground, satellite radio, computers and MESH wireless LAN and WAN services, internet, telephones and Public switched telephone access, Video Teleconference, dispatch and gateway operations/management services can be provided to meet needs in an emergency when those services and or capabilities have been lost. The transportable can also be used to increase the capacity of the ALMR system to handle high volume communications needs typically found in an emergency response situation ensuring fluid communications and sustained quality of service levels to emergency responders. Finally the transportable can also be used to restore communications to damaged or destroyed ALMR infrastructure ensuring continued communications when

required.

4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

The question is not detailed enough to provide an assessment and impact statement. The impact is dependent upon the geographical area in which reduction would occur.

Additional Comments: It is not understood what a reduction in coverage would accomplish nor why the question is posed for this study? Costs can be controlled in various ways but to remove coverage from an area should only be done if the area being covered has no need for continued coverage.

5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Because of the shared system infrastructure and shared spectrum approach a separation of the system would require each agency to completely replace their entire portion of the system with an independent stand alone replacement. That cost analysis has already been accomplished and the cost impact to DoD is \$36M in initial capital investment, however operational costs may be collectively reduced for DoD from \$2.5M to \$2.2M annually. The trade off in savings in operational costs which primarily comes from there no longer needing to be Operations Management Services function such as the shared cost ALMR OMO, and the loss of operational capability most importantly of which is interoperability is severe and significant. There is a cost for interoperability but not having the interoperability when it is needed has historically proven to be much more costly.

6) Is a legacy communications system still available to your agency? If so, please describe its features: No, DoD operates totally on ALMR.

7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability.

At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization? NO

Additional Comments: ALMR provides primary and critical communications

for Public Safety first responders whom rely for safety and security reasons on a quality of service that provides communications on demand and in real time when needed every time it is needed.

For DoD when critical operations are underway and LMR communications is the or one of the primary communications capabilities the highest quality of service is required and demand of by the operations community.

Where there is a mix of agencies using a shared system, there is also a mix of service level needs among the agencies operating on the shared system. In the case of ALMR, Federal, State and Local law Enforcement, Fire, and medical response personnel operate daily in performing Public Safety roles, missions and tasks. Other agencies are conducting critical services in which safety and security are paramount, while yet other agencies are performing non critical support functions. The ALMR User Council understands that the quality of service for the system must meet the demands of the agencies that have the highest need. There has been no change in the Public Safety roles, missions and tasks supported by the ALMR system, nor for the agencies performing other critical mission roles and tasks, as such the quality of service level has not changed and would not change unless the nature of the mission critical operations being supported by the ALMR system changed. The same is true for the Information Assurance and Security demands that federal and State agencies operating on the system must adhere to and insist be maintained on the system in order to gain an authority to operate on the system. Service level is also tied to Information Assurance levels. ALMR has a collective Mission Assurance Category (MAC) of "Mission Critical" and they type of communications passed over the ALMR system are sensitive in nature. But operating on the same system are agencies operate at a MAC level of "Mission Essential" and some operate at a "Mission Support" level. But because it is one system, it is maintained at the Mission Critical level.

-----Original Message-----

From: Brian Aho [<mailto:baho@nstiak.com>]
Sent: Thursday, August 18, 2011 4:51 PM
To: Woodall, Timothy P Civ USPACOM ALCOM JTF-AK/J64
Subject: ALMR questionnaire

Mr. Woodall:

attached is the ALMR questionnaire. All answers and comments can be provided in an email by simply referencing the question number. Your feedback and support is greatly appreciated.

Best Regards,

--

Brian Aho

North Slope Telecom, Inc.
Projects and Engineering
(907) 751-8267 (office)
(907) 360-4671 (cell)
baho@nstiak.com

ALMR stakeholder interview questions

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Alaska DOT&PF uses the ALMR system daily to conduct state business and
manage emergencies for airport security, airport maintenance, highway maintenance,
commercial vehicle enforcement, equipment fleet maintenance and facilities
maintenance.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

DOT&PF uses ALMR as our primary emergency and disaster response
communications with both internal and external support agencies like Alaska State
Troopers, local law enforcement, National Forest Service, US Customs and Immigration,
US Coast Guard, Commercial trucking and bus companies.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

DOT&PF provides services statewide and uses ALMR everywhere there is a ALMR
repeater coverages.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important				most important
A) Improved safety and security:	(1)	(2)	(3)	(4)	(5)
B) Improved training:	(1)	(2)	(3)	(4)	(5)
C) Increased ability to interoperate:	(1)	(2)	(3)	(4)	(5)
D) Improved protocols/procedures/standards:	(1)	(2)	(3)	(4)	(5)
E) Greater ability to acquire federal grants:	(1)	(2)	(3)	(4)	(5)
F) Other: <u>Improved daily operational efficiency.</u>	(1)	(2)	(3)	(4)	(5)

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

Adequate coverage

(1)

(2)

(3)

(4)

Significant gaps in several areas

(5)

Adequate availability

(1)

(2)

(3)

(4)

System unavailable/busy for significant periods of time

(5)

Additional Comments:

DOT&PF safety and efficiency are impaired on the Tok Cutoff, Taylor Hwy., Steese
Hwy., Dalton Hwy. and in the remote communities of Alaska by the lack of ALMR
coverage.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

No impact

(1)

(2)

(3)

(4)

Severe Impact

(5)

Additional Comments:

Not maintaining the existing ALMR network may have disastrous results for the
traveling public and DOT&PF as safety and efficiency of operations are diminished.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

The DOT&PF has not contemplated or planned for this and has no contingency plan or funding.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF	UHF	UHF	Unknown
(136-174 MHz)	(406-512 MHz)	(700/800 MHz)	

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO N/A

- C) Is it P25-Standard² compliant? YES ☒ NO N/A

- D) What are the benefits/disadvantages of having an alternative legacy system?

The DOT&PF legacy system is VHF Low Band and all the repeaters have been decommissioned since the system was 1960 vintage equipment.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES

☒ NO

Additional Comments:

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

least important

most important

(1) (2) (3) (4) (5)

A) Improved safety and security:

B) Improved training:

C) Increased ability to interoperate:

D) Improved protocols/procedures/standards:

E) Greater ability to acquire federal grants:

F) Other: _____

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage						Significant gaps in several areas
Adequate availability						System unavailable/ busy for significant periods of time

Additional Comments:

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact						Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF
(136-174 MHz)

UHF
(406-512 MHz)

UHF
(700/800 MHz)

Unknown

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES NO N/A

- C) Is it P25-Standard² compliant? YES NO N/A

- D) What are the benefits/disadvantages of having an alternative legacy system?

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES

NO

Additional Comments:

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

The Municipality uses ALMR frequently as an important tool for all events that require governmental interoperability. The Municipality's AWARD system uses technology compatible with ALMR and provides seamless integration.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Fire, APD, health and public services cooperate frequently with AST, DNR / Division of Forestry and DOD resources

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Daily operations require communications within the Municipality and the Mat-Su Borough. AWARD has coverage from Palmer to Portage. The Municipality also maintains a cache with 100 ALMR radios for use outside of AWARD area.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F) Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Not applicable.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

economic: none.

Without ALMR the Municipality would have to make additional operational considerations when sending assets outside of the AWARD coverage area for disaster relief. The loss or reduction in interoperability among Anchorage, SOA and Federal agencies would result in lower public service and increased risk for first responders.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☐
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☒
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

AWARN technology was selected for interoperability with ALMR and the higher frequency provides improved signal penetration in an urban landscape.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

To save cost and reduce turnover, the State of Alaska should consider bringing the ALMR system maintenance in-house, as was done with prior LMR systems.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Municipality of Anchorage - Trygve Erickson

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

- 1) 1-2 days/week: ALMR provides additional coverage on E Glenn Hwy and N of Talkeetna to Denali Borough.
 2) Occasional use for interoperable communications in response to any major event
 3) ALMR provides backup for other existing VHF system when needed

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Primarily for internal communications and some inter-agency training. In case of a catastrophic event, ALMR would most likely be used to coordinate with AST, Division of Forestry, Wasilla PD, DOD and other State and Federal government agencies that are outside of Mat-Su Borough jurisdiction.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Operations are across the entire Mat-Su Borough with its primary population centers in Palmer and Wasilla. The majority of operations are along the road system, however, the Mat-Su Borough also has a regular requirement to go beyond the road system for Search and Rescue missions, plane crash, etc.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Sutton, Knik-Goose Bay Road, Hatcher Pass, Pt. MacKenzie are areas with high activity where ALMR has insufficient coverage.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Operational: Reduced ability to communicate in more remote areas of Mat-Su Borough, difficulty to interoperate with other agencies when needed, limited backup options.

Economic: modest impact, ALMR is not only system available nor is it the primary system.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☒ N/A ☐

- C) Is it P25-Standard² compliant? YES ☐ NO ☒ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

B) Narrowband transition is in progress, will be complete by FCC deadline

D) Backup. Possible Subscriber Unit fee was a factor in the decision not to make ALMR the only choice. Uncertainty about how much it will cost in the future to participate in ALMR system. Also concerned about political impact / how larger agencies can change the ALMR landscape. Bottom line: Too much uncertainty with current agreements.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Mat-Su Borough - Carl Hereford

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

NPS uses ALMR on a daily basis along with the communication system installed in the Parks.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Primarily for law enforcement coordination with AST and internal use (50/50).
Not much communication with anyone else.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Operations are across vast geographic areas within National Parks, usually far away from the road system. ALMR is used where coverage is present.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>Fed. Grants do not apply to Fed. agency</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

ALMR has good coverage where it is supposed to have coverage. A separate communications system is in place to support operations outside of ALMR coverage areas.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

economic: NPS would save money.

operational: NPS would have to find a new way to communicate with AST. This would impact Cooperative Use Agreements, Dispatch Center Agreements, etc.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

NPS is not dependent on ALMR to conduct daily business.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☒

Additional Comments:

Law enforcement work is very important and reliable communications are vital but cost has to be reasonable. If cost for Service Level A is too large, NPS would look for alternative means to provide necessary service.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Natl. Park Service - Tom Gillett

Brian And (907) 751-8272 Fax

MARK BEALS

Agency Name BEAR CREEK FSN-

362-1213

ALMR stakeholder interview questions

SEUMBU AK 99664

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Approx 50 emergency incidents each year, daily
comm & training

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Different agencies, AST, Seumbu Amb, Moose Pass
Fire, Cooper Landing, LIFE MED

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Primary Road System

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important				most important
A) Improved safety and security:	(1)	(2)	(3)	(4)	(5) <u>5</u>
B) Improved training:	(1)	(2)	(3)	(4) <u>4</u>	(5)
C) Increased ability to interoperate:	(1)	(2)	(3)	(4)	(5) <u>5</u> *
D) Improved protocols/procedures/standards:	(1)	(2)	(3)	(4) <u>4</u>	(5)
E) Greater ability to acquire federal grants:	(1)	(2)	(3) <u>3</u>	(4)	(5)
F) Other: _____	(1)	(2)	(3)	(4)	(5)

Agency Name | BETH CREEK

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

Adequate coverage

(1)

(2)

(3)

(4)

Significant gaps in several areas

(5)

Adequate availability

(1)

(2)

(3)

(4)

System unavailable/busy for significant periods of time

(5)

Additional Comments:

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

No impact

(1)

(2)

(3)

(4)

Severe Impact

(5)

Additional Comments:

SITE ALONG SEUNAW HIGHWAY
WILL HAVE A GREAT IMPACT ON
INTEROPERABILITY & SAFETY & OPERATION

Agency Name BETHA CREEK

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Response ^{will} out of the service area,
up the Sevier Highway. STATE
needs to provide communication
system for the area

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF
 (136-174 MHz)

UHF
 (406-512 MHz)

UHF
 (700/800 MHz)

Unknown

- B) Is it compliant with the pending FCC narrow-band¹ mandate?

YES

NO

N/A

- C) Is it P25-Standard² compliant?

YES

NO

N/A

- D) What are the benefits/disadvantages of having an alternative legacy system?

LIMITED COVERAGE
SEVERAL DIFFERENT FREQ. to change to
ALMR HAS INCREASED OUR INTEROPERABILITY
Greatly.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² Project 25 (P25) or APCO-25 refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

Agency Name | BEAR CREEK

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES

NO

Additional Comments:

STATE NEEDS TO STEP
UP AND PROVIDE FUNDING - THIS
IS A BIG PUBLIC SAFETY ISSUE
TO THE RESIDENTS OF ALASKA -

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

We use ALMR on a daily basis for law enforcement and as needed for wildland fire suppression

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Wildland fire suppression and Fuels Management (prescribed fires) requires interoperable communications with multiple agencies:

- AST for law enforcement
- close cooperation with State of Alaska DNR / Division of Forestry (shared resources and responsibilities)
- Fire Departments
- BLM is service provider on DOD lands

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

BLM operations require communications across the entire State of Alaska. ALMR is used where coverage is present. A conventional system is used if ALMR coverage is not available.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

ALMR needs improved coverage along the road system, especially on Denali Hwy, Dalton Hwy and in Glennallen area.

State of Alaska funding issue: BLM is concerned about interoperability with DNR / Division of Forestry if their conventional system is decommissioned before ALMR coverage has increased. Not all firefighters carry ALMR-capable handheld radios and the radio cache has some older radios as well.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Severe Impact

Additional Comments:

Ability to communicate with AST is imperative. Reducing the ALMR coverage area would create a severe safety issue for law enforcement personnel

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

BLM and DNR Division of Forestry have shared responsibilities and shared costs. Without ALMR, cooperation between agencies would be diminished leading to increased costs to provide these services. BLM currently provides fire suppression services on U.S. Fish and Wildlife Service lands, Bureau of Indian Affairs lands, National Parks, Alaska Native Corporation lands and certain DOD lands under contract

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☒
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

6A: BLM also uses microwave infrastructure

6D: The alternative systems provides extended coverage for remote regions in AK

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☐ NO ☒

Additional Comments:

Preventive maintenance and the administrative support for the ALMR system are absolutely necessary. However, reducing only the theoretical core system availability from 5 min to 50 min per year would be acceptable to BLM. The Transportable / Deployable Systems have critical importance during any catastrophic event but are not necessary for regular BLM operations. The BLM maintains its own portables that can be delivered by helicopter.

Additional comments to question 2:

The BLM had established interoperability protocols and procedures as well as an extensive training program already before ALMR.

Other comments:

As an ALMR User Council member the BLM has seen the progress of ALMR from the project phase to the current operational status. With ALMR, Alaska is ahead of the Nation with respect to interoperability. There has always been a culture of cooperative effort in AK. All agencies have benefited from the ALMR system and it would be a big step backwards if the current interoperability capabilities were diminished or lost. ALMR has become a very important tool for BLM's day-to-day operations in Alaska.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Dept. of Interior, BLM - Bev Fronterhouse

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR is used for daily operations, mainly for ambulance and fire services. Delta Rescue Squad responds to approximately 275 to 325 EMS calls and 10 to 15 fire calls per year

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Mainly for communication with Fairbanks Dispatch, Fire Line and Ambulance Line, for internal communications, Family Medical Center, AST when necessary, Fort Greely ambulance/fire service, Rural Deltana VFD

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Large geographic area, some missions require Four Wheeler access (not restricted to road system)

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Coverage: Some roads have significant coverage gaps, including major roads in Delta.

Availability: Often can't hear anything.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Delta Rescue Squad used to have a legacy system with less coverage (long time ago). Would have to hire local dispatcher.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☐
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☒

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☐ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☐ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

Not familiar with legacy system. It may still work, would probably have to purchase new equipment. No guarantee that legacy system is narrow-band compliant.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Delta Rescue Squad - Angela Lentz

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR is used for daily operations, emergency response and mutual aid.
Dispatch assigns tactical talkgroup for emergency operations.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Fairbanks FD communicates with all other fire departments, DOD, Borough HazMat and emergency operations, and occasionally law enforcement.
Improved communications with DNR / Division of Forestry would be desirable but they still use their conventional system.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Large geographic area with City of Fairbanks and nearby hills.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Hills and valleys cause blind spots but the same issues were present with the conventional system. Both law enforcement and the fire department have penetration issues in metal/concrete city buildings. Conventional mobile base and repeater necessary to provide additional coverage, especially around Chena Hot Springs.

The FFD has experienced significant busy periods during multi-jurisdictional emergency response. This was possibly caused by improper ALMR system use (e.g. repeatedly re-keying PTT button).

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Severe Impact

Additional Comments:

Increased coverage gaps outside the city would have a severe impact (4-5). In the city, the impact would be moderate.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

The FFD recently investigated the operational and economic feasibility of using a conventional system in a similar fashion to ALMR (talkgroups for dispatch and tactical response). This would only be possible with a significant capital investment to purchase the new equipment and to reprogram the radios.

If necessary, the FFD could go back to its legacy system. However, this would have a negative impact on the department's operations and cause additional training challenges (people are used to ALMR).

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☒ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

The legacy system can be used as a backup to ALMR. Every fire department had a repeated and a tactical simplex channel plus three area-wide mutual aid channels.

However, with the introduction of ALMR the legacy system has not been used much and many people are unfamiliar with it. About half of the legacy equipment is not FCC narrowband compliant. Future upgrades are possible but priorities have shifted towards ALMR.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☐ NO ☒

Additional Comments:

There is no way to predict when an emergency is going to happen and any extended period of downtime has significant operational impact.

A dedicated emergency communications system such as ALMR is necessary. Cell phone system regularly becomes overloaded whenever there is an earthquake. Local agencies have very limited operating budget and depend on additional financial support to purchase equipment. In the past the FFD had fewer radios but historic events have proven that every user needs his own radio. A subscriber unit fee to use ALMR is not sustainable for FFD and was driving factor to investigate alternatives. Mr. Misewicz remembers the evolution of inter-agency communications. Daily operations and large-scale emergency responses are simplified and more effective when everyone is on the same system. ALMR is significant development and a huge step forward.

Comments to question 2A:

Improvements in safety are very important and beneficial. Security is also becoming an issue as the public and the media use scanners.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Fairbanks FD - Ernie Misewicz

Agency Name | Homer PD

ALMR stakeholder interview questions

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

we use ALMR on a daily basis
for all normal and emergency
radio communications

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

All of the above.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

we operate primarily within the
city limits of Homer or in
close proximity

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
A) Improved safety and security:	(1)	(2)	(3)	(4)	(5)
B) Improved training:	(1)	(2)	(3)	(4)	(5)
C) Increased ability to interoperate:	(1)	(2)	(3)	(4)	(5)
D) Improved protocols/procedures/standards:	(1)	(2)	(3)	(4)	(5)
E) Greater ability to acquire federal grants:	(1)	(2)	(3)	(4)	(5)
F) Other: _____	(1)	(2)	(3)	(4)	(5)

Agency Name

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

Adequate coverage

(1)

(2)

(3)

(4)

Significant gaps in several areas

(5)

Adequate availability

(1)

(2)

(3)

(4)

System unavailable/busy for significant periods of time

(5)

Additional Comments:

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

No impact

(1)

(2)

(3)

(4)

Severe Impact

(5)

Additional Comments:

Agency Name _____

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Fairly minimal, we would revert
back to our legacy system

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

<u>VHF</u>	UHF	UHF	Unknown
(136-174 MHz)	(406-512 MHz)	(700/800 MHz)	

- B) Is it compliant with the pending FCC narrow-band¹ mandate?

YES NO N/A

- C) Is it P25-Standard² compliant?

YES NO N/A

- D) What are the benefits/disadvantages of having an alternative legacy system?

Disadvantages - increased maintenance
and upkeep costs

Advantages - provides us a viable
option for communications
if we lose ALMR.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² Project 25 (P25) or APCO-25 refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

Agency Name _____

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES

☒ NO

Additional Comments:

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

NPFD uses ALMR for all communications (internal / dispatch / mutual aid)

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

- Fairbanks Dispatch
- North Star Volunteer FD First Responders
- All other departments in Fairbanks North Star Borough

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Operations are along road system, circa 100 square miles

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Chena Lakes area has coverage gap and there is very poor signal in city cement buildings.

Availability OK, users usually just keep pressing the button when ALMR system is busy until it becomes available.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

This could mean a reduction in work force in order to maintain basic communications.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☐ NO ☒ N/A ☐

- C) Is it P25-Standard² compliant? YES ☐ NO ☒ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

The legacy system is not used anymore but could possibly serve as a backup. Not sure if it still works. All agencies in Fairbanks North Star Borough were sharing old system for interoperability before ALMR. NPFD would still be using the legacy system without grant money to purchase ALMR equipment. However, legacy system is not compliant with narrowband mandate and costly upgrades would have been necessary at some point.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☐ NO ☒

Additional Comments:

The public expects that First Responders are available 24/7. Lives are at risk, both public and NPFED employees, if communications system is compromised.

Great uncertainty about future cost of ALMR. Have heard Subscriber Unit fees as high as \$100/month per SU. Currently there is no fee but it is difficult to budget for a potential unknown cost.

It is difficult to cooperate with other agencies that are not participating 100% in ALMR, although they are ALMR members. UAF FD and PD are still using legacy system for primary communications, as well as DNR/Division of Forestry. Fairbanks Airport is not a member at all.

Answers to Question 2:

2A) Improved safety and security: ALMR has proven very beneficial and is better than legacy system w/ respect to safety and security.

2B) Improved training: There has been very limited training for ALMR, still figuring out system as we go. Dispatch assigns TAC channels to NPFED, didn't really like the more complex system at first but now it is hard to imagine going back.

2C+D) Increased ability to interoperate / Improved protocols/procedures/standards: NPFED has very efficient policies and procedures (already before ALMR) which enables a coordinated and efficient response to large scale incidents. ALMR has additional benefits for multi-jurisdictional response coordination.

2E) Greater ability to acquire federal grants: Borough received grant money to make initial purchase of ALMR radio equipment

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

North Pole Fire Department - Chief Geoff Coon

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR is used by two city departments (Seward Police Department and Seward Electric Department)

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Approximately 50/50 split between internal and inter-agency communications. Primary partners are a variety of State and Federal agencies. Seward has talkgroups for law enforcement, fire, etc.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Most operations are restricted to the road system but Seward also uses ALMR for Mountain Search and Rescue and Water Rescue (where available).

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>Motobridge, see comments on last page</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Poor coverage is reported by the Police Department in certain areas and buildings (SeaLife Center, City Hall). Current coverage limitations in High School and at prison are unknown.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

It depends on which sites are affected. Greatest impact would be on law enforcement and cooperation with AST.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Operational: Seward would have to use the existing legacy system but it has less coverage. The capability for interoperations between the State of Alaska and the City of Seward would be diminished.

Economic: 2 new repeaters would be required at Mile 18 and Mile 23 (Seward Highway)

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

Benefits:

- all city departments still have access to system, ensuring city-wide interoperability. Some city departments use it for their daily operations.
- provides a backup to ALMR
- can be used to meet other communication needs

Disadvantages:

- The legacy system has limited range (12 miles) outside of town on the Seward Highway
- limited number of channels for communications with other agencies (e.g. State of Alaska)
- OTAR/encryption not available (very important for law enforcement operations)

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒ NO ☐

Additional Comments:

With advanced notice for ALMR preventive maintenance work and a plan for unscheduled ALMR outages, the longer downtime should not significantly impact the City of Seward to conduct internal or external communications.

Additional Comments to Question 2)

2B: Training has been sporadic and is often only offered in Anchorage. Seward can only send a few people each time. The training offered is not frequent enough to learn all nuances of the system. ALMR emergency features (i.e. man-down button) and procedures can't be practised often enough.

2F - Other: MOTOBRIDGE is a very important tool to establish communications between disparate radio systems. However, Seward has had a MOTOBRIDGE for a long time but it's not available to the dispatcher because the installation is incomplete. The MOTOBRIDGE could be very useful but dispatchers can't access the equipment.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

City of Seward - David Squires

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR is used for all daily operations and other emergencies in coverage area.

Some buildings don't have sufficient ALMR coverage, VFD uses conventional VHF system in that case.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

VFD communicates with all agencies in service area: Valdez PD, Valdez City Schools, Alyeska Pipeline Service Company, DOT (airport and roads), National Guard, hospitals, DNR / Division of Forestry, Coast Guard.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Large area: VFD responds all the way to Glennallen (120 miles) including Mountain Search and Rescue and sometimes uses ALMR to coordinate with crews in Anchorage.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

ALMR coverage has helped much along road system through Keystone Canyon and through Thompson Pass. However, some areas in town do not have sufficient coverage and conventional VHF system has to be used.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

"Scary scenario"...nearest community is 120 miles away.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

VFD would have to revert to conventional VHF system making it much more difficult to interoperate (esp. with hospital, issues with secure communications). Cost for narrowband compliance had to be expended.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☒
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

VFD will continue to use conventional system in addition to ALMR. There is a concern that a user fee will be mandated for ALMR use. A subscriber unit fee is not affordable for VFD and the fire department would be forced to revert to a conventional system. ALMR already comes at a higher cost - could buy 5 to 6 conventional radios for the price of one ALMR radio.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

If ALMR is unavailable, VFD can use conventional system. Other backup solutions (Ham radio, VHF, UHF systems) are available at each station. In any event, VFD will use whatever works best.

Comments to question 2B:

Additional training would be beneficial. Monthly or at least quarter-annually trainings would be best.

Comments to questions 2D:

Occasionally there is lack of clarity as to who is authorized or supposed to be operating on which channel.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR provides main communications. Wasilla PD uses 4 assigned talkgroups. 98% of communications is on the main talkgroup.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

AST is the primary communications partner

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Wasilla PD operates mainly from the City of Wasilla to Anchorage

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

There would be little impact unless a repeater in the Wasilla area was decommissioned.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Wasilla PD would go back to using the legacy system. Manual console patches could provide interoperability with other agencies when necessary.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☐ NO ☒ N/A ☐

- C) Is it P25-Standard² compliant? YES ☐ NO ☒ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

Benefits: The legacy system provides an alternative to ALMR:

- if a user fee is introduced
- in the event that ALMR fails

Additional Comments to 6C: The legacy system uses analog technology.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

Wasilla PD is not dependant on ALMR. However, the benefits of ALMR greatly outweigh the negatives of the system.

It is beneficial to have:

- Man-down feature
- Wide-area coverage
- interoperability with other agencies
- ID transmission when keying the radio and ability to see who is calling

Using a VHF system to provide ALMR coverage is a good choice because of the vast coverage area. Other systems provide better penetration in buildings. ALMR coverage is significantly reduced especially in big-box retail stores (Walmart, etc.).

The ALMR system is complicated and has too many zones and talkgroups. High O&M cost could be potentially reduced if the Transportable/Deployable Systems were mothballed.

Additional comments to questions 2)

Training: There is a need for more training to use ALMR efficiently but at the same time there is resistance to spending resources to learn features that are non-essential to daily operations. A simplified system with less overhead would be preferred. WPD needs only 2 talkgroups and is reluctant to use channels that are not recorded on the voice logger.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Wasilla Police Department - Joel Butcher

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR is used frequently for non-tactical radio communications support along road system instead of satellite or cellular phones. The primary purpose of ALMR is for multi-jurisdictional emergency response in the event of a disaster and for training missions.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Primarily to communicate with Alaska State Troopers, EMS agencies, DNR / Division of Forestry and many others

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Anchorage - Fairbanks - Greely, Eielson AFB, Yukon Training Area, Kodiak, Juneau.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

The Alaska Army National Guard would like to see increased coverage in Nome, Bethel, Kotzebue and the Alaska Peninsula. Some of these locations have had very limited VHF coverage in the past but the systems have been removed due to age and high maintenance cost.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

Impact ranges across entire scale depending on the location. Some areas have very good coverage while others are in fringe zones already.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Minimal to insignificant economic impact.

Without ALMR the Army Natl. Guard would be hindered in its ability to support the State of Alaska during emergency responses.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☐
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☐ NO ☐ N/A ☒

- C) Is it P25-Standard² compliant? YES ☐ NO ☐ N/A ☒

- D) What are the benefits/disadvantages of having an alternative legacy system?

In addition to ALMR, the Army National Guard uses UHF LOS and satellite technology and HF communication systems (1.6 - 30 MHz) for increased global voice and data transfer capabilities.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

The benefit of reduced costs has to be balanced against an acceptable Level of Service. ALMR is a very important life-safety system that makes efficient use of State and Federal funds.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Stakeholder interview questions

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Ground support for Search and Rescue operations, ground team training, general
communications between Squadrons and logistical support. The time frame varies from
once a month to multiple times a day.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or
mostly for internal communications?

Most communications are internal to CAP but in the event of a major disaster we could
communicate with other agencies.

C) Do your operations require communications across a large geographic area, are they usually restricted to
the road system with present ALMR coverage or are they more localized.

Search and Rescue covers the entire state but the road systems gets a lot of attention.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
A) Improved safety and security:	(1)	(2)	(3)	(x)	(5)
B) Improved training:	(1)	(2)	(3)	(x)	(5)
C) Increased ability to interoperate:	(1)	(2)	(3)	(4)	(X)
D) Improved protocols/procedures/standards:	(1)	(2)	(x)	(4)	(5)
E) Greater ability to acquire federal grants:	(1)	(2)	(3)	(4)	(5)
F) Other: _____	(1)	(2)	(3)	(4)	(5)

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

Adequate coverage

(1)

(2)

(3)

(4)

Significant gaps in several areas

(x)

Adequate availability

(1)

(2)

(3)

(4)

System unavailable/busy for significant periods of time

(x)

Additional Comments:

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

No impact

(1)

(2)

(3)

(x)

Severe Impact

(5)

Additional Comments:

It would of course depend on the sites that were decommissioned. It would also depend on the area that was needed next, which is impossible to predict.



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exist and no alternative interoperable communications system was
d operational impact on your agency?

It would put us in a very vulnerable position as all of our conventional
repeaters have been decommissioned. It would take us at least three years
to provide any semblance of are coverage and we could never provide the type
of coverage we have with ALMR.

6) Is a legacy communications system still available to your agency? If so, please describe its features:

A) What frequency/band is used in the legacy system?

VHF	UHF	UHF	Unknown
(136-174 MHz)	(406-512 MHz)	(700/800 MHz)	

B) Is it compliant with the pending FCC narrow-band¹ mandate?

YES	NO	N/A
-----	----	-----

C) Is it P25-Standard² compliant?

YES	NO	N/A
-----	----	-----

D) What are the benefits/disadvantages of having an alternative legacy system?

It is simplex only, we have no repeaters on the system.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency



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Civil Air Patrol

arrowbanding.

ards for digital radio communications for use by federal, state/province and
local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.



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Civil Air Patrol

...ently operate and maintain the ALMR system at the highest service level. Level A comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES

NO

Additional Comments:

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

FEMA uses ALMR for exercises, disaster response and periodic testing

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

ALMR is primarily used for internal communications and for testing with State agencies

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

FEMA responds to events across a very large geographic area. ALMR is utilized where present.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

ALMR works fine in supporting the small FEMA user group. ALMR communications in remote areas away from road system are impaired but FEMA also utilizes satellite phones and has a High-frequency (HF) option.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

The greater Anchorage with high population density area is most important for FEMA operations. For example, a catastrophic seismic event would have the biggest impact in this area and reduced ALMR coverage would be very undesirable.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

This scenario would have very little economic or operational impact for FEMA.

However, it would be more difficult to communicate with State of Alaska agencies: Additional planning and new communications plans would be required to determine all options to interoperate with DOD, SOA,...

Without ALMR, FEMA would have to operate using simplex channels.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☒
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☒ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

Additional technology available to FEMA and SOA: Weekly tests are performed with High-frequency (HF) system.

HF system can provide short-range and long-range communications at low cost.

HF communications have a high noise floor and require specific skills and a high level of training to operate.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

FEMA has a minimal footprint on the ALMR system (3 subscriber units) and several other agencies may have higher SLA requirements. While the immediate impact of reduced preventive maintenance is probably minimal, this would also have a substantial long-term impact for the public at large and becomes a safety issue.

FEMA is very satisfied with the ALMR system performance and the services provided. Training resources have been very adequate.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

FEMA (Alaska Region) - Terry Knight

ALMR stakeholder interview questions

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

The ALMR System is utilized during emergency/incident situations as well as during any extended duration or location interoperable security exercises.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

The ALMR System is used primarily for internal communications during emergency/incident situations. We also utilize it for interoperable communications with stakeholders and other Federal/State agencies.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

TSA's use of the ALMR system is typically restricted to road system use, generally situated around airports, mass transit or other infrastructure areas.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
A) Improved safety and security:	(1)	(2)	(3)	(4)	(5)
B) Improved training:	(1)	(2)	(3)	(4)	(5)
C) Increased ability to interoperate:	(1)	(2)	(3)	(4)	(5)
D) Improved protocols/procedures/standards:	(1)	(2)	(3)	(4)	(5)
E) Greater ability to acquire federal grants:	(1)	(2)	(3)	(4)	(5)
F) Other: _____	(1)	(2)	(3)	(4)	(5)

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

Adequate coverage

(☒)

(2)

(3)

(4)

Significant gaps in several areas

(5)

Adequate availability

(☒)

(2)

(3)

(4)

System unavailable/busy for significant periods of time

(5)

Additional Comments:

In the current build-out, we have no areas of missing coverage.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

No impact

(☒)

(2)

(3)

(4)

Severe Impact

(5)

Additional Comments:

If decommissioned sites are outside the major road system or communities, then the impact with TSA would be minimal.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

The interoperable and long distance communication ability of the TSA would be attenuated. Our ability to reach other airports and mass transit locations would be virtually eliminated when standard lines of communication are inoperable.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

HF

~~VHF~~

UHF

UHF

Unknown

(136-174 MHz)

(406-512 MHz)

(700/800 MHz)

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ~~NO~~ N/A

- C) Is it P25-Standard² compliant? YES ~~NO~~ N/A

- D) What are the benefits/disadvantages of having an alternative legacy system?

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES

NO

Additional Comments:

As long as the lack of preventative maintenance does not impact
the overall long-term capability of the system.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

The Div. of Forestry (DOF) is piloting ALMR and has not switched operations over 100%. Currently ALMR is used for logistical support. DOF will be transitioning to full ALMR use within a year from now.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

Primarily used for inter-agency cooperation, mostly for fire response

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Forestry has protection areas across the entire State of Alaska

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Entire Delta area has very poor coverage, to the point where the system is not usable.

System availability ranges from 1 to 5 for the many different field areas across the State.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Severe Impact

Additional Comments:

The ALMR network needs to be expanded to be a useful tool for DOF. However, DOF has a seasonal demand for ALMR as there are no wildfires in the winter.

The current communications system is experiencing budget cuts in favor of ALMR but there are still many problems related to ALMR coverage and system availability.

DOF has concerns that there will be no cost control over communications system that is used for life support. There is no clear picture of what DOF will get and when.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

This would create a safety concern for DOF. Firefighting too dangerous without communications.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☒ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

B) Legacy system is approximately 60% compliant across the State.

Remaining legacy equipment will not be upgraded due to budget cuts. Shutdown and full transition to ALMR planned for January 1, 2013. Compliant legacy system will run parallel to ALMR for approximately 3 years due to concerns about future of ALMR. Also, some cooperators (esp. aviation resources from out of State) do not use ALMR.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☐ NO ☐

Additional Comments:

Comments to question 7:

ALMR has not been used extensively enough to make judgment.

However, system availability is a major concern since aircraft are relying on communications. Functionality of legacy system would become even more critical to provide reliable communications if ALMR was compromised.

The maintenance status of the ALMR T/D systems is not a real issue for DOF.

Comments to question 2:

Div. of Forestry has had no training yet, would be very helpful.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

ALMR is used rarely, only for interoperability and unusual emergencies. JPD has a very limited number of ALMR subscriber units for the command staff and Sergeant. There are no mobile ALMR units (except in the RV-style Incident Command Vehicle). Some legacy radios have ALMR frequencies programmed.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

ALMR system is exclusively used for coordination with other agencies (DOT, AST) and is tied into dispatch console system. JPD takes over dispatching after 5 PM and AST/DOT switch to legacy channels until the next morning.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

JPD does not use ALMR for daily operations.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

ALMR coverage and availability has not yet been evaluated. JPD field personnel does not use ALMR.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

None.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

Greatest benefit is ownership. JPD can make own decisions as to when, where and how to perform preventive and corrective maintenance.

Future O&M cost for legacy system is more predictable. There is currently no cost to JPD for shared ALMR infrastructure but there is no guarantee/control over cost in a shared system.

JPD would discontinue ALMR use if a subscriber unit fee was introduced to share ALMR cost.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

Question 7 is not applicable to JPD.

Question 2B:

JPD has not had the opportunity to participate in any ALMR training. The importance of proper training needs to be emphasized as the system is not very useful otherwise.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Kenai FD does not use the ALMR system (although it owns ALMR assets). The city has its own conventional VHF system with 2 ICS zones for interoperable communications with other local agencies but it is not tied into ALMR. Kenai FD uses NIMS compliant protocols. There has been no incident that required the additional capabilities provided by ALMR.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

The conventional VHF system works well for local multi-jurisdictional response. ALMR is not necessary to meet the fire department's daily operational needs. There is a difference between day-to-day interoperability and disaster interoperability. KFD needs and has day-to-day interoperability.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

The Kenai city area is 36 square miles. No repeaters are needed for Kenai FD communications. Sufficient coverage across the city is present with the current conventional VHF system.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F) Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

ALMR has good coverage due to the robust build-out and small coverage area required by KPD. ALMR availability is good but not utilized by KPD.

Building penetration of ALMR signal is inadequate compared to analog VHF.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

The sunk capital cost for purchasing ALMR radios was the total economic impact.

Interagency cooperation capability is provided through conventional VTAC 11 and VTAC 12 which is available on AST radios and also works in Homer, Seward and Ninilchik. This allows for simplex communications at emergency scenes across the Kenai Peninsula.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☐ NO ☒ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

6B) Narrow-band transition will be completed by September 8th, 2011

6C) Conventional radios are analog

6D) There are no disadvantages to using the current conventional system.

Benefits:

- Cost control. ALMR is too expensive for the benefits provided. None of the ALMR features are necessary to meet KFD's operational needs. KFD would terminate their membership if a user fee was introduced. The ALMR membership merely extends KFD's ability to interoperate and allows for additional grant funding.
- Less training required than with ALMR system. KFD Chief has received ALMR training and provides in-house training as needed.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☐ NO ☐

Additional Comments:

The ALMR Service Level has no impact on KFD's day-to-day operations.

However, if ALMR was the primary system it would need to be maintained to the highest level for reliable inter-jurisdictional emergency response.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

The borough primarily uses the ALMR system for interagency communications during disaster events and exercises. In addition, the borough receives training on how to use the system during the exercises.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

The system is used mostly to communicate with a variety of agencies, and to a lesser extent for internal communications.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Borough operations require communications over a large geographical area and are restricted to the road system.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>NA</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

none

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

none

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

Economic: the borough would need to look for grant funding to provide for an alternative communications backbone.

Operational: the ability to communicate during a widespread disaster would pose a real challenge.

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

The benefits of having an alternative legacy system would be redundancy with respect to interagency operability, and economic security. The disadvantages would be the high cost of upkeep and maintaining the legacy system.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

The borough does not depend on the use of the ALMR system as a primary means of communication as much as other agencies do.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Kenai Peninsula Borough - Eric Mohrmann

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Kenai PD uses a legacy conventional communications system to meet day-to-day operational needs. ALMR is only used to coordinate with other agencies as needed. The legacy equipment is currently receiving a software upgrade (encryption) to become compatible with ALMR used by AST and Soldotna PD.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

ALMR is needed to assist AST and to communicate with other agencies that do not use the legacy conventional system anymore (Seward PD and Homer PD).

Kenai PD has personnel in Seward annually for Independence Day and Kenai resources are in Homer for other special events maybe every 4-6 years.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Operations are mainly localized in Kenai area (20 mile radius).

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important		most important		
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

Kenai PD is not in a position to rate ALMR coverage or availability.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

There would be no impact unless the ALMR site in Kenai was affected.

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

None

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☐
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

Note: Legacy system will be narrow-band compliant after September 15, 2011.

- The legacy system has better scanning capabilities over multiple channels
- Nikiski, Kenai and Central EMS are all using legacy system
- The legacy system has a very low maintenance cost
- less overhead expenses associated with legacy system
- Inter-agency collaboration has become more difficult between ALMR users and legacy system users
- Lack of coordination between different agencies during ALMR implementation and transition has created safety and efficiency issues
- Uncertainty about future user fee / costs makes ALMR membership very unattractive

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☐ NO ☐

Additional Comments:

Kenai PD is not in a position to comment on the current ALMR Service Level performance.

Additional comments to question 2B (Training):

ALMR has not provided any improvement in training.

Other comments:

ALMR is not the primary communications system, nor is it intended to be at any time in the future. The necessity to communicate with AST is the primary reason for KPD's membership. ALMR has impeded the ability to efficiently collaborate with other law enforcement agencies, especially when responding to immediate calls for service (e.g. armed robbery) where an office may need help immediately. With the multiple communications systems currently in place it can cause a delay of several minutes before someone gets the call.

The legacy system meets all requirements for daily operations and is much more cost-effective than ALMR. ALMR is oversized and more expensive for the tax payer due to the fact that additional grant money has to be spent to upgrade the legacy system (encryption support). A communications system designed for responses to 9-11 type events is reasonable for large metropolitan areas but not for Kenai. All units can easily operate on a single tactical channel and there is no need to communicate with distant communities (e.g. Fairbanks).

ALMR has great potential but uncertainty about the future cost, slower scanning capabilities, additional overhead, insufficient training and a lack of coordination to ensure that all agencies can transition to ALMR are major contributing factors to user resistance and low acceptance.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

Agency Name

Kenai Police Dept. - Lt. Ross and Chief Sandahl

ALMR Stakeholder Questionnaire

1) Please describe how your agency uses the capabilities of the ALMR system:

A) How often / during what type of events do you use the ALMR system?

Tok Area EMS uses a legacy conventional system for primary communications. Dispatch is provided by courtesy of AST during normal business hours but switches to Fairbanks or Delta ALMR Dispatch after hours and Tok has to initiate calls on a landline for that time.

B) Do you use it to communicate primarily with certain other agencies, a variety of different agencies, or mostly for internal communications?

The Chief and Assistant Chief use ALMR frequently for internal communication. ALMR is used rarely for communication with other agencies as the expensive ALMR equipment is only available for core personnel (the conventional legacy system has to be used for daily operations). Tok EMS has mutual aid agreements with Delta EMS and AST.

C) Do your operations require communications across a large geographic area, are they usually restricted to the road system with present ALMR coverage or are they more localized.

Service Area covers a very large area (22,500 square miles) but part of the road system has very limited ALMR coverage.

Tok Area EMS has many flight operations and ALMR has enabled communications with crew all the way to Anchorage.

2) How do you rate the following intangible benefits with respect to the cost of ALMR to your organization?

	least important			most important	
	(1)	(2)	(3)	(4)	(5)
A) Improved safety and security:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Improved training:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Increased ability to interoperate:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D) Improved protocols/procedures/standards:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Greater ability to acquire federal grants:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Other: <u>SEE COMMENTS ON LAST PAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3) How do you rate the current ALMR coverage and system availability? Are there existing areas in which your agency's operations are impaired due to the lack of system availability?

	(1)	(2)	(3)	(4)	(5)	
Adequate coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Significant gaps in several areas
Adequate availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System unavailable/ busy for significant periods of time

Additional Comments:

There is no ALMR coverage north or south from Tok.

The Tanana River Bridge near Tok is a critical transportation link for goods shipped between Alaska, Canada and the Lower 48. The minimum response time for a HazMat team from Fairbanks is 8 hours and at least 12 hours for teams from Anchorage. Extended ALMR coverage is very important.

Channel scanning across conventional and trunked ALMR channels is much slower than legacy system scanning, causing missed calls.

- 4) How do you rate the impact on your organization if some ALMR sites were decommissioned, causing a reduction of the existing coverage area by 10%?

	(1)	(2)	(3)	(4)	(5)	
No impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Severe Impact

Additional Comments:

"Probably wouldn't notice if ALMR was turned off tomorrow"

- 5) If the shared ALMR cooperative ceased to exist and no alternative interoperable communications system was provided, what would be the economic and operational impact on your agency?

None

- 6) Is a legacy communications system still available to your agency? If so, please describe its features:

- A) What frequency/band is used in the legacy system?

VHF ☒
(136-174 MHz)

UHF ☒
(406-512 MHz)

UHF ☐
(700/800 MHz)

Unknown ☐

- B) Is it compliant with the pending FCC narrow-band¹ mandate? YES ☒ NO ☐ N/A ☐

- C) Is it P25-Standard² compliant? YES ☒ NO ☐ N/A ☐

- D) What are the benefits/disadvantages of having an alternative legacy system?

The legacy system was installed in the 1970s and is maintained by the State. It recently received a system upgrade with all new repeaters and became narrow-band compliant, thus establishing a system that will serve Tok Area EMS for many years. The system upgrade technician also surveyed the area looking for places where new repeaters sites could be established to serve the area south of Tok.

There is no cost for using the legacy system, it has better coverage and provides an alternative/backup to ALMR. If there was a user charge for ALMR, Tok Area EMS would have to end their membership.

¹ On January 1, 2013, all public safety and business industrial land mobile radio systems operating in the 150-512 MHz (VHF/UHF) radio bands must cease operating using 25 kHz efficiency technology, and begin operating using at least 12.5 kHz efficiency technology. For more information go to www.fcc.gov/narrowbanding.

² **Project 25 (P25)** or **APCO-25** refers to a suite of standards for digital radio communications for use by federal, state/province and local public safety agencies to enable them to communicate with other agencies and mutual aid response teams in emergencies.

- 7) The ALMR User Council has agreed to currently operate and maintain the ALMR system at the highest service level available³ (Level A). This level of service comes at a high cost for operation and maintenance in order to meet the desired system availability. At Level A, the core system components may be unavailable for up to 5 min per year.

There are provisions for two lower levels in the Service Level Agreement. Level B would increase the acceptable annual system downtime to 50 min. Preventative Maintenance on site shelters, towers and other non-critical site equipment would no longer be performed, as well as certain administrative and support tasks. The upkeep of both ALMR Transportable/ Deployable Systems is not included under Service Level B.

Would a reduction to a lower service level be acceptable to your organization?

YES ☒

NO ☐

Additional Comments:

Comments to Question 2:

B) Training: Tok Area EMS has not had an opportunity to participate in mutual aid training scenarios. The only other agencies in area are the fire department and AST.

C) Interoperability: Implementation of ALMR is not coordinated between user agencies. Currently decreased ability to communicate with AST which is primary contact for interoperations. Tok EMS can not use AST Talkgroup and has to communicate using conventional mutual aid channel. Transition to ALMR would work much better if new equipment was available for entire personnel and coverage issues were solved.

E) Grants: Current subscriber units (11 mobiles and 29 portables) were received through DHS grant but each unit costs at least \$3000. Conventional P-25 compliant radios are available for less than \$100.

³ ALMR Cooperative Agreement and Appendix D (Service Level Agreement), Table 3-1 through Table 3-7.
<http://www.alaskalandmobileradio.org/documents.htm>

