

**Alaska Land Mobile Radio Emergency Response  
Narrowband Compliance**

**FY2013 Request: \$2,960,000  
Reference No: 54914**

**AP/AL:** Appropriation **Project Type:** Life / Health / Safety  
**Category:** Natural Resources  
**Location:** Statewide **House District:** Statewide (HD 1-40)  
**Impact House District:** Statewide (HD 1-40) **Contact:** Jean Davis  
**Estimated Project Dates:** 07/01/2012 - 06/30/2017 **Contact Phone:** (907)465-2422

**Brief Summary and Statement of Need:**

This is a new FY2013 capital project due to cost estimates that were finalized after the December 15 release of the Governor's budget. This project will fulfill the Federal Communications Commission (FCC) January 1, 2013 mandate for narrowbanding specific spectrum bands used by the department and complete the migration to ALMR. The department is migrating to the shared system, the Alaska Land Mobile Radio (ALMR) system, for emergency response, logistics and operations. Sites not served by ALMR must be upgraded to narrowband standards. Radios and dispatch equipment that is not narrowbanded and is incompatible prevent total migration to the shared system and also must be upgraded.

<b>Funding:</b>	<u>FY2013</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>Total</u>
Gen Fund	\$2,960,000						\$2,960,000
<b>Total:</b>	\$2,960,000	\$0	\$0	\$0	\$0	\$0	\$2,960,000

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input checked="" type="checkbox"/> Phased - underway	<input type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

**Operating & Maintenance Costs:**

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
<u>One-Time Startup:</u>	0	
<b>Totals:</b>	0	0

**Additional Information / Prior Funding History:**

**Project Description/Justification:**

**Why is this Project Needed Now?:**

On January 1, 2013, the Federal Communications Commission (FCC) has mandated that all public safety and business industrial land mobile radio (LMR) systems operating in the 150-512 MHz radio bands must cease operating using 25 kHz efficiency technology and begin operating on channel bandwidths of 12.5 kHz or less, or that meet a specific efficiency standard, e.g., utilize two- or four-slot Time Division Multiple Access (TDMA). This means not only the repeater systems and the mobiles/hand-held radios but also the dispatch offices. Agencies that do not meet the deadline face the loss of communication capabilities and incur fines. FCC will prohibit the manufacturing or importation of new equipment that operate on 25 kHz channels. This will reduce the availability of parts / new equipment for the legacy radio system.

If the narrow banding project is not completed within the next fiscal year and before January 1 2013, the Department of Natural Resources (Forestry, Parks and DGGS) will lose effective and essential two-way radio field communications and will no longer be able to meet our respective division's mission objectives.

### **Forestry**

Communications during wildland fire and other emergency situations plays a key role for the safety of Division of Forestry personnel, other emergency responders and the public. Lack of compatible communications systems has been cited on numerous occasions, including the Miller's Reach Fire. Per FCC mandate (FCC Order 05-9/FCC order 04-292), the FCC requires that state and local agencies operating with FCC licenses upgrade to 12.5 kHz narrowband operation by January 1, 2013. The federal partners / agencies have already migrated.

Forestry, cooperators, Alaska State Troopers, the Department of Transportation and Public Facilities, and other local fire departments have or need to migrate to the trunk radio system (Alaska Land Mobile Radio - ALMR) which is federally compliant. With prior funds Forestry has been able to partially migrate to the ALMR trunk system plus upgrade the off road Southwest Area (McGrath) mountain top conventional radio repeaters to meet narrowband compliancy standards.

Dispatch area offices, Forestry engines, fire fighter portable (hand-held) radios all operating within the ALMR service area, must be upgraded to ALMR capable equipment. Funds will be used to purchase equipment (dispatch consoles, portable radios, mobile radios, vehicle repeaters) that allows radio systems to be tied into the multi-agency shared system. This will allow access to an area's local conventional frequencies and the ALMR trunking system as well as allowing access by other offices, agencies, and Forestry regions for year round emergency situation communications coverage when the dispatch office personnel are on seasonal leave. As dispatch consoles (8) are upgraded to ALMR compatible equipment, the dispatcher position terminals themselves will be required to be upgraded to meet American Disabilities Act code standards. Included in this console upgrade is a terminal for the Department of Natural Resources (DNR) Parks System; whose console runs off a Forestry console in the state logistics center. Many of the Forestry dispatch offices have been in existence since the 1970s and do not meet code. Vehicle repeaters (15) will be purchased, installed and strategically positioned during a wildfire incident, tying ALMR to off-road incident communications and back to dispatch. Forestry maintains a NUS (Normal Unit Strength) of portable radios (600) to meet the communication needs during fire season. Currently only 20% of the portable radios are ALMR capable. Forestry's narrow banded mobile radios (30) are at the end of their life cycle and in need of upgrading. ALMR mobile radios are needed for the 10 new engines Forestry will be taking delivery of in 2012. All equipment will require programming of proper frequencies and talk groups. Current non-ALMR equipment must be removed from two-way radio sites that will be collocated with ALMR sites.

Forestry currently has 343 DPH (non-ALMR) radios available to trade in on ALMR capable radios per agreement with vendor. These radios have been in service for 6 years and are approaching the end of their life cycle. Without full replacement of all non-ALMR radios, Forestry cannot migrate to the shared system.

Cooperating federal agencies, i.e. Alaska Fire Service (AFS), have upgraded their conventional radio system. AFS is in the process of upgrading their dispatch consoles to ALMR capable equipment. AFS is working with the Department of Defense and the Bureau of Land Management Rangers who

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utilize ALMR hand-helds. The National Interagency Coordination Center (NICC) maintains conventional VHF and UHF radios and repeater kits. This incompatibility between Forestry's current capability and the ALMR capable communications that AFS and U. S. Forest Service are now using creates a fire safety issue of significant proportion.

Both federal and local agencies assist Forestry with wildland fire suppression. In addition Forestry assists AFS with their fires. Forestry has created frequency sharing agreements with cooperators to provide communication interoperability to provide a short term solution.

The adaptation of ALMR radio equipment into wildland firefighting operations will require the delivery of field user training. Training modules need to be developed and hands on training sessions across the state will be held. The seasonality of the workforce limits the window in which training can occur prior to wildland fire season.

<b>Forestry</b>			
	Quantity	Each	Total
Portable Radios - ALMR	600	\$1,700	\$1,020,000
Mobile Radios - ALMR	40	\$3,000	\$120,000
Vehicle Repeaters	15	\$2,800	\$42,000
Dispatch Equipment Required Upgrades			
	Fairbanks Area		\$320,000
	State Logistics Center		\$65,000
	Mat Su		\$345,000
	Kenai Interagency Dispatch Center		\$340,000
Removal of Non-ALMR Sites			\$140,000
Maintenance of Sites Outside ALMR Coverage			\$60,000
Training Services for New Radios and Dispatches			\$30,000
	<b>Total</b>		<b>\$2,482,000</b>

**Parks**

The narrow banding project pertains only to seven selected sites of Homer, Ninilchik and Sterling, two sites on Kodiak Island, Chena Dome near Fairbanks and one repeater serving Chugach State Park. These sites provide non-ALMR radio communication to park operations beyond the range provided by the ALMR system (a system that was designed to cover the main highway systems of Alaska).

This project will allow the present radio system to continue to function per FCC requirements and provide essential communication for health, safety and day to day park operations.

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The remainder of the funds provides updates, repairs and replacement to the Division of Parks' radios in the field and field offices to interface with the State's emergency management and response system.

<b>Parks</b>			
	Quantity	Each	Total
Repeaters	7	\$30,000	\$210,000
Portable Radios	40	\$1,700	\$68,000
	<b>Total</b>		<b>\$278,000</b>

**DGGS**

The Alaska Division of Geological and Geophysical Surveys (DGGS) is responsible for conducting field work throughout Alaska to determine the potential of Alaskan land for production of metals, minerals, fuels, and geothermal resources, the locations and supplies of groundwater and construction material, and the potential geologic hazards to buildings, roads, bridges, and other installations and structures (AS 41.08.020). Field projects in support of these geologic investigations may be based along the road system, but are often located in remote areas with very few services.

The DGGS runs multiple field-based projects each summer, located in widely separated areas throughout the state. The projects often overlap due to the short summer field season. The DGGS may utilize up to five portable mountain-top repeaters concurrently to facilitate two-way radio communication. During field work, use of hand-held radios is essential for communication throughout the day between field personnel and other field personnel, the base camp, and the helicopter pilot. Multiple helicopter drop-offs and pick-ups are coordinated via radios throughout the day for all field crew members, which may be located many miles apart. Use of repeaters and base stations is needed to transfer and receive spatially limited, relatively weak, hand-held radio signals. This communication equipment is essential for daily operations and to ensure the safety of DGGS and contracted personnel, who regularly work in remote areas with rugged terrain and abundant wildlife.

ALMR connectivity is not necessary for DGGS, although narrow-banding is required.

**Status of equipment:** All of the DGGS communications equipment needs to be upgraded (portable base stations, portable mountain top repeaters, hand-held radios)

- All existing equipment is either outdated or inadequate to meet current needs and future requirements. Existing repeaters are over 40 years old and cannot be upgraded to meet the new FCC narrow-band requirements. None of the DGGS hand-held radios are narrow-band capable, and many are decades old and are failing on a regular basis.
- Newer hand-held radios acquired in the 1990s are of insufficient power to act as base stations in camp and are not narrow-band capable. Portable base stations are needed to facilitate communication through the repeaters to the hand-held and helicopter-based radios.

<b>DGGS</b>			
	Quantity	Each	Total
Base Stations (portable)	2	\$5,000	\$10,000
Mountain Top Repeaters	5	\$20,000	\$100,000

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(portable, 12V Battery  
Powered UHF/VHF/Satellite  
Phone Enabled, Including  
Antennas)  
Hand-Held Radios (VHF,  
narrow-band capable)

60 \$1,500 \$90,000

**Total \$200,000**

**Specific Spending Detail:**

LINE ITEM	DOLLAR AMOUNT	DESCRIPTION
Personal Services	\$ 40,000	Training module development and statewide training delivery for new portable and mobile radios, consoles.
Travel	\$10,000	Travel costs associated with radio programming and training.
Services	\$ 465,000	ETS procurement and labor. Contractual labor. Helicopter costs. De-installations.
Commodities	\$210,000	Two-way radio related supplies, helicopter fuel, code compliancy supplies.
Capital Outlay	\$ 2,235,000	ALMR and narrow banded portable radios, Narrow banded portable repeaters and base stations, ALMR and narrow banded mobile radios, vehicle repeaters, ALMR compatible dispatch consoles, ADA dispatcher position stations.