

Mutual Aid Box Alarm System  
Special Communications Committee

**ADVOCACY STATEMENT #1**  
VHF Interoperability

**1.0 PURPOSE**

- 1.1 To encourage all MABAS members and other Fire Departments to obtain base station, mobile and portable radio communications capability on interagency radio frequencies for use during times of serious emergencies or disasters.
- 1.2 Amendment 1 - To add four additional 12.5 kHz “narrow-band” frequencies to the list of fire service interoperability channels identified in Statement #1 approved by the MABAS Executive Board on October 16, 2002.

**2.0 SCOPE**

This policy applies to all MABAS member agencies. It is encouraged that all fire departments and related emergency response organizations throughout Illinois adopt the procedures set forth herein.

**3.0 BACKGROUND**

3.1 Fire departments rely heavily on two-way radios to communicate between companies, departments, and other disciplines at emergency and disaster scenes. Fire Departments utilize radio frequencies in the VHF-Low, VHF-High, UHF and 800 MHz frequency bands for day-to-day operations. Newer technologies include the use of analog and digital transmissions and trunking technologies using incompatible protocols.

While these systems may meet the routine needs of individual departments, experience has shown that lack of interoperability between companies operating at an emergency scene can lead to serious and potentially life threatening consequences.

The FCC’s national radio frequency band plan specifies four VHF-High Band radio frequencies for fire service interoperability and fireground operations. There are also five analog public safety mutual aid frequencies in the 800 MHZ band plan. The state of Illinois has identified the frequency of 155.055

MHz (IREACH) as a statewide, interdisciplinary, coordination channel for use by police, fire, EMS, public works, highway and other governmental agencies.

Departments that utilize frequencies other than VHF-High Band for primary operations have developed various systems to communicate with MABAS departments at mutual aid calls. These systems include cross-band mobile repeaters and console patches to VHF base stations. These systems have many limitations, have tendencies to cause harmful interference, limit operating areas, may violate FCC rules, and could jeopardize the safety of personnel at emergency scenes.

NFPA standard 1221, **Standard for the Installation, Maintenance, and Use of Emergency Communications Systems**, Section 6-3.1.3 and 6-3.1.4 recommend that, “A simplex radio channel shall be provided for on-scene tactical communications” and “Communications system design shall be such that a portable radio is capable of operating properly within the dispatch area without the use of mobile radio frequency (RF) amplifiers”.

MABAS and the Illinois Emergency Management Agency (IEMA) have entered into an agreement to provide disaster response statewide. The potential exists for fire and EMS units to be operating for extended periods of time several hundred miles from their local jurisdiction or other distant jurisdictions may be operating in a stricken community during a disaster. Common mutual aid operations and fireground frequencies that will function statewide are essential.

- 3.2 The Federal Communications Commission (FCC) has designated four 12.5 kHz “narrow band” frequencies, three of which are for inter-system operation. As fire departments migrate to newer “narrow-band” two-way radio equipment, the four additional VHF fire frequencies could be integrated into MABAS’s overall communications plan.

Future fire service communications could dictate an alternate base to mobile frequency. To address this need, one of the new frequencies will be designated for base and mobile licensing.

## **4.0 POLICY/PROCEDURE**

The MABAS Special Communications Committee hereby makes the following recommendations for both member and non-member Fire Departments:

- 4.1 The following analog simplex radio frequencies are hereby identified for fire service and public safety interoperability:

<b>Frequency</b>	<b>Name</b>	<b>Purpose</b>
154.265 MHz	IFERN*	Mutual Aid base/mobile dispatch
153.830 MHz	Red Fireground	Fireground Operations
154.280 MHz	White Fireground	Fireground Operations
154.295 MHz	Blue Fireground	Fireground Operations
153.8375 MHz	Gold Fireground	Fireground Operations
154.2725 MHz	Black Fireground	Fireground Operations
154.2875 MHz	Gray Fireground	Fireground Operations
154.3025 MHz	IFERN2	Alternate Mutual Aid Base/Mobile
155.055 MHz	IREACH	Interdisciplinary Coordination

\*IFERN (Interagency Fire Emergency Radio Network) replaces the old NIFERN moniker.

- 4.2 All fire service apparatus that has the potential to respond mutual aid to a department that uses a different dispatch radio band or technology, or that may respond as part of an IEMA/MABAS disaster response, should have at least one mobile and one portable radio capable of functioning on the frequencies identified in Section 1.
- 4.3 All fire department command vehicles should have radio capability on the five VHF-High Band frequencies identified in Section 1.
- 4.4 All fire department dispatch centers statewide should have base station transmit and receive capabilities on the IFERN frequency of 154.265 MHz. MABAS members should have capability to receive and decode the MABAS alert tones.
- 4.5 Fire Departments that lack current FCC authorizations for the frequencies identified in Section 1 should immediately apply for proper frequency coordination and authorizations through the IMSA/IAFC frequency coordinator and FCC respectively.
- 4.6 MABAS Divisions are encouraged to apply for FCC authorizations on these frequencies.
- 4.6 The use of trunking technology, in-band or cross-band repeaters, or console based cross-band patches is strongly discouraged for tactical fireground operations.
- 4.7 In accordance with Illinois Department of Public Health rules, all ambulances shall have VHF-High band capabilities on the statewide MERCI frequency of 155.340 MHz utilizing a transmit CTCSS (PL) tone of 210.7 Hz (M2).

## **5.0 CONCLUSION**

Interoperability between various fire departments and other public safety and governmental agencies at major emergencies or disasters is essential for organized and safe coordination of personnel and resources.

Approved by the MABAS Executive Board on 10/16/2002.

Amendment 1 - Approved by the MABAS Executive Board on 04/24/2003.

MABAS Interoperability Statement