

**Project Name**

IFERN / IFERN 2 Radio Base Stations for all Wisconsin MABAS Divisions/Counties

**Sponsoring Agency**

**MABAS Wisconsin** - The Mutual Aid Box Alarm System (known as MABAS) Senate Bill SB 642 was approved by the Wisconsin State Legislature and signed by Governor Jim Doyle in April 5th, 2006. MABAS is a mutual aid measure that may be used for deploying fire, rescue and emergency medical services personnel in a multi-jurisdictional and/or multi-agency response.

Participation in the mutual aid program is voluntary. Equipment, personnel or services provided under MABAS are at no charge between municipalities. Expenses recovered from the responsible parties are equitably distributed. In addition, emergency personnel that respond to the emergency remain employees of their initial department or agency. MABAS is broken into divisions rather than regions.

The MABAS divisions basically follow county lines. The only exception is the City of Milwaukee which has established its own MABAS division due to size and number of agencies potentially involved. Currently, fifteen counties have formally established MABAS divisions and an additional 20 counties are in the process of adopting the program.

**Project Description**

The purpose of this project is to provide IFERN (Interagency Fire Emergency Radio Network) base stations at each primary fire dispatch center in the State of Wisconsin or one IFERN/IFERN 2 base station per county. This is very similar to projects in the State SCIP plan with regards to MARC, POINT, and WISPERN.

As MABAS Fire Mutual Aid spreads across the State of Wisconsin there is a pressing need to have a single common frequency for dispatching fire mutual aid companies to assist neighboring communities and fire departments. In addition we already have in place common MABAS operational fire ground radio frequencies which allow similarly equipped mutual aid companies to communicate with each other while en-route and on the scene of an emergency. These operational fire ground frequencies are commonly color-coded RED, WHITE, BLUE, GOLD, BLACK, and GRAY. Presently there are very few IFERN / IFERN 2 base stations in Wisconsin and those stations are generally located in Southeast Wisconsin.

This proposal when funded over a five year time frame will allow for the IFERN / IFERN 2 base stations to be installed as new MABAS divisions within Wisconsin come on line. This will lessen the financial impact in any one year and also recognizes those base stations will be installed as needed.

**Project Costs**

Presently there are 72 counties in the State of Wisconsin. For now we are estimating the cost of each base station as follows:

- Motorola Quantar VHF mixed mode base station with a wire line card..... \$15,000

*This base station will be capable of narrow band, and have the capacity to accept both IFERN*

and IFERN 2 base station frequencies. In addition the unit will be APCO Project 25 compliant and include the necessary flash code to allow for digital operation as required in the future.

- Andrew Helix 7/8" coax (estimate 300 feet per installation) ..... \$3,000
- Decibel Products DB-224 VHF Dipole Antenna ..... \$1,000
- Connectors, grounding cables, and coax clips..... \$1,000
- Local Installation Costs (Tower installation, rack mounting, etc) ..... \$4,000
- **Total Equipment and Installation Costs..... \$24,000**
- Local Match / Cost Share (25%) including additional installation costs ..... \$6,000
- **Total DHS / OJA Cost Minus Local Share ..... \$18,000**

Estimated cost for one Base Station is \$24,000 minus the local share of \$6,000 will give us an installed and ready to go base station capable of operating on both IFERN and IFERN 2.

Estimated cost for 72 Base Stations is \$1,728,000 minus the 25% local share of \$432,000 equals \$1,296,000. This investment can then be spread over 5 years creates a DHS/OJA investment of \$259,200 a year or fourteen IFERN / IFERN 2 Base Stations installed each year.

Local Match costs would include but not be limited to console connection and wiring along with any other infrastructure that would be necessary to connect the IFERN / IFERN 2 base with the primary dispatch center in a given county.

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**Baseline Description**

This investment will allow all Fire and Emergency Medical Services agencies who have the ability to operate on IFERN, and MABAS fire ground tactical channels the ability to communicate with Law Enforcement Dispatch Centers throughout the State of Wisconsin when a local, or regional event occurs that requires a multi-jurisdictional emergency response. Currently significant barriers exist in that communications capability in that a majority of counties in Wisconsin do not have the equipment necessary to operate on IFERN or IFERN 2.

MABAS Wisconsin in cooperation with the State Interoperability Executive Council (SIEC) and Wisconsin Emergency Management (WEM) is working hard to achieve this transparent interoperability for Fire and Emergency Medical Services through the establishment of VHF frequencies and radio standards. MABAS Wisconsin regularly conducts outreach programs, and more importantly training sessions with regard to radio interoperability.

The Office of Justice Assistance (OJA) has funded three rounds of radio replacement grants throughout Wisconsin allowing emergency agencies, including Fire and EMS, to replace old, and outdated radio equipment with new VHF, APCO Project 25 compliant radios which will allow all these radios to operate on the IFERN and IFERN 2 radio frequencies in addition to numerous tactical channels including MABAS, VCALL/VTAC, MARC, POINT, and WISPERN. The other benefit of these radio replacement grants is the ability to migrate to the State's proposed VHF Trunking Backbone which will further enhance Fire and EMS interoperability across the state.

Due to the design of trunking radio systems, it is impossible for Law Enforcement Dispatch centers to “Alert Tone Out” Fire and EMS responders. This “alert tone out” can only be done over a dedicated single frequency such as IFERN or IFERN 2. At this time and for the foreseeable future there are no belt style radio pagers capable of receiving alerting tones from a trunking radio system regardless of what band that system may reside on. The only other option would be for fire departments and EMS services to purchase trunking radios for all of their members. With respect to cost, for every one trunking radio a department would purchase they could purchase five or six radio pagers with the same funding.

**Strategy – Homeland Security Strategy goals and objectives**

A Goal of the Homeland Security State Strategy is to “*enhance the capabilities of emergency responders, specialty teams, and support providers to respond to CBRNE terrorist attacks*”. This project, when completed, will significantly enhance the ability of emergency responders to communicate via a common radio channel with every dispatch center across the state.

The movement of resources from an unaffected area to a stricken area is critical in resolving life safety, and property conservation issues. MABAS allows for the rapid coordination, movement and subsequent deployment of a wide multitude of resources including Fire, Rescue, Heavy Rescue, Collapse Rescue, Trench Rescue, and Hazardous Materials Teams. In order to efficiently and effectively manage these resources each Law Enforcement Dispatch Center needs to have a single, common, standalone frequency in which to operate. IFERN and IFERN 2 provide that resource. This project when fully implemented will provide the necessary hardware and dispatch console connections to seamlessly allow for dispatching and coordination of the aforementioned resources.

Throughout the State of Wisconsin similar projects have been funded in the past. Those projects are known as MARC, POINT, and WISPERN. MARC is an multi-disciplinary standalone frequency, while POINT and WISPERN are Law Enforcement standalone frequencies. All three are in the VHF frequency range as is IFERN and IFERN 2.

IFERN/IFERN 2 base stations will complement the Statewide VHF Trunking System. IFERN / IFERN 2 base stations will be used to alert surrounding jurisdictions of the need for emergency resources. If the surrounding jurisdiction has access to the Statewide VHF trunking system they can utilize that system to communicate with the local dispatch center. If that jurisdiction does not have access to the Statewide VHF trunking system they can always use IFERN/IFERN 2 to convey the required information. We must bear in mind that not every agency or county in the State will jump on the Statewide VHF trunking system however every agency and county will always have the ability to utilize conventional VHF radio systems and in particular with this investment the IFERN/IFERN 2 system.

**Milestones**

This investment project will occur over a five year period of time. The goal is to provide funding to install fourteen IFERN base stations per year starting in late 2008 through 2013. Dispatch Centers will need time to budget their local match for the project through the normal budget process.

During this five year period of time many public safety agencies including Police, Sheriff, Fire, and EMS must migrate to operating their radios utilizing narrow band technology. This is a mandate from the Federal Communication Commission in that they have set a target date of

January 1, 2013 as the ultimate changeover. This equipment will have those narrow band capabilities in addition to being APCO Project 25 compliant. It is our goal to have IFERN initially programmed as wide band, and IFERN 2 programmed as narrow band. Both frequencies can be used for alerting and dispatch purposes. This way the law enforcement dispatch center will have both capabilities available depending on the circumstances surrounding the need.

Project Year 1 – Existing MABAS Divisions/counties who do not presently have an IFERN base will be notified that the Grant is available and the need for a local match. Currently as of March 21, 2008 there are 15 divisions within Wisconsin. Of those 15 existing divisions/counties we anticipate 10 will need IFERN base stations. MABAS Wisconsin will coordinate the grant application process.

Project Year 2 through 4 – As new MABAS Divisions come on line and they do not have IFERN base station capabilities they will be notified of the grant process and the need for a local match. MABAS Wisconsin will coordinate the grant application process. Adjustments in the funding request can be made in cooperation with OJA based on the number of new divisions that comes on board with MABAS.

Project Year 5 – Any MABAS Division/County that has old wide band IFERN base stations will be afforded the opportunity to replace their old wide band IFERN base station with the new narrow band IFERN base station available through this grant subject to the local match requirement. MABAS Wisconsin will coordinate the grant application process.

### **Project Management**

This initiative will receive oversight from the MABAS Wisconsin Communications Committee and the Office of Justice Assistance. The Fire Chief who is chairman of the Communications Committee has been involved with the fire service for 26 years, and has served as Fire Chief for the last 3 years. In addition the Fire Chief has been involved with MABAS Wisconsin and the Communications Committee for the last four years. He is well versed in the communications needs of the Fire Service and is very supportive of state wide interoperability.

This Fire Chief is a member of the Wisconsin Statewide System Management Group (SSMG) and regularly attends WI-CORT and SIEC meetings. He is well versed in the SCIP and takes an active role in many communications related issues. In addition he maintains a liaison with the Wisconsin State Fire Chiefs organization and also a strong supporter of Incident Management Teams which can form the backbone of an extended emergency anywhere in the state.

MABAS Wisconsin Communications Committee will report to the Planning and Implementation Manager in the Office of Justice Assistance. Policy decisions affecting the investment as a whole are made in consultation with OJA, and the MABAS Wisconsin Communications Committee with input from the SIEC when necessary.

Grants will be made directly to the local agencies for equipment. Those local agencies must submit a detailed budget based on the criteria developed by MABAS Wisconsin Communications Committee along with an implementation schedule. Training, exercising, and the proper use of IFERN and IFERN 2 will be accomplished through MABAS Wisconsin, and Wisconsin Emergency Management – Fire Service Coordinator utilizing a training simulator specifically developed for dispatchers.

### **Investment Challenges**

Local Match – While the local match for the implementation of the IFERN base station is relatively low at about \$6,000 we anticipate with tight local budgets across the State of Wisconsin and the anticipated recession some Dispatch Centers may find it challenging to implement the IFERN base as soon as the Division/County comes on line. We believe it could be six to nine months down the road after a Division/County comes on line before they will be able to assure the match is part of their local operating budget.

Memorandums of Understanding (MOU) – MOU's will need to be developed, and approved by the local Dispatch Center, and the hosting agency to test, and maintain the equipment after installation. A boiler plate MOU will be developed by MABAS Wisconsin and OJA to facilitate this process. Before a grant application is opened up for a new MABAS Division/County the MOU will need to pass the local process and have the appropriate approvals.

Tower Sites – Each County has an array of unique towers, and sites to host public safety radio equipment. MABAS Wisconsin working very closely with the Dispatch Center, and their radio servicing agency will develop an equipment location plan that takes into account available tower space, frequencies used on that particular tower, antenna attachment, the need for cavities (filtering), and power requirements. In addition there will be a need to assess any backhaul requirements to get the IFERN/IFERN 2 signal from the transmitter site back to the Dispatch Center. This backhaul would need to utilize existing infrastructure such as microwave, fiber optic or telephone lines. This project does not provide for upgrading backhaul capacities.

Another aspect of tower siting will be to choose a location that best covers a MABAS Division/County based on terrain. Some counties are challenged on radio coverage based on the hills and valleys that exist in their respective jurisdictions. In some instances there may only be 90% coverage of a given Division/County based on terrain and the fact this grant only provides for a single base station. It would be incumbent upon the local jurisdiction to review enhancements to the IFERN/IFERN 2 base station that would provide broader receive coverage in that division/county.

### **Impact**

At the conclusion of each project year the MABAS Division/County that implements the IFERN/IFERN 2 base station will gain the ability to communicate with neighboring MABAS Divisions/Counties by radio. In addition these MABAS Division/Counties will gain the ability to communicate with local, regional, and state Fire and EMS resources responding to their emergency incident.

From a local or regional standpoint the goal is to provide mobile radio coverage from the IFERN/IFERN 2 Base Station within each Division/County that implements the grant. Generally speaking this will mean 95 to 99% mobile radio coverage. There will be some departure from this standard depending the size of the Division/County and the terrain to be covered.

When Fire or EMS mutual aid is requested from neighboring municipalities and jurisdictions IFERN/IFERN 2 base station will allow the stricken Dispatch Center to send out the alerting tones, and provide critical information updates to responding units prior to their arrival on the scene using a common statewide frequency. IFERN/IFERN 2 also allows almost instant feedback from neighboring jurisdictions as to whether they can provide the requested resources

or must take a pass due to local emergencies. This way Dispatch Centers can instantly move down the list of resources to pick up the next available resource from another jurisdiction when necessary.

Overall the minimal investment in the IFERN/IFERN 2 base station in each county will provide local and statewide communications capacities which allows for the rapid request of emergency resources, rapid assessment of the ability of those resources to respond, and communication of critical information updates to those resources as they are responding. When we speak in terms of "rapid" we mean, literally, seconds from the time of the initial request for MABAS resources to respond.

**Sustainability**

Once the IFERN/IFERN 2 base station is installed the local Dispatch Center and their affiliated governmental agency will be responsible for the maintenance and upkeep of the equipment. This also includes continuous, ongoing training for their dispatchers in conjunction with MABAS Wisconsin. We anticipate no additional funding will be required from DHS/OJA.

Memorandums of Understanding will be formalized to insure that the local agency is aware of their responsibilities regarding the installation of IFERN/IFERN 2 base stations

Respectfully submitted,

MABAS Wisconsin