

This is a regional interoperable communications project involving 100% participation of all 12 fire departments in Green County, Wisconsin that have never received funding for and are not currently interoperable in regards to mobile data communications. This project will benefit multiple seats of government and will enable a multi-jurisdictional communications system. We are seeking a federal share grant award of \$345,017.

PROJECT DESCRIPTION:

The Green County Fire Association is made up of 12 departments representing 429 firefighters and protects an area of 576 sq. miles along with a permanent resident population of over 33,647. The member departments annually respond to more than 2500 calls. All member departments are active participants in a unified approach to fire protection in Green County, Wisconsin. All departments have automatic and mutual aid agreements with other county departments and with departments outside the area through the Mutual Aid Box Alarm Association in Illinois and Wisconsin. Green County departments constitute MABAS Division 105. Additionally, nearly all departments respond on automatic aid requests to other departments outside the county. This mutual and automatic aid helps all departments come into compliance with NFPA Standard 1720.

The participating departments are all members of The Green County Fire Association and are listed below.

Argyle 33 members – volunteer
Albany 30 members – volunteer
Belleville 35 members – volunteer
Blanchardville 36 members – volunteer
Brodhead 40 members – volunteer
Brooklyn 34 members – volunteer
Browntown 23 members – volunteer
Juda 40 members – volunteer
Monroe 53 members – combination
Monticello 35 members – volunteer
New Glarus 38 members – volunteer
South Wayne 32 members – volunteer

Green County is home to many family farm operations and increasingly many factory farm operations with hundreds of head of livestock, large grain and liquid storage structures, and along with those structures, many hazardous locations within and associated with them.

Green County is a major commercial and industrial area with plastics production, and worldwide shipping and handling of many consumer products, automobile parts, and food processing concerns (i.e., candy manufacturing and packaging, meat production, and cheese production – our major industry). We also have five whey or milk products plants that have numerous confined and elevated space assemblies. Lastly, we have the main plant for a large truck manufacturing company that has over 500 employees. We have been called to this plant numerous times (seven times in the last two years) for persons trapped in machinery, hazardous material spills, and fire suppression.

In addition several major intra-state and interstate commerce arterials bisect the county from north to south and from east to west. These routes connect cities such as Madison, Wisconsin to points south in Illinois, and Highway 11 is the major east-west arterial connecting Iowa and points west to Chicago and Milwaukee.

Green County has become a major tourist destination in recent years. Monroe's Cheese Day festival draws over 250,000 people, and other communities also have large crowds during their annual local festivals.

Green County critical infrastructure includes:

- 150 million gallon ethanol plant
- 11 state- or county-owned communication towers are located in Green County
- Southern Wisconsin Railway Systems *
- A 24-inch flammable liquids pipeline traverses the northern portion of the county *
- 23 fuel storage facilities w/capacity of 1.8 million gals.
- Six electrical transmission facilities
- A major fiber optics array connecting Minneapolis and Chicago *
- 5 bridges crossing water
- Byron, IL nuclear power plant producing 1100 mgw daily

(NOTE: * denotes capacities not available because of security concerns)

Members of our departments have responded to assist at major incidents such as the Alfred R. Murrow Building bombing in Oklahoma City, The World Trade Center attacks, and Hurricanes Katrina and Rita.

Our county is faced with two interoperable communications problems at this time. Approximately two years ago, Green County partnered with the City of Monroe to purchase and implement a mobile data system for emergency management purposes. After considerable research, Spillman Technologies was chosen as the vendor for a system that includes mobile data, haz-mat, pre-plan and premise information, and GIS mapping along with features specifically for police use such as criminal, license and instant messaging. The system infrastructure was installed at a cost of \$1.1 million, and has been operational for a year; however, budgetary constraints only allowed mobile data terminals to be purchased for law enforcement at that time. The 12 fire departments do not have the financial ability to purchase the computers, modems and licensing for each department.

The second problem involves paging and notification of fire departments and their members. Our current paging system works on the same frequency as our voice radio communications. Critical fire ground communications are being interrupted by the need to re-page firefighters who did not receive the pages due to override on the frequencies. We have an immediate need to reduce voice communications and congestion on essential voice frequencies and ensure that the needed manpower resources are being effectively alerted to respond.

This project addresses those issues by providing the needed equipment and licenses to enable each department to be paged on a dedicated paging frequency and by providing voiceless mobile data and dispatching capabilities.

The project involves obtaining and installing a Mobile Data Terminals (MDT) in each department's primary command vehicle and first due engine. This will ensure that the command staff and first alarm assignment personnel have access to critical information prior to arriving at the scene and commencing operations, and will also allow departments to handle simultaneous calls. We are proposing to purchase 24 MDTs (Mobile Data Terminals), capable of linking to our Spillman mobile data system through an 802.11g wireless LAN and cell phone or radio modem and GPS receiver. These laptops will run CAMEO, incident pre-fire plans, and incident management software. Much of the information needed to deal with these hazards has been provided to us locally or through state and federal government; however, if we cannot access it expeditiously, we will not gain the full benefit of this important information. The mobile data system will send call information to each department and will include GIS mapping, and site hazards, building pre-fire plans, and owner-occupant information.

The mobile data terminals selected will include the MDT and a vehicle dock to secure the unit in the vehicle. The dock will also provide connection points for peripheral equipment such as the modem and GPS transponder. Placing the unit in a dock will enable easy removal to install updates or perform maintenance on the unit without having to install large downloads through a

radio modem connection which is slower than a wired connection.

The installation includes a radio modem of each department's choice to connect to the county public safety data system through a cell phone provider or a radio modem to connect to the county's VHF radio system installed on the central county radio transmitter site. These varied methods of connectivity are required since different areas of the county only have access to certain cell providers, and in some areas of the county the VHF radio modems are somewhat unreliable. All of the various options will cost essentially the same to implement so one figure is used for all departments' needs

The cost listed includes all training, equipment and installation costs as well as the initial license fee for each unit. Subsequent maintenance and annual license fees are NOT included as part of this grant request and will be funded locally either through the County board or by each individual department. The participating department heads and their respective government entities have agreed to budget for future annual license fees of approximately \$50 per unit per year.

Once installed, this will improve efficiency, enable more interoperability, and make our operations safer by providing information such as hazardous materials on scene, access to Emergency Response Guidebook info, building pre-plans, and location mapping along with Auto Vehicle Locating (AVL) showing the location of the incident, the best route to the scene, and the location of other emergency response vehicles.

Green County has operated a VHF radio system that included a limited number of frequencies for use in fire department operations. One of the major hindrances that existed was that the fire frequency was used for paging, regular voice communications and fireground operations communications. This led to an overlap in emergency and non-emergency operations. One of the biggest hindrances occurred when second or subsequent alarms were needed for additional firefighters or mutual aid departments. Often fireground communications had to be interrupted so that a clear channel could be held for a subsequent page.

Two years ago the county did a complete upgrade of the radio system and installed a new VHF system with multiple channels available for operations and paging. The result was moving the paging frequency from the 154 MHz range to 163 MHz. This move, while sorely needed and appropriate, rendered many of the older pagers in the county useless with the new frequency. Most departments in the county are using older Minitor 2 or 3 pagers which have a very limited frequency range of 147-155 MHz and for which manufacturer support for maintenance and parts has ceased. Many of these departments do not have the financial resources available to replace all of these older pagers that are unable to receive pages on the newer frequency. As a result the county must now either page on the old frequency, which is now the primary fire communication frequency, or to piggyback the page on both frequencies simultaneously. This causes interruption of fire ground and fire department communications. Additionally, several departments in the county do not have enough pagers to equip each authorized member.

Example: January 2006, 10 fire departments worked a factory explosion in Monticello with injuries and entrapment. Early in the incident repeated alerts for additional crews and successive interruptions of fire ground communications occurred while responding crews were given directions and instructions by dispatchers. This incident lasted more than five days and involved 23 pieces of equipment and over 200 firefighters.

We are proposing upgrading the pagers of all departments to Minitor V two-channel pagers with stored voice feature. This will allow the county to page only the assigned pager frequency without having to interrupt operational communications. The stored voice function will also enable the firefighter to replay the message if in a high noise environment or if they happened to miss the initial page. These pagers will allow our members to not only be alerted to needed incident responses, but will also allow them to monitor our primary communication channel to receive continuous updates as to the nature of the incident and any special hazards involved. With the

completion of this portion of the project, 100% of the firefighters in Green County will have adequate equipment to receive and respond to pages requesting fire department assistance, and will reduce radio frequency traffic by 30%.

PROJECT BUDGET:

Mobile Data Computer \$4355 x 24 = \$104,520

Vehicle Dock for Computer \$939 x 24 = \$22,536

Radio Modem \$1600 x 24 = \$38,400

Spillman Technologies License Fee \$1500 x 24 = \$36,000 (one-time fee)

429 pagers x \$424 = \$181,896. (This price includes a price concession on \$50 off state bid by the manufacturer because of the size and scope of the project. This concession can only be achieved by 100% participation as a county organization and saves \$21,450.)

Total Project Cost = \$383,352.

Minus 10% local matching funding = \$38,335

TOTAL REQUESTED GRANT FUNDING = \$345,017

The City of Monroe Fire Department will complete all grant requirements, including reporting to NFIRS, control and accounting for the funds, and distribution and control of the property. The Monroe Fire Department has extensive experience in administering federal grants, and will certify that all previous reporting and grants management has been completed as required in the respective program guidance. The bids for this project will be judged on merit based on adherence to stated specifications, quality of example workmanship and ease of use. By using this method, the greatest savings will be achieved since no one company can receive any advantage by exceeding specifications or tailoring bids to exclude others, and all federal procurement policies will be addressed. All participating departments have agreed to execute a Memorandum of Understanding defining cost reimbursement, continuing costs, and distribution and ownership of equipment received.

All equipment will be compatible with the State of Wisconsin and local interoperable communications plans.

FINANCIAL NEED:

The mobile data system and pagers, while very beneficial to us, cannot be funded through local means because all of the departments serve an economically stagnant area which has seen little growth in commercial or residential properties while tax levies have been severely restricted or even cut through state mandate.

Since 2004 the county began an aggressive plan to improve communications within the county and has spent \$3.4 million in communications infrastructure improvements. A new P25 compatible VHF radio system was installed to ensure reliable radio coverage throughout the county. Additional frequencies were assigned for police, EMS emergency management, and fire operations. Unfortunately lack of sufficient funding has placed the project in limbo. The taxpayers are very adamant about not wanting a tax increase to improve fire department communications.

All of these departments have seen operating costs increase while revenues from taxes or other sources have shrunk significantly. Most of the departments (92%) are entirely volunteer, and raise most of the funds that provide operating capital through individual fundraising.

The average median income for our area is \$36,922 (US average \$41,994), while the average property tax bill is \$2,029 (2000 Census). Taxable home values and land values have decreased

2.9% since the last census, with our average median home value of \$97,700 compared to the US average of \$119,000. We have a large number of senior citizens (14.7%), and 17.4% of the population is disabled and living on fixed incomes. Several large employers have downsized or left the area this year, leaving over 700 people unemployed. This has greatly impacted our ability to raise funds due to shrinking tax revenues and less disposable income to the residents.

COST BENEFIT:

The benefits of truly interoperable communications will reach well outside the geographic borders of our county. All firefighters in Green County will be reliably connected to our dispatch center and will be alerted in a timely manner. This single item will go a long way to improving safety for our members, and will ensure that our staffing levels will be sufficient to meet NFPA 1720 standards.

Making operations safer cuts down on lost time and decreases firefighter out-of-pocket expenses, decreases work comp and insurance costs, and ensures that the appropriate levels of staffing are in place. Better information about the scene and the occupancy will result in unneeded resources being released or cancelled, saving manpower and equipment operating costs. More efficient operations will protect our tax base by minimizing or preventing property damage.

If this equipment has to be purchased over time, the cost will steadily increase. (We have seen a price increase of over 14% since the inception of the project.) And delay of purchase will cause loss of lives and firefighter injuries because of decreased manpower and longer response times to emergency incidents.

OPERATIONAL OUTCOMES:

Implementation of this system will increase firefighter safety since all departments will have access to hazardous material emergency response data. The Emergency Response Guidebook will be continually updated electronically instead of receiving new hard copy books only every 3-4 years. Pre-plan information will be available to all responders even if the address is outside of their local jurisdiction. Vehicle routing and response routes will be clearly displayed and continually updated to speed response times and to identify special features such as the availability of alternative water supplies, hydrant locations and site hazards.

This system will improve interoperability since all departments will have access to pre-fire plans and information that the other departments have developed. This will assist when responding on mutual aid calls. It will make operations safer since it will continue to improve upon an environment where all 12 departments function as one in large incidents. It will make all of our operations more efficient and timely, and will lead to lives saved, quicker incident stabilization and mitigation, and more property and tax base conserved. This upgrade will allow us to meet statutory compliance to Wisconsin state statute Comm. 30 (which is our state equivalent of OSHA 29CFR1910), NFPA recommendations, and other federal requirements.

However, the most important attribute that the system will provide is to keep our firefighters safe by providing them the best intelligence and operational information possible. This program will address interoperability, and will directly benefit all firefighters in Green County, Wisconsin, and those in surrounding counties through the MABAS system. We feel that this proposal is a wholly-appropriate and responsible use of critical funding, and ask for your favorable consideration.

On behalf of all the fire chiefs, officers, and members of the Green County Fire Service, I thank you for your time and service in considering our request.