

2015 JMGBL Awards Application

Submission Date	2015-06-24 09:21:38
This application is for:	J. Mitchell Graham Memorial Award
Project Title	Barnwell County Power Wagon-We've Got The Power
County/Counties	Barnwell County
Staff Contact	Roger Riley
Job Title	Emergency Management Director
E-mail Address	rriley@barnwellsc.com
Phone Number	803-541-2013
Please provide a summary of your entry (no more than 100 words) to be used in a handout for the awards competition and included in press releases/publications. You may either type the summary in the text box or upload it as an attachment below.	The Barnwell County Power Wagon was designed for Emergency Management and the Barnwell community as a result of lessons learned through various disaster situations. By partnering between Emergency Management and the Barnwell County Career Center, a cost effective trailer was created that is truly unique. This trailer has the ability recharge many electronic devices, provide internet service and cell service in areas of low signal strength. This trailer can be used as a recharge station for emergency services, a place for the public to recharge and get online during disasters, as well as an educational tool for our local students.
Presentations may include more than one speaker; however, each speaker should be aware that the 10-minute time limit is strictly enforced. Please list the name, title, and e-mail address of each speaker:	Roger Riley Barnwell County Emergency Management Director rriley@barnwellsc.com
Will any of the speakers need accommodations (wheelchair accessibility, etc.) during the awards competition?	No
To submit these attachments online, please upload Microsoft Word or PDF documents below.	Letter to SCAC (1).pdf SCAC AWARDS 2015_PowerWagon_06232015-B.pdf



Barnwell County Administration
County Administration Building
57 Wall Street, Room 126
Barnwell, SC 29812
Phone (803) 541-1000
Fax (803) 541-1104

Pickens Williams, Jr.
County Administrator

Kim A. Futrell
Admin. Assistant
Clerk to Council

June 23, 2015

SCAC
PO Box 8207
Columbia, SC 29202-8207

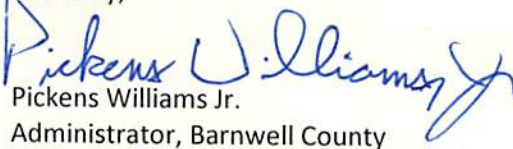
To Whom It May Concern:

I am writing in support of Barnwell County's application for the J. Mitchell Graham Memorial Award. A local school approached the Barnwell County Emergency Management Department requesting its participation in an energy grant the school was applying for. Barnwell Emergency Manager Roger Riley was so impressed with the idea that he agreed to finance the entire project through the Emergency Management Department if the school was not awarded the grant.

Using innovative ideas from the valuable lessons learned through emergency situations Barnwell County has responded to in the past, an emergency recharge trailer was developed that is able to recharge up to 40 cell phones, tablets, or computers and 18 communication radios for emergency response and law enforcement at one time through a solar generator with a gas backup generator. The trailer is also equipped with a 4G AT&T cell phone booster that accommodates 3G with all other carriers. Up to 12 devices can connect to the internet through a wireless hot spot. This trailer was built with no cost to the County due to grants for the equipment and "in kind" work by the Barnwell County Career Center's welding and electrical classes. Students from three school districts and one private school participated in the trailer's construction.

As Administrator of Barnwell County, I am pleased with the cooperation of our Emergency Management Department and the local school systems in the construction of such a unique piece of equipment. This trailer has the potential to benefit our entire County and neighboring Counties during a disaster and has been a great learning experience for the students.

Sincerely,


Pickens Williams Jr.
Administrator, Barnwell County



South Carolina Association of Counties 2015 J. Mitchell Graham



BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

INTRODUCTION

“*Lessons Learned*” is a phrase with multiple meanings for a collaborative project between the Barnwell County Career Center (BCCC) and Barnwell County Emergency Management Division (BCEM). The County’s technical school for high school students and the County division charged with mitigating local disasters teamed up to design and build the **Power Wagon**, a unique mobile recharging station for use during emergency incidents.

Truly, Public Safety should always be government’s first priority.

Reliable communication is one of the core components necessary for ensuring public safety before, during and after an emergency. According to FEMA, “the ability of an organization to execute its essential functions at its continuity facilities depends on the identification, availability, and redundancy of critical communications and information technology systems to support connectivity among key government leadership personnel, internal organization elements, other organizations, critical customers, and the public, during crisis and disaster conditions.”

Lessons Learned during the 2014 Ice Storm that hit Barnwell County and the 2015 Train Derailment in nearby Allendale County laid the foundation for the design and build-out of the **Power Wagon**.

As with any disaster, government officials, emergency service professionals and first responders should re-visit the incident in an After Action Review (AAR) to evaluate response and ascertain *Lessons Learned*, *Best Practices* and *Next Steps*. Again, one consistent topic that monopolizes most every AAR, including these two recent incidents, is how to improve/enhance communication during power outages and when disasters strike in areas already fraught with spotty cellular coverage.

In a 2012 AAR, Dr. Robert Chandler, Director of the Nicholson School in Central Florida and Imad Mouline, CTO of Everbridge, analyzed four major incidents: Hurricane Sandy, Aurora Colorado mass shooting, London Summer Olympics (the “first social media games”) and the Waldo Canyon Wildfire. They surmised ‘communication breakdown,’ a common thread in most all disaster incidents, is irrespective of location, size or scope. In other words, ALL *Lessons Learned*, *Best Practices* and *Next Steps* must address the premise that communication is crucial in incident response.

Ensuring public safety in a world of ever-increasing threats can be an almost insurmountable task and not just in Barnwell County. Alerting the public with critical information regarding pending emergency situations such as how to protect themselves and their families during a disaster, unsafe areas to avoid, inherent health and safety concerns, as well as how to access survivor resources in the aftermath of the disaster, is paramount to a ‘whole community’ emergency response approach.

Tremendous advances in communication technology and the prevalence of social media have transformed the world into a much smaller place, making ‘real-time’ communication not only a convenience, but more and more of a necessity especially during disaster situations.

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

I. BENEFIT/IMPORTANCE OF THE PROJECT

1. *Why was this project undertaken?*

Barnwell High School Assistant Principal Franklin McCormack, Barnwell 45 School District Grant Writer Tim Hicks and Barnwell County Emergency Management Director Roger Riley were the catalysts that sparked this project into being. The expression, “great minds think alike” could certainly paraphrase the origin, timeliness and relevance of the **Power Wagon** project.

Without a specific project in mind, Assistant Principal McCormack approached Tim Hicks about applying for a \$5,000 alternative energies grant. Hicks immediately recalled seeing photos of Filipinos desperately recharging cell phones after Typhoon Haiyan devastated the island nation in 2013. With Ice Storm Pax, (which severely impacted Barnwell County in February 2014) still fresh in his mind, Hicks, who also serves as a volunteer with BCEM, approached Riley with the idea of building an alternative energy charging station prototype. Hicks inquired about the practicality of a ‘student-built charging station’ and whether BCEM would have an interest in partnering with the Barnwell County Career Center (BCCC) to secure the grant as well as to provide insight into the design of the proposed project. Although the grant proposal was not successful, Riley was completely committed and ready to fully fund the project regardless of the grant outcome.

Riley worked alongside Hicks, BCCC Director Sam McKay and the Career Center Team (4 instructors and 18 students) to pattern the new charging station prototype, which came to be known as the **Power Wagon**, after *Lessons Learned* during the 2014 Ice Storm and the 2015 Allendale Train Wreck. The need for a resource like the **Power Wagon** became evident since most people in today’s technologically advanced society are communicating wirelessly. During the ice storm, Riley learned the best way to mass-disseminate emergency information is through social media, such as Facebook and Twitter which require charged phones, tablets or other mobile devices.

Recent, local and world-wide emergency incidents make the **Power Wagon** a timely project. Citizens and first responders’ increased dependence on mobile communication devices makes the **Power Wagon** project relevant. The need to communicate with the public and between emergency response agencies during disaster make the **Power Wagon** project essential. The urgency of keeping mobile communication devices such as phone, tablets and laptops charged even during power outages and other emergencies make the **Power Wagon** project critical.

2. *What is the significance of this project to your community as a whole? How does it relate in importance to the other problems in your community?*

The **Power Wagon** was designed to rapidly recharge personal electronics like cell phones and tablets (up to 50 at a time) from a 12-volt direct current battery which in turn is recharged by a deployable 31-by-16-inch solar panel. Emergency responder and firefighter radios recharge from a gas-powered generator in the trailer. Also outfitted with six household outlets, the **Power Wagon** can quickly charge essential medical equipment such as oxygen machines.

The **Power Wagon** boasts the answer to another *Lesson Learned* during the January 2015 CSX train collision in the Martin Community of Allendale County, near the Archroma chemical plant (formerly Clariant), derailing 14 railcars and creating a potentially dangerous hazardous materials


BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

scene with virtually no cell phone reception, leaving responders unable to communicate. Many areas of Barnwell and neighboring counties, such as Allendale County have spotty cell service. The **Power Wagon’s** 25-foot extendable mast with a 4-gigabyte cellular service booster mitigates this issue by boosting cellular service in areas of poor cell phone coverage. Furthermore, the booster amplifies cell phone signals within a 550-ft radius of the mast. The tower can boost the signals from many areas to provide adequate cell service during an emergency and is additionally equipped with twelve hotspots. (*Lessons Learned* from Allendale train derailment, January 2015).

3. How much of the county’s population is benefited by the project? In what specific ways are different groups of citizens within the county better off than before?

It would be safe to surmise that had the **Power Wagon** been a mitigating factor during the 2014 ice storm that ravaged Barnwell County, its immense capabilities would have been significant or as they say, a real ‘game changer’. The flow of communication to the public would have been smoother as well as streamlined. In the future, the Power Wagon will immediately be deployed to assist with internal communication among first responders as well as external communication with the public. In the event of a long-term electrical outage, where citizens eventually lose communications too, as cell phone and tablet batteries die uncharged, the **Power Wagon** is one solution to this problem.

In a 2012 report, it has been noted that 38.2% of American households were totally wireless with its phones – no landlines. That equates to 44,016,638 households out of 115,226,802 nationally – or about two out of every five American homes, according to the National Center for Health Statistics (NCHS) under the Centers for Disease Control. **(The same report actually gave a higher percentage – 39% -- for South Carolina households.)** A 2013 update report, quoted in the Los Angeles Times, suggested an increase to 41% of American households (93 million adults and 35 million children) relied solely on wireless phones. Similarly, a 2013 report by the Cellular Telecommunications and Internet Association (CTIA) stated that 39.4% of American households were totally wireless.

 SOUTH CAROLINA
SC – 4,609,176 population (2010) – State Area: 30,109 square miles
State Capital City: Columbia – population 119,961 (2006)
3,086,634 Internet users as of June/10, 67.0% of the population, per IWS.
1,625,480 Facebook users on June/10, 35.3% penetration rate.
2,006,280 Facebook users on March 31/11, 43.5% penetration rate.
http://www.internetworldstats.com/unitedstates.htm#SC

Percentage of US senior citizens that use Facebook: 31% updated 09/14

Percentage of US Internet users, age14-17 that use Facebook: 63.7% updated 10/14

Percentage of all US social media users that use Facebook: 90% updated 01/15

Percentage of online US adults (65+) that use Facebook: 56% updated 09/14

During a power outage, BCEM can use the **Power Wagon** to recharge radios and communication devices, while also distributing news releases and posting important information to social media. The **Power Wagon** can also be deployed to a centrally-available location for use

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

by the general public to charge communication devices and medical equipment as well as to get up-to-date situational information.

Additionally, education at the Career Center has been enhanced through the partnerships forged during this project. Teachers have a real world approach to demonstrating core concepts by engaging students in a creative and powerful way.

4. What degree of success did the project attain? What major objectives were achieved?

The ***Power Wagon*** concept has always been a two-part concept: one, a recharging resource during emergencies and two, an education example of alternate electrical energy that Barnwell County schools can use for demonstrations.

The ***Power Wagon*** was designed for use by BCEM using *Lessons Learned* from various incidents Barnwell County has responded to and can be easily deployed in 10 minutes by one person.

The ***Power Wagon*** is equipped with:

- A 7500-watt gas generator that will run for 10 hours on 1 ½ gallon of gas (also a backup to the solar panel)
 - Emergency Responder & Firefighter Radios
- A 1800-watt solar panel with inverter capable of simultaneously recharging
 - up to 18 county portable radios at the time with quick charges, and have individual pockets to accommodate various types of radios
 - up to 50 cell phones, tablets, or computers of any type with our multi-charger cords
 - up to 6 devices/medical equipment via 6 household outlets
- A wireless hotspot that can provide internet capability for up to 16 computers or tablets at one time
- A 25-ft extension tower with a 4G AT&T cell phone booster and 3G for Verizon and/or other carriers with range in excess of 550-ft radius

The ***Power Wagon*** is the answer to the challenges faced by First Responding Agencies during the 2014 ice storm and the 2015 Allendale train derailment. Power outages during the ice storm made communication with residents very difficult. Even those residents who had access to smart phones ran into difficulty after several hours as batteries were drained and they had no charging capability due to extended power outages.

The train derailment incident brought to light another shortfall in communication capability. Allendale, like most rural communities, has areas of low or no cellular coverage, which severely hampered communications among first responders during and immediately following the incident. The presence of hazardous substances that had leaked from the train made this incident a literal ‘powder keg’ situation. Responders needed to communicate with one another as well as with local residents to keep them updated on an escalating situation.

In both situations, the ***Power Wagon*** would have been a mitigating factor to many of the communication issues faced by first responders and the community. The ability to boost the

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

cellular signal would have mitigated communication coverage issues in the Allendale train derailment incident.

During the 2014 ice storm, the Power Wagon would have aided Barnwell County when one of the communication towers went down. Residents could have charged their computerized devices and smart phones allowing them real-time access to updates from emergency services as well as to monitor roadways and weather conditions.

II. PROJECT EFFORT/DIFFICULTY

1. What did your county have to do to accomplish its objectives?

Barnwell County is fortunate to have positive working relationships with other government entities within the county. For instance, the Barnwell School District 45 grant writer, Tim Hicks is a volunteer with Barnwell County Emergency Management in addition to his employment with the school. Once the need was communicated, these relationships were activated to solve any obstacles to completing the project.

This project was an excellent example, or model of separate county entities collaborating and working together to accomplish a common goal that benefits all involved. The students were eager to work on the project and they took pride in their work. The students received real world, hands-on experience that will mold them into an outstanding future generation of engineers, carpenters, welders, electricians and productive, caring citizens.

2. What challenges occurred during the project? Were there any community concerns?

After initial meetings, McCormack and Barnwell High industrial technology teacher Stephen Andrews knew as a project-driven learning experience, the ***Power Wagon*** venture was well suited for the Barnwell County Career Center and its students. Although it was a challenge to start from scratch and construct a trailer that would house everything needed to aid in communications during a disaster incident, everyone – instructors, students, school administrators, county officials and emergency services officials - rose to and exceeded that mission.

All the BCCC instructors took to the ***Power Wagon*** idea enthusiastically and without skepticism. They took the ball and ran it all the way to the end zone. There was never any question of ‘Should we do this?’ but instead, ‘How do we accomplish this?’ They transferred their enthusiasm about the project to the students – the main characteristic of successful teachers. As more of the community found out about this project, they offered support as well. If, or more likely, when the BCCC and BCEM undertake more collaborative projects, more partners are waiting in line to help because of the success enjoyed in this joint venture.

3. What were the nature and extent of the county government’s efforts to alleviate the problem(s)? How difficult was it to accomplish the project’s goals and/or objectives?

In Barnwell, as in every other jurisdiction, people are the most valuable resource. Everyone involved in the Power Wagon venture was enthusiastic and because of their dedication and

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

commitment to the completion of the project, any obstacles, most of which were technical in nature, were quickly rectified by the sheer determination of the students and instructors.

4. Was financing the project an obstacle? Were there any unusual factors inherent in financing the project?

Originally, the Career Center applied for a \$5,000 energy grant to finance the project. The grant failed, so Barnwell County Emergency Management, visualizing the tremendous merits of their investment, fully funded the project at a total cost of \$6,800. Funding came from a Barnwell County annual budgeted item under the direction of Barnwell Emergency Management Division Director Roger Riley, who realized the value of the Power Wagon during potential emergencies made it a great project with a return on investment that far out-weighed the cost.

5. Did any agencies, citizen groups, or other organizations assist your county with this project? Did their participation pose any particular challenges or offer any unique contributions or benefits?

For 18 BCCC students, the power wagon was a hands-on lesson in electricity, carpentry, welding, drafting, project management and teamwork as they modified the five-by-eight foot utility trailer. Students from all three school districts; Barnwell 45, Williston 29 and Blackville 19 as well as Jefferson Davis Academy participated. Five BCCC instructors oversaw students on the project: Jimmy Easterling, computer repair; Kenny Bates, welding; Johnny Dodge, building construction and W.C. Black, drafting. Ron Still, the BCCC electricity instructor, was the overall project manager.

“I liked the experience of getting out of the classroom and learning something hands-on.”

Blake Owens, 17-year-old junior at Barnwell High and BCCC electricity student (Owens helped wire the power wagon, hook up the breaker box, receptacle outlets and generator)

“I loved working on it. It’s good for the community. If you have a trailer of this type, you can keep up communications. I want to give thanks for the people who let us build it and the teachers for encouraging us.”

Cody Nix, 17-year-old junior at Barnwell High and BCCC electricity student

“The students thoroughly enjoyed working on this project and they learned a lot in the process.”

Sam McKay, the BCCC director

“We have great students that were willing to work and took pride in what we accomplished. BCCC is turning out future engineers, carpenters, welders and electricians. We hope the general public will see one county entity working with another to accomplish great things. After all, when you get governmental entities working together toward a common goal– it’s a win-win situation.”

Ron Still, BCCC electrical instructor

6. Are there any unresolved problems or other goals left to tackle?

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

Although the Power Wagon is complete and fully functional, BCEM plans to test the cellular boosting capability of the Power Wagon in areas where cell phone coverage is spotty.

Additionally, several have suggested that the BCCC and BCEM pursue a patent for the *Power Wagon*, as a possible revenue stream that would allow the Career Center to pursue additional projects with Barnwell County Government.

III. PROJECT ORIGINALITY/INNOVATION

1. Justify the uniqueness of this project. What makes it different from other projects designed to achieve the same objective?

Although other counties and municipalities have access to ‘charging stations’, Barnwell’s *Power Wagon* has the distinction of being designed with oversight by the BCEM Director Roger Riley with “boots on the ground” experience and *Lessons Learned* from a variety of emergency situations where the *Power Wagon* would have been a major mitigating factor with communication and power resource issues. Whereas, most charging stations are proprietary to the mobile carrier’s brand, the *Power Wagon* has the capability of charging diverse communication devices including mobile phones and tablets as well as first responder and firefighter radios, regardless of the retailer.

Having the 25-ft extendable mast with the 4-gigabyte cellular service booster and the 6-household outlets add to the uniqueness of the Power Wagon, while making it an invaluable, all-hazards piece of equipment.

Construction of the *Power Wagon* was also unique in that it provided an opportunity for collaboration between BCEM Director Roger Riley and the BCCC’s local high school students, giving students real world and priceless hands-on experience. After just three months of collaboration and hard work, the team presented the finished product to the Barnwell County Emergency Management.

“The need for a resource like the *Power Wagon* became evident since most people are communicating wirelessly now. Riley discovered during the 2014 ice storm the best way to convey emergency information is posting on Facebook which requires electricity,” Riley said. “In the event of a long-term electrical outage, people will eventually lose communications too as cell phone and tablet batteries die uncharged. The power wagon is one solution to that problem.”

2. Do you know of any other similar programs in South Carolina? If so, how is your program different?

According to BCEM Director Roger Riley and SC Emergency Management Division’s Public Information Coordinator Derrec Becker, the Power Wagon is unique to Barnwell County as well as to South Carolina.

3. What innovations were required in accomplishing your objectives?

Roger Riley incorporated *Lessons Learned* from real-world emergency incidents into the design of the Power Wagon. The Instructors modified the trailer, taking into account the needs of a

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

“boots on the ground” first responder’s experiences. One of the greatest innovations was utilizing the human capital and knowledge available at the BCCC. The students and instructors provided a wealth of technical knowledge. The cost of a simple charging station costs in the thousands. By utilizing the BCCC, BCEM now has a custom-designed Power Wagon at a fraction of the cost of a standardized, off the shelf model.

4. Who provided the creativity and imagination in your project?

Barnwell High School Assistant Principal Franklin McCormack became aware of a \$5,000 alternative energies grant. BCCC Director Sam McKay worked with five Career Center instructors (Jimmy Easterling – computer repair, Kenny Bates – welding, Johnny Dodge – building construction, WC Black – drafting and project manager Ron Still – electricity) and Stephen Andrews (Barnwell High School Industrial technology instructor).

Eighteen students from the Barnwell County Career Center, which encompasses one private school (Jefferson Davis Academy) and three public schools (Barnwell 45, Williston 29, and Blackville 19) collaborated with Barnwell County Emergency Management Department Director Roger Riley to design and construct the ***Power Wagon***. Each of the four individual schools’ logos and the Barnwell County Career Center logo are emblazoned on the Power Wagon to commemorate their efforts as well as their commitment to the safety of Barnwell County residents.

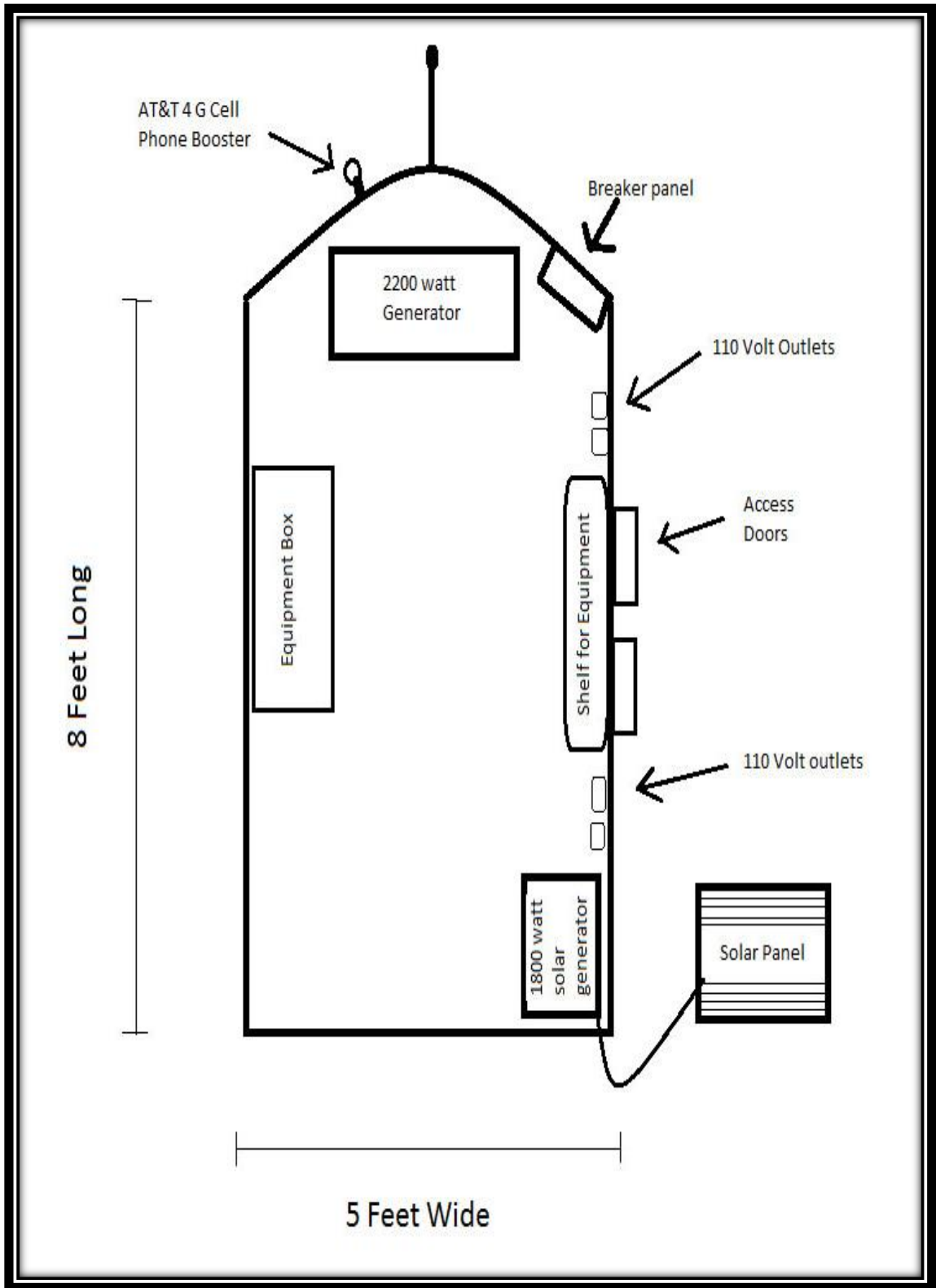
In honor of the students’ hard work, BCEM Director Roger Riley held a cook-out at the school and presented each student and teacher involved in the project with a plaque.

“I want to thank you for your hard work. This trailer is unique. I don’t know of any other one in the State,” Riley said to the Career Center students at the cook-out. “On that day I wanted to recognize those who worked on the trailer, so I cooked a hamburger lunch, presented each student a plaque of appreciation, and invited the local media and school officials. I also went to the school board meeting and recognized Mr. Tim Hicks who came to me with the project in the beginning.” In attendance at the unveiling of the ***Power Wagon*** were: Barnwell County Administrator Pickens Williams Jr., Barnwell County Clerk of Court Rhonda McElveen, Barnwell 45 School Superintendent Jay Grissom, Williston 29 School superintendent, Dr. Missoura Ashe, SC Emergency Management Division Public Information Coordinator Derrec Becker, and Region 6 Emergency Management Coordinator Gretchen Birt-Schatzer.

SUMMARY

When disasters strike, residents tend to look to local government for answers as well as relief. It is the emergency manager’s job and in the best interest of our communities to take every precaution and to be prepared for the ‘what-if’s’. In South Carolina, whether it’s an ice storm, hurricane, earthquake or other weather related disaster - no matter what the emergency, a common result is power outage and Barnwell County NEVER wants to hear, “What we have is a failure to communicate.” When power is unavailable, communication suffers. Because of the growing dependency on mobile phones, tablets, etc., Barnwell County devised a solution – The ***Power Wagon***. And NOW..., **“WE’VE GOT THE POWER!”**

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!



'Power wagon' created by students after lessons learned

TIM HICKS
Barnwell District 45

"Lessons learned" is a phrase with multiple meanings for a collaborative project between the Barnwell County Career Center (BCCC) and the Barnwell County Emergency Management Department (BCEM). The county's technical school for high school students and the county department charged with mitigating local disasters teamed up to build a power wagon, or mobile recharging station, for BCEM to use. BCCC students began work on it in early January after returning from Christmas break.

On March 17, BCCC presented the finished trailer to BCEM.

In honor of the students' hard work, BCEM director Roger Riley held a cook-out at the school and presented each student and teacher involved with the project with a plaque.

"I want to thank you for your hard work. This trailer is unique. I don't know of any other one in the state," Riley said to the BCCC students at the cook-out.

The power wagon recharges personal electronics like cell phones and tablets from a 12-volt direct current battery which in turn is recharged by a deployable 31-by-16-inch solar panel. Emergency responder and firefighter radios recharge from a gas-powered generator also in the trailer.

In the event of a long-term electrical outage, people will eventually lose communications too as cell phone and tablet batteries die uncharged. The power wagon is one solution to that problem.

"The biggest thing is the power wagon was built from lessons learned from the ice storm and the train wreck in Allendale," said Riley



Jonathan Vickery/Managing Editor

Barnwell County Emergency Management Director Roger Riley (left) thanked the career center students who built the trailer with a lunch and certificates on March 17.

See TRAILER, 14A

14A • The People-Sentinel • Wednesday, April 1, 2015

Trailer: Power wagon solves communication problem in disasters

of discovering what is needed in handling emergencies.

The need for a resource like the power wagon became evident since most people are communicating wirelessly now. Riley discovered during the 2013 ice storm the best way to convey emergency information is posting on Facebook which requires electricity, he said.

For 18 BCCC students, the power wagon was a hands-on lesson in electricity, carpentry, welding, drafting, project management and teamwork as they modified the five-by-eight foot utility trailer. Students from all three school districts; Barnwell 45, Williston 29 and Blackville 19 as well as Jefferson Davis Academy participated. Four BCCC instructors oversaw students on the project: Jimmy Easterling, computer repair; Kenny Bates, welding; Johnny Dodge, building construction and W.C. Black, drafting. Ron Still, the BCCC electricity instructor, was the overall project manager.

Blake Owens, a 17-year-old junior at Barnwell High and a BCCC electricity student, enjoyed the opportunity to work on the power wagon.

"I liked the experience of getting out of the classroom and learning something hands-on," he said.

Owens helped wire the power wagon, hooking up its breaker box, receptacle outlets and the generator.

Working alongside Owens was Cody Nix, 17, and another Barnwell High junior and BCCC electricity student.

"I loved working on it. It's good for the community. If you have a trailer of this type, you can keep up communications," Nix said.

Nix appreciated the opportunity to participate in such a pragmatic lesson.

"I want to give thanks for the people who let us build it and the teachers for encouraging us," Nix said.

"They enjoyed doing it and learned a lot," said Sam McKay, the BCCC director.

Ron Still thinks it was a good collaboration as well as a good lesson for his students.

"We have good students willing to work and have pride in what we did," Still said. "We (BCCC) are turning out future engineers, carpenters, welders and electricians. We've got kids who work."

"We hope the general public will see one county entity working with another one. When you get governmental entities working together - it's a win-win situation," Still said.

The power wagon also boasts the answer to another lesson learned: a 25-foot extendable mast with a 4-gigabyte cellular service booster. The booster amplifies cell phone signals within 550 feet of the mast.

"You get in range of the mast and you've got full bars



The power wagon bears the emblems of every school that was involved in the project.

(signal) on your phone," Riley said.

The lesson learned was needing a mobile cellular service booster in areas of poor cell phone coverage, like in Allendale County this past January, Riley said.

Riley was referring to the incident when CSX trains collided in the Martin community near the Archroma chemical plant (formerly Clariant), derailing 14 railcars and creating a potentially dangerous hazardous materials scene.

One challenge with this incident was poor cell phone reception, Riley said.

"In Allendale, we couldn't talk to anyone," he said. "We are going to test this thing (the power wagon) out down in

Allendale soon."

Bad spots of cellular coverage or not, it is a general fact now that more people are wireless and mobile with personal communications.

In a 2012 report, it was noted that 38.2% of American households were totally wireless with their phones - no landlines. That equates to 44,016,638 households out of 115,226,802 nationally - or about two out of every five American homes, according to the National Center for Health Statistics (NCHS) under the Centers for Disease Control. (The same report actually gave a higher percentage - 39% - for South Carolina households.)

Similarly, a 2013 report by the Cellular Telecommunications and Internet Association

(CTIA) stated that 39.4% of American households were totally wireless.

The original idea for the power wagon occurred when Barnwell High assistant principal Franklin McCormack approached the Barnwell 45 School District grant writer Tim Hicks about applying for a \$5,000 alternative energies grant.

However, McCormack did not have a specific project in mind. Hicks suggested the idea of a power wagon after seeing photos of Filipinos desperately recharging cell phones after Typhoon Haiyan devastated the island nation in 2013. Also the 2014 ice storm in South Carolina which affected Barnwell County severely was still fresh in mind too.

Hicks, an emergency management volunteer, asked Riley about the practicality of such a project and whether BCEM could use such equipment.

"Not only did he like the idea, but Roger Riley stepped up and said Barnwell County Emergency Management would fully fund the project regardless of the grant decision. That was a phenomenal offer," Hicks said.

"The power wagon idea has always been a two-part concept: one, a recharging resource during emergencies and two, an education example of alternate electrical energy Barnwell County schools can

FROM PAGE 1A

use for demonstrations," he said.

After initial meetings, McCormack and Barnwell High industrial technology teacher Stephen Andrews knew as a project-driven learning experience, the power wagon was well suited for the Barnwell County Career Center and its students, so BCCC director McKay was contacted.

"All the BCCC instructors took to the power wagon idea enthusiastically without skepticism. They took the ball and ran it to the end zone from there on out. There was never any question of 'Should we do this?' but instead, 'How do we accomplish this?' which is to their credit," Hicks said. "They transferred their enthusiasm to the students about the project. I think that's the mark of a good teacher."

On hand for the unveiling of the power wagon were Barnwell County Manager Pickens Williams; Barnwell County Clerk of Court Rhonda McElveen; Barnwell 45 School Superintendent Jay Grissom and the newly hired Williston 29 School Superintendent, Dr. Missoura Ashe. Also attending were Derrac Becker, the Public Information Coordinator for the S.C. Emergency Management Division, and Gretchen Birt-ressure during emergencies and two, an education example of alternate electrical energy Barnwell County schools can

BARNWELL COUNTY POWER WAGON – WE’VE GOT THE POWER!

Roger Riley, (center) the Barnwell County Emergency Management director, talks with the BCCC students who built the power wagon at a cook-out he held to thank them for their work. High school students from all three county school districts; Williston 29, Blackville 19 and Barnwell 45 and Jefferson Davis Academy worked on the power wagon, so each is represented by their logo as well as that of the Barnwell County Career Center.



Ten of the 18 BCCC students, who worked on the **Power Wagon** project pose in front of their handiwork along with Roger Riley, far left standing, the Barnwell County Emergency Management director.

The **Power Wagon** also boasts a 25-foot cellular signal booster for working in areas with poor or no cellular coverage. The booster mast is retractable.

