



2018 Annual Report

Boone County Joint Communications



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Letter from the Director

On behalf of the team at Boone County Joint Communications (BCJC), I am pleased to present our 2018 annual report. BCJC is the 9-1-1 Public Safety Answering Point (PSAP) and dispatch center for police, sheriff, fire, and emergency medical services for the residents and visitors of Boone County, Missouri. We are the vital link between the citizens we serve and our public safety partners.

As the "first" first responders, BCJC strives to provide prompt, courteous, and professional service for all our customers. Through our actions, we help save lives, protect property, and assist the public in their time of need. We have been "the calm voice in the dark" for citizens and responders since 1977. Through public support of a dedicated sales tax we continue to elevate the level of service to those who live in and travel through Boone County and we continue to support the operations of the municipalities where our residents live and work.

Our services are provided from a state-of-the-art Emergency Communications Center (ECC) located in northern Columbia, as well as radio towers throughout Boone and surrounding counties. Our dedicated funding and in-house Information Technology support has allowed us to achieve enhanced reliability through system redundancy at the ECC, at an offsite backup, and at a neighboring PSAP.

BCJC is recognized by the International Academies of Emergency Dispatch as an Accredited Center of Excellence in emergency police, fire, and medical dispatch. This was achieved by consistently meeting exacting industry standards and applying best practices for processing thousands of emergency and non-emergency calls for service each year.

Our in-house training program readies each new Emergency Telecommunicator for the challenges ahead as they embark on their career in 9-1-1 call taking and dispatching. With the skills received during training and continuing education, our Emergency Telecommunicators are some of the best trained in their profession. Callers receive exceptional service along with lifesaving instructions on what may be the worst day of their lives.

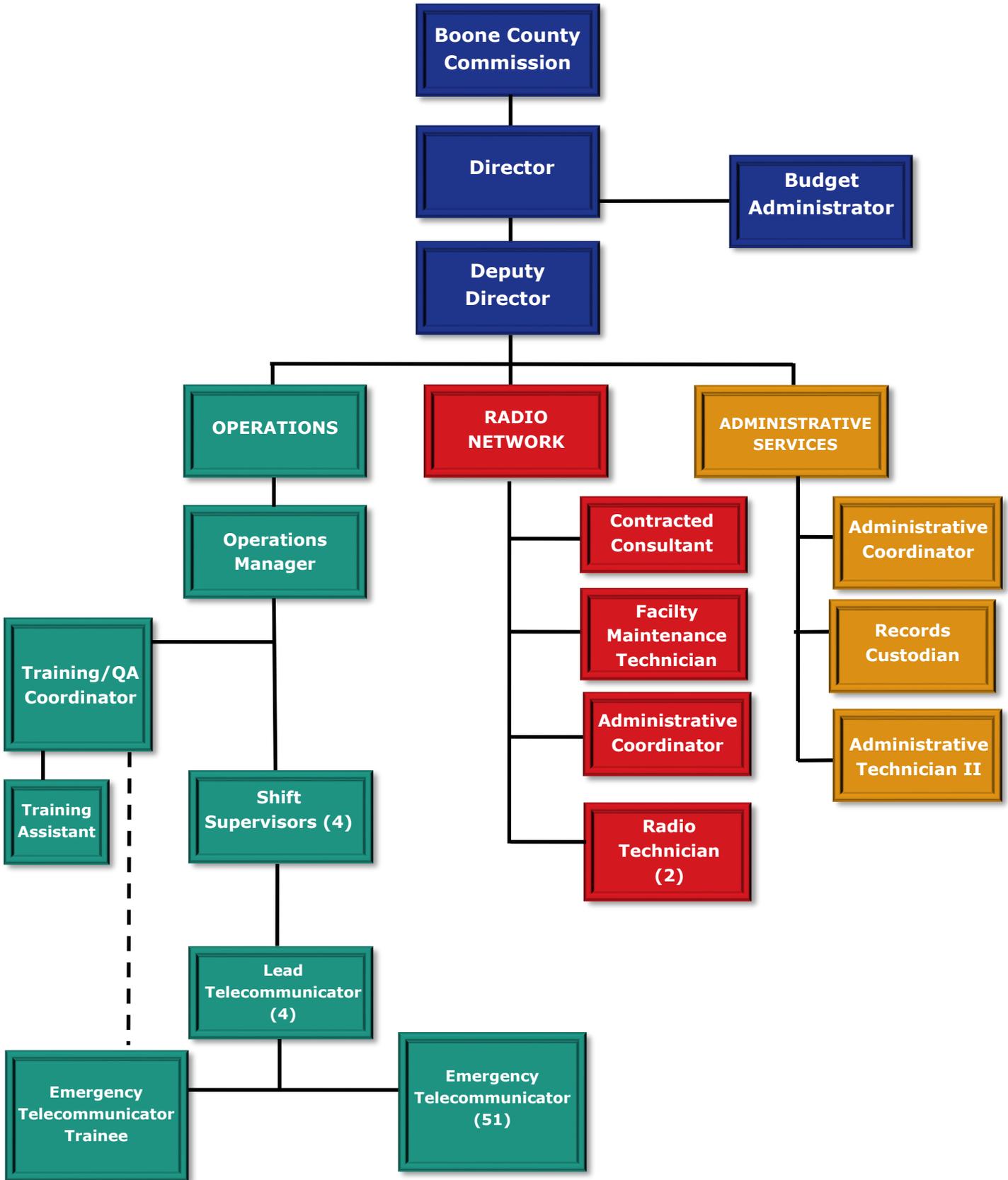
2018 marked the first full calendar year Boone County Joint Communications operated in the new ECC building. BCJC continues to grow and evolve, moving forward with changes in technology and industry trends. One of the largest challenges in 2018 related to recruiting and hiring of Emergency Telecommunicators. Using multiple media pathways, we launched a successful recruiting campaign to fill our vacant positions.

Together as a team, everyone at Boone County Joint Communications faces the urgent challenges head-on to ensure Boone County has modern resources and well-trained staff for emergency communications and dispatching. Our employees take pride in serving Boone County and represent the department well through their daily call handling, training new employees, community outreach and 9-1-1 public education. We look forward to the challenges ahead in 2019 as we continue to expand our services to the community.

Sincerely,

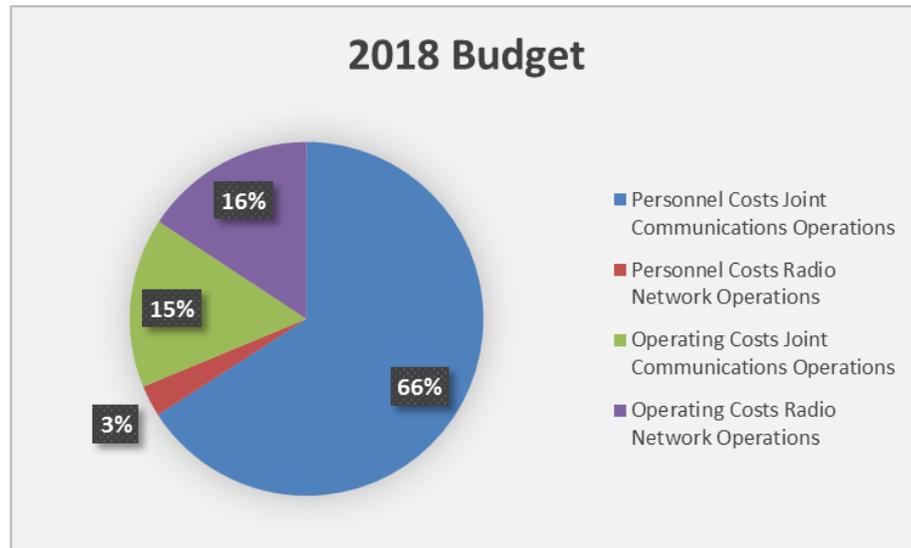


Chad Martin
Director



The Deputy Director is the Manager of Administrative Services and takes over the responsibilities of the Director should his/her office be absent or vacant .

2018 Budget



Personnel Costs

Joint Communications Operations	\$ 3,270,948
Radio Network Operations	\$ 142,579

Operating Costs

Joint Communications Operations	\$ 770,740
Radio Network Operations	\$ 781,190

Total 2018 Personnel & Operating Budgets \$ 4,965,457

Personnel costs reflect the service nature of BCJC’s primary function: emergency call taking and dispatching. Staffing the 9-1-1 operations center with skilled Emergency Telecommunicators appropriately represents the bulk of the BCJC budget.

It should be noted that 911-related technology is not included in the BCJC budget, as these costs are under the oversight of the Boone County Information Technology department.

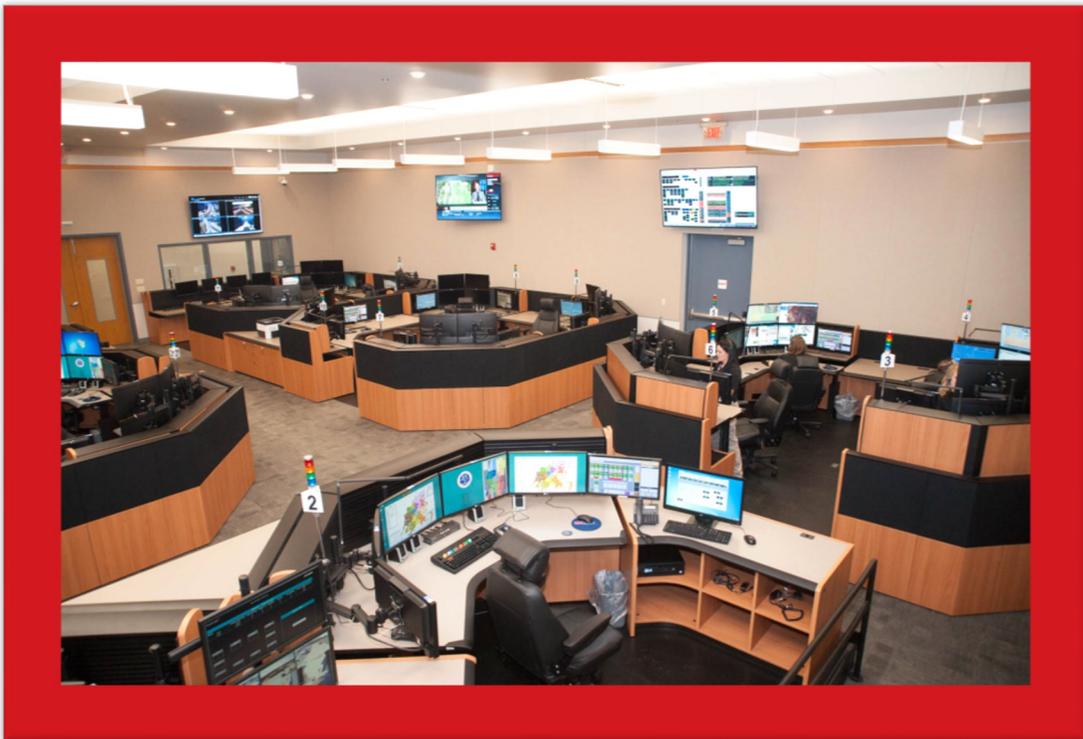
Radio Network Operations is tracked as its own cost center since it represents a significant portion of ongoing operating costs.

In addition to the budget above for ongoing costs, \$2,430,984 was set aside in the 2018 budget for Radio Network Improvements, covering costs of planned projects such as addition of radio channels and establishing new radio tower locations to improve coverage in under-served geographic areas. The Radio Network Improvements budget appropriations are planned to fund multi-year projects.

911 Dispatch Operations

BCJC Dispatch Operations is dedicated to serving as the vital link between the community and our public safety partners. BCJC's motto is *Vox in Tenebris*, which means "the voice in the dark" and although we aren't out in the field putting out fires, arresting criminals, and bandaging wounds, we are the caller's first contact with the emergency response system which plays a key role in the process.

BCJC receives 9-1-1, alarm, and non-emergency calls for all of Boone County and dispatches those calls to the appropriate agencies. Emergency Telecommunicators manage the calls from start to finish and coordinate with multiple agencies and resources on behalf of responders.



Recruiting and Hiring

The Emergency Telecommunicator (ETC) is the heart and soul of the 9-1-1 Operations Center. BCJC is proud to have some of the most highly-trained ETCs in the industry. Our Emergency Telecommunicators are dedicated, skilled professionals, serving the public and supporting front-line first responders.

As of December 31, 2018, BCJC employed 45 staff in the 9-1-1 Operations Center, including 4 Shift Supervisors, 4 Lead ETCs, 21 fully trained ETCs and 16 ETC Trainees. The 9-1-1 Operations Center is supported by 9 administrative staff and 3 radio system technicians.



The Operations Room

Staffing the 9-1-1 Operations Center begins with the recruitment process. In 2018 BCJC participated in 13 Career Fairs at local colleges, high schools, and community centers.



Randolph County Career Fair



The Hartsburg Pumpkin Festival

Recruitment efforts included a Public Safety Hiring Fair hosted in partnership with BCJC, the Boone County Sheriff's Department, the Office of Emergency Management, Boone County Fire Protection District, and Southern Boone Fire Protection District.

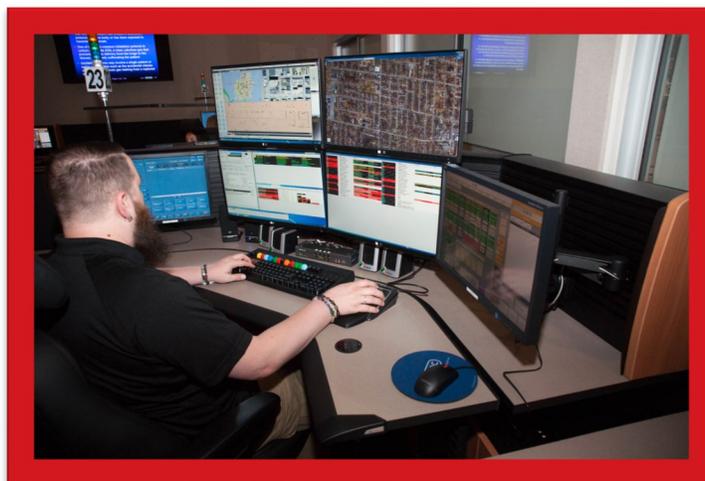
The event brought county-wide public safety agencies together for an opportunity to recruit candidates. Over 96 individuals filled the Boone County Sheriff's Department annex to learn about new career opportunities.



Public Safety Hiring Fair

In 2018, about 24% of applicants for the ETC Trainee position passed initial screening and a computer-based skills test, and were invited to a panel interview. Of those, about 33% decided not to move forward in the process, 19% accepted job offers, and 24% were still in process as of year end.

Training facilities in the new Emergency Communications Center made it possible to accommodate 22 ETC Trainees that were hired in 2018. Full staffing was accomplished on July 30, 2018. Because there is a high attrition rate during the training period, positions continued to be vacated and filled for the remainder of 2018.



Training

The Boone County Joint Communications training division is responsible for training programs that not only develop newly hired staff, but also support the continuing education of existing staff.

Emergency Telecommunicator Trainees

New Emergency Telecommunicator training consists of three phases: certification, classroom, and the on-the-job training (OJT).

In the certification phase the trainee learns basic skills of an emergency telecommunicator according to the training standards set forth by the Missouri 911 Training and Standards Act (RsMO 650.340), and qualifies for certification from the International Academies of Emergency Dispatch (IAED) as an Emergency Telecommunicator. The trainee also receives certification from the American Heart Association in Cardiopulmonary Resuscitation (CPR). This is then followed by certification as an Advanced Emergency Medical Dispatcher (EMD), Emergency Fire Dispatcher (EFD) and Emergency Police Dispatcher (EPD) from IAED. The certification phase takes approximately three weeks to complete.

The classroom phase provides trainees with in-depth training on phone answering skills, mapping and geography, computer-aided dispatch (CAD), dispatch policy and procedures. This phase also includes simulation lab training in which trainees perform advanced call taking and dispatch scenarios in a controlled environment. The classroom phase lasts approximately six weeks.

For on-the-job training, the trainee is paired with a Communications Training Officer (CTO) and assigned to a shift. Under the supervision of the CTO, the trainee answers live 9-1-1 calls and non-emergency calls for service. The trainee will also work with the CTO in mastering all aspects of dispatching law enforcement, fire, and ambulance units in Boone County. This phase lasts approximately 16-20 weeks.



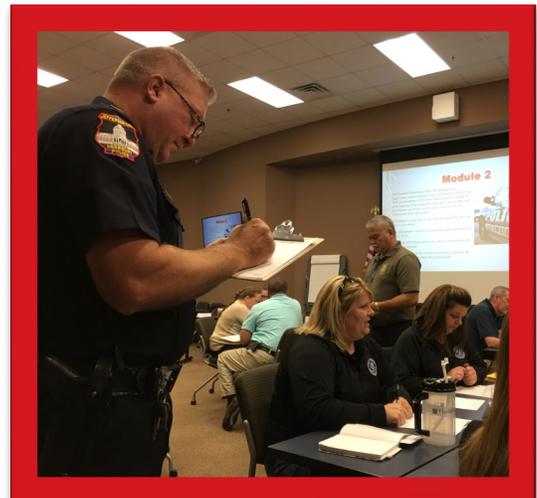
Classroom in Emergency Communication Center

Continuing Dispatch Education

Continuing education is conducted regularly for all staff members. In 2018, the Emergency Telecommunicator staff completed approximately 100 hours per employee. These training resources include:

- ◆ IAED continuing dispatch education training opportunities
- ◆ Association of Public-Safety Communications Officials (APCO) training opportunities
- ◆ Dispatch wellness training provided by Public Safety Training Consultants
- ◆ Communications Training Officer certification
- ◆ Management and supervision training conducted by several agencies

The classroom in the new Emergency Communications Center makes it possible to host regular training classes, allowing more of our ETCs to participate with minimal disruption to scheduling. These hosted courses are often open to ETCs from other dispatch centers, giving them an opportunity to gain skills to better serve their own communities.



BCJC Partnership with MACC

BCJC has partnered with Moberly Area Community College (MACC) Workforce Development Center to provide the International Academies of Emergency Dispatch (IAED) Emergency Telecommunicator (ETC) certification course. This partnership reaches members of the community to increase awareness of career opportunities in emergency dispatch.

The 10-week course teaches job skills such as emergency telecommunication technology, interpersonal communication, legal issues, job stress factors, and other related topics. BCJC employees who are IAED-certified instructors lead students through the classroom curriculum. An extensive simulation lab allows the students to practice in a controlled environment. Students then participate in clinical observation in BCJC alongside working Emergency Telecommunicators. This combination of instruction and experience gives the students the unique chance to see emergency telecommunications through the eyes of working and experienced ETCs.

Students who pass the final exam receive certification as an Emergency Telecommunicator from IAED. This certification meets the standards set forth by the state 911 Training and Standards Act, allowing graduates to work at any 9-1-1 center in Missouri.



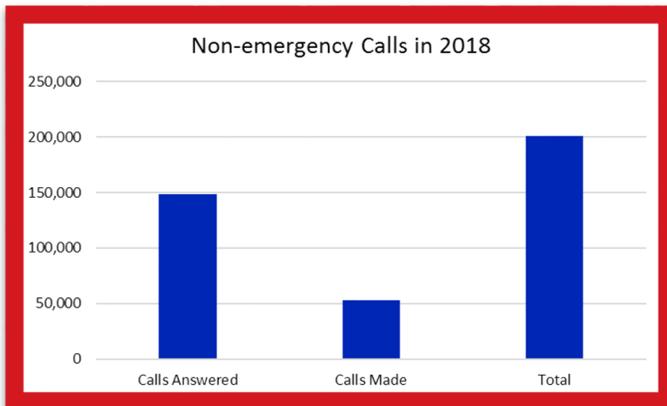
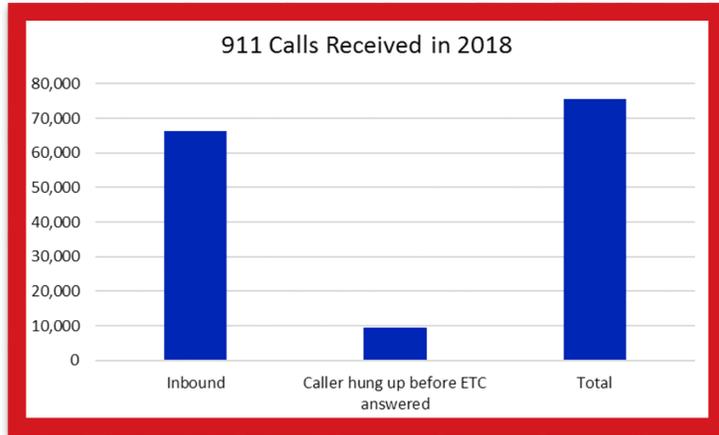
Ribbon Cutting at MACC

Phone System

BCJC's call processing equipment is used to handle all 9-1-1, alarm line, and non-emergency calls received by the Operations Center. The system allows for Enhanced 9-1-1 services, provides integrated automatic call distribution, and is Next Generation 9-1-1 compliant.

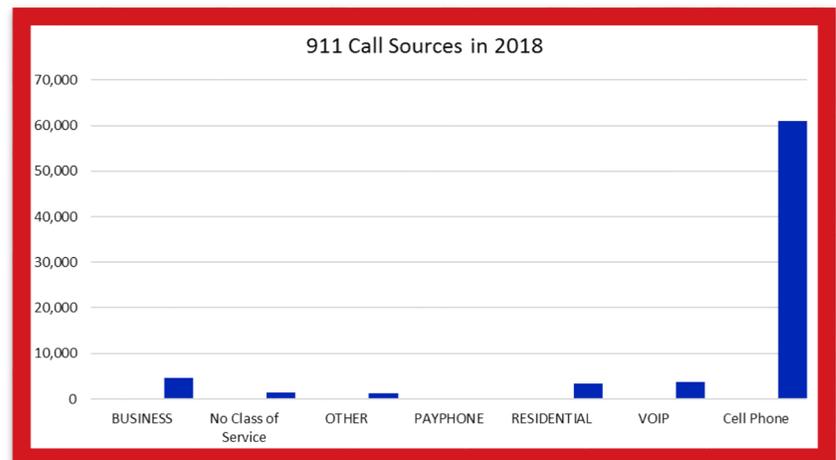
BCJC emergency telecommunicators handle both 9-1-1 calls and non-emergency calls and often must prioritize their call answering based upon call volume.

BCJC received approximately 75,000 9-1-1 calls in 2018.

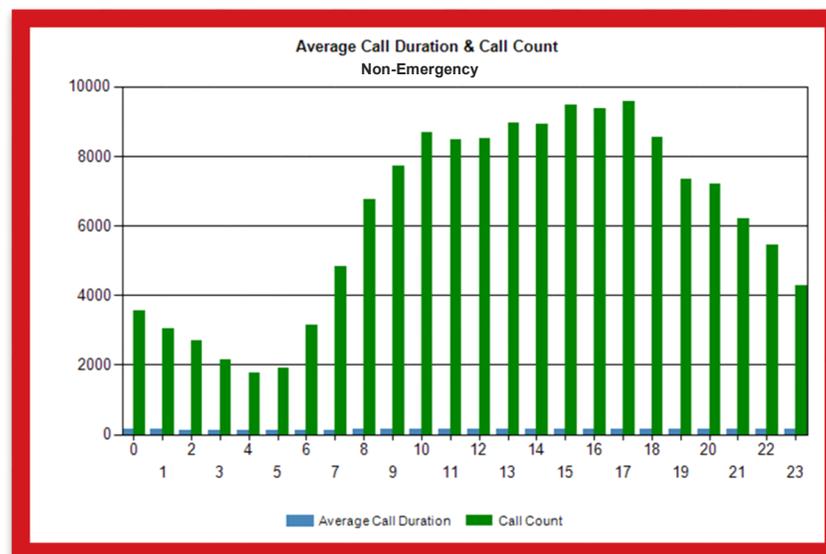
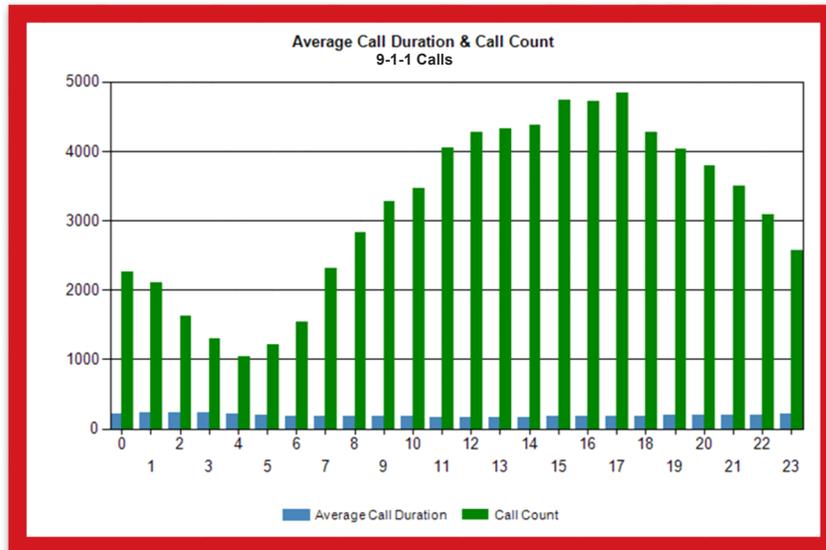


BCJC had approximately 200,000 non-emergency calls in 2018.

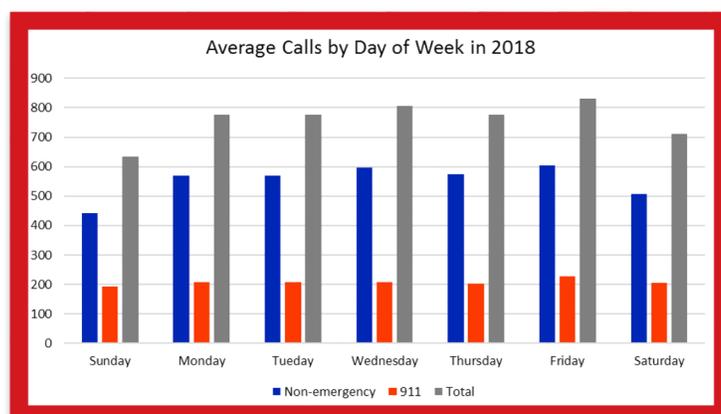
Most of the 9-1-1 calls in 2018 were from cell phones.



The busiest time of day for 9-1-1 and non-emergency calls in 2018 was between 5:00 p.m. and 6:00 p.m. The average length of a 9-1-1 call in 2018 was about 3 minutes and 7 seconds and the average length of a non-emergency call was about 2 minutes and 28 seconds as illustrated below.



The busiest day for call volume in 2018 was Friday. The least busy day was Sunday.



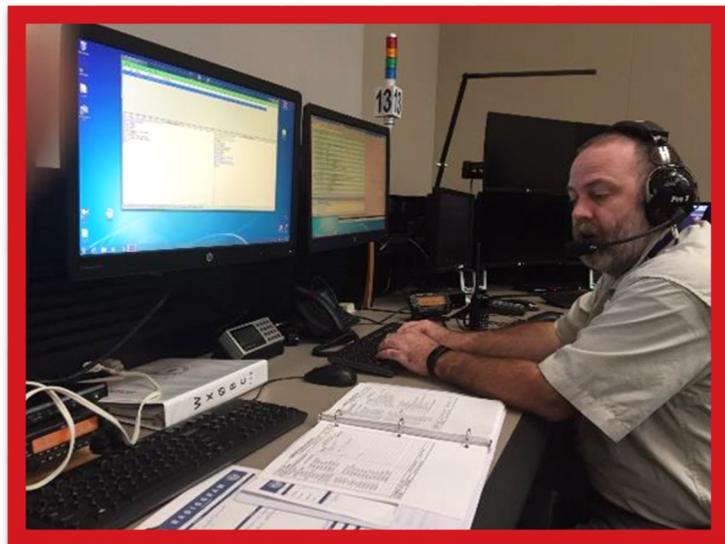
Radio Console System

BCJC utilizes an IP-based multi-channel radio console system that allows ETCs to communicate with field personnel and serves as a backup notification solution for fire and ambulance station alerting. The system is scalable based on evolving agency needs and can be flexibly re-configured in-house to accommodate a variety of radio technologies.

Boone County Amateur Radio Emergency Services (BCARES)

BCARES is a group of trained amateur radio operators that provides emergency communications support to BCJC in the event of a natural disaster, weather event, or other emergency communications need. BCARES operates five radios within the 9-1-1 Operations Center that can help provide communications capability should other resources fail.

In November, BCARES completed their annual Simulated Emergency Test (SET) exercise. One of the goals was to test amateur radio communication reliability and capability at 18 different geographic points throughout Boone County. The test was an overall success and communications was established with message traffic passed from all areas of the county.



Radio Network Support Unit

Boone County Joint Communications has a Radio Network Support Unit that is charged with the planning, installation, and maintenance of the radio communications system. The unit is comprised of two full-time Radio Technicians and a radio site Facility Maintenance Tech who report to the Deputy Director.

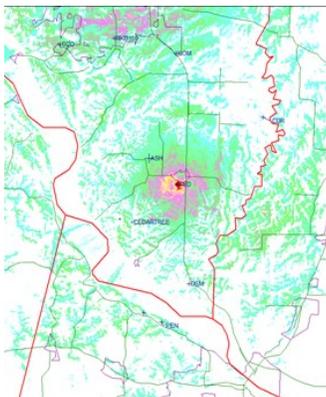


Working with the County's Radio Consultant, the Support Unit is responsible for all facets of the radio communication system that serves the public safety providers in Boone County. Overall, the system consists of the main dispatch facility at the Emergency Communications Center, a backup facility in downtown Columbia plus twenty-two tower sites located throughout Boone County.

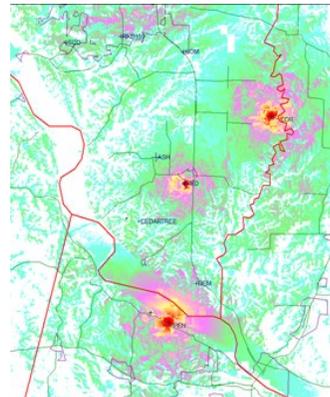
System Planning

System Planning is an ongoing process to foster adoption of improved technical standards and upgrade system components. For 2018, system planning included the following projects:

- ◆ Benchmarked coverage issues in southern County service areas and began development of new sites to improve operations in that area.
- ◆ Identified worsening interference issues and developed a plan to mitigate these problems by moving select operations to a newly licensed group of five radio channels.



Coverage Map Current



Coverage Map After Planned Construction

Site Construction

Site Construction has allowed the County to meet the growing communication needs of its allied public safety agency partners. The radio system has developed a focused coverage growth plan and a migration path for additional new features.

- ◆ In 2018, construction work began on one new tower site to serve north County users and to improve site linking back to the Emergency Communication Center. Additional work to improve another existing north County site was started as well.
- ◆ In 2018 the Backup Communications Center was fully outfitted for radio communications.



Ongoing Maintenance

Ongoing Maintenance is required to keep the radio network reliable. Technicians visit all of the sites on a regular schedule to verify the proper functioning of equipment, to inspect on-site standby generators, and to ensure safe, stable site conditions. Several site maintenance projects were completed in 2018 that have helped ensure system performance even under extended adverse environmental conditions.

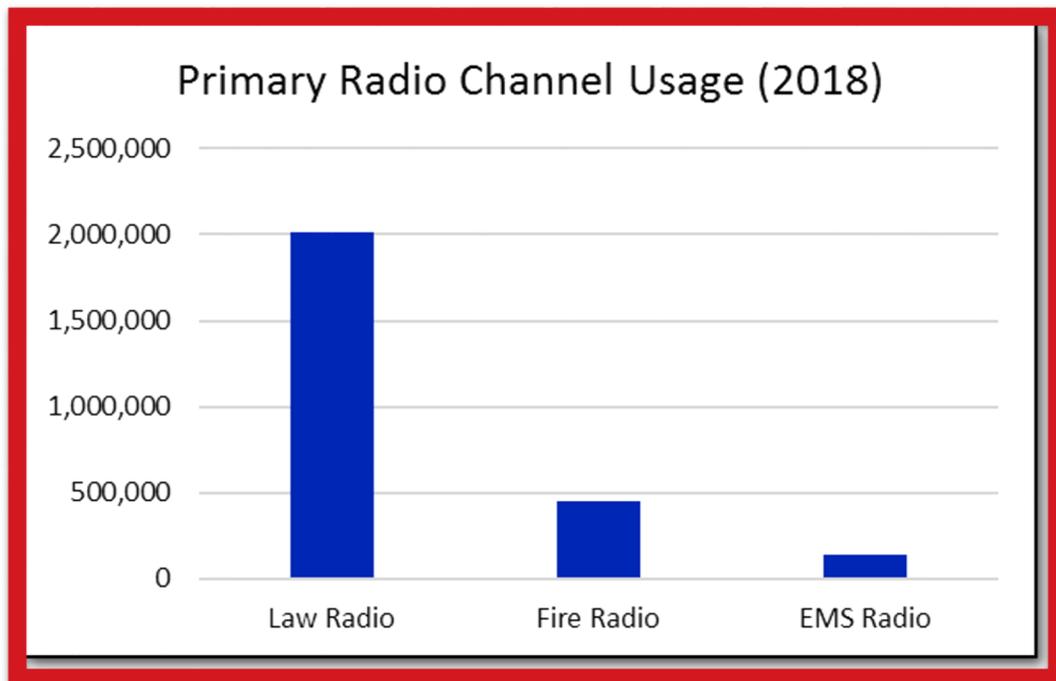
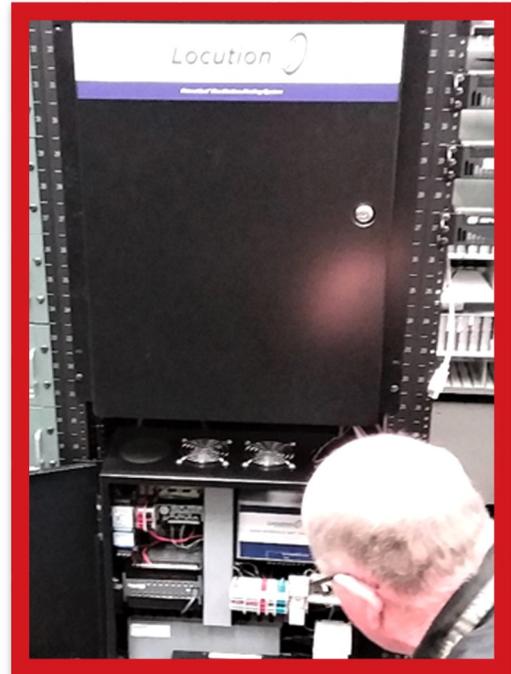


- ◆ Individual battery banks serving UPS units at remote sites were upgraded to provide extended runtime for radio equipment.
- ◆ Sites without standby power generators were fitted with "shore line" connections to permit connection to mobile generators in the event of an extended power outage.
- ◆ Generators were checked and serviced regularly to ensure reliable operation.

Emerging Technology

As emerging technology is introduced to public safety providers, it is carefully evaluated before being adopted for BCJC operations. In 2018, an automated voice dispatching system underwent such a review and was installed and placed in operation principally serving Fire and EMS agencies.

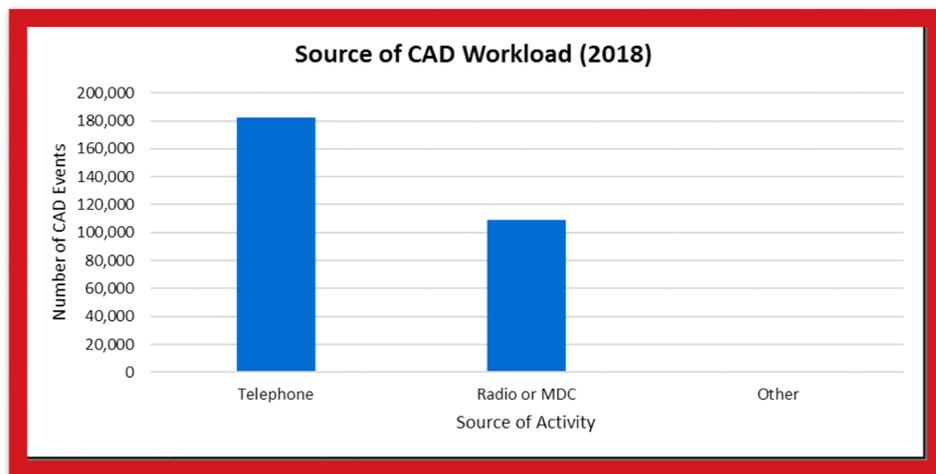
Through the committed efforts of the Radio Network Support Unit, the Boone County Emergency Communications Center saw continued reliable performance from its radio system. Combined use of the system radio channels and network infrastructure by first responders surpassed 2.5 million radio transmissions in 2018 as depicted in the chart below.



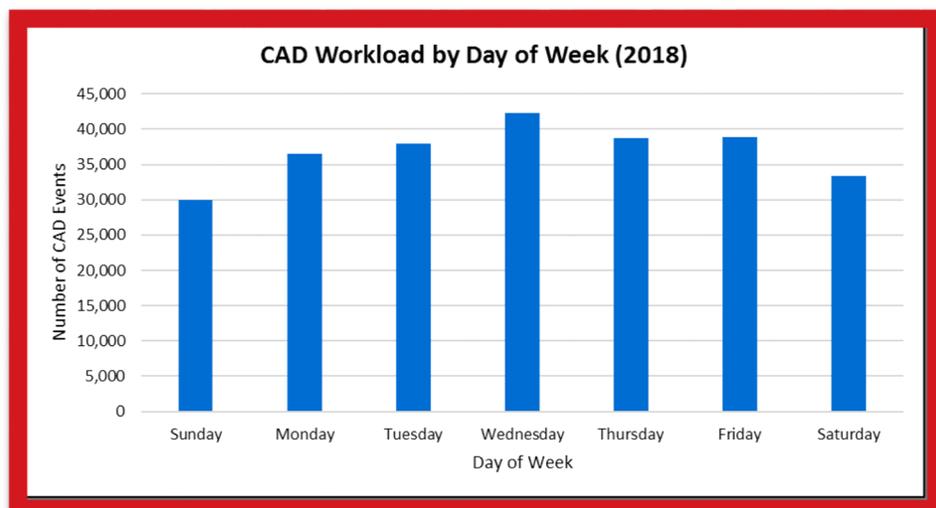
Computer-Aided Dispatch

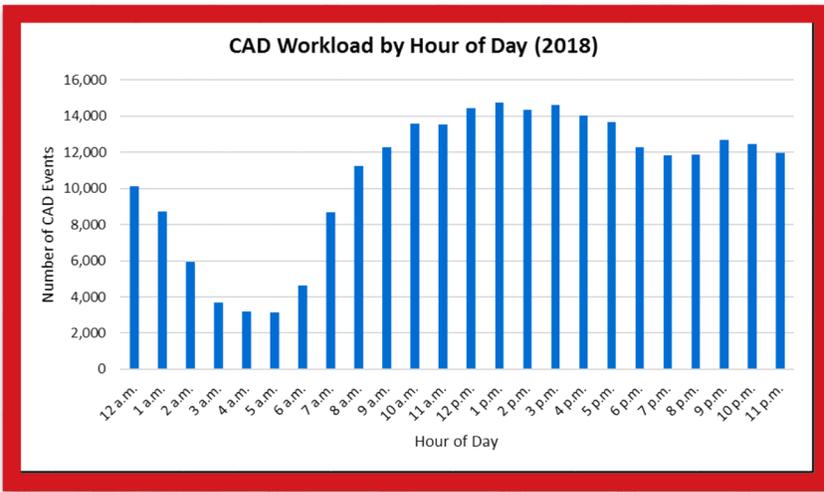
Boone County Joint Communications (BCJC) utilizes a Computer-Aided Dispatch (CAD) system to process calls for service, dispatch and support first responders in the field. Activity recorded in the CAD system is an indicator of the workload in the 9-1-1 Operations Center. In 2018, there were 291,594 calls for service and user agency-initiated activities (CAD events) recorded in the CAD system.

62% of CAD events were reported by telephone and 37% were reported by user agency personnel in the field using the BCJC Radio System or Mobile Data Computers (MDCs).



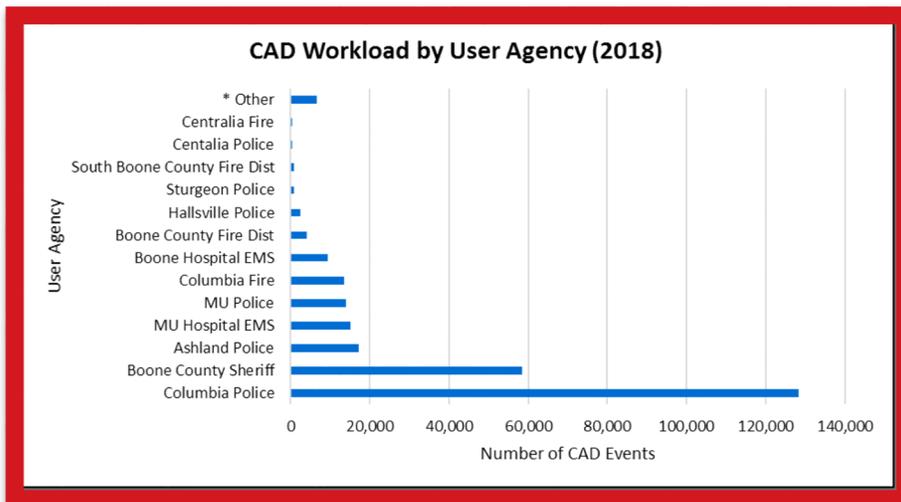
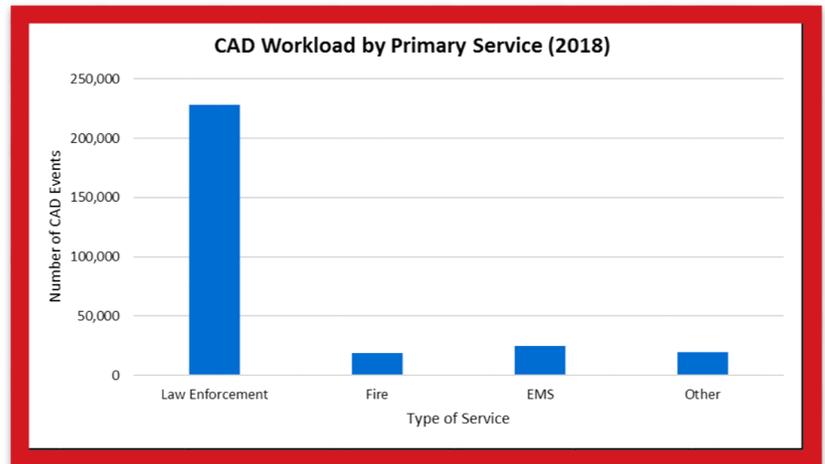
The CAD system was busiest on Wednesday and least busy on Sunday.





The busiest time of day for the CAD system was 12 p.m. to 4 p.m. The CAD system was least busy from 3 a.m. to 5 a.m.

Law Enforcement calls for service and field activity generated 84% of the CAD system workload.



Columbia Police Department calls for service and field activity generated 69% of the CAD system workload.

Serving a Multilingual Community

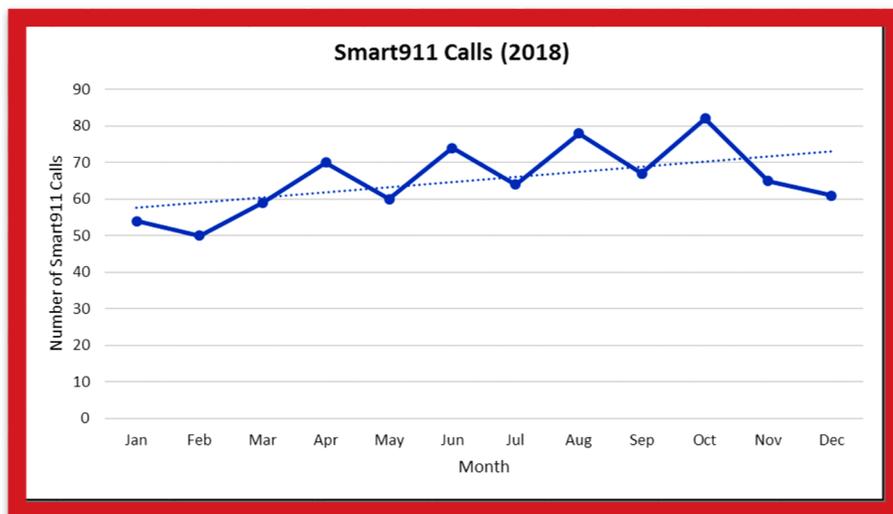
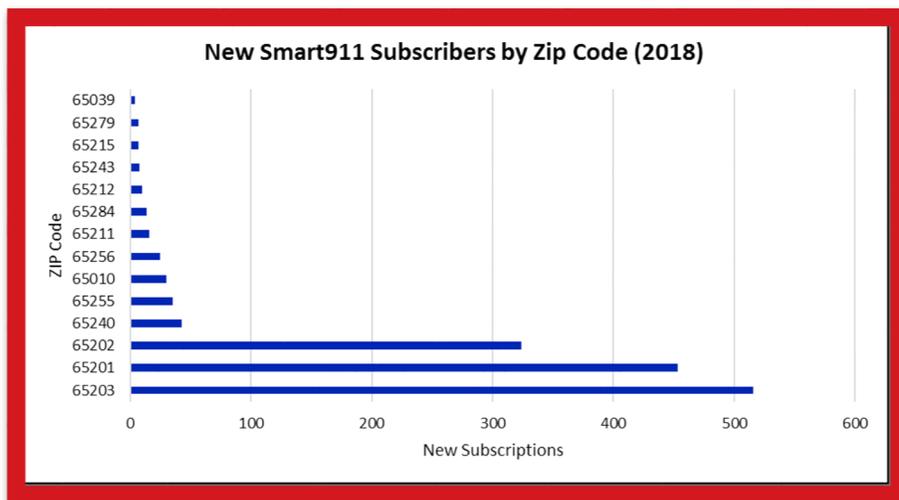
BCJC serves a multilingual community and that sometimes requires the use of a translator during emergency (and non-emergency) call interactions. In 2018, 81 calls required translation assistance; the majority of those calls were for Spanish speakers.

Emergency Telecommunicators access specially trained interpreters with command of over 240 languages. Within moments of receiving a call, telecommunicators connect with interpreters to progress through questions and answers in order to deliver the needed response.

Language	Calls	Minutes	% of Total Calls
Spanish	66	611	81.48%
Bosnian	5	62	6.17%
Mandarin	3	30	3.70%
Arabic	3	15	3.70%
Tigrinya	2	10	2.47%
Swahili	1	9	1.23%
French	1	5	1.23%
Languages: 7	81	742	100.00%

Smart911™

BCJC partners with Rave Mobile Safety to provide Smart911, enhancing the community's ability to quickly share quality information with first responders when a subscriber of the service calls 9-1-1. In 2018, BCJC processed 784 Smart911 calls, and the total number of subscriptions to the service saw a 35% increase.



Accreditation

In October, BCJC achieved reaccreditation from the International Academies of Emergency Dispatch (IAED) as an Accredited Center of Excellence (ACE) in Emergency Police Dispatch. Because BCJC is also an ACE in Emergency Fire Dispatch and Emergency Medical Dispatch, BCJC was again honored to be recognized by the IAED as one of only eight tri-accredited centers in the world.

The IAED is a nonprofit standard-setting organization promoting safe and effective emergency dispatch services worldwide. Comprising three allied Academies for police, fire and medical dispatching, the IAED supports first responder-related research, unified protocol application, legislation for emergency call center regulation, and also strengthens the emergency dispatch community through education, certification and accreditation.

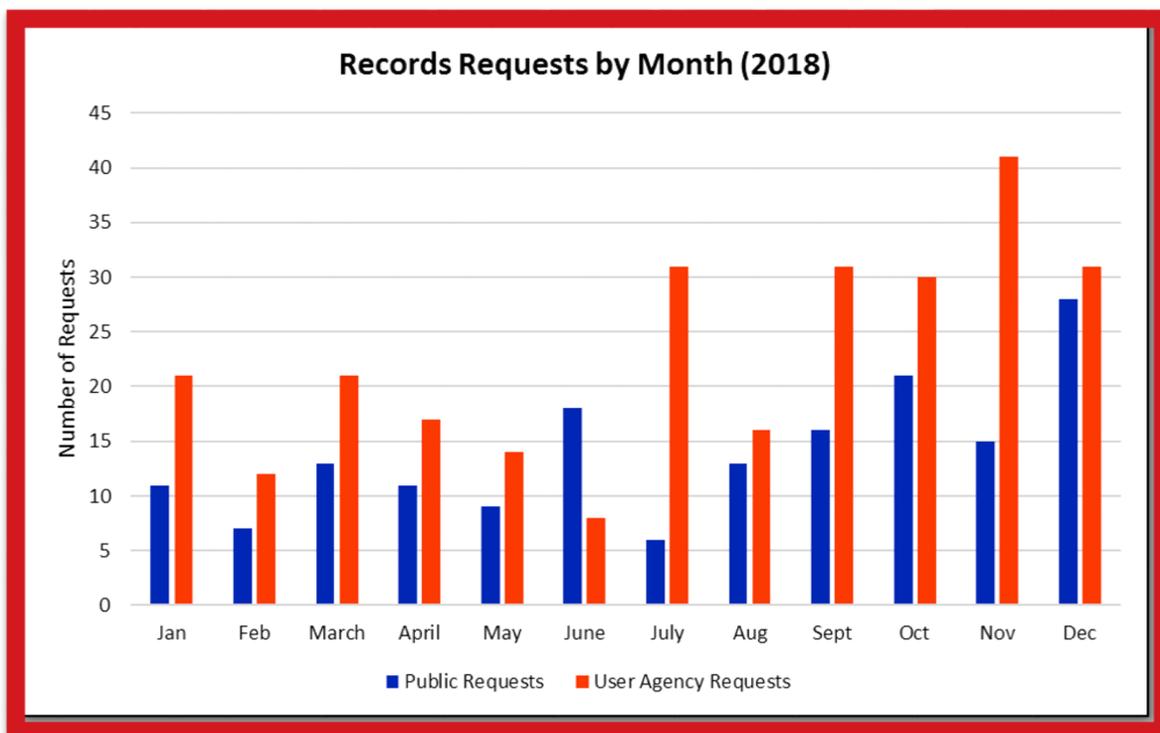
Accreditation by the IAED is voluntary and involves completing a detailed self-study based on a total quality management process that demonstrates superior performance in training, quality improvement, oversight, and compliance. It is a proven way to maximize the accuracy, effectiveness and efficiency of emergency call systems and improve the quality of public safety service that ensures the highest standard of care and practice available.

IAED accreditation is valid for three years and in order to achieve reaccreditation, a dispatch center must meet or exceed the same standards required in the initial accreditation process. Because ACE dispatch centers abide by IAED standards and have fulfilled these stringent requirements, citizens calling an ACE dispatch center can have peace of mind knowing their needs will always be appropriately addressed and that they will always receive the help they need.



Records Requests

The Boone County Joint Communications Records Custodian is responsible for timely response to all departmental records requests. In 2018, the BCJC Records Custodian processed 441 records requests. 38% (168) of the requests came from the public and 62% (273) of the requests came from BCJC user agencies or affiliated user agencies.



National Center for Missing & Exploited Children® (NCMEC)

In April BCJC was honored to be recognized as a National Center for Missing & Exploited Children® Missing Kids Readiness Program (MKRP) partner.

MKRP promotes best practices for responding to calls of missing, abducted and sexually exploited children. BCJC is one of five agencies in the state who have achieved this recognition for demonstrating preparedness for responding to a missing child incident.

In order to obtain this recognition, everyone involved in call taking and dispatch operations had to meet certain training criteria, and we adopted an American National Standards Institute policy, meeting the critical components and matching NCMEC standards.



National Public Safety Telecommunicators Week

National Public Safety Telecommunicators Week is the first full week in April. In 2018 we celebrated with our 2nd Annual Cupcake Wars.

The theme was Dr. Seuss, and a few of our friends at the Sheriff's Department served as judges.

Midnight Shift won a \$50 gift certificate for Italian Village with their Cat in the Hat themed red velvet cupcakes.

The other displays were:

Evening shift - Green Eggs and Ham

Trainees - Horton Hears a Who

IT - Sneetches

Relief shift - The Lorax



Our User Agencies

Law Enforcement Services

- Boone County Sheriff's Department
- Columbia Police Department
- University of Missouri Police Department
- Columbia Regional Airport
- Sturgeon Police Department
- Centrailia Police Department
- Hallsville Police Department
- Ashland Police Department
- 13th Judicial Circuit Court Marshal



Medical Services

- University of Missouri Health Care
- Boone Hospital Center



Fire & Rescue Services

- Boone County Fire Protection District
- Southern Boone County Fire Protection District
- Columbia Fire Department



Other Affiliated Services

- Boone County Office of Emergency Management
- Missouri State Highway Patrol
- Missouri Department of Natural Resources
- Missouri Department of Conservation
- V.A. Police Department
- Columbia Housing Authority

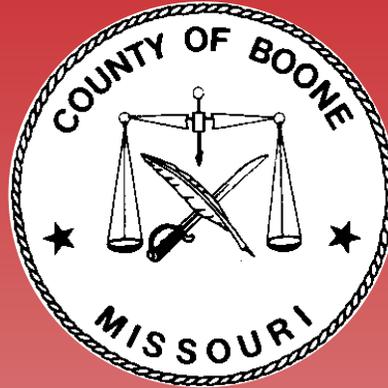


2018 Accomplishments

- ◆ Reaccredited by the International Academies of Emergency Dispatch (IAED) as an Accredited Center of Excellence (ACE) in Emergency Police Dispatch.
- ◆ Recognized by the International Academies of Emergency Dispatch (IAED) as a Tri-Accredited Center of Excellence in emergency police, fire and medical dispatch – one of only eight in the world.
- ◆ Successfully converted to a new Computer-Aided Dispatch (CAD) system to bring the center up to date with current technology. The new system also substantially improved communication and workflow between BCJC and the University of Missouri Police Department.
- ◆ Participated in 11 community outreach programs to promote Smart911 resulting in a 35% increase in subscriptions to the service.
- ◆ Recognized by the National Center for Missing and Exploited Children as a partner agency.
- ◆ Continued 3-1-1 community education for non-emergency line.
- ◆ Achieved full staffing with a record 22 new hires.
- ◆ Implemented an automated voice dispatch system which increases efficiency by freeing the Emergency Telecommunicator to handle other tasks and provides a clear, consistent and understandable voice for critical information.
- ◆ Implemented a technology to receive improved location data from cell phone calls. In 2018, BCJC received 5,183 calls that contained location data. This number is expected to grow as more cell phone providers integrate the technology into their products.
- ◆ Implemented a web-based mapping application that provides ETCs with access to current data without requiring updates to each workstation.

Goals For 2019

- ◆ Implement Text-to-911 so citizens may reach 911 in Boone County by text message.
- ◆ Develop an Elementary School outreach program to educate students on the proper use of 911.
- ◆ Continue recruiting efforts to fill eleven newly added Emergency Telecommunicator positions.
- ◆ Implement the Automated Secure Alarm Protocol (ASAP) to provide a computerized method for the rapid exchange of data between alarm monitoring companies and BCJC.



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