2021

Annual Report

Boone County Joint Communications

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Boone County Commission

Director

Budget Administrator

Deputy Director

OPERATIONS

RADIO NETWORK

ADMINISTRATIVE SERVICES

Operations Manager

Contracted Consultant

Administrative Coordinator

Training/QA Coordinator

Facilty Maintenance Technician

Records Custodian

Training Assistant

Administrative Coordinator

Administrative Technician II

Shift Supervisors

Radio Technician

Lead Telecommunicator

Emergency Telecommunicator Trainee

Emergency Telecommunicator

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 .

2021 Budget
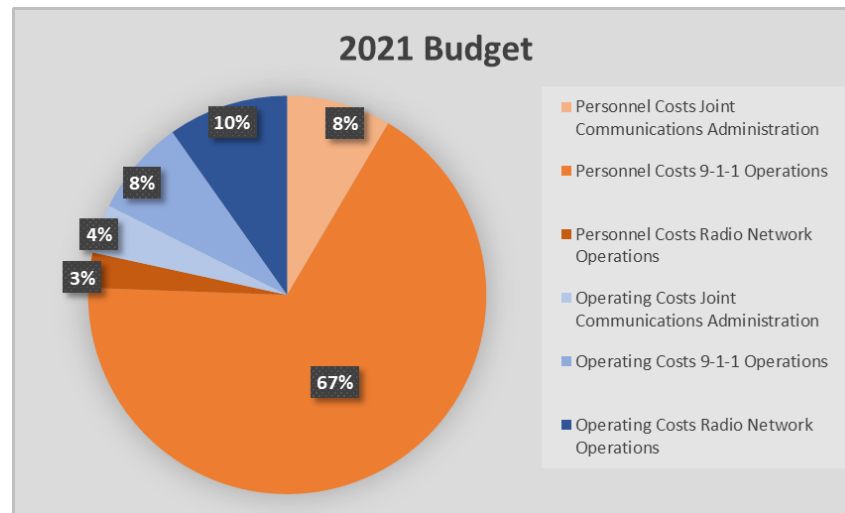
Personnel Costs

Joint Communications Administration	$ 430,121
9-1-1 Operations	$ 3,405,302
Radio Network Operations	$ 144,891

Operating Costs

Joint Communications Administration	$ 201,015
9-1-1 Operations	$ 397,473
Radio Network Operations	$ 496,508
Total 2021 Personnel & Operating Budgets	$ 5,431,580

Personnel costs for Joint Communications comprise 78% of the 2021 budget and reflect the primary functions of the 9-1-1 Center: emergency call-taking and dispatching by skilled Emergency Telecommunicators.

The previous cost center for Joint Communications Operations was divided into 9-1-1 Operations and Joint Communications Administration for tracking purposes, with 9-1-1 Operations Budget covering the personnel cost for Emergency Telecommunicators and operating costs specific to the 9-1-1 Operations Center, versus Administrative personnel and general costs.

It should be noted that 9-1-1 related technology is not included in the BCJC budget, as these costs are under the oversight of the Boone County Information Technology department.

Staffing

The impact of the Covid-19 pandemic and consequent economic shifts continued to impact recruiting, hiring and turnover in 2021.

As of December 31, 2021, BCJC employed 33 staff in the 9-1-1 Operations Center, down from 42 at the beginning of the year.
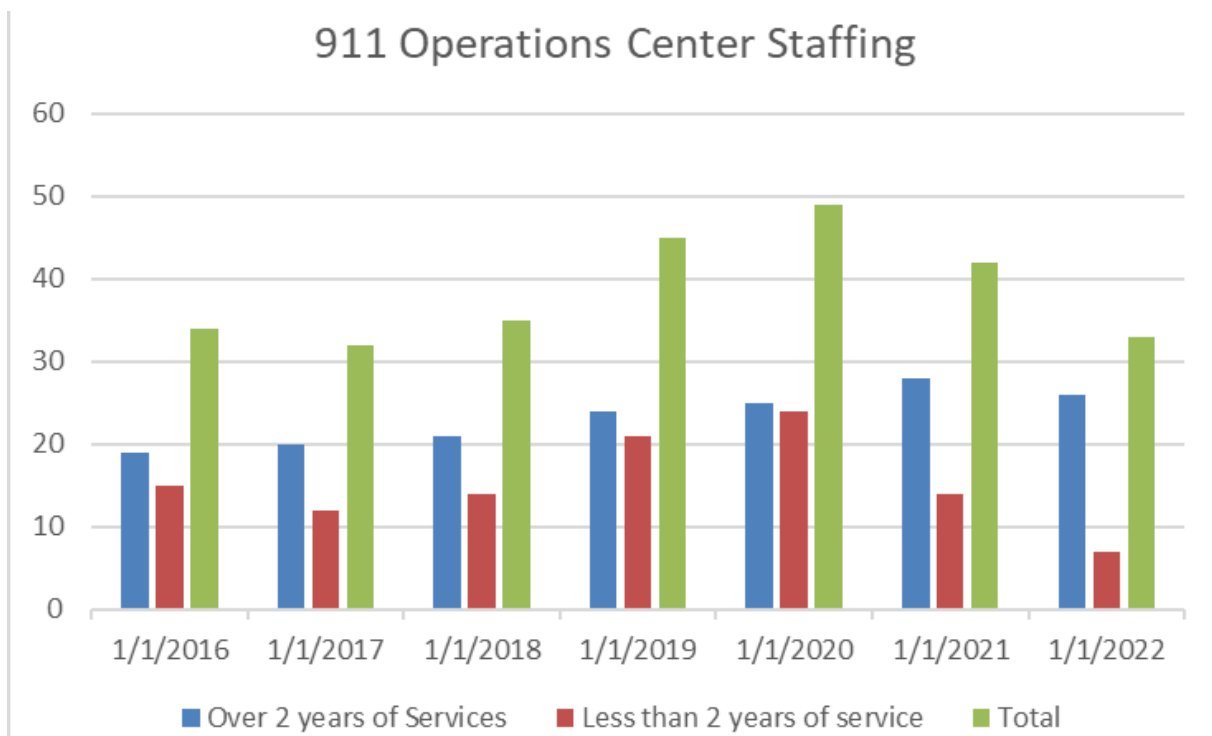
Overall turnover in 2021 was 42% with unprecedented turnover rates within all seniority groups. These staffing struggles reflect national trends, particularly in PSAPs nationwide.

9-1-1 Operations Center Staff Turnover

	2021 Ops Staff	2021 Turnover	Turnover Rate
Ops staff over 2 yrs service as of 1/1/21	28	-6	21%
Ops staff under 2 yrs service as of 1/1/21	14	-6	43%
2021 New Hires	15	-12	80%
Overall Turnover	57	-24	42%

Recruiting

Hiring fairs and other public events were slow to resume during 2021 because of extended shutdowns for COVID-19. Use of radio and streaming ads and digital advertising continued, with the addition of some television advertising. Advertising campaigns are continuously monitored and adjusted as needed to attain optimal response.

BCJC was not immune from the nationwide worker shortage in 2021. The amount of job applications received declined by more than 50% compared to recent years.

Hiring

Applicants for an ETC Trainee position must first pass initial screening and a computer-based skills test before participating in a panel interview and undergoing background checks. Use of remote skills testing continued while in-person testing gradually resumed by the end of the year.

Out of 173 applications received in 2021, about 9% of applicants accepted job offers and 3% were still in process as of year-end. There were 15 ETCs hired, drawing from 2021 applications and applications that were in process at the end of 2020.

9-1-1 Administration

9-1-1 Operations is supported by nine administrative staff, two radio system technicians and one part time maintenance technician.
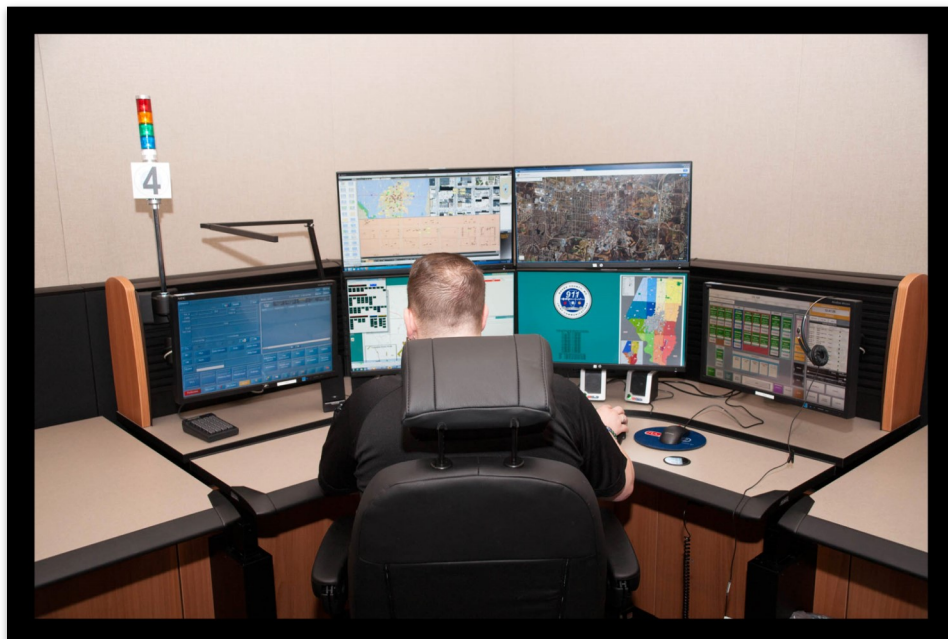
Training

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.

The pandemic brought many changes in training. Restrictions that were put in place because of the pandemic caused much of the traditional in-seat training opportunities to be cancelled. Other training was transitioned to digital remote environment for safety.

Emergency Telecommunicator Training

New Emergency Telecommunicator training is a multi-phased process: certification, academy, examination, on-the-job training (OJT), and Communications Training Evaluation (CTE).

In the certification phase, trainees learn basic skills of an emergency telecommunicator. The trainee 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 the International Academies of Emergency Dispatch (IAED).

The training academy 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 scenarios in a controlled environment. The call taking 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 to master call taking. This phase lasts approximately 4-8 weeks.

At the end of each month of on-the-job training, the trainee undergoes a 2-day Communications Training Evaluation (CTE). The trainee will work on their own. They are assigned to a specially trained Communications Training Evaluator to rate their performance in a list of key areas. At the end of this evaluation period, the Evaluator's report will either identify areas the trainee needs remedial training or will recommend release from training. Upon release, the trainee is then qualified to work on their own as a call taker.

Once the trainee is released from training as a call taker, they are then returned to the classroom for Fire/EMS dispatch training. The trainees learn dispatch policy and procedure as well as working through dispatch scenarios in a controlled environment in our simulation lab. This phase lasts 2 weeks.

Emergency Telecommunicator Training continued

The trainee is then returned to the shift for on-the-job training in Fire/EMS dispatch. Under the supervision of a CTO, the trainee dispatches live Fire and EMS calls for service and develops their dispatch skills. This phase lasts 4-8 weeks.

At the end of each month of on-the-job training, the trainee undergoes a 2-day Communications Training Evaluation (CTE). The trainee will work on their own. They are assigned to a specially trained Communications Training Evaluator to rate their performance in a list of key areas. At the end of this evaluation period, the Evaluator's report will either identify areas the trainee needs remedial training or will recommend release from training. Upon release, the trainee is then qualified to work on their own as a Fire/EMS dispatcher.

Once the trainee is released from training as a Fire/EMS dispatcher, they are then returned to the classroom for Law dispatch training. The trainee learns dispatch policy and procedure as well as working through dispatch scenarios in a controlled environment in our simulation lab. This phase lasts 2 weeks.

The trainee is then returned to the shift for on-the-job training in Law dispatch. Under the supervision of a CTO, the trainee dispatches live Law enforcement calls for service and develops their dispatch skills. The trainee also works on mastery of the Services dispatch position which handles self-initiated Law Enforcement activity. Each of these phases lasts 4-8 weeks.

At the end of each month of on-the-job training, the trainee undergoes a 2-day Communications Training Evaluation (CTE). The trainee will work on their own. They are assigned to a specially trained Communications Training Evaluator to rate their performance in a list of key areas. At the end of this evaluation period, the Evaluator's report will either identify areas the trainee needs remedial training or will recommend release from training. Upon release, the trainee is then qualified to work on their own as a Law dispatcher or a Services dispatcher.

After the trainee has successfully completed these phases, they are released from trainee status. In 2021, fifteen ETC trainees participated in the Academy.
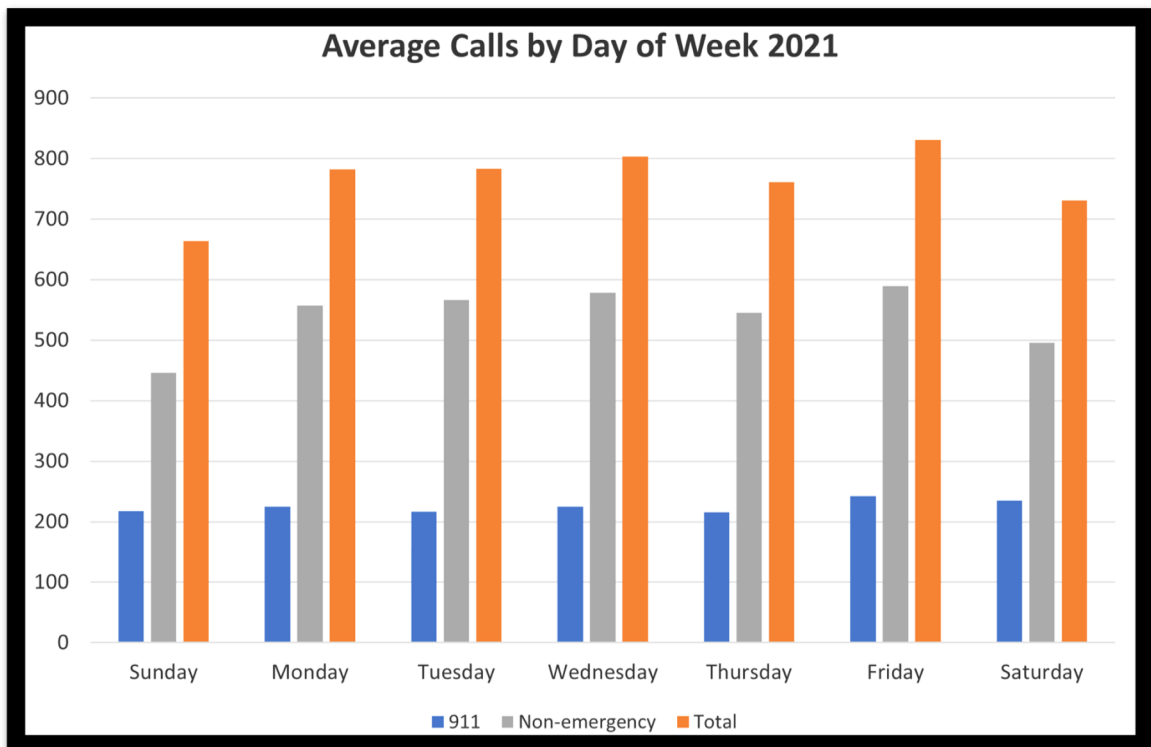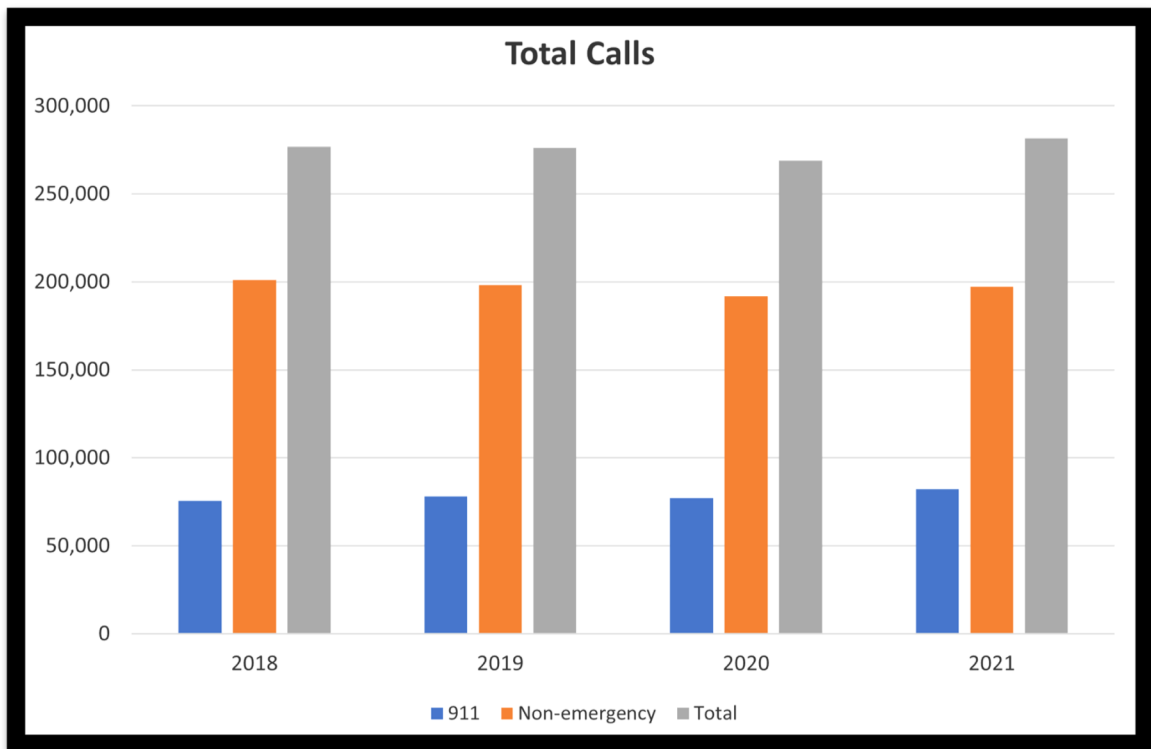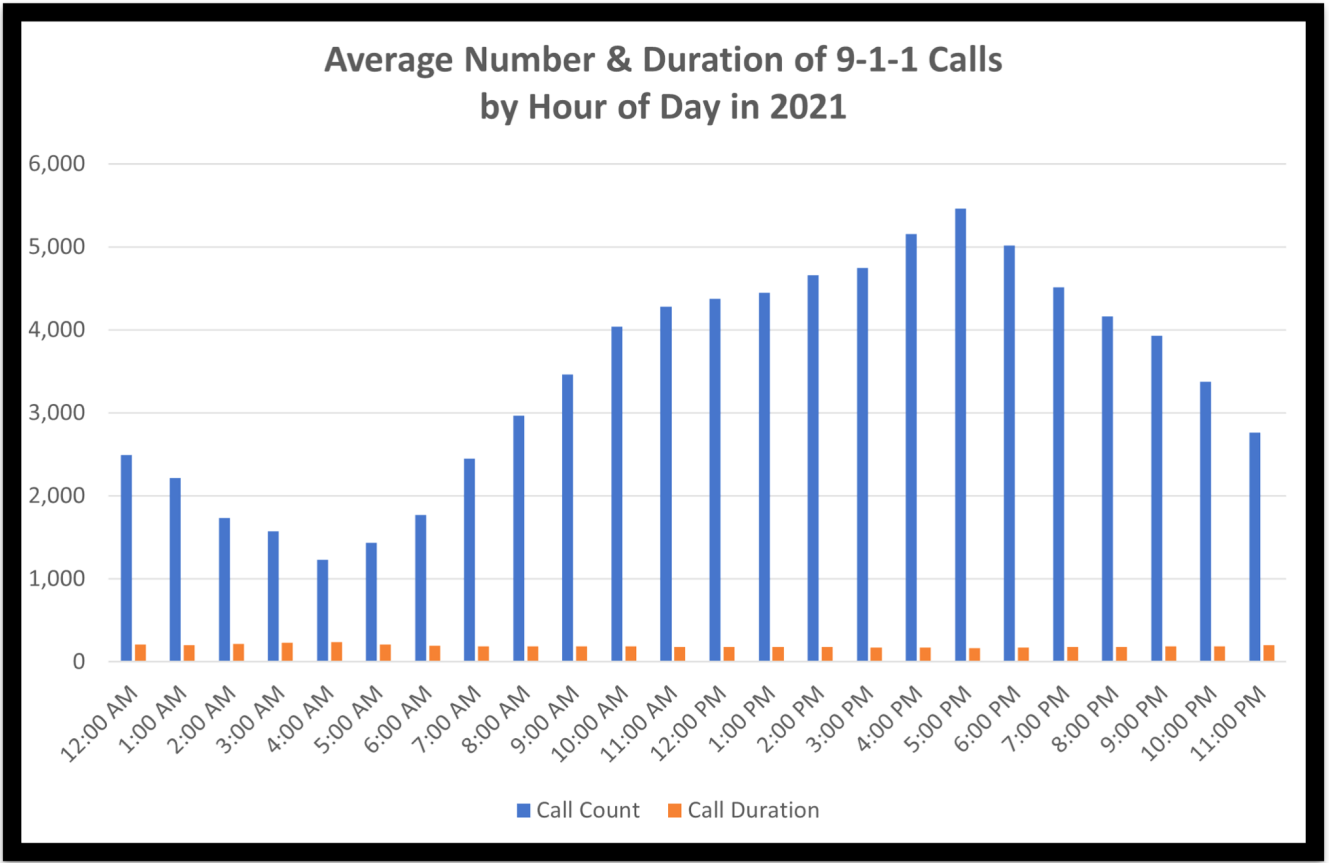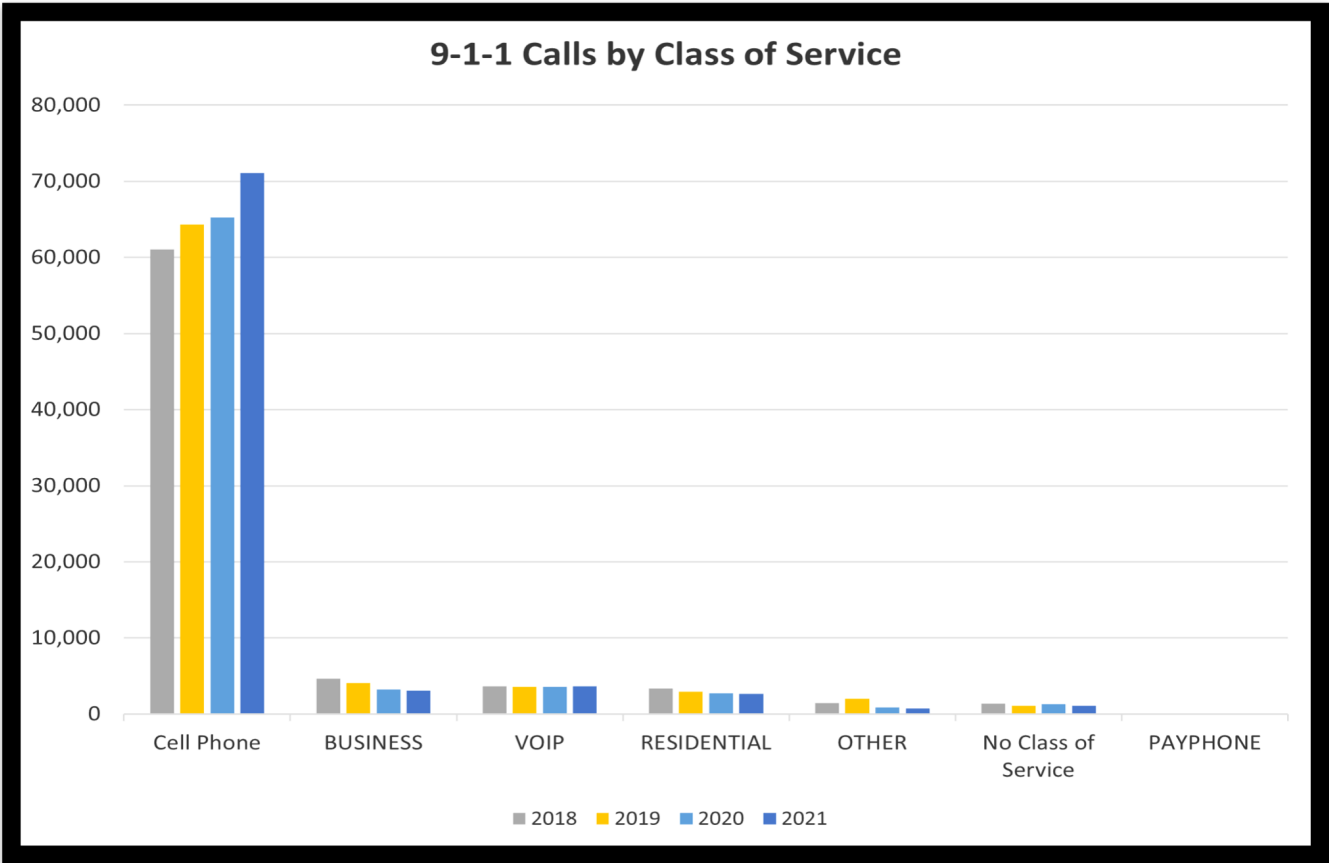
Continuing Dispatch Education

Continuing education is conducted regularly for all staff members. In 2021, the Emergency Telecommunicator staff completed over 4,200 hours of continuing dispatch education training.
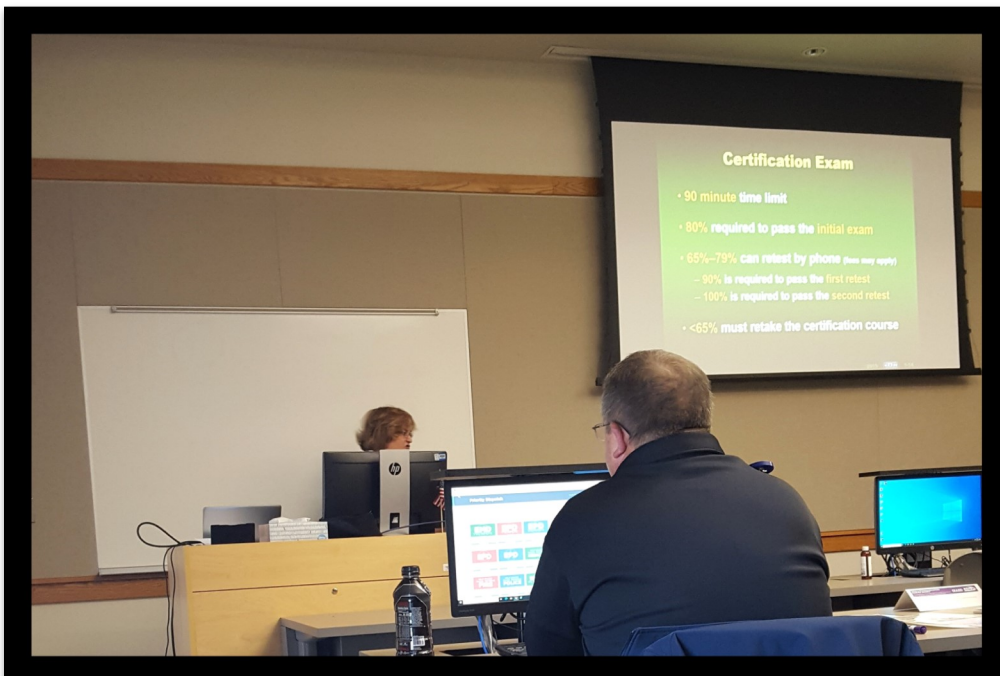
Phone System

Computerized telephone technology is utilized to manage incoming emergency (9-1-1) and non-emergency (3-1-1) calls for service and to provide operational support to first responders in the field. Telephone system activity is a key indicator of the workload of emergency telecommunicators working in the Emergency Communications Center.


Total Calls

Average Calls by Day of Week 2021

9-1-1 Calls by Class of Service

Legend: 2018, 2019, 2020, 2021

Categories: Cell Phone, BUSINESS, VOIP, RESIDENTIAL, OTHER, No Class of Service, PAYPHONE

Average Number & Duration of 9-1-1 Calls by Hour of Day in 2021

Legend: Call Count, Call Duration

Average Number & Duration of Non-emergency Calls by Hour of Day in 2021
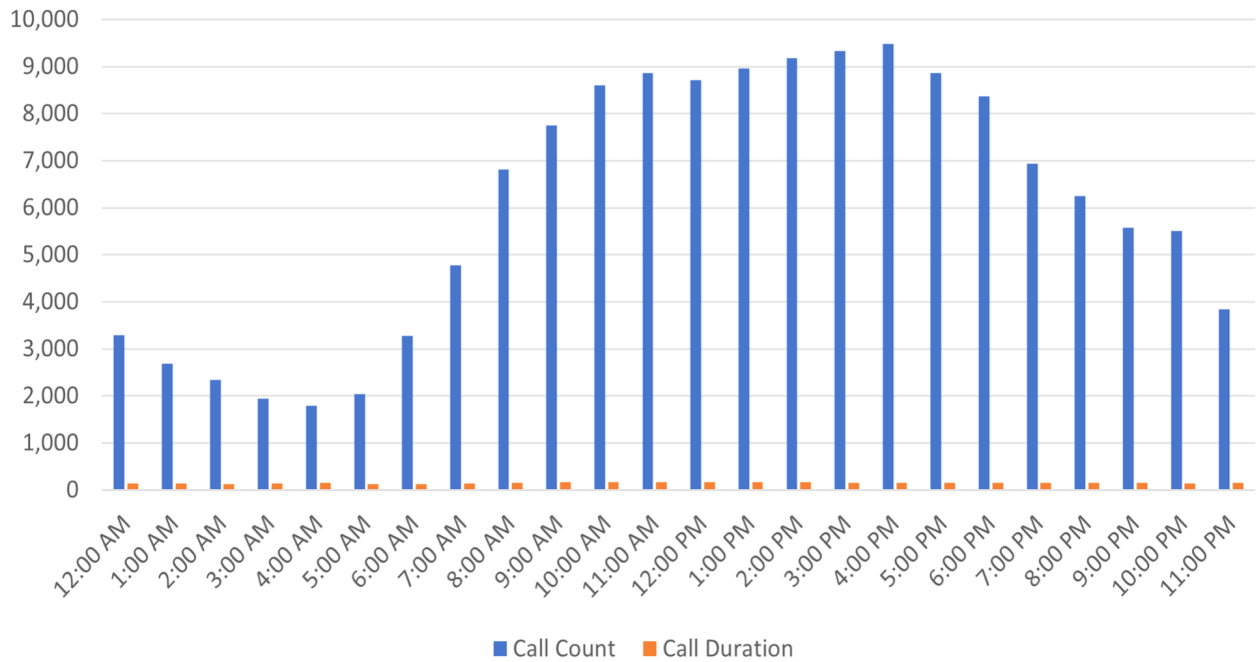
Total Outbound Calls
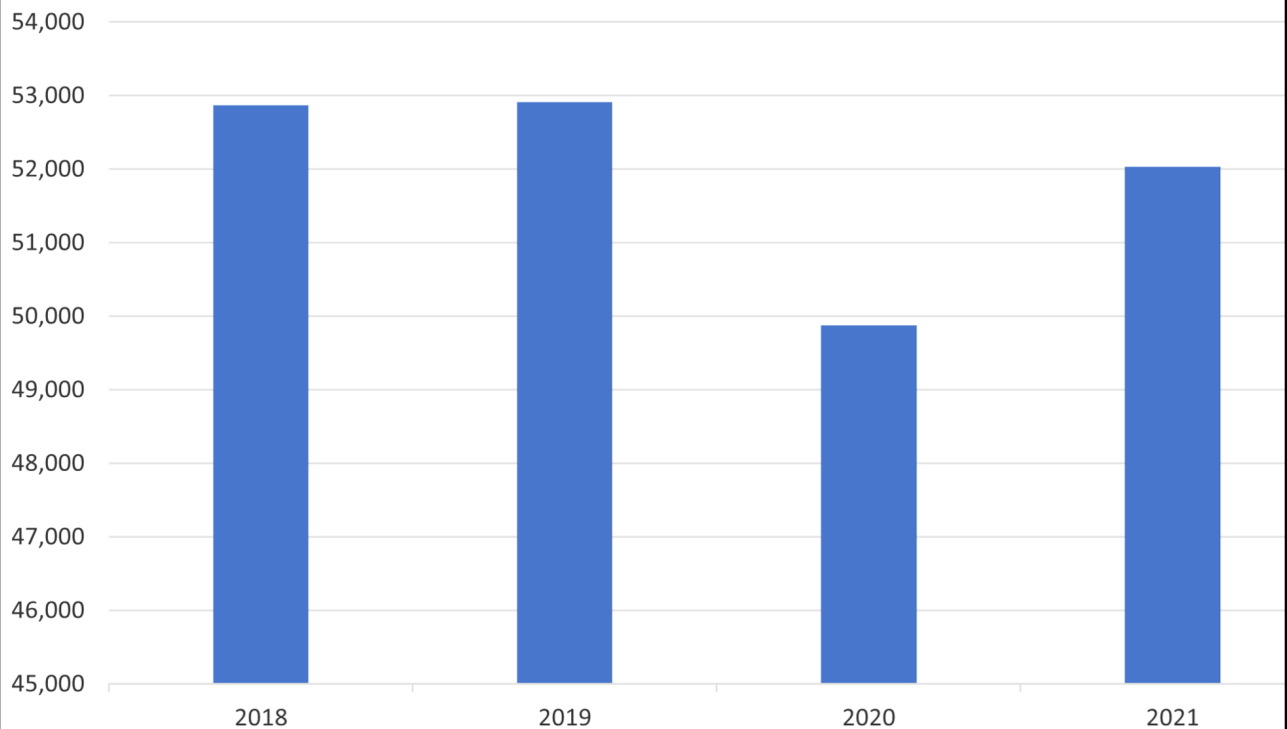
Smart911

Smart911 allows rapid information sharing of quality information with emergency telecommunicators when a subscriber of the system calls 9-1-1. In 2021, there were 809 new subscriptions added to the Boone County system, and there were 691 calls received from subscribers of the service.

New Smart911 Subscribers by Zip Code


Smart911 Calls Received
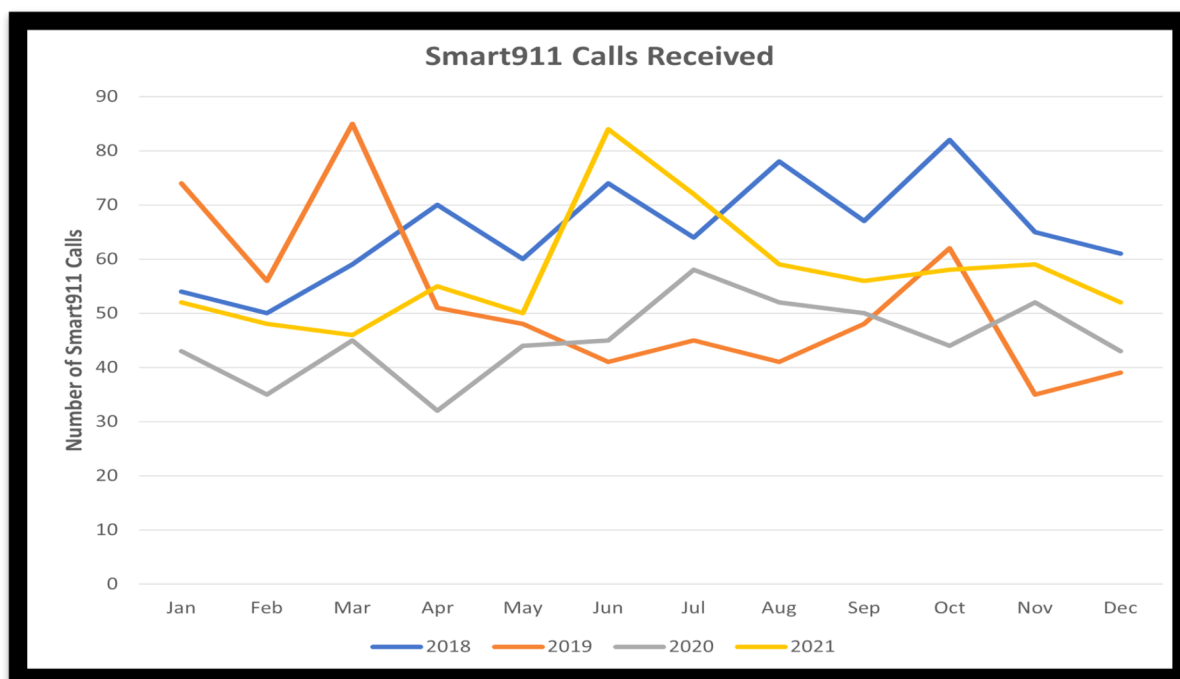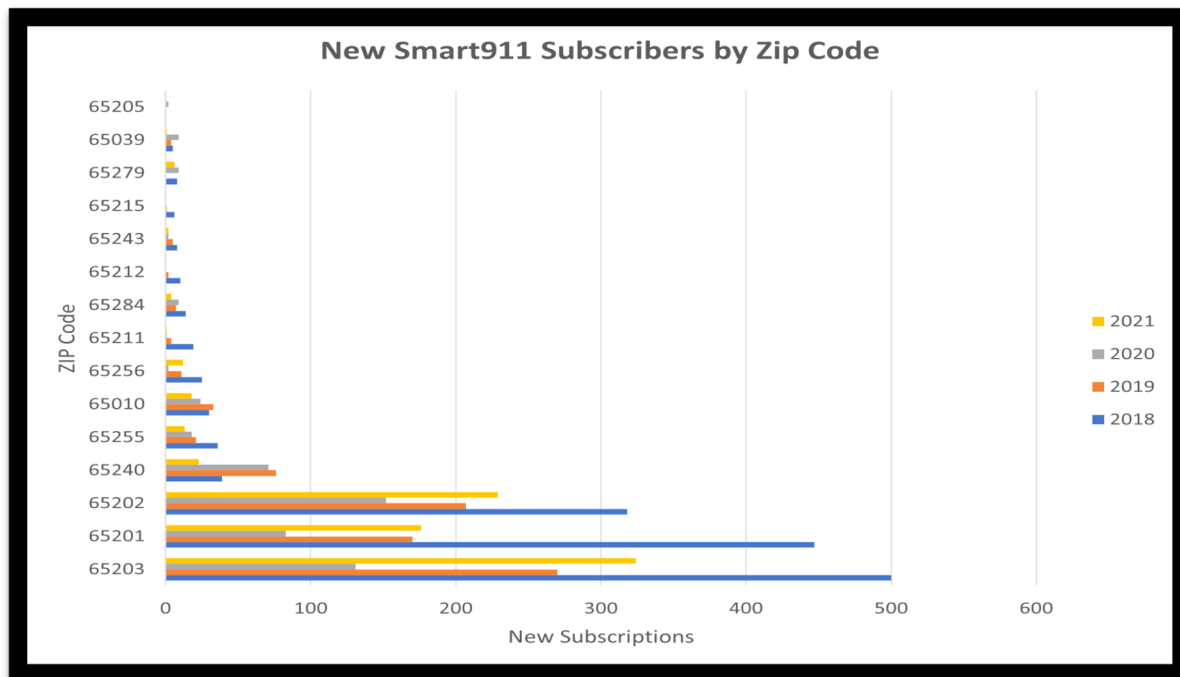
Serving a Multilingual Community

911 and non-emergency calls sometimes require the use of a translator. In 2021, 91 calls required translation assistance – a 24% increase from 2020. Most of those calls were for Spanish speakers.
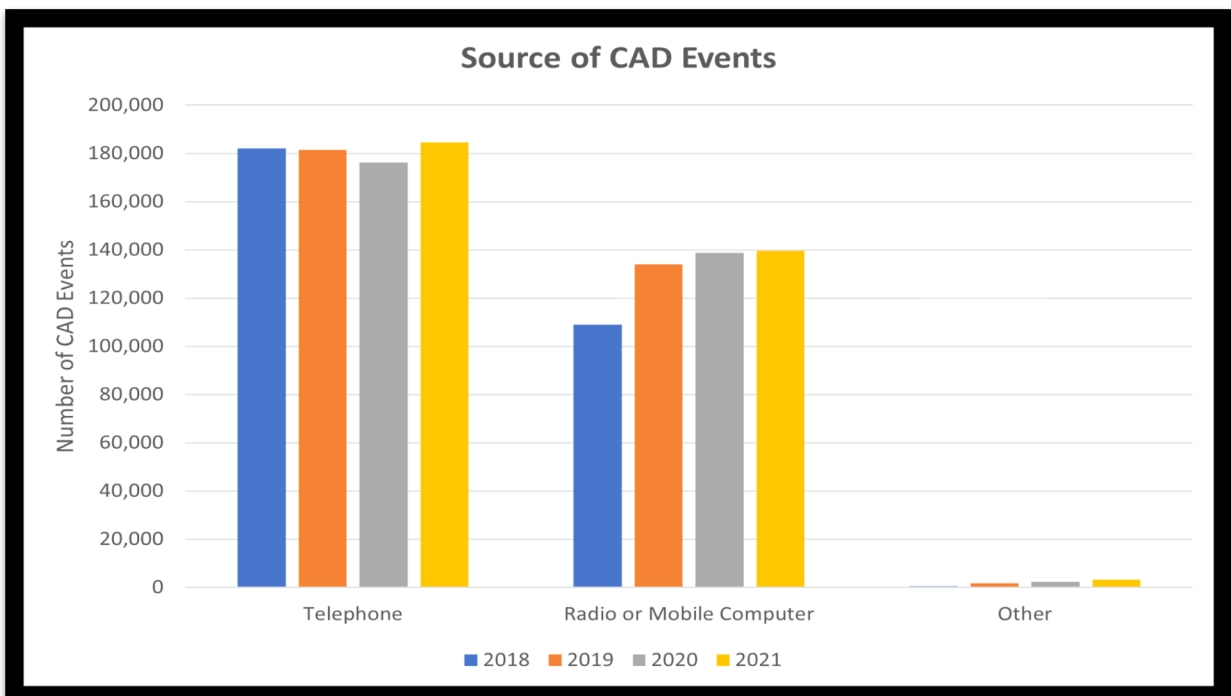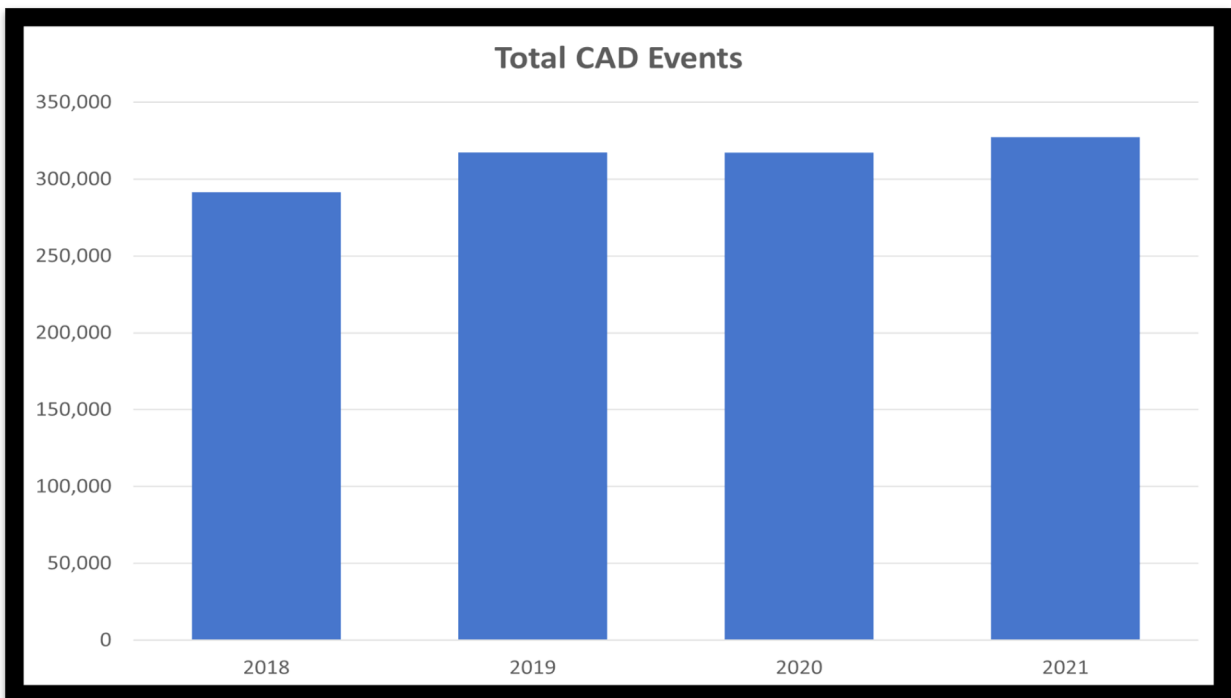
Emergency Telecommunicators connect with specially trained interpreters within seconds to obtain essential information and deliver help.
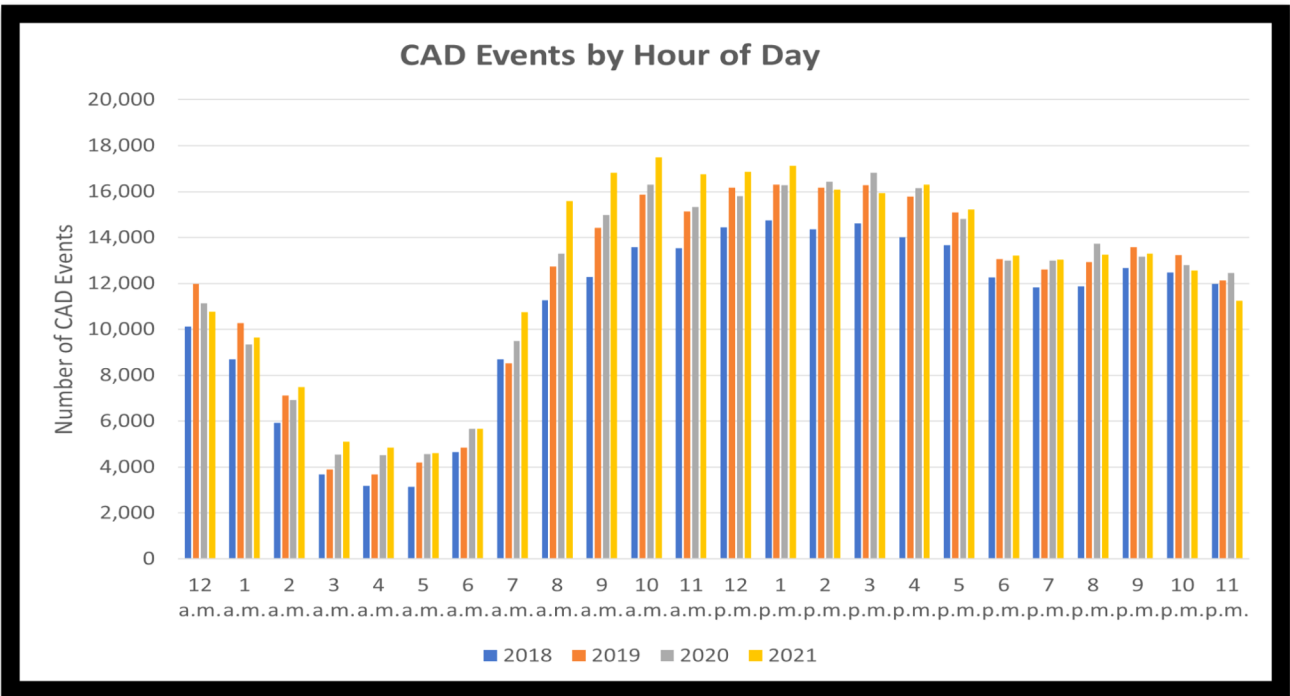
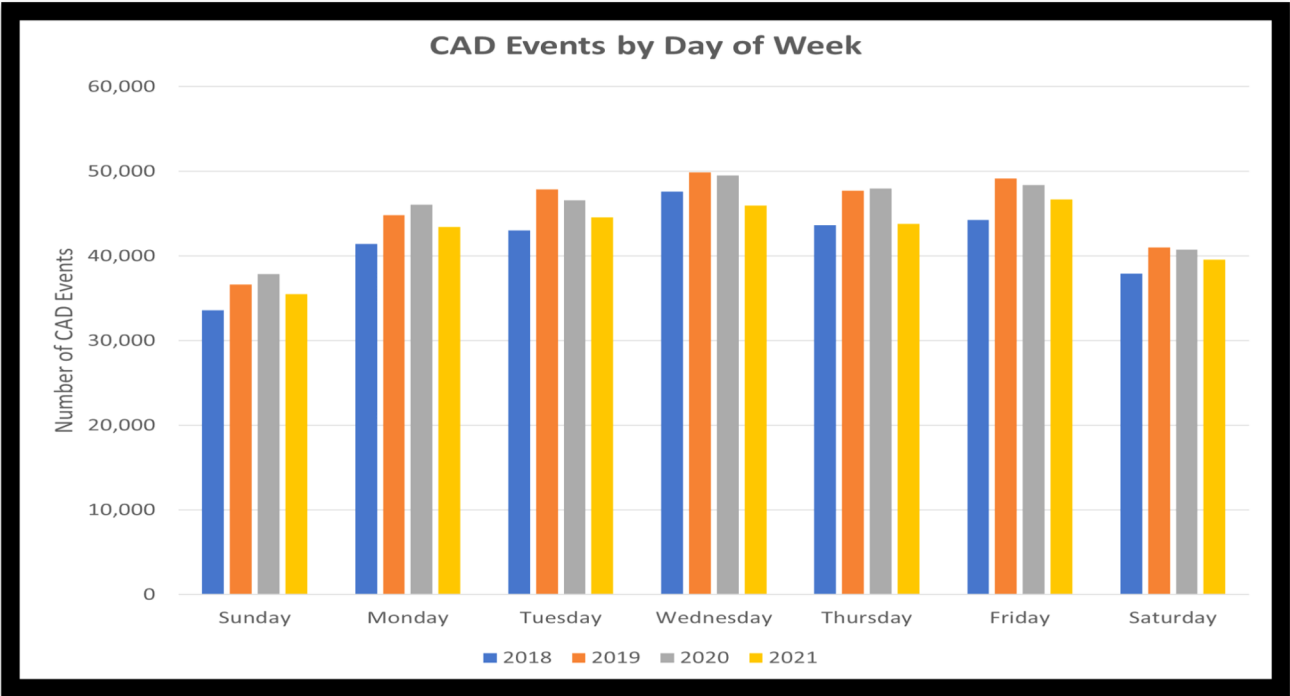| Language	Calls	Minutes	% of Total Calls
SPANISH	77	695	84.62%
SWAHILI	4	41	4.40%
MANDARIN	3	9	3.30%
TIGRIGNA	2	10	2.20%
ARABIC	2	10	2.20%
FRENCH	1	4	1.10%
GERMAN	1	13	1.10%
THAI	1	27	1.10%
Languages: 8	91	809	100.00%

CALLS BY LANGUAGE

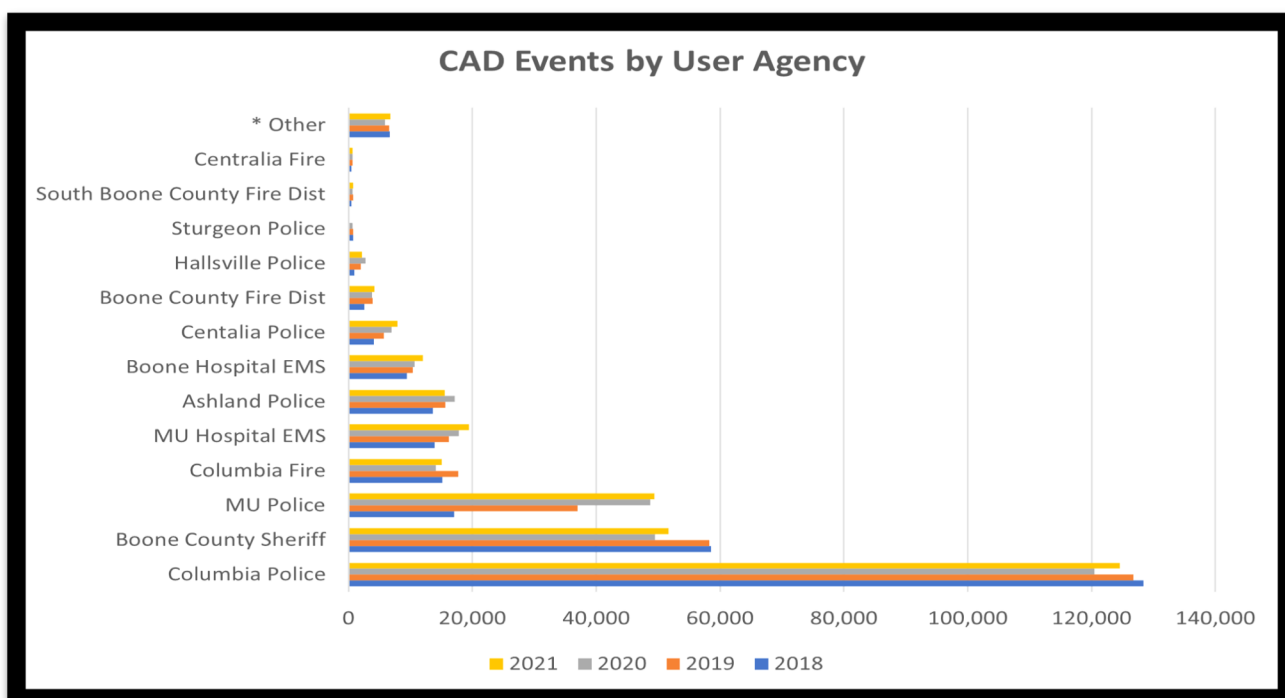■ SPANISH ■ SWAHILI ■ MANDARIN ■ OTHER
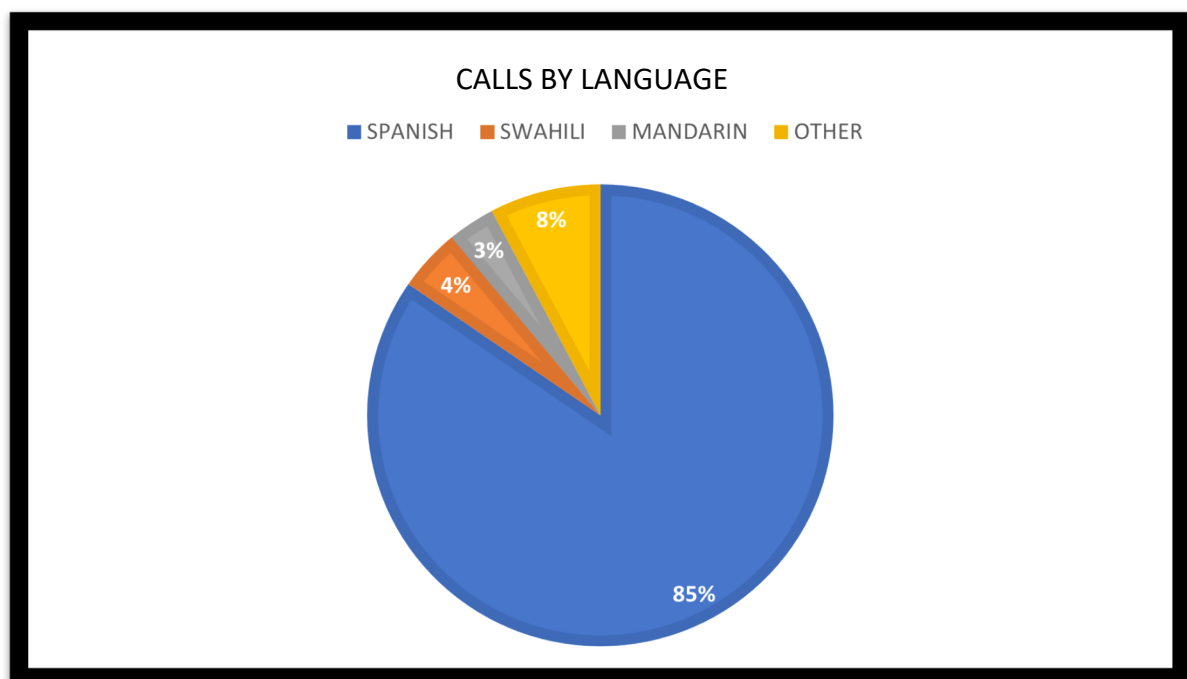
Dispatch Data
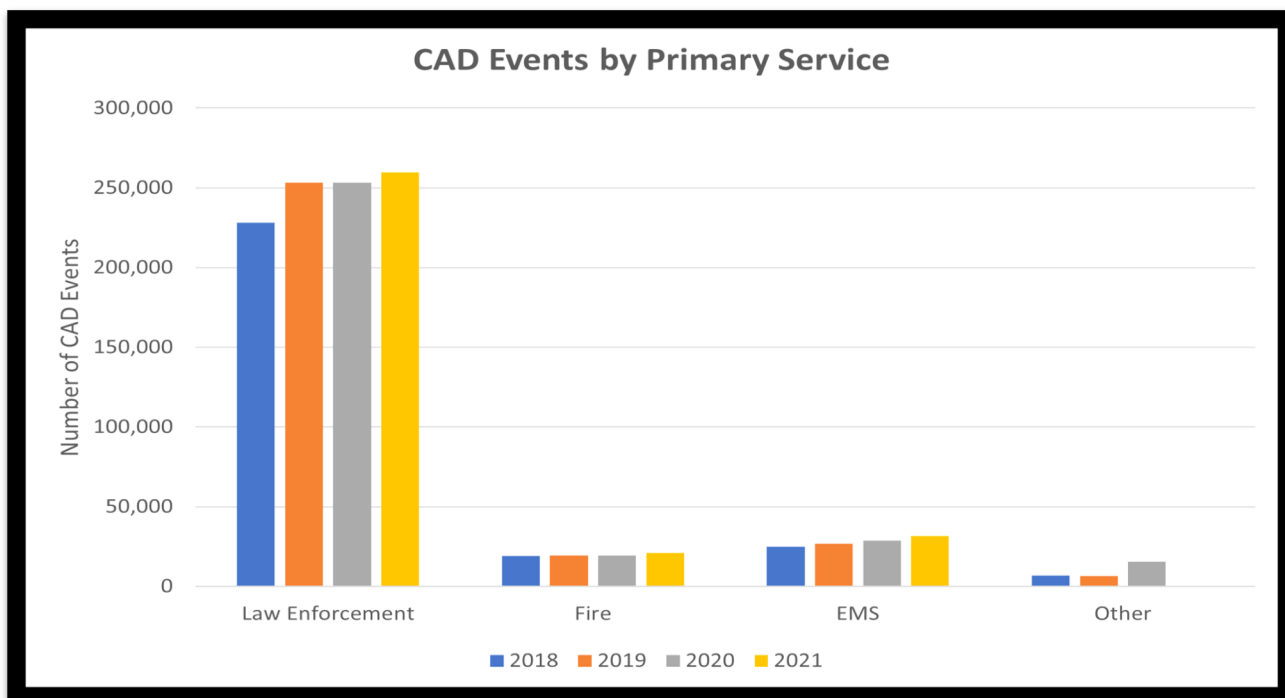
A computer-aided dispatch (CAD) system is utilized to process calls for service, dispatch and support first responders in the field. Events recorded by the CAD system are another key indicator of the workload of emergency telecommunicators working in the Emergency Communications Center.

Total CAD Events

Source of CAD Events

CAD Events by Day of Week

CAD Events by Hour of Day

CAD Events by Primary Service

CAD Events by User Agency

*Affiliated user agencies such as the Missouri State Highway Patrol, VA Police, Court Marshals, Missouri Department of Conservation, etc.

Automated Secure Alarm Protocol

The ASAP-to-PSAP (Public Safety Answering Point) program, implemented in 2019, allows participating alarm companies to deliver law, fire, and medical alarms directly into the BCJC CAD system for dispatch. This automation reduces telephone calls to BCJC, helping to keep call-takers available and reducing response times to alarm activations. 16% of the alarm activations reported to BCJC in 2021 were received via the ASAP-to-PSAP service.

ASAP-to-PSAP Events by Service Type

19
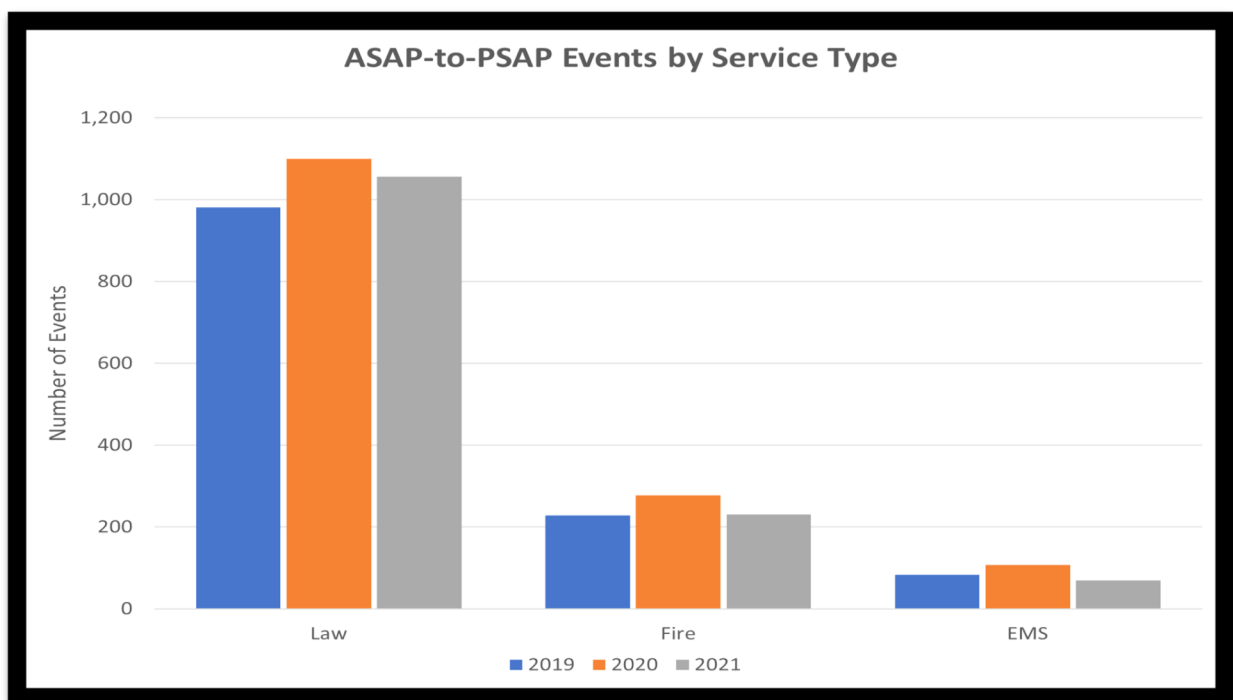
Radio Network Support Unit

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

Working with the County's Radio Consultant, the Support Unit staff is responsible for all facets of the radio communication system that serves the public safety providers in Boone County. Collectively, the system consists of the main dispatch facility at the Emergency Communications Center, a backup facility in downtown Columbia, and the radio network comprised of twenty-seven tower sites located in and around Boone County. At present, the BCJC Radio Network serves in excess of 2,000 user radios and has a total technical presence at thirty-nine different sites and facilities.

System Planning

System Planning is an ongoing process to improve system technical performance and upgrade system components. In 2021, planning and budgeting were completed for the spectrum expansion into the 800 MHz frequency range. This plan will improve in-building radio coverage for first responders and help improve interagency communication.

Site Construction

Site Construction has allowed the County to meet the growing communication needs of its allied public safety agency users. Under the County governance, the radio system uses a focused coverage growth plan and a migration path to additional system features.

In 2021 bids were received to begin work at the RKB site at Rock Bridge High School in Columbia and at the PEN site in Cole County. Both of these sites will help improve coverage of the Boone County radio system.

One of the first steps in this process was soil testing for design of the tower foundations. In this photo, contractors are taking soil samples for the 42' tower piers at the RKB site.

As part of the new support building at BCJC, a new tower for test antennas used by the BCJC Tech Staff was completed and outfitted.


Ongoing Maintenance

Ongoing Maintenance is performed to keep the radio network robust and reliable. Technicians visit all of the sites on a regular schedule to verify the proper functioning of equipment, to inspect and test standby generators, and to ensure safe and stable site conditions. Several site maintenance projects were completed in 2021 that have helped ensure system performance even under extended adverse environmental conditions.

The antenna array on the POL tower at the Columbia PD was replaced and additional antennas were added for operations in the 800 MHz band.

System Upgrades

In addition to new construction, the BCJC Tech Staff completed several system enhancement projects in 2021. To help improve portable coverage, an additional site was added at the MUPD facility.
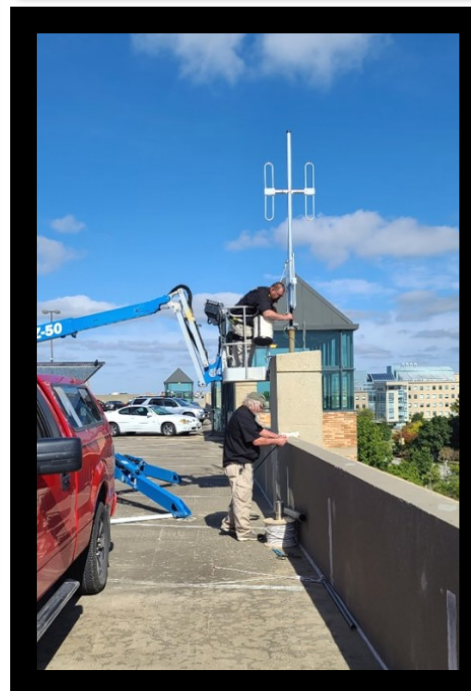
Records Requests

The Boone County Joint Communications Records Custodian is responsible for timely response to all departmental records requests. In 2021, the BCJC Records Custodian processed a total of 1,118 records requests. 37% (419) of the requests came from the public and 63% (699) came from BCJC user agencies or affiliated user agencies.

Records Requests by Month (2021)
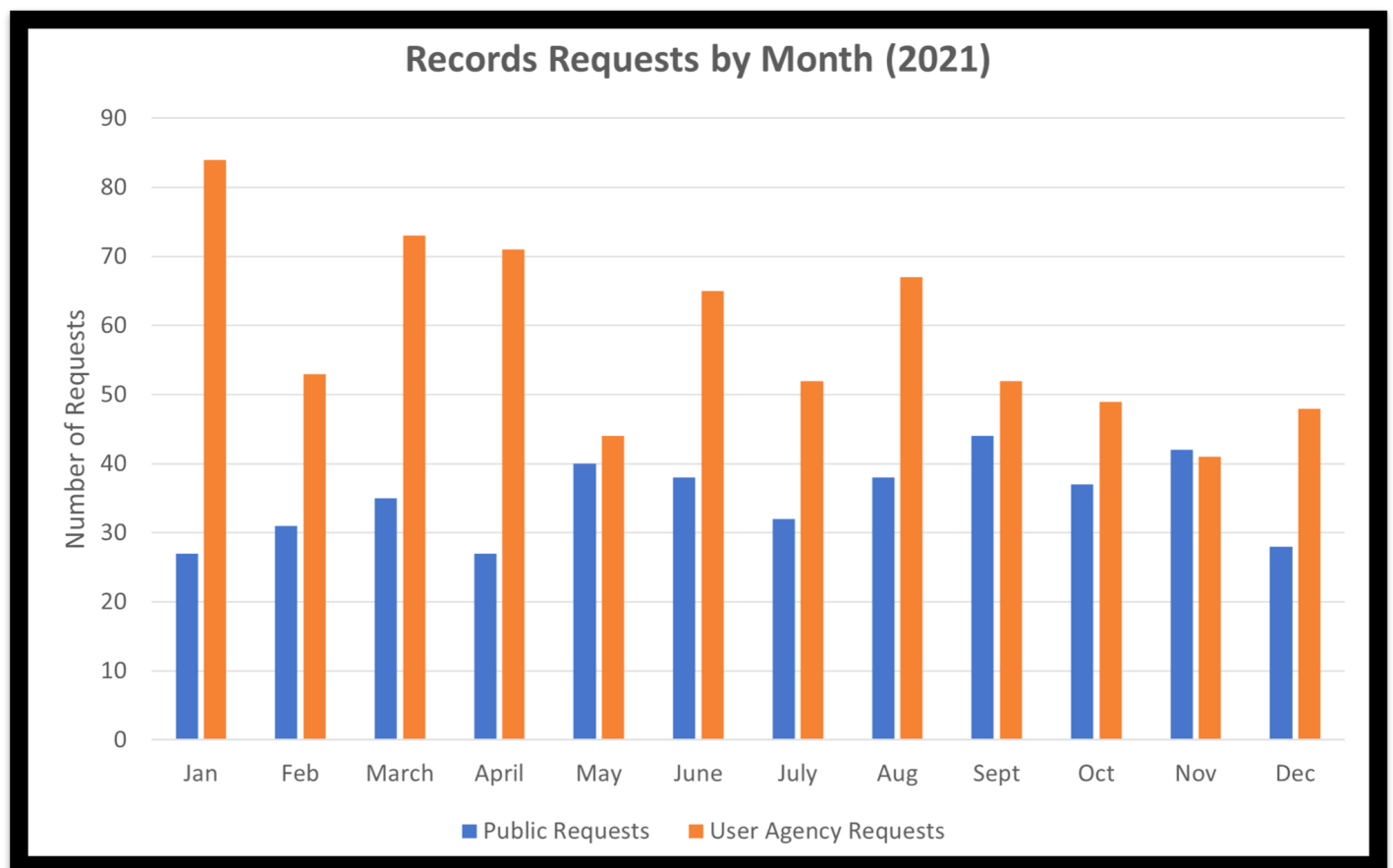
Our User Agencies

Law Enforcement Services

Boone County Sheriff's Office

Columbia Police Department

University of Missouri Police Department

Columbia Regional Airport

Centralia 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