

## Audit Report

# 911 Operations

February 2020



People can call or text 911 to get help when there is an emergency. Austin's 911 service receives over a million calls and texts every year. These calls are handled by communications staff in the Austin Police Department, Austin Fire Department, and Austin-Travis County Emergency Medical Services. We found that while these three departments met recommended goals for quickly answering 911 calls, they missed other goals related to emergency response times. Additionally, each department has practices to ensure 911 operations are effective, but improved public education efforts are needed. Lastly, we noted issues with plans and training that could limit the City's ability to continue 911 operations during a disruption.

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Cover Photo: Inside of the 911 call center, Stephanie McClintock, Acting CTECC General Manager.

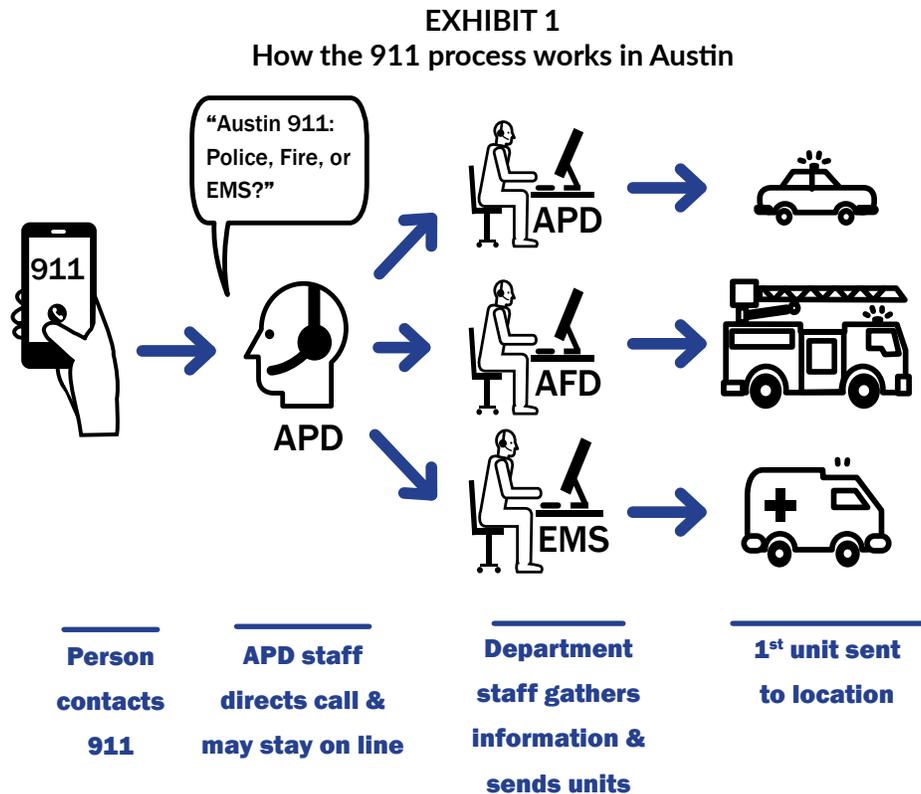
# Objective

Are emergency calls being dispatched in an effective and efficient way to meet community needs?

# Background

When there is an emergency people can call 911 to get help. Depending on the situation, the person may need help from one or more public safety departments. For example, a car crash may require police officers, firefighters, and paramedics.

Exhibit 1 shows the general dispatch process for someone who calls 911 in Austin. An Austin Police Department (APD) employee answers the 911 call and determines what services are needed. The APD employee may then transfer the call to staff with the Austin Fire Department (AFD), Austin-Travis County Emergency Medical Services (EMS), or other public safety departments. These employees collect specific details about the situation, determine what resources are needed, and ensure those resources arrive on scene.



SOURCE: OCA analysis of 911 dispatch process in Austin, October 2019

In Austin, this 911 process happens at the Combined Transportation and Emergency Communications Center (CTECC). CTECC is intended to improve emergency response by allowing APD, AFD, EMS, and other public safety agencies to coordinate in a centralized location.

The three public safety departments have different missions, which result in different dispatch procedures. For example, police officers need a physical description of criminal suspects while paramedics need to know about someone's medical condition. This need for different information from callers would make it difficult for APD, AFD, and EMS to completely align 911 operations.

In Fiscal Year 2020, the three departments budgeted approximately \$29 million for emergency communications and have around 330 communications staff. These resources are used to handle the roughly one million 911 calls and texts made every year in Austin.

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# What We Found

## Summary

People can call or text 911 to get help when there is an emergency. Austin’s 911 service receives over a million calls and texts every year. These calls are handled by communications staff in the Austin Police Department, Austin Fire Department, and Austin-Travis County Emergency Medical Services. We found that while these three departments met recommended goals for quickly answering 911 calls, they missed other goals related to emergency response times. Additionally, each department has practices to ensure 911 operations are effective, but improved public education efforts are needed. Lastly, we noted issues with plans and training that could limit the City’s ability to continue 911 operations during a disruption.

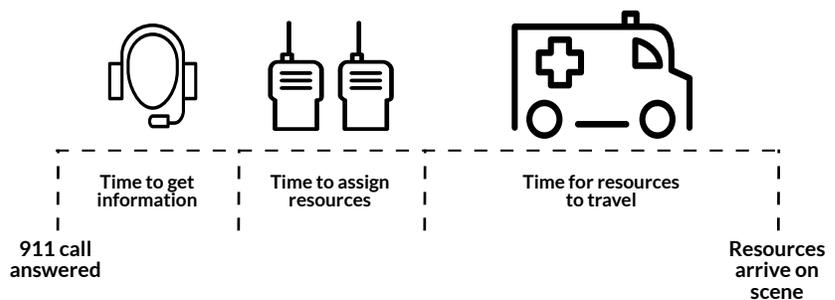
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## Finding 1

Austin’s public safety departments met recommended goals for answering calls but missed other goals related to emergency response times.

Each of the three public safety departments set performance goals related to the timeliness of the dispatch process. Timeliness goals can generally be separated into three segments, as shown in Exhibit 2. The first measures the time it takes to answer a call and collect information about the situation. The second measures how long it takes to assign emergency resources, and the third measures how long it takes for the assigned resources to arrive on the scene.

**EXHIBIT 2**  
The three phases of emergency response



Source: OCA analysis of 911 operations, October 2019

According to the National Emergency Number Association, agencies should answer 911 calls in less than 10 seconds and all three departments met this goal. However, as shown in Exhibit 3, APD and AFD reported that they missed most of their other goals related to the timeliness of 911 operations. Many of the missed goals related to the time it took for resources to arrive on the scene and involve factors outside of the direct control of communications staff. For example, arrival time at an emergency depends in large part on the location of the emergency in relation to available resources.

**EXHIBIT 3**  
**Departments did not meet many goals related to dispatch timeliness**

<b>Performance Measure</b>		<b>2018 Target</b>	<b>2018 Performance</b>
<b>APD</b>	% of 911 calls answered within 10 seconds	<b>98</b>	<b>99</b>
	Total police response time for EMERGENCY and URGENT calls	<b>8.040</b>	<b>8.4</b>
	Response time to process EMERGENCY calls	<b>1.09</b>	<b>1.06</b>
	Response time to process URGENT calls	<b>1.22</b>	<b>1.2</b>
	Response time to process EMERGENCY and URGENT calls	<b>1.180</b>	<b>1.16</b>
	Total response time for EMERGENCY calls	<b>6.440</b>	<b>7.15</b>
	Total response time for URGENT calls	<b>8.390</b>	<b>9.23</b>
	Response time to dispatch EMERGENCY calls	<b>0.530</b>	<b>1.02</b>
	Response time to dispatch URGENT calls	<b>1.02</b>	<b>1.16</b>
	Response time to dispatch EMERGENCY and URGENT calls	<b>1</b>	<b>1.11</b>
	Response time from dispatch to arrival for EMERGENCY calls	<b>4.430</b>	<b>5.12</b>
	Response time from dispatch to arrival for URGENT calls	<b>6.140</b>	<b>6.47</b>
	Response time from dispatch to arrival for EMERGENCY and URGENT calls	<b>5.470</b>	<b>6.15</b>
<b>AFD</b>	% of calls answered within 10 seconds	<b>95</b>	<b>96</b>
	Average dispatch time (seconds) for emergency incidents in AFD service area	<b>5</b>	<b>6</b>
	AFD call-taking time for calls in AFD service area	<b>40</b>	<b>44</b>
	% of emergency incidents where amount of time between call receipt and arrival of AFD unit is 8 minutes or less	<b>90</b>	<b>82</b>
	Average first-in unit response time to emergency incidents (minutes from dispatch to arrival)	<b>4.7</b>	<b>4.9</b>
<b>EMS</b>	% of calls answered in less than 10 seconds	<b>90</b>	<b>93.540</b>
	EMS Communication Center average call processing time	<b>75</b>	<b>69.070</b>
	% of EMS Communication Center calls processed within 90 seconds	<b>90</b>	<b>81.310</b>
	% of potentially life-threatening responses within 9 minutes and 59 seconds	<b>90</b>	<b>90.120</b>
	% of priority 1-5 calls responded to on time within the city of Austin and Travis County	<b>90</b>	<b>94.490</b>
	% of priority 1-5 calls responded to on time within the city of Austin	<b>90</b>	<b>95.230</b>

SOURCE: City's ePerformance website, August 2019

Exhibit 3 also shows the differences in how departments reported 911 and emergency response performance. While departments reported similar measures, they used different formats. For example, both APD and AFD measured their response time goal in minutes and seconds. According to APD management, their target of 4.430 meant 4 minutes and 43 seconds, while AFD management said their target of 4.7 meant 4 minutes and 42 seconds. Although each department's goal was nearly identical, this was not clear based on the different formats.

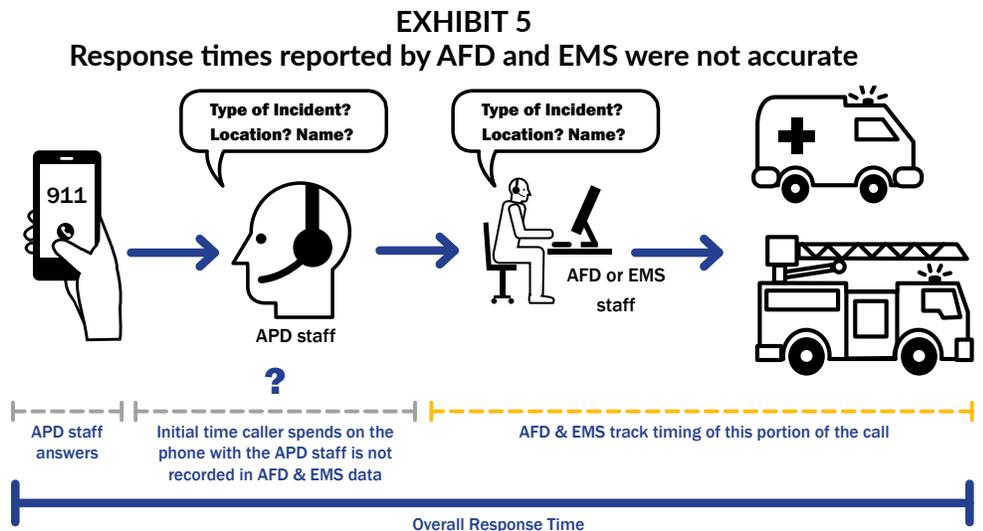
Performance measures also did not align across departments. As shown in Exhibit 4, APD had a performance target of processing EMERGENCY calls in 1.09 minutes, AFD had a performance target of sending calls to the dispatch queue in 40 seconds, and EMS had a performance target of processing 90% of calls in less than 90 seconds. The different measures make it difficult to compare performance across the three departments.

**EXHIBIT 4**  
Department performance measures were not aligned

	APD	AFD	EMS
<b>Performance goal</b>	Response time to process EMERGENCY calls	AFD call-taking time for calls in AFD service area	% of EMS Communication Center calls processed within 90 seconds
<b>Measurement</b>	Minutes	Seconds	Percentage

SOURCE: OCA analysis of department's reported performance, October 2019

Lastly, the response times AFD and EMS reported did not reflect the actual experience of someone who called 911. That is because those departments reported the response time from when they received the call, and did not include the time it took for APD to answer the call and transfer it to them. Exhibit 5 shows how from the caller's perspective, the response times reported by AFD and EMS were not accurate.



SOURCE: OCA analysis of department performance calculations, October 2019

## Finding 2

Departments have some practices to ensure 911 operations are effective, but could improve 911 operations with better public education efforts.

Accreditation helps ensure a high level of service by evaluating performance against a set of recognized standards.

When people call 911 they are likely in a stressful situation. Additionally, they may not speak English, may have a disability, or may be very young. As a result, it could be challenging for 911 staff to get the information they need from the caller. One way the departments have addressed this challenge is through staff training and quality assurance processes. These practices can make the 911 process more effective by ensuring staff know how to deal with communication barriers to getting the information they need.

Both APD and EMS required 911 staff to be accredited by state agencies. The departments helped staff maintain those accreditations by offering training opportunities. While not accredited by the state, AFD's 911 staff also have ongoing training. AFD only maintained some training records though, so we were unable to verify whether all staff were fully trained.

All three departments also had practices to monitor and review calls to ensure staff handled the call appropriately. The specific practices used by each department, such as the number of calls reviewed each month, were different though. For EMS, monitoring was required to maintain the department's status as an Accredited Center of Excellence by the National Academy of Emergency Dispatch.

Another method to address the challenges of getting accurate information is educating the public about 911 operations. Both APD and EMS had materials to educate children about how to use 911. Each public safety department also posted about 911 on social media, and APD recently created a Facebook page specifically focused on emergency communications. However, these efforts were limited and inconsistent.

As shown in Exhibit 6, some posts simply stated that people should call 911 "in an emergency," but did not define what qualifies as an emergency. Other posts clearly defined what qualified as an emergency. This distinction is important because people in Austin can call 311 to report non-emergency situations and people who do not understand the difference between an emergency and a non-emergency may call the wrong number.

### EXHIBIT 6

Social media posts provided varied information about what qualifies as an emergency



SOURCE: APD Twitter and EMS Facebook, October 2019

While some situations are clearly emergencies, others may be less clear. For example, a downed power line may seem like an emergency to some people but this is likely not an emergency and should be reported to Austin Energy. Alternatively, some people may think they should call 311 to report a gas smell, but AFD staff said they consider this an emergency and people should call 911 in that situation.

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Between May 2018 and April 2019, 311 transferred almost 3,500 calls to 911.

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When someone calls 311 to report an emergency it will take longer for the appropriate personnel to respond. Not only does the caller spend time talking with 311 staff, but it can take longer to confirm a caller's location because the 311 system does not automatically collect this information. As a result, 911 staff have less data about a caller's location when calls are transferred from 311.

Lastly, the departments provided little education about what to expect when someone called 911. EMS published a video with this information on their YouTube channel, but we saw few other examples of this type of education from any of the public safety departments.

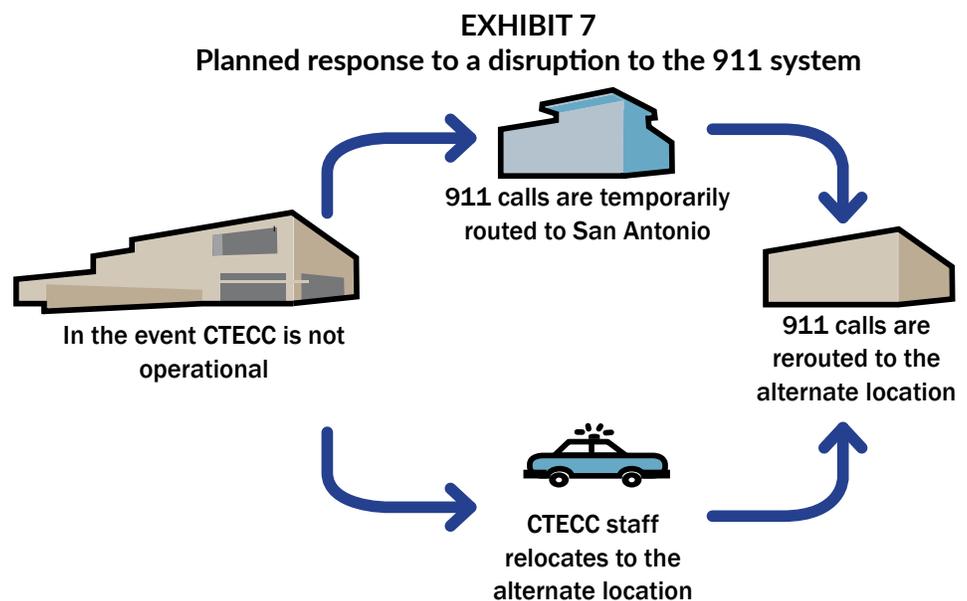
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### Finding 3

Although there are some actions to prevent disruptions of 911 operations, several issues with plans and practices could result in serious health and safety consequences if public safety dispatch operations were disrupted.

The 911 system is critical for the City and maintaining that service is important. National standards require that public safety agencies create a plan to continue 911 operations during any disruptions. City policies also require that every department maintain an emergency management plan.

Austin's 911 system has several safety measures and protections in place to prevent disruptions of 911 operations. This includes data backups, an alternate location for 911 operations, and an agreement with San Antonio to handle Austin's 911 calls if needed. Exhibit 7 shows the plan for continuing 911 operations if there was an issue with CTECC.



SOURCE: OCA analysis of the plan to respond to a disruption in 911 operations, September 2019

However, we noted several issues with these efforts which may limit the City's ability to maintain 911 operations during a disruption. The alternate location site is smaller than CTECC and cannot support current 911 staffing levels. It is currently being renovated to increase capacity, but will still not be able to support the same number of 911 staff as CTECC.

Another issue relates to current plans to respond to a disruption to the 911 system. APD has primary responsibility for 911 operations and has a plan to maintain them during a disruption. However, both AFD and EMS also have plans, and none of the three plans appear to be aligned. As a result, departments may not effectively coordinate during a disruption, which could extend or worsen the situation. Additionally, the departments' plans may not be accurate. For example, none of the plans appeared to have the correct address of the alternate location, and one plan has a different address than the other two. Lastly, public safety management said their staff had limited access to the plans.

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A disruption could be caused by a break in internet connectivity, an interruption in the mobile phone system, an environmental incident at CTECC, or even a pandemic flu that affects staff.

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A third issue is that there is limited training for staff to prepare for disruptions. For example, it appears that only AFD regularly has 911 staff operate out of the local alternate location and only one APD shift has practiced switching 911 operations to San Antonio. Without regular practice and access to department plans, staff may be unfamiliar with what to do during a disruption and not respond appropriately or timely.

Even when training does occur, it is not clear whether the experience is used to improve department response to a disruption. We were unable to find evidence that staff had completed after-action reports from previous training drills. During one training drill we observed in April 2019, there were several issues with technology and communications. However, many of these issues were not included in the after-action report APD prepared. One purpose of training should be to identify problems so they can be avoided during an actual disruption. If problems and solutions are not identified through training, there is a chance that the same problems will prevent effective response during a real disruption.

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## Recommendations and Management Response

- 1 | The Assistant City Manager responsible for public safety should ensure the three public safety departments work together to standardize current performance measures.

Management Response: AGREE

Proposed Implementation Plan: Each of the three public safety departments has different performance measures because they have different mission focuses. However, the three public safety departments will develop a work group to determine the most appropriate standardized measurement for reporting specific performance measures.

Proposed Implementation Date: October 2020

- 2 | The Assistant City Manager responsible for public safety should ensure the three public safety departments work together to develop a new performance measure that reflects the entire experience of a 911 user. This measure should demonstrate timeliness from when a 911 call is made to when the appropriate resources arrive on scene.

Management Response: DISAGREE

Proposed Implementation Plan: Significant challenges exist to implementing the suggested performance measure due to the current 911 software, Solacom system design and ownership of the system. This software is designed to begin measuring the answer rate and overall response time from the time of “phone pickup.” Each public safety agency is able to measure their respective department’s response time from the time of “phone pickup” to “first unit arrival”; however, because AFD and ATCEMS are secondary Public Safety Answering Points (PSAPs) their response time begins from their phone pickup. As the primary PSAP, APD 911 Operators answer 911 calls by stating, “Austin 911, do you need Police, Fire, or EMS?” If the caller states Fire or EMS, the 911 Operator immediately transfers the 911 call to AFD or EMS, at which point the time of transfer is usually five (5) seconds or less. Due to this software’s system design, AFD and ATCEMS are technologically unable to measure their overall response from the time of APD’s “phone pickup”.

Further, the Capital Area Emergency Communications District (CAECD) contracts and manages the 911 software, Solacom, for all PSAPs for the Capital Area Council of Governments. The PSAPs include all emergency service agencies answering 911 calls in the CAECD District. In 2013, State Legislation and subsequent resolutions established the CAECD for the City of Austin and the following counties, Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis and Williamson counties.

The CAECD oversees 911 services to local governments in the State Planning Region 12; therefore, changing the software and its configuration will impact all CAECD agencies and incur significant costs associated with implementing the suggested performance measure. Should CAECD plan for an upgrade for the Solacom system in the future, staff will explore how the performance metric might be included in the upgrade.

Proposed Implementation Date: N/A

### 3

The Assistant City Manager responsible for public safety should ensure the three public safety departments work together to create a public education plan to teach the public about using 911. The plan should:

- involve 311, schools, utilities, and other stakeholders,
- focus on what is considered an emergency and non-emergency,
- address how to interact with 911 staff, and
- engage non-English speaking communities as well as people with disabilities.

**Management Response: AGREE**

**Proposed Implementation Plan:**

April - August 2020: The three public safety departments will continue to develop their existing public education plans teaching the public about using 911 and will work together to ensure consistent messaging.

Initiatives currently underway, includes APD's launch of its Emergency Communication Division's Facebook webpage and the Community Outreach Program. Both resources aim to actively engage and educate the public about how to best use the 911 call system. APD also uses these platforms to promote Texting 911, directed at persons who are deaf or hard of hearing. In 2019, APD also collaborating with Austin 3-1-1 to create an educational video about the difference between a 9-1-1 and 3-1-1 call.

There are on-going discussions between the three public safety departments to create educational videos in English and Spanish promoting the use of 911.

APD, AFD and ATCEMS will integrate lessons learned from the audit findings into their current public education efforts to include schools, utilities and community events.

**Proposed Implementation Date: June 2020**

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The Assistant City Manager responsible for public safety should ensure the three public safety departments work together to improve disruption preparedness for 911 operations. These departments should:

- enhance training for communications staff on disruption procedures,
- prepare reports that document all issues that arise during training and use these reports to improve disruption preparedness, and
- update comprehensive plans for handling disruptions that addresses the needs of each department and ensure all staff can access it.

**Management Response: AGREE**

**Proposed Implementation Plan:**

May - August 2020: The Emergency Communications Divisions (ECD) of the three public safety departments will ensure Division staff receives training related to practices and procedures on disruption preparedness. In addition, ECD will conduct bi-annual drills with the San Antonio Emergency Communications Center (SAECC). The ECDs of the three public safety departments and the SAECC have agreed to hold 2020's first 911 disruption drill on June 1, 2020.

June 2020 and ongoing: The ECDs will ensure after-action reports (AAR) for disruption drills are comprehensive and will use the AARs to improve disruption preparedness.

The ECDs of the three public safety departments will update their Continuity of Operations Plans (COOP) to ensure the plans contain accurate information and outlines current procedures. Further, each ECD will ensure their staff can readily access the procedures and training opportunities on the COOP.

**Proposed Implementation Date: May 2020**

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## Scope

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The audit scope included 911 dispatch operations and procedures from October 1, 2013 to July 31, 2019.

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## Methodology

To complete this audit, we performed the following steps:

- interviewed management and staff in APD, AFD, EMS, Communications and Technology Management, Austin 311, Office of Homeland Security & Emergency Management, and Office of the Medical Director;
- interviewed vendor management from the Capital Area Council of Governments, San Antonio Police Department, and Travis County Sheriff's Office;
- reviewed applicable laws, policies, procedures, guidelines, and best practices;
- reviewed department performance measures and training materials related to dispatch operations and emergency response;
- selected a judgmental sample of training certifications and reviewed supporting documentation to determine if department communications staff are qualified to perform job duties;
- observed the dispatch process for each public safety department at CTECC and the backup center;
- selected a 15-day sample of data (January 1, 2018 - January 15, 2018) and analyzed 911 calls dispatched;
- reviewed dispatch system security, maintenance, and recovery plans;
- reviewed department continuity of operations plans and after-action reports;
- observed a scheduled drill between Austin and San Antonio Communications Divisions to practice transferring 911 calls to / from both cities in case of an emergency;
- analyzed call transfer data of Austin 311 to 911;
- reviewed criminal background check policies and procedures;
- reviewed criminal justice information services policy and procedures at CTECC;
- reviewed community survey results to determine public satisfaction with 911 services;
- reviewed public safety department social media and public education materials;
- selected a judgmental sample of collisions and reviewed supporting documentation to determine if public safety departments are traveling safely to incidents;
- evaluated the risk of fraud, waste, and abuse associated with the dispatch process; and
- evaluated internal controls related to administering and monitoring of the dispatch process.

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## Audit Standards

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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The Office of the City Auditor was created by the Austin City Charter as an independent office reporting to City Council to help establish accountability and improve City services. We conduct performance audits to review aspects of a City service or program and provide recommendations for improvement.

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