

OFFICE OF THE CITY AUDITOR PERFORMANCE AUDIT

February 2018

Comparative Study of Fire Department Use of Resources



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KANSAS CITY,
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CITY OF FOUNTAINS
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February 26, 2018

Honorable Mayor and Members of the City Council:

This audit is a comparison of the Fire Department's fire suppression and emergency medical services (EMS) resources, deployment, and workload to other jurisdictions. We hope this audit will provide further context to the discussion about matching fire suppression and EMS services to available resources while maintaining public safety.

We surveyed 10 jurisdictions, which were chosen based on fire suppression and EMS functions being within the fire department and demographic and geographic characteristics. Including the Kansas City, Missouri, Fire Department, we received nine responses. The information we received was self-reported by the jurisdictions and we did not verify the reliability of the data they submitted.

Using the survey information, we developed a number of measures related to department, firefighting, and EMS resources; deployment; workload; and response time. Throughout the audit, we use graphs and tables to show how Kansas City, Missouri, compared to the other surveyed jurisdictions. Although jurisdictions have similarities, no comparisons between jurisdictions are perfect because of differences in demographics, geography, services, etc. In order to normalize the results, we analyzed the resources, deployment, and workload on per resident and per square mile basis as well as percentage change and percent of actual to budget. We also include the median numerical value of the responding jurisdictions in the measures as a way to mitigate these differences and provide some additional context when viewing the graphs.

The acting fire chief reviewed the draft report on February 20, 2018. We did not request a response from the department because we did not make any recommendations. We would like to thank Fire Department staff, as well as all the surveyed jurisdictions, for their participation in the survey. The audit team for this project was Joan Pu, Jon Lecuyer, and Sue Polys.


Douglas Jones
City Auditor

Comparative Study of Fire Department Use of Resources

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Introduction

Objectives

We conducted this audit of the Fire Department's use of resources compared to other jurisdictions under the authority of Article II, Section 216 of the Charter of Kansas City, Missouri, which establishes the Office of the City Auditor and outlines the city auditor's primary duties.

A performance audit provides "findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria. Performance audits provide objective analysis to assist management and those charged with governance and oversight in using the information to improve program performance and operations, reduce costs, facilitate decision making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability."¹

The objective of this audit is to compile comparative data for fire suppression and emergency medical services (EMS) activities and resources for Kansas City, Missouri, and other selected jurisdictions. We hope this audit will encourage public discussion about fire suppression and emergency medical services resources, deployment, and workload.

Scope and Methodology

Our review focuses on comparing Kansas City, Missouri's, fire department activities and resources with selected jurisdictions. Our audit methods included:

- Reviewing professional literature and interviewing staff from the Kansas City, Missouri, Fire Department and other city staff to understand fire department operations and identify comparative measures for resources, deployment, and workload.

¹ Comptroller General of the United States, *Government Auditing Standards* (Washington, DC: U.S. Government Printing Office, 2011), p. 17.

- Selecting jurisdictions based on considerations of fire suppression and EMS functions within the fire department as well as demographic and geographic characteristics.
- Surveying jurisdictions by having the city auditor, legislative auditor, or fire department complete the survey. The survey instrument and survey responses can be found in Appendix A.
- Reviewing surveyed jurisdictions' collective bargaining agreements to identify overtime categories and required staffing levels.
- Calculating measure of resources and workload based on survey responses compared to population size and total area for Kansas City, Missouri, and surveyed jurisdictions.
- Calculating medians² of survey responses for comparison with the results of Kansas City, Missouri.

We conducted this performance audit in accordance with generally accepted government auditing standards with the exception of reporting the views of management concerning the audit because we do not make any recommendations. We do not believe the absence of a response affects the audit results. Government auditing 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 objective. No information was omitted from this report because it was deemed privileged or confidential.

We did not verify the reliability of the reported data. We reviewed responses to survey questions and contacted jurisdictions for clarification when needed. Some of the jurisdictions provided clarification or corrected responses, but some did not respond to our follow-up questions. We eliminated responses that did not answer a survey question or did not make sense in our analysis.

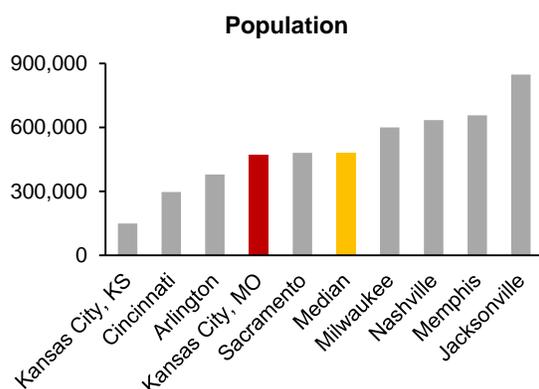
Background

Kansas City Fire Department. The Fire Department provides fire protection, emergency medical services (EMS), emergency rescue, and hazardous materials response in Kansas City, Missouri.

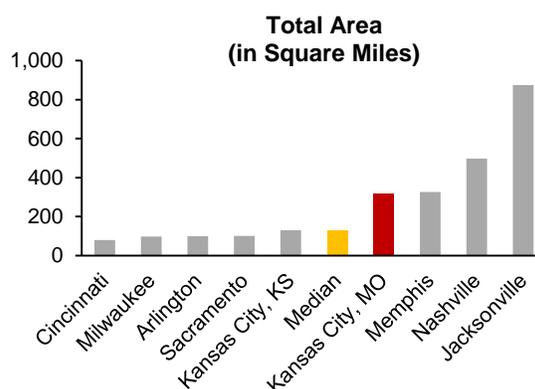
² Median is the middle number of a sequential list of numbers. Jurisdiction-to-jurisdiction comparisons are difficult due to the variety of programs or services. Medians were used to minimize the effect of outliers.

The department's fiscal year 2018 budget includes expenditures of over \$166 million and 1,286.5 authorized full time equivalents (FTEs). The department's overtime costs increased over the years, reaching more than \$16 million in fiscal year 2017.

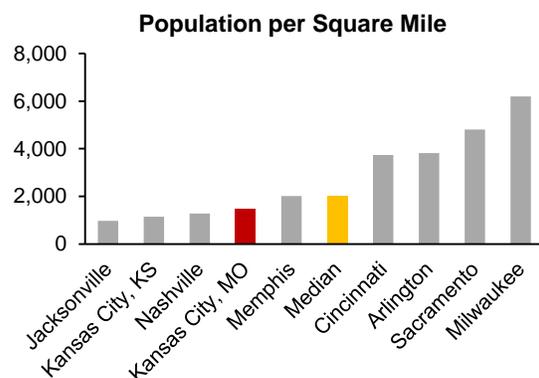
Surveyed jurisdictions. We surveyed jurisdictions based on considerations of fire suppression and EMS functions within the fire department as well as demographic and geographic characteristics. We sent survey questionnaires to 10 jurisdictions including Kansas City, Missouri, nine of which responded to the survey. We asked the jurisdictions to provide data or information from their most recently available year unless indicated otherwise. For each question, we only reported the results of jurisdictions that responded to the question. The graphs below present selected demographics of the surveyed jurisdictions.³



Source: U.S. Census 2015 estimates.



Source: U.S. Census 2015 estimates.



Source: U.S. Census 2015 estimates.

³ For the sake of brevity, in our demographic graphs, we refer to the Unified Government of Wyandotte County and Kansas City, Kansas as "Kansas City, Kansas." Bonner Springs and Edwardsville, Kansas, demographics are excluded from the Unified Government of Wyandotte County and Kansas City, Kansas demographics because they are not served by the Unified Government's fire department.

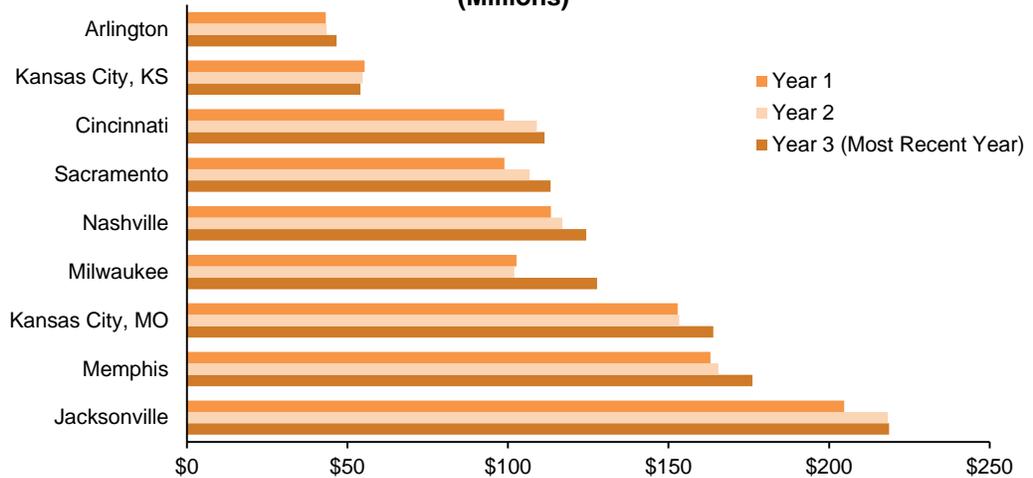
Survey Results

Department, Fire Fighting, and EMS Resources

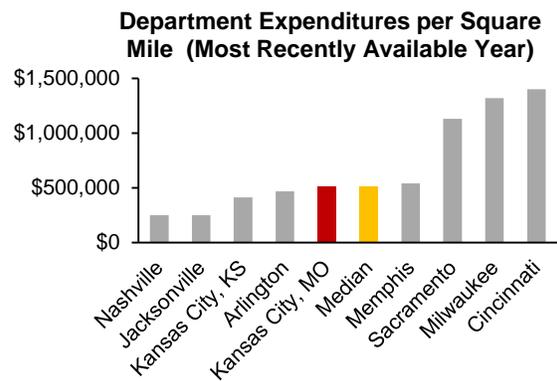
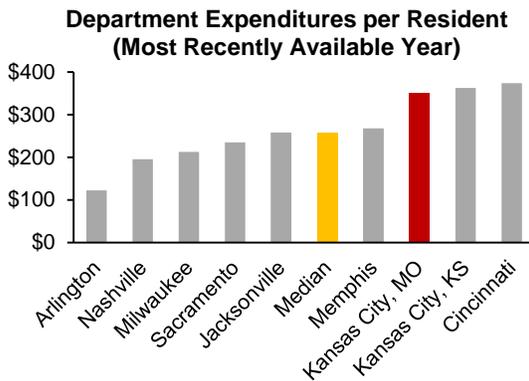
Total Expenditures

Department expenditures. The Kansas City, Missouri, Fire Department's expenditures for the past three years were the third highest among the surveyed jurisdictions. Most of the jurisdictions' expenditures increased each year.

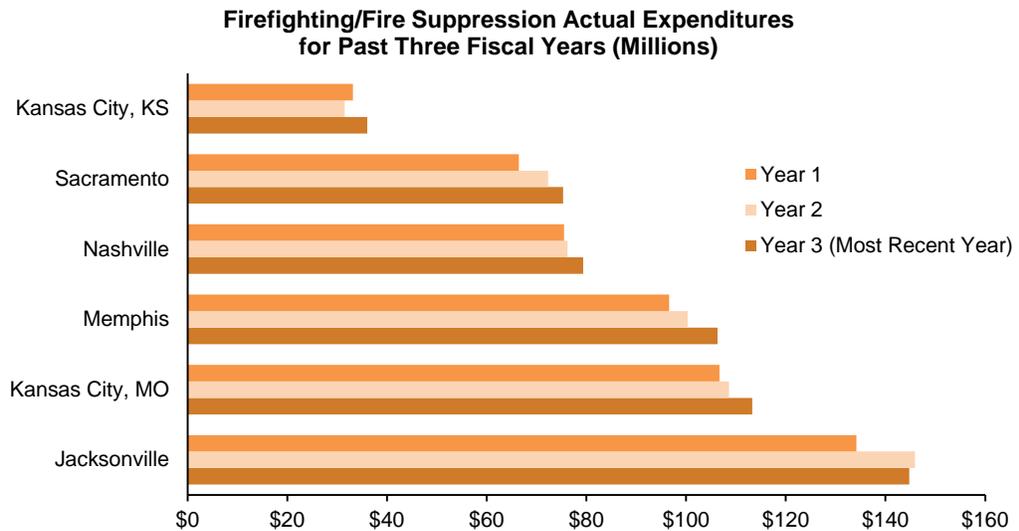
Fire Department Expenditures for Past Three Fiscal Years (Millions)



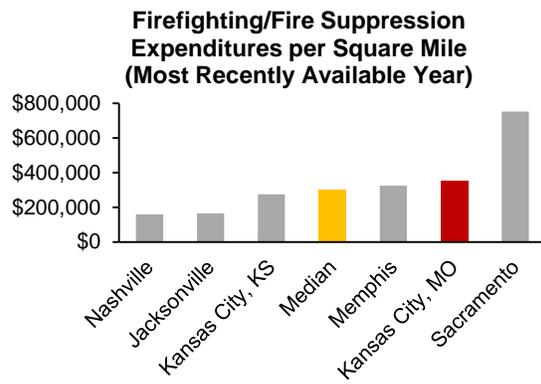
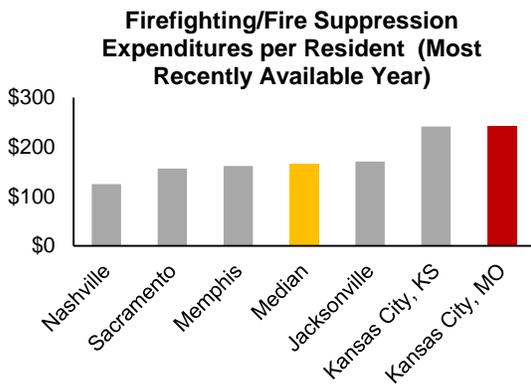
The Kansas City, Missouri, Fire Department's expenditures per resident were the third highest among the surveyed jurisdictions. Kansas City, Missouri's, expenditures per square mile, however, were at the median of the surveyed jurisdictions.



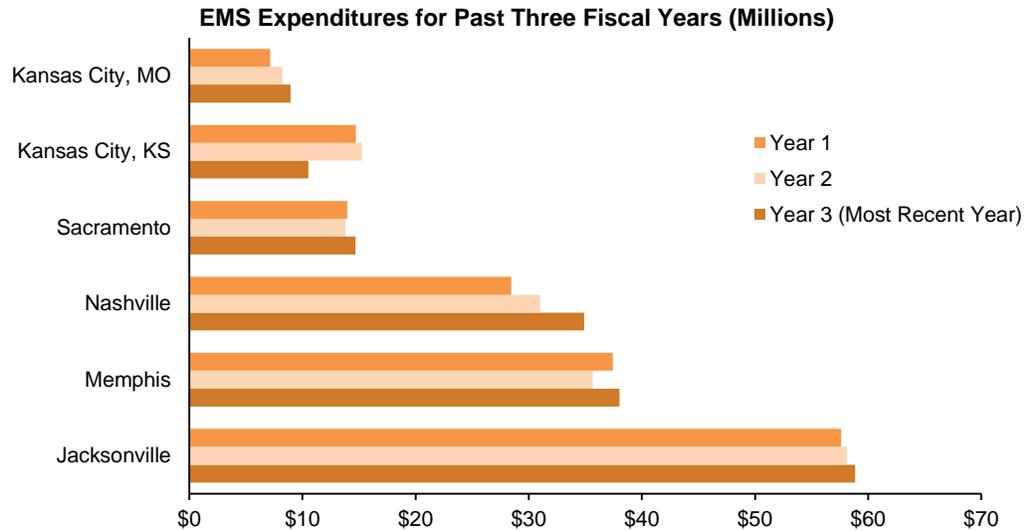
Firefighting/fire suppression expenditures. Expenditures for firefighting/fire suppression in the past three years for Kansas City, Missouri, were more than most of the jurisdictions responding to the survey question. Some of Kansas City, Missouri's, expenditures allocated to firefighting may be for emergency medical services. When firefighting/fire suppression employees work on ambulances, the department allocates those expenditures as firefighting/fire suppression expenditures, not as EMS expenditures.



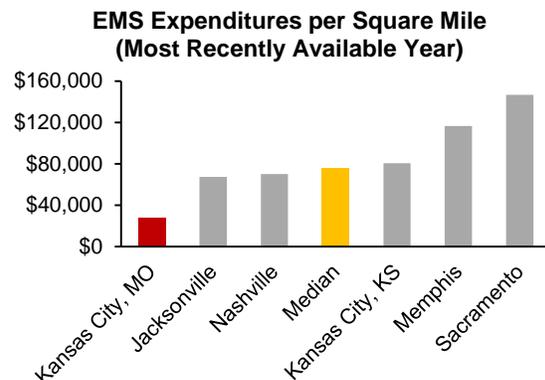
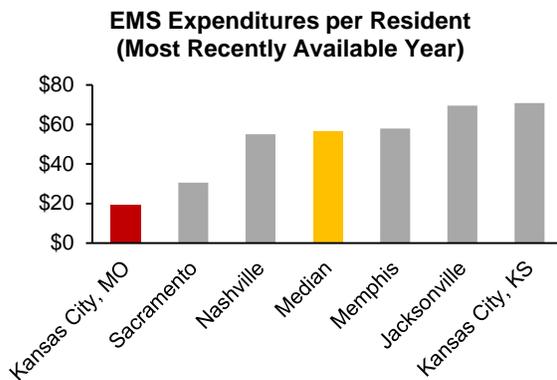
Kansas City, Missouri's, firefighting/fire suppression expenditures per resident were the highest among the responding jurisdictions and were the second highest per square mile.



Emergency medical services (EMS) expenditures. Kansas City, Missouri's, EMS expenditures were the lowest of all jurisdictions responding to the survey question.⁴



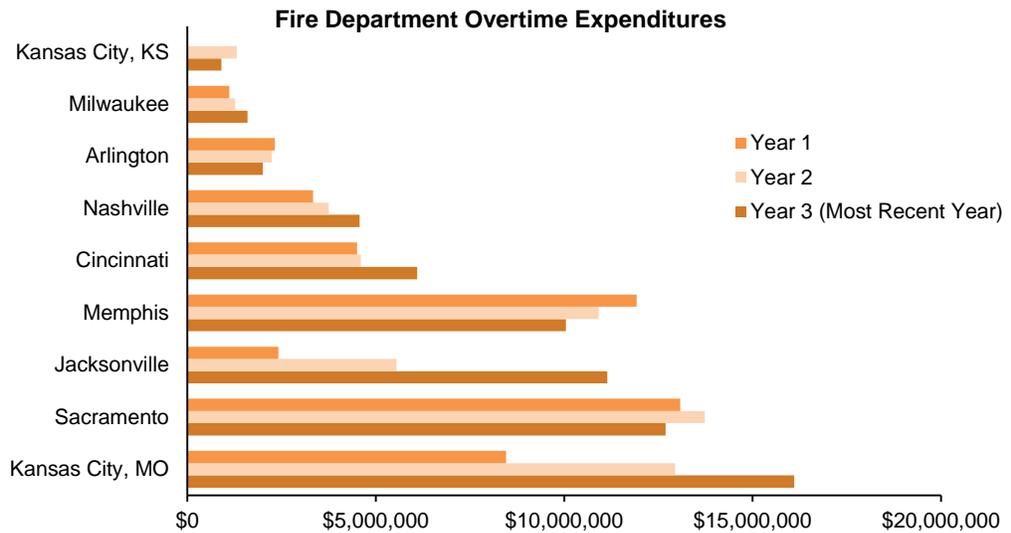
Kansas City, Missouri's, EMS expenditures per resident and per square mile were both the lowest among the responding jurisdictions.⁴



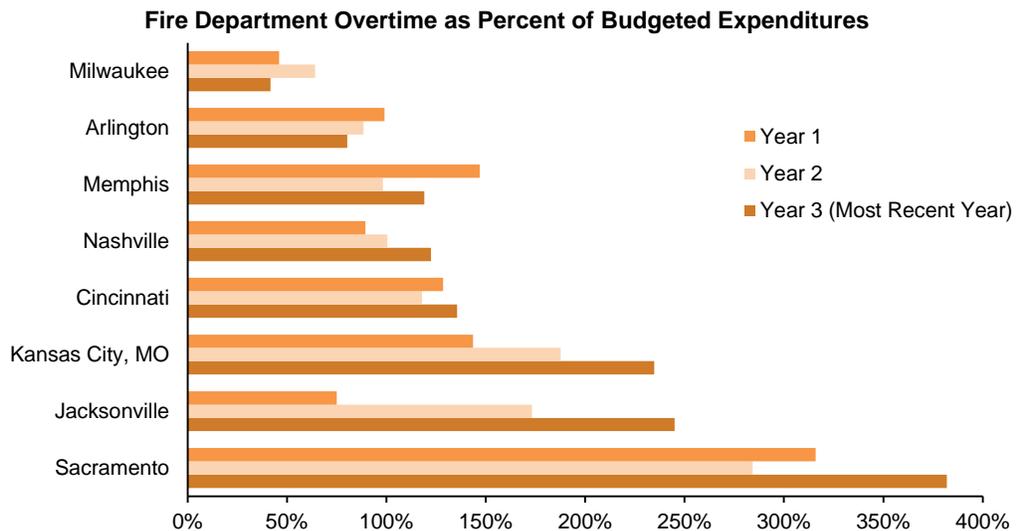
⁴ Some of Kansas City, Missouri's, expenditures allocated to firefighting may be for emergency medical services. When firefighting/fire suppression employees work on ambulances, the department allocates those payments as firefighting/fire suppression expenditures, not as EMS expenditures.

Overtime Expenditures

Department overtime. Fire department overtime expenditures in the most recent years were higher for Kansas City, Missouri, than for most other surveyed jurisdictions.



Kansas City, Missouri's, overtime expenditures increased from 144 percent to 235 percent of the budgeted amount in the past three years, higher than most of the other responding jurisdictions.



Some jurisdictions reported that they used the following strategies to reduce their overtime costs.

- Budgeting for the average number of employees who will be out due to sick leave and vacation, and hiring new employees throughout the year to ensure it has trained replacements available to keep pace with attrition throughout the year. The department reduced unscheduled overtime by 82 percent from fiscal year 2010 to 2016.
- Providing extra incentives for selling back sick pay and restricting overtime for employees who have used more than 120 hours of sick leave in a year.
- Using a managed care program for injured employees and a health and wellness program.
- Using 40-hour staff positions to alleviate some overtime.

Overtime provisions in collective bargaining agreements.

We identified categories of overtime for fire fighters and EMS staff in Kansas City, Missouri's, collective bargaining agreement (CBA) and compared them to overtime categories in the surveyed jurisdictions' most recent fire union agreements.⁵ Arlington, Texas, does not have an agreement with its local fire union. Nashville, Tennessee, does not have overtime provisions included in its most recent Memorandum of Understanding. We found that some jurisdictions do not have as many overtime categories agreed to in their union agreements as Kansas City, Missouri. We also found that Kansas City, Missouri, pays more for overtime on holidays than other surveyed jurisdictions.

⁵ Collective Bargaining Agreement Between City of Kansas City, Missouri and International Association of Fire Fighters Local No. 42, 2015-2020; 2016-2019 Labor-Management Agreement by and between the City of Cincinnati and Cincinnati Fire Fighters Union Local 48, Effective May 22, 2016, Expires January 1, 2019; Agreement Between the City of Jacksonville and the International Association of Firefighters Local 122 (Fire Fighters, Fire Engineers, Fire Lieutenants & Fire Captains). October 1, 2012 Through September 30, 2015; Agreement Between the City of Memphis and the International Association of Fire Fighters Local 1784, Effective July 1, 2013 through June 30, 2015; Agreement Between City of Milwaukee and Milwaukee Professional Fire Fighters' Association Local #215, IAFF, AFL-CIO, Effective January 1, 2013 Through December 31, 2016; Memorandum of Understanding Between Nashville Fire Fighters and Fire Service Employees Association Local 140, International Association of Fire Fighters AFL-CIO CLC and Metropolitan Government of Nashville and Davidson County; City of Sacramento and Sacramento Area Local 522, Labor Agreement Covering Employees in the Fire Department Unit, 2014-2018; and Memorandum of Agreement 2015-2017 Between The Unified Government of Wyandotte County, Kansas City, Kansas and The International Association of Firefighters Local No. 64.

Comparative Study of Fire Department Use of Resources

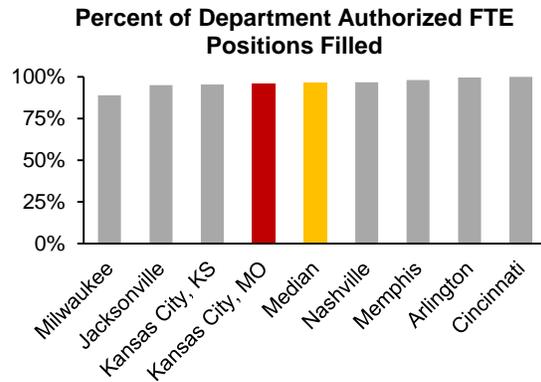
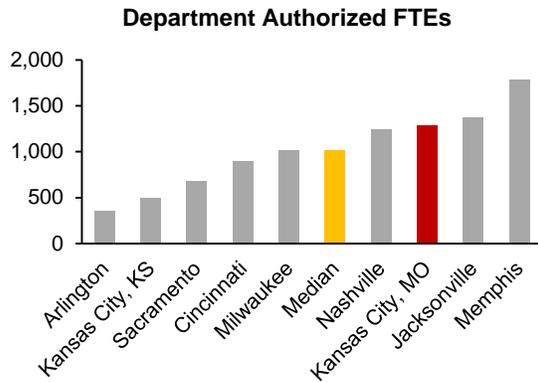
Kansas City, Missouri, Overtime Categories Compared to Surveyed Jurisdictions

Jurisdiction	Hours in Excess of Work Period	Holdover	Callback/Call-ins	Holiday
Kansas City, MO	Paid at overtime rate – 1.5 times regular hourly rate.	Minimum 1 hour at the overtime rate if held over 30 minutes.	Minimum 4 hours at the overtime rate if called back to work after leaving regular shift.	Twice the regular hourly rate for overtime hours.
Cincinnati	(Not specified)	Option of one hour overtime pay or compensatory time at the end of shift to complete duties or cleanup at overtime rate – 1.5 times the 40 hour rate of pay or compensatory time – 1.5 times hours worked.	Minimum 4 hours at the overtime rate – 1.5 times the 40 hour rate of pay or compensatory time – 1.5 times hours worked due to recall of any nature.	Overtime rate – 1.5 times the 40 hour rate of pay or compensatory time – 1.5 times hours worked for overtime hours.
Jacksonville	Paid at overtime rate – 1.5 times regular hourly rate.	Paid at overtime rate. Minimum 1 hour if relief is late or 2 hours minimum if a work run extends over shift, unless under 30 minutes, then paid actual time worked.	Minimum 2.5 hours at the overtime rate.	Overtime rate for overtime hours.
Kansas City, KS	Paid at overtime rate – 1.5 times regular hourly rate or compensatory time.	(Not specified)	The greater of 4 hours straight time rate or actual hours worked at the overtime rate.	(Not specified)
Memphis	Paid at overtime rate – 1.5 times regular hourly rate. 40 hour/week employees may earn overtime rate or compensatory time at a rate of 1.5 times the number of hours worked.	Overtime rate for all hours worked.	The greater of minimum 4 hours at the straight time rate or overtime rate for the time worked for 40-hour employees. Minimum 4 hours at the overtime rate for 56-hour employees.	Overtime rate for overtime hours.
Milwaukee	Paid at overtime rate – 1.5 times regular hourly rate.	Overtime rate for all hours worked.	Minimum 3 hours at the overtime rate.	Overtime rate for overtime hours.
Sacramento	(Not specified).	(Not specified)	Overtime pay at 1.5 times the regular hourly rate if hours worked in excess of standard work period. A minimum compensation of 3 hours.	(Not specified)

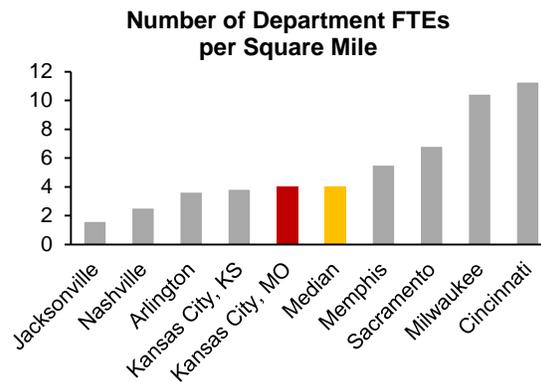
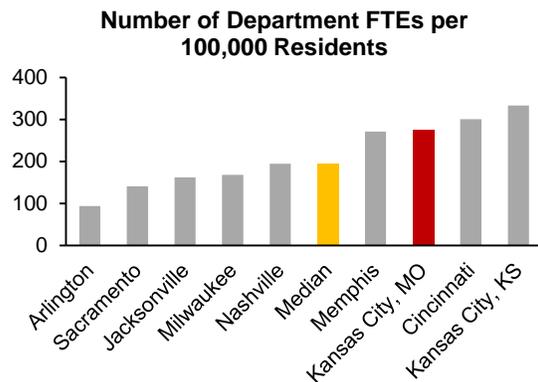
Source: Collective bargaining agreements for surveyed jurisdictions.

Employees

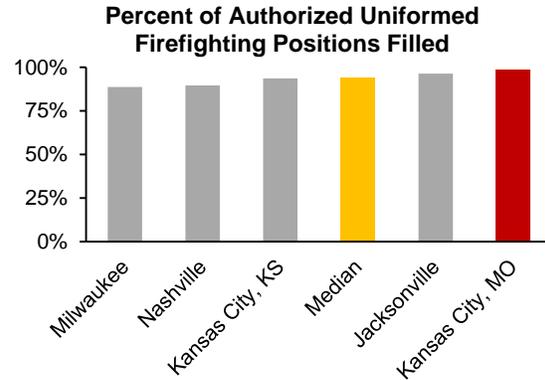
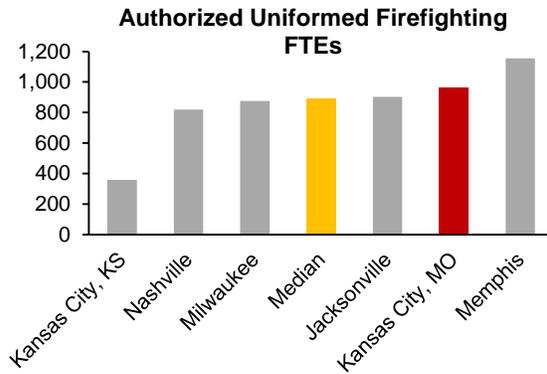
Department full-time equivalents (FTEs). The Kansas City, Missouri, Fire Department had 1,286 authorized FTE positions last fiscal year, 96 percent of which were filled. Kansas City, Missouri, had more authorized FTEs than most of the surveyed jurisdictions, but was slightly below the median for filled FTE positions as a percent of authorized positions.



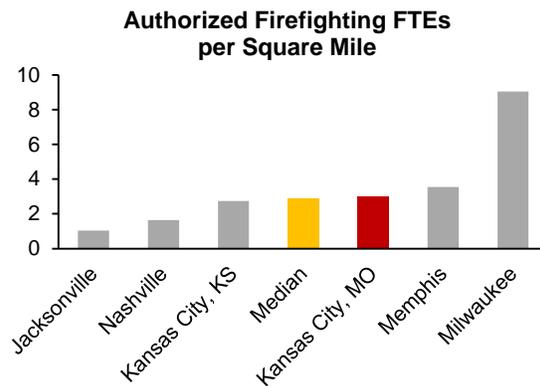
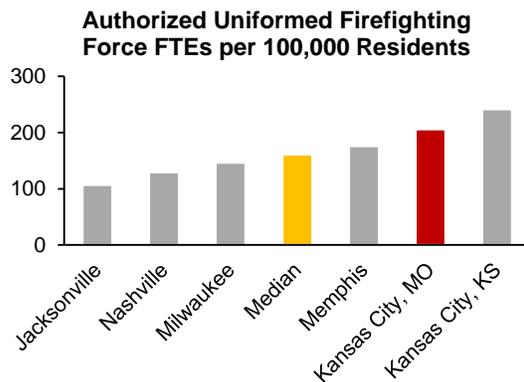
Kansas City, Missouri's, fire department had more authorized FTEs per 100,000 residents than most of the surveyed jurisdictions. The number of authorized department FTEs per square mile for Kansas City, Missouri, was at the median.



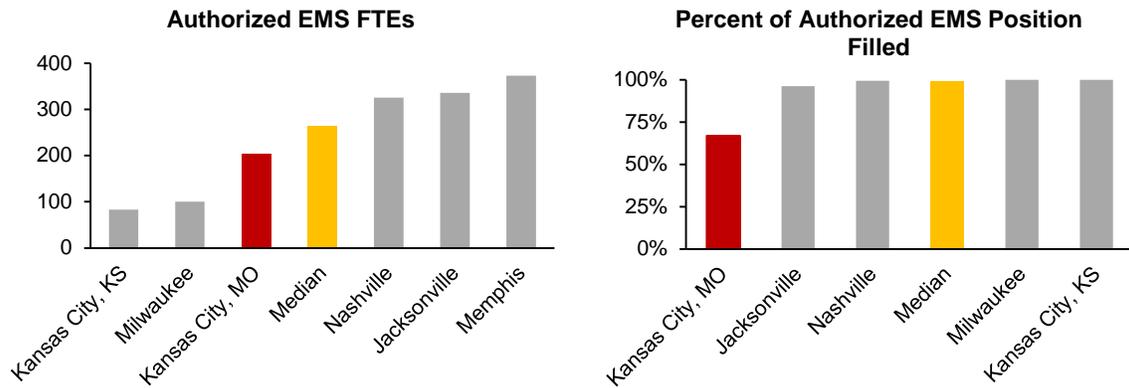
Firefighting FTEs. Kansas City, Missouri, had the second largest authorized uniformed firefighting force (961 FTEs) among the responding jurisdictions, over 98 percent of which were filled.



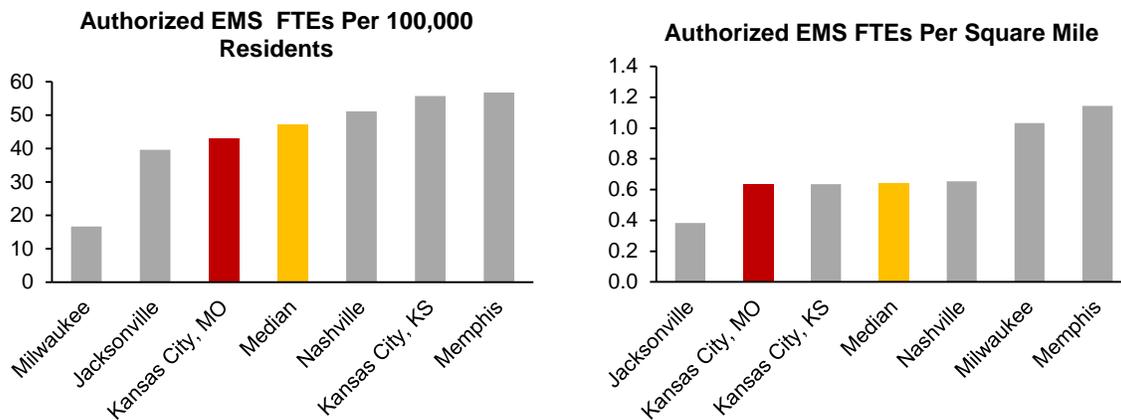
Kansas City, Missouri, had more authorized firefighters per 100,000 residents than most of the responding jurisdictions, and was slightly above the median regarding the number of authorized firefighters per square mile.



EMS FTEs. Kansas City, Missouri, had fewer authorized EMS FTEs than most of the jurisdictions that responded to the survey question. It had the lowest level of filled EMS positions – 67 percent compared to 100 percent or almost 100 percent for the other responding jurisdictions.

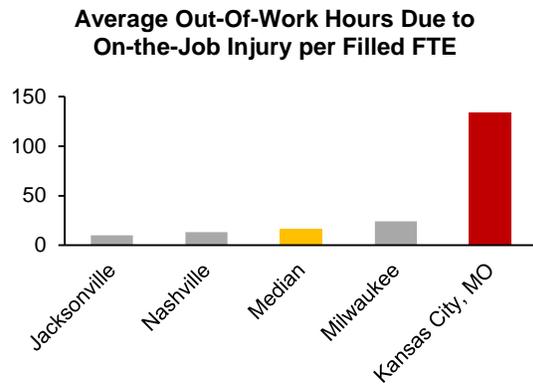
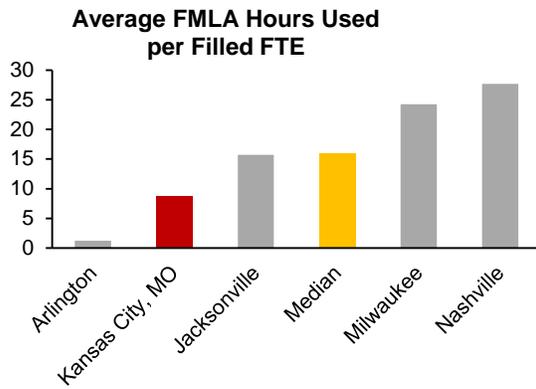
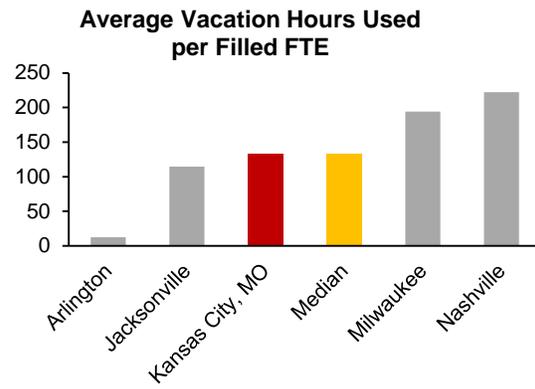
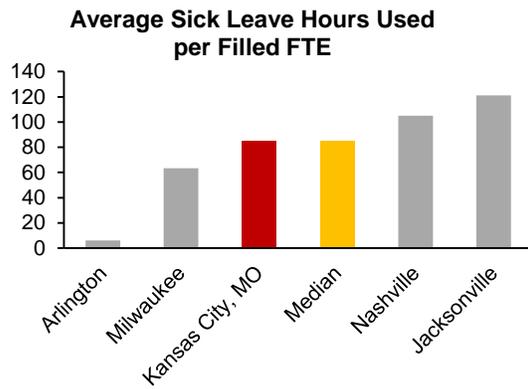


Kansas City, Missouri, had fewer authorized EMS FTEs per 100,000 residents than most of the responding jurisdictions and was close to the middle regarding the number of authorized EMS FTEs per square mile.



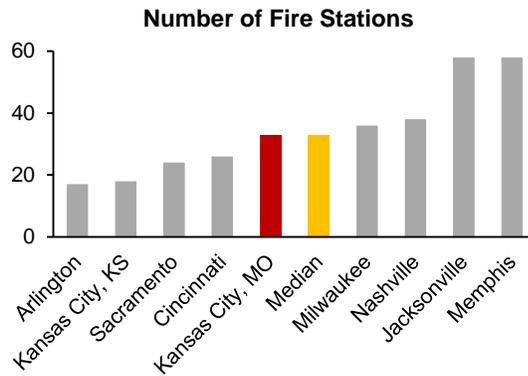
Use of Leave

The average number of sick leave and vacation hours per filled FTE used by Kansas City, Missouri, Fire Department employees was at the median in the most recently available year. They used fewer Family and Medical Leave Act (FMLA) hours on average than the median. The average number of out-of-work hours due to on-the-job injury used by Kansas City, Missouri's, fire department, however, was about eight times the median and the highest among the jurisdictions that responded to the survey question.

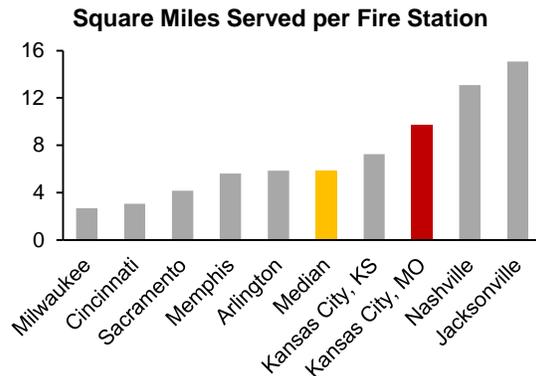
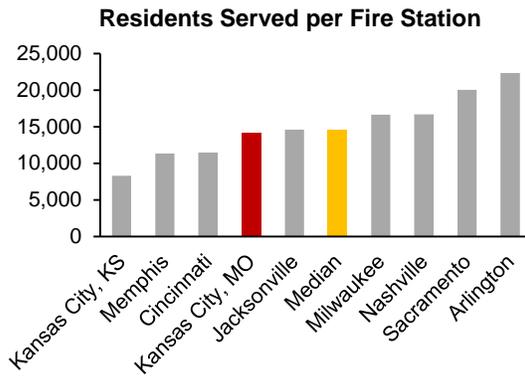


Fire Stations and Equipment

The number of fire stations in Kansas City, Missouri, was at the median of the surveyed jurisdictions.



Fire stations in Kansas City, Missouri, on average, served fewer residents but covered a larger geographic area than most of the other surveyed jurisdictions.



Comparative Study of Fire Department Use of Resources

The numbers of major types of firefighting apparatuses in the Kansas City, Missouri, Fire Department were close to the medians of the surveyed jurisdictions. Kansas City, Missouri, however, had substantially more EMS ambulances than the other jurisdictions.

Comparison of Kansas City, Missouri's, Major Apparatus Types to Surveyed Jurisdictions⁶

Jurisdiction	Engines/ Pumpers	Ladders/ Trucks	EMS Ambulances	Airport Rescue Firefighting	Heavy/Technical Rescue
Arlington	17	2	0 ⁷	1	1
Cincinnati	26	12	12	1	2
Jacksonville	55	12	43	6	1
Kansas City, KS	15	3	9	0	0
Kansas City, MO	32	12	60	1	3
Memphis	56	21	36	3	3
Milwaukee	31	12	12	0	2
Nashville	39	12	41	0	4
Sacramento	24	9	15	0	1

⁶ Only major apparatus types used by the Kansas City, Missouri, Fire Department are included in the chart. The other jurisdictions may have additional types of apparatus.

⁷ The Arlington, Texas, fire department provides emergency medical services and responds to EMS calls, but contracts with a private company to provide ambulance transports.

Fire Department Deployment

Staffing Requirement in Fire Union Agreements

Cincinnati, Nashville, Kansas City, Kansas, and Kansas City, Missouri, are the only responding jurisdictions that specify a staffing level of fire companies in their fire union agreements.⁸ A staffing level is based on the minimum number of on-duty fire suppression members sufficient to perform the necessary fire-fighting operations given the expected fire-fighting conditions.⁹

Kansas City, Missouri's, fire union agreement is the only agreement that states the city will comply with the National Fire Protection Association (NFPA) staffing level standard. NFPA standards call for each fire engine or truck to be staffed with a minimum of four on-duty staff members.¹⁰ Any changes of the NFPA's staffing standard may impact the staffing levels of Kansas City, Missouri.

Minimum Staffing Levels for Major Apparatuses

The minimum staffing level per engine/pumper and ladder/truck was three or four for all surveyed jurisdictions. Kansas City, Missouri, staffed these apparatuses on the high side.

Comparison of Minimum Staffing per Kansas City, Missouri, Fire Department Major Apparatus to Surveyed Jurisdictions

Jurisdiction	Engine/ Pumper	Ladder/ Truck	EMS Ambulance	Airport Rescue Firefighting	Heavy/Technical Rescue
Arlington	3	3	N/A	1	3
Cincinnati	4	4	2	1	4
Jacksonville	3	4	2	1	1
Kansas City, KS	3	4	2	N/A	N/A
Kansas City, MO	4	4	2	6	6
Memphis	4	4	2	3	4
Milwaukee	4	4	2	N/A	5
Nashville	3	3	2	N/A	3
Sacramento	4	4	2	N/A	4

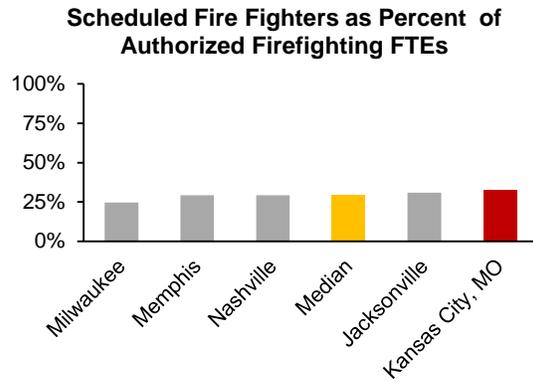
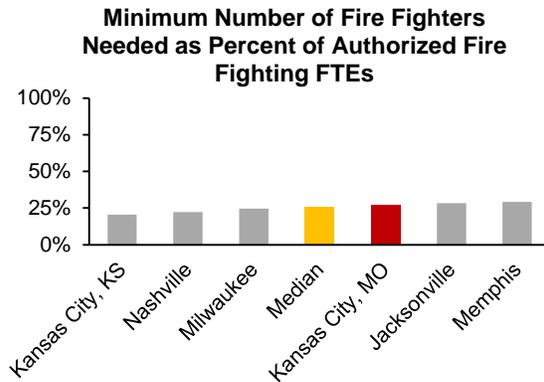
⁸ Arlington, Texas, does not have an agreement with its local fire union.

⁹ National Fire Protection Association, NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2016 Edition.

¹⁰ National Fire Protection Association, NFPA 1710, 2016 Edition.

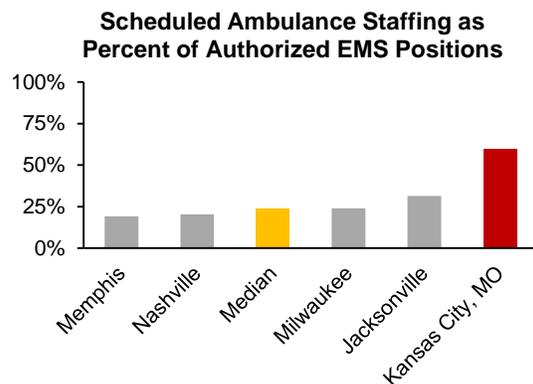
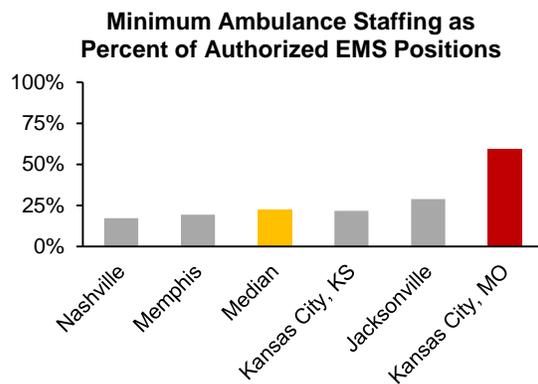
Firefighting Minimum Staffing Level

Over one-fourth of Kansas City, Missouri's, authorized firefighting FTEs are needed daily to meet the department's minimum staffing requirement, and almost one-third of authorized firefighting FTEs are scheduled to work daily. These staffing levels, although a little higher, are close to staffing levels of other jurisdictions responding to the survey questions.



EMS Minimum Staffing Level

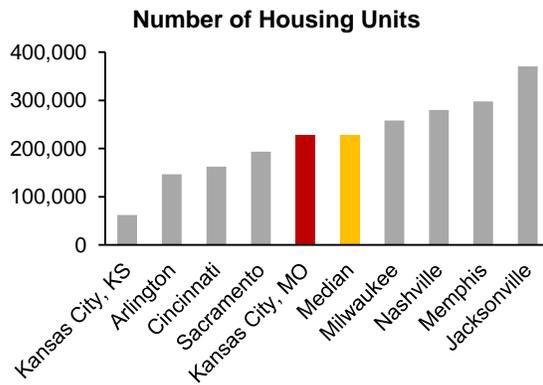
Kansas City, Missouri, needs about 60 percent of its authorized EMS FTEs to meet its daily minimum ambulance staffing level while the other jurisdictions that responded to the question need a third or less than that amount. Kansas City, Missouri, schedules about 60 percent of its authorized EMS FTEs to work daily, much more than the other responding jurisdictions.



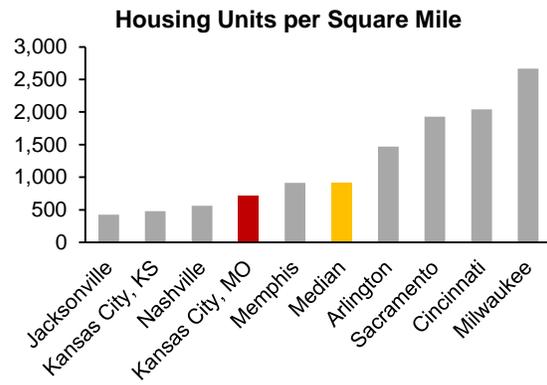
Workload

Housing Units

The number of housing units in Kansas City, Missouri, is at the median of the surveyed jurisdictions. Kansas City, Missouri, had fewer housing units per square mile than most of the surveyed jurisdictions.



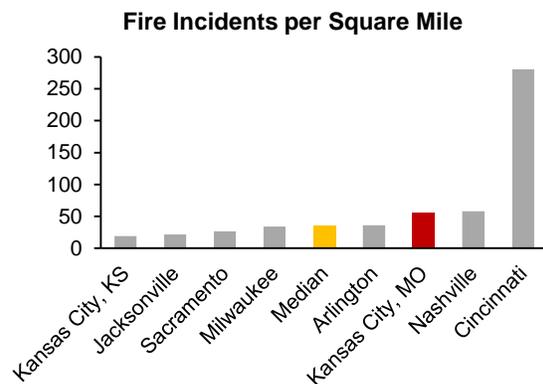
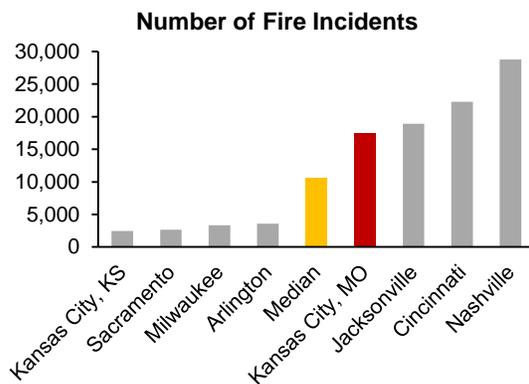
Source: U.S. Census 2015 estimates.



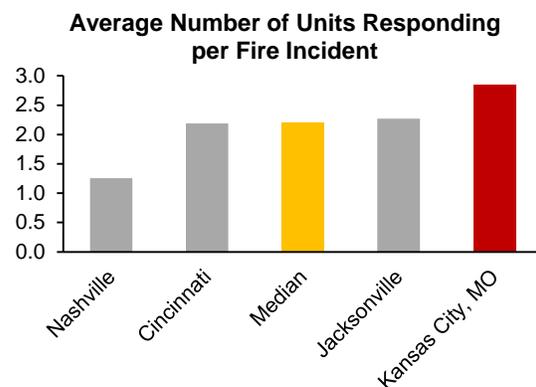
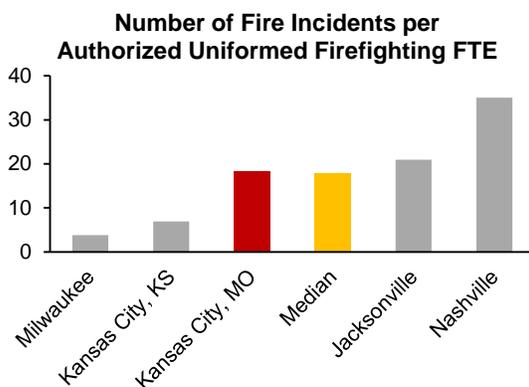
Source: U.S. Census 2015 estimates.

Fire Incidents and Responses

A fire incident is any call that does not require emergency medical dispatch and is not a technical rescue, hazardous materials incident, or specialty assist incident. It typically includes building, vehicle, grass, and dumpster fires. The number of fire incidents in Kansas City, Missouri, was higher than the median. The number of fire incidents per square mile in Kansas City, Missouri, was also higher than most responding jurisdictions.

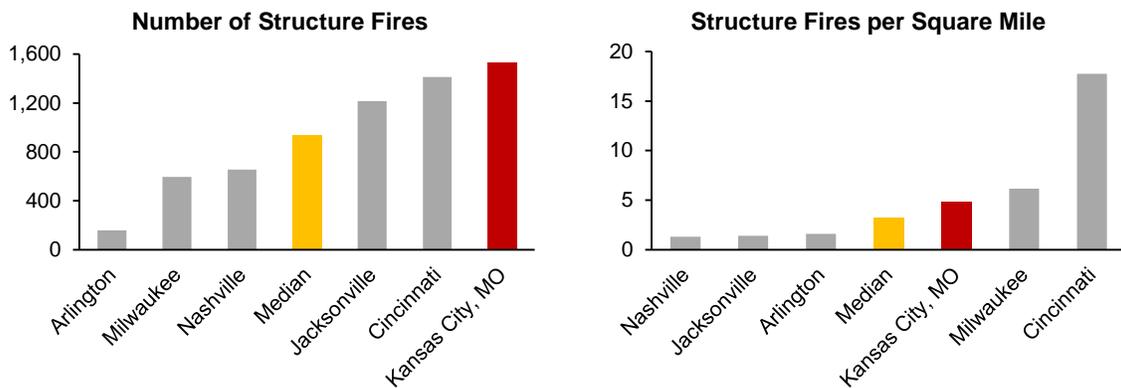


The number of fire incidents per authorized uniformed firefighting FTE in Kansas City, Missouri, was at the median. Kansas City, Missouri, used more units (fire suppression apparatuses and ambulances) to respond to fire incidents on average than other jurisdictions that responded to the question.

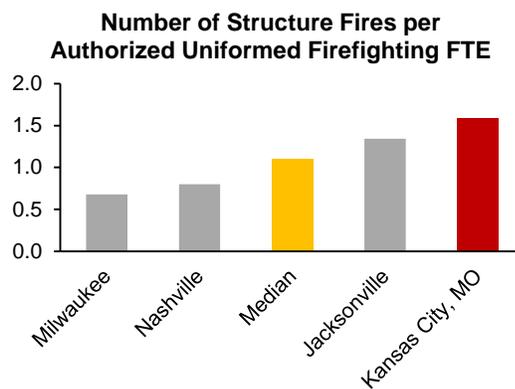


Structure Fires

A structure fire is a fire incident inside a building or structure, whether or not there was structural damage to the building. The number of structure fire incidents is comprised of residential, commercial, and industrial structure fires. Kansas City, Missouri, had more structure fire incidents than other jurisdictions responding to the survey question. It had the third highest number of structure fires per square mile.

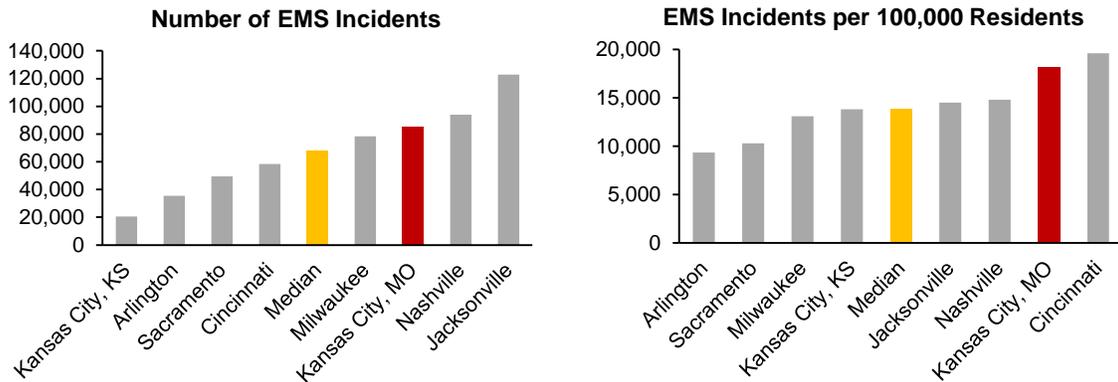


Kansas City, Missouri, also had more structure fires per authorized uniformed firefighting FTE than other responding jurisdictions.

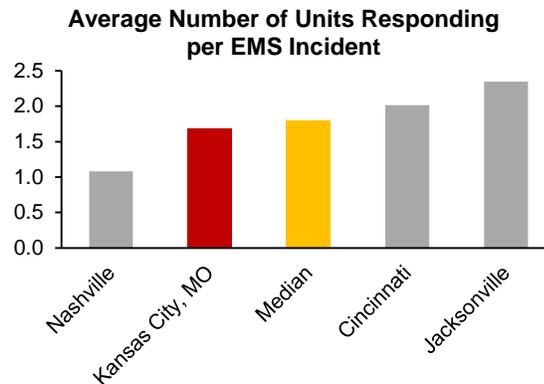


EMS Incidents and Responses

Kansas City, Missouri, had more EMS incidents, including basic life support (BLS) and advanced life support (ALS) than most responding jurisdictions. It had the second highest number of EMS incidents per 100,000 residents.



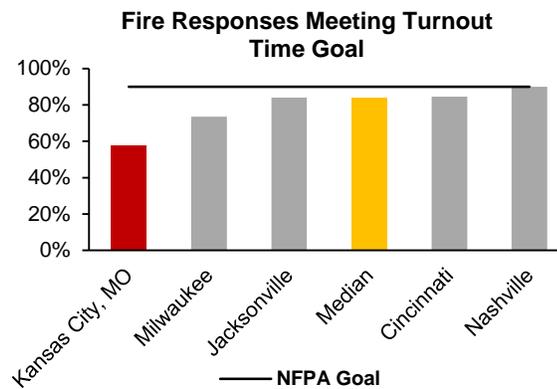
Kansas City, Missouri, used fewer units (fire apparatuses and ambulances) to respond to EMS incidents on average than most jurisdictions that responded to the question.



Response Time

Firefighting Turnout Time

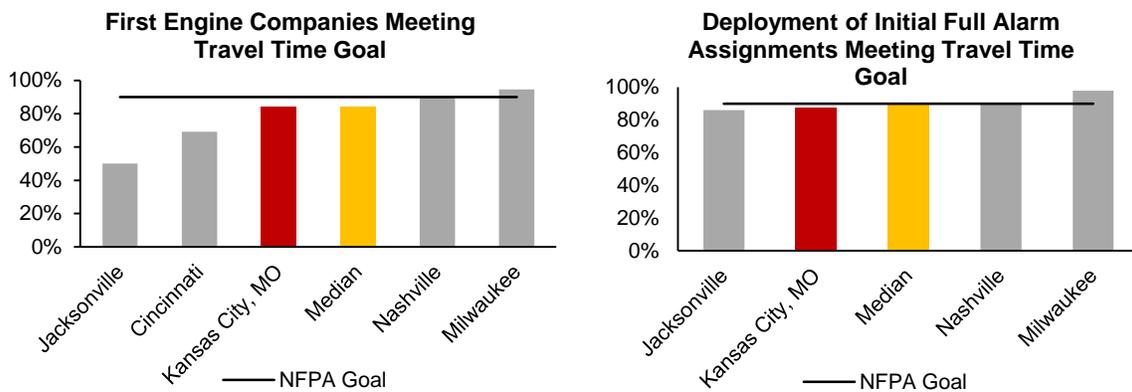
Turnout time is the time between a unit being dispatched and the unit reporting it is en route. According to National Fire Protection Association (NFPA) standards, turnout time for fire responses should be 80 seconds at least 90 percent of the time.¹¹ The percent of time Kansas City, Missouri, met the NFPA turnout time standard for fire responses was lower than the other jurisdictions responding to the survey question.



¹¹ National Fire Protection Association, NFPA 1710, 2016 Edition.

Firefighting Travel Time

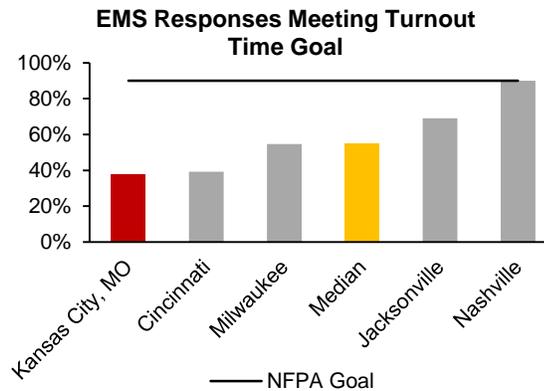
Travel time is the time between a unit reporting it is en route to the emergency incident and the unit reporting it has arrived at the scene. According to NFPA standards, travel time should be 240 seconds or less for the arrival of the first engine company at a fire suppression incident and 480 seconds or less for the deployment of required personnel, equipment, and resources at a fire suppression incident at least 90 percent of the time.¹² The percent of time Kansas City, Missouri, met NFPA's travel time standards for fire responses was at or close to the median compared to other jurisdictions that responded to the survey questions.



¹² National Fire Protection Association, NFPA 1710, 2016 Edition.

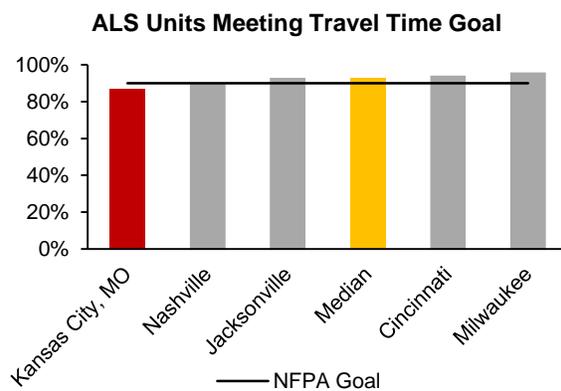
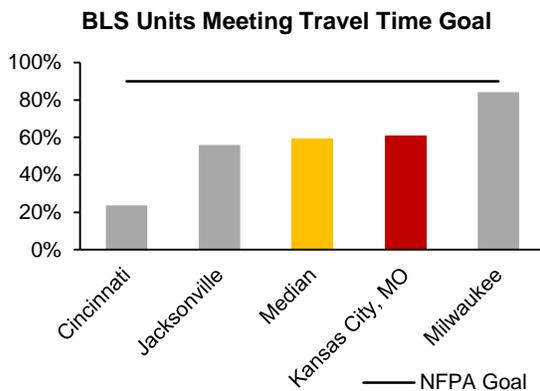
EMS Turnout Time

According to NFPA standards, turnout time for EMS responses should be 60 seconds at least 90 percent of time.¹³ The percent of time Kansas City, Missouri's, EMS responses met the turnout time standard was the lowest among the jurisdictions that responded to the question.



EMS Travel Time

According to NFPA standards, travel time for EMS responses should be 240 seconds or less for the arrival of the first responder with an automatic external defibrillator or basic life support (BLS) unit and 480 seconds or less for the arrival of an advanced life support (ALS) unit at least 90 percent of time.¹⁴ For Kansas City, Missouri's, EMS responses, the percent of its BLS units meeting the travel time goal was the second highest among the responding jurisdictions, but the percent of its ALS units meeting the goal was the lowest among the responding jurisdictions.



¹³ National Fire Protection Association, NFPA 1710, 2016 Edition.

¹⁴ National Fire Protection Association, NFPA 1710, 2016 Edition.

Appendix A

Survey Questions and Responses

Survey Questions & Responses*

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
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RESOURCES

1. Number of Employees									
a) Total number of authorized department FTEs	1,286	357	894	1,373	1,784	1,007	1,237.5	678	496
b) Total number of filled department FTEs as of the last day of your most recently available year	1,235	356	901	1,304	1,749	895	1,197.95		473
c) Number of authorized uniformed firefighting force FTEs (i.e. fire suppression staff dispatched on calls)	961	323	841	903	1,155	876	820	673	359
d) Number of filled uniformed firefighting force FTEs as of the last day of your most recently available year	946	322	849	870		777	735	516	336
e) Number of authorized EMS FTEs	202	na	841	336	373	100	325		83
f) Number of filled EMS FTEs as of the last day of your most recently available year	135	na	841	323		100	323		83
g) Number of employees who are EMTs	52	323	494	418	0	588	759		
h) Number of employees who are paramedics	88	162	355	852	336	189	304		

2. Budgeted and Actual Expenses									
a) Fire department budget for past 3 fiscal years									
Year 1 (Two Years Before Most Recent Year)	\$139,109,664	\$43,238,685	\$98,826,650	\$210,673,807	\$165,604,739	\$104,536,907	\$114,455,100	\$99,073,318	\$52,932,527
Year 2 (One Year Before Most Recent Year)	\$149,387,258	\$43,805,214	\$109,022,440	\$216,540,128	\$172,888,781	\$101,020,306	\$119,119,200	\$106,175,364	\$52,645,333
Year 3 (Most Recent Year)	\$154,288,257	\$46,640,614	\$111,355,840	\$220,873,448	\$172,259,672	\$111,311,820	\$124,385,900	\$112,212,191	\$52,072,247

Comparative Study of Fire Department Use of Resources

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
b) Fire department actual expenses for past 3 fiscal years									
Year 1 (Two Years Before Most Recent Year)	\$152,876,812	\$43,225,776	\$98,826,650	\$204,650,884	\$163,014,226	\$102,677,571	\$113,389,098	\$98,847,381	\$55,298,643
Year 2 (One Year Before Most Recent Year)	\$153,370,165	\$43,561,354	\$109,022,440	\$218,288,494	\$165,503,264	\$101,974,784	\$116,948,664	\$106,684,196	\$54,761,210
Year 3 (Most Recent Year)	\$163,958,082	\$46,585,830	\$111,355,840	\$218,701,228	\$176,101,551	\$127,690,693	\$124,384,360	\$113,252,845	\$54,089,703
c) Firefighting/fire suppression budget for past 3 fiscal years									
Year 1 (Two Years Before Most Recent Year)	\$99,105,402	\$34,240,204	\$91,359,470	\$143,413,982	\$94,223,333	\$91,928,998	\$76,591,150	\$61,707,251	\$31,877,031
Year 2 (One Year Before Most Recent Year)	\$105,962,682	\$33,896,932	\$94,136,590	\$146,247,448	\$99,084,411	\$87,842,676	\$77,302,300	\$67,777,618	\$30,700,265
Year 3 (Most Recent Year)	\$110,195,009	\$35,965,401	\$97,760,950	\$147,000,477	\$99,706,215	\$97,124,869	\$79,129,650	\$71,529,094	\$33,783,964
d) Firefighting/fire suppression actual expenses for past 3 fiscal years									
Year 1 (Two Years Before Most Recent Year)	\$106,683,524	\$34,350,133	\$91,359,470	\$134,128,460	\$96,624,509	\$90,513,733	\$75,504,202	\$66,482,396	\$33,202,461
Year 2 (One Year Before Most Recent Year)	\$108,631,535	\$33,517,391	\$94,136,590	\$145,937,937	\$100,281,016	\$90,131,076	\$76,196,976	\$72,336,587	\$31,542,425
Year 3 (Most Recent Year)	\$113,243,559	\$36,084,646	\$97,760,950	\$144,742,951	\$106,295,376	\$112,216,379	\$79,359,267	\$75,340,154	\$36,022,335
e) EMS budget for past 3 fiscal years									
Year 1 (Two Years Before Most Recent Year)	\$6,145,478	N/A	\$91,359,470	\$54,725,528	\$39,537,212		\$27,492,550	\$16,662,592	\$13,683,214
Year 2 (One Year Before Most Recent Year)	\$7,518,611	N/A	\$94,136,590	\$57,877,313	\$40,984,887		\$30,416,300	\$17,025,832	\$14,811,508
Year 3 (Most Recent Year)	\$7,500,594	N/A	\$97,760,950	\$59,626,458	\$40,073,235		\$34,288,850	\$16,771,266	\$11,054,981
f) EMS actual expenses for past 3 fiscal years									
Year 1 (Two Years Before Most Recent Year)	\$7,146,971	N/A	\$91,359,470	\$57,598,324	\$37,435,259		\$28,450,353	\$13,957,036	\$14,711,783
Year 2 (One Year Before Most Recent Year)	\$8,220,103	N/A	\$94,136,590	\$58,121,768	\$35,648,876		\$31,018,100	\$13,778,049	\$15,258,898
Year 3 (Most Recent Year)	\$8,943,870	N/A	\$97,760,950	\$58,857,807	\$38,024,498		\$34,897,850	\$14,684,030	\$10,527,127

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
3. Total number of fire stations	33	17	26	58	58	36	38	24	18

RESPONSE TIME

4. Does your department use NFPA 1221 for alarm handling time goals and NFPA 1710 for response time goals for fire suppression, ALS and BLS?									
a) If yes , please provide your actual performance:	Y	Y	Y	Y	Y	Y	Y		Y

Alarm processing time (time between call received from a secondary answering point or communication center to the call dispatched)									
FIRE: percent of alarms that met the goal of 60 seconds	55		45.6	93		49.7	93		
EMS: percent of alarms that met the goal of 90 seconds	60		88.5	99		47.8	90		

Turnout time (time between call dispatched to units responded)									
FIRE: percent of fire responses that met the goal of 80 seconds	58		84.6	84		73.6	90		
EMS: percent of EMS responses that met the goal of 60 seconds	38		39.2	69		54.6	90		

Travel time (time between units responded to unit(s) arrived)									
FIRE: percent of first engine companies arriving at a fire suppression incident that met the goal of 240 seconds	84		69.2	50		94.7	90		
FIRE: percent of deployment of initial full alarm assignments at a fire suppression incident that met the goal of 480 seconds	87		N/A	86		97.8	90		
EMS: percent of BLS arriving at an emergency medical incident in 240 seconds	61		23.7	56		84.3	N/A		
EMS: percent of ALS units arriving at an emergency medical incident in 480 seconds	87		94.1	93		95.8	90		

Comparative Study of Fire Department Use of Resources

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
5. Do you use EMD (Emergency Medical Dispatch)?									
	Y	Y	Y	Y	Y	Y	Y		Y
If Yes , do you pre-alert (dispatch prior to receiving the final determinate)?	N	Y	Y	Y	Y	Y	Y		
If Yes , do you stand down first response for lower priority determinates?		Y	N	N	N	N	Y		

WORKING HOURS

6. a) Work schedule for firefighters (e.g. 24/48, 48/96, Berkely Rotation, etc.)	24/48	24/48	24/48	24/48	56 - California Schedule	24/48	24/48	48/96 Shift Rotation	24/48
b) Number of hours worked per year for a firefighter	2,574	2,912	2,592 minus vacation	2,912	2,880	2,756	2,652	2,912	1,728
c) Number of hours worked per shift for a firefighter	24	24	24	24	24	24	24	48	24
d) Maximum work hours at regular pay rates in a work period for a firefighter	212 hours in 28 day cycle	212	96	204	112	96 or 120	204	182	53
e) Work schedule for EMS employees assigned to ambulance (e.g. 24/48, 40 hours/week, etc.)	24/48 for static	N/A	24/48	24/48	56	24/48	4-12 hr shifts 4 off	48/96 Shift Rotation	24/48
f) Number of hours worked per year for an EMS employee assigned to ambulance	2080 or 2574	N/A	2,592 minus vacation	2,912	1,440	2,756	2,304	2,912	1,728
g) Number of hours worked per shift for an EMS employee assigned to ambulance	10, 13.3 or 24	N/A	24	24	12	24	12	48	24
h) Maximum work hours at regular pay rates in a work period for an EMS employee assigned to ambulance	40 hours in a 7 day cycle	N/A	96	204	56	96 or 120	40 hours per week	182	53

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
STAFFING AND DEPLOYMENT									
7. Number of each type of apparatus in your department and staffing level per shift (i.e. minimum required staffing level and assigned or scheduled staffing level including relief factor):									
a) Engines/Pumpers									
Total Number	32	17	26	55	56	31	39	24	15
Minimum FTE	128	51	104	167	224	124	117	95	45
Assigned FTE	160	51 or 68	104	184		124	156	95	46
b) Ladders/Trucks									
Total Number	12	2	12	12	21	12	12	9	3
Minimum FTE	48	6	48	48	84	48	36	36	12
Assigned FTE	60	6 or 8	48	46		48	48	36	12
c) Quints									
Total Number	0	5	0	0	4		n/a	0	4
Minimum FTE	0	15		0	16			0	16
Assigned FTE	0	15 or 20		0				0	16
d) EMS/Rescue vehicles (non-transport)									
Total Number	0	5	3	0	0		n/a	0	0
Minimum FTE	0	10	3	0	0			0	
Assigned FTE	0	10	3	0				0	
e) EMS ambulances (transport capable)									
Total Number	60	NA	12	43	36	12	41	15	9
Minimum FTE	120	NA	24	92	72	24	82	30	18
Assigned FTE	120	NA	24	99		24	82	30	18
f) Tenders/Tankers									
Total Number	1	NA	0	13	0		n/a	0	0
Minimum FTE	0	NA		10	0			0	
Assigned FTE	0	NA		13				0	
g) Airport Rescue Firefighting (ARFF) apparatus									
Total Number	1	1	1	6	3		n/a	0	0
Minimum FTE	6	1	1	7	8			0	
Assigned FTE	8	2 or 3	1	21				0	

Comparative Study of Fire Department Use of Resources

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
h) Heavy/Technical Rescue									
Total Number	3	1	2	1	3	2	4	1	0
Minimum FTE	18	3	8	1	12	10	12	4	
Assigned FTE	24	3 or 4	8	3		10	20	4	
i) Other									
Total Number	9	3	5	32	0		2	4	7
Minimum FTE	19	3	5	27	0		4	0	7
Assigned FTE	20	3 or 6	5	32			0	0	7

8. EMS deployment model (a) Static; (b) Dynamic/System Status Management;									
(c) Mixed	c	b	a	a	a	a	a	a	a

9. Effective response (the minimum number of equipment and firefighters that must reach a specific emergency incident location within a maximum prescribed travel/driving time):									
a) Type of Equipment	Pumper/Engine	Engine	Engine Company				Engine		
# of Equipment	2	3	3				3		
# of Firefighters	8	9	12				9		
b) Type of Equipment	Aerial/Truck	Truck	Ladder Company				Truck		
# of Equipment	1	2	2				1		
# of Firefighters	4	8	8				3		
c) Type of Equipment	Rapid Intervention Team	Command	Rapid Assist Companies				Heavy Rescue		
# of Equipment	1	1	2				1		
# of Firefighters	4	2	8				3		
d) Type of Equipment	Staffing (any suppression unit that has a minimum of four personnel)		Heavy Rescue Companies						
# of Equipment	1		1						
# of Firefighters	4		4						

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
e) Type of Equipment	Battalion Chief								
# of Equipment	1								
# of Firefighters	2								
f) Type of Equipment	Ambulance								
# of Equipment	1								
# of Firefighters	2								

10. Average DAILY staffing level for fire suppression:									
a) Minimum number of fire fighters needed to meet the minimum staffing level	259	75	193	255	338	216	183	135	74
b) Number of fire suppression staff scheduled to work daily including relief factor	312	102	193	279	338	216	240		
c) Average daily number of fire suppression staff actually reporting to work before using overtime	259	84	186	238	338	Varies	183		

11. Average DAILY staffing level for ambulance:									
a) Minimum number of ambulance employees needed to meet the minimum staffing level	120	N/A	24	97	72	24	56	30	18
b) Number of ambulance employees scheduled to work daily including relief factors	120	N/A	24	106	72	24	66		
c) Average daily number of ambulance employees actually reporting to work before using overtime	120	N/A	18	81	72	Varies	56		

Comparative Study of Fire Department Use of Resources

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
WORKLOADS (most recently available year):									
12. Number of incidences and responses:									
a) Fire									
# of Incidences	17,558	3,570	22,287	18,919		3,322	28,753	2,662	2,480
# of Responses (Individual unit responding)	49,996		48,725	42,984			36,056		
b) EMS -- BLS									
# of Incidences			46,649			36,551	N/A		
# of Responses (Individual unit responding)			93,298						
c) EMS -- ALS									
# of Incidences	85,185	35,509	11,663	122,895		41,933	94,000		
# of Responses (Individual unit responding)	143,117		24,126	288,423			101,747		
c1) EMS -- BLS + ALS									
# of Incidences	85,185	35,509	58,312	122,895		78,484	94,000	49,475	20,575
# of Responses (Individual unit responding)	143,117		117,424	288,423			101,747		
d) Inter-facility medical transports									
# of Incidences	11,875		0	0			N/A		
# of Responses (Individual unit responding)	11,875			0					
e) Other									
# of Incidences		5,775		6,500		11,361	N/A	24,171	
# of Responses (Individual unit responding)				8,526					
13. Number of structure fire incidents	1,529	159	1,412	1,214		595	655		

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
14. Utilization for fire suppression and EMS employees									
The number of <u>hours on-call</u> divided by the number of resource unit hours produced									
Fire Suppression	7.52								
Static Deployed EMS	26.52								
Dynamic-Deployed EMS	45.25								
The number of <u>responses</u> divided by the number of resource unit hours produced									
Fire Suppression									
Static Deployed EMS									
Dynamic-Deployed EMS									

OVERTIME

15. Department overtime costs and hours for past 3 fiscal years:									
a) Budgeted overtime costs									
Year 1 (Two Years Before Most Recent Year)	\$5,890,686	\$2,345,505	\$3,500,000	\$3,212,853	\$8,111,650	\$2,413,187	\$3,732,800	\$4,140,796	
Year 2 (One Year Before Most Recent Year)	\$6,900,206	\$2,524,726	\$3,900,000	\$3,201,137	\$11,121,450	\$1,969,018	\$3,732,800	\$4,830,444	
Year 3 (Most Recent Year)	\$6,860,069	\$2,485,845	\$4,500,000	\$4,548,081	\$8,437,000	\$3,836,099	\$3,732,800	\$3,322,314	
b) Actual overtime costs									
Year 1 (Two Years Before Most Recent Year)	\$8,454,501	\$2,323,131	\$4,500,000	\$2,411,628	\$11,919,550	\$1,110,107	\$3,337,074	\$13,080,123	
Year 2 (One Year Before Most Recent Year)	\$12,944,298	\$2,234,894	\$4,600,000	\$5,545,433	\$10,918,548	\$1,262,503	\$3,748,910	\$13,727,292	\$1,304,743
Year 3 (Most Recent Year)	\$16,104,826	\$1,996,797	\$6,100,000	\$11,142,671	\$10,047,299	\$1,597,599	\$4,571,505	\$12,690,181	\$903,637
c) Budgeted overtime hours									
Year 1 (Two Years Before Most Recent Year)				N/A	NA				
Year 2 (One Year Before Most Recent Year)				N/A	NA				34,369
Year 3 (Most Recent Year)				N/A	NA				23,715

Comparative Study of Fire Department Use of Resources

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
d) Actual overtime hours									
Year 1 (Two Years Before Most Recent Year)		15,064		64,405	NA	68,000			
Year 2 (One Year Before Most Recent Year)		12,319		154,476	NA	75,475			
Year 3 (Most Recent Year)		6,250		312,230	NA	100,485			

USE of LEAVE (most recently available year)									
16. a) Aggregated sick leave usage	105,017	2,190		158,080	NA	56,804	125,723	53,950	
b) Aggregated N-day (Kelly day) usage	305,845	NA		N/A	NA	181,049	114,084		
c) Aggregated FMLA usage	10,790	431		20,517	NA	21,682	33,169	4,666	
d) Aggregated vacation	164,658	4,380		149,699	NA	173,823	266,167	89,275	
e) Aggregated out-of-work days due to worker's comp	165,314			12,911	NA	21,561	16,055	23,782	

WAGE RANGES

17. Annual wage ranges of following positions:									
a) Fire Apparatus Operator									
Min.	\$64,644	\$72,101	\$71,875	\$35,916	\$58,351	\$58,985	\$53,443	\$75,127	\$70,847
Max.	\$74,568	\$75,706		\$54,540		\$82,933	\$69,474	\$91,318	\$74,107
b) Firefighter									
Min.	\$36,456	\$53,532	\$66,551	\$45,996	\$53,901	\$47,108	\$48,384	\$69,547	\$36,754
Max.	\$74,568	\$71,809		\$62,712		\$78,402	\$62,895	\$84,535	\$69,423
c) Fire Captain									
Min.	\$78,696	\$91,588	\$89,551	\$75,132	\$66,248	\$83,302	\$61,795	\$88,332	\$75,347
Max.	\$81,480	\$96,168		\$82,980		\$100,961	\$80,333	\$107,369	\$78,775
d) Paramedic									
Min.	\$45,624		\$73,331		\$39,915	\$47,108	\$53,443	N/A	
Max.	\$69,708					\$78,402	\$69,474	N/A	
e) EMT									
Min.	\$36,876		\$66,551				\$43,684	N/A	
Max.	\$61,056						\$56,788	N/A	

Jurisdiction	Kansas City, MO	Arlington, TX	Cincinnati, OH	Jacksonville, FL	Memphis, TN	Milwaukee, WI	Nashville, TN	Sacramento, CA	Kansas City, KS
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EMERGING PRACTICES**18. Have you used any strategies to reduce Fire Department overtime?**

Arlington	The department budgets for the average number of employees who will be out due to sick leave and vacation and over hires new employees throughout the year to ensure we have trained replacements available to keep pace with attrition throughout the year. The Department reduced unscheduled overtime by 82% from FY10 to FY16. Arlington FD has the lowest per capita cost in our region.
Cincinnati	Provided extra incentives for selling back sick pay and making it 1 for 1 instead of 1 for 3. Restricted overtime for members who have used more than 120 hours in a year.
Jacksonville	Under a collective bargaining agreement in 2012, the city imposed a strict 5% cap for employee leave. 5% over the assigned daily staffing amounted to approximately 19 people off per day. This worked for a while but then FMLA requests skyrocketed. They were not held against a leave cap. Next we adjusted recruit weekend rides to help alleviate OT on weekends but this was followed by shortening the recruit training program from 12 weeks to 6 to increase our relief numbers. Our current OT issues are directly related to our historical low relief level of 9% over minimum staffing levels. Normally we're 23%.
Milwaukee	Managed care program for injured members (contact MFD for more information). A full Health & Wellness program.
Nashville	Nashville Fire Department utilizes 40 Hour staff Positions to alleviate some overtime, Chief Grade Officers backfill Field Operations Chief positions.
Kansas City, KS	Trading Time, please review Legislative Auditor's report on Trading Time. Also the FD is utilizing Trainee Program.

* Due to space limitations, some explanatory comments have been excluded. Some answers were changed based on further clarifications with jurisdictions or to normalize answers across jurisdictions.