2018 ESO FIRE TRENDS REPORT

INSIGHTS AND BEST PRACTICES FOR FIRE DEPARTMENTS

AUTHORS

TIM IRELAN, DIRECTOR OF BUSINESS DEVELOPMENT, FIRE PRODUCTS, ESO
SHELLEY KOEGLER, VP OF FIRE DIVISION, ESO

WITH

BILL GARDNER, CFO, CFE, EMT-P, FIRE CHIEF/ HSEM COORDINATOR

eso

CONTEXT AND OVERVIEW FOR THE FIRE TRENDS REPORT

Earlier this year, we explored four predictions we believed would have the biggest impact on fire departments in 2018. Among those predictions, visibility and accessibility to data was highlighted as essential – and we're seeing that play out. Data and proper data analysis enable quicker responses and smarter decisions about lead indicators for certain types of fires, injuries and illnesses. Additionally, we see integration of data and sharing of information between fire departments and EMS organizations. Data will allow for better anticipating call types and creating smarter response plans, leading to the ability to provide safer events for responders.

Bottom line, the use of data to make more informed decisions is transforming, and will continue to transform, fire departments as they look to serve their communities.

And we have data to share.

We are launching this inaugural *ESO Fire Trends Report* to help fire leaders explore the following questions, among others:

The appropriate metrics for evaluating the success of your fire department will vary depending upon a number of factors, including the size of population served and geographic location. In some cases, it is less about identifying "success" and more about understanding your community and its unique needs. However, we believe an objective look at aggregate data across the United States can give you a good idea how you are performing compared to your peers.

The purpose of this Report is to serve as a point of reference for fire departments to identify which areas are in alignment and which areas represent opportunity for improvement – or at least further assessment and evaluation. This quantitative approach to measuring performance gives fire departments a framework to continually refine tactics, improve efficiency and outcomes, and allocate resources appropriately.

HOW QUICKLY DO WE RESPOND TO A CALL?

WHAT IS OUR AVERAGE TRAVEL TIME TO A CALL?

HOW MANY OF OUR CALLS ARE EMS CALLS VS. FIRE CALLS?

WHAT ARE THE MOST COMMON PROPERTY TYPES?

WHAT IS OUR MOST COMMON RESPONSE?

The *ESO Fire Trends Report* uses data compiled from nearly 198 fire departments from January 1, 2018 – August 31, 2018.

198 FIRE DEPARTMENTS

This Report is retrospective and looks at aggregate data from January 1, 2018 – August 31, 2018. There are no universal rules designed around these trends. The purpose of the Report is to be informative and directional, but it is not intended to be a scientific study – nor is it intended to be comprehensive in nature. We hope it serves as a body of literature that adds to the discussion and conversation around best practices for each of the trends identified in this Report to improve overall outcomes.

THE KEY TRENDS IDENTIFIED ARE:

PERCENT OF EMS CALLS VS. FIRE CALLS

FIRST APPARATUS TURNOUT TIME

FIRST APPARATUS TRAVEL TIME

TOP 3 PROPERTY TYPES VISITED AND PURPOSE OF VISIT

ESTIMATED PROPERTY LOSS FOR TOP 4 PROPERTY TYPES

We hope you find this *Fire Trends Report* helpful, enlightening, and empowering. We're always here to answer any questions, clarify any of the data, and share our expertise. Enjoy.

KEY FINDINGS

The *ESO Fire Trends Report* looked at 603,000 calls from January 1, 2018-August 31, 2018 across a number of events. At a macro level, the Report revealed the following findings:

Fire departments, by and large, respond to more EMS calls than Fire calls.

Based on our data, we see that EMS calls accounted for

MORE THAN

60%

of all calls, while fire calls accounted for less than 30 percent of all calls. Ten percent were left blank.

30%

FIRE-RELATED CALLS

First apparatus turnout time and travel time look positive.

CLOCKING IN

First apparatus turnout time was clocking in at

01:11s

while typical travel time is 4 minutes and 41 seconds.

Advanced or basic life support was the most common response.

22% OF CALLS

were for Basic Life Support; 18 percent were for Advanced Life Support. The next closest response is simply an investigation at 11 percent.

Family dwellings are the most common property type.

FIRE AND EMS

37%

One or two-family dwelling structures accounted for 37 percent of all calls while multifamily dwelling properties accounted for 14 percent of all calls.

FIRE ONLY

12%

For fire-specific calls, building fires were the most common type of call at 12 percent.

While, in aggregate, one or two-family dwellings represented the largest financial loss, construction sites and other industrial facilities account for the largest loss per individual property.
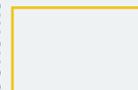
$66M

FAMILY DWELLINGS

CONSTRUCTION SITES

$12M

One or two-family dwellings represented more than

$66M

in property loss. Construction sites accounted for more than $12M in loss, averaging $50,000 in loss per property.

FIRE TRENDS

EMS VS. FIRE CALLS

This is an issue that has been trending for some time – the increase in EMS calls. With the advent of new, more fire-resistant building materials – as well as an increase in community risk reduction programs – fire calls tend to be on a downward trend overall, while many departments are looking to hire paramedics or firefighter/paramedic hybrids to adjust to the changing call volume.

In our data, we see that 64 percent of all calls were EMS calls, while 26 percent of calls were fire-based calls. Ten percent were left blank. Figure 1 shows this breakdown.

For fire-specific calls, the data show the top five calls are: building fires (12%), gas leaks (8%), downed powerline (6%), vehicle fire (6%), and brush fire (6%). While the top 5 make up only 38 percent of all fire-related calls, the remaining 62 percent are a collection of a wide variety of calls. Figure 2 shows fire-specific calls.

RECOMMENDED ACTION

If you're department doesn't currently offer EMS services, use the opportunity to collaborate more closely with EMS agencies in your community. The ability to share data and insights across organizations can help improve patient outcomes as well as improve firefighter safety.

COLLABORATE WITH EMS

In particular, collaboration between EMS and fire departments around safety programs – including healthcare, prevention, and fire safety – can provide much broader education to help improve the health and safety of a community.
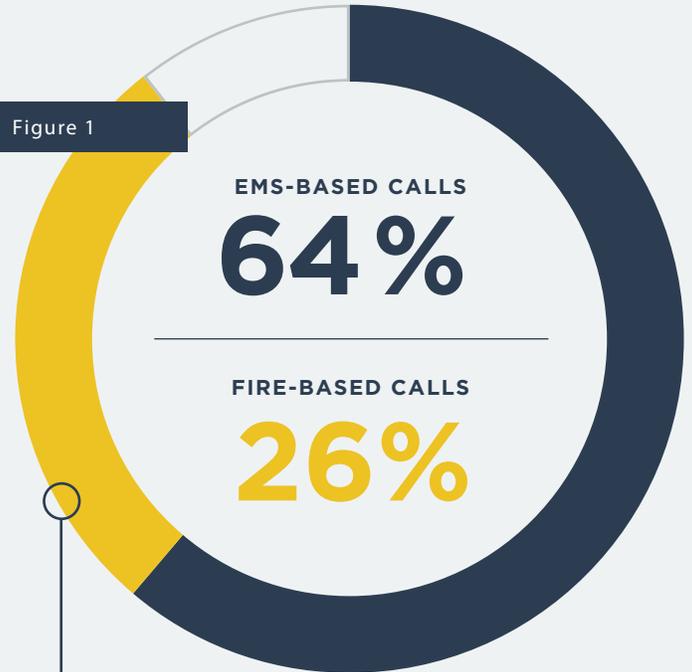
Figure 1

EMS-BASED CALLS
64%

FIRE-BASED CALLS
26%

Figure 2

TOP 5 FIRE INCIDENTS

|	
BUILDING FIRES	12%
GAS LEAKS	8%
DOWNED POWERLINE	6%
VEHICLE FIRE	6%
BRUSH FIRE	6%

38%

FIRE TRENDS

APPARATUS TURNOUT AND TRAVEL TIME

According to NFPA 1710, the standard turnout time is 60 seconds. Our data indicate departments take the standard to heart, with an average turnout time of 1 minute, 11 seconds.

The average travel time is 4 minutes, 41 seconds. Average travel time, of course, will vary depending on location of the station, location of the call, traffic patterns, road closures, etc. Figure 3 shows average turnout time and average travel time.

Figure 3

STANDARD TURNOUT TIME
60 SECONDS

AVERAGE TURNOUT TIME
1 MIN 11 SEC
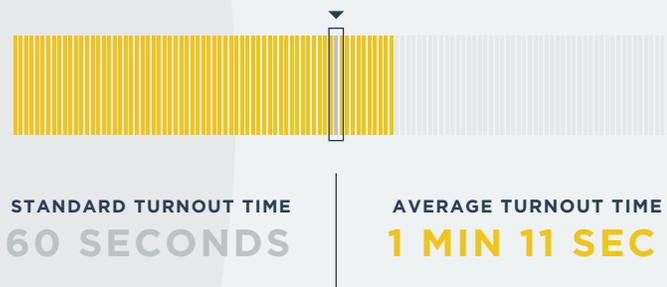
AVERAGE TRAVEL TIME
0:04:41

RECOMMENDED ACTION

Your crews want to do the right thing for the customer; however, sometimes they may not know exactly how long they are taking for turnout. The ability to add timers with a notification system showing turnout time as they are headed to the truck, as well as the monthly sharing of turnout times with each crew provide real-time knowledge of their performance.

**! ADD TIMERS WITH NOTIFICATIONS**

When tracking travel time against the NFPA 1710 standard, your agency may be in line with NFPA 1720 based on population density. Rural and more suburban areas create different distance challenges. For those with distance challenges, set an acceptable standard based on items for NFPA 1720 or what your agency can develop with community leaders. Then measure those data points.

FIRE TRENDS

PROPERTY TYPES

In 2017, there were approximately 136M housing units in the United States according to Statista, so it's no surprise the most common property types that fire departments respond to are housing units – whether single-family units or multifamily units.

Single-family units accounted for 37 percent of all calls, while multifamily units accounted for 14 percent of all calls. Together, they accounted for the majority of calls at 51 percent. Figure 4 shows the most common property types responded to by fire departments.

Figure 4

TOTAL # OF HOUSING UNITS

136M

PERCENT OF ALL RESPONSES

51%

MULTIFAMILY UNITS
14%

SINGLE-FAMILY UNITS
37%
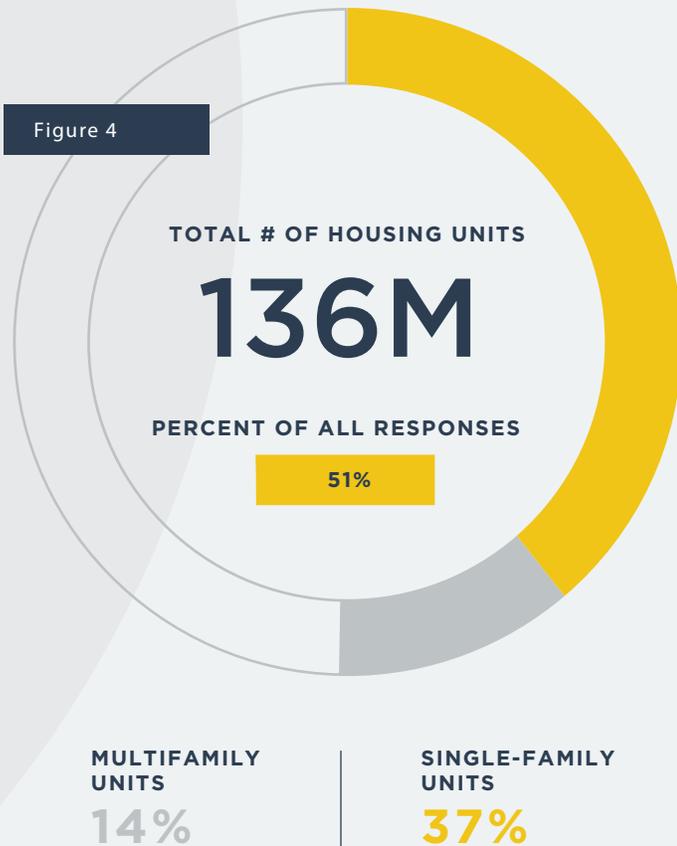
RECOMMENDED ACTION

When talking about single-family homes, the ability to positively impact the largest number of fires are target prevention programs, such as smoke detector programs, home evacuation programs, and ensuring residents are able to adequately mark their address so the homes are easy to find at night or in sight-hindering conditions.

MAKE A PREPLAN

For multifamily structures, make sure your responding companies have the ability to get to the right building, access to the riser room, and key access to building mechanical rooms. A good preplan based on data in properties and inspection actions can make all the difference. This type of information can easily be turned into two-page quick references that can be available for first-responding units to get information safely and quickly.

FIRE TRENDS

RESPONSE TYPES

With the majority of calls fire departments respond to being EMS calls, it's no shock that most responses are EMS-related.

Basic Life Support accounted for 22 percent of all calls, while Advanced Life Support accounted for 18 percent of all calls. Combined, the top 5 actions taken account for 57 percent of all response types. Figure 5 shows the action taken by firefighters in response to a call.
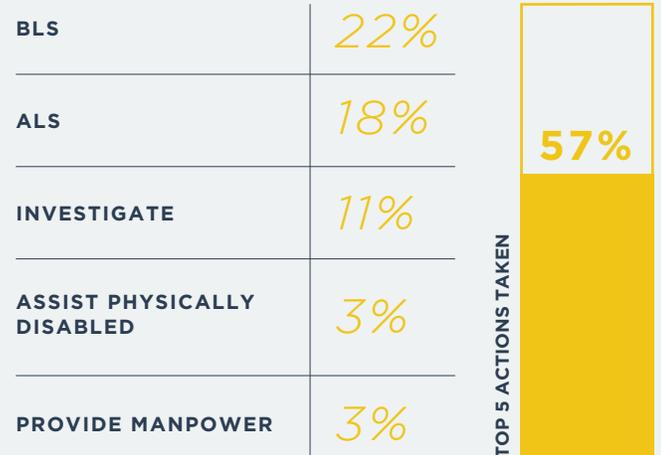
RECOMMENDED ACTION

Work with hospitals and/or EMS transport providers in your area to receive outcomes data to determine where training might be beneficial. Additionally, take a look at the EMS Index to compare your metrics with the national average.

WORK WITH EMS TRANSPORT PROVIDERS

Figure 5

		TOP 5 ACTIONS TAKEN
BLS	22%	
ALS	18%	
INVESTIGATE	11%	57%
ASSIST PHYSICALLY DISABLED	3%	
PROVIDE MANPOWER	3%	

FIRE TRENDS

PROPERTY LOSS

In a fire, property loss is oftentimes inevitable. The first priority is the saving of lives, followed by containment to ensure the fire doesn't spread and cause more damage.

Building fires represent the most common type of fire-related call, so it's no surprise they also represent greatest property loss. In our dataset, total property loss recorded was $207,354,937. Single-family homes, in aggregate, suffered the greatest property loss in terms of value at $66,686,811. Multifamily homes are next at $28,810,901. Industrial sites ($16,303,300) and construction sites ($12,315,000) follow close behind.

However, one important piece of information to note – of the fire-related calls associated with building fires, only 37 percent had property loss values recorded. That means 63 percent of the time, estimated properly loss values were left blank, suggesting documentation (or lack thereof) is a missing element in creating reports.

INSIGHT

Make sure to document property loss in your software system. Sixty-three percent of property loss values were not documented.

DOCUMENT. DOCUMENT. DOCUMENT.

Remember, property loss values can be calculated using NFPA recommended calculation steps, or via local tax assessor web sites. This is a great number to measure your added benefits and value to the community you serve.

Figure 6

TOTAL PROPERTY LOSS

$207M

PERCENT OF SINGLE-FAMILY HOMES

32%
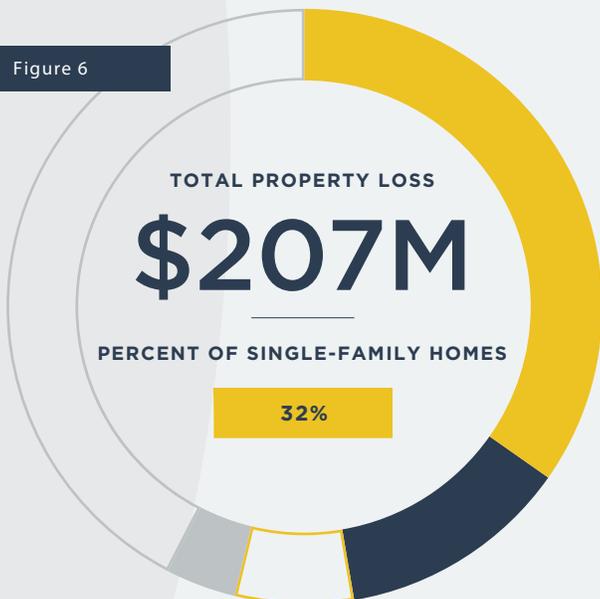
PERCENT OF PROPERTY LOSS VALUES LEFT BLANK

63%

LOSS PER PROPERTY TYPE		
SINGLE-FAMILY HOMES	$66,686,811	32%
MULTI-FAMILY HOMES	$28,810,901	13%
INDUSTRIAL SITES	$16,303,300	7%
CONSTRUCTION SITES	$12,315,000	5%

METHODOLOGY

The dataset for the *ESO Fire Trends Report* is real-world data, compiled and aggregated from more than 198 departments across the United States that use ESO's products and services. These data are based on 603,000 anonymized calls between January 1, 2018 and August 31, 2018.

THERE IS A 95% CONFIDENCE LEVEL IN THE NUMBERS USED IN THIS REPORT WITHIN A 1% +/- RANGE.

OK, NOW WHAT?

Organizations should use this information to understand why metrics are important and which metrics and drivers can have the biggest impact on your department and the communities you serve.

With this Report as a foundation, you can do your own analysis to serve as the basis for other modeling and outcomes. The metrics shown in this study are by no means exhaustive. Every department is unique and has its own strengths, structure, and goals. Because of these attributes, results achieved by one organization may not be attainable by another for a variety of reasons. However, these metrics should provide a foundation to compare your measurements and outcomes to what we are seeing nationally.

IF YOU HAVE FURTHER QUESTIONS, DON'T HESITATE TO REACH OUT TO ESO ABOUT HOW TO BEST USE AND INTERPRET THIS DATA FOR YOUR ORGANIZATION AT

WWW.ESOSOLUTIONS.COM/FIRE

ABOUT ESO

ESO Solutions, Inc., is dedicated to improving community health and safety through the power of data. Since its founding in 2004, the company has been a pioneer in electronic patient care records (ePCR) software for emergency medical services, fire departments and ambulance services. Today, ESO serves more than 13,000 agencies throughout the U.S. The company's healthcare, public safety and technology experts deliver the most innovative software and data solutions on the market, including the industry-leading ESO Electronic Health Record (EHR); ESO Health Data Exchange (HDE), the first-of-its-kind healthcare interoperability platform; record management system (RMS) for fire departments; and ambulance revenue recovery/billing software. ESO is also playing a leading role in helping EMS provider organizations across the nation successfully transition to NEMSIS Version 3 and new state standards for electronic patient care reporting.

ABOUT ESO FIRE RMS

ESO Fire RMS enables departments to manage NFIRS, pre-plans, inspections, and EMS documentation within an easy-to-use, integrated software solution. Backed by extensive usability research and decades of fire and EMS experience, ESO Fire is designed for quick yet comprehensive data collection and actionable reporting. To learn more, visit esosolutions.com/fire.