

QUALITATIVE LOOK AT TURNOUT TIMES

Executive Development

A Qualitative Look at Turnout Times in Emergency Responses

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used this language, ideas, expressions, or writings of another.

Signed: \_\_\_\_\_

## Abstract

Eastside Fire & Rescue (EF&R) had not established a turnout time standard for career firefighters. This allowed for inconsistent response times and conflicting expectations.

The research purpose was to propose a turnout standard, with recommendations for immediate and future ways to improve turnout times. Surveys, direct observation and a literature review, utilizing the descriptive method of research was incorporated as part of this research project.

Five questions formed the basis for the research. What industry standards exist for turnout times? What standards have been adopted locally by other like fire departments? What are the current turnout times within EF&R? What tasks are performed during the turnout phase of the response? What can EF&R do to limit barriers that contribute to lengthy turnout times?

Results and recommendations identified the need for awareness training, stations designed with turnout time as a priority, policy revision regarding turnout gear, removal of certain barriers that extend turnout time and a turnout standard for EF&R.

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## Introduction

Critical to the delivery of emergency services is the ability to quickly, yet safely respond to requests from customers who have suffered injury or are attempting to mitigate property loss. Recognition of the situation, reporting the event, processing the information, dispatching the call, turnout time, travel to the scene and setting up for service delivery are all part of the total response time expended before medical aid is provided to a patient or suppression activities begin to control a fire.

Finding ways to limit and even reduce the time involved before customer contact takes place is, and must remain, a major concern and primary goal in the fire service industry. Although several elements of the total response time are fixed with little ability to change, the turnout time of personnel is an area where precious seconds may be gained if properly managed.

The problem is that EF&R has not established a turnout time standard for its career firefighters. The lack of an established standard allows for subjective opinion as to an appropriate turnout time, which results in inconsistent turnout times between crews.

The purpose of this Applied Research Project (ARP) is to recommend a turnout time standard for EF&R. This will enable the agency to monitor and measure a component of response timelines. Recommendations for immediate and future ways to improve turnout times are also an expected outcome.

This ARP titled “A Qualitative Look at Turnout Times in Emergency Responses” utilized descriptive research. The following questions constitute the foundation for this ARP:

What industry standards exist for turnout times?

What standards have been adopted locally by other like fire departments?

What are the current turnout times within EF&R?

What tasks are performed during the turnout phase of the response?

What can EF&R do to limit barriers that contribute to lengthy turnout times?

### Background and Significance

EF&R is a consolidated fire department, located in the eastern portion of King County Washington, 13 miles east of Seattle. Interstate 90 runs east and west through the middle of the service area.

The department organized in 1999, bringing fire and medical services under one administration that protects the cities of Issaquah, Carnation, North Bend and Sammamish, along with the unincorporated areas within King County Fire District 10 (FD 10) and King County Fire District 38 (FD38).

Within EF&R, there are rural farmlands, residential communities, master-planned developments, urban and commercial centers, along with light industrial facilities.

It is estimated that 110,000 people reside in this area that spans approximately 220 square miles. The department consists of 114 career firefighters, staffing nine stations with a minimum of three firefighters assigned at each staffed station on a 24 hour shift. EF&R has a minimum daily staffing of 28 career firefighters. In addition to the career firefighters, there are 120 volunteers that are also assigned to certain staffed stations and the six all volunteer stations. The career firefighters and the volunteers are supported by 20 full-time staff and administrative personnel.

EF&R provides emergency medical, fire and rescue services from a total of 15 stations. In 2003, the department responded to 10,158 requests for service.

Prior to consolidation, the former independent service providers (Issaquah, North Bend, FD10 and FD 38) did not have a policy or other written standard that established turnout time expectations. There was not a formal process or periodic review of turnout times by the different departments prior to consolidation and the situation remains the same to this date.

A few years ago, the issue of turnout times became illuminated for the fire administration at EF&R. Previous to 2001, other fire service providers had outlined expectations for their emergency responders regarding turnout time. It was not until the adoption of the National Fire Protection Association (NFPA) 1710 and recommendations specific to turnout time standards, that the interest and pressure to act became prominent with the agency.

The absence of a turnout time standard provides an opportunity for the fire administration to set direction and develop objective accountability. Desired results would be to identify and achieve the best turnout time possible.

Although turnout times were considered important to monitor as a measurement of the total response time, the agency has spent little, if any, time proactively to review what was taking place regarding turnout times. Since there was no internal benchmark or standard used by the agency, officers have been left to monitor and react to issues dealing with turnout times. In nearly every case, attention given to turnout times has been in a reaction mode, following what was considered by a superior officer to be an unacceptable delay in that period from when the alarm was received at the station, to the time the apparatus was moving toward an event.



In the five years since consolidation, EF&R has centered its energy on merging policies, securing appropriate funding to maintain current and future operations, upgrading apparatus and facilities, designing a stable funding model, and exploring other consolidating opportunities with agencies neighboring EF&R. In 2004, an administrative reorganization took place establishing a Deputy Chief of Planning position, dedicated to, among other responsibilities, recommending for agency consideration, a standard of cover and a deployment standard for EF&R.

Concern was raised by the fire administration as to how this period known as turnout time, as part of the total response, may affect the outcome on calls. Particularly, the time sensitive calls such as cardiac arrests, immediate threats to life that involve rescue, and other events where the expectation for survival would be less likely if a unit did not arrive within four to six minutes.

Although difficult, if not impossible to quantify if an extended turnout time may have played into a negative outcome, the fire administration had the sense that turnout times were a crucial component to a timely delivery of emergency services. However, the standard and a method to periodically monitor the turnout times and measure both times and impact on services is lacking. Along with the administration's intuition, the goal to have crews be more consistent with turnout time, legal liabilities were also raised as an important consideration for having an agency established turnout standard.

Currently, without a turnout time standard, there is no official expectation established. Therefore, the situation which existed prior to consolidation remains the same today.

Without the establishment of a turnout standard, which is periodically reviewed and analyzed, the current situation is expected to continue into the future. It is likely that this will contribute to increased liability risk for the agency and will compromise the ability of the fire administration and elected officials to justify the need for future improvements designed to lessen response times, the possible addition or relocation of facilities, increased staffing, etc.

Most important to the research and establishment of a turnout time standard is to have the customer receiving services in the most expeditious way, without compromising the safety of the responders or others in the process.

This ARP addresses the concern over a specific operational aspect of the service delivery at EF&R, which lacks a turnout time standard. The findings of this research has the potential to increase the understanding of the time savings, particularly in turnout times, to reduce the loss of life of both civilians (of all ages) and firefighters from fire, since an established turnout time standard may increase the likelihood of the timely arrival of firefighters.

Through a well researched, properly implemented and administered turnout time standard, a minimum of three operational objectives of the ARP criteria should be achieved. (FEMA, 2004 p.3)

### Literature Review

A literature review was performed to better understand what others have concluded in regard to considerations involving the establishment of a turnout time standard. Which turnout standards have become recognized by the industry, and what other local fire departments have adopted for a turnout time standard, were also targets

for this review activity. Additionally, a literature review was performed to better understand what tasks are conducted during the turnout phase and what others have done to remove barriers that contribute to lengthy response times.

Rule (1992), while performing research commissioned by the International Association of Fire Chiefs (IAFC), provided detailed analysis of the entire emergency response beginning with access to the system to delivery of service. He broke down the process and suggested that turnout time be one of three phases of the emergency response. (The other phases were identified as alarm processing and travel time.) He proposed that the turnout time phase be limited to 60 seconds. His work provided a structured view of the total response package and contributed to the development of one of the first recognized definitions for turnout time. (p.7)

Rule (1996) would later appear to amend his 60 second turnout time recommendation to one of having standards set by individual departments which are based on local conditions, not necessarily tied to one industry number. (p.7- 8)

*The Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations for the Public by Career Fire Departments* (NFPA, 1710, 2001) recommends that turnout time be no longer than 60 seconds, with a 90% compliance rate. According to NFPA 1710, turnout time is the time beginning when units acknowledge notification of the emergency to the beginning point of response time. (NFPA, 1710, p.6)

*The Washington Fire Deployment Standard*, (WFDS, 2001) does not set a specific turnout time standard, but requires local jurisdictions to identify and publish their turnout standard. Turnout time, as defined by the WFDS, is the interval between the

activation of station and/or company alerting devices and the time when the responding crew activates the “responding” button on the mobile terminal or notifies dispatch by voice that the company is responding. During the reflex (turnout) interval, crews cease other activities, don appropriate protective clothing, determine the location of the call, and board and start the fire apparatus. It is expected that the “responding” signal will be given when personnel are aboard the apparatus and the apparatus is beginning to move toward the call. (Washington, p. 8)

The *Fire & Emergency Service Self Assessment Manual* (CFAI, 1997) of the Commission on Fire Accreditation International (CFAI) set a benchmark of 60 seconds for turnout time. According to the CFAI, turnout time is the time point at which responding units acknowledge receipt of the call from the dispatch center. Total turnout time begins at this point and ends with the beginning of travel time. For staffed fire stations, the benchmark is 60 seconds. (Commission, p. 3, 39)

The Kent Fire Department seeks to achieve a desired turnout time (period of notification of emergency personnel to the time the emergency vehicle responds) of 60 seconds, 80% of the time. (Kent, p.59)

The SeaTac Fire Department has a published turnout time standard of 60 seconds during daytime hours and 90 seconds during nighttime hours, with a compliance goal set at 90% for each period. (Seatac, p. 33)

The Bellevue Fire Department has a published turnout time standard of 60 seconds, with a target of 90% for compliance. (Bellevue, p. 43)

The North Highline Fire Department has established a turnout time standard of 60 seconds. (North, p. 4)

The Duvall Fire Department has established by department policy, a turnout time standard which is split between type of call and time of day. During the daytime hours, the goal is to turnout in less than 90 seconds for an emergency medical event, while the expectation is to turnout for a fire related event in less than three minutes. During evening hours, the goal is to turnout in less than three minutes for an emergency medical event, while the expectation is to turnout for a fire related event in less than four minutes. (Duvall, p. 2)

Stauber (2003) conducted an extensive study that led to recommendations for turnout time standards for the Green Bay (WI) Fire Department (GBFD). His research concluded that there are many factors that need to be considered when establishing a standard. Station configuration, routine tasks performed by the personnel, type of incident that the crew is responding to, etc., must all be considered before setting the turnout standard. Measuring methods adopted by the department and the accepted definitions of the turnout time benchmarks are key aspects of the standards. He concludes, “Multiple factors affect the duration of turn out time during an emergency response.” (p. 17)

Stauber (2003) surveyed employees of the GBFD in an effort to determine the factors and the frequency of those factors that impacted turn out time. He posed the open-ended question, “What do you believe are the factors that affect the turnout time of an emergency response?” Of the 150 employees, 69% responded to the survey. Survey respondents indicated that time of day and activity at time of call received, were equally ranked and mentioned most often. Speed in which responders could receive the “tear & run” printout followed closely, then length of dispatch message, PPE (personal protective

equipment) requirements, slow personnel and station design/layout completed the top seven factors that affected turnout times. (p. 28-29)

The results of a related and broader survey conducted by Stauber (2003) of the Wisconsin Fire Chiefs, produced mirrored responses to the GBFD employee survey when asked the open ended question, “What do you believe are the factors that affect the turnout time of an emergency response?” The factors affecting turnout as determined by the Chiefs, (1) activity at time of call, (2) time of day, (3) dispatch message and (4) personal protective equipment (PPE) requirements as having most impact and in the same order as the GBFD survey. (p. 27-28)

Kemp (1998), while conducting research related to reflex (turnout) time of the Alhambra (CA) Fire Department found that “once personnel became aware they were being timed, the timed components used to measure the reflex time decreased significantly.” (p. 24)

Regarding turnout time delays, Metcalf (2002) noted that a cultural change in the North Lake Tahoe (NV) Fire Protection District would have to be addressed. “Personnel will need to understand the degree to which the organization is failing to achieve the standard and take ownership of the portion of the solution.” He recommended having the turnout standard be part of the agency goals and objectives, making the standard well publicized and having systems in place to provide data that would be routinely monitored and reported to the members of the fire district regarding crew performance. His research suggests that by simply making personnel aware of the standard and the current performance of the personnel, a major reduction in turnout time would be achieved. (p. 25)

Stauber (2004) found that slow personnel and attitude play a part in turnout time and this must become a concern of the fire administration. “The number of false alarms or a disparate number of true emergencies in relation to the number of emergency dispatches may precipitate the problem of complacency.” (p. 39)

Deputy Chief John Coleman (2004) of the Toledo (OH) Fire Department purports that there is a link between the turnout time and safety of the crew during the travel time portion of the response. He contends that extended turnout times may contribute to vehicular accidents by causing responders to try and make up time on the road. Coleman further notes, “So, considering that we have little control over traffic, street and department procedures, the only way to get to an incident faster is to get out of the house faster.” (p. 36)

The United States Fire Administration (USFA, 2004) notes that in the last ten years, over 225 firefighters have been killed in the line of duty as a result of vehicle accidents. The number of firefighters killed while responding to or returning from calls, accounted for approximately 25 percent of all firefighter fatalities.

Fire Instructor Lance Peebles (2004) of the St. Louis County (MO) Fire Academy stated, “Time lost getting out of the house can’t be made up on the road.” (Coleman, p. 41)

Station design has a major impact on the ability of the crew to safely and quickly cease current activities and move to the apparatus from various areas of the facility. There are several elements that must come together in order to have operational success. One key element would be having a well-designed and well functioning fire station.

“Primarily, a fire station must provide the fastest possible response to fire.” (Bryan, 1979, p. 507)

Commenting on station design, Cricenti (1997) stated: “The proximity of personnel to fire apparatus when a response is required must be considered when laying out a fire station. Locating these spaces next to the apparatus floor limits travel to the apparatus and increases efficiency.” While outlining priorities for the design of a fire station, Cricenti noted that the facility must be designed to provide for the various uses that it will be expected to support. “The fire station design must address the needs of its users.” Personnel that will be using the facility should be consulted as to relevance of rooms and travel distances to each other. “The proximity of personnel to the fire apparatus when a response is required must be considered when laying out a fire station.” To disregard this critical element could lessen efficiencies and increase the time it takes to get to the apparatus. Speaking specifically about sleeping quarters, he indicated, “Access from this area to the emergency equipment room should be as direct as possible.” The use of stairs should be limited if not avoided altogether, as they are a contributing factor to potentially serious injuries. The best case would be to have the sleeping areas and the apparatus on the same level. (p. 10, 179-181)

How turnout times are set, measured and monitored are essential to success. Endicott (2002) spoke on a host of problems that exist due to the lack of proper measurement of turnout times. Uneducated guessing on what causes extended turnout times, employees who are unsure if they are meeting expectations and actions taken that may not contribute to improvements, along with other undesirable outcomes, are produced when there is a failure to have proper measuring tools in place. (pp. 292-333)



Metcalf (2002) identified potential inconsistencies in how dispatchers “time stamped” the entry when a unit reported that it was responding. He identified the potential for a mistake to be made, which would result in an inaccurate recording of the turnout time. “Due to distractions and other duties in the dispatch center, it is possible that the time stamp does not represent the actual time of the event.” (p. 18)

Employee awareness for the purpose of a turnout standard, and how the fire administration approaches implementation through compliance review, may mean the difference between acceptance and resistance. Assistant Fire Chief Ron Hiraki (2004) indicates that Gig Harbor (WA) Fire & Medic One “uses the NFPA 1710 Standard as a goal or motivator.” (Coleman, p. 37-38)

Agency culture and maturity play an important part of approaches to standards. Jay Riley (2004) of the City of Green (OH) Division of Fire offered that his agency “does not hold the 60 second rule to an absolute ceiling for turnout time. The response is to be timely and is left to the discretion of the on-duty station officer.” (Coleman, p. 39)

Brian Singles (2004) of the Hampton (VA) Fire Department shared, “We do not have a set policy for our turnout time per se, but our objective is to get out as quickly as possible with safety always in mind.” (Coleman, p. 39)

How to measure turnout time within an industry is critical, according to Jack Stout (1987), who performed studies involving emergency service providers in multiple cities across the United States. He found that consistencies must be sought for comparative purposes and to understand the entire response picture. He believes that when simple averages are used, many fail to remember that the number represents the fact that half of the people are considered within acceptable limits, (or in this case, would

be within tolerances in regard to response expectations) while the other half are somewhere beyond what is the desired standard or goal. “Fractal measuring is a more accurate indication of what is actually happening in regards to all aspects of a response, including turnout times.” (p. 107)

To assume that there is a cookie cutter solution like NFPA 1710, by assigning a “one size fits all” standard would, according to former International City/County Management Association (ICMA) Regional Vice President Mark Watson (2001), “undermine management responsibility delegated to city/county managers by elected officials.” He further purported that it does not take into account the variations that exist between jurisdictions in demographics, capabilities, and citizen preferences. He asserts that the hesitation on the part of some agencies to adopt a turnout time standard can be traced back to the origins of the ratification process of NFPA 1710 and the industry appears divided on the need to have a standard. (Kite, p.34).

Kite (2001) was with those who argued that the turnout time standard as outlined in NFPA 1710 was doing more harm than good. Commenting on the process leading to and the adoption of NFPA 1710, Kite offered, “From all evidence, there is no true consensus on standard 1710, and the proposed standard is not scientifically based.” (p. 38)

Battalion Chief Richard Sterne (2004) of the District of Columbia Fire Department noted that NFPA standards are recommendations, the compliance to which is voluntary. He recognizes that the agency needs standards, but the standards must be realistic and based on common sense. Sterne called the NFPA standards “an overly complex pie in the sky vision, rather than a real world picture of how the fire service

actually operates.” He cautioned about the huge liability when things go wrong and standards are not met. (p. 75)

The *Turnout Clothing-Care & Maintenance Policy* (EF&R, 1990) requires that turnout gear be stored in areas that are not considered “living spaces” so as to limit possible contamination from products accumulated at emergency scenes. Sleeping areas are off limits to turnout clothing. (p. 1)

The review of literature has enhanced overall, the ability to meet the expected outcomes by refining criteria to propose a turnout time standard, measure and monitor the same, and likewise make recommendations on how to improve this response element.

#### Procedures

This ARP utilized the descriptive research method to recommend a turnout time standard for EF&R. The process to design the project, attain information, organize, consider, interpret information, and make recommendations involved many steps.

Formulating research questions based on the hypothesis that having a turnout time standard would provide consistency within EF&R and allow for measuring and monitoring that component of response timelines, was the first process.

Deciding which method of research would be employed to complete the project, and then gathering information (literature review) related to the questions posed, came next.

Developing a survey to determine what other area fire departments have done in regard to turnout times, along with determining the best method to circulate the survey and establishing timelines for completion was the third step. Circulating the survey,

receiving feedback, clarifying information, requesting policies where appropriate, and plotting data tables was a natural follow up to survey development.

Formulating questions to ask EF&R officers regarding tasks conducted during turnout time and seeking recommendations for improving turnout times was the next priority.

Measuring of PPE donning times, travel distances in facilities, noting station configuration and observing tasks performed during the turnout phase then took place.

The next process entailed, the reviewing of data received and compiling of what was considered to be useful information/constructing tables.

Formulating recommendations and drafting a proposed turnout time standard concluded the procedural part of this ARP.

The literature search included a review of industry and non-industry books, fire journals, periodicals and magazines. Local libraries and agency training office reference material attributed much of the information reviewed.

Supplemental to this search of material, was a review of various materials at the Learning Resource Center (LRC) of the National Fire Academy (NFA) in Emmitsburg, MD. Additionally, nine applied research projects from executive fire officer candidates were reviewed in their entirety, either at the LRC or obtained from the Internet.

The WFDS was attained in person through the Washington State Fire Chiefs Association (WSAFC) office located in Olympia, WA.

The accreditation standards published by the CFAI were obtained by attending an accreditation seminar in March of 2002 in Issaquah WA.

“Turnout”, “turn-out”, “scramble”, “get out”, “reflex”, “reaction” and “time,” with various combinations of each as submitted Internet search terms through the LRC and/or “Google” search options, provided hundreds of “hits”, but only a small fraction of usable information was obtained.

EF&R policies were obtained through the agency intranet.

Documents which outlined specific standards that have been adopted by other service providers within King County were obtained from departments via fax, mail, email or in person.

A survey of the King County Fire Chiefs Association (KCFCA), via the Internet, sought to gain information related to the number of departments with a published turnout time standard. Additionally, information was sought to understand compliance rates, the origin of the standard and what the agency selected as a time for the turnout time standard. The Chiefs in King County were asked: Do you have a published standard? If your agency has a published standard, what is the time standard that you use? If your agency has a published standard, does the agency comply? If your agency has a published standard, is it based on any other recognized standard? If so, what standard is it based from? The voluntary survey of the King County Chiefs was designed to help establish a turnout standard for EF&R. (See Appendix A)

Dispatch data which identified the number of events (by station with an agency total) for EF&R was provided by Kevin Bryson, of the Eastside Communications Center (ECC). This data may possibly indicate a relationship between station call volume and turnout time. (See Table 2)

Data requested from the EEC also included turnout time averages for each of the stations that are staffed with career firefighters. This data was received as day vs. night response averages. Daytime was set from 0800 to 2059 hours, with remaining hours identified as nighttime. The information was requested to help understand if there is a difference between traditional sleeping and work periods. (See Table 3)

Individual station performance reports regarding turnout time for specific types of events was provided by the ECC. Although dozens of types of events are tracked, “Cardiac” (time is critical, little PPE required), “MVA (Motor Vehicle Accident) Rescue” (time is critical, complexity of event and full PPE required with air pack optional), “Full” (time is critical, complexity of event and full PPE required with air pack required), and “BLS” (time is normally not critical and little PPE required) were chosen for analysis. This information was requested to see if there was an intuited correlation between type of call and turnout time. (See Table 4)

The time period selected for this dispatch data analysis was 2003, which is the last full year in which information was available. The data involving turnout times encompassed the period where the crew recognized an alarm until the unit recorded a response by radio. The analysis of this information could reveal inconsistencies that exist in turnout performance between crews. More important however, would be the opportunity to set a base for measuring future turnout times.

The EEC also provided fractal measurement of EF&R turnout time performance for the period of July and August of 2004. The data requested/received contained station and overall agency averages for daytime and nighttime periods. The data illustrated how often EF&R obtained 90% compliance at 60, 90 and 105 seconds. This information

would provide a history of compliance and may be useful in establishing a realistic turnout time standard for EF&R. (See tables 5-8)

A questionnaire was emailed to EF&R officers, which sought to identify barriers effecting turnout times and to determine tasks performed in the turnout time period. EF&R officers were asked: What can we do to improve turnout times? What tasks must be completed during turnout time? Information gained would help the author to understand tasks performed during the turnout time and may provide suggestions for improvements of turnout times. (See Appendix C)

EF&R officers were asked to conduct and record the time needed to perform normal turnout time tasks. The officers were also asked to conduct and record the time it takes in order for firefighters to apply PPE. This data could help to establish a realistic base for the EF&R turnout time standard. (See Appendix E & F and Table 9 & 10)

Measurements of actual distances from various high use points to mid apparatus bay locations in each of the nine staffed facilities were taken, using a wheeled counter secured from the Fire Prevention Office at EF&R. This work was to help understand how the station design may effect turnout time. (See Table 11)

Some limitations were encountered. EF&R has few local entities of like size and/or configuration to compare with. The Seattle and Bellevue Fire Departments staff more facilities and respond to more events than EF&R, while other departments have fewer crews, yet a larger call volume than EF&R. Most departments have fewer crews and fewer responses. Time did not allow for a proper analysis regarding the correlation between size of an agency (volume and crews) and the establishment of a turnout standard.

Some of the departments that had established turnout time standards were unable to state the compliance rate for their entity. This information may have been valuable to assist EF&R in establishing a turnout standard.

There was no common format used by local agencies with an established turnout standard to measure compliance. This did not allow for a clear comparison and may have aided in helping EF&R to establish a reliable measuring process.

Some EF&R firefighters were skeptical of the work being done to support this project and feared that information gleaned may be used in a punitive way, should a standard be established and compliance not gained. This may have influenced some of the responses of some firefighters, to the questionnaire and/or speed in which tasks were performed.

Previous to this work, most EF&R officials were unaware of the capability of the EEC, regarding the production of useful data related to turnout time. Information was offered (performance by individual crews, shifts, etc.), however time did not permit for this data to be analyzed and incorporated as a part of this ARP. This additional information may have assisted in identifying other factors that affect turnout times.

The questionnaire to the EF&R officer did not ask for a ranking of most important tasks performed during turnout time and the author did not calculate how often similar responses were provided. This information may have been important in setting of best practices for the agency.

## Results

Of the 33 fire service providers within King County, 100% of the agencies surveyed, responded to the questionnaire regarding this ARP. (See Table 1)



The survey was conducted via email through the King County Fire Chiefs Association network on July 7, 2004. There were eleven agencies (33%) that responded within the designed/designated two week period, which was identified as an appropriate time frame in consideration of the traditional summer vacation season. Follow up email during the first week of August captured an additional eight of the remaining 22 agencies requested to respond to the survey. Phone contact was made with the 14 remaining non-responding agencies by the 15<sup>th</sup> of August.

Of the 33 fire departments providing services within King County, five departments have an established and published turnout time standard. Some have adopted national standards as a goal, rather than a rule. Some departments have elected to use a fractal measurement (e.g. 60 seconds/90% compliance) rather than the traditional average (60 seconds) which does not account for variances.

Of the five departments in King County that had a published turnout time standard, four had origins to the NFPA 1710 recommendation, CFAI accreditation process or the WFDS.

NFPA 1710 suggests one minute (with 90% compliance) as the turnout time standard. The WFDS requires that an agency declare a turnout time standard and then make known the standard for public awareness/scrutiny. CFAI suggests 60 seconds as the turnout time benchmark.

A majority of the departments (25 of 33) without a published turnout time standard indicated that there was either a “cultural” standard in place or “an expectation of the agency” in regards to the time between receiving the alarm and having the apparatus move toward the scene.

In King County, three all-career departments and two combination departments had published standards. None of the all-volunteer departments had a published standard. In King County, 29 of the departments are considered “combination” departments, having both career and volunteer firefighters, while four departments are considered to be all-volunteer departments.

The Kent Fire Department established their standard as part of the CFAI accreditation process. Fire Chief Jim Schneider indicated by email that the standard is met less than 50% of the time, but they are improving each year. (See Table 1)

The Seatac Fire Department set their standard based on CFAI criteria. Fire Chief Bob Meyer indicated through email that they do not meet this goal presently, but was not able to provide the compliance rate. (See Table 1)

The Bellevue Fire Department set their goal as part of the CFAI Accreditation process, although NFPA 1710 was the original standard set by the department. Battalion Chief Mike Remington indicated through email that they do not meet this goal presently, with a compliance rate that has varied between 11% and 12% since 2001. (See Table 1)

North Highline Fire Department set their standard as part of a compliance review using the WFDS. Administrative Assistant Ron Harmon indicated by phone that they meet this standard currently and have for the two years previous to 2004. (See Table 1)

King County Fire District 45 (Duvall) developed an internal standard, based on historical/performance based data. Captain Ken Burnside indicated through email that they meet these goals. (See Table 1)

Table 1

TURNOUT TIME STANDARDS WITHIN KING COUNTY FIRE DEPARTMENTS				
DEPARTMENT	WRITTEN STANDARD	STANDARD TIME	COMPLIANCE	ORIGIN OF STANDARD
AUBURN	NO			
BELLEVUE	YES	60 SEC/90%	11%	NFPA/CFAI
BLACK DIAMOND	NO			
BOTHELL	NO			
ENUMCLAW	NO			
KENT	YES	60 SEC/80%	50%	CFAI
KIRKLAND	NO			
MERCER ISLAND	NO			
REDMOND	NO			
RENTON	NO			
SEATAC	YES	60 SEC/90% DAY 90 SEC/90% NIGHT	NO	CFAI
SEATTLE	NO			
SNOQUALMIE	NO			
TUKWILLA	NO			
DISTRICT 2	NO			
DISTRICT 4	NO			
EF&R	NO			
NORTH HIGHLINE	YES	60 SECONDS	YES	WFDS
DISTRICT 13	NO			
DISTRICT 16	NO			
DISTRICT 20	NO			
DISTRICT 26	NO			
DISTRICT 27	NO			
DISTRICT 36	NO			
DISTRICT 39	NO			
DISTRICT 43	NO			
DISTRICT 44	NO			
DISTRICT 45	YES	90 SEC DAY AID 180 SEC NIGHT AID 180 SEC DAY FIRE 240 SEC NIGHT FIRE	YES	HISTORICAL PERFORMANCE
DISTRICT 47	NO			
DISTRICT 50	NO			
DISTRICT 51	NO			
BOEING	NO			
PORT OF SEATTLE	NO			

Dispatch data provided for the year 2003 indicated that EF&R responded to 10,158 requests for assistance and has an overall average turnout time of 1:59. The data

did not differentiate between emergent nature and type of event, whether a unit was in quarters or in the field at the time of call, or what the company was doing immediately prior to the alarm or time of day.

Call volume at EF&R stations varied wildly, with the busiest station (71) responding to 2,576 events (slightly more than seven a day) to the least active company (78) responding to 510 events (slightly less than one and a half calls a day) with an overall average for the agency of nearly 28 responses a day in 2003. (See Table 2)

Table 2

2003 Call Volumes by Individual EF&R Stations

Station 71	2,576
Station 72	1,361
Station 73	320*
Station 78	510
Station 81	801
Station 82	1,007
Station 83	1,630
Station 85	512
Station 87	1,441
TOTAL CALLS	10,158

\* Station 73 opened 9-03

The agency overall average turnout performance was 1:59, with a daytime average of 1:49 compared to 2:26 during the nighttime. On the average, Station 83 performed the best in both (day/night) operating periods, with an overall difference of 38 seconds between day and night, while the agency overall averages a 37 second difference between day and night periods. (See Table 3)

Table 3

2003 EF&R Career Station Daytime/Nighttime Average Turnout Time	
Daytime (0800-2059)	
Station 71	Average Alert to Enroute: 0:01:45
Station 72	Average Alert to Enroute: 0:01:52
Station 73	Average Alert to Enroute: 0:02:02
Station 78	Average Alert to Enroute: 0:01:46
Station 81	Average Alert to Enroute: 0:01:53
Station 82	Average Alert to Enroute: 0:01:46
Station 83	Average Alert to Enroute: 0:01:40
Station 85	Average Alert to Enroute: 0:02:10
Station 87	Average Alert to Enroute: 0:01:54
Aggregate Daytime Average Alert to Enroute: 0:01:49	
Nighttime (2100-0759)	
Station 71	Average Alert to Enroute: 0:02:25
Station 72	Average Alert to Enroute: 0:02:28
Station 73	Average Alert to Enroute: 0:02:23
Station 78	Average Alert to Enroute: 0:02:24
Station 81	Average Alert to Enroute: 0:02:30
Station 82	Average Alert to Enroute: 0:02:22
Station 83	Average Alert to Enroute: 0:02:18
Station 85	Average Alert to Enroute: 0:02:33
Station 87	Average Alert to Enroute: 0:02:35
Aggregate Nighttime Average Alert to Enroute: 0:02:26	
Aggregate Overall Average Alert to Enroute Reflex: 0:01:59	

In regard to how stations perform when event type is considered, Station 81 was out quickest for Cardiac events, and MVA Rescues. Stations 73 and 78 were quickest to Full responses, while Station 83 had the best turnout time for BLS calls.

Station 73 had the longest turnout time for Cardiac events, while Station 82 had the longest for MVA Rescues. Station 85 had the longest turnout time for Full responses and BLS events. (See Table 4)

Table 4

## 2003 EF&amp;R Average Turnout Time by Type of Event

Type of Call	Cardiac	MVA Rescue	Full	BLS
Station 71	1:58	1:31	2:08	1:52
Station 72	2:10	2:01	2:29	1:47
Station 73	2:36	0+	1:59	2:12
Station 78	1:40	2:39	1:59	2:00
Station 81	1:16	1:11	3:58^	1:51
Station 82	2:15	2:59	2:10	1:49
Station 83	1:54	1:15	2:03	1:43
Station 85	2:08	2:36	4:04*	2:23
Station 87	2:21	1:55	2:38	2:08
+ None recorded in 2003 (Station 73 came on line 9-03)				
* Included all Tender 85 responses, which (at times) were volunteer staffed				
^ Included Air Unit 81 responses, which are accomplished through volunteer staffing				

An overall fractal view of the station turnout times revealed that as a department, EF&R meets a 60 second or less turnout time standard just over 9% of the time. Station 87 recorded the best turnout time average, with Station 73 attaining the highest compliance rate. (See Table 5)

Table 5

## Call Volume &amp; Percent &lt; 60 Seconds For Turnout Time\*

Station	Call Volume	Average Alert-Response	Responses < 60 Seconds	Percent of calls < 60 Seconds
71	359	01:51	44	12.26%
72	229	01:59	14	6.11%
73	119	01:54	15	12.61%
78	73	02:02	3	4.11%
81	124	01:54	12	9.68%
82	109	01:59	3	2.75%
83	252	01:45	19	7.54%
85	62	01:59	2	3.23%
87	278	01:43	34	12.23%
TOTAL	1605	01:51	146	9.10%

\*Data represents period of July and August of 2004

An overall fractal view of the station turnout times revealed that as a department, EF&R meets a 90 second or less turnout time standard nearly 31% of the time. From this view, Station 87 has the best turnout time average and compliance rate. (See Table 6)

Table 6

Call Volume & Percent < 90 Seconds For Turnout Time\*

Station	Call Volume	Average Time Alert-Response	Responses < 90 Seconds	Percent of calls < 90 Seconds
71	359	01:51	117	32.59%
72	229	01:59	47	20.52%
73	119	01:54	33	27.73%
78	73	02:02	21	28.77%
81	124	01:54	40	32.26%
82	109	01:59	21	19.27%
83	252	01:45	87	34.52%
85	62	01:59	16	25.81%
87	278	01:43	114	41.04%
TOTAL	1605	01:51	496	30.90%

\*Data represents period of July and August of 2004

A fractal view of the daytime station turnout times revealed that as a department, EF&R meets a 90 second or less turnout time standard just over 39% of the time. From this view, Station 87 has the best average turnout time and the highest compliance rate.

(See Table 7)

Table 7

Call Volume & Percent < 90 Seconds For Turnout Time-Day\*

Station	Call Volume	Average Time Alert-Response	Responses < 90 Seconds	Percent of calls < 90 Seconds
71	254	01:37	105	41.34%
72	160	01:52	41	25.63%
73	88	01:47	30	34.09%
78	52	01:48	19	36.54%
81	88	01:46	35	39.77%
82	72	01:46	17	23.61%

83	172	01:33	81	47.09%
85	47	01:53	15	31.91%
87	188	01:30	98	52.13%
TOTAL	1121	01.41	441	39.34%

\*Data represents period of July and August of 2004 (0800-2059 hours)

A fractal view of the nighttime station turnout times revealed that as a department, EF&R meets a 105 second or less turnout time standard nearly 21% of the time. From this view, Station 87 has the best turnout time average, with Station 81 attaining the highest compliance rate. (See Table 8)

Table 8

Call Volume & Percent < 105 Seconds For Turnout Time-Night\*

Station	Call Volume	Average Time Alert-Response	Responses < 105 Seconds	Percent of calls < 105 Seconds
71	105	02:24	20	19.05%
72	69	02:15	14	20.29%
73	31	02:15	6	19.35%
78	21	02:34	3	14.29%
81	36	02:13	12	33.33%
82	37	02:25	7	18.92%
83	80	02:09	14	17.50%
85	15	02:18	3	20.00%
87	90	02:08	22	24.44%
TOTAL	484	02:16	101	20.87%

\*Data represents period of July and August of 2004 (2100-0759 hours)

Thirteen of 29 crews participated in the “turnout” exercise, with crew 10 establishing the quickest turnout time of 67 seconds, while crew 5 completed the task in 112 seconds. The average turnout time of the 13 crews participating in the exercise was 83 seconds. (See Table 9)



Table 9

## Crew Turnout Time

Crew 1	1:22
Crew 2	1:35
Crew 3	1:20
Crew 4	1:47
Crew 5	1:52
Crew 6	1:13
Crew 7	1:09
Crew 8	1:10
Crew 9	1:25
Crew 10	1:07
Crew 11	1:34
Crew 12	1:09
Crew 13	1:11
Average	1:23

The data collected in regard to the time needed for donning PPE (Appendix F) showed that participating EF&R firefighters, could apply their gear in an average of 46 seconds. Thirty eight of 114 firefighters were observed/timed in this process. The best time recorded was 26 seconds, while the longest time required was 61 seconds. The time appearing most often (4) was 51 seconds. Ten firefighters (nearly one quarter tested) timed in between 57 seconds and 61 seconds. (See Table 10)

Table 10

## PPE Donning Time-Seconds/Frequency

26/1	34/1	42/3	50/3	58/0
27/0	35/1	43/0	51/4	59/3
28/0	36/3	44/0	52/0	60/3
29/0	37/1	45/3	53/0	61/3
30/0	38/0	46/1	54/0	-
31/0	39/0	47/1	55/0	-
32/1	40/1	48/0	56/0	-
33/3	41/0	49/1	57/1	-

The kitchen, dayroom, bedroom and classroom, along with the apparatus bays are areas of the station where firefighters tend to spend much of the time when in quarters. Some EF&R facilities do not have a classroom; others combine the day room with the kitchen. Station 85 had the longest route (144') to travel in a station. Station 81 would travel the least distance (52') in a station. (See Table 11)

Table 11

## Travel Distances from Selected Rooms to Mid Apparatus Bay

STATION #	KITCHEN	DAYROOM	BEDROOM	CLASSROOM
71*	122'	122'	120'	N/A
72	127'	127'	106'	N/A
73*	134'	134'	100'	82'
78	63'	63'	67'	N/A
81	52'	78'	78'	N/A
82*	88'	108'	100'	95'
83*	95'	111'	91'	85'
85	103'	73'	126'	144'
87*	72'	100'	110'	N/A

\* Denotes 2-story facilities/stairwell included in count

## Discussion

The data collected as a result of the survey of King County Fire Departments, revealed that most of the agencies are operating as is EF&R. There is not a recognized standard in place in the region. The majority of departments have a “cultural” approach where the standard is not published and might not be well known by all. This may imply that departments have yet to raise this issue to a priority, some may see a published standard as a liability, while others may not have the means or time to measure and

monitor results. It is conceivable that some hesitation to adopt a turnout standard may be tied to the NFPA 1710 debate, which also speaks to staffing and other performance criteria.

King County is a diverse community that derives services from all career departments such as Seattle and Bellevue, to combination departments such as EF&R and King County Fire District 43, to all volunteer departments like King County Fire District 47 or King County Fire District 51. With the majority not publishing a standard, and others that have but use different measurements, the opinion of this author is that one size does not fit all. It may be implied that one standard would not serve the needs of such a varied delivery service and would be impractical, having an adverse affect on safety and morale.

Just as there are many approaches to establishing an agency turnout expectation, there are many ways to measure for effectiveness and compliance. Some departments have stayed away from the adoption of a standard that strictly uses averages. A standard that simply takes the total of all time spent during turnout and divides by the number of total events, can give a false sense of accomplishment. Results of this ARP demonstrated that displaying averages only, without the fractal view, present very different understandings of the same raw information. When looking strictly at averages, the best case is that half (those at or better than average) may think they are doing well. To imply that this method is acceptable, may be giving only part of the story and may provide an agency or community with a false read on performance or service delivery. One can assume that the fractal method is more of a correct way to report performance.

How turnout time is identified or measured is not common in the fire industry, despite the appearance of similarities in the definitions provided by NFPA, CFAI and the WFDS. Unless a clear definition is provided, supported by proper measuring, an assumption is made that data will be less than accurate when comparing an industry.

Prior to this ARP, the turnout time issues were rarely spoken of at EF&R, and generally in a reaction mode. Speculation on the part of employees as to why a standard is needed may have potential negative affects should a standard be adopted. On the contrary, the establishment of a standard in itself may serve to raise and maintain awareness of the need to move quickly but safely to the apparatus. As the fire administration puts in place a reliable means to track, analyze and report turnout time information, the work group will most likely respond positively, as the expectation would be established. As firefighters better understand the need and purpose of a standard, it is likely that they would provide additional feedback on how turnout times can be improved. If a system of recognition is provided for top performers, firefighters may be even more supportive of turnout time and other performance based standards. It will be critical to involve the firefighters in all aspects of determining, measuring and monitoring turnout times.

An assumption was made that smaller stations would equate to quick turnout times. Data did not support this assumption. Station 85 is the largest facility and the turnout time of the crew might suggest that the distance contributes to an extended turnout time. Station 78 is the smallest facility and yet ranks third and fourth during day and night turnout times, respectively. There is no clear indication that distances

firefighters travel in the station to get to the apparatus is the prime indicator for inconsistent turnout times.

An assumption was made that station design (configuration, number of stories, etc.) would determine the speed in which a crew could turnout. Dispatch data did not support this assumption either. Station 78 exits quickly to the bay from most points in the station, is single story, and yet did not have a better turnout time than Station 83, which does not flow to the bays as quickly, incorporates stairs due to a second story and is twice the size of Station 78. The call volume is substantially different between the two facilities, with Station 83 responding to approximately four times the number that is assigned to Station 78. The number of calls with the associated times that a crew will turnout, despite poor station design, may contribute more to achieving appropriate turnout times. Repetition of turnout tasks (due to call volume) appears to be a major factor in the ability of a crew to post turnout times that are better than other crews.

As is the case with many stations across the country, EF&R is utilizing stations that were not originally designed for full-time staffing. Volunteer stations that have been converted to full-time operation may not provide the best use of space to accommodate swift flow of personnel to the apparatus. Recognizing that less than optimum facilities exist, which has a potential impact on turnout time, should be considered when designating a standard. Likewise, a new station, poorly designed, can have the same outcome. It is plausible that stations that are either converted or newly constructed which fail to place a primary interest in getting people to the apparatus, will contribute to frustrations, increased liability, unexpected costs, extended response times, safety concerns, which could manifest into an erosion of employee and public trust.

Station 71 has the highest call volume and has comparatively long distances to travel within the facility in order to get to the apparatus. Even so, Station 71 performs well in regard to turnout time when compared to other EF&R stations. Further analysis is required to better understand the correlation between call volume and travel distance.

The 60 second turnout standards, found in NFPA and CFAI standards do not differentiate between traditional work and rest hours, spreading the average across an entire 24 hour period. Since data collected at EF&R demonstrated a substantial difference between day and night turnout time performance, it would be prudent to consider dual standards and most likely is the reason why two local jurisdictions (Seatac and Duvall) have taken that approach.

The urgent nature of a call was presumed to be a prime motivator for crews, but this did not prove correct when data was analyzed. Type of event appears to influence the ability of a crew to quickly turnout for an event, however the difference in time does not appear to be common between EF&R crews given this one consideration. The data does not indicate that as an agency, EF&R reacts consistently from one event type to another. The amount of PPE required for different events could be a determining factor, but the data does not show a common link in regard to this factor. It appears that individual crews do perform differently based on the type of event. Perhaps an ARP dedicated to understanding the link between call type and turnout time would be beneficial for the industry.

The literal interpretation of the definition of turnout time as outlined in NFPA 1710 may encourage some officers to radio responding long before the crew is on the vehicle or the vehicle is moving to an emergency. A premature responding signal may

improve turnout time but will have the adverse effect on times recorded for travel to the event, and may be reason for firefighters to try and make up time on the road. More important than the potential to skew data in the way of various response elements, would be the concern that firefighters may try to make up lost turnout time by driving faster to the emergency. Safety has to be the overriding consideration when looking at an agency turnout time standard.

EF&R instituted a requirement that turnout clothing be restricted to the apparatus bays, as it was assumed that all turnout clothing was contaminated. The immediate effect of this rule was during sleeping hours, firefighters would need to dress in uniform pants and shirts prior to leaving the sleeping areas, then don protective clothing in the apparatus bay, essentially dressing twice. This has an obvious impact on limiting activities during the turnout period. Now with the incorporation of extractor washing machines in many of the EF&R facilities and the issuance of two sets of turnout clothing to all firefighters, the policy of restricting turnout clothing to apparatus bays appears to be outdated.

The average time (in a controlled setting) for EF&R firefighters to don PPE was 46 seconds, while the average time to complete all tasks inclusive of turnout time was 83 seconds. This information, combined with the historical data (July/August of 2004) which notes that only 9% of the time the agency was able to comply with the 60 second or less standard, would suggest something more than 60 seconds should be considered as realistic and attainable turnout time standard.

Subjective and different opinions in regard to an appropriate turnout time leads to avoidable confrontations and frustrations on the part of employers and employees. Presumably, a well conceived and implemented turnout time standard, with periodic

review and reporting would most likely motivate firefighters and have a direct positive affect on this component of the total response. Simply making firefighters aware that turnout time is on the radar for the fire administration, appears to have an immediate positive impact on the reduction in turnout time.

Several barriers can influence turnout times, however, no clear single factor emerged as why one crew is performing better than another. When station design, call volume, type of event, operating period and task completion were studied, there was no single element that stood out as why one crew performs better than another. It may be assumed that individual officers have placed a greater emphasis on turnout times and that might explain why there are inconsistent times between the stations.

An established turnout standard that is not attainable is likely to be a de-motivator for the firefighters, their supervisors and the department. Legal liabilities become greater when a department knowingly sets a standard that will not be achieved. Even though standards exist on a national level, it would seem to be more prudent to set a standard that considers local factors, while not discounting national standards. Data collected in this ARP does not suggest that EF&R should adopt the 60 second turnout time standard at this time. It is important, however, that the agency move forward with adopting a local standard and put in place the ability to measure and monitor compliance, while other efforts continue to remove barriers that add to extended turnout times.

It is my opinion that a turnout standard will have many positive outcomes, with greater consistency and improved response times being two of the most prominent.



## Recommendations

The fire administration should publish a turnout time standard in policy format for the on-duty firefighters and have in place a method to periodically measure, monitor and report the findings to the organization and the community. It is proposed that EF&R adopt the WFDS definition for turnout time and adopt a turnout time for of 90 seconds, with 90% compliance. (See Appendix B)

The fire administration should provide awareness training for the responders in regard to the purpose and value of a turnout standard, along with instruction on how the program will be managed.

The Fire Chief should require formal consideration of the suggested ways to improve turnout time as identified by those who responded to the questionnaire, with a formal plan developed to address each item listed.

The Fire Chief must mandate design priorities in future fire stations which provide immediate access to the apparatus bay from high use rooms in the station, and cause to minimize/eliminate known restrictions in current and future facilities.

The fire administration should review/revise the restriction of having turnout gear in the stations, in particular to the bedrooms, so that responders arising from sleep would not have to apply a uniform before donning PPE.

The Battalion Chiefs should identify “Best Practices” among crews regarding tasks performed during turnout time, periodically sharing the results with all firefighters, while recognizing top performers in the area of turnout time.

The near term expected results from these actions would be a reduction in turnout time below the current average of 119 seconds, without sacrificing safety to firefighters or the external customers.

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Appendix A

**Questionnaire to the King County (WA) Fire Chief's-Standards**

July 7, 2004

TO: Fire Chief  
FROM: Lee Soptich  
REF: Turnout Time Standard

I am requesting your participation in a quick survey that will help in my research to determine what an appropriate "turnout" time standard would be for EF&R.

**Definitions**

**Published Standard:** Agency (official) written policy/document that identifies a standard.

**Turnout:** The interval between the activation of station and/or company alerting devices and the time when the responding crew activates the "responding" button on the mobile terminal or notifies dispatch by voice that the company is responding. During the reflex interval, crews cease other activities, don appropriate protective clothing, determine the location of the call, and board and start the fire apparatus. It is expected that the "responding" signal will be given when personnel are aboard the apparatus and the apparatus is beginning to move toward the call. (Washington Fire Deployment Standard)

Please provide your responses to the 4 questions that follow and email your answers back to me within 2 weeks.

If you have any questions regarding this survey or if you would like to provide any additional information that you feel may be helpful to my research, please call me at 425-313-3201 or email at [lsoptich@esf-r.org](mailto:lsoptich@esf-r.org).

- #1 Do you have a published standard?
- #2 If your agency has a published standard, what is the time standard that you use?
- #3 If your agency has a published standard, does the agency comply?
- #4 If your agency has a published standard, is it based on any other recognized standard? If so, what standard is it based from?

Regards

Appendix B

**Turnout Time Standard for Career Firefighters Draft Policy**

**EASTSIDE FIRE & RESCUE  
OPERATIONS POLICY AND PROCEDURES/GUIDELINES**

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**SUBJECT: Turnout Time Standard for Career Firefighters**

Policy Number:	draft	Approved By:	<b>Chief Soptich</b>
Effective Date:	draft	Revised Date:	NA
Pages:	3	Attachments:	None

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**1 Purpose**

- 1.1 To provide a definition of turnout time.
- 1.2 To establish a turnout time for EF&R along with a process to measure, monitor and report the performance of the department.
- 1.3 To establish consistent expectations within the ranks of the career firefighters.
- 1.4 To raise awareness of turnout time performance within the agency.
- 1.5 To foster means of identifying Best Practices within/between crews related to keeping turnout time to a minimum, without compromising safety.

**2 Reference**

- 2.1 Washington Fire Deployment Standard (Washington State Association of Fire Chief's)
- 2.2 NFPA 1710 (Nation Fire Protection Association)
- 2.3 Qualitative Look at Turnout Times (NFA/APR-Soptich)

**3 Responsibility**

- 3.1 All career firefighters are to be familiar with and strive to remain within compliance of this policy/guideline.
- 3.2 The Deputy Chief of Operations is primarily responsible to measure, monitor and report turnout time compliance reports.

**4 Policy**

- 4.1 EF&R establishes, measures and monitors the turnout phase of response times to minimize the time consumed in reaching customers who request emergency services.

**5 Procedures/Guidelines**

- 5.1 Each quarter and then annually, the Deputy Chief of Operations will provide to the Board of Director's, Fire Administration and the

- Battalion Chief's a written report detailing the overall agency performance as to compliance with this policy/guideline.
- 5.2 Each quarter and then annually, the Deputy Chief of Operations will provide to the Administrative Chief's and the Battalion Chief's a written report detailing the individual shift and crew performance as to compliance with this policy/guideline.
  - 5.3 The quarterly and annual overall agency performance report will likewise be posted through a department notice by the Deputy Chief of Operations.
  - 5.4 The Battalion Chief's will communicate the findings of the report(s) to each company officer assigned to their shift.
  - 5.5 Data as generated/provided from the fire dispatch center will be used to compile the agency reports.
  - 5.6 Events with a turnout time in excess of 120 seconds will be identified by the shift Battalion Chief, who will review the circumstances with the involved company officer.
  - 5.7 Events of a non-emergent nature are not included as part of the turnout time measurement. These events include but are not limited to:
    - Service calls (water leak, etc.)
    - Complaints (burning, etc.)
    - Investigations (unusual odor, etc.)
    - "Fire Now Out"
    - Welfare check w/o information to warrant concern
    - Alarm system reset
    - Call from site w/proper code of alarm system/accidental activation
    - Move up to fill vacated service area
    - Any event where dispatch announces "Non-Emergency" as a recommendation for response mode
  - 5.8 The turnout time standard for EF&R career responders to emergency events is 90 seconds, 90% of the time.
  - 5.9 Safety of all concerned is paramount and will not be sacrificed in order to achieve compliance with this policy/guideline. Time lost during the turnout phase of an event can not be made up on the road!
  - 5.10 The individual crew(s) with the best quarterly turnout time (with consideration given as outlined in 5.9) will receive appropriate written recognition to be placed in their personnel file.

## 6 Definitions

- 6.1 Turnout Time: The interval between the activation of station and/or company alerting devices and the time when the responding crew activates the "responding" button on the mobile terminal or notifies dispatch by voice that the company is responding. During the turnout time interval, crews cease other activities, don appropriate



protective clothing, determine the location of the call, and board and start the fire apparatus. It is expected that the “responding” signal will be given when personnel are aboard the apparatus and the apparatus is beginning to move toward the call. (Washington Fire Deployment Standard)

Appendix C

**Questionnaire to EF&R Officers-Improvements/Tasks**

08-16-04

As you may be aware, I am enrolled in the Executive Fire Officer Program through the National Fire Academy.

I am required to provide an Applied Research Project that addresses a concern at EF&R which may also have the potential to benefit the fire service industry.

I have chosen to study our turnout time, with the desired outcome of establishing a turnout time standard. I am interested in gaining your feedback regarding the following:

- 1) What can we do to improve turnout times?
- 2) What tasks must be completed during turnout time?

I am interested in learning about barriers that exist, whether it be in policy, station layout, practices, needed equipment, etc.

Please forward your comments to me as soon as possible, but no later than September 1.

Thank you in advance for your consideration/participation. Please contact me if you have questions regarding this request.

Lee Soptich  
Fire Chief

## Appendix D

**Feedback to questionnaire provided to EF&R Officers**

What can we do to improve turnout times?

1. Move the station printer at 87 to a spot between the crew quarters and the apparatus.
2. Change the direction of the door swing at the bottom of the stairs at 87, leading to the bay.
3. Figure out a way to tie the station printer activation to the station house alarm, since there are times when 20+ seconds pass between printer and pager/station alarm activations.
4. If dispatch gets busy, they can miss the responding transmit and that throws off the turnout time. Maybe there is a way to transmit automatically without voice, which would not interfere with work the dispatchers are doing.
5. Drop the policy restricting turnout clothes in the station, especially the bedroom/dorms.
6. Do better planning of future stations so that we don't have to go so far from high use rooms to the apparatus.
7. Allow more employee input on station design.
8. Find a way to clean up the stats from dispatch. They are not consistent.
9. Provide MDT's in apparatus.
10. Set up the alpha pagers to simulcast with the VHF pagers. (Would get info faster)
11. Put the downstairs station printer at Station 71 on the apparatus floor by the door to the living areas or get another printer.
12. Give incentives for getting out faster.
13. Educate us on the need for a reflex standard and don't overreact if we don't hit the target each time.
14. Provide reliable data on a consistent basis that tells us what the times are and how we stack up against others.
15. Clarify what the admin wants for a standard.
16. Hold people more accountable.
17. Hire more people so we don't have to cross staff units.
18. Keep your cool and don't run, which may cause an injury, put the crew OOS.

What tasks must be completed during turnout time?

1. Get a copy of the station dispatch printout.
2. Secure from drill, customer contact, inspections, etc. and head for the apparatus.
3. Put on the appropriate protective clothing and/or store the gear on the unit if you don't need it.
4. Make sure the crew heard the alarm.
5. Load the passports (if not done already)

6. Put on the headsets and seat belt.
7. Check to see that the compartment doors are closed and the shoreline is disconnected.
8. Locate the address on the wall map and/or the map book.
9. Check the pre-fire where appropriate.
10. Power on radio responding.
11. Don scba for fire calls.
12. Check crew once on the rig.
13. Dress for the call. (if getting out of bed or coming from a workout, need to put on a uniform shirt and pants before heading for the rig.)
14. Open bay doors and check for clearance.
15. Consider time of day and weather, which may slow you down.
16. Write down the address if the printer is not working (happens) or if you are out of the station.

Appendix E

**Request of Officers to Conduct/Time Turnout Time of Crew**

August 21, 2004

Captains/Lieutenants,

As part of the EFO paper that I am researching, I need to know what the typical turnout time is of your crew. Please have the crew gathered in one place in the station and simulate a response. Assume it is during the day and that you are not involved in any particular activity that you would have to secure from, taking the exercise from alarm awareness to a point when the apparatus would be rolling out the door/responding.

I need you to do all the normal tasks that you would do for a structure fire response.

Please record the time by way of a stop watch and forward the results to me within two weeks. Thanks

Appendix F

**Request of Officers to Record Time to Apply PPE**

August 14, 2004

Captains & Lieutenants,

For the EFO paper that I am doing regarding turnout time, I need to have a benchmark for the time it takes to get the turnout gear on.

Could you please (using the two FF's you have on duty when you get this email/if possible) record the time it takes to quickly, but safely/appropriately get the gear on.

Please forward the times to me. I do not need names, just times if you would.

For the purpose of this assignment, let's have the FF's start with their work shoes on, standing at their gear as it is normally stored during the day. (If that is on the rig, on the floor in the app bay, on a wall peg, etc.) I would also appreciate knowing where the gear is located prior to donning.

When the time stops, they should have their coat, pants, boots, hood, helmet and gloves applied.

Thanks