CONTINUOUS IMPROVEMENT INITIATIVE

September

2025

High Point Fire Department

High Point, North Carolina

A Progressive Local Government Initiative Compiled & Presented by NC Fire Chief Consulting

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Scope of Work and Project Disclaimer:

NCFCC 2025 High Point Fire Department Technical Analysis

Conduct a Post Incident Analysis:

- NCFCC will request documentation from High Point regarding the specific incident in question and subsequently review these materials.
- Two of our subject matter experts (SMEs) will follow up in a remote format with identified High Point staff to develop baseline questions and identify persons who need to be met with in-person.
- Two consecutive on-site dates will be scheduled for both SMEs to come on-site to High Point and meet in-person, face-to-face with key personnel involved in this incident to be interviewed. During this time on site, any physical equipment, sites or additional review will be conducted.
- Material and content collected will be reviewed and the SMEs will develop an observations and recommendations style report based upon the data and contrasted with North Carolina industry best practice for similar events or situations.
- This drafted report will be prepared for High Point leadership to review. A subsequent Zoom session will be held with High Point leadership to review any areas of the report that need additional detail or clarity.
- A final report will then be provided in both digital format and one hard-copy format.

Staffing Benchmarking:

- NCFCC will virtually meet with High Point staff to clearly identify data points that are sought relative to staffing needs and issues.
- Metrics of the data points will be developed for High Point's concurrence.
- NCFCC will gather comparable data from the NC School of Government data, as well as individually collect data from across the state for comparable size fire departments and the Triad region to establish how High Point's documented staffing levels contrast with comparable agencies.
- Additionally, to the extent that data is available and using a PowerPivot data table, NCFCC SMEs will evaluate High Point's incident records management system software (FireWorks RMS) to determine High Point's demonstrated response time performance for 1) the first due High Point unit, and 2) the arrival of the full complement/effective response force

(ERF) for the time frame that the FireWorks data will provide. From this information, the department's level of service will be established and documented.

- This High Point data will be compared against the national industry consensus standard for fire service staffing and deployment (NFPA 1710) as well as comparable North Carolina municipalities who can provide contrasting comparable data. A level of GIS analysis may also be used for visual depiction of data.
- This collective analytical data will be provided to High Point leadership in written format as well as chart format where possible.
- SMEs will provide a written observations and recommendations report, which will be presented to High Point leadership in a Zoom session for clarity and explanation.
- A final report will be provided in both digital and hard-copy format.

Training Hour Review:

- NCFCC will collect documented training hours from High Point for firefighters over a one-year period, as data from High Point is available.
- This data will be contrasted against the Insurance Services Office rating structure/categories, including (but not limited to) company training, hazardous materials training, driver training, officer training, recruit training, building familiarization for pre-incident planning, and others. High Point documented data will be compared to the ISO standard.
- A summary report with observations and recommendations will be presented to High Point leadership in a Zoom format for clarity and thoroughness.
- A final report will be provided in both digital and hard copy format.

Project Disclaimer:

This project has been conducted upon the written request of the City of High Point. The sole intent of this project is to improve, advance and strengthen the fire protection service delivery system in the City of High Point and the State of North Carolina. Persons involved in this report have contributed for the purposes of providing information, professional observations and recommendations to city management and the fire service leadership. Recommendations included in this report are based upon professional experience and understanding of current fire and rescue service best practices. Examples and references in the document are for informational purposes only. Information contained within this document is not intended to be comprehensive, and recommendations are based on limited information available at this time. As with any project based on a snapshot in time, additional facts, local issues and/or changes in the facts could alter the conclusions and recommendations in this document. This document is solely to be utilized by local government and fire service officials for long-term planning purposes. It should not be utilized for any other purpose. No warranties or guarantees (express or implied) are provided. While this document will hopefully assist local officials in their deliberative and long-term planning process, it should be recognized that there are many local issues that may impact the ultimate decisions and what works for a particular jurisdiction. The ultimate decision-making lies with the appropriate local government and fire officials.

Project Executive Summary:

The City of High Point is committed to continuous improvement in providing fire and rescue services, as evidenced by High Point earning accredited agency status by the Center for Public Safety Excellence (CPSE) as well as earning a "Class 1" public protection rating from the Insurance Services Office (ISO).

Significant events occurring within the city provide an opportunity to evaluate current practices and adjust the fire department's strategic plan. Such a significant event occurred in High Point in 2025, and it presented an opportunity to evaluate the city's response to an incident. Tragically, two residents lost their lives in a residential structure fire on April 13, 2025, and two firefighters experienced a" near miss".

The City of High Point proactively stepped forward to conduct a review of several components of the fire department by initiating an independent, third-party review and analysis. High Point selected North Carolina Fire Chief Consulting (NCFCC) to assist them in this important endeavor. NCFCC focuses on strengthening the fire service in North Carolina and has served as the fire consulting provider for the NC League of Municipalities for many years and currently contracts for serving all 100 North Carolina counties through the NC Association of County Commissioners.

<u>Overall, Purpose and General Methodology:</u>

The core purpose of this initiative was to conduct a post incident analysis with the men and women of the High Point Fire Department who responded to this tragic fire. A portion of this work was in-person, on-site discussion and feedback with High Point Fire Department personnel who responded to the incident of concern as well as a comprehensive analysis of response data to credibly represent the overall service delivery levels for the High Point Fire Department.

Additionally, as a best practice, High Point desired to conduct a staffing benchmarking analysis of comparable North Carolina municipalities. Also, it was determined to review the fire department's current training records consistent with the Insurance Services Office (ISO) rating standards.

All the above data was comprehensively reviewed by NCFCC's well-experienced team of long tenured and highly experienced fire chiefs who have worked extensively with fire protection service delivery systems, fire operations, fire fighter staffing and fire service management for many years. Certain specific recommendations have been noted within the report, and supplemental information is included in the appendix of this comprehensive report.

Emergency Response Records Analysis:

To accomplish this task, NCFCC evaluated the last six years of emergency incident response records of the High Point Fire Department utilizing PowerPivot technology to determine the levels of service that the fire department has been able to provide their community. NCFCC developed a dynamic statistical analysis of incident data for the High Point Fire Department to determine the level of service that the department can provide at the 90th percentile (based on population density), or simply what level of service can the fire department provide 90 percent of the time that someone dials 9-1-1 and needs emergency assistance.

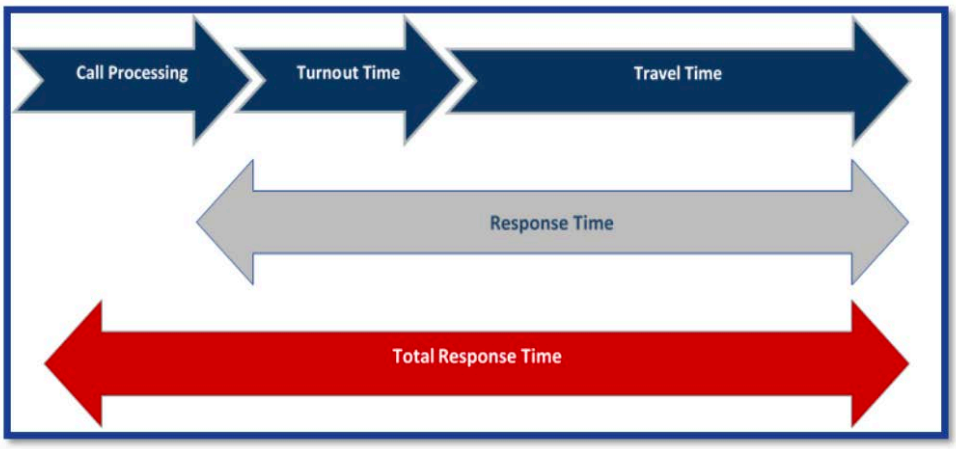
The purpose of this records analysis component is two-fold; first is to show the demand on the department as it relates to response for service, show trends in this demand and help to project future demand and/or challenges this increase demand may have on the department. Second, this data demonstrates the ability for the fire department to respond in a timely manner as compared to standards and industry's best practices. This demonstrated performance evaluation reviews responses based on different factors like location, time of day and incident type.

It should be noted that the High Point Fire Department self-reporting schedule is consistent with the national industry consensus standard for fire and emergency responses to urban areas (areas with 1,000 people per square mile, or greater) as outlined in NFPA consensus and industry standard, known as *"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."*

Within this national industry consensus standard, response times are recognized in fractile format at 90% of all responses and not averages because the fractile

percentages much more accurately reflect the actual level of service that is provided to the residents that are served and protected by the fire department.

Components of "response time" are often mis-understood. To "Ms. Smith" who is calling 9-1-1 to report an emergency, the response time to her is from the time she dials 9-1-1 until the fire department arrives at her location. However, the graphic below illustrates that there are several variables that must be considered for what occurs when someone calls 9-1-1.



The 911 center has demonstrated their ability to process incidents (82,981) and alert the fire department within 37 seconds, or less, on 90% (90th percentile) of the incidents. The trend reflects that call processing time is generally increasing. A goal of 1 minute was used as a benchmark and the current performance was compared to the benchmark. Overall, the goal of 1 minute call processing time was met on 97.38% of the events. Hence, the benchmark has been met.

Turnout time is defined as the segment of time from dispatch to apparatus moving forward, representing the time segment from where the fire department has the most control for response time improvement, with the least cost. Evaluating only the first arriving unit, traveling emergency traffic, on 82,514 responses, the department has demonstrated a turnout time of 01 minute 31 seconds, or less, on 90% of the incidents.

A goal of 1 minute 20 seconds was used as a benchmark, and the current performance was compared to the benchmark. Overall, the goal of 1 minute 20 seconds turnout time was met on 84.76% of the events. The gap between the benchmark and the baseline is only 11 seconds.

Travel time is defined as the segment of time from checking enroute (turnout) to the arrival at the dispatched address. Travel time can be affected by many factors such as distance, vehicle traffic, weather, street width and grade, signal and stop signs, to name a few. Travel time performance is a good indicator of proper fire station placement and/or distribution and saturation of fire stations for those fire departments with more than one station. The High Point Fire Department has demonstrated the ability to respond to 90% of emergency incidents within 05 minutes and 04 seconds, or less. Travel times are slowly increasing, and percentage of compliance is slowly decreasing over the 6-year period. A goal of 5 minutes was used as a benchmark, and the current performance was compared to the benchmark. Overall, the goal of 5 minutes travel time was met on 77.58% of the events. The gap between the benchmark and the baseline is 1 minute 04 seconds.

Total response time represents all three segments of time from the call being received in the 911 center until the fire department arrives their first unit. It is also representation of the true time the caller must wait before help arrives. Although not a direct reflection of the fire department's response capabilities, it should give the department a more realistic perspective on the amount of burn time a fire may have before their arrival. For medial events, it gives perspective on the possible cardiac downtime for cardiac arrest patients.

For this evaluation, totaling 83,063 incidents within the High Point Fire Department's first-due response area, the first arriving unit's Total Response Time at the 90th percentile is 6 minutes and 30 seconds.

A goal of 6 minutes 20 seconds was used as a benchmark, and the current performance was compared to the benchmark. Overall, the goal of 6 minutes 20 seconds travel time was met on 88.80% of the events. The gap between the benchmark and the baseline is only 10 seconds.

Based on the incident data, the High Point Fire Department has demonstrated the ability to respond to 90 percent of all emergency events (all risk hazard) within 6 minutes and 30 seconds, or less, from the receipt of the 911 call in the PSAP until the first fire department unit arrives. This is considered Total Response Time demonstrated, baseline performance.

When analyzing the fire department's ability to assemble an effective response force for High Point, the department is also attempting to place 4 firefighters on the scene in a timely manner to allow entry to the structure for fire suppression. This requires a minimum of two (2) firefighters on the handline and another two (2) firefighters as backup in the event the first handline gets into trouble. This practice is commonly referred to as 2-in, 2-out, a rule required by OSHA. This practice is applicable to all fire departments except when there is a known rescue.

Because High Point fire apparatus is typically staffed with 3 firefighters, the 2nd High Point unit must arrive before 2-in, 2-out can be accomplished. Based on evaluation of the data from the 620 structures fires, the first High Point unit arrives within 4 minutes 1 second or less on 90% of incidents, but it requires another 1 minute and 6 seconds or less (05:07 total) on 90% of incidents to get the 2nd unit on scene carrying the 4th firefighter to allow OSHA compliant entry in the structure. This equates to an additional 01:06 to put water on the fire or initiate a rescue, both of which can have significant effects on outcomes.

Post Incident Facilitated Debrief:

On April 13, 2025, the High Point Fire Department responded to a reported building fire in a single-family dwelling. There were no extenuating circumstances that impacted the response to the event. The department received the call for assistance, responded as they normally do, and upon arrival initiated expected actions.

The event quickly became extraordinary when the arriving firefighters determined there were multiple victims that required rescue and a well-advanced building fire. During operations at the event, two firefighters became disoriented in the structure as conditions rapidly deteriorated. Both firefighters were able to self-rescue and ultimately continued operating at the event. These events caused the High Point Fire Department to first begin a thorough examination of what were the factors that led to the near misses, and how could the organization improve to prevent similar events in the future.

The High Point Fire Department (HPFD) command staff provided the results of the department's internal review of the event for NCFCC staff to review prior to the facilitated sessions. HPFD supported the debriefing sessions by ensuring all personnel who were involved during the event on April 13, 2025, were provided

an opportunity to be part of the sessions while on duty. A virtual session was also held for anyone who was unable to attend the group session.

Two facilitators who are seasoned North Carolina fire service veterans conducted the debriefing sessions, both of which have been through a line of duty death (LODD) situation and subsequent debriefings and investigation in their career.

A facilitated debrief is not an investigation to place blame or find fault, it is designed to allow the participants to discuss their first-hand experiences in a non-threatening, learning environment. The session consisted of each company providing what their role in the event was and what their actions were. After each company provided a description of their experiences, a series of questions were asked to elicit feedback about what actions went well, if the responders were prepared for the events of April 13, 2025, and what does the department need to do to prevent a near miss like this in the future. The members of HPFD were engaged throughout the sessions and provided open and forthright feedback in hopes of improving their department and sharing these experiences with others to prevent a catastrophic outcome elsewhere.

Key take-aways from the feedback sessions included:

- Feedback from the sessions solidified that the HPFD knew their mission was to successfully extinguish the fire and ensure the occupants were safely removed. It was further confirmed that as a fire department, they are prepared and equipped for what was described as a "bread and butter" type event. However, when asked if there were gaps in the planning for an event like this, the response was a consistent theme that they were <u>not</u> prepared to effectively respond to the complexity of multiple rescues at this incident.

- There are a significant number of firefighters with limited experience within the High Point Fire Department. At least two members of the first arriving engines had less than one year experience as firefighters. In the discussion about gaps within preparation, fire ground staffing was discussed several times.

- Discernment that High Point's minimal staffing of 3 firefighters per company was less effective than a 4-person company among the entire group.

- When discussing these areas, there was overwhelming agreement that many things did go well. The group recognized that extricating a victim timely and delivering medical treatment on scene while continuing extinguishment actions was a testament to the professionalism and training of the HPFD.

- Another area that was discussed focused on the actions of the two firefighters who became disoriented; both remained calm and relied on their previous training to successfully exit the structure when conditions worsened. The crews involved also mentioned that while there were limitations with crew integrity, all personnel functioned effectively and efficiently.

- When discussing "Did we do all we could to make this incident successful?", again the overwhelming response was yes – as a fire department our actions were successful in mitigating the event.

- The group recognized the importance of additional staffing to complete the needed fire ground tasks as well as additional staffing at the command level to successfully manage a complex event. The discussion included the needed number of firefighters to effectively staff a Rapid Intervention Team (RIT) when events like this occur.

- When asked about "Were there any unsafe behaviors noticed?", the group noted that although the department has an Air Management Guideline, there were low air alarms sounding during this event. Also, the practice of a two-person company separating in an Immediately Dangerous to Life and Health (IDLH) environment was concerning to the firefighters.

- The responses mostly focused on the need for greater staffing on the fire ground and greater support for the incident commanders.

<u>Benchmarking Analysis:</u>

A benchmarking analysis was conducted to provide information relating to company level minimum staffing level, response alarm levels, effective response force, and Rapid Intervention practices from 7 municipal departments of similar size throughout North Carolina for the City of High Point Fire Department.

When reviewing the minimum number of personnel assigned to an apparatus, High Point was the only fire department that operates all their fire companies with 3 personnel. The seven departments surveyed all operate at least a portion of their companies with a minimum of 4 personnel. High Point Fire Department operates one company, a heavy rescue, with 2 personnel, only two of the surveyed departments operate specialized companies with 2 personnel, but they are not given fire ground assignments within the IDLH environment.

The surveyed departments were consistent in the number of supervisory or support personnel minimally staffed for shift operations. Three fire departments staff personnel other than a Battalion Chief position that respond as part of the Incident Management Team (IMT). All comparable fire departments respond multiple Battalion Chiefs to events classified as Moderate or greater risk.

The number of personnel defined as Total Effective Response Force (TERF) varied across the fire departments interviewed. The greatest number noted was 31 for a Moderate-risk event in Asheville, to 15 for Low and Moderate-risk events in Cary, Fayetteville, and Wilmington. Currently High Point assigns 23 personnel to a Moderate-risk event and 31 for a High-risk event. High Point is successful at putting the number of required firefighters on the fire ground in a timely manner as their 90th Percentile of Moderate-risk TERF is 10:19. Wilmington achieves the 90th Percentile on similar classified events in 9:22, while Cary achieves their 90th Percentile at 9:21. Apex achieves the lowest 90th Percentile in 9:08 while both Asheville and Gastonia have greater 90th Percentile times for Moderate-risk classified events at 15:27 (Asheville) and 16:56 (Gastonia). Both of those departments have noticeably better performance in Maximum-risk classified events at 13:30 (Asheville) and 10:19 (Gastonia).

The surveyed departments were asked how they assign the Rapid Intervention functions, and what is the minimum number of personnel that are assigned to that fire ground assignment. The responses varied; however, only Fayetteville assigns a company of 3 firefighters to the RIT function like High Point. The remainder of the surveyed fire departments always ensure that the primary assigned company has at least 4 firefighters. Several departments have companies who are dedicated to RIT like a ladder company being dedicated to search or ventilation as its primary fire ground function. The fire departments that have a “Working Fire” alarm consider the companies dispatched from that alarm to be available to assist in RIT operations if needed.

It should also be noted that between 2005 and 2024, the City of High Point population increased by a cumulative 21.85% (or a mean annual average of 1.15%). Meanwhile, the fire department staffing increased by a cumulative 7.41% (or a mean annual average of .39%). Hence, an average 1.15% per year population increase with only a .39% per year firefighter average annual increase.

Additionally, comparison and contrast with the most recent data collected and provided by the North Carolina School of Government additionally indicates that the comparable fire departments within their Benchmarking 2.0 initiative (on average) employ approximately 2 firefighters per every 1,000 municipal residents. With High Point's approximate population of 120,000 people, that would be 240 firefighters. This is contrasted to High Point's FY 25-26 full-time equivalent allocation of 216 firefighters, providing a deficit of approximately 24 firefighters. The 216-firefighter total is before the City of High Point received the 2024 federal SAFER Grant, which will fund 24 additional firefighters for a limited time.

Training Records Review:

The 2024 Training Compliance Assessment for High Point Fire Department (HPFD) presents a comprehensive evaluation of suppression personnel training records against the ISO Fire Suppression Rating Schedule (FSRS) benchmarks and some applicable NFPA standards. It is important to note that ISO standards are provided for the optimal rating, and each fire department rated by ISO receives credit for the actual training conducted. These standards are NOT requirements. However, the analysis offers an opportunity to portray HPFD's training performance against the ISO standard.

Collectively, the training component represents 9% of the overall ISO grading schedule. The following eight (8) categories are evaluated by ISO when evaluating fire training:

- Training facilities and use.
- Company training program.
- Officer training and certification program.
- New driver/operator training program.
- Existing driver/operator training program.
- Hazardous materials training program.
- Recruit training program.
- Building familiarization for pre-incident planning program.

Information provided by HPFD for each of these categories was reviewed and evaluated by the assessment team. Observations and recommendations were made were applicable. Overall, HPFD is in good alignment with the ISO standards.

An analysis of the data provided illustrates that "Company Training" presents the greatest opportunity for improvement across all ranks. The average Company Training per member reached only 126.37 hours, still 65.63 hours short of the ISO-required (optimum)192 hours—resulting in a revised departmental deficit of 13,258.67 hours. This shortfall poses a risk to optimal ISO scoring and is recommended to be addressed through targeted remediation.

Additional vulnerabilities include inconsistent Learning Management System (LMS) tagging and documentation gaps, with approximately 15% of entries lacking ISO-creditable classification or NFPA references. Personnel with low Company Training hours may reflect personnel-related circumstances such as extended leave, staffing transitions, or separations. While these individual scenarios were not verified within this analysis, they warrant documentation for transparency and audit preparedness.

To close remaining gaps and sustain compliance momentum, the report recommends quarterly remediation cycles focused on Fire Suppression, Incident Analysis, and NIMS-ICS, alongside standardized evolution naming and LMS protocols. With continued improvements in documentation, scheduling, and personnel tracking, HPFD is well-positioned to elevate its ISO alignment in the training category and strengthen future audit outcomes.

Observations and Recommendations:

From the collective review in the scope of work in this initiative, the assessment team has developed the following seventeen (17) recommendations for the City of High Point to dutifully consider when strengthening and improving the city's fire protection service delivery system:

1. Staffing Levels:
    a. There are several data-based studies that conclude that more firefighters arriving together are more efficient than the same number of firefighters arriving in more apparatus. Additional company level staffing to ensure that there are adequate numbers of firefighters to

manage the tasks required at building fires is needed. The tragic event under review occurred in a smaller residential setting. Had this incident occurred in a commercial occupancy or 5 floors up, the outcome could have been more catastrophic.

b. The assessment team recommends that the City of High Point develop a viable plan to increase the daily minimum staffing levels on all large response apparatus to four (4) firefighters as soon as conditions will allow. Fortunately, High Point has recently received a 2024 federal SAFER grant for 24 additional firefighters. It is typical that this firefighter minimum staffing increase may need to occur over multiple fiscal years. High Point's plan should prioritize increasing staffing on the city's current two-person heavy rescue company first, followed by engines, then ladders. This prioritization to increase safety and performance is consistent with the 2-in, 2-out OSHA standard for IDLH environments. Furthermore, 4-person minimum staffing prioritization should consider High Point fire stations with the highest response times confirmed by the data in this report, such as stations 11, 10, 6, and 9 (based upon the data provided).

   For the eight (8) additional positions per shift provided by the 2024 SAFER grant, the assessment team recommends the following, based upon data provided for this analysis:

   - Add two firefighters to the rescue company.
   - Add one firefighter to Engine 11.
   - Add one firefighter to Engine 10.
   - Add one firefighter to Engine 6.
   - Add one firefighter to Engine 9.
   - Add one Shift Safety and Training Officer.
   - Increase the daily minimum staffing buffer by one firefighter.

c. It is recommended that the High Point Fire Department conduct a critical task analysis with a residential fire, commercial fire and cardiac medical event determining the efficiencies gained between three-person and four-person crews. Although significant research and data analysis exists from Underwriters Laboratories (UL) and the National Institutes of Standards and Technology (NIST), it is important to solidify the actual performance of High Point firefighters going

through standard evolutions. This is a best practice in the North Carolina fire service and can provide very important data for city management and city elected officials to understand the differences in performance that should be expected with four-person crews versus three-person crews. Within the appendix, there is an illustrative example of tangible data from a critical task analysis (or CTA) such as have recently been conducted for Clayton, Marion, Kannapolis, McLeansville, and others.

d. The assessment team identified the need to provide additional incident management support to incident commanders managing complex events in dangerous environments. A robust Incident Management Team in an environment conducive to decision-making is vital to preventing an incident commander from becoming task saturated or overwhelmed.

e. It is recommended that High Point modify response plans to send additional companies when a working fire incident is declared. Higher fireground staffing levels when a working fire is declared should be considered. In multiple studies across the United States, the number of firefighters needed to rescue a firefighter having a MAYDAY is much greater than a Rapid Intervention Team consisting of a single company.

2. <u>Improving Travel Time:</u>
   a. It is recommended that the City of High Point pursue installation of traffic signal pre-emption systems on traffic signals prioritized on main corridors of fire apparatus travel. It was noted in the data that the travel time for fire apparatus is increasing. Traffic pre-emption systems will enable the fire apparatus to move through heavy traffic faster and will increase safety to firefighters as well as the public. In some cases, the City of High Point may be able to partner with the NC Department of Transportation to cost-share the traffic signal enhancements on certain signals.

3. <u>Incident Management System:</u>
   a. The assessment team determined that a consistent Incident Management/Command system is needed by both the firefighter

working in a hazardous environment and the commander ensuring their well-being. A standardized system that produces expected outcomes is the cornerstone to any such ICS system. Systems such as Fire Command that are compliant with all NIMS requirements as well as NFPA 1550 should be evaluated and considered for implementation.

b. A part of any incident command system is effective communication during an event. This includes radio discipline and ensuring assignments are received and understood. It is recommended that the fire department's policies on incident communication be reviewed and that additional training occur on this critical component.

c. As a best practice, it is recommended that the City of High Point consider adding a training and safety officer to each operating shift. This person focuses on prioritizing training for each shift and making shift-based training programmatic adjustments as required. More importantly, the position responds to all significant events (such as structure fires) and serves as the incident safety officer. By consistently deploying the safety and training officer to the significant incidents, the second arriving High Point Battalion Chief can best focus on assisting and supporting the primary Battalion Chief that is serving as the incident commander. Having the second Battalion Chief assisting the incident commander is a proven best practice in North Carolina and enables a safer, more effective and more efficient operation. Additionally, the shift safety and training officer can directly observe the actions of their shift's personnel on the fireground and can create training programs to improve safety and performance. Furthermore, this position is an excellent career preparation for Battalion Chiefs.

4. <u>Firefighter Training:</u>
   a. The importance of effective air management training and policy adherence cannot be understated. It is recommended that the fire department review and revise the existing policy on air management and further emphasize the importance of air management as a critical component of the fire department's safety and operating culture.

b. It is recommended that the fire department further develop the current city fire training facility to better allow High Point firefighters the ability to practice the required skills in a realistic environment. This is particularly important to newer members of the department as well as company officer development. Until the current training facility can be upgraded, it is further recommended that High Point personnel utilize training facilities in the immediate region to strengthen skill sets as soon as conditions will allow.

5. Rapid Intervention and Firefighter Survival:
   a. The importance of adequate staffing dedicated to Rapid Intervention function (RIT) is critical to firefighter safety during all building fire responses. It is recommended that a minimum of four personnel be assigned to RIT during any working fire response and department policies and training be adjusted to this modification.

   b. It is recommended that High Point send firefighters to advanced breathing equipment training. Firefighter survival and Rapid Intervention training programs such as North Carolina Breathing Equipment School to instill into all firefighters the importance of recognizing when to call a MAYDAY and practicing the skills required to do so is vital to developing a culture of fireground safety.

6. Training Records:
   a. It is recommended that strategic remediation planning occur in the with the following three steps:
      i. Add 100+ hours quarterly in Fire Suppression and Fire Behavior to close Company Training gaps.
      ii. Integrate NIMS-ICS and Incident Analysis into tabletop exercises and scenario-based drills.
      iii. Schedule Hazmat drills with mutual aid partners to expand awareness level and utility-specific competencies.

   b. It is recommended that curriculum optimization occur by using the following three methods:
      i. Expand ICS 300/400, EOC, and NFPA 1521 modules for officer development.

ii. Reinforce foam operations, ladder rescues, and apparatus testing in Facilities Training.
iii. Restructure LMS content towards instructor-led, scenario-based instruction.

c. It is recommended that documentation enhancements be made in the following three areas:
   i. Implement standardized training descriptions with ISO/NFPA tags and evolution naming conventions.
   ii. Require personnel ID numbers in all training entries for traceability and audit defensibility.
   iii. Use visual dashboards to monitor per-member compliance, and remediation progress.

d. It is recommended audit readiness and scoring strategy actions take place with the following three actions:
   i. Clearly tag ISO-creditable hours and align training calendars with ISO audit cycles and NFPA benchmarks.
   ii. Track personnel below baseline thresholds for targeted follow-up and remediation.
   iii. Conduct mock ISO reviews to identify vulnerabilities and reinforce defensible narratives.

Next Steps:

The next steps for this process will be for the High Point Fire Department to review the data and information contained within this report as well as the observations and recommendations contained herein.

Several fire department operating policies and practices will need revision. The implementation of the 2024 federal SAFER grant for 24 additional firefighters will need to be implemented. Additionally, an incremental plan to further increase daily minimum staffing will need to be developed and presented to High Point elected officials as a policy decision moving forward. Additional enhancements such as implementing additional personnel, training center enhancements and sending personnel to outside training should be developed into the High Point FY 26-27 budget request for further consideration.

The entire NCFCC team sincerely appreciates the opportunity to provide this vital information to the City of High Point. We humbly and sincerely thank everyone who supported this progressive initiative and express our honor to serve in this beneficial capacity of continuous improvement.

SECTION 1: RESPONSE DATA ANALYSIS

Key Findings:

Demand of Services

- Post COVID, demand climbed back to pre-COVID numbers in FY21/22.
- In FY22/23, demand peaked at 16,691 incidents, a 6.48% increase over the previous year.
- Since FY22/23, demand has declined annually between 2.92% and 5.75%.
- July through December has more demand than the other half of the year.
- The highest 8-hour period of demand is between 11am and 7pm.
- 3pm has more demand than any other hour.
- October has more demand than any other month.
- Friday has more demand than any other day.
- Medical Responses contribute to 63.88% of the overall demand.
- Fires contribute to 3.40% of the demand. This should be seen as positive fire prevention efforts.
- Structure fires contribute to 2.18% of demand.
- Station 1 has more demand than any other station, Station 12 has the least.
- The percentage of overlapping events with a station area range from 4.65% in Station 1 area to 1.11% in Station 12 area.

Response Time Performance

• Call Processing Time	00:37
• Turnout Time Turnout	01:31
• Travel Time	05:04
• Response Time (Turnout and Travel Time)	06:04
• Total Response Time (Call Processing, Turnout, Travel)	06:30

Effective Response Force

The High Point Fire Department has demonstrated their ability to place their first fire suppression unit on the scene of a structure fire with 04 minutes and 51 seconds, or less, Total Response Time with a minimum of 3 firefighters on 90% of incidents.

In addition, the department has demonstrated their ability to place 17 firefighters on scene within 10 minutes and 14 seconds, or less, on 90% of the incidents.

RMS Data Analysis Introduction:

Data Source

The analysis in this report was created from data exported from the department's fire records management system (FRMS), EPR Fireworks. The department gave NCFCC access to this system where a query was created containing select data fields and exported as a .csv file format. This data was used in a data model tool provided by NCFCC. The data was limited to incident and unit data to show trends in demand of services and evaluate demonstrated response time performance to establish a baseline for future comparison. The date range of the data is July 1st, 2019, to June 30th, 2025, hence 6 full years of incidents.

All incidents were evaluated for the purpose of showing demand, a total of 91,879 incidents. For response time analysis, only the first arriving suppression unit indicating an "Emergency" or null response in their unit report was used. Some records did not have this value and therefore the blank value was used also. Those records tagged as non-emergency were excluded. In addition, only incident responses where the "Aid Type" did not indicate aid given were used, excluding responses outside the department's jurisdiction. This process yielded 82,250 first arriving unit responses where a response time (dispatch to arrive) could be calculated.

Purpose & Approach

The purpose of this report is two-fold; first is to show the demand on the department as it relates to response for service, show trends in this demand and help to project future demand and/or challenges this increased demand may have on the fire department. Second, this data will demonstrate the ability for the department to respond in a timely manner as compared to standards and industry best practices. This demonstrated performance evaluation will look at responses based on different factors like location, time of day and incident type, just to name a few.

Noted Errors and Omissions

The data model providing this analysis can find errors in respect to chronological time stamping found to be out of order and tag those for omission. This is required because the calculated values of date/time fields out of order produce an elevated value and may cause deviation in a summary like the 90th percentile evaluation. In addition, this model can eliminate or filter outliers by defining the time for select time segments the agency wishes to remove.

Errors found in the data were minimal and overall, their elimination would have no impact on the analysis in this report.

When evaluating PSAP time against alarm time, 290 records had no PSAP time, 5 records had PSAP time greater than alarm time, 99.69% records were found to be in chronological order.

When evaluating dispatch time against enroute time, 2 records had dispatch time greater than enroute time, 37 records had no dispatch time. 99.98% of records were found in chronological order.

When evaluating enroute time against arrival time, 1,308 records were found with arrive time but no enroute time, 6 records were found with enroute time greater than arrival times. 99.37% were found in chronological order.

When evaluating dispatch time against arrival times, 6 records had dispatch time greater than arrival time, 37 records had no dispatch time. 99.98% were found in chronological order.

Outliers

Call processing, turnout and travel time area were given a time threshold to be considered an outlier and filtered from the data analysis. The following shows the outlier time, the percentage and count of records filtered.

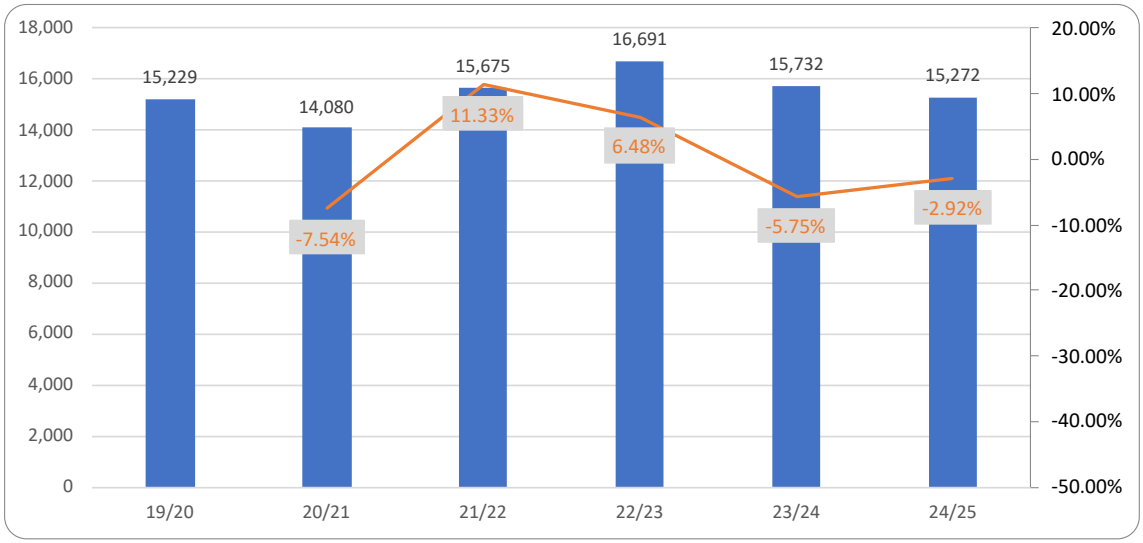
	Outlier Time	# of records	% of records
Call Processing Time	06:00	103	0.06%
Turnout Time	05:00	419	0.20%
Travel Time	30:00	211	0.10%

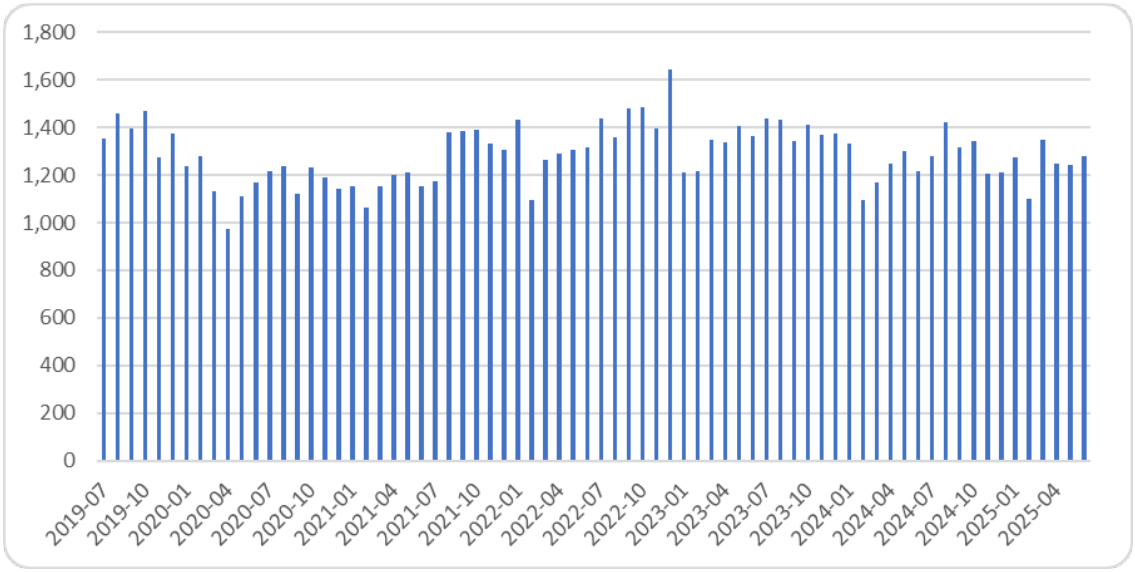
Demand for Services on the Department:

Demand by Fiscal Year

After a 7.54% decline in the pandemic year of 2020, demand climbs back to the pre-pandemic count in fiscal year 21/22 year. The following year posted a 6.48% increase but since fiscal year 22/23 demand has fallen a small percentage each year. Annually, the early month of the calendar year sees a monthly decline compared to the summer and fall. This can be seen when looking at the monthly demand.

Figure 1: Demand by Fiscal Year





Demand by Month

Applying color to each month allows us to see the higher demand in darker shades of red against the lower demand in darker shades of green. We apply this to the fiscal year grand totals and the monthly totals too.

The lowest monthly demand is April 2020 because of the Pandemic. The highest month was December 2022 which may have been the result of a major Arctic outbreak impacting High Point with extreme cold temperatures and power outages.

The months of July through December have more demand than the other half of the year. October is the month with most demand while February has the least demand over the 6-year period.

Figure 2: Demand by Month, by Fiscal Year

Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Jun	May	Grand Total
19/20	1,353	1,459	1,396	1,468	1,277	1,375	1,237	1,279	1,132	973	1,168	1,112	15,229
20/21	1,218	1,236	1,123	1,234	1,190	1,140	1,153	1,065	1,152	1,201	1,155	1,213	14,080
21/22	1,176	1,378	1,384	1,391	1,334	1,305	1,432	1,097	1,266	1,288	1,316	1,308	15,675
22/23	1,439	1,360	1,482	1,484	1,397	1,644	1,210	1,219	1,350	1,336	1,364	1,406	16,691
23/24	1,438	1,434	1,344	1,412	1,371	1,375	1,333	1,094	1,171	1,246	1,214	1,300	15,732
24/25	1,280	1,422	1,317	1,344	1,206	1,213	1,272	1,099	1,348	1,250	1,280	1,241	15,272
Grand Total	7,904	8,289	8,046	8,333	7,775	8,052	7,637	6,853	7,419	7,294	7,497	7,580	92,679

Demand by Alarm Hour / Day of Week

Friday has more demand than any other day and the 3pm hour more than any other hour. The highest 8-hour period of demand is 11am to 7pm.

Figure 3: Demand by Alarm Hour

Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
0	412	353	310	306	322	361	409	2,473
1	342	313	306	279	265	295	326	2,126
2	315	266	256	222	254	245	305	1,863
3	275	225	234	216	228	240	260	1,678
4	259	226	246	193	211	234	251	1,620
5	265	272	263	249	234	264	248	1,795
6	301	359	330	324	309	313	301	2,237
7	358	483	440	432	487	458	356	3,014
8	429	609	576	612	631	563	447	3,867
9	506	748	686	656	648	734	571	4,549
10	536	725	774	744	741	768	623	4,911
11	658	763	715	761	789	720	689	5,095
12	689	772	747	758	767	759	688	5,180
13	654	760	773	796	790	777	709	5,259
14	675	821	793	745	823	842	688	5,387
15	689	781	848	796	785	768	726	5,393
16	712	762	817	764	843	758	730	5,386
17	683	811	846	733	843	873	727	5,516
18	781	744	728	844	743	731	722	5,293
19	694	688	752	722	710	749	723	5,038
20	656	644	632	665	623	664	673	4,557
21	562	568	548	547	589	620	630	4,064
22	492	476	489	480	480	538	550	3,505
23	384	388	383	387	385	471	475	2,873
Total	12,327	13,557	13,492	13,231	13,500	13,745	12,827	92,679

Demand by NFIRS Category

The National Fire Incident Reporting System (NFIRS) uses 9 categories to identify the incident as it was found when arriving on scene. These are further defined by an incident type to be more specific. The Rescue & EMS category contains more incidents than any other with 63.88% of the incidents within the 6-year period. Thirty-six incidents (36) were defined as unknown or not completed. Many in this unknown category contain errors defined in the previous section of this report. Fires are 3.40% of the department's demand.

Figure 4: Demand by NFIRS Category

NFIRS - Category / Description	Count	%
1-Fire	3,147	3.40%
2-Overpressure Rupture, Explosion, Overheat(no fire)	160	0.17%
3-Rescue & Emergency Medical Service Incident	59,204	63.88%
4-Hazardous Condition (No Fire)	2,743	2.96%
5-Service Call	6,922	7.47%
6-Good Intent Call	8,045	8.68%
7-False Alarm & False Call	12,047	13.00%
8-Severe Weather & Natural Disaster	53	0.06%
9-Special Incident Type	322	0.35%
-Unknown	36	0.04%
Grand Total	**92,679**	**100.00%**

Digging deeper into the incident type, we find the medical assistance of the EMS crew to be the top incident type with 42.70% of all incidents of this type. The top 15 incident types are listed below. Building fires rank #13 with 212 incidents or 2.18% of all incidents.

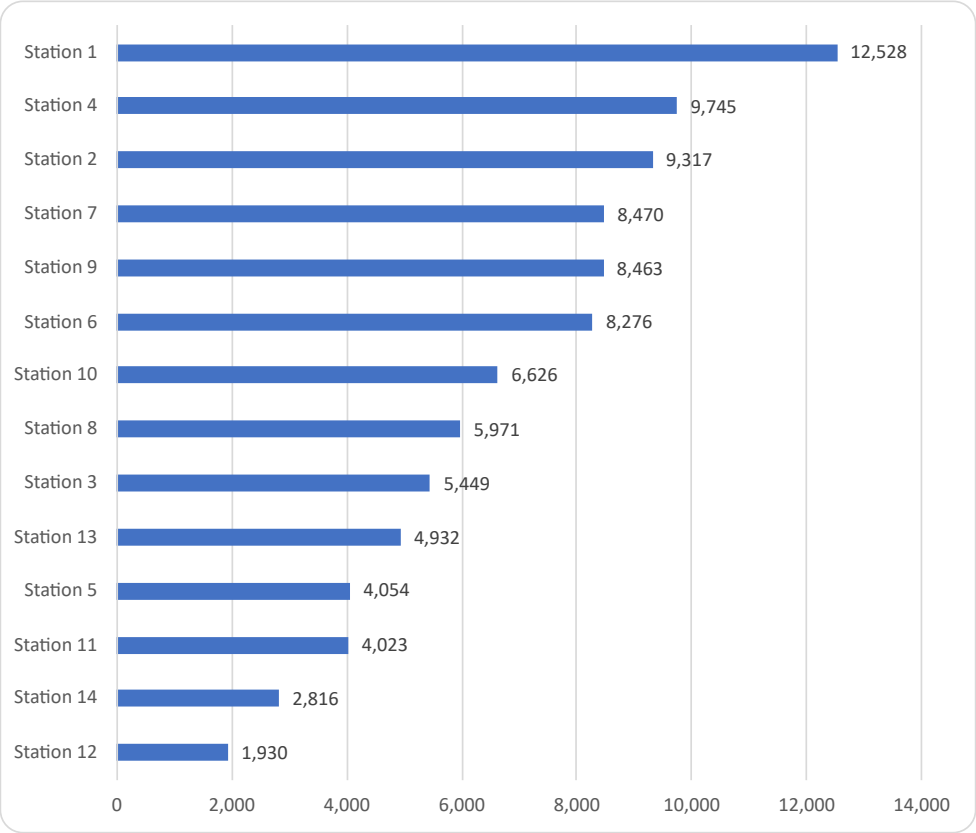
Figure 5: Demand by Incident Type (Top 15)

NFIRS Incident Type	Count	%
311 - Medical assist, assist EMS crew	4,162	42.70%
321 - EMS call, excluding vehicle accident with injury	2,425	24.88%
322 - Motor vehicle accident with injuries	680	6.98%
324 - Motor vehicle accident with no injuries.	482	4.95%
743 - Smoke detector activation, no fire - unintentional	432	4.43%
745 - Alarm system activation, no fire - unintentional	294	3.02%
111 - Building fire	212	2.18%
735 - Alarm system sounded due to malfunction	166	1.70%
600 - Good intent call, other	146	1.50%
622 - No incident found on arrival at dispatch address	141	1.45%
733 - Smoke detector activation due to malfunction	137	1.41%
440 - Electrical wiring/equipment problem, other	135	1.39%
651 - Smoke scare, odor of smoke	116	1.19%
511 - Lock-out	112	1.15%
412 - Gas leak (natural gas or LPG)	106	1.09%
Grand Total	**9,746**	**100.00%**

Demand by Station

Demand within the station geographically, first-due area is listed below and can be compared to response performance and overlapping events. If there is a high percentage of overlapping incidents in the station's area and the response time performance is less than the benchmark or other stations, this could be an indication of a decline in reliability.

Figure 6: Demand by Station Area



Overlapping Events

Due to the department having more than one station, this overlapping events evaluation focuses on events that overlap within the fire station area and not department wide. Station 1 has the highest number of overlapping events with 4.65% occurring before the first event cleared. This station also has the highest number of events.

August has more overlapping events than any other month, 4 to 5 pm more than any other hour, and Thursday more than any other day.

Figure 7: Overlapping Events by Station

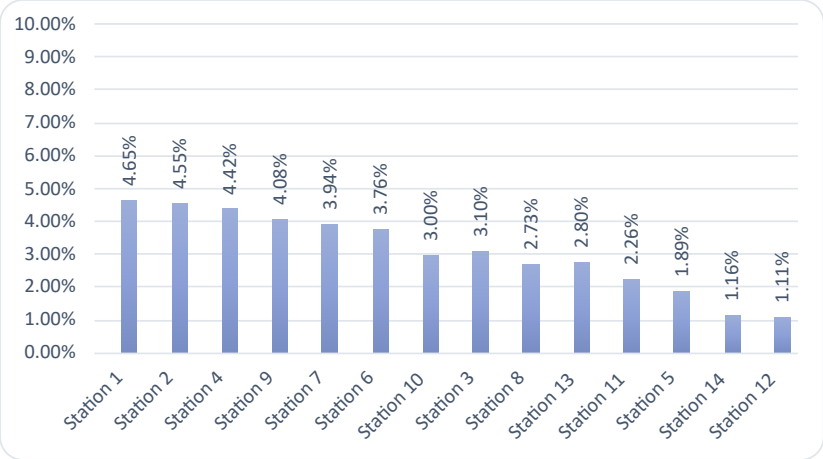


Figure 8:Overlapping Events by Alarm Hour

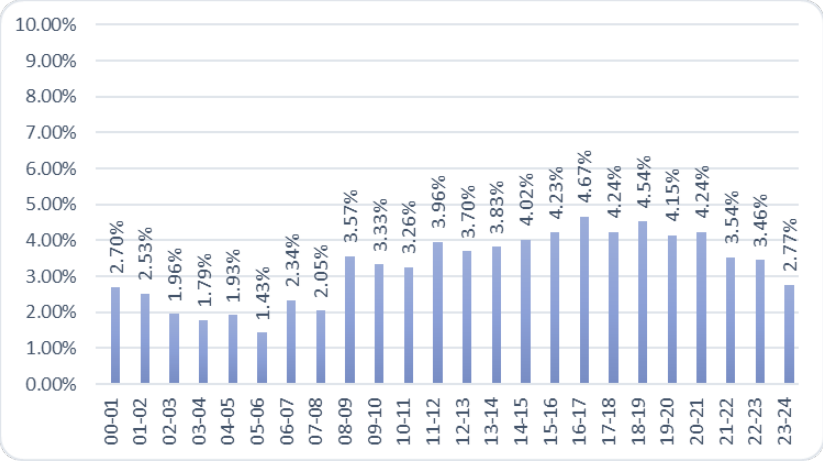
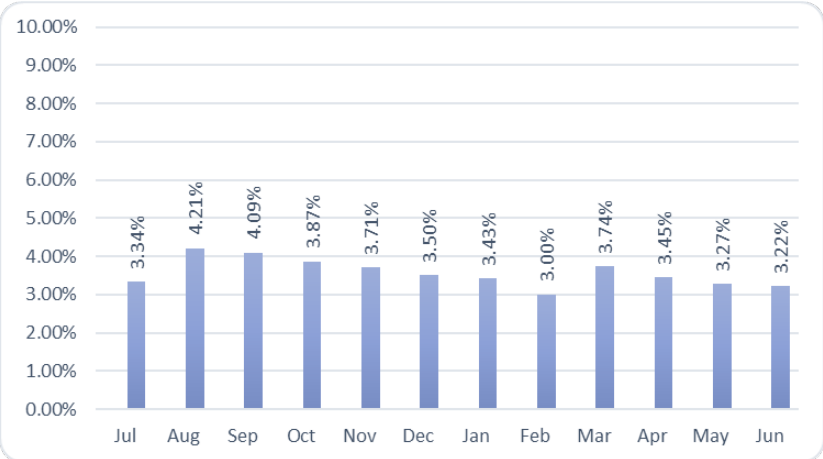


Figure 9: Overlapping Events by Month



Response, based on time – Three time-segments:

Total Response Time is the duration of time, measured from the receipt of the 911 call in the Public Safety Answering Point (PSAP) until the first fire department unit arrives on the scene of the incident. Total response time should be measured for the first-arriving unit and the arrival of the full alarm, or the declared effective response force, if possible. This time element can be broken into the following segments.

Call Processing Time – the elapsed time from event receipt at the PSAP to the dispatching of the first unit.

Turnout Time – the elapsed time from notification of the fire department from the 911 center until a fire unit has forward moment (wheels turning).

Travel Time – the elapsed time from the unit's turnout to the arrival at the incident address (wheels stopped).

Response Time - the elapsed time from when a unit is dispatched until the first unit arrives. (Turnout + Travel)

Total Response Time – the time elapsed from receipt at the PSAP until arrival of the unit on scene. (Call Processing + Turnout + Travel)

The fire department will typically evaluate and focus on response time, since call processing time is normally the responsibility of the 911 center. Call processing is equally important because it plays a key role in the total response time and the outcome of those served and protected. Because of this, the department should always analyze this information, if possible, and build relationships with the 911 center to develop a continuous improvement plan, using standards, best practices, or local approved goals as the benchmark.

Evaluation of response times should only evaluate those responses in the department's primary jurisdiction, excluding: those events where mutual/auto aid was given to other departments, non-emergency response, and justified outliers.

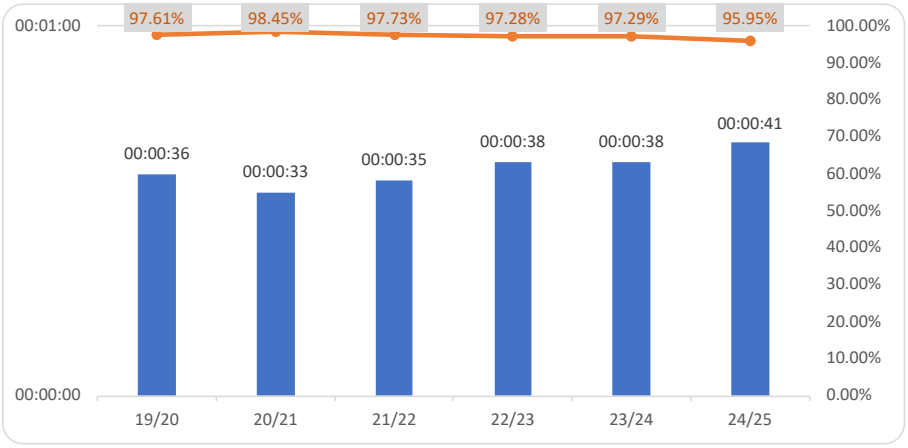
Call Processing Time – Segment One:

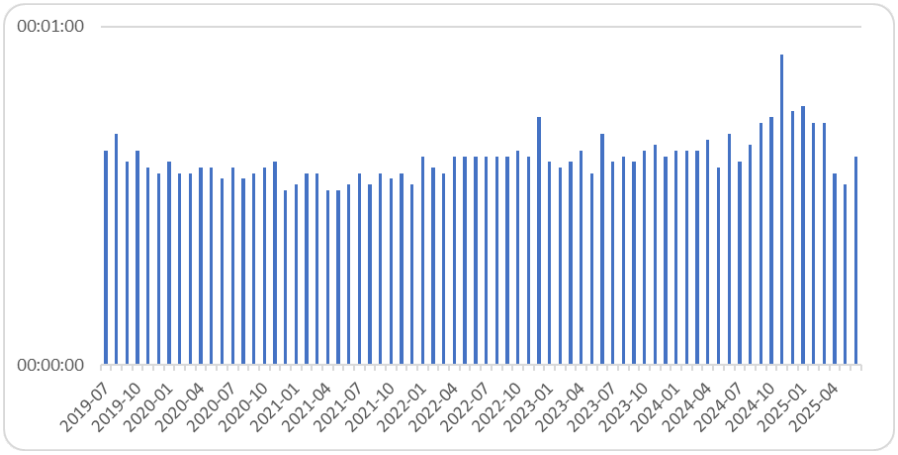
The 911 center has demonstrated their ability to process incidents (82,981) and alert the fire department within 37 seconds, or less, on 90% (90th percentile) of the incidents. The trend is increasing times with the exception to the few months.

A goal of 1 minute was used as a benchmark and the current performance was compared to the benchmark. The percentage of incidents meeting that benchmark is shown in orange as a percentage of compliance. Overall, the goal of 1 minute call processing time was met on 97.38% of the events. The benchmark has been met.

The most current NFPA 1710 requirements surrounding "Alarm Processing" or call processing time state the call should be processed within 64 seconds 95% of the time or 106 seconds 99% of the time. This document uses 90th percentile and 1 minute as a reference point for percentage of compliance.

Figure 10: Call Processing by Fiscal Year

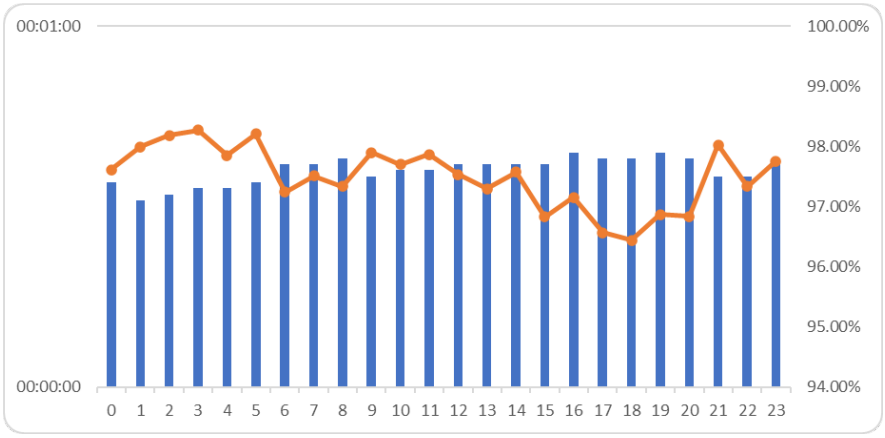




Call Processing by Alarm Hour

Any changes in call processing time by alarm hour could be due to demand and the inability for the dispatcher to get multiple calls out simultaneously or staffing shortages. High Point is using an automated fire station alerting system which reduces the amount of time the human dispatcher spends processing and delivering a call, thereby allowing another call to be dispatched. This may explain the relatively steady call processing time across the 24 alarm hours.

Figure 11: Call Processing by Alarm Hour



Call Processing by NFIRS Category

When evaluating call processing against the different types of events, all are less than 1 minute with exception to Weather & Natural Disaster event. This would be no surprise in this category as the agency would most likely hold some events during a storm until higher acuity events are dispatched or safety concerns are eliminated before dispatch.

Figure 12: Call Processing by NFIRS Category

NFIRS Category/Description	Count	CP	Goal Met
1-Fire	2,873	00:00:50	94.95%
2-Overpressure Rupture, Explosion, Overheat(no fire)	149	00:00:48	96.64%
3-Rescue & Emergency Medical Service Incident	56,085	00:00:26	98.36%
4-Hazardous Condition (No Fire)	2,497	00:00:51	94.11%
5-Service Call	5,283	00:00:46	95.19%
6-Good Intent Call	4,661	00:00:44	95.26%
7-False Alarm & False Call	11,282	00:00:47	95.81%
8-Severe Weather & Natural Disaster	44	00:01:25	84.09%
9-Special Incident Type	90	00:00:40	97.78%
-Unknown	17	00:01:16	88.24%
Grand Total	**82,981**	**00:00:37**	**97.38%**

Call Processing by Incident Type (Top 15)

Based on the data, the department's incident type, with the highest demand, has a call processing time of 21 second or less on 90% of those incidents. Building Fires take less than 47 seconds to process on most incidents (90th).

Figure 13:Call Processing by NFIRS Incident Type (Top 15)

NFIRS Incident Type	Count	CP	Goal Met
321-EMS call, excluding vehicle accident with injury	41,587	00:00:21	99.17%
311-Medical assist, assist EMS crew	7,395	00:00:23	98.59%
745-Alarm system activation, no fire - unintentional	4,251	00:00:50	95.15%
743-Smoke detector activation, no fire - unintentional	3,541	00:00:45	96.95%
322-Motor vehicle accident with injuries	3,297	00:00:53	92.78%
622-No incident found on arrival at dispatch address	3,222	00:00:37	96.55%
324-Motor vehicle accident with no injuries.	2,593	00:00:52	93.68%
500-Service Call, other	1,227	00:00:46	94.87%
554-Assist invalid	1,029	00:00:27	98.35%
733-Smoke detector activation due to malfunction	742	00:00:51	94.74%
522-Water or steam leak	723	00:00:48	95.44%
412-Gas leak (natural gas or LPG)	640	00:00:53	92.97%
744-Detector activation, no fire - unintentional	626	00:00:44	97.28%
111-Building fire	603	00:00:47	96.19%
735-Alarm system sounded due to malfunction	600	00:00:49	95.00%
Grand Total	**72,076**	**00:00:33**	**97.86%**

Turnout Time – Segment Two:

Defined as the segment of time from dispatch to apparatus moving forward, turnout time represents the time segment from where the fire department has the most control for response time improvement, with the least cost. That said, departments relying on fire staff and 911 staff to consistently timestamp the "enroute" timestamp at the same point in the response is the challenging part. Evaluating only the first arriving unit, traveling emergency traffic, the department has demonstrated a turnout time of 01 minute 31 seconds, or less, on 90% of the incidents.

A goal of 1 minute 20 seconds was used as a benchmark, and the current performance was compared to the benchmark. The percentage of incidents meeting that benchmark is shown in orange as a percentage of compliance. Overall, the goal of 1 minute 20 seconds turnout time was met on 84.76% of the events. The gap between the benchmark and the baseline is 11 seconds.

The time here represents the first arriving fire suppression unit where their unit report indicated emergency response of had a null value. Time stamping error and outliers were eliminated. A total of 82,514 responses were evaluated.

Turnout Time by Fiscal Year

The first four years of this 6-year evaluation show a steady and consistent turnout time. The past two years have shown an increase in time-out with any known reason. Demand has remained steady or has dropped, and travel time is not offset by this increase in turnout. This may lead to a change in where the timestamping occurs at the unit level. Implementing an automation of "enroute" may be a factor if the department has implemented auto-enroute in their One Solution CAD/MCT product.

Figure 14: Turnout Time by Fiscal Year

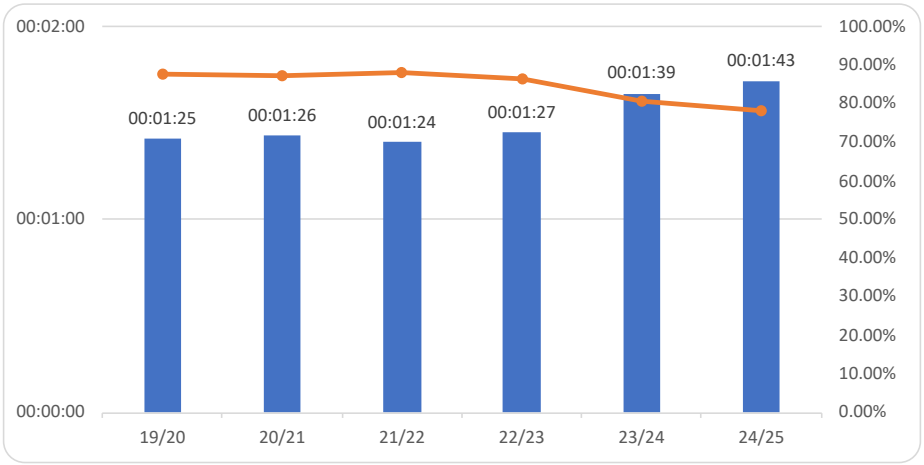
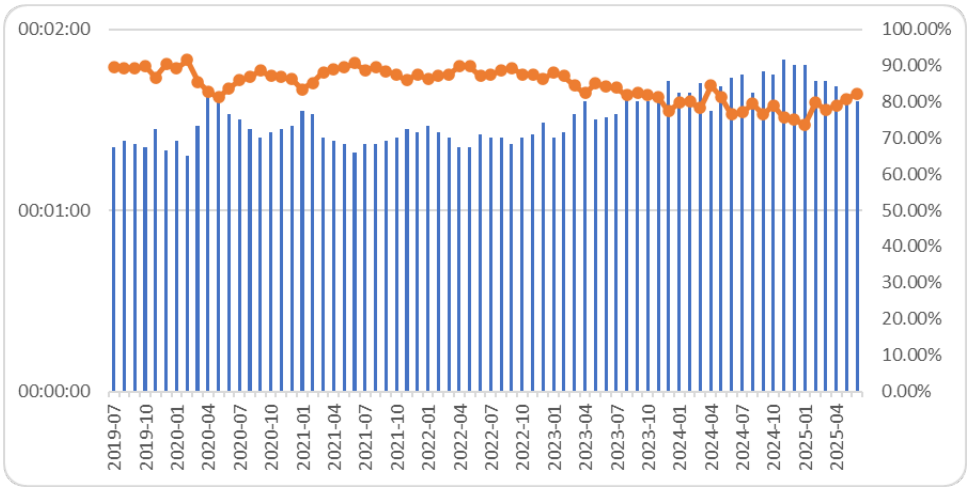


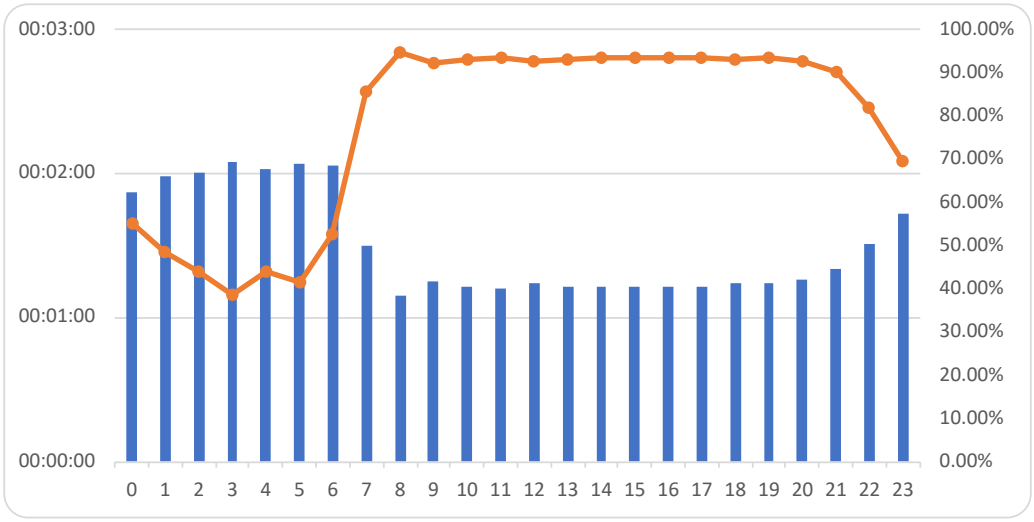
Figure 15: Turnout Time by Month



Turnout Time by Alarm Hour

A fire station staffed with personnel 24 hours a day and allowing sleep time will normally incur longer turnout time at night. The chart below shows this during the nighttime hours and its impact of the percentage of compliance against the 1 min 20 sec goal (in orange).

Figure 16: Turnout Time by Alarm Hour



Turnout Time by NFIRS Category

The fire category posts a turnout time of 01:27 while the Rescue/ EMS category posts a turnout time of 01:31. The fire category most likely requires the use of fire gear to be worn prior to departure whereas the rescue may not. Assuming turnout timestamping of each category are done alike, this may suggest a different sense of urgency in staff members once they are informed of the type of incident.

Figure 17: Turnout Time by NFIRS Category

NFIRS Category/Description	Count	TO	Goal Met %
1-Fire	2,833	00:01:27	86.52%
2-Overpressure Rupture, Explosion, Overheat(no fire)	148	00:01:38	81.76%
3-Rescue & Emergency Medical Service Incident	55,811	00:01:31	85.00%
4-Hazardous Condition (No Fire)	2,480	00:01:30	84.84%
5-Service Call	5,302	00:01:29	86.23%
6-Good Intent Call	4,615	00:01:29	85.63%
7-False Alarm & False Call	11,175	00:01:33	81.96%
8-Severe Weather & Natural Disaster	46	00:01:41	86.96%
9-Special Incident Type	87	00:00:57	97.70%
-Unknown	17	00:01:09	94.12%
Grand Total	**82,514**	**00:01:31**	**84.76%**

Turnout Time by Incident Type

The incident type with highest demand has a turnout time of 01:29 or less on 90% of the incidents. Building fires have a turnout time of 01:33 over the 6-year period.

Figure 18: Turnout Time by Incident Type (Top 15)

NFIRS Incident Type	Count	TO	Goal Met %
321-EMS call, excluding vehicle accident with injury	41,438	00:01:29	86.05%
311-Medical assist, assist EMS crew	7,373	00:01:46	76.32%
745-Alarm system activation, no fire - unintentional	4,209	00:01:38	79.43%
743-Smoke detector activation, no fire - unintentional	3,510	00:01:27	85.95%
322-Motor vehicle accident with injuries	3,250	00:01:23	88.80%
622-No incident found on arrival at dispatch address	3,197	00:01:28	86.68%
324-Motor vehicle accident with no injuries.	2,542	00:01:23	88.39%
500-Service Call, other	1,251	00:01:20	90.01%
554-Assist invalid	1,027	00:01:33	83.93%
733-Smoke detector activation due to malfunction	735	00:01:34	79.18%
522-Water or steam leak	723	00:01:36	81.88%
412-Gas leak (natural gas or LPG)	632	00:01:35	81.17%
744-Detector activation, no fire - unintentional	618	00:01:34	82.52%
735-Alarm system sounded due to malfunction	593	00:01:34	79.93%
111-Building fire	593	00:01:33	83.64%
Grand Total	**71,691**	**00:01:31**	**84.67%**

Turnout Time by Station

Station layout, station activities, like mowing the grass or training exercises, time of day, and/or supervisor expectations can all have an impact on turnout time.

Station 6 and 8 have the best turnout time, at 01:21 each, and highest compliance against the goal.

By shift, the turnout times are very similar.

Figure 19: Turnout Time by Station

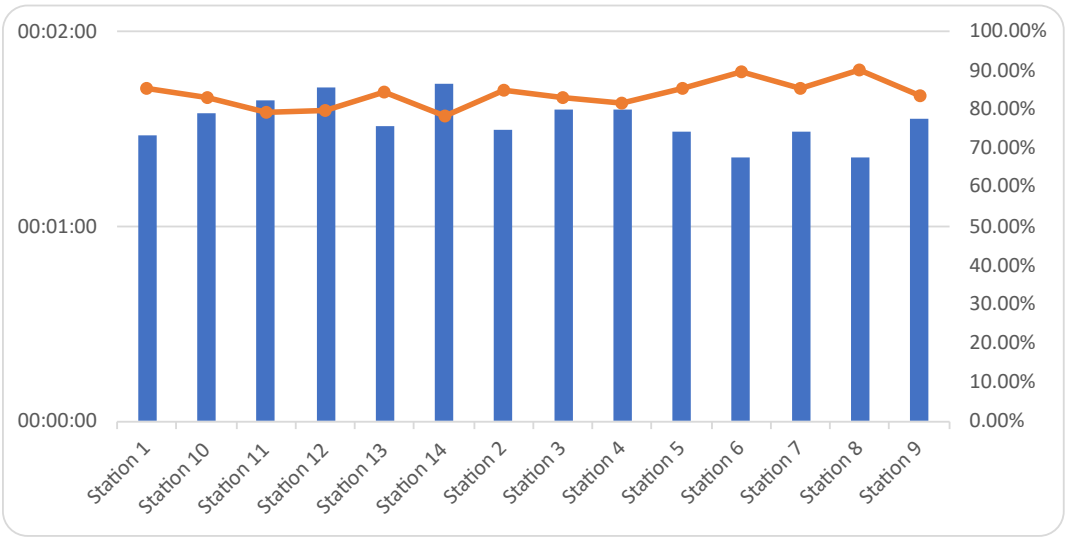
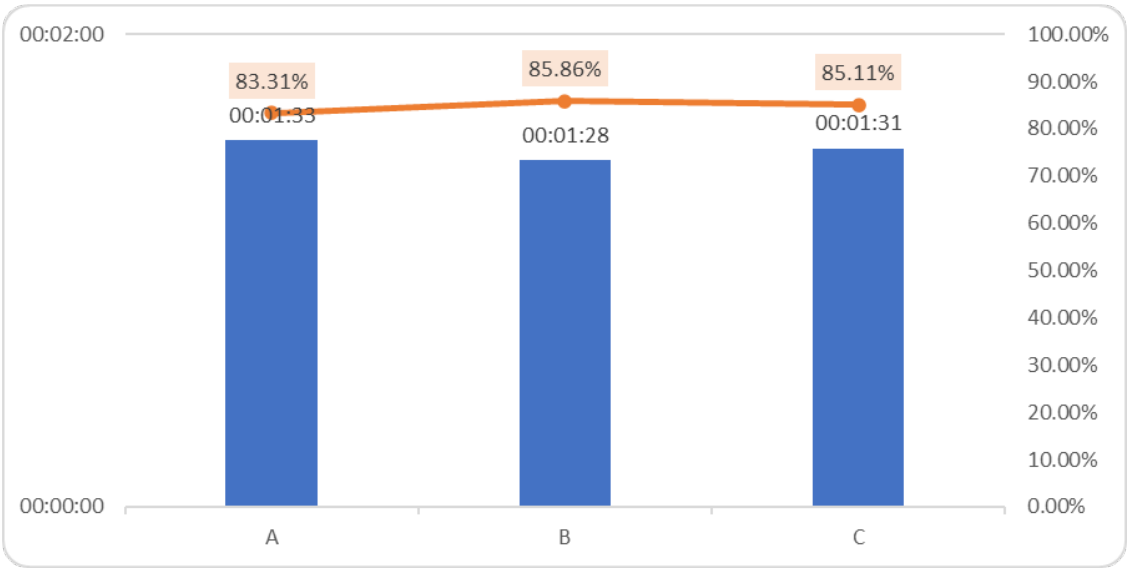


Figure 20:Turnout Time by Shift



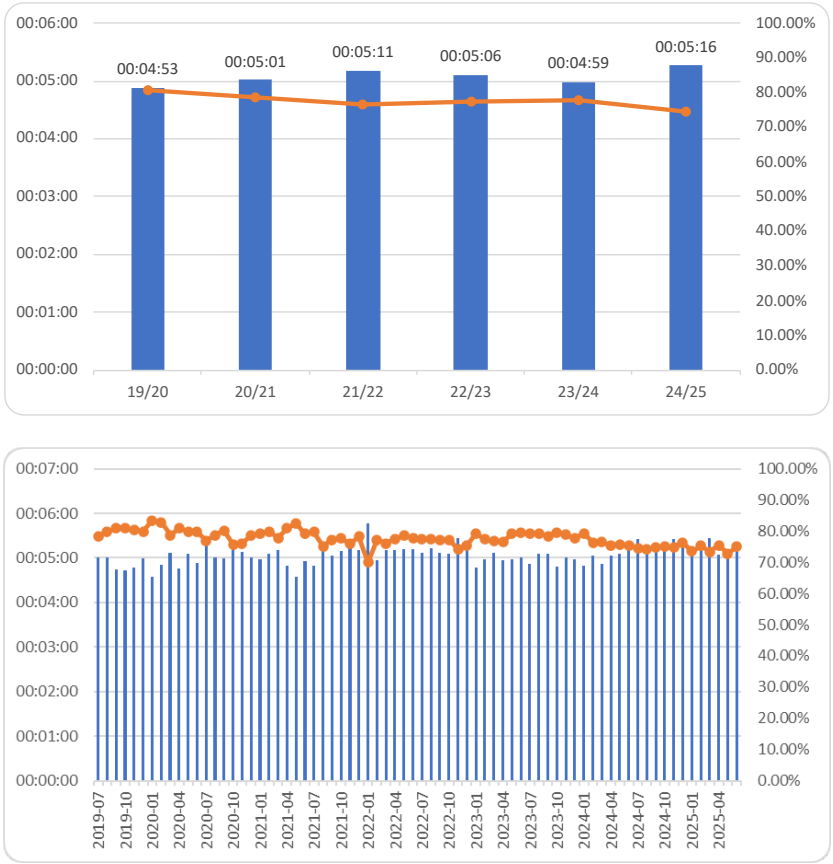
Travel Time – Segment Three:

Defined as the segment of time from checking enroute (turnout) to the arrival at the dispatched address. Travel time can be affected by many factors such as distance, vehicle traffic, weather, street width and grade, signal and stop signs, to name a few. Travel time performance is a good indicator of proper station placement and/or distribution and saturation of stations for those departments with more than one station. The High Point Fire Department has demonstrated the ability to respond to 90% of emergency incidents within 05 minutes and 04 seconds or less. Travel times are slowly increasing, and percentage of compliance is slowly decreasing over the 6-year period.

A goal of 5 minutes was used as a benchmark, and the current performance was compared to the benchmark. The percentage of incidents meeting that benchmark is shown in orange as a percentage of compliance. Overall, the goal of 5 minutes travel time was met on 77.58% of the events. The gap between the benchmark and the baseline is 1 minute 04 seconds.

Travel Time by Fiscal Year

Figure 21: Travel Time by Fiscal Year



Travel Time by NFIRS Category

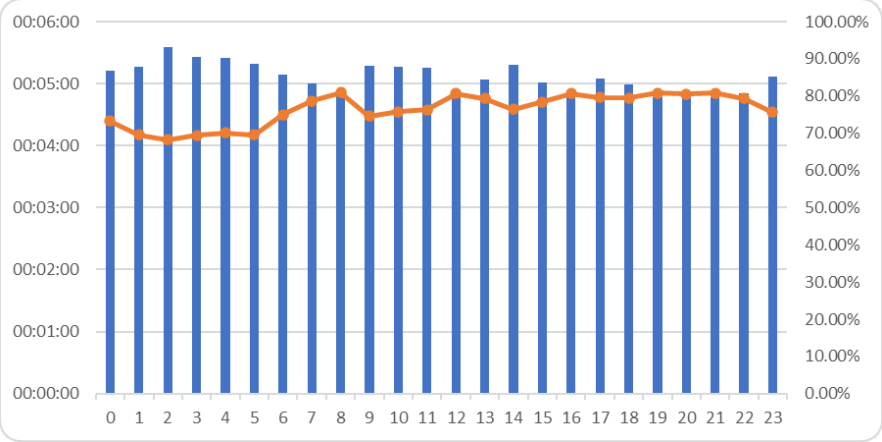
Figure 22: Travel Time by NFIRS Category

NFIRS Category/Description	Count	Travel	Goal Met %
1XX - Fire	331	00:06:44	69.49%
2XX - Overpressure Rupture, Explosion, Overheat(no fire)	17	00:07:06	52.94%
3XX - Rescue & Emergency Medical Service Incident	7,230	00:07:05	63.58%
4XX - Hazardous Condition (No Fire)	378	00:06:23	78.31%
5XX - Service Call	187	00:06:45	73.26%
6XX - Good Intent Call	296	00:06:56	68.58%
7XX - False Alarm & False Call	1,064	00:06:19	77.63%
8XX - Severe Weather & Natural Disaster	10	00:19:44	40.00%
9XX - Special Incident Type	7	00:05:32	71.43%
Grand Total	**9,520**	**00:06:59**	**66.25%**

Travel Time by Alarm Hour

It would be normal to see travel time increase during daytime hours due to traffic density and longer travel time when responding to other station's first due areas. In the data below we see the opposite effect where travel time is longer at night when traffic density should not be an issue and the chances of responding to another station's territory have decreased. This may suggest a premature time stamping of the enroute time at night thereby elongating the travel.

Figure 23: Travel Time by Alarm Hour



Travel Time by Incident Type

The service call incident type has a higher travel time than others, but this may be due to a non-emergency response, where traffic laws were obeyed but the staff failed to record this as a non-emergency response. This also be a sense of urgency reason where staff lowered their risk and had different travel tactics or practices.

Figure 24: Travel Time by Incident Type (Top 15)

NFIRS Incident Type	Count	Travel	Goal Met %
321-EMS call, excluding vehicle accident with injury	41,454	00:04:56	78.01%
311-Medical assist, assist EMS crew	7,380	00:05:38	68.73%
745-Alarm system activation, no fire - unintentional	4,209	00:04:37	83.82%
743-Smoke detector activation, no fire - unintentional	3,510	00:04:19	86.55%
322-Motor vehicle accident with injuries	3,251	00:04:08	88.71%
622-No incident found on arrival at dispatch address	3,198	00:04:56	80.30%
324-Motor vehicle accident with no injuries.	2,541	00:04:27	85.05%
500-Service Call, other	1,253	00:06:59	61.93%
554-Assist invalid	1,028	00:06:18	64.49%
733-Smoke detector activation due to malfunction	735	00:05:13	76.87%
522-Water or steam leak	723	00:05:39	66.80%
412-Gas leak (natural gas or LPG)	632	00:05:05	78.96%
744-Detector activation, no fire - unintentional	618	00:04:44	83.01%
735-Alarm system sounded due to malfunction	593	00:04:54	79.93%
111-Building fire	593	00:04:01	89.88%
Grand Total	**71,718**	**00:04:59**	**78.22%**

Response Time (Turnout and Travel):

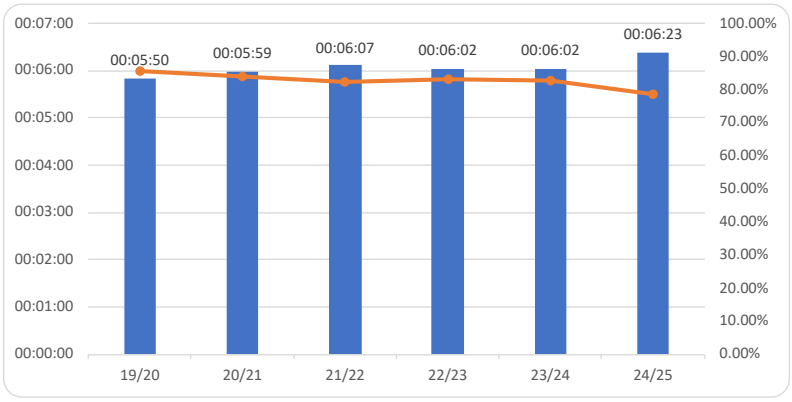
The measurable time segments which the department can manage and make improvements are turnout and travel. Added together and called "response time", the following presents response time, measured at the 90th percentile. The department has demonstrated their ability to respond within 06 minutes and 04 seconds with the first arriving unit, running lights and sirens, within the department's first due territory.

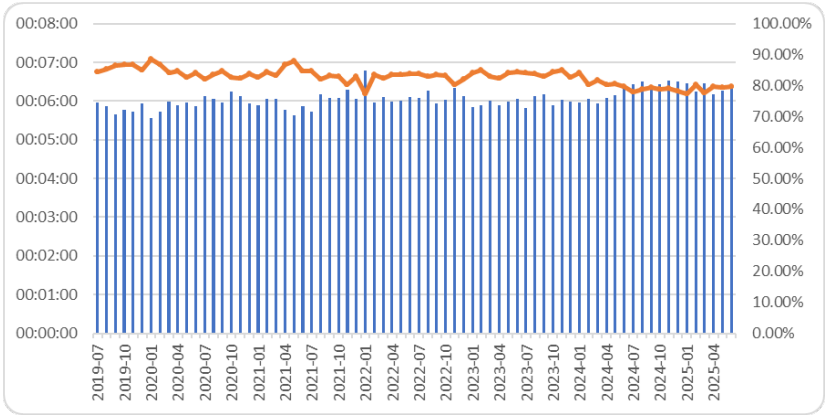
A goal of 5 minutes 20 seconds was used as a benchmark, and the current performance was compared to the benchmark. The percentage of incidents meeting that benchmark is shown in orange as a percentage of compliance. Overall, the goal of 5 minutes 20 seconds travel time was met on 82.763% of the events. The gap between the benchmark and the baseline is 44 seconds.

Response Time by Fiscal Year

A relatively steady response time performance during the period with exception to the last fiscal year where response time has increased approx. 20 seconds at the 90th percentile.

Figure 25: Response Time by Fiscal Year

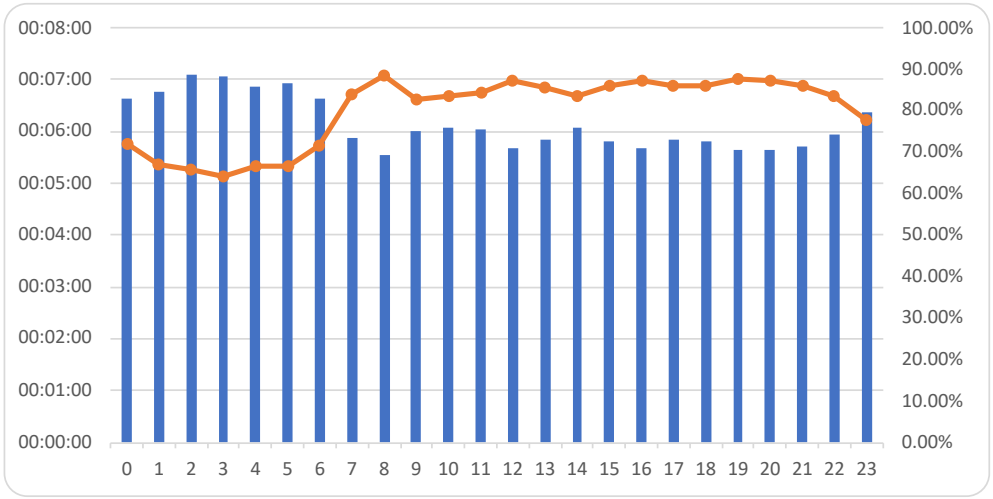




Response Time by Alarm Hour

Change seen here are driven by turnout time elongated at night.

Figure 26: Response Time by Alarm Hour



Response Times by NFIRS Category

Consistent response times across most categories except for weather related and service calls which may both be non-emergency type events or hard to locate events.

Figure 27: Response Time by NFIRS Category

NFIRS Category/Description	Count	RT	Goal Met %
1-Fire	2,880	00:05:36	87.40%
2-Overpressure Rupture, Explosion, Overheat(no fire)	149	00:05:36	88.59%
3-Rescue & Emergency Medical Service Incident	56,268	00:06:00	83.01%
4-Hazardous Condition (No Fire)	2,518	00:06:28	80.82%
5-Service Call	5,372	00:07:18	72.45%
6-Good Intent Call	4,671	00:05:57	83.96%
7-False Alarm & False Call	11,327	00:05:57	85.07%
8-Severe Weather & Natural Disaster	46	00:07:27	71.74%
9-Special Incident Type	89	00:06:34	86.52%
-Unknown	17	00:04:46	100.00%
Grand Total	**83,337**	**00:06:04**	**82.76%**

Response Time by Incident Type

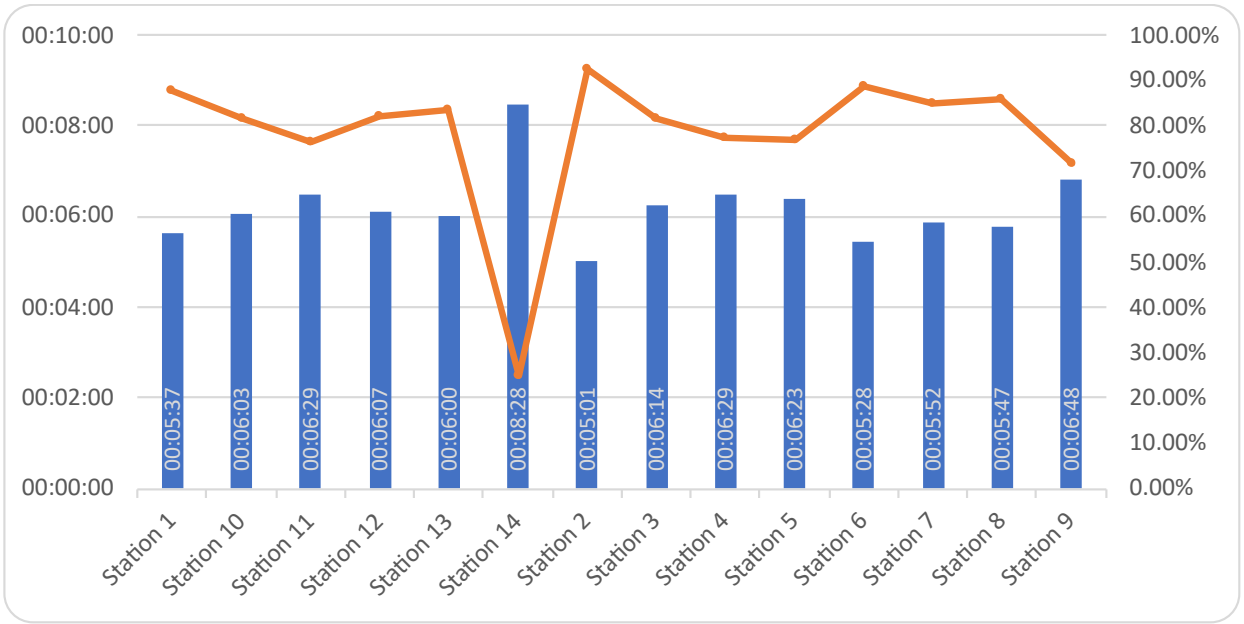
An impressive look at the top 15 incident types where overall the response is less than 6 minutes at the 90th percentile.

Figure 28: Response Time by Incident Type

NFIRS Incident Type	Count	RT	Goal Met %
321-EMS call, excluding vehicle accident with injury	41,724	00:05:57	83.57%
311-Medical assist, assist EMS crew	7,426	00:06:42	73.22%
745-Alarm system activation, no fire - unintentional	4,264	00:05:38	87.27%
743-Smoke detector activation, no fire - unintentional	3,557	00:05:16	90.72%
322-Motor vehicle accident with injuries	3,304	00:05:04	92.71%
622-No incident found on arrival at dispatch address	3,228	00:05:54	84.73%
324-Motor vehicle accident with no injuries.	2,597	00:05:18	90.41%
500-Service Call, other	1,279	00:07:48	69.74%
554-Assist invalid	1,041	00:07:15	69.93%
733-Smoke detector activation due to malfunction	745	00:06:05	81.48%
522-Water or steam leak	724	00:06:42	75.55%
412-Gas leak (natural gas or LPG)	645	00:06:05	83.88%
744-Detector activation, no fire - unintentional	629	00:05:44	86.65%
735-Alarm system sounded due to malfunction	603	00:05:57	84.74%
111-Building fire	603	00:04:49	94.20%
Grand Total	**72,369**	**00:05:59**	**83.38%**

Response Time by Station Area

Stations 1 and 2 have some of best response times, while station 14 has some of the higher response times.



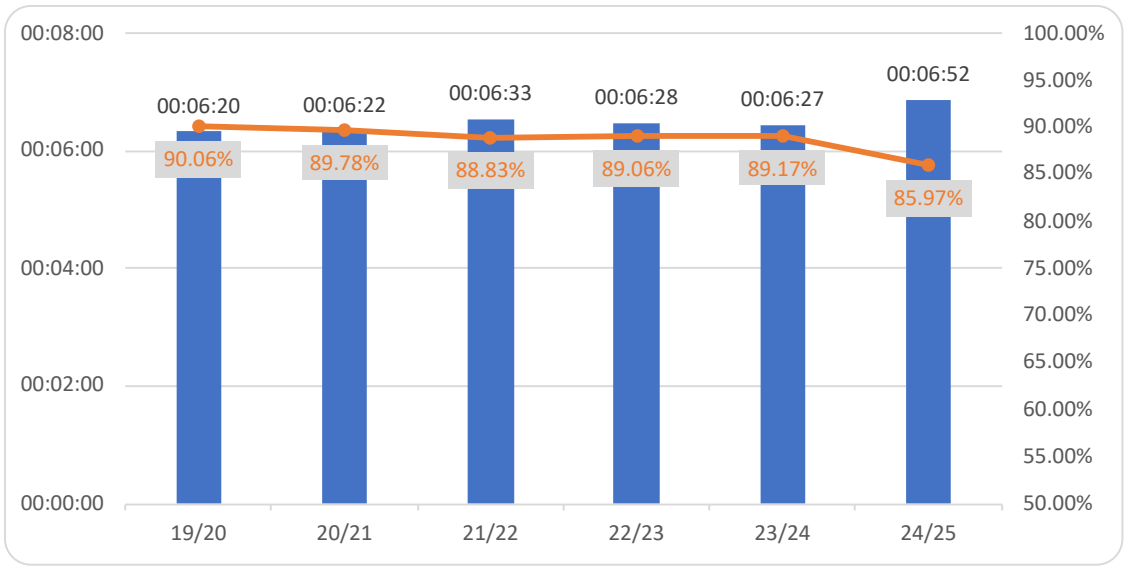
Total Response Time:

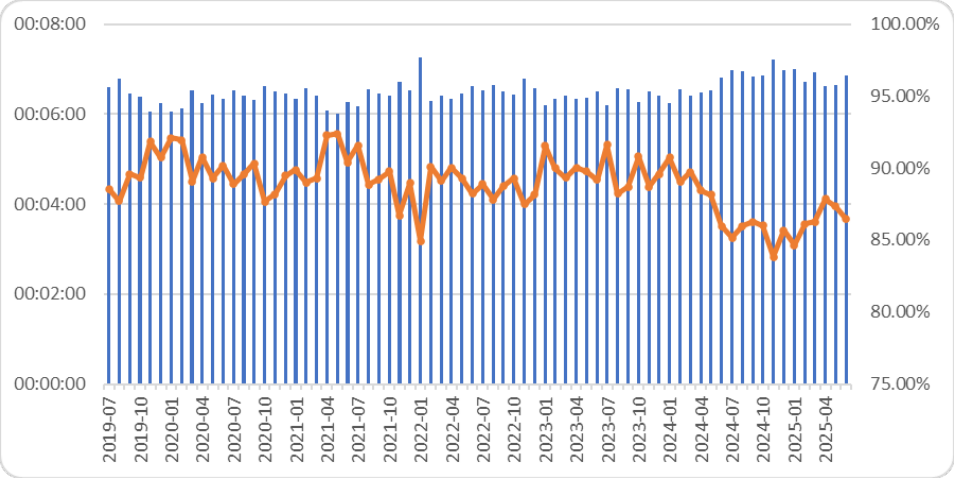
This represents all three segments of time from the call received in the 911 center until the department arrives their first unit. It is also representation of the true time the caller must wait before help arrives. Although not a direct reflection of the fire department's response capabilities, it should give the department a more realistic perspective on the amount of burn time for fire may have before their arrival. For medial events, it gives perspective on the possible cardiac downtime for cardiac arrest patients.

For this evaluation, totaling 83,063 incidents within the High Point Fire Department's first-due response area, the first arriving unit's Total Response Time at the 90th percentile is 6 minutes and 30 seconds.

A goal of 6 minutes 20 seconds was used as a benchmark, and the current performance was compared to the benchmark. The percentage of incidents meeting that benchmark is shown in orange as a percentage of compliance. Overall, the goal of 6 minutes 20 seconds travel time was met on 88.80% of the events. The gap between the benchmark and the baseline is 10 seconds.

Figure 29: Total Response Time by Fiscal Year





In the table below, each time segment for each NFIRS category is shown. This may allow us to see the one or more time segements that contributs to a longer total response time.

NFIRS Category/Description	Count	Call Processing	Turnout	Travel	Response Time	Total Response Time
1-Fire	2,873	00:00:50	00:01:26	00:04:42	00:05:36	00:06:15
2-Overpressure Rupture, Explosion, Overheat(no fire)	149	00:00:48	00:01:38	00:04:33	00:05:36	00:05:58
3-Rescue & Emergency Medical Service Incident	56,083	00:00:26	00:01:31	00:04:58	00:06:00	00:06:20
4-Hazardous Condition (No Fire)	2,508	00:00:52	00:01:30	00:05:34	00:06:28	00:07:09
5-Service Call	5,350	00:00:48	00:01:29	00:06:19	00:07:18	00:08:08
6-Good Intent Call	4,661	00:00:44	00:01:28	00:04:59	00:05:57	00:06:29
7-False Alarm & False Call	11,286	00:00:48	00:01:33	00:04:57	00:05:57	00:06:34
8-Severe Weather & Natural Disaster	46	00:02:29	00:01:41	00:06:55	00:07:27	00:09:36
9-Special Incident Type	90	00:00:40	00:01:00	00:05:43	00:06:34	00:09:55
-Unknown	17	00:01:16	00:01:09	00:03:54	00:04:46	00:04:55
Grand Total	**83,063**	**00:00:37**	**00:01:31**	**00:05:04**	**00:06:04**	**00:06:30**

Benchmarks and Baselines:

Most fire departments have response time goals which align with standards or best practices and monitor their performance against those goals. These are known as benchmark goals, and baseline performance measures. The unit of measure is percentile, normally 80th or 90th depending on the department type, and gives a good indication of what the department can accomplish in most incidents. The difference between the benchmark and baseline is referred to as the gap. A gap analysis should be performed periodically to determine needs to improve and highlight performance improvements that have been made.

Response Goals (Benchmark)

The High Point Fire Department has established benchmark goals at the 90th percentile as follows:

Call Processing	911 rec'd to dispatch	01:00
Turnout Time	Turnout 1st Arriving Unit	01:20
Travel Time	Travel Time 1st Arriving	04:00
Response Time	Turnout and Travel Time	05:20
Total Response Time	Call Processing, Turnout, Travel	06:20

Demonstrated Performance (Baseline)

Based on the incident data, the High Point Fire Department has demonstrated the ability to respond to 90 percent of all emergency events (all risk hazard) within 6 minutes and 30 seconds, or less, from the receipt of the 911 call in the PSAP until the first fire department unit arrives. This is considered Total Response Time demonstrated, baseline performance.

		Benchmark	Baseline	Gap
Call Processing Time	911 Rec'd to Dispatch	01:00	00:37	Goal Met
Turnout Time	Turnout 1st Arriving Unit	01:20	01:31	00:11
Travel Time	Travel Time 1st Arriving	04:00	05:04	01:04
Response Time	Turnout and Travel Time	05:30	06:04	00:44
Total Response Time	Call Processing, Turnout, Travel	06:20	06:30	00:10

Unit Staffing:

Based on the averages in the data in Figure 30, it suggests staffing is 3 firefighters for the engines, 3 firefighters for the trucks and 2 for the rescue. Occasionally, but not often, an additional staff member will bump these numbers by one, increasing the average ever so slightly over this 6-year period.

As an example, figure 31 shows the number and percentage where an incident shows 4 staff members. Only 2.29% but 1,935 total incidents where 4 staff were shown as part of the engine company.

Figure 30: Avg Staff by Unit

Unit Type | ID	D Count	Avg Staff	Min	Max
Engine				
Engine 1	15,865	3.04	1.00	7.00
Engine 10	8,016	3.02	1.00	7.00
Engine 11	5,252	3.02	1.00	7.00
Engine 12	4,422	3.01	1.00	6.00
Engine 13	9,211	3.01	1.00	7.00
Engine 2	15,973	3.01	1.00	7.00
Engine 3	7,847	3.02	1.00	8.00
Engine 4	10,430	3.00	1.00	6.00
Engine 5	6,698	3.02	1.00	8.00
Engine 6	9,971	3.03	1.00	8.00
Engine 7	11,484	3.01	1.00	6.00
Engine 8	9,236	3.03	1.00	7.00
Engine 9	10,352	3.04	1.00	7.00
Rescue unit				
Rescue 1	13,482	2.02	1.00	5.00
Tanker & pumper combination				
Engine 14	3,824	3.01	1.00	6.00
Truck or aerial				
Truck 12	4,923	3.04	1.00	7.00
Truck 2	12,028	3.08	1.00	8.00
Truck 4	5,678	3.06	1.00	8.00
Truck 7	8,408	3.03	1.00	7.00

Figure 31: Staff Count for Engines

Staff Count	D Count	D Count Inc #
1	405	0.44%
2	13,561	14.69%
3	89,941	97.45%
4	2,812	3.05%
5	74	0.08%
6	330	0.36%
7	35	0.04%
8	7	0.01%
Grand Total	**92,291**	**100.00%**

Effective Response Force Analysis (ERF):

An Effective Response Force is determined by the fire department once they have analyzed their risk in the community and completed a critical task analysis of each risk type to determine what resources are needed in respect to apparatus and staff counts. The deployment and arrival of those resources should have time-based goals associated with each, and a declared objective of assembling the ERF in minimal time to mitigate the incident and contribute to a more positive outcome.

We can analyze possible effectiveness of the AHJ's resources by looking at their abilities to assemble suppression apparatus and staff for specific incident types. The following represents 624 NFIRS-defined structure fires (Incident Types: 111,112,120,121,122,123), within the AHJ, where units arrived while traveling emergency traffic. Based on most of these structure fire incidents, the apparatus deployment count is: 2-Chief Cars, 4-Engines, 1-Rescue, 2-Trucks, and 1 Air Resource Unit. The average apparatus staff count is Chief: 1 staff, Engines: 3 staff, Rescue: 2 staff and Truck: 3 staff. This should yield approximately 22 staff on each incident if all apparatus arrives. This does not count the light unit which does not participate in suppression activities.

NFPA 1710 Industry Standard

The National Fire Protection Association has a standard for deployment of resources for career fire departments based on time and staff arrival. Those benchmarks are listed below along with the actual performance demonstrated by the agency.

Enter ERF # here->		17	Baseline@ 90th percentile	Benchmark	Gap
Call Processing Time (CP)	nth = 624	Pickup to Dispatch	**0:00:47**	0:01:00	Goal Met
Turnout Time (TO)		Turnout 1st Arriving Unit	**0:01:33**	0:01:20	0:00:13
Travel Time (Trv)		Travel Time 1st Arriving	**0:04:00**	0:04:00	0:00:00
	nth = 454	Travel Time ERF Unit	**0:08:50**	0:08:00	0:00:50
Total Response Time (TRT)		Total Response Time 1st Arriving Unit (CP,TO,Trv)	**0:04:49**	0:06:20	Goal Met
	nth = 454	Total Response Time ERF Unit (CP,TO,Trv)	**0:09:57**	0:10:20	Goal Met

The High Point Fire Department has adopted the time and staff count of NFPA 1710 for their moderate structure hazard. Many of the time segments have met or exceeded the times established by the standard with exception to the turnout and travel of the first arriving units and the travel time of the unit caring the declared 17th person.

The department is also attempting to place 4 firefighters on the scene in a timely manner to allow entry to the structure for fire suppression. This requires a minimum of 2 firefighters on the handline and another two 2 firefighters as backup in the event the first handline gets into trouble. This is referred to as 2-in, 2-out, a rule required by OSHA.

Because the apparatus is staffed with 3 firefighters, this requires the 2nd unit to arrive before this can be accomplished. Based on the data from the 624 structures fires, the first unit arrives within 4 minutes 49 second or less on 90% of incidents, but it requires another 1 minute and 11 seconds or less (06:00 total) on 90% of incidents to get the 2nd unit on scene carrying the 4th firefighter to allow entry in the structure. This equates to an addition 01:11 to put water on the fire or initiate a rescue, both could affect outcomes.

Arrival Sequence	Running Staff Count with 3-person apparatus	Total Response Time @ 90th	Running Staff Count with 4-person apparatus
1	3	04:49	4
2	6	06:00	8
3	9	06:49	12
4	12	07:39	16
5	15	07:54	20

Arrival Sequence – Evaluating each Unit

Using the 624 structure fires from above, the initial unit deployment strategy for the majority (90.6%) was Chief: 2, Engine:4, Light:1, Rescue:1, Truck: 2 for a total of 10 units. Earlier, we determined the Light Unit was not part of the ERF and therefore is not counted in the arrival sequence. Many of these percentages are the result of the proximity of the unit to the incidents; those in distal areas of the city like engines 12 and 5. For those distal units, an argument could be made for a greater need of increased staff due to the amount of waiting time for the next unit.

In Figure 32 below, Engine 1 arrived first on 15.32% of the structure incidents they responded to (unknown count). They arrived 2nd on 14.76% of the incidents and 3rd on 15.04% of these and so on.

Figure 32: Engine Arrival Sequence Percentages

Seq	Engine 1	Engine 10	Engine 11	Engine 12	Engine 13	Engine 14	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6	Engine 7	Engine 8	Engine 9
1	15.32%	36.61%	32.10%	12.99%	6.51%	19.51%	21.03%	11.54%	36.07%	17.35%	32.95%	26.79%	30.67%	27.78%
2	14.76%	20.54%	11.11%	14.29%	7.91%	7.32%	23.79%	20.00%	11.48%	6.12%	10.80%	12.50%	9.82%	14.44%
3	15.04%	9.82%	11.11%	24.68%	12.09%	4.88%	19.31%	13.08%	11.48%	17.35%	14.77%	13.10%	16.56%	5.56%
4	18.11%	8.93%	12.35%	11.69%	18.60%	12.20%	13.45%	6.15%	8.20%	19.39%	10.23%	10.12%	13.50%	18.33%
5	16.71%	7.14%	11.11%	14.29%	20.47%	9.76%	9.31%	13.08%	7.38%	10.20%	10.80%	10.71%	14.72%	14.44%
6	11.14%	3.57%	4.94%	7.79%	14.42%	24.39%	6.90%	17.69%	12.30%	8.16%	11.36%	9.52%	10.43%	8.89%
7	4.18%	4.46%	7.41%	9.09%	11.16%	7.32%	2.07%	6.92%	7.38%	14.29%	5.11%	7.14%	2.45%	8.33%
8	3.34%	8.04%	7.41%	3.90%	4.65%	9.76%	3.10%	7.69%	4.10%	5.10%	2.27%	5.36%	1.84%	1.67%
9	1.39%	0.89%	2.47%	1.30%	4.19%	4.88%	1.03%	3.85%	1.64%	2.04%	1.70%	4.76%	0.00%	0.56%

Figure 33: Battalion, Truck and Rescue Arrival Sequence Percentages

	Battalion 1	Battalion 2	Battalion 3	Rescue 1	Truck 12	Truck 2	Truck 4	Truck 7
1	6.17%	8.74%	9.81%	0.72%	7.14%	3.40%	3.41%	5.98%
2	13.14%	17.74%	13.08%	4.31%	14.29%	14.45%	20.49%	8.55%
3	13.67%	17.74%	11.68%	8.61%	10.20%	16.15%	6.34%	7.12%
4	9.12%	19.28%	8.88%	11.72%	14.29%	15.30%	2.93%	7.12%
5	15.55%	14.91%	7.01%	8.85%	16.33%	11.90%	5.37%	9.40%
6	10.72%	10.80%	7.94%	15.07%	14.29%	10.76%	13.17%	12.54%
7	14.48%	4.63%	9.81%	17.70%	8.16%	9.07%	13.66%	21.65%
8	11.53%	3.60%	10.28%	20.10%	12.24%	11.61%	20.98%	14.53%
9	5.63%	2.57%	21.50%	12.92%	3.06%	7.37%	13.66%	13.11%

What may be important is to understand how long, on average, the first unit arriving is waiting on the second unit's arrival. This 2nd arriving unit, currently staffed with 3 firefighters, may have the 4th firefighter needed to make entry and/or have the firefighters needed to complete some of the priority tasks prior to entry. We look to averages here to allow a better understanding, but we should also understand some are longer and some are shorter waiting times. This chart below

is broken out by the station's first due (geographical) area with a total incident count to allow understanding of how many incidents contribute to the average. Stations 10 and 11 are waiting the longest, on average, for the 2nd unit arrive; both around 1 min 30 seconds each. Station 11 waits another full minute before the arrival of the 3rd unit, longer than any other station waits on the 3rd unit.

Figure 34: Average Time between Arrival Sequences

Seq	1	2	3	Count	Between 1st and 2nd	Between 2nd and 3rd
Station 1	00:02:55	00:03:33	00:04:12	68	0:00:38	00:00:39
Station 10	00:03:35	00:05:02	00:05:38	48	0:01:27	00:00:35
Station 11	00:03:31	00:05:08	00:06:12	26	0:01:37	00:01:04
Station 12	00:03:51	00:04:53	00:05:33	16	0:01:02	00:00:39
Station 13	00:02:44	00:03:23	00:03:59	23	0:00:39	00:00:37
Station 14	00:04:43	00:05:46	00:06:37	13	0:01:03	00:00:51
Station 2	00:02:41	00:03:12	00:03:50	58	0:00:30	00:00:39
Station 3	00:03:47	00:04:18	00:04:45	30	0:00:31	00:00:27
Station 4	00:03:34	00:04:38	00:05:17	66	0:01:04	00:00:39
Station 5	00:03:52	00:04:53	00:05:20	17	0:01:00	00:00:28
Station 6	00:03:47	00:05:07	00:05:45	70	0:01:20	00:00:37
Station 7	00:03:12	00:03:53	00:04:52	63	0:00:40	00:01:00
Station 8	00:03:27	00:04:17	00:04:45	64	0:00:51	00:00:28
Station 9	00:03:31	00:04:56	00:05:28	62	0:01:25	00:00:32

SECTION 2: POST INCIDENT ANALYSIS

Post Incident Analysis – 610 Barbee Ave. on April 13, 2025

The following report was developed following a near miss event that occurred within the High Point Fire Department. The department recognized the significance of this event and immediately sought ways to improve their firefighter's safety and service delivery. The event that led to the near misses was a relatively normal occurrence for most fire departments across the United States. The department responded to a reported building fire in a single-family dwelling. There were no extenuating circumstances that impacted the response to the event, the department received the call for assistance, responded as they normally do, and upon arrival initiated expected actions.

The event quickly became extraordinary when the arriving firefighters determined there were multiple victims that required rescue and a well-advanced building fire. During operations at the event, two firefighters became disoriented in the structure as conditions rapidly deteriorated. Both firefighters were able to self-rescue and ultimately continued operating at the event. These events caused the High Point Fire Department to first begin a thorough examination of what were the factors that led to the near misses, and how can the organization improve to prevent similar events in the future.

Upon completion of an internal review of the events that occurred at 610 Barbee Ave., the City of High Point and the High Point Fire Department sought an independent third party to provide a review of the event and provide recommendations to improve policies and systems.

Facilitated Debriefing Sessions

The High Point Fire Department (HPFD) command staff provided the results of the department's internal review of the event for NCFCC staff to review prior to the facilitated sessions. HPFD supported the debriefing sessions by ensuring all personnel who were involved during the event on April 13, 2025, were provided an opportunity to part of the sessions while on duty. A virtual session was also held for anyone who was unable to attend the group session.

Two facilitators who are seasoned North Carolina fire service veterans conducted the debriefing sessions, both of which have been through a line of duty death (LODD) situation in their career.

A facilitated debrief is not an investigation to place blame or find fault, it is designed to allow the participants to discuss their first-hand experiences in a non-threatening, learning environment. The session consisted of each company providing what their role in the event was and what their actions were. After each company provided a description of their experiences, a series of questions were asked to elicit feedback about what actions went well, if the responders were prepared for the events of April 13, 2025, and what does the department need to do to prevent a near miss like this in the future. The members of HPFD were engaged throughout the sessions and provided open and forthright feedback in hopes of improving their department and sharing these experiences with others to prevent a catastrophic outcome elsewhere.

Incident Summary:

On April 13, 2025, at 20:29:32 the HPFD was dispatched to a reported residential fire at 610 Barbee Ave. The structure was a single-family dwelling constructed in 1945. The structure was approximately 1,185 square feet in size and was occupied by an elderly couple, one of which was not ambulatory and required the use of a wheelchair. The initial dispatch for the HPFD for this type of event consists of four engine companies, two truck companies, one rescue company, and two battalion chiefs. The total number of personnel responding was 22 firefighters. Engine and truck companies are minimally staffed with 3 personnel, and the rescue company is minimally staffed with 2 personnel.

The first arriving company, Engine 1, arrived on scene at 20:31:05 and provided an initial radio report stating there was heavy smoke showing from the structure and upon completion of a 360 reported flames on the "C Division" and that they would be deploying an attack line to the "A Division" and entering the structure. At 20:32:21 Engine 1 made entry into the structure (1:16 after arrival) and at 20:35:40 located and removed a victim to the front yard. (3:19 after entry)

The first arriving battalion chief (BC 1) arrived at 20:33:43, just after Engine 1 made entry into the structure. BC1 performed an additional 360 review of the incident and command was transferred to him. As Incident commander he assigned the next arriving engines the following tasks:

- Engine 13 was assigned to staff a second attack line and assist Engine 1 with fire attack.
- Engine 2 was assigned to initiate patient care on the victim that had been extricated by Engine 1's crew.
- Engine 7 arrived at 20:34:41 and was initially assigned as the Rapid Intervention Team for the incident.
- Rescue 1 arrived at almost the same time as the two previous engines (20:34:00) and was assigned the task of completing a primary search of the structure.
- Both truck companies arrived about the same time, Truck 7 arrived at 20:35:14 and Truck 4 arrived at 20:36:40 and were given tasks to secure utilities and bring up a ventilation fan.
- The second arriving battalion chief, BC 3, arrived at 20:39:07 and was assigned as the incident safety officer.

After approximately 8 minutes (20:39:07), there were 19 personnel on the scene of the incident. At about this time, events began to rapidly change. The first victim was located and extricated from the structure at 20:35:40. In just over four minutes, fire conditions had gotten much worse and the Incident Commander was ordering a strategy change by ordering all crews out of the structure at 20:39:16.

Engine 13, which was initially assigned the second attack line, had entered the structure and had added a member of Engine 1's crew to their crew as they entered for fire attack.

As conditions deteriorated, Engine 13's officer ordered the crew out prior the declared strategy change from the Incident Commander. In this action, the company officer lost contact with the attack line as he was ensuring all personnel were exiting the structure. He called the Incident Commander by radio stating he could not find his way out of the structure at 20:39:29. A MAYDAY was declared by the Incident Commander (20:40:28), and a second alarm was requested at 20:40:03. The company officer from Engine 13 was able to self-rescue after hearing shouts from the doorway he had entered on the "A Division." (20:40:38)

During the same approximately 8 minutes from arrival to the rapid change of conditions, the crew of Rescue 1 also experienced a near miss. The crew of two firefighters was assigned the task of providing a primary search of the structure and upon approaching the structure, the crew was familiar with the residence and its occupants, so a decision to enter the structure from the "C Division" was made in hopes of performing a rescue due to the known proximity to the door as the resident who was confined to the wheelchair was generally in a room easily accessed from the "C Division." This action required the crew to separate to enter from both sides of the structure with the company officer entering the same way as the engine companies had advanced a hose line and the engineer entering in the door into the kitchen from the "C Division." The engineer reported that upon entry, the conditions were moderate smoke and good visibility. When the conditions began worsening, he reported he had to drop to the floor and experienced zero visibility. He attempted exit the structure but could not locate the door he had entered earlier. After several passes through the kitchen, he located the door he had entered through and was able to self-rescue as well. He did not declare a MAYDAY but did attempt to report he was unable to exit the structure – however, he was unsuccessful due to the high amount of radio traffic.

After all personnel were accounted for and the fire was cooled with streams from the exterior, the decision to return to an offensive strategy was declared at 20:42:08. The truck companies on the scene initiated vertical ventilation as well and upon re-entering the structure, the second victim was in the primary fire room (20:44:09). When located, it was determined that the victim had already succumbed to his injuries, and he was not removed until after the fire cause investigation was completed.

The first victim was transported to a local medical facility but succumbed to her injuries in the days following the fire. Upon completion of the fire cause investigation, all firefighters returned to their assigned locations and completed their shifts.

Department Feedback:

Participants were asked if as a department and/or company they knew what the mission was on April 13, 2025, and had they planned for an event like this. The feedback received was consistent that the department knew the mission was to successfully extinguish the fire and ensure the occupants were safely removed and that as a department they are prepared and equipped for what was described as a "bread and butter" type event. When asked if there were gaps in the planning for an event like this, the response was a consistent theme that they were not prepared to effectively respond to the complexity of multiple rescues at this incident.

Additionally, the personnel involved discussed the challenges that confronted them that evening with a significant number of firefighters with limited experience within the fire service. At least two members of the first arriving engines had less than one year experience as firefighters. In the discussion about gaps within preparation, fire ground staffing was discussed several times. The minimal staffing of 3 firefighters per company being less effective than a 4-person company was a concern among the entire group. The group also discussed the importance of crew integrity as a gap within the planning for high-risk events such as this. Several crews were blended due to vacancies, coupled with a lack of experienced firefighters presented additional challenges to having a successful outcome.

The next area of discussion focused on what went well, asking "Did we do all we could to make this a successful outcome?", and "Was there anything else needed at this event?" When discussing these areas, there was overwhelming agreement that many things did go well. The group recognized that extricating a victim timely and delivering medical treatment on scene while continuing extinguishment actions was a testament to the professionalism and training of the HPFD. Another area that was discussed focused on the actions of the two firefighters who became disoriented, both remained calm and relied on their previous training to successfully exit the structure when conditions worsened. The crews involved also mentioned that while there were limitations with crew integrity, all personnel functioned effectively and efficiently. When discussing "Did we do all we could to make this incident successful?", again the overwhelming response was yes - as a department our actions were successful in mitigating the event. This led to a discussion about did we have all we needed for this event. This discussion was focused primarily on the staffing levels of all companies. The group recognized the importance of additional staffing to complete the needed fire ground tasks as well as additional staffing at the command level to successfully manage a complex event. The discussion included the needed number of firefighters to effectively staff a Rapid Intervention Team when events like this occur. The discussion also touched on the culture of the department of "doing

more with less for so long" that this is one of the things that impacts firefighter retention.

The group was then asked, "What could have gone better, were there any unsafe behaviors seen, and what could we have done differently?" The group presented several responses that focused on tactical decisions but also can be distilled down to a robust incident management system that provides for effective tactical supervision and support for an incident commander. The culture of the department as described by the participants was that there are differences among every Incident Commander and that often assignments are made based upon "what we always do versus what do we see happening now." The group mentioned the need to have greater dedication to the RIT functions, not just a check in a box.

When asked about were there any unsafe behaviors noticed, the group mentioned that although the department has an Air Management Guideline there were low air alarms sounding. Also, the practice of a two-person company separating in an Immediately Dangerous to Life and Health (IDLH) environment was discussed. Although the crew can often maintain voice contact, it was felt this practice is not safe. When discussing what could have been conducted differently, the group discussed the importance of recognizing the changing smoke conditions and the need for ventilation tactics to be better coordinated with fire attack. Also, the importance of decreasing radio traffic by having greater radio discipline was mentioned.

Last, the group was posed with the question "What needs to be fixed so this doesn't happen again?" The responses again focused on the need for greater staffing on the fire ground and greater support for the incident commanders. Other areas discussed included challenges with radios, and the retention challenges the department is facing. The importance of succession planning was discussed and focusing on continuing to develop the newer members of the department.

The events of April 13, 2025, highlight the importance of having well-trained and equipped firefighters performing during a highly dangerous event. The efforts of the High Point Fire Department to ensure that a near miss event like this is shared and learned from is to be applauded. The participants of the debriefing sessions sought to tell their experiences and hope others will learn from them.

SECTION 3: BENCHMARKING ANALYSIS

Benchmarking Summary:

NC Fire Chief Consulting was asked to provide information relating to company level minimum staffing level, response alarm levels, effective response force, and Rapid Intervention practices from seven (7) municipal fire departments of similar size throughout North Carolina for the City of High Point Fire Department. The information obtained was through direct phone interviews and publicly available information via internet searches.

When reviewing the minimum number of personnel assigned to an apparatus, High Point was the only fire department that operates all companies with 3 personnel. The seven departments surveyed all operate at least a portion of their companies with a minimum of 4 personnel. High Point Fire Department operates one company, a heavy rescue, with 2 personnel, only two of the surveyed departments operate companies with 2 personnel. Those two departments, Asheville and Wilmington, operate a tanker company and EMS squad companies respectively. The tanker personnel are not given fire ground assignments within the IDLH in Asheville, and the squads are not assigned tasks without additional personnel in Wilmington.

The surveyed departments were consistent in the number of supervisory or support personnel minimally staffed for shift operations. Only three departments' staff personnel other than a Battalion Chief position that respond as part of the Incident Management Team (IMT). Those departments, Asheville, Concord, and Wilmington all staff a dedicated Safety Officer to assist within the IMT. The additional support staff allows for greater tactical supervision when operating in hazardous environments. All departments respond multiple Battalion Chiefs to events classified as Moderate or greater risk. The number of supervisory personnel being dispatched to low-risk events was consistent as only one department reported sending a Battalion Chief to a fire alarm activation.

Every department surveyed increases the number of companies dispatched for Moderate and High-risk events within the nature codes. High Point adds additional personnel to High-risk events by placing 3 more companies on the dispatch. When asked if when a "Working Fire" is confirmed only 3 of the 7 departments send additional resources. The number of companies sent varied from only 1 engine and a Battalion Chief to 2 engines and a ladder company for moderate risk events.

The number of personnel defined as Total Effective Response Force (TERF) varied across the departments interviewed. The greatest number noted was 31 for a Moderate-risk event in Asheville, to 15 for Low and Moderate-risk events in Cary, Fayetteville, and Wilmington. Currently High Point assigns 23 personnel to a Moderate-risk event and 31 for a High-risk event. The only department which

assigns greater than 31 for a High-risk event is Asheville which assigns 39 personnel. The variation of assigned numbers is often determined by several factors such as available automatic/mutual aid and geography. In communities where automatic aid is more readily available and dependable, such as Cary and Apex, the number of personnel assigned is lower. In communities such as Asheville where the number of available mutual aid companies is not as great and the distance required to arrive is significant, more firefighters are assigned to all events. High Point is successful at putting the number of required firefighters on the fire ground in a timely manner as their 90th Percentile of Moderate-risk TERF is 10:19. Wilmington achieves 90th Percentile on similar classified events in 9:22, while Cary achieves their 90th Percentile at 9:21. Apex achieves the lowest 90th Percentile in 9:08 while both Asheville and Gastonia have greater 90th Percentile times for Moderate-risk classified events at 15:27 (Asheville) and 16:56 (Gastonia). Both of those departments have noticeably better performance in Maximum-risk classified events at 13:30 (Asheville) and 10:19 (Gastonia). Data from Concord was not available related to TERF.

The surveyed departments were asked how they assign the Rapid Intervention functions, and what is the minimum number of personnel that are assigned to that fire ground assignment. The responses varied, however, only Fayetteville assigns a company of 3 firefighters to the RIT function like High Point. The remainder of the surveyed departments always ensure that the primary assigned company has at least 4 firefighters. Several departments have companies who are dedicated to RIT like a ladder company being dedicated to search or ventilation as its primary fire ground function. The departments that have a “Working Fire” alarm consider the companies dispatched from that alarm to be available to assist in RIT operations if needed.

Benchmarking Data - Municipal Staffing Levels:

Department Surveyed	Daily Company Level Staffing	Daily Minimum Staffing	Positions Staffed	Staffing Buffer	Population
Apex Fire Department	Engines 3 Ladder 4 Rescue 4	29 Personnel	5 Engines, 1 Ladder, 1 Rescue, 2 BC	35 Assigned 15%	76,974
Asheville Fire Department	Engines 4 Ladder 4 Rescue 4 Tanker 2	73 Personnel	9 Engines, 3 Ladders, 2 Quints, 1 Rescue, 1 Squad, 1 Tanker, 4 Chiefs, 2 STO, 1 Inv	88 Assigned 17%	95,376
Cary Fire Department	Engines 4 Ladder 3 Rescue 3	60 Personnel	9 Engines, 4 Ladders, 3 Rescues, 2 BC	76 Assigned 22%	183,498
Concord Fire Department	Engines 3 or 4, Ladder 4 or 5, Rescue 4	74 Personnel	11 Engines, 4 Ladders, 1 Rescue, 2 ARFF, 4 Chiefs, 1 Safety	89 Assigned 17%	113,608
Fayetteville Fire Department	Engines 3 or 4 Ladder 3 Rescue 2	88 Personnel	16 Engines, 5 Ladders, 1 Rescue	106 Assigned 17%	210,135
Gastonia Fire Department	Engines 3, Ladder 4, Rescue 4	36 Personnel	6 Engines, 3 Ladders, 1 Rescue, 2 BC,	44 Assigned 19%	86,218
Wilmington Fire Department	Engines 3 or 4 Ladder 3 or 4 Rescue 4 Squad 2	52 Personnel	7 Engines, 4 Ladders, 3 Squads, 1 Rescue, 2 BC, 1 Safety	62 Assigned 17%	127,316
High Point Fire Department	Engines 3 Ladder 3 Rescue 2	60 Personnel	14 Engines, 4 Ladders, 1 Rescue, 2 BC	72 Assigned 17%	118,312

Benchmarking Data – Response Models:

Department Surveyed	Fire Alarm Response (Low)	Residential Fire Response (Moderate)	Commercial Fire Response (High)	Working Fire Response	Defined Effective Response Force	90th Percentile TERF
Apex Fire Department	1 Engine, 1 Ladder	4 Engines, 1 Ladder, or 1 Rescue, 2 BC	5 Engines, 2 Ladders, 1 Rescue, 2 BC	No Additional Resources Unless Requested by IC	17 in SOC Document 18 being sent	9:08 (FY 24)
Asheville Fire Department	2 Engines, 1 Ladder, 1 BC	4 Engines 1 Ladder 1 Rescue 1 Tanker 2 Chiefs 2 STO 1 Inv	1 Additional Ladder for ***Commercial, Max Risk*** Additional Engine	2 Engines, 1 Ladder	***Moderate***--31 Personnel ***High***-- 39 Personnel	10:05 ***Low*** 15:27 ***Moderate*** 16:34 ***High*** 13:30 ***Maximum*** (FY19-23)
Cary Fire Department	1 Engine, 1 Ladder	4 Engines, 1 Ladder, or 1 Rescue, 2 BC	5 Engines, 2 Ladders, 1 Rescue, 2 BC	No Additional Resources Unless Requested by IC	***Moderate***-- 15 Personnel ***High***-- 26 personnel	9:21 ***Moderate*** 13:07 ***High Risk*** (FY23)
Concord Fire Department	2 Engines,1 Service (Ladder or Rescue)	4 Engines, 2 Service, 1 Safety Officer, 2 BC	4 Engines, 2 Ladders, 1 Rescue, 1 SO, 2 BC 1, DC	No Additional Resources Unless Requested by IC	Unavailable	Unavailable
Fayetteville Fire Department	1 Company	3 Engines, 1 Ladder, 1 Rescue, 1 BC	5 Engines, 3 Ladders, 1 Rescue, 2 BC	***Moderate***--1 Engine, 1 Rescue, ***High***-- 2 Engines, 1 Ladder, 2 BC	***Light & Moderate***-- 15 Personnel, ***High***-- 24 Personnel	15:52 (2024)
Gastonia Fire Department	2 Companies	2 Engines, 1 Ladder, 1 Rescue, 1 BC	additional Ladder, 1 BC	1 Engine, 1 BC	***Moderate***-- 15 Personnel	16:56 ***Moderate*** 10:51 ***Significant*** 10:19 ***Maximum*** (2024)
Wilmington Fire Department	***Single Family Dwelling*** -1 Engine, 1 Ladder, ***Commercial***- 2 Engines, 1 Ladder	3 Engines, 1 Ladder, 1 Rescue, 1 BC, 1 Safety	3 Engines, 2 Ladders, 1 Rescue, 2 Squads, 1 BC, 1 Safety- ***Special (Max)*** 1 additional Engine	No Additional Resources Unless Requested by IC	***Moderate***-- 15 Personnel, ***High***-- 18 Personnel, ***Special***-- 21 Personnel	9:22 ***Moderate Risk*** (2022)
High Point Fire Department		4 Engines, 2 Ladders, 1 Rescue, 2 BC, 1 Air	4 Engines, 2 Ladders, 1 Rescue, 2 BC, 1 Air ***Plus 2nd Alarm***	No Additional Resources Unless Requested by IC	***Moderate***-- 23 Personnel, ***High***-- 31 Personnel	10:19 ***Moderate*** (2024)

Benchmarking Data – Rapid Intervention:

Department Surveyed	RIT Assignments
Apex Fire Department	CAM Operational Guides 2nd Arriving Truck Company is Assigned RIT. Always minimum of 4 Personnel
Asheville Fire Department	3 Engines assigned RIT in department, CAD always sends at least 2 on all fire calls
Cary Fire Department	CAM Operational Guides 2nd Arriving Truck Company is Assigned RIT. Always minimum of 4 Personnel
Concord Fire Department	RIT is not preassigned, IC directed, Rescue or Ladder companies are generally given the assignment
Fayetteville Fire Department	Dedicated companies, 3 personnel minimum staffed.
Gastonia Fire Department	Initial RIT assigned by IC, then 2nd arriving Rescue. Minimally staffed with 4 personnel.
Wilmington Fire Department	IC assigned, companies assigned "On Deck" are given RIT Functions. Any comany can receive assignment with exception of Squads (2 personnel)
High Point Fire Department	3rd Arriving Engine. 3 personnel minimum staffed

High Point Population and Firefighter Position Data:

This analysis compares the data provided in High Point's "Staffing and Deployment Proposal" document (see Appendix #7) with the side-by-side display of population figures and firefighter staffing levels. The assessment team conducted additional research and located population data spanning 2005 to 2010. Based on the original chart, there appears to be no change in firefighter staffing during that period. Please note due to the ongoing government shutdown, the U.S. Census Bureau data is currently inaccessible, so the population figures have not been independently verified.

Figure 35: Original Data

Year	Population	Population Change %	Call Volume	Call Volume Change %	Firefighters	Firefighter Change %
2005	95,630		10,755		201	
2010	104,371	9.1%	11,029	2.5%	201	0.0%
2011	105,843	1.4%	11,209	1.6%	201	0.0%
2012	107,157	1.2%	11,719	4.5%	201	0.0%
2013	108,285	1.1%	12,189	4.0%	201	0.0%
2014	109,270	0.9%	12,406	1.8%	201	0.0%
2015	110,638	1.3%	12,403	0.0%	210	4.5%
2016	111,967	1.2%	13,662	10.2%	211	0.5%
2017	112,201	0.2%	14,957	9.5%	211	0.0%
2018	113,125	0.8%	15,569	4.1%	211	0.0%
2019	114,183	0.9%	16,035	3.0%	211	0.0%
2020	115,526	1.2%	14,006	-12.7%	211	0.0%
2021	115,900	0.3%	14,877	6.2%	211	0.0%
2022	116,996	0.9%	16,471	10.7%	216	2.4%
2023	117,279	0.2%	16,225	-1.5%	216	0.0%
2024	118,370	0.9%	16,515	1.8%	216	0.0%

Figure 36:Original Data Graph

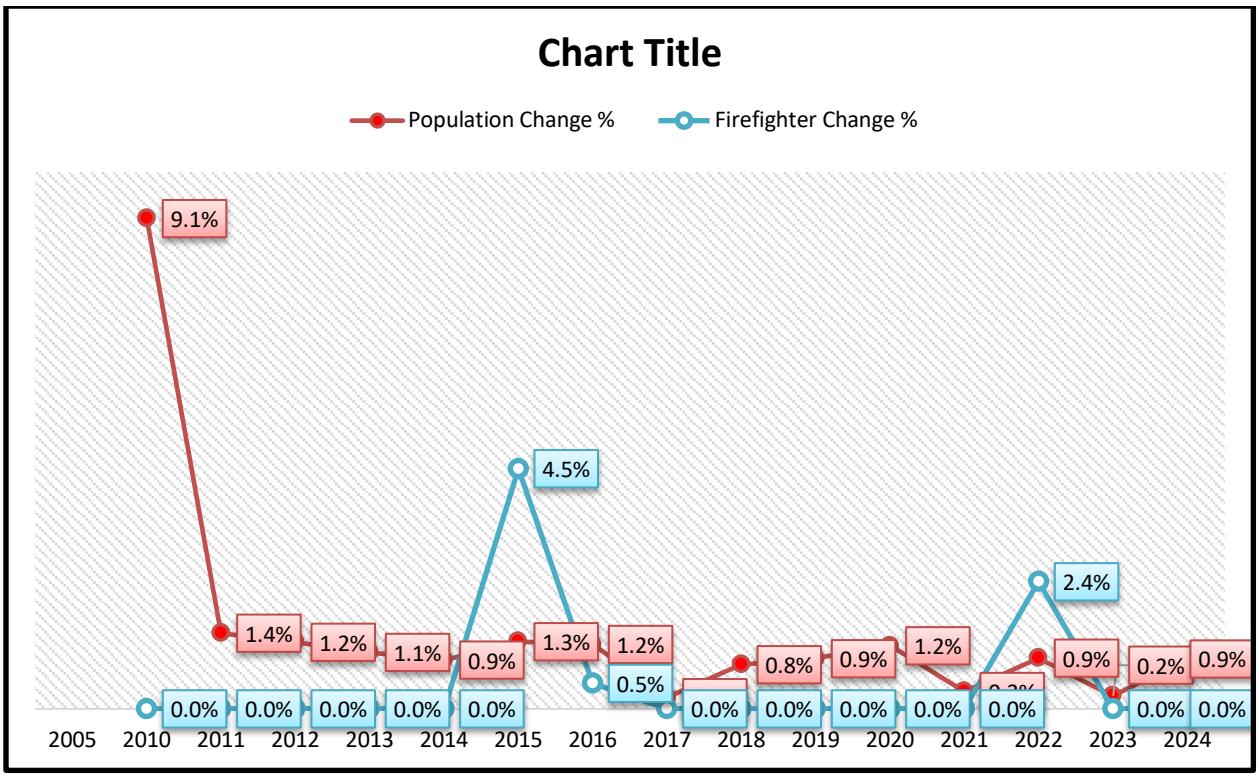
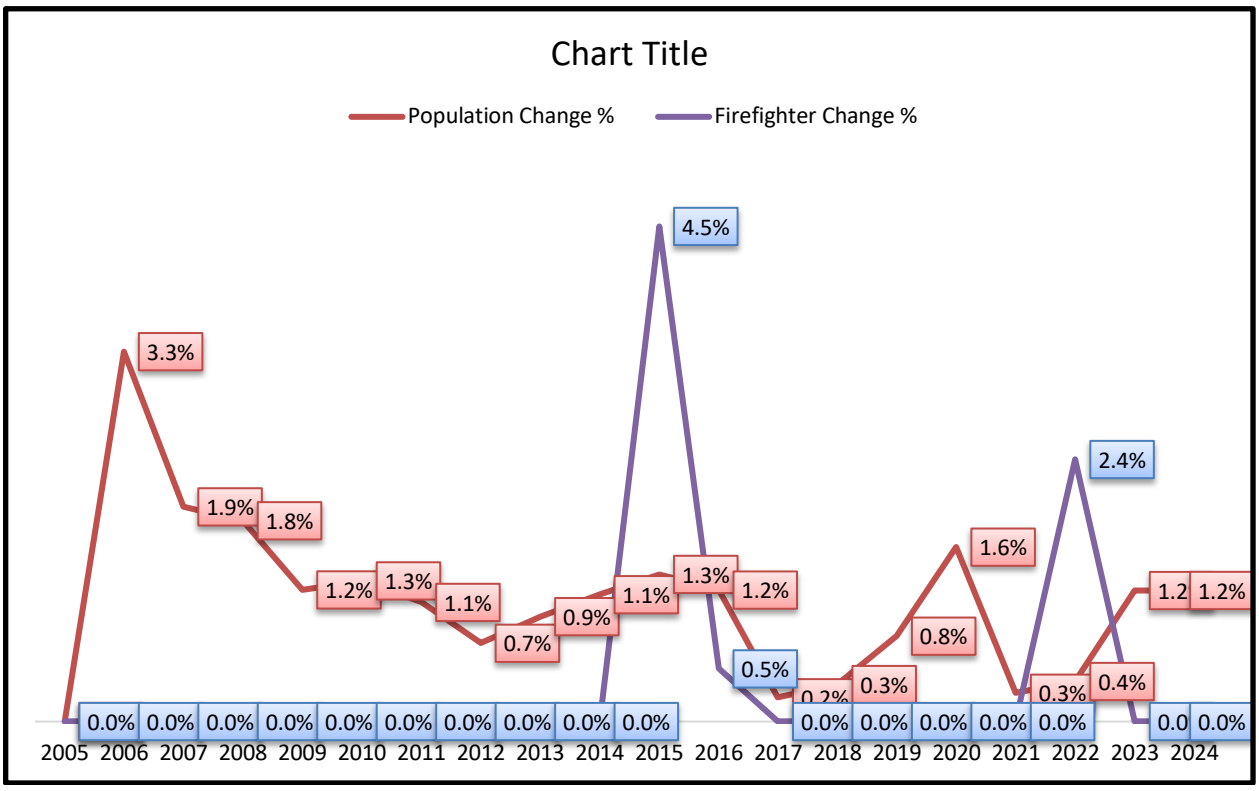


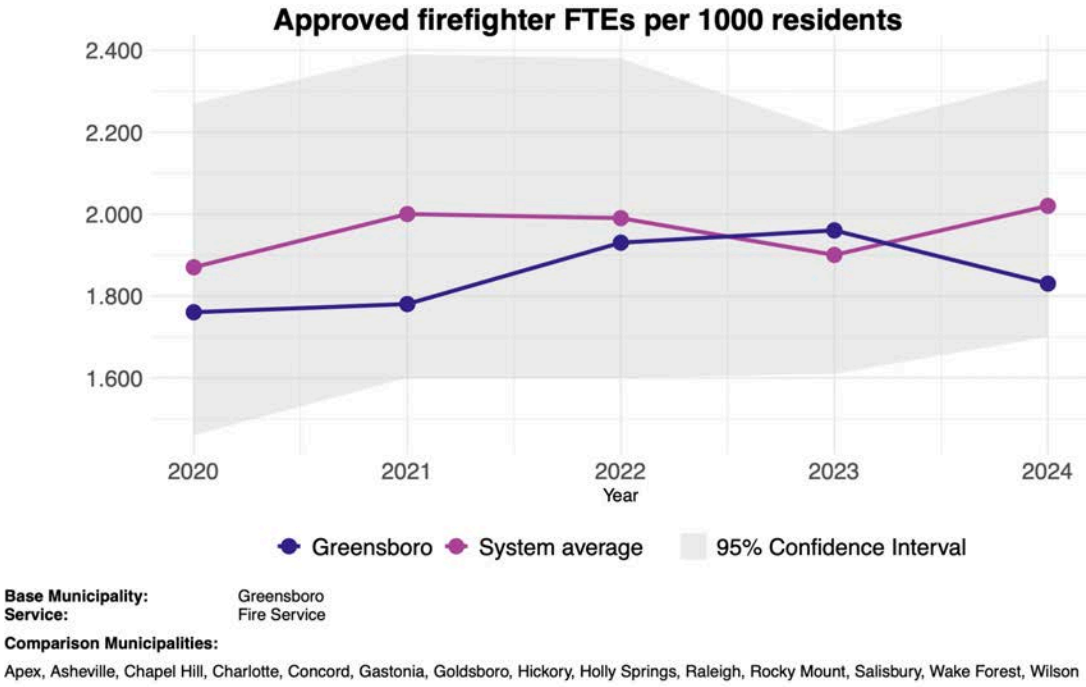
Figure 37: Updated Population Data

Year	Population	Population Change %	Firefighters	Firefighter Change %
2005	95,252		201	
2006	98,438	3.3%	201	0.0%
2007	100,349	1.9%	201	0.0%
2008	102,171	1.8%	201	0.0%
2009	103,387	1.2%	201	0.0%
2010	104,702	1.3%	201	0.0%
2011	105,830	1.1%	201	0.0%
2012	106,579	0.7%	201	0.0%
2013	107,590	0.9%	201	0.0%
2014	108,824	1.1%	201	0.0%
2015	110,272	1.3%	210	4.5%
2016	111,583	1.2%	211	0.5%
2017	111,823	0.2%	211	0.0%
2018	112,197	0.3%	211	0.0%
2019	113,063	0.8%	211	0.0%
2020	114,846	1.6%	211	0.0%
2021	115,140	0.3%	211	0.0%
2022	115,557	0.4%	216	2.4%
2023	116,926	1.2%	216	0.0%
2024	118,312	1.2%	216	0.0%

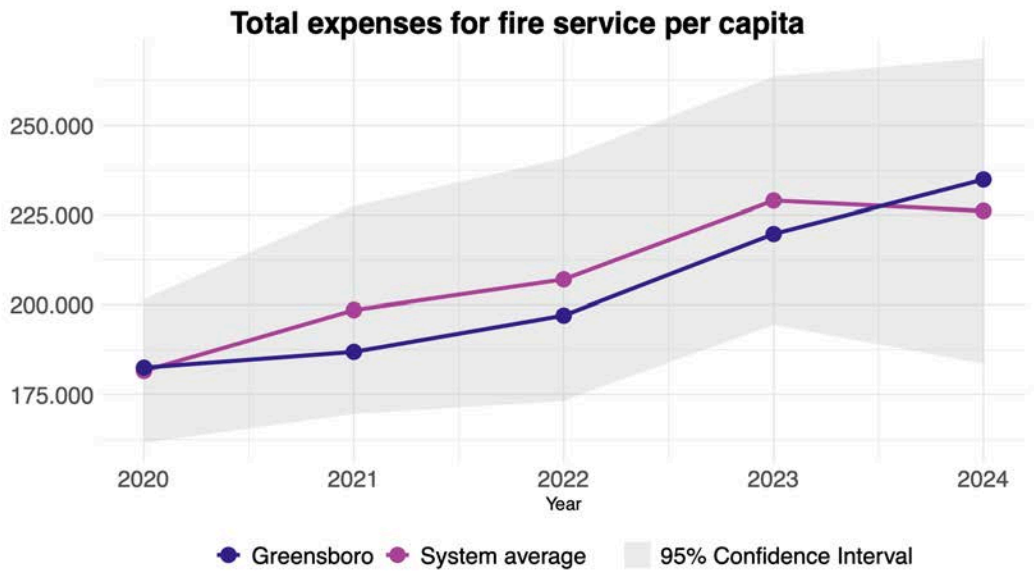
Figure 38: Updated Chart



Additionally, comparison and contrast with the most recent data collected and provided by the North Carolina School of Government additionally indicates that the comparable fire departments within their Benchmarking 2.0 initiative (on average) employ approximately 2 firefighters per every 1,000 municipal residents. With High Point's approximate population of 120,000 people, that would be 240 firefighters. This is contrasted to High Point's FY 25-26 full-time equivalent allocation of 216 firefighters, providing a deficit of approximately 24 firefighters. The 216-firefighter total is before the City of High Point received the 2024 federal SAFER Grant, which will fund 24 additional firefighters for a limited time.



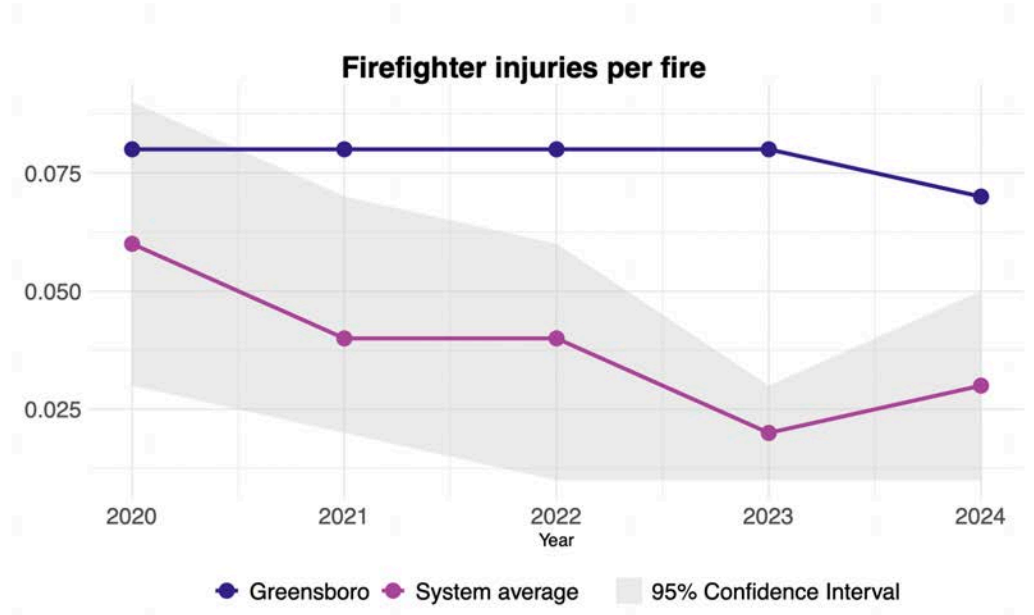
Additional data for comparison purposes from the North Carolina School of Government directly related to the review within this report are provided below for consideration by the City of High Point. Greensboro (Guilford County) data is provided with the additional average data from Apex, Asheville, Chapel Hill, Charlotte, Concord, Gastonia, Goldsboro, Hickory, Holly Springs, Raleigh, Rocky Mount, Salisbury, Wake Forest and Wilson for a credible statewide average.



Base Municipality: Greensboro
Service: Fire Service

Comparison Municipalities:

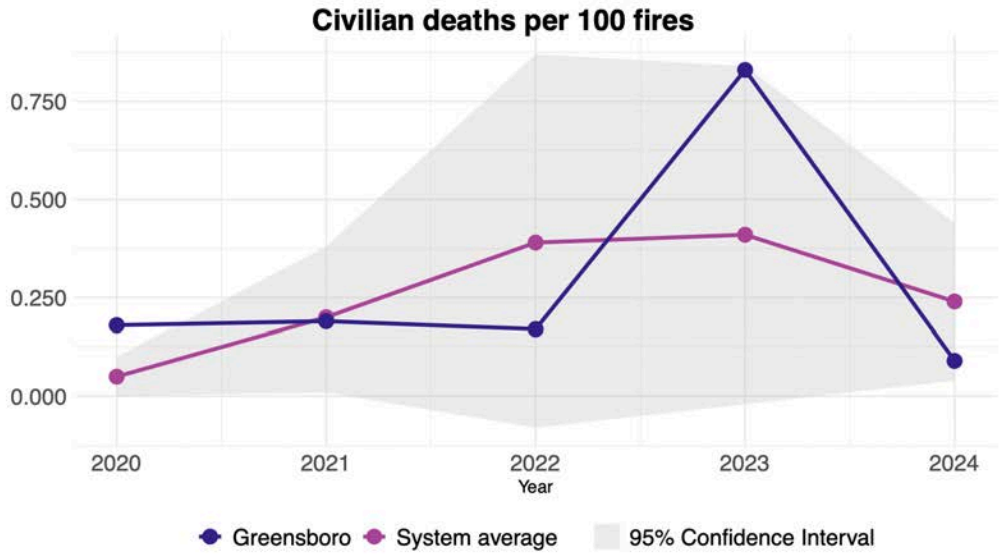
Apex, Asheville, Chapel Hill, Charlotte, Concord, Gastonia, Goldsboro, Hickory, Holly Springs, Raleigh, Rocky Mount, Salisbury, Wake Forest, Wilson



Base Municipality: Greensboro
Service: Fire Service

Comparison Municipalities:

Apex, Asheville, Chapel Hill, Charlotte, Concord, Gastonia, Goldsboro, Hickory, Holly Springs, Raleigh, Rocky Mount, Salisbury, Wake Forest, Wilson



Base Municipality: Greensboro
Service: Fire Service

Comparison Municipalities:

Apex, Asheville, Chapel Hill, Charlotte, Concord, Gastonia, Goldsboro, Hickory, Holly Springs, Raleigh, Rocky Mount, Salisbury, Wake Forest, Wilson

SECTION 3: TRAINING RECORDS ANALYSIS

Training Evaluation Summary:

The 2024 Training Compliance Assessment for High Point Fire Department (HPFD) presents a comprehensive evaluation of suppression personnel training records against ISO Fire Suppression Rating Schedule (FSRS) benchmarks and applicable NFPA standards. Following a facility-to-company training data conversion and the submission of updated documentation, based on the data provided, this analysis offers an accurate and complete portrayal of HPFD's training compliance landscape.

The methodological improvements have increased the recognition of instructional hours and resolved several previously unidentified training gaps, most notably in facility usage and live fire documentation. These corrections have reduced the overall departmental training deficit and improved alignment with ISO-creditable benchmarks. As a result, HPFD's compliance posture has strengthened, and audit resilience has improved.

Despite these advances, Company Training remains the most persistent and critical compliance challenge across all ranks. The average Company Training per member reached only 126.37 hours, still 65.63 hours short of the ISO-required 192 hours—resulting in a revised departmental deficit of 13,258.67 hours. This shortfall continues to pose a substantial risk to ISO scoring and must be addressed through targeted remediation.

Additional vulnerabilities include inconsistent LMS tagging and documentation gaps, with approximately 15% of entries lacking ISO-creditable classification or NFPA references. Personnel with low Company Training hours may reflect personnel-related circumstances such as extended leave, staffing transitions, or separations. While these scenarios were not verified within this report, they warrant documentation for transparency and audit preparedness.

To close remaining gaps and sustain compliance momentum, the report recommends quarterly remediation cycles focused on Fire Suppression, Incident Analysis, and NIMS-ICS, alongside standardized evolution naming and LMS protocols. With continued improvements in documentation, scheduling, and personnel tracking, HPFD is well-positioned to elevate its ISO alignment and strengthen future audit outcomes.

Training Evaluation Purpose, Scope and Methodology:

Purpose

The purpose of this report is to evaluate the High Point Fire Department's (HPFD) 2024 training records against the ISO Fire Suppression Rating Schedule (FSRS) and applicable NFPA standards. This assessment supports HPFD's commitment to operational excellence, audit readiness, and continuous improvement in fire service delivery. The findings will inform strategic remediation planning, enhance documentation accuracy, and optimize training alignment with ISO-creditable benchmarks.

This analysis delivers a thorough re-evaluation of the High Point Fire Department's (HPFD) 2024 training records in alignment with the ISO Fire Suppression Rating Schedule (FSRS) and applicable NFPA standards. The revision was prompted by the submission of updated and verified training documentation, corrections to previously identified data discrepancies, and the application of an improved facility-to-company training hour conversion methodology. This reassessment underscores HPFD's continued commitment to operational excellence, audit readiness, and ongoing enhancement of fire service delivery. The insights obtained will guide targeted remediation efforts, increase documentation accuracy, and reinforce compliance with ISO-recognized benchmarks.

This revised analysis presents a thorough re-evaluation of the High Point Fire Department's (HPFD) 2024 training records against the ISO Fire Suppression Rating Schedule (FSRS) and relevant NFPA standards. Updated and pertinent training documentation was supplied for review. This reassessment underscores HPFD's dedication to operational excellence, audit preparedness, and ongoing advancement in fire service delivery. The insights gained will inform targeted remediation strategies, enhance the accuracy of documentation, and reinforce alignment with ISO-recognized benchmarks.

Scope

This evaluation encompasses documented training hours across six core categories:

- Company Training (NFPA 1001)
- Driver/Operator Training (NFPA 1002, 1451)
- Facilities Training (NFPA 1402)
- Hazardous Materials Training (NFPA 472)
- Officer Training (NFPA 1021)
- LMS-Based Training (NFPA 1500 safety culture modules)

The analysis includes 202 suppression personnel across all operational ranks. Administrative and recruit personnel were excluded due to non-applicability or incomplete training data for the reporting period.

The revised analysis covers documented training hours across five core categories, each mapped to relevant NFPA standards:

- Company Training – NFPA 1001
- Driver/Operator Training – NFPA 1002, NFPA 1451
- Facilities Training – NFPA 1402
- Hazardous Materials Training – NFPA 472
- Officer Training – NFPA 1021

Methodology

Training records were benchmarked against ISO FSRS and NFPA standards using the following approach:

- Aggregated and categorized 2024 training entries by rank, topic, and ISO-creditable domain.
- Identified compliance gaps based on minimum hour thresholds and topic-level deficiencies[1].
- Assessed documentation quality, classification consistency, and personnel traceability.
- Applied ISO scoring criteria to determine creditable vs. non-creditable training hours.
- Developed strategic recommendations for remediation, curriculum optimization, and audit resilience.

In the revised methodology, training records were systematically benchmarked against ISO FSRS and applicable NFPA standards using the following structured process:

- Training Data Aggregation and Categorization
  Compiled and classified 2,024 individual training records according to rank, training topic, and ISO-creditable domains to ensure comprehensive alignment with operational roles.

[1] All entries related to Annual Physicals or Fitness that had been categorized under Company Training were excluded from the 2024 Training Database.

- Compliance Gap Analysis
  Conducted a detailed comparison of training hours against ISO minimum threshold requirements, identifying specific topic-level deficiencies that impact overall compliance.

- Documentation Quality and Traceability Assessment
  Reviewed the completeness, consistency, and traceability of training documentation and personnel classifications to support audit readiness and data integrity.

- ISO Scoring Implementation
  Applied ISO FSRS scoring criteria to differentiate creditable from non-creditable training hours, accounting for personnel role eligibility and documentation fidelity.

- Strategic Recommendations Development
  Formulated targeted action plans for remediation, curriculum refinement, and enhancement of documentation practices to strengthen audit resilience and operational readiness.

ISO FSRS and NFPA Training Requirements Overview:

Summary ISO Training Requirements

The ISO training requirements for fire department personnel are structured by rank and aligned with nationally recognized standards to ensure operational readiness and compliance.

Firefighters must complete 192 hours of company training annually in accordance with NFPA 1001, along with 6 hours of hazardous materials awareness training per NFPA 472. They are also required to complete 18 hours of facility training annually, based on ISO FSRS and NFPA 1402 standards, and participate in at least one documented pre-incident planning review each year.

Driver/Operators must fulfill a one-time 60-hour new driver training requirement under NFPA 1002 before operating apparatus, followed by 12 hours of annual driver training per NFPA 1451. They also complete the same company training, hazardous materials awareness, facility training, and pre-incident planning reviews as firefighters, with added emphasis on vehicle operations and access considerations.

Company Officers are required to complete 12 hours of officer training annually under NFPA 1021, focusing on leadership and command. In addition to participating in or leading the same company, hazardous materials, and facility training as firefighters, they are responsible for directing pre-incident planning efforts.

Chief Officers must also complete 12 hours of officer training annually, with a strategic and administrative focus. While they may delegate company training, they are accountable for ensuring departmental compliance with hazardous materials awareness, overseeing facility certification status, and verifying documentation of pre-incident planning reviews. Additionally, Chief Officers maintain ongoing oversight of ISO documentation, ensuring accurate records and reporting in alignment with ISO FSRS standards.

Summary of Referenced NFPA Standards

NFPA 1001 – Fire Fighter Professional Qualifications

Defines the minimum job performance requirements for career and volunteer firefighters. It underpins the 192-hour annual company training requirement and covers core firefighting skills such as fire suppression, PPE use, hose operations, ladders, ventilation, and rescue techniques.

NFPA 1002 – Fire Apparatus Driver/Operator Professional Qualifications

Establishes qualifications for personnel operating fire apparatus. It mandates a one-time 60-hour training for new drivers and supports ongoing instruction in pump operations, aerial device handling, water supply, and apparatus safety.

NFPA 1451 – Vehicle Operations Training Program

Provides guidance for developing a comprehensive driver training program, emphasizing safety, vehicle inspection, and emergency response readiness. It supports the 12-hour annual driver/operator training requirement and reinforces ISO scoring criteria.

NFPA 472 – Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

Outlines the competencies required for personnel responding to hazardous materials incidents. It supports both awareness-level and technician-level training, including incident operations, sampling, monitoring, and specialty scenarios.

NFPA 1402 – Facilities for Fire Training and Associated Props

Specifies design and operational standards for fire training facilities. It informs the 18-hour annual facility training requirement and supports scenario-based instruction in hose streams, technical rescue, and apparatus operations.

NFPA 1021 – Fire Officer Professional Qualifications

Defines the qualifications for fire officers at various levels. It supports the 12-hour annual officer training requirement and includes leadership development, incident command, administrative oversight, and strategic planning.

High Point Fire Department Personnel Overview:

The High Point Fire Department's suppression division consists of 215 personnel, organized across key operational ranks. Leadership includes 9 Battalion Chiefs and 58 Fire Captains (Grades I and II), The department also has 53 Fire Equipment Operators (Grades I and II), who manage apparatus operations and support emergency response. The largest group, 80 Firefighters, including Master Firefighters. Personnel are assigned across engine, truck, and rescue companies, with additional staff supporting training and recruitment. There are currently 15 recruit personnel[2] who are attending the training academy.

Data Integration and Classification Review:

NCFCC reviewed four departmental files: the primary dataset (TotalCompletions-2024REV), which contained 30,584 individual training entries, and three credential files—Credentials-OfficerREV, Credentials-DOREV, and Credentials-FFREV—which listed HPFD personnel by rank as of 2024.

The TotalCompletions-2024REV file included training records for 219 individuals, while the credential files accounted for 174 personnel. To maintain consistency, 20 individuals (representing 548 training entries) were removed from the primary file due to their primary roles falling outside suppression operations. An additional 25 individuals listed in the training file could not be matched to any credential file, and their ranks were unverified at the time of reporting. These individuals were retained in the analysis and designated as "N/A" for classification purposes.

HPFD's suppression leadership includes 9 Battalion Chiefs and 51 Fire Captains (Grades I and II), responsible for company-level oversight and strategic incident management. Apparatus deployment and emergency response are supported by 52 Driver Operators (Grades I and II). The largest cohort consists of 62 Firefighters, including Master Firefighters, assigned to engine, truck, and rescue companies. The 25 "N/A" entries remain included for transparency and completeness.

Reclassification and ISO/NFPA Alignment Summary

As part of the 2024 training compliance audit, High Point Fire Department's instructional records were reviewed for alignment with ISO Fire Suppression Rating Schedule (FSRS) Section 580 and applicable NFPA standards. The audit focused

[2] Recruit personnel did not log any training hours in 2024 and, as a result, they were excluded from the training hour analysis.

on validating instructional hour eligibility, correcting categorical misclassifications, and preserving documentation integrity across Company Training, Driver/Operator Training, Facilities Training, Hazardous Materials, and Officer Development domains.

Company Training Audit and Reclassification

Company Training entries were evaluated against NFPA 1001: Standard for Fire Fighter Professional Qualifications, with emphasis on Firefighter I and II Job Performance Requirements (JPRs). Instructional hours were analyzed for suppression-level relevance and ISO credit eligibility.

Two modules—Air Consumption Training and HPFD Saws, Blades, Chains, and Intro Operations—were newly confirmed as ISO-creditable Company Training. These support SCBA proficiency, PPE use, and emergency tool operations, aligning with NFPA 1001 JPRs 5.3.1–5.3.2 (donning PPE/SCBA), 6.3.1 (operating in hazardous environments), and 6.3.4 (operating power tools). The "Company Officer Entry" designation reflects role-based participation but does not alter the instructional category.

Several topics were reclassified and removed from Company Training totals due to partial or contextual alignment. These include Health & Wellness, Community Risk Reduction, First Aid Provider, Drone Training, and ICS/NIMS. While operationally relevant, these modules lacked sufficient documentation to qualify as suppression-level instruction and may be more appropriately categorized under Officer Development or Community Risk Reduction. For example, activities such as fire safety presentations and station tours, though aligned with NFPA 1001 Firefighter II JPR 5.5.2, were excluded due to their non-tactical nature.

Modules deemed not creditable under ISO Company Training were reclassified accordingly:

- Air Purifying Respirators – moved to Hazmat.
- Wildland Firefighting – recognized separately under FSRS Section 580; must align with NFPA 1051 and be tied to defined wildland interface risk or mutual aid role.
- Fire Origin & Cause Determination – aligns with NFPA 1033; falls under investigative competencies.
- Pump Test – reclassified under Driver/Operator

Three entries—2024 Annual Air Consumption, Ladder Safety, and Lithium-Ion Battery Fires—were excluded from Company Training totals due to lack of documented contact hours.

First Aid-related instruction was reviewed separately. Modules covering emergency medical roles, patient assessment, and CPR procedures were found to not align with NFPA 1001 and therefore were reclassified and removed from Company Training totals to preserve categorical clarity.

Driver/Operator Training Reclassification

A set of instructional entries and task books were identified as misclassified under general training categories. Upon review, these modules were found to align directly with NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications and were reclassified under ISO FSRS Section 580 – Driver/Operator Training.

Reclassified modules include:

- NC OSFM Driver Operator Engine/Pumper – Hydraulics and Mobile Water Supply
- NC OSFM Driver Operator – EVD Chapters 1–4
- Engine Company Relief Driver Hydraulics and Written Tests
- Task Books for Engine Relief, Heavy Duty Tiller, Aerial Company, and Platform Relief Driver

Facilities Training Reclassification

Several instructional entries originally labeled as general "Training" were found to meet the criteria for ISO Facilities Training under FSRS Section 580. These modules were delivered in structured, facility-based environments and aligned with NFPA 1002 and operational readiness standards.

Reclassified modules include:

- NC OSFM Driver Operator Engine/Pumper – Sprinkler/Standpipe, Maintenance & Testing
- Basic Pump Operations
- Hydraulics and Mobile Water Supply
- EVD Chapters 1–4
- Water Rescue Training for Operations Companies

These sessions were conducted at designated facilities and involved structured instruction in apparatus operation, pump theory, water supply management, and rescue awareness. Their reclassification ensures proper alignment with ISO scoring criteria.

Hazardous Materials

NFPA 470 Advanced HAZWOPER Awareness was reclassified under ISO Hazardous Materials Training, aligning with NFPA 472 for advanced hazmat awareness and emergency response.

Officer Training Reclassification

Inter-Department Career Development: Officer Training, along with OCS/Leadership Academy Day 1–3 (Administration, Leadership, NIMS/ICS Scene Management), were reclassified under ISO Officer Training, consistent with NFPA 1021.

The module Company Officer/Chief Officer Leadership Development (Facility-Based) was updated to reflect dual classification under both ISO Facilities Training and ISO Officer Training, recognizing its structured delivery and alignment with supervisory JPRs.

This review was necessary because the training data differed from the original, and there were concerns that training topics had been improperly categorized or misclassified. To ensure the training documentation receives full ISO credit, a thorough reclassification and verification process was undertaken.

Complete technical data of the analysis is provided in Appendix #3 of this report. This technical analysis includes:

- Standardized Training Hours by Rank and Category
- Strategic Reallocation of Facility Training to Meet ISO Company Standards
- Training Record Evaluation Documents

Summary of Overall Findings and Recommendations:

The High Point Fire Department's 2024 training program reflects a strong commitment to operational readiness, professional development, and standards alignment across multiple domains. Training efforts were benchmarked against ISO Fire Suppression Rating Schedule (FSRS) and NFPA standards—revealing both commendable strengths and targeted areas for improvement.

High Point Fire Department – 2024 Training Compliance Assessment (ISO/NFPA Alignment)

The High Point Fire Department's 2024 training program reflects a strong commitment to operational readiness, professional development, and standards-based instruction. Training records were benchmarked against ISO FSRS Section 580 and applicable NFPA standards, revealing notable strengths, critical gaps, and actionable opportunities for improvement.

Key Improvements and Strategic Adjustments

Facility-to-Company Conversion: Reclassifying structured facility-based instruction as Company Training improved credit attribution and resolved previously unrecognized gaps.

Domain-Level Gains: Driver/Operator, Facilities, Officer Development, and Hazardous Materials training categories exceeded ISO thresholds, demonstrating strong instructional coverage and documentation fidelity.

Audit Support Tools: Visual dashboards and technical narratives were developed to support hypothetical ISO inspections and enhance audit defensibility.

Persistent Deficiencies

Company Training Deficit: Despite reclassification gains, average hours per member (126.37) remain 65.63 hours below ISO's 192-hour requirement, resulting in a total departmental shortfall of 13,258.67 hours.

Undertraining in Key Areas: Fire Suppression, Incident Analysis, NIMS-ICS, Foam/Gas Fire Response, and ladder rescues require targeted instructional reinforcement.

LMS Limitations: LMS modules averaged less than 1 hour per member, lacked ISO creditability, and were inconsistently tagged—limiting their value for audit scoring.

Documentation Challenges: Inconsistent subject classification, missing personnel identifiers, and vague or duplicate entries compromise traceability and audit reliability.

Contributing Factors

Low Company Training hours may be influenced by personal leave, staffing transitions, or early separations. While not confirmed, these factors should be documented to support audit transparency.

Recommendations for ISO Readiness

Strategic Remediation

- Add 100+ hours quarterly in Fire Suppression and Fire Behavior.
- Integrate NIMS-ICS and Incident Analysis into scenario-based drills.
- Schedule Hazmat drills with mutual aid partners to expand awareness-level competencies.

Curriculum Optimization

- Expand ICS 300/400, EOC, and NFPA 1521 modules for officer development.
- Reinforce foam operations, ladder rescues, and apparatus testing in Facilities Training.
- Restructure LMS content toward instructor-led, scenario-based instruction.

Documentation Enhancements

- Standardized training descriptions with ISO/NFPA tags and evolution naming conventions.
- Require personnel ID numbers in all entries to ensure traceability.
- Use dashboards to monitor per-member compliance and remediation progress.

Audit Readiness Strategy

- Clearly tag ISO-creditable hours and align calendars with audit cycles.
- Track personnel below baseline thresholds for targeted follow-up.
- Conduct mock ISO reviews to identify vulnerabilities and reinforce defensible documentation.

SECTION 4: REPORT APPENDIX DOCUMENTS

Appendix #1 – Abbreviated Report Executive Summary:

This five-page summary captures the core findings, data, and recommendations from the independent review of the High Point Fire Department. It is structured in a bulleted, reader-friendly format that emphasizes clarity while retaining all key details.

Background and Purpose:

- High Point Fire Department (HPFD) is accredited by the Center for Public Safety Excellence and holds a Class 1 ISO rating.
- A tragic residential fire on April 13, 2025, claimed two lives, prompting an independent review by North Carolina Fire Chief Consulting (NCFCC).
- Purpose: conduct a post-incident analysis, evaluate staffing, review training records, and benchmark practices against other NC departments.
- Methods included on-site discussions, facilitated debriefs, six years of incident data analysis, staffing benchmarking, and ISO training record review.

Emergency Response Records Analysis:

- Six years of HPFD emergency data analyzed using PowerPivot.
- Performance measured against NFPA 1710 standards (90th percentile benchmarks, not averages).

Key Findings:

• Call Processing: 37 seconds or less on 90% of 82,981 incidents; met 1-minute benchmark 97.38% of the time.
• Turnout Time: 1:31 or less on 90% of 82,514 responses; benchmark of 1:20 met on 84.76% of events (11-second gap).
• Travel Time: 5:04 or less on 90% of incidents; benchmark of 5 minutes met on 77.58% of events (1:04 gap).
• Total Response Time: 6:30 or less on 90% of 83,063 incidents; benchmark of 6:20 met on 88.8% of events (10-second gap).
• Effective Response Force: Staffing of 3 per apparatus requires second unit for OSHA 2-in/2-out compliance, adding ~1:06 delay to suppression/rescue initiation.

Post-Incident Facilitated Debrief:

- April 13, 2025 incident involved advanced fire conditions and multiple rescues.
- Two firefighters became disoriented but self-rescued.
- Facilitated debrief emphasized learning, not blame.

Key Takeaways:

• HPFD prepared for standard single-victim fires, but not complexity of multiple rescues.
• High proportion of inexperienced firefighters (two had <1 year experience).

• Staffing of 3 per company consistently seen as a limitation.
• Many successes recognized (victim extrication, continued suppression efforts, calm response under stress).
• Air management issues noted (low air alarms, 2-person teams separating in IDLH).
• Overarching feedback: actions were successful but highlighted need for more staffing and command-level support.

Benchmarking Against Peer NC Departments:

- HPFD only department operating all companies with 3 personnel.
- Peer cities: most companies staffed with 4 firefighters.
- HPFD Heavy Rescue staffed with 2 (others with 2 do not enter IDLH).
- Effective Response Force (TERF) comparisons:

• HPFD: 23 personnel (Moderate risk), 31 (High risk); 90th percentile TERF at 10:19.
• Peer range: Cary 9:21, Wilmington 9:22, Apex 9:08, Asheville 15:27, Gastonia 16:56.
- Rapid Intervention (RIT): HPFD assigns 3-person company; most peers assign 4+ or dedicated RIT companies.

Training Records and Compliance:

- 2024 Training Compliance Assessment revealed Company Training deficit:
• ISO requirement: 192 hrs. per suppression member.
• HPFD achieved 126.37 hrs. avg. (65.63 hrs. short).
• Total deficit: 13,258.67 hrs.
- Strengths: Driver/Operator, Officer Development, Hazmat training.
- Weaknesses: Company-level training, documentation consistency (15% of records lacked ISO/NFPA tags).
- Recommendations: quarterly remediation cycles, standardized documentation, stronger audit readiness, improved LMS protocols.

Observations and Recommendations:

1. Staffing Levels:
• Increase company staffing (4 vs. 3) for efficiency and safety.
• Strengthen Incident Management Teams to prevent task saturation.
• Enhance fireground staffing during working fires.
2. Incident Management System:
• Implement standardized ICS compliant with NIMS/NFPA 1550.
• Reinforce radio discipline and assignment clarity.
3. Firefighter Training:
• Strengthen air management culture and training.
• Invest in a training facility for realistic skill practice.
4. Rapid Intervention and Firefighter Survival:

• Assign minimum of 4 personnel to RIT.
• Expand survival and Mayday training programs (e.g., NC Breathing Equipment School).
5. Training Records:
• Add 100+ hours quarterly in suppression/ICS drills.
• Optimize curriculum with advanced ICS, Hazmat, foam ops, ladder rescues.
• Enhance documentation with ISO/NFPA tags and dashboards.
• Conduct mock ISO audits to ensure readiness.

Note that the above summary is generated by Artificial Intelligence (AI) for simplified review.

Appendix #2 – Summary of Report Recommendations:

From the collective review in the scope of work in this initiative, the assessment team has developed the following seventeen (17) recommendations for the City of High Point to dutifully consider when strengthening and improving the city's fire protection service delivery system:

1. Staffing Levels:
    a. There are several data-based studies that conclude that more firefighters arriving together are more efficient than the same number of firefighters arriving in more apparatus. Additional company level staffing to ensure that there are adequate numbers of firefighters to manage the tasks required at building fires is needed. The tragic event under review occurred in a smaller residential setting. Had this incident occurred in a commercial occupancy or 5 floors up, the outcome could have been more catastrophic.

    b. The assessment team recommends that the City of High Point develop a viable plan to increase the daily minimum staffing levels on all large response apparatus to four (4) firefighters as soon as conditions will allow. Fortunately, High Point has recently received a 2024 federal SAFER grant for 24 additional firefighters. It is typical that this firefighter minimum staffing increase may need to occur over multiple fiscal years. High Point's plan should prioritize increasing staffing on the city's current two-person heavy rescue company first, followed by engines, then ladders. This prioritization to increase safety and performance is consistent with the 2-in, 2-out OSHA standard for IDLH environments. Furthermore, 4-person minimum staffing prioritization should consider High Point fire stations with the highest response times confirmed by the data in this report, such as stations 11, 10, 6, and 9 (based upon the data provided).

    For the eight (8) additional positions per shift provided by the 2024 SAFER grant, the assessment team recommends the following, based upon data provided for this analysis:
    - Add two firefighters to the rescue company.
    - Add one firefighter to Engine 11.
    - Add one firefighter to Engine 10.

- Add one firefighter to Engine 6.
- Add one firefighter to Engine 9.
- Add one Shift Safety and Training Officer.
- Increase the daily minimum staffing buffer by one firefighter.

c. It is recommended that the High Point Fire Department conduct a critical task analysis with a residential fire, commercial fire and cardiac medical event determining the efficiencies gained between three-person and four-person crews. Although significant research and data analysis exists from Underwriters Laboratories (UL) and the National Institutes of Standards and Technology (NIST), it is important to solidify the actual performance of High Point firefighters going through standard evolutions. This is a best practice in the North Carolina fire service and can provide very important data for city management and city elected officials to understand the differences in performance that should be expected with four-person crews versus three-person crews. Within the appendix, there is an illustrative example of tangible data from a critical task analysis (or CTA) such as have recently been conducted for Clayton, Marion, Kannapolis, McLeansville, and others.

d. The assessment team identified the need to provide additional incident management support to incident commanders managing complex events in dangerous environments. A robust Incident Management Team in an environment conducive to decision-making is vital to preventing an incident commander from becoming task saturated or overwhelmed.

e. It is recommended that High Point modify response plans to send additional companies when a working fire incident is declared. Higher fireground staffing levels when a working fire is declared should be considered. In multiple studies across the United States, the number of firefighters needed to rescue a firefighter having a MAYDAY is much greater than a Rapid Intervention Team consisting of a single company.

2. Improving Travel Time:
    a. It is recommended that the City of High Point pursue installation of traffic signal pre-emption systems on traffic signals prioritized on main corridors of fire apparatus travel. It was noted in the data that the travel time for fire apparatus is increasing. Traffic pre-emption systems will enable the fire apparatus to move through heavy traffic faster and will increase safety to firefighters as well as the public. In some cases, the City of High Point may be able to partner with the NC Department of Transportation to cost-share the traffic signal enhancements on certain signals.

3. Incident Management System:
    a. The assessment team determined that a consistent Incident Management/Command system is needed by both the firefighter working in a hazardous environment and the commander ensuring their well-being. A standardized system that produces expected outcomes is the cornerstone to any such ICS system. Systems such as Fire Command that are compliant with all NIMS requirements as well as NFPA 1550 should be evaluated and considered for implementation.

    b. A part of any incident command system is effective communication during an event. This includes radio discipline and ensuring assignments are received and understood. It is recommended that the fire department's policies on incident communication be reviewed and that additional training occur on this critical component.

    c. As a best practice, it is recommended that the City of High Point consider adding a training and safety officer to each operating shift. This person focuses on prioritizing training for each shift and making shift-based training programmatic adjustments as required. More importantly, the position responds to all significant events (such as structure fires) and serves as the incident safety officer. By consistently deploying the safety and training officer to the significant incidents, the second arriving High Point Battalion Chief can best focus on assisting and supporting the primary Battalion Chief that is serving as the incident commander. Having the second Battalion Chief assisting

the incident commander is a proven best practice in North Carolina and enables a safer, more effective and more efficient operation. Additionally, the shift safety and training officer can directly observe the actions of their shift's personnel on the fireground and can create training programs to improve safety and performance. Furthermore, this position is an excellent career preparation for Battalion Chiefs.

4. Firefighter Training:
    a. The importance of effective air management training and policy adherence cannot be understated. It is recommended that the fire department review and revise the existing policy on air management and further emphasize the importance of air management as a critical component of the fire department's safety and operating culture.

    b. It is recommended that the fire department further develop the current city fire training facility to better allow High Point firefighters the ability to practice the required skills in a realistic environment. This is particularly important to newer members of the department as well as company officer development. Until the current training facility can be upgraded, it is further recommended that High Point personnel utilize training facilities in the immediate region to strengthen skill sets as soon as conditions will allow.

5. Rapid Intervention and Firefighter Survival:
    a. The importance of adequate staffing dedicated to Rapid Intervention function (RIT) is critical to firefighter safety during all building fire responses. It is recommended that a minimum of four personnel be assigned to RIT during any working fire response and department policies and training be adjusted to this modification.

    b. It is recommended that High Point send firefighters to advanced breathing equipment training. Firefighter survival and Rapid Intervention training programs such as North Carolina Breathing Equipment School to instill into all firefighters the importance of recognizing when to call a MAYDAY and practicing the skills required to do so is vital to developing a culture of fireground safety.

6. Training Records:
    a. It is recommended that strategic remediation planning occur in the with the following three steps:
        i. Add 100+ hours quarterly in Fire Suppression and Fire Behavior to close Company Training gaps.
        ii. Integrate NIMS-ICS and Incident Analysis into tabletop exercises and scenario-based drills.
        iii. Schedule Hazmat drills with mutual aid partners to expand awareness level and utility-specific competencies.

    b. It is recommended that curriculum optimization occur by using the following three methods:
        i. Expand ICS 300/400, EOC, and NFPA 1521 modules for officer development.
        ii. Reinforce foam operations, ladder rescues, and apparatus testing in Facilities Training.
        iii. Restructure LMS content towards instructor-led, scenario-based instruction.

    c. It is recommended that documentation enhancements be made in the following three areas:
        i. Implement standardized training descriptions with ISO/NFPA tags and evolution naming conventions.
        ii. Require personnel ID numbers in all training entries for traceability and audit defensibility.
        iii. Use visual dashboards to monitor per-member compliance, and remediation progress.

    d. It is recommended audit readiness and scoring strategy actions take place with the following three actions:
        i. Clearly tag ISO-creditable hours and align training calendars with ISO audit cycles and NFPA benchmarks.
        ii. Track personnel below baseline thresholds for targeted follow-up and remediation.
        iii. Conduct mock ISO reviews to identify vulnerabilities and reinforce defensible narratives.

Appendix #3 – Technical Training Record Review:

The 2024 Training Compliance Assessment for High Point Fire Department (HPFD) presents a comprehensive evaluation of suppression personnel training records against ISO Fire Suppression Rating Schedule (FSRS) benchmarks and applicable NFPA standards. Following a facility-to-company training data conversion and the submission of updated documentation, this revised analysis offers a more accurate and complete portrayal of HPFD's training compliance landscape.

The methodological improvements have increased the recognition of instructional hours and resolved several previously unidentified training gaps, most notably in facility usage and live fire documentation. These corrections have reduced the overall departmental training deficit and improved alignment with ISO-creditable benchmarks. As a result, HPFD's compliance posture has strengthened, and audit resilience has improved.

Despite these advances, Company Training remains the most persistent and critical compliance challenge across all ranks. The average Company Training per member reached only 126.37 hours, still 65.63 hours short of the ISO-required 192 hours—resulting in a revised departmental deficit of 13,258.67 hours. This shortfall continues to pose a substantial risk to ISO scoring and must be addressed through targeted remediation.

Additional vulnerabilities include inconsistent LMS tagging and documentation gaps, with approximately 15% of entries lacking ISO-creditable classification or NFPA references. Entities with low Company Training hours may reflect personnel-related circumstances such as extended leave, staffing transitions, or separations. While these scenarios were not verified within this report, they warrant documentation for transparency and audit preparedness.

To close remaining gaps and sustain compliance momentum, the report recommends quarterly remediation cycles focused on Fire Suppression, Incident Analysis, and NIMS-ICS, alongside standardized evolution naming and LMS protocols. With continued improvements in documentation, scheduling, and personnel tracking, HPFD is well-positioned to elevate its ISO alignment and strengthen future audit outcomes.

Standardized Training Hours by Rank and Category:

During the current reporting period, the High Point Fire Department completed a total of 25,395 documented training events across key ISO and NFPA categories. Company Training under NFPA 1001 represented the highest volume with 12,280 entries. Driver/Operator Training (NFPA 1002) followed with 5,186 counts. Facilities Training accounted for 3,911 entries, while Officer Training under NFPA 1021 contributed 3,345. Hazardous Materials training (NFPA 472) logged 459 counts, and LMS-based training added 214. The total number of documented training hours for each category is summarized in Figure 1.

Figure 39:2024 HPFD ISO Training by Rank

Rank	BC	FC	FEO	FF	NCR	Grand Total
Company Training	842.50	7,489.01	6,681.66	6,617.91	238.50	21,869.58
Driver/Operator Training	204.50	2,712.00	2,688.00	3,001.00	182.00	8,787.50
Facilities Training	400.50	2,905.75	2,480.75	3,014.00	93.00	8,894.00
Hazardous Materials	70.50	395.00	380.00	402.50	7.00	1,255.00
Officer Training	625.00	2,100.50	2,032.75	1,668.50	57.00	6,483.75
LMS	17.50	66.00	67.50	22.25		173.25
Grand Total	2,160.50	15,668.26	14,330.66	14,726.16	577.50	47,463.08

Revised Standardized Training by Rank and Category

This report evaluates HPFD's 2024 training performance against ISO Fire Suppression Rating Schedule (FSRS) and applicable NFPA standards for 199 suppression personnel. The minimum annual requirement totals 47,760 hours, based on a per-person benchmark of 240 hours distributed across five domains: Company Training (NFPA 1001), Driver/Operator Training (NFPA 1451), Facilities Training (NFPA 1402), Hazardous Materials (NFPA 472), and Officer Training (NFPA 1021).

As shown in Figure 2, the training data reveals a comprehensive overview of documented hours across five rank position categories: Battalion Chief (BC), Driver/Operator (DO), Fire Captain (FC), Firefighter (FF), and Not Assigned (NA). When compared against ISO Section 580 training requirements, the aggregated hours show mixed results across different categories and ranks.

Overall, the department's total documented training hours slightly exceed the ISO minimum requirement by approximately 2,010 hours. This positive variance is

primarily driven by significant surpluses in specialized training categories such as Driver/Operator, Facilities, Hazardous Materials (HazMat), and Officer training. Notably, the Driver/Operator and Facilities categories surpass their required totals by over 10,000 and 5,900 hours, respectively, indicating a strong emphasis and thorough documentation in these areas.

However, a substantial deficit appears in the Company Training category, which falls short of nearly 20,000 hours compared to the required minimum. This gap suggests that either qualifying sessions are under-documented or more focused efforts are needed to deliver or capture company-level training in the system. The removal of EMT/First Aid modules from the database likely contributes to this discrepancy, underscoring the importance of carefully allocating training hours to preserve audit clarity and prevent double counting.

At the individual rank level, Firefighters contribute the largest volume of training hours, comfortably exceeding their required minimums, while Battalion Chiefs fall slightly below the target, signaling an opportunity for targeted training interventions. The Not Assigned (NA) category also reflects a notable shortfall, which may require administrative review to ensure proper rank classification or training capture.

In summary, while the department maintains strong compliance across specialized training domains, attention is warranted to close the gap in Company Training hours to fully align with ISO standards. Maintaining categorical clarity through deliberate reclassification and precise documentation will support both audit resilience and operational excellence moving forward.

Figure 40: Revised 2024 HPFD ISO Training by Rank

Rank	BC	DO	FC	FF	NA	Total	Difference
Count	9	52	51	62	25	199	
Company	670	5,616	5,639	5,926	409	18,261	-19,947
Required CT	1,728	9,984	9,792	11,904	4,800	38,208	
Driver/Operator	241	3,750	3,318	4,740	554	12,602	10,214
Required DO	108	624	612	744	300	2,388	
Facilities	377	2,626	2,301	3,622	626	9,551	5,969
Required F	162	936	918	1,116	450	3,582	
HazMat	127	705	697	768	63	2,358	1,164
Required HM	54	312	306	372	150	1,194	
Officer	660	1,948	2,123	2,143	126	6,999	4,611
Required O	108	624	612	744	300	2,388	
Grand Total	2,074	14,644	14,077	17,198	1,777	49,770	2,010
Required GT	2,160	12,480	12,240	14,880	6,000	47,760	

Company Training

During the 2024 reporting period, the High Point Fire Department (HPFD) recorded a total of approximately 21,870 company training hours documented by 202 suppression personnel. This training was assessed against the ISO Fire Suppression Rating Schedule (FSRS) and NFPA 1001 standards for Fire Fighter Professional Qualifications. The analysis is based on documentation provided by HPFD; however, it should be noted that certain entries lack specific descriptions, which may limit the precision of topic-level categorization and compliance scoring.

HPFD's 2024 training program demonstrated strong performance in foundational firefighting competencies, with concentrated efforts in high-impact operational areas. The greatest investment was in Tools & Equipment, totaling 2,770 hours (13%) and averaging 14 hours per personnel, followed closely by Fire Hose training at 2,667 hours (12 %), or 13 hours per member. Additional focus areas included Ropes & Knots (2,175 hours, 10%, 11 hours per personnel), PPE and SCBA (1,416 hours, 6%, 7 hours per personnel), and Hose Operations & Hose Streams (1,288 hours, 6%, 6 hours per personnel). This distribution reflects HPFD's strategic prioritization of operational readiness and safety, with training content closely aligned to ISO and NFPA standards for core firefighting capabilities. (See Figure 3)

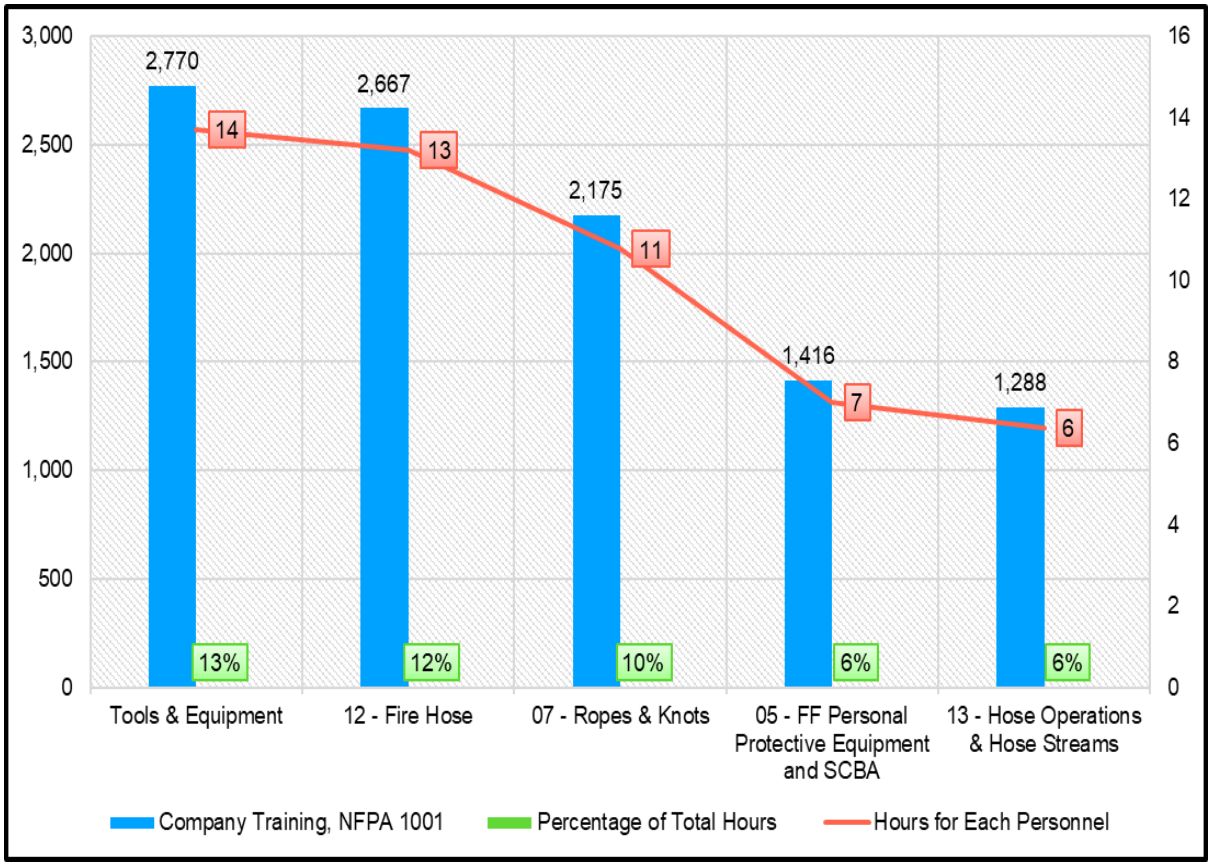
However, several critical domains were significantly undertrained, including Fire Suppression (20 hours, 0.1%), Incident Analysis (1 hour, 0.0%), NIMS-ICS (17 hours, 0.1%), Foam/Gas Fire Response (28 hours, 0.1%), and Fire Origin & Cause Determination (3 hours, 0.0%). These gaps pose risks to audit readiness and compliance, particularly in areas essential to incident command, hazardous materials response, and post-incident investigation. Moderate coverage was observed in Building Construction (934 hours, 4.3%), Ground Ladders (899 hours, 4.1%), Structural Search & Rescue (890 hours, 4.1%), Technical Rescue & Vehicle Extrication (801 hours, 3.7%), Incident Scene Operations (775 hours, 3.5%), and Fire Behavior (168 hours, 0.8%), indicating room for deeper engagement.

To address these deficiencies, HPFD should implement a strategic remediation plan that includes adding 100+ hours quarterly in Fire Suppression and Fire Behavior, integrating NIMS-ICS and Incident Analysis into tabletop exercises, and scheduling hazardous materials drills with mutual aid partners. Supporting tools such as a visual dashboard to track training hours against benchmarks and a quarterly calendar aligned with ISO audit cycles will enhance oversight and planning.

In conclusion, while HPFD demonstrates a strong commitment to training excellence—particularly in equipment, hose, and PPE domains—targeted improvements in suppression tactics, strategic command, and specialized

incident response are essential to achieving full compliance with ISO and NFPA 1001 standards. A full breakdown of training topics is available in Appendix A.

Figure 41: 2024 HPFD Highest Volume ISO Company Training



Revised Company Training

The 2024 Company Training dataset for High Point Fire Department (HPFD) reflects a total of 18,261 documented instructional hours, averaging 92 hours per suppression personnel. This training was benchmarked against ISO FSRS Section 580 and NFPA 1001 standards, with emphasis on tactical relevance, instructional depth, and categorical alignment.

Core Training Domains

Shown in Figure 4 are the top five instructional categories, accounted for over half of all Company Training hours:

- Tools & Equipment led with 2,734 hours (15%), averaging 14 hours per person.

- Fire Hose followed closely with 2,591 hours (14%).
- Ropes & Knots contributed 2,155 hours (12%).
- PPE and SCBA logged 1,409 hours (8%).
- Hose Operations & Hose Streams added 1,221 hours (7%).

Several modules contributed between 4–5% of total hours, including:

- Building Construction (928 hours)
- Ground Ladders (888 hours)
- Structural Search & Rescue (876 hours)
- Tech Rescue Support & Vehicle Extrication (795 hours)
- Incident Scene Operations (765 hours)

Low-Frequency and Specialized Topics

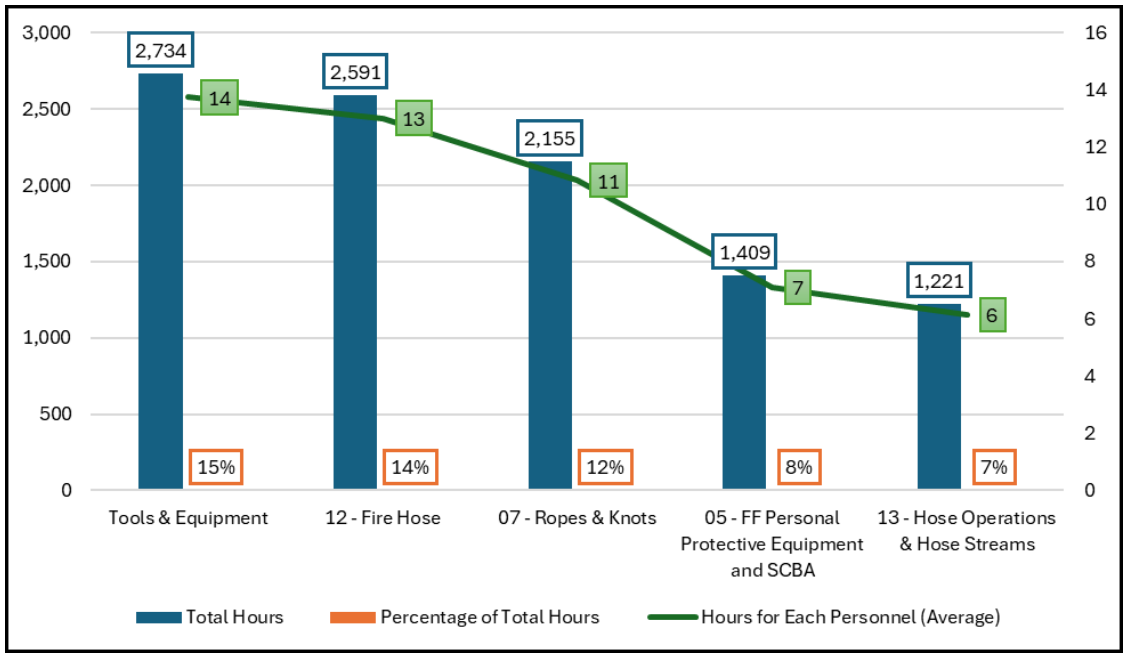
Topics contributing 2% or less of total hours include Tactical Ventilation, Firefighter/Self-Rescue, Standpipe Operations, Forcible Entry, and Communications. While these modules are essential, their lower instructional volume suggests potential areas for curriculum reinforcement or documentation review. Additionally, over 30 topics contributed less than 1% each, with many documenting fewer than 50 total hours. These include specialized evolutions (e.g., Apartment Lay, Drafting Relay, Reverse to Aerial) and scenario-based entries (e.g., Boyd Street Fire, Defeating Automatic Gates). While operationally relevant, their limited instructional footprint may reflect either targeted delivery or incomplete documentation.

Three topics—2024 Annual Air Consumption, Ladder Safety, and Lithium-Ion Battery Fires—recorded zero documented hours.

Instructional Balance and Strategic Implications

The dataset demonstrates strong instructional coverage in foundational suppression domains, with clear emphasis on equipment use, hose operations, and rescue fundamentals. However, the distribution also reveals instructional tapering across advanced tactical modules and specialized evolutions. To optimize ISO scoring and operational readiness, HPFD may consider reinforcing underrepresented topics, validating undocumented entries, and ensuring categorical clarity for scenario-based training. A full breakdown of training topics is available in Appendix A1.

Figure 42: Revised 2024 HPFD Highest Volume ISO Company Training



Facilities Training

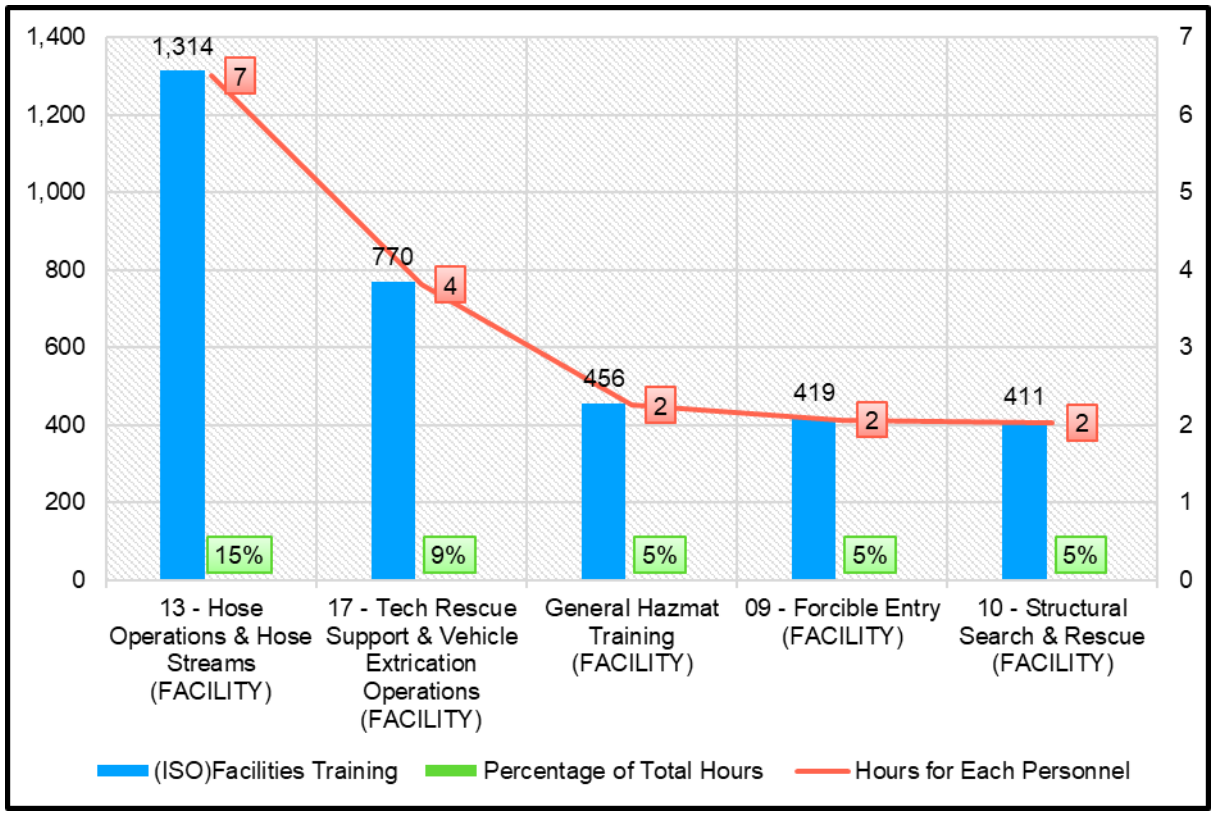
HPFD's 2024 Facilities Training program reflects a robust infrastructure and strong alignment with ISO standards, documenting a total of 8,894 training hours across 202 personnel—averaging 44.05 hours per member and surpassing the required individual threshold. The distribution of training hours underscores a comprehensive and strategically balanced approach, with significant emphasis on core operational competencies. Notably, Hose Operations & Hose Streams accounted for 1,314 hours (15%), averaging 7 hours per member; Technical Rescue and Vehicle Extrication totaled 770 hours (9%), with 4 hours per member; General Hazmat Training reached 456 hours (5%), both averaging 2 hours per member. Additional strengths include Forcible Entry (419 hours), Structural Search & Rescue (411 hours), Water Rescue Awareness (375 hours), and Tactical Ventilation (333 hours), all of which contribute meaningfully to ISO scoring and operational readiness. See Figure 5.

Despite this strong foundation, several domains remain critically undertrained. Foam Fire Fighting received only 15 hours (0.17%), Ladder Rescues for conscious and unconscious victims totaled just 4 hours combined (0.04%), and Pumping Operations with Foam and Apparatus Testing each logged only 3 hours (0.03%). These deficiencies represent key operational vulnerabilities and should be addressed through targeted remediation. Strategic improvements should focus on embedding these topics into multi-skill evolutions, utilizing scenario-based drills,

and aligning monthly and quarterly training calendars with ISO benchmarks. A dashboard should be implemented to monitor per-member facility hours, topic-level compliance ratios, and remediation progress.

By reinforcing undertrained areas while maintaining strength in core competencies, HPFD can ensure balanced operational readiness and sustained ISO accreditation. The department's commitment to comprehensive training is evident, and with focused adjustments, it is well-positioned to meet evolving standards and performance expectations. A full breakdown of training topics is available in Appendix B.

Figure 43:2024 HPFD ISO Facilities Training Hours



Revised Facilities Training

The 2024 Facilities Training dataset for High Point Fire Department (HPFD) documents a total of 9,551 instructional hours, averaging 48 hours per suppression personnel. These hours were delivered in structured, facility-based environments and benchmarked against ISO FSRS Section 580 and relevant NFPA standards, including NFPA 1002, NFPA 1402, and NFPA 472. The analysis highlights instructional distribution, categorical strengths, and strategic implications for audit alignment and operational readiness.

Core Training Domains

The top three instructional categories (See Figure 6) accounted for over one-quarter of all Facilities Training hours:

Hose Operations & Hose Streams led with 1,238 hours (13%), averaging 6 hours per person.

- Technical Rescue Support & Vehicle Extrication contributed 768 hours (8%).
- Hydraulics and Mobile Water Supply (NC OSFM Driver Operator, NFPA 1002) added 576 hours (6%).
- Mid-Tier Instructional Modules
- Several modules contributed between 2–5% of total hours, including:
- General Hazmat Training – 449 hours
- Forcible Entry – 410 hours
- Structural Search & Rescue – 403 hours
- Water Rescue Awareness – 372 hours
- Ropes & Knots – 364 hours
- Fire Hose Deployment – 347 hours.
- Tactical Ventilation – 322 hours
- Sprinkler/Standpipe Maintenance & Testing – 288 hours

These modules reflect balanced instructional coverage across suppression, rescue, ventilation, and hazmat domains. Their facility-based delivery supports ISO scoring under structured training environments and aligns with NFPA 1001 and 1002 JPRs.

Specialized and Low-Frequency Topics

Topics contributing 1% or less of total hours include Live Fire Evolutions, Relay Pumping, Aerial Apparatus Strategies, and various Driver Operator evolutions. While operationally relevant, these modules reflect either targeted delivery or limited documentation. Over 100 entries contributed less than 0.5% each, with many registering fewer than 50 total hours. These include scenario-based drills (e.g., Apartment Lay, Standpipe Operations, Ground Ladder Rescue) and technical evolutions (e.g., Foam Systems, Drafting, Master Stream Deployment).

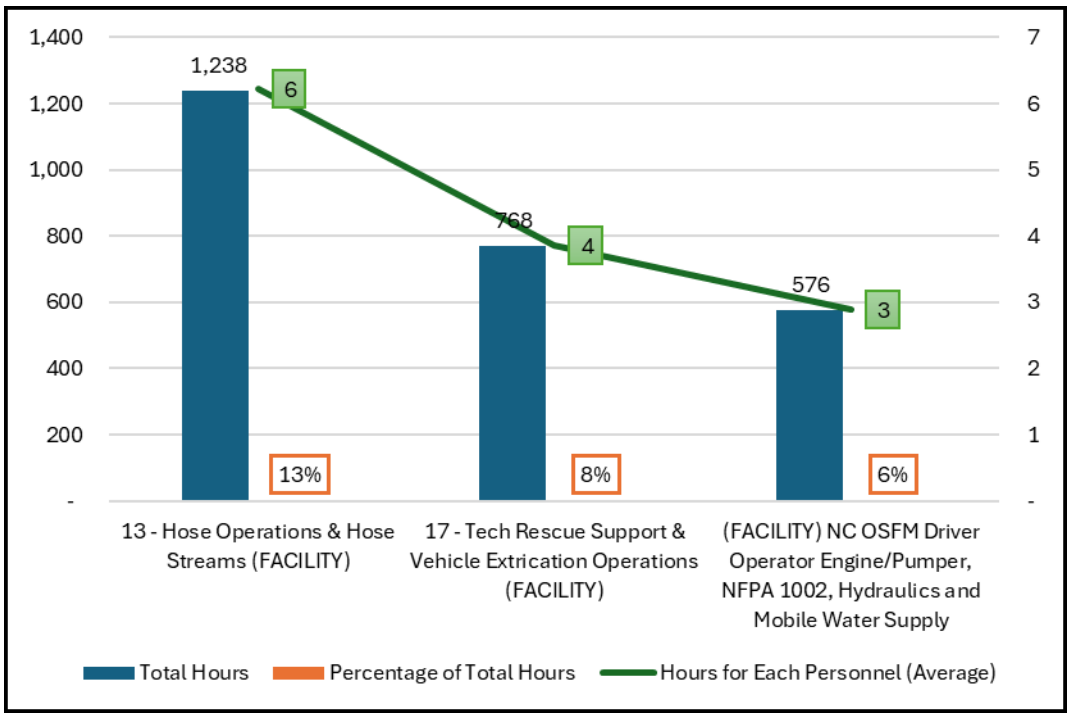
Several entries—such as Facilities Training Documentation, JRPAT, and Mutual Aid Company Training were confirmed to be hands-on, facility-based training exercises that contribute directly to operational readiness. However, their titles lack clarity and specificity regarding instructional content. Renaming these entries with more descriptive labels—such as “Structured Facilities-Based

Performance Assessment" or "Mutual Aid Tactical Drill"—would improve categorical transparency and strengthen ISO audit alignment.

Instructional Balance and Strategic Implications

The dataset demonstrates strong instructional coverage in suppression, rescue, and apparatus operations, with clear alignment to ISO FSRS Section 580 and NFPA standards. However, the distribution also reveals instructional tapering across advanced evolutions, aerial tactics, and foam systems. To optimize ISO scoring and operational readiness, HPFD may consider reinforcing underrepresented modules, consolidating duplicate entries, and validating low-frequency topics for documentation completeness. A full breakdown of training topics is available in Appendix B1.

Figure 44:Revised 2024 HPFD ISO Facilities Training Hours



Driver/Operator Training

The 2024 training analysis for HPFD's 53 existing driver/operator's benchmarks performance against ISO maintenance standards and NFPA 1451 expectations for professional development, safety, and operational readiness. A total of 2,692 training hours were delivered to current Fire Equipment Operators (FEOs), averaging 50.79 hours per member. Special note: the department documented a total of 8,788 hours under the driver/operator category; however, this analysis

was conducted exclusively for the current FEOs on the roster. The residual 6,096 hours were documented predominantly by firefighters who are not classified as driver/operators for ISO scoring purposes. While ISO permits a maximum of 12 creditable hours annually per existing driver/operator—totaling 636 hours for HPFD—only 24% of the recorded hours were compliant with ISO scoring criteria. However, the remaining 2,056 hours, though non-creditable under ISO, demonstrate HPFD's strong alignment with broader NFPA 1451 objectives.

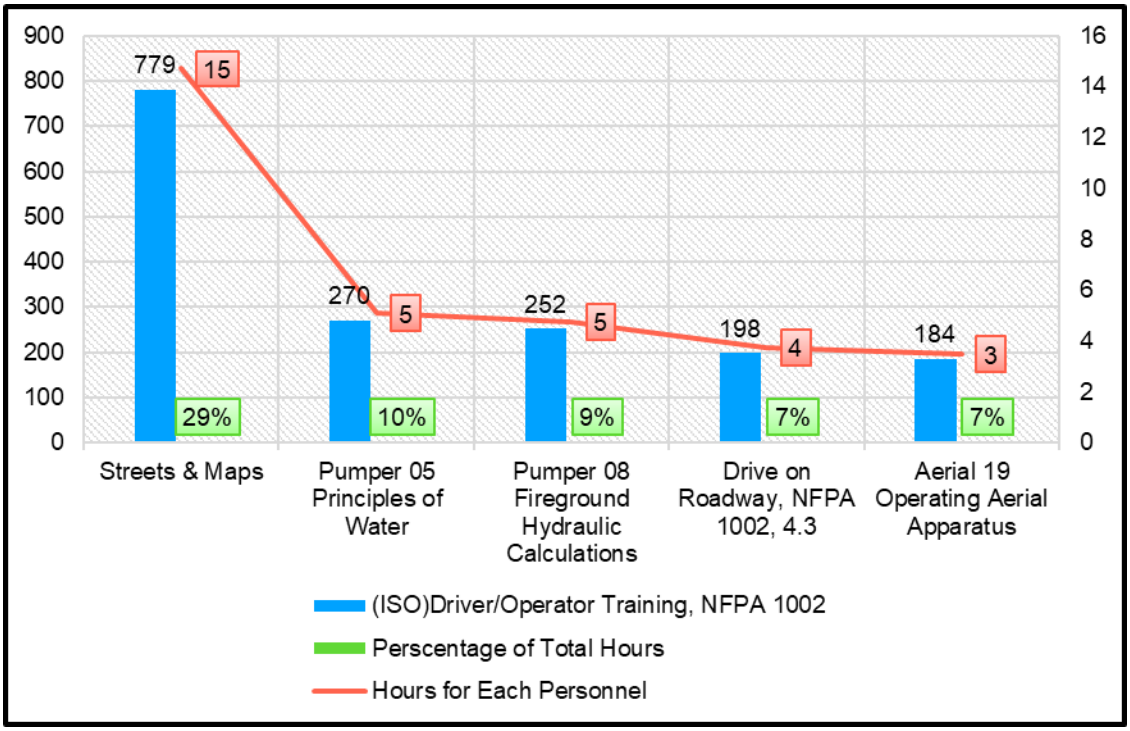
HPFD delivered robust training across critical operational domains, with a strong emphasis on roadway navigation, pump operations, and aerial apparatus deployment. Key instructional areas included Streets & Maps, which accounted for 779 hours (29%) and averaged 15 hours per Fire Equipment Operator (FEO), followed by Principles of Water (270 hours, 10%) and Fireground Hydraulic Calculations (252 hours, 9%), each averaging 5 hours per FEO. Additional focus was placed on Roadway Driving (198 hours, 7%, 4 hours per FEO) and Operating Aerial Apparatus (184 hours, 7%, 3 hours per FEO). This distribution reflects HPFD's strategic commitment to operational proficiency and aligns with ISO/NFPA standards for apparatus readiness and water supply management. (See Figure 7)

Additional instruction covered Apparatus Inspection and Maintenance (170 hours, 6.32%), Operating Fire Pumps (151 hours, 5.60%), Hose Nozzles and Flow Rates (82 hours), Relay Pumping Operations (31 hours), Water Shuttle Operations (66 hours), and Aerial Apparatus Strategies and Tactics (36 hours), all supporting NFPA 1002 Chapter competencies.

HPFD meets ISO's maximum allowable credit for driver/operator training, but strategic improvements are needed to optimize scoring and compliance. NFPA 1451 alignment is strong in hydraulics, pump theory, and apparatus operations; however, gaps remain in safety-specific training and evaluation practices. For example, EVOC and obstacle course modules received only 4 and 5 hours respectively, and documentation/evaluation training was minimal. To enhance compliance, HPFD should clearly tag ISO-creditable hours in training records, expand safety modules by 4–6 hours per driver, and incorporate post-incident analysis and apparatus testing reviews to reinforce NFPA 1451 standards. Optimizing the training calendar to prioritize ISO-creditable domains will further improve audit readiness.

In conclusion, HPFD's driver/operator training program exceeds ISO's minimum requirements and demonstrates strong alignment with NFPA 1451's emphasis on safety, technical proficiency, and continuous improvement. With targeted adjustments in documentation, safety, and evaluation, the department can further strengthen its compliance posture and operational readiness. A full breakdown of training topics is available in Appendix C.

Figure 45: 2024 HPFD ISO Driver/Operator Training Hours



Revised Driver/Operator Training

The 2024 Driver/Operator Training dataset for High Point Fire Department (HPFD) reflects a total of 12,602 documented instructional hours, averaging 63 hours per suppression personnel. This training was benchmarked against ISO FSRS Section 580 and NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications. The analysis highlights instructional strengths, categorical distribution, and strategic implications for audit alignment and operational readiness. (See Figure

Core Training Domains

The top five instructional categories (See Figure 3) accounted for 41% of all Driver/Operator training hours:

- Streets & Maps led by 2,412 hours (19%), averaging 12 hours per person.
- Pumper 05 Principles of Water contributed 774 hours (6%).
- Pumper 08 Fireground Hydraulic Calculations added 717 hours (6%).
- Engine Relief Driver/MFF 2.19 – 35 Hours Driving Time logged 695 hours (6%).
- Drive on Roadway, NFPA 1002, 4.3 recorded 642 hours (5%).

Mid-Tier Instructional Modules

Several modules contributed between 2–5% of total hours, including:

- Apparatus Inspection and Maintenance (Pumper 02) – 587 hours
- Operating Aerial Apparatus (Aerial 19) – 579 hours
- Operating Fire Pumps (Pumper 10) – 415 hours
- NFPA 1002 Chapter 5 – Engine/Pumper Operations – 348 hours
- 15-Hour Pumping Time (MFF 2.19) – 330 hours
- EVD Chapters 1–4 (NC OSFM) – 324 hours

Specialized and Low-Frequency Topics

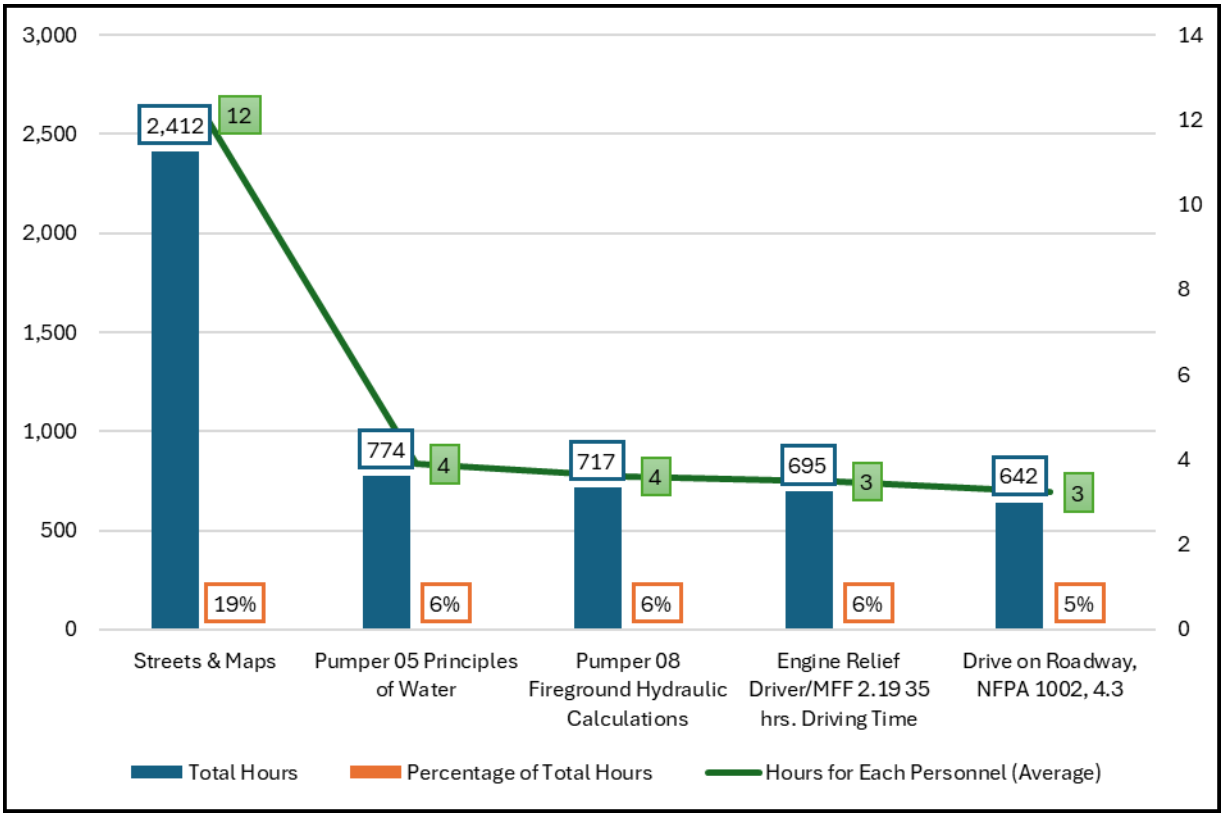
Topics contributing 1% or less of total hours include Relay Pumping, Foam Systems, Static Water Supply, and various Relief Driver task book entries. While operationally relevant, these modules reflect either targeted delivery or limited documentation. Over 100 entries contributed less than 0.5% each, with many registering fewer than 50 total hours. These include scenario-based evolutions, obstacle courses, and statutory reviews (e.g., NC General Statutes 20-125, 20-156).

Several entries—such as Pump Test, Daily Truck Inspection, and Emergency Procedures—appear multiple times under slightly varied titles. These may benefit from consolidation and documentation standardization to improve audit clarity.

Instructional Balance and Strategic Implications

The dataset demonstrates strong instructional coverage in navigation, hydraulics, and apparatus operation, with clear alignment to NFPA 1002 and ISO FSRS Section 580. However, the distribution also reveals instructional tapering across advanced aerial tactics, foam systems, and specialized evolutions. To optimize ISO scoring and operational readiness, HPFD may consider reinforcing underrepresented modules, consolidating duplicate entries, and validating low-frequency topics for documentation completeness. A full breakdown of training topics is available in Appendix B1.

Figure 46:Revised 2024 HPFD ISO Driver/Operator Training Hours



Hazardous Materials

In 2024, the High Point Fire Department (HPFD) recorded 1,255 hours of hazardous materials training across 202 suppression personnel, averaging 6.21 hours per member. This training portfolio demonstrates strong alignment with ISO requirements and NFPA 472 standards, with a clear emphasis on technician-level competencies and operational incident response readiness. General Hazmat training comprised the largest share at 642 hours (51%), averaging 3 hours per member, while HMRT Technician-level instruction followed with 408 hours (33%), averaging 2 hours per member. These figures reflect HPFD's strategic commitment to comprehensive Hazmat preparedness and advanced response capability. (See Figure 9)

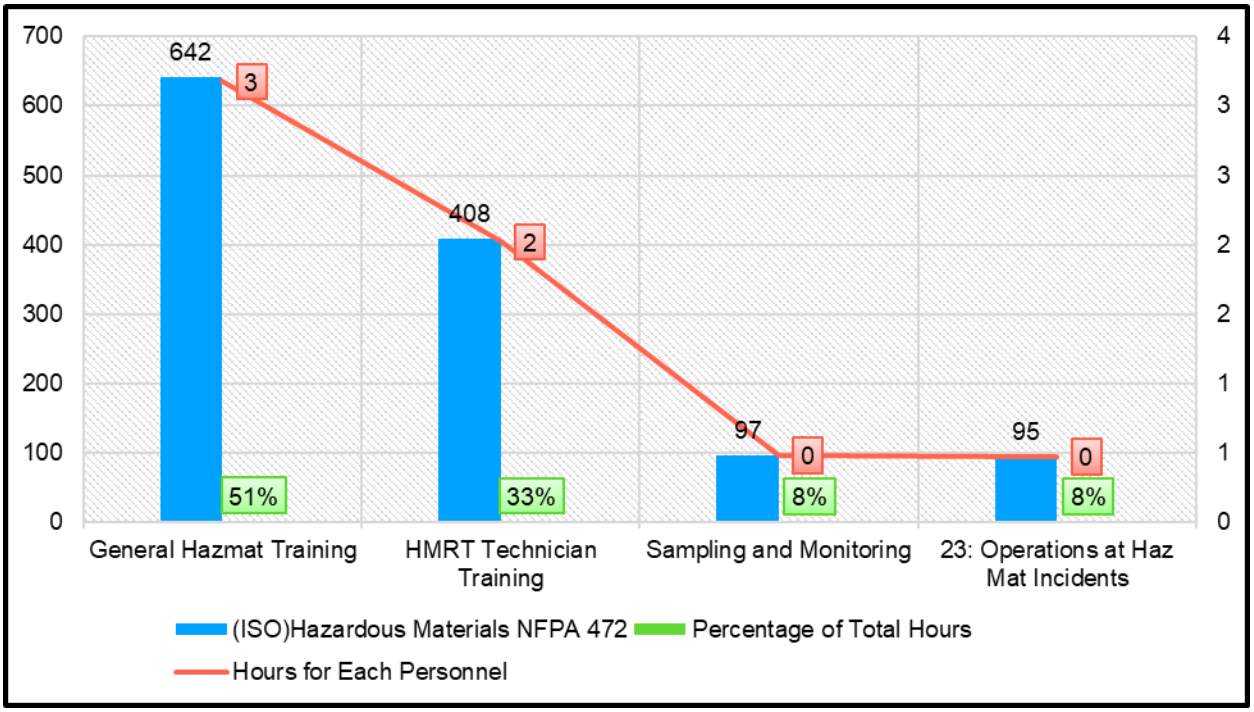
Operational competencies were further supported by 95 hours (8%) dedicated to incident-level training, while mission-specific tasks such as sampling and monitoring received 97 hours (8%), reinforcing NFPA 472 specialty domains. However, foundational, and utility-specific topics remain underrepresented. Introduction to Hazardous Materials training totaled just 4 hours, indicating a gap

in awareness-level instruction. Similarly, natural gas emergencies were covered in only 10 hours, suggesting limited readiness for utility-related incidents.

To address these deficiencies, HPFD should implement a quarterly remediation plan focused on awareness-level refreshers and utility-specific hazards, including natural gas and electrical emergencies. These modules should be embedded into multi-company drills and tabletop exercises to reinforce practical application. A Hazmat-specific training calendar aligned with NFPA 472 domains will support strategic planning, while tracking tools should monitor per-member hours, topic-level distribution, and flag personnel below baseline thresholds for targeted follow-up.

In conclusion, HPFD's hazardous materials training program demonstrates strong operational and technician-level compliance with ISO and NFPA 472 standards. Strategic reinforcement of awareness-level instruction and specialty scenarios will ensure comprehensive readiness, balanced coverage, and improved audit resilience. A full breakdown of training topics is available in Appendix D.

Figure 47:2024 HPFD ISO Hazardous Materials Training Hours



Revised Hazardous Materials

The 2024 Hazardous Materials Training dataset for High Point Fire Department (HPFD) documents a total of 2,358 instructional hours, averaging 12 hours per suppression personnel. These hours were benchmarked against ISO FSRS Section 580 and aligned with NFPA 472 and NFPA 470 standards, focusing on awareness, technician-level competencies, and operational readiness for hazardous materials incidents.

Core Training Domains

The top two instructional categories (See Figure 5) accounted for 44% of all Hazmat training hours:

- General Hazmat Training led with 633.5 hours (27%), averaging 3 hours per person. This reflects HPFD's foundational emphasis on hazardous materials awareness, scene safety, and basic response protocols.
- HMRT Technician Training contributed 402 hours (17%), supporting advanced competencies in containment, mitigation, and technician-level operations.

Advanced HAZWOPER Awareness Modules

Four modules under NFPA 470 Advanced HAZWOPER Awareness collectively contributed 1,090 hours (46%), with each module ranging from 268 to 280 hours and averaging 1 hour per person. These sessions reflect structured delivery of advanced awareness-level training, including hazard recognition, PPE protocols, decontamination procedures, and regulatory compliance.

Specialized and Low-Frequency Topics

Topics contributing 4% or less of total hours include:

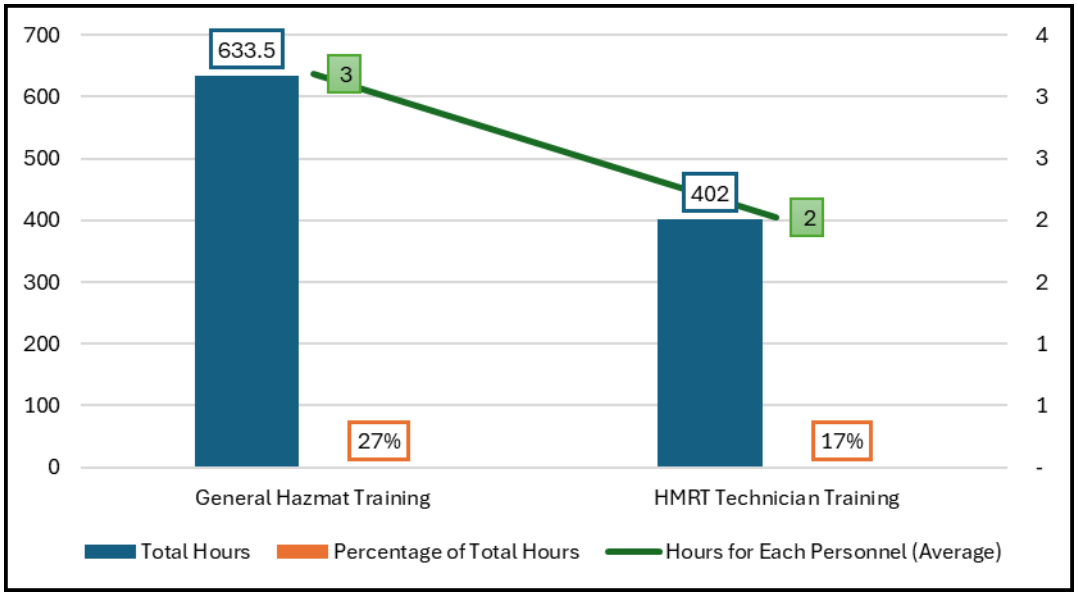
- Sampling and Monitoring – 96.5 hours
- Operations at Hazmat Incidents (Module 23) – 95 hours
- Air Purifying Respirators – 27 hours
- Natural Gas Emergencies – 10 hours
- Introduction to Hazardous Materials (Module 22) – 4 hours

While operationally relevant, these modules reflect either targeted delivery or limited documentation.

Instructional Balance and Strategic Implications

The dataset demonstrates strong instructional coverage in awareness-level training and technician development, with clear alignment to ISO FSRS Section 580 and NFPA 472/470 standards. However, the distribution also reveals instructional tapering across specialized topics such as respiratory protection, gas emergencies, and incident sampling. To strengthen audit resilience and operational readiness, HPFD may consider reinforcing underrepresented modules, validating low-frequency entries, and ensuring modular content is clearly documented and categorized. A full breakdown of training topics is available in Appendix D1.

Figure 48: Revised 2024 HPFD ISO Hazardous Materials Training Hours



Officer Training

In 2024, the High Point Fire Department (HPFD) delivered a total of 2,726 officer training hours across 67 officer personnel, averaging 40.68 hours per officer. This exceeds ISO's annual creditable threshold of 36 hours per officer, resulting in 2,412 ISO-creditable hours and a surplus of 314 hours. The training program reflects strong alignment with ISO standards and NFPA 1021, 1521, and 1561 requirements, particularly in operational readiness, administrative policy, and area familiarization.

The 2024 officer training distribution highlights a strategic emphasis on area familiarization, which led all categories with 861 hours (32%), averaging 13 hours per officer and aligning with NFPA 1500/1620 standards for pre-incident planning and operational readiness. Administrative policy review followed with 672 hours (25%), or 10 hours per officer, reinforcing procedural consistency and regulatory compliance. Emergency scene strategies and tactics received 497 hours (18%), averaging 7 hours per officer, directly supporting NFPA 1561 competencies in incident management. Career development and off-site officer training totaled 265 hours (10%), with 4 hours per officer, while company and chief officer leadership accounted for 208 hours (8%), averaging 3 hours per officer and aligning with NFPA 1021 standards for officer qualifications. This distribution reflects a balanced investment in operational capability, leadership growth, and compliance assurance. (See Figure 11)

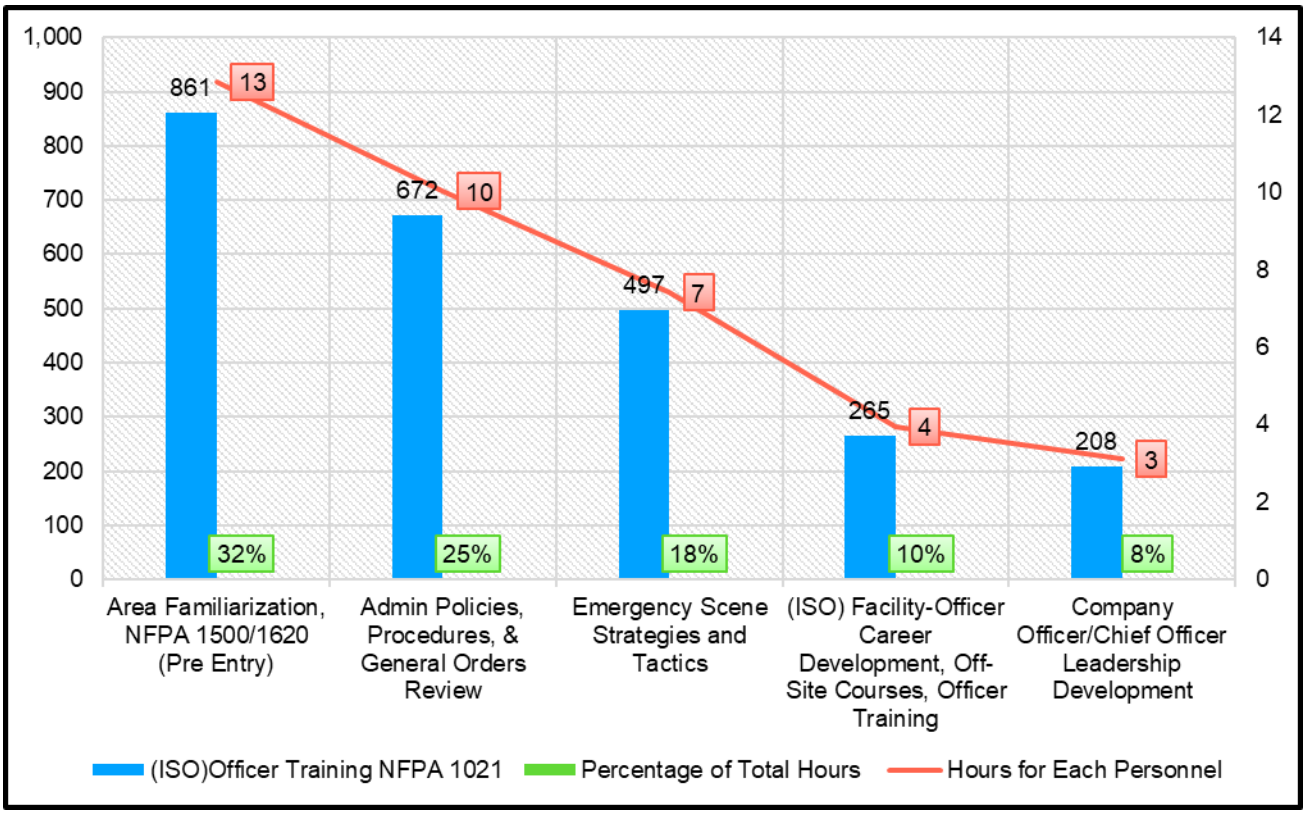
Despite these strengths, several areas remain underdeveloped. ICS/EOC and NIMS-related training represented only 2% of total hours combined, with ICS 400, general NIMS/ICS, and EOC modules totaling just 61 hours. Safety officer

development was similarly limited, with only 32 hours (1%) dedicated to NFA Incident Safety Officer training and no additional NFPA 1521-aligned risk management content. Post-incident analysis was underutilized at 38 hours (1%), and required reading was negligible at 3 hours. To enhance compliance and leadership capacity, HPFD should implement targeted improvements. These include expanding ICS 300/400 and EOC modules by 2–3 hours per officer to strengthen NFPA 1561 alignment, integrating NFPA 1521-compliant safety risk management content (2–4 hours per officer), and increasing structured post-incident evaluation (1–2 hours per officer). Leadership development should be reinforced through expanded chief officer mentoring and succession planning (2–3 hours per officer). Additionally, ISO-creditable hours should be clearly tagged in training records to ensure audit transparency and maximize scoring.

Special Note: HPFD documented a total of 3,345 hours under the officer training category; however, this analysis was conducted exclusively for the current officers on the roster. The residual hours were documented predominantly by non-officers who are not classified as officers for ISO scoring purposes.

In conclusion, HPFD's officer training program exceeds ISO benchmarks and demonstrates strong alignment with NFPA standards in key operational and administrative domains. Strategic reinforcement in safety, incident command, and leadership development will elevate readiness, compliance, and long-term organizational resilience. A full breakdown of training topics is available in Appendix E.

Figure 49:2024 HPFD ISO Officer Training Hours



Revised Officer Training

The 2024 Officer Training dataset for High Point Fire Department (HPFD) documents a total of 6,999 instructional hours, averaging 35 hours per suppression personnel. These hours were benchmarked against ISO FSRS Section 580 and aligned with NFPA 1021: Standard for Fire Officer Professional Qualifications, NFPA 1500 (Occupational Safety and Health), and NFPA 1620 (Pre-Incident Planning).

Strategic Leadership and Pre-Incident Planning

Illustrated in Figure 12 are the three categories that account for 70% of all Officer Training hours:

- Area Familiarization, NFPA 1500/1620 (Pre-Entry Planning) led with 2,097 hours (30%), averaging 11 hours per person.
- Administrative Policies, Procedures, and General Orders Review contributed 1,506 hours (22%).
- Emergency Scene Strategies and Tactics added 1,237 hours (18%).

Structured Leadership Development

Facility-based and structured leadership modules contributed 15% of total hours, including:

- Company Officer/Chief Officer Leadership Development (Facility-Based and General) – 451 hours
- Acting Company Officer Development – 418 hours
- Career Development (On-site and Off-site) – 319 hours
- Fire Inspections – 263 hours.

Specialized and Low-Frequency Topics

Topics contributing 1% or less of total hours include:

- Fire Officer I & II Training (NFPA 1021)
- Instructor INDOC
- Post-Incident Analysis
- Incident Command System (ICS 300/400)
- NFA Incident Safety Officer
- Required Reading and NIMS/ICS Training Modules

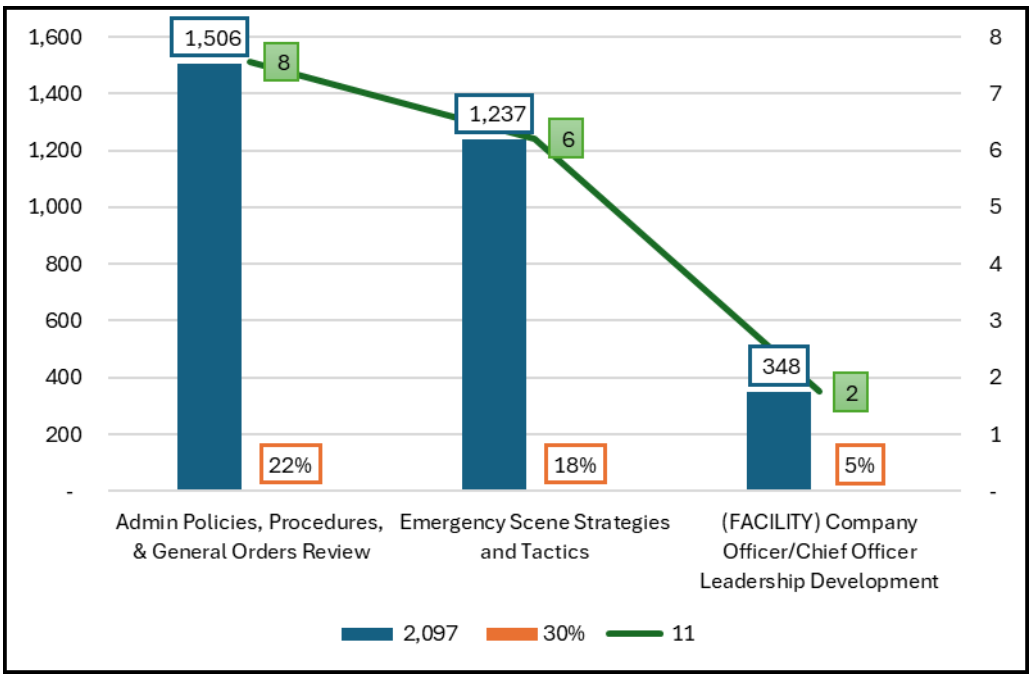
While operationally relevant, these modules reflect either targeted delivery or limited documentation. Their inclusion supports tactical leadership, safety officer competencies, and emergency operations center (EOC) coordination.

Several entries—such as Required Reading, Company Meetings, and Analyzing the Incident—were confirmed to be structured leadership development sessions but lack descriptive clarity. Renaming these entries with more specific titles—e.g., "Officer Development Roundtable," "Policy Review Workshop," or "Strategic Planning Session"—would improve categorical transparency and strengthen ISO audit alignment.

Instructional Balance and Strategic Implications

The dataset demonstrates strong instructional coverage in pre-incident planning, administrative leadership, and tactical command, with clear alignment to ISO FSRS Section 580 and NFPA 1021. However, the distribution also reveals instructional tapering across advanced ICS modules, safety officer training, and post-incident analysis. To optimize ISO scoring and operational readiness, HPFD may consider reinforcing underrepresented modules, validating low-frequency entries, and refining naming conventions for contextual training sessions. A full breakdown of training topics is available in Appendix E1.

Figure 50:Revised 2024 HPFD ISO Officer Training Hours



LMS Training

In 2024, the High Point Fire Department (HPFD) completed a total of 173.25 hours of LMS-based training across 202 personnel, averaging 0.858 hours per member. The training distribution reflects a strategic emphasis on occupational safety and regulatory compliance, with the highest allocation directed toward Hearing Conservation (13.15%) and Hazard Communication in cleaning and maintenance environments (11.56%). Fire extinguisher use, job site housekeeping, and vehicle safety also received notable attention, each contributing between 9% and 11% of total hours. Mid-tier topics such as harassment prevention, fire safety, and ergonomics were present but less emphasized, while lower-tier modules—including confined space awareness, bloodborne pathogens, and driving behavior—accounted for minimal time per member. Duplicate entries suggest a need for LMS content consolidation to improve reporting clarity.

This training portfolio, however, appears to be a residual structure from COVID-19 isolation protocols, when remote LMS modules were prioritized to maintain compliance and engagement during restricted in-person operations. While these modules served a critical role during pandemic conditions, their continued use in the same format and volume may no longer reflect the operational demands or strategic priorities of HPFD in a post-COVID environment. Compared to the ISO

Fire Suppression Rating Schedule (FSRS), which emphasizes hands-on, scenario-based training aligned with NFPA 1001/1021 standards, the current LMS content offers limited value in enhancing fire suppression capabilities or improving Public Protection Classification (PPC) scores. The low average training time per member and the absence of advanced fireground competencies suggest a misalignment with FSRS expectations for personnel readiness.

Moving forward, HPFD should consider phasing out or restructuring these legacy LMS modules in favor of more immersive, field-based training that directly supports ISO benchmarks and NFPA-aligned operational readiness. Prioritizing high-impact topics such as live fire exercises, hazardous materials response, and incident command simulations would not only improve audit resilience but also elevate the department's strategic posture in fire suppression rating evaluations. A full breakdown of training topics is available in Appendix F.

Strategic Reallocation of Facility Training to Meet ISO Company Standards:

In a hypothetical ISO inspection of HPFD's 2024 training records, the department could present a well-structured reallocation strategy aimed at optimizing Company Training credit by leveraging surplus Facility Training hours. With a total of 8,894 Facility Training hours logged, HPFD would demonstrate compliance with the ISO minimum requirement of 18 hours per member, equating to 3,636 hours for 202 personnel. This compliance leaves a surplus of 5,258 hours, from which 3,655.75 hours were strategically transferred into the Company Training ledger. These reallocated hours would be drawn from ISO-creditable Facility topics such as Hose Operations, Technical Rescue, Forcible Entry, Structural Search, Ground Ladders, Incident Scene Operations, PPE and SCBA, Communications, and Fire Behavior—all of which align with NFPA 1001 competencies. As a result of this transfer, HPFD's total Company Training hours would increase from 21,869.58 to 25,525.33, yielding an average of 126.37 hours per member. While this reflects a proactive and standards-aligned approach to maximizing ISO scoring, the inspection would still reveal a deficit of 13,258.67 hours against the ISO FSRS requirement of 192 hours per member annually, totaling 38,784 hours. Despite the strategic use of surplus Facility hours, HPFD would need to continue addressing undertrained Company domains—particularly Fire Suppression, Incident Analysis, and NIMS-ICS—to fully close the compliance gap.

Revised Strategic Reallocation of Facility Training to Meet ISO Company Standards

Rank-Based ISO Compliance Summary: Facility-to-Company Training Adjustments

In accordance with ISO provisions, up to 18 hours of documented facility training may be reclassified toward company training for everyone. This conversion was applied across all ranks to more accurately reflect instructional engagement and support compliance benchmarking. The adjusted totals provide a clearer view of each member's standing relative to ISO requirements, helping to identify both resolved deficiencies and areas still requiring remediation. This approach ensures transparency, maximizes creditable instructional value, and aligns with ISO/NFPA standards for suppression personnel training.

Battalion Chief Training Compliance

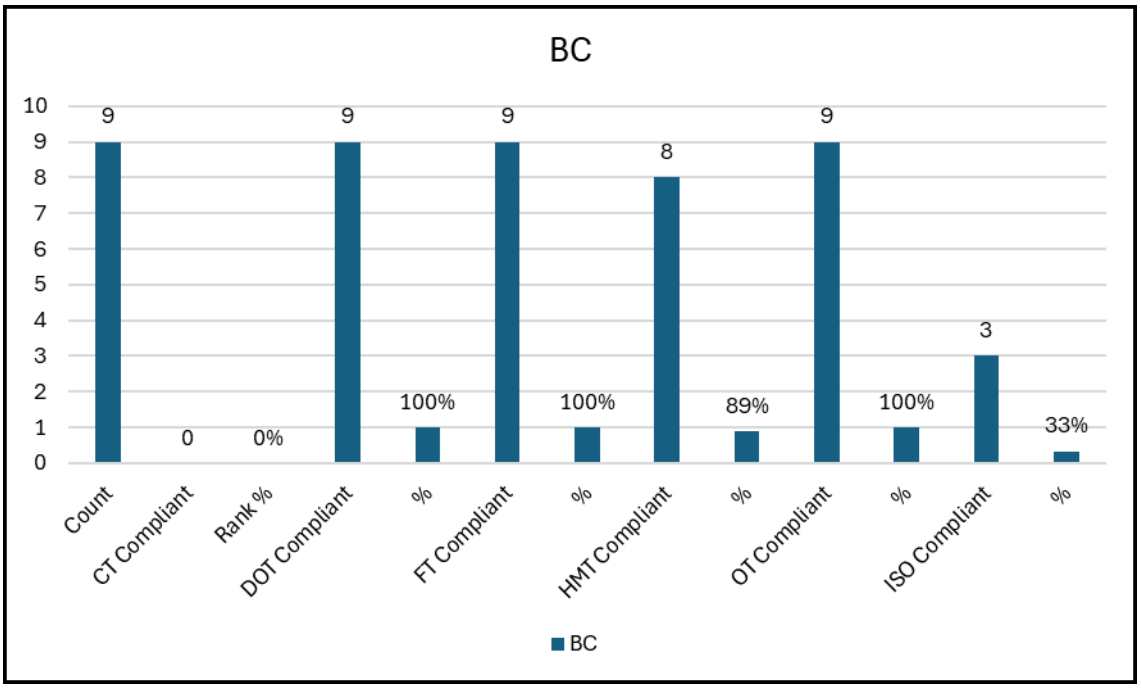
Among the nine Battalion Chiefs in the department:

- Company Training (CT): None were compliant with the ISO benchmark (0% of the rank; 0% of the department).

- Driver/Operator Training (DOT): All nine were compliant with the benchmark (100% of the rank; 5% of the department).
- Facilities Training (FT): All nine were compliant with the benchmark (100% of the rank; 5% of the department).
- Hazardous Materials Training (HMT): Eight were compliant with the benchmark (89% of the rank; 4% of the department).
- Officer Training (OT): All nine were compliant with the benchmark (100% of the rank; 5% of the department).
- Total ISO Requirement: Three were compliant with all required benchmarks (33% of the rank; 2% of the department).

The compliance analysis indicates that while all nine BCs completed multiple training categories, only a minority were compliant with the full ISO thresholds when measured against the department's 199 personnel. Despite applying the maximum allowable 18-hour carryover per individual, none were compliant with the ISO standard for Company Training. (See Figure 13)

Figure 51:BC– ISO Compliance with Conversion Applied



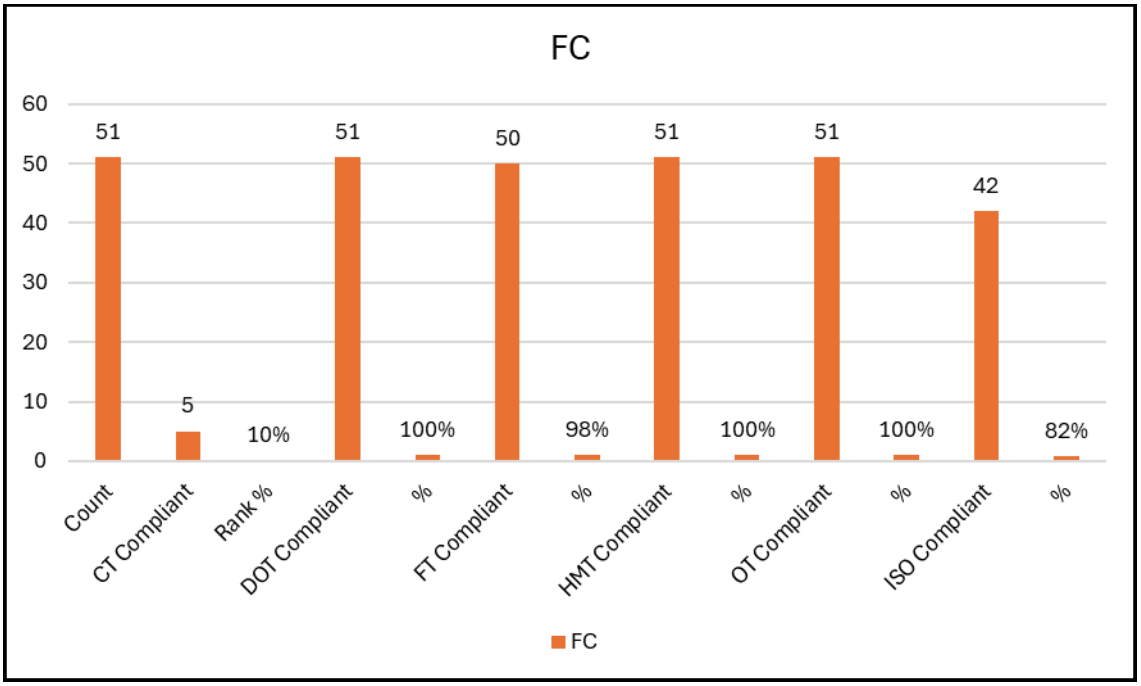
Fire Captain Training Compliance

Among the 51 Fire Captains:

- Company Training: 5 were compliant with the ISO benchmark, representing 10% of the rank and 3% of the entire department.
- Driver/Operator Training: All 51 were compliant with the benchmark, achieving 100% compliance within the rank and accounting for 26% of the department.
- Facilities Training: 50 were compliant with the benchmark, equating to 98% of the rank and 25% department wide.
- Hazardous Materials Training: Full compliance with all 51 Fire Captains meeting the benchmark, representing 100% of the rank and 26% of the department.
- Officer Training: Similarly, all 51 were compliant with the benchmark, reflecting 100% rank compliance and 26% department wide.
- Total ISO Requirement: 42 Fire Captains satisfied all required benchmarks, accounting for 82% of the rank and 21% of the department.

After the maximum allowable 18-hour facility-to-company training conversion, only five Fire Captains were compliant with the ISO benchmark for Company Training, which remains the primary constraint for full compliance within this rank. (See Figure 14)

Figure 52:FC-ISO Compliance with Conversion Applied



Driver/Operator Training Compliance

Among the 52 Driver/Operators:

- Company Training: Only 4 were compliant with the ISO benchmark, representing 8% of the rank and about 2% of the full department.

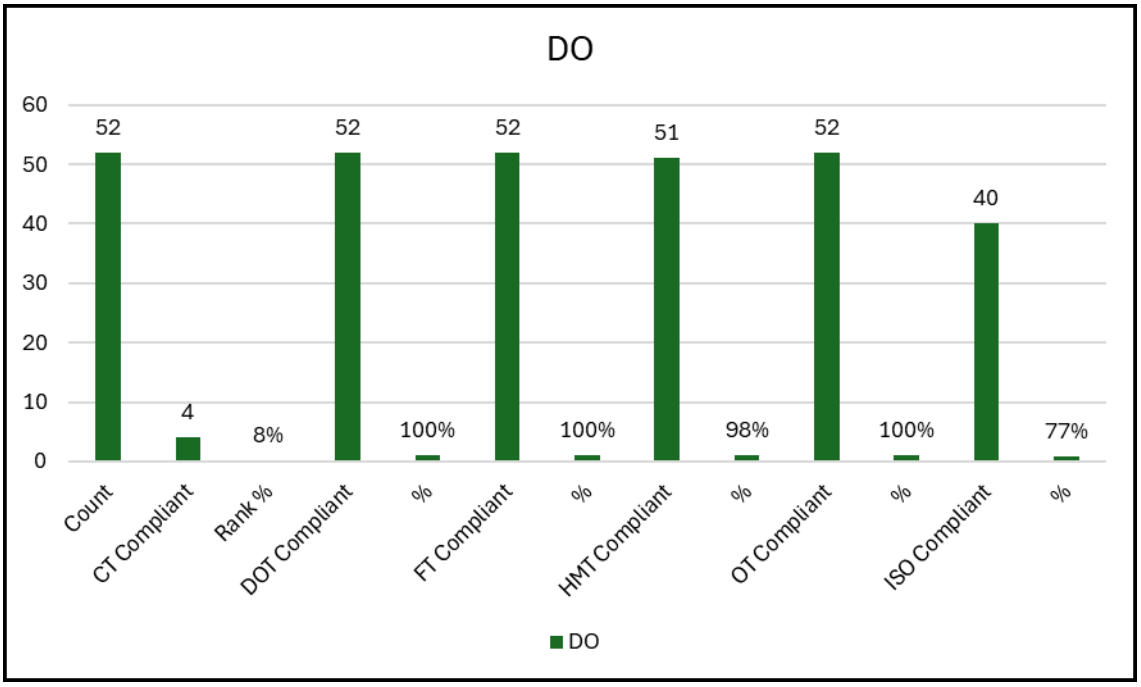
- Driver/Operator, Facilities, and Officer Training: All Driver/Operators were compliant with these benchmarks, accounting for 100% compliance within the rank and 26% department wide.

- Hazardous Materials Training: Nearly universal compliance with 51 meeting the benchmark (98% of the rank; 26% of the department).

- Total ISO Requirement: 40 Driver/Operators were compliant with all required benchmarks, representing 77% of the rank and approximately 20% of the department.

Despite applying the maximum 18-hour facility-to-company training conversion, Company Training remains the primary limiting factor. (See Figure 15)

Figure 53:DO- ISO Compliance with Conversion Applied



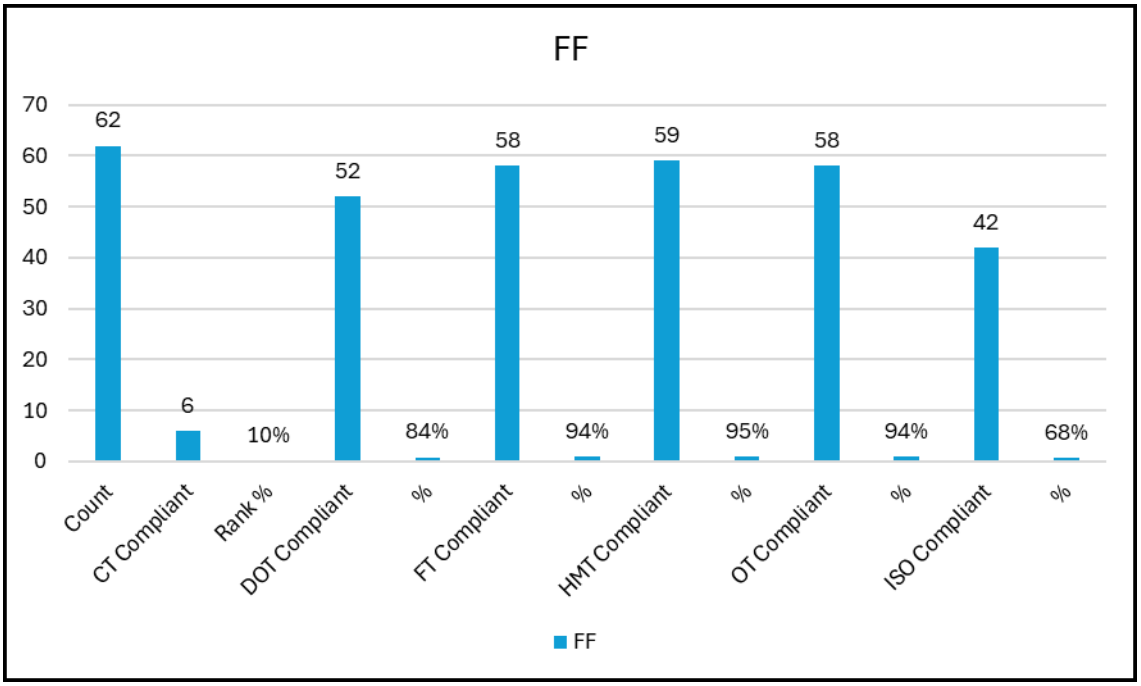
Firefighter Training Compliance

Among the 62 Firefighters:

- Company Training: Only 6 were compliant with the ISO benchmark, representing 10% of the rank and about 3% of the department.
- Driver/Operator Training: 52 achieved the benchmark (84% of the rank; 26% department-wide).
- Facilities Training: 58 were compliant with the requirement (94% of the rank; 29% department-wide), following an 18-hour reclassification that offset lower raw facility hours.
- Hazardous Materials Training: 59 complied (95% of the rank; 30% of the department).
- Officer Training: 58 were compliant with the benchmark (94% of the rank; 29% department-wide).
- Total ISO Requirement: 42 Firefighters were compliant with all benchmarks (68% rank compliance; 21% department-wide).

Despite applying the maximum allowable 18-hour facility-to-company training conversion, Company Training remains the chief obstacle. (See Figure 16)

Figure 54:FF-ISO Compliance with Conversion Applied



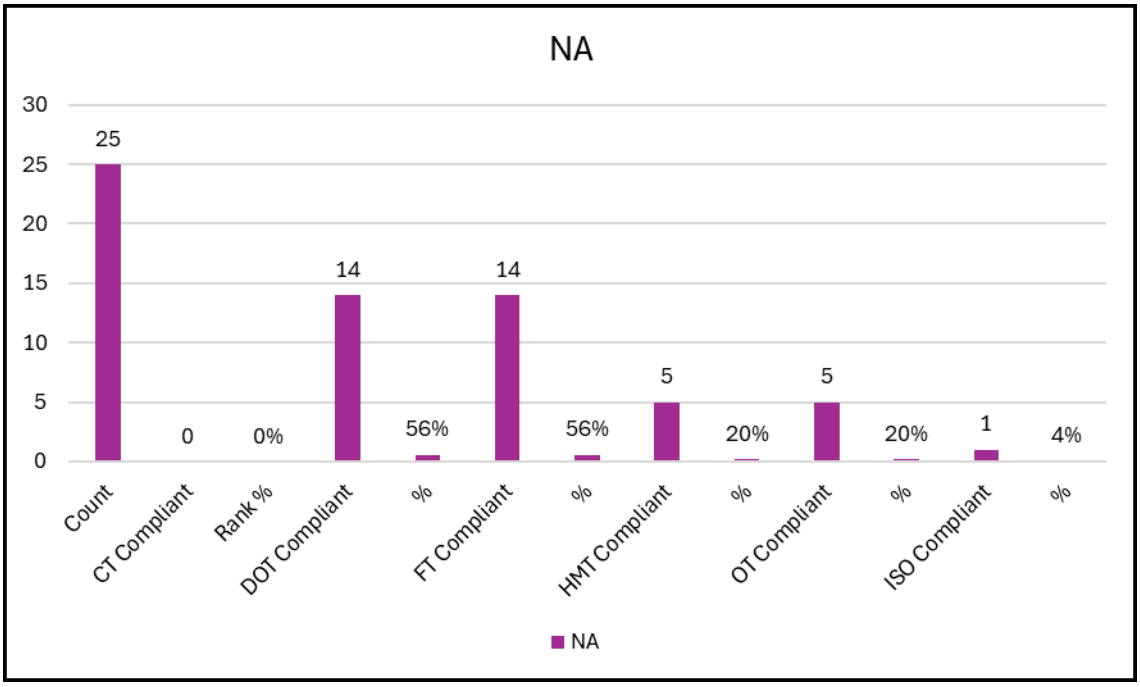
NA Unclassified Personnel Training Compliance

Among the 25 NA personnel:

- Company Training: None were compliant with the ISO benchmark (0% of the rank; 0% of the department).
- Driver/Operator Training: 14 were compliant with the benchmark, representing 56% of the rank and approximately 7% of the department.
- Facilities Training: 14 were compliant with the benchmark, 56% of the rank and 7% department wide.
- Hazardous Materials Training: 5 were compliant with the benchmark, accounting for 20% of the rank and 3% of the department.
- Officer Training: 5 were compliant with the benchmark, reflecting 20% of the rank and 3% of the department.
- Total ISO Requirement: Only 1 individual was compliant with all required benchmarks, representing 4% of the rank and less than 1% of the department.

Even after utilizing the full 18-hour facility-to-company training conversion, Company Training continues to be the primary challenge. (See Figure 17)

Figure 55:NA – ISO Facility-to-Company Conversion Applied



Summary

The facility-to-company training conversion provides a clearer and more accurate reflection of the department's overall ISO compliance landscape. This adjustment enhances recognition of instructional hours and resolves some training gaps; however, Company Training consistently emerges as the primary challenge across all ranks. Other training categories demonstrate strong compliance, reflecting solid engagement and operational readiness. For entities with low Company Training hours, these shortages may be attributable to various personnel-related factors, including extended personal leave, staffing transitions, separation from the department, or other circumstances preventing individuals from meeting ISO-mandated training requirements. It should be noted that specific scenarios or circumstances causing these shortages were unknown for this report and are mentioned here as reasonable possibilities. While often unavoidable, such factors contribute to ongoing deficits that must be documented for audit transparency. Addressing these persistent Company Training shortfalls is critical to achieving full ISO alignment and audit readiness moving forward. A full breakdown of training topics is available in Appendix G.

Training Record Evaluation Appendix Documents:

Attachment A

Training Topic	Company Training, NFPA 1001	Percentage of Total Hours	Hours for Each Personnel
Tools & Equipment	2,770	13%	14
12 - Fire Hose	2,667	12%	13
07 - Ropes & Knots	2,175	10%	11
Fire Department General (HPFD)	1,695	8%	8
05 - FF Personal Protective Equipment and SCBA	1,416	6%	7
13 - Hose Operations & Hose Streams	1,288	6%	6
03 - Building Construction	934	4%	5
08 - Ground Ladders	899	4%	4
10 - Structural Search & Rescue	890	4%	4
17 - Tech Rescue Support & Vehicle Extrication Operations	801	4%	4
19 - Incident Scene Operations	775	4%	4
Drone Training	451	2%	2
11 - Tactical Ventilation	396	2%	2
Firefighter/Self-Rescue Rescue Operations	364	2%	2
Evolution A Standpipe Operations	317	1%	2
22 - Community Risk Reduction	270	1%	1
23 - First Aid Provider	270	1%	1
FF Health and Wellness	266	1%	1
09 - Forcible Entry	255	1%	1
Evolution N Reverse To A Deck Set 5 Inch	222	1%	1
02 - Communications	220	1%	1
06 - Portable Fire Extinguishers	205	1%	1
HPFD Pump Test Procedure	184	1%	1
04 - Fire Dynamics / Fire Behavior	168	1%	1
Evolution V Relay Pump	163	1%	1
RIT Training	160	1%	1
21 - Maintenance & Testing Responsibilities	159	1%	1
RIT Assessing SCBA on a downed Firefighter	147	1%	1
Sprinklers & Fire Alarm Systems	141	1%	1
01 - Fire Service & Firefighter Safety	139	1%	1
26 - PPE, Product Control & Decontamination	122	1%	1
Evolution X Drafting Relay	120	1%	1
15 - Overhaul, Property Conservation, & Scene Preservation	101	0%	0

Thermal Imager Review	95	0%	0
ISO Mutual Aid Company Training	85	0%	0
16 - Building Materials, Structural Collapse, & Effects of Fire Suppression	79	0%	0
Evolution M Reverse To Aerial	53	0%	0
Elevator	48	0%	0
Live Fire Evolutions NFPA 1403/1142	46	0%	0
Evolution C Advancing a hose line up a ground ladder	33	0%	0
18 - Foam Fire Fighting, Liquid Fire, & Gas Fires	28	0%	0
Air Purifying Respirators	27	0%	0
Evolution L Apartment Lay	26	0%	0
25 - Action Options & Response Objectives	21	0%	0
14 - Fire Suppression	20	0%	0
Evolution H Preconnected	20	0%	0
27 - NIMS-ICS	17	0%	0
Evolution P Forward Mounted Deck Set	17	0%	0
Air Bag Use for Rescue Incidents	15	0%	0
Evolution Y Drafting	15	0%	0
Firefighter Safety .	15	0%	0
Fire Behavior Section #1	11	0%	0
Wild land Firefighting (ISO)	10	0%	0
Evolution O Reverse To A Deck Set 2 And A Half	9	0%	0
Pump Test	9	0%	0
Evolution I Deuce And A Half Heavy Fire Knockdown	6	0%	0
Evolution F Forward Lay Sprinkler System	5	0%	0
Fire Behavior #3	4	0%	0
20 - Fire Origin & Cause Determination	3	0%	0
Evolution R Extending Hand line	3	0%	0
Evolution J Reverse Out Preconnected	2	0%	0
Boyd Street Fire Los Angeles	2	0%	0
Defeating Automatic Gates	2	0%	0
24 - Analyzing the Incident	1	0%	0
Fire Behavior #2	1	0%	0
2024 Annual Air Consumption	0	0%	0
Ladder Safety	0	0%	0
Lithium-Ion Battery Fires	0	0%	0
Grand Total	21,870	100.00%	108

Attachment A1

Company Training Topics	Total Hours	Percentage of Total Hours	Hours for Each Personnel (Average)
Tools & Equipment	2,734	15%	14
12 - Fire Hose	2,591	14%	13
07 - Ropes & Knots	2,155	12%	11
05 - FF Personal Protective Equipment and SCBA	1,409	8%	7
13 - Hose Operations & Hose Streams	1,221	7%	6
03 - Building Construction	928	5%	5
08 - Ground Ladders	888	5%	4
10 - Structural Search & Rescue	876	5%	4
17 - Tech Rescue Support & Vehicle Extrication Operations	795	4%	4
19 - Incident Scene Operations	765	4%	4
11 - Tactical Ventilation	382	2%	2
Firefighter/Self-Rescue Rescue Operations	361	2%	2
Evolution A Standpipe Operations	303	2%	2
09 - Forcible Entry	254	1%	1
02 - Communications	220	1%	1
Evolution N Reverse To A Deck Set 5 Inch	214	1%	1
06 - Portable Fire Extinguishers	202	1%	1
04 - Fire Dynamics / Fire Behavior	168	1%	1
21 - Maintenance & Testing Responsibilities	159	1%	1
RIT Training	157	1%	1
RIT Assessing SCBA on a downed Firefighter	147	1%	1
Sprinklers & Fire Alarm Systems	140	1%	1
01 - Fire Service & Firefighter Safety	139	1%	1
26 - PPE, Product Control & Decontamination	121	1%	1
Evolution X Drafting Relay	116	1%	1
15 - Overhaul, Property Conservation, & Scene Preservation	96	1%	0
Thermal Imager Review	94	1%	0
ISO Mutual Aid Company Training	85	0%	0
16 - Building Materials, Structural Collapse, & Effects of Fire Suppression	79	0%	0
Evolution M Reverse To Aerial	52	0%	0
Elevator	47	0%	0
Air Consumption	38	0%	0
Live Fire Evolutions NFPA 1403/1142	38	0%	0
Evolution C Advancing a hose line up a ground ladder	33	0%	0
Evolution L Apartment Lay	26	0%	0
18 - Foam Fire Fighting, Liquid Fire, & Gas Fires	26	0%	0

(ISO) Air Consumption - Company Officer Entry	23	0%	0
HPFD Saws, Blades, Chains and Intro Operations	21	0%	0
25 - Action Options & Response Objectives	21	0%	0
14 - Fire Suppression	20	0%	0
Evolution H Preconnect	20	0%	0
Air Bag Use for Rescue Incidents	15	0%	0
Evolution P Forward Mounted Deck Set	15	0%	0
Evolution Y Drafting	15	0%	0
Firefighter Safety .	15	0%	0
Fire Behavior Section #1	11	0%	0
Evolution O Reverse To A Deck Set 2 And A Half	9	0%	0
Evolution I Deuce And A Half Heavy Fire Knockdown	6	0%	0
Evolution F Forward Lay Sprinkler System	5	0%	0
Fire Behavior #3	4	0%	0
Evolution R Extending Hand line	3	0%	0
Evolution J Reverse Out Preconnect	2	0%	0
Boyd Street Fire Los Angeles	2	0%	0
Defeating Automatic Gates	2	0%	0
Fire Behavior #2	1	0%	0
2024 Annual Air Consumption	0	0%	0
Ladder Safety	0	0%	0
Lithium-Ion Battery Fires	0	0%	0
Grand Total	**18,261**	**100%**	**92**

Attachment B

Training Topic	(ISO)Facilities Training	Percentage of Total Hours	Hours for Each Personnel
13 - Hose Operations & Hose Streams (FACILITY)	1,314	15%	7
17 - Tech Rescue Support & Vehicle Extrication Operations (FACILITY)	770	9%	4
General Hazmat Training (FACILITY)	456	5%	2
09 - Forcible Entry (FACILITY)	419	5%	2
10 - Structural Search & Rescue (FACILITY)	411	5%	2
Water Rescue Awareness	375	4%	2
07 - Ropes & Knots (FACILITY)	369	4%	2
(FACILITY) Company Officer/Chief Officer Leadership Development	356	4%	2
12 - Fire Hose (FACILITY)	354	4%	2
Diversity Equity Inclusion (FACILITY)	333	4%	2
11 - Tactical Ventilation (FACILITY)	333	4%	2
Firefighter/Self-Rescue Rescue Operations (FACILITY)	283	3%	1
08 - Ground Ladders (FACILITY)	238	3%	1
19 - Incident Scene Operations (FACILITY)	198	2%	1
Aerial 19 Operating Aerial Apparatus (FACILITY)	195	2%	1
05 - FF Personal Protective Equipment and SCBA (Facility)	171	2%	1
2.12 Pumping a fog and a smooth bore handline from a positive water source (FACILITY)	153	2%	1
Aerial 17 Positioning Aerial Apparatus (FACILITY)	150	2%	1
Pumper 04 Positioning Apparatus (FACILITY)	143	2%	1
2.14 Pumping Operations from a draft (FACILITY)	128	1%	1
2.9 Establishing a water supply (FACILITY)	127	1%	1
Facilities Training Documentation	114	1%	1
04 - Fire Dynamics / Fire Behavior (FACILITY)	109	1%	1
2.10 Booster Tank Changeover (FACILITY)	98	1%	0
Live Fire Evolutions NFPA 1403/1142 (FACILITY)	93	1%	0
(ISO) JRPAT (Facilities)	70	1%	0
16 - Building Materials, Structural Collapse, & Effects of Fire Suppression (FACILITY)	69	1%	0
Pumper 10 Operating Fire Pumps (FACILITY)	67	1%	0
Burn Can Live Fire Evolutions NFPA 1403/1142 (FACILITY)	58	1%	0
2.11 Pumping handlines of two different diameters (FACILITY)	58	1%	0
Evolution V Relay Pump (FACILITY)	56	1%	0
01 - Fire Service & Firefighter Safety (FACILITY)	50	1%	0
14 - Fire Suppression (FACILITY)	49	1%	0
2.16 NFPA Driving Course (FACILITY)	47	1%	0
Pumper 12 Relay Pumping Operations (FACILITY)	47	1%	0

3.18 High-rise pack (FACILITY)	45	1%	0
Evolution L Apartment Lay (FACILITY)	45	1%	0
(ISO) Mutual Aid Company Training (FACILITY)	38	0%	0
Evolution A Standpipe Operations (FACILITY)	38	0%	0
Pumper 06 Hose Nozzles and Flow Rates (Facility)	33	0%	0
3.24 Level aerial stabilization (FACILITY)	30	0%	0
15 - Overhaul, Property Conservation, & Scene Preservation (FACILITY)	28	0%	0
4.2 Deploy ground mounted master stream device (FACILITY)	28	0%	0
Aerial 20 Aerial Apparatus Strategies and Tactics (FACILITY)	28	0%	0
NFPA 1001 - 02 - Communications (FACILITY)	27	0%	0
Evolution P Forward Mounted Deck Set (FACILITY)	20	0%	0
2.8 Pumping Operations from booster tank and 1 fog line (FACILITY)	19	0%	0
Evolution Q Pittsburg Rit Drill (FACILITY)	19	0%	0
Evolution R Extending Hand line (FACILITY)	18	0%	0
Evolution H Preconnect (FACILITY)	17	0%	0
Evolution Z Ground Ladder Rescue (FACILITY)	16	0%	0
18 - Foam Fire Fighting, Liquid Fire, & Gas Fires (FACILITY)	15	0%	0
3.26 elevated master stream device (FACILITY)	15	0%	0
Evolution C Advancing a hose line up a ground ladder (FACILITY)	15	0%	0
3.25 Un-level aerial stabilization (FACILITY)	14	0%	0
Evolution D Forward Lay to Aerial (FACILITY)	14	0%	0
3.09 24' extension ladder (FACILITY)	13	0%	0
Evolution E Reverse To Aerial (FACILITY)	12	0%	0
Evolution K Forcible Entry with Attack Lines (FACILITY)	12	0%	0
3.27 Lower aerial device (FACILITY)	7	0%	0
Evolution J Reverse Out Preconnect (FACILITY)	7	0%	0
Evolution M Reverse To Aerial (FACILITY)	6	0%	0
Evolution N Reverse To A Deck Set 5 In (FACILITY)	6	0%	0
Pumper 11 Static Water Supply Sources (FACILITY)	6	0%	0
2.15 Pumping from a draft part II (FACILITY)	5	0%	0
3.14 Ladder axe carry (FACILITY)	5	0%	0
Aerial 18 Stabilizing the Apparatus (FACILTY)	5	0%	0
Evolution F Forward Lay Sprinkler System (FACILITY)	5	0%	0
Evolution I Deuce And A Half Heavy Fire Knockdown (FACILITY)	5	0%	0
Evolution Y Drafting (FACILITY)	5	0%	0
2.13 Pumping Operations with Foam (FACILITY)	3	0%	0
3.10 35' extension ladder (FACILITY)	3	0%	0
Evolution A Standpipes (FACILITY)	3	0%	0
Pumper 15 Apparatus Testing (FACILITY)	3	0%	0
3.13 ladder leg lock (FACILITY)	3	0%	0

3.12 Unconscious victim ladder (FACILITY)	2	0%	0
Evolution C Engine Co (FACILITY)	2	0%	0
3.11 Conscious victim ladder (FACILITY)	2	0%	0
4.1 Deploying a 2 1/2 (FACILITY)	2	0%	0
Pumper 02 Apparatus Inspection and Maintenance (FACILITY)	2	0%	0
Grand Total	8,894	100%	44

Attachment B1

Facilities Training	Total Hours	Percentage of Total Hours	Hours for Each Personnel (Average)
13 - Hose Operations & Hose Streams (FACILITY)	1,238	13%	6
17 - Tech Rescue Support & Vehicle Extrication Operations (FACILITY)	768	8%	4
(FACILITY) NC OSFM Driver Operator Engine/Pumper, NFPA 1002, Hydraulics and Mobile Water Supply	576	6%	3
General Hazmat Training (FACILITY)	449	5%	2
09 - Forcible Entry (FACILITY)	410	4%	2
10 - Structural Search & Rescue (FACILITY)	403	4%	2
Water Rescue Awareness	372	4%	2
07 - Ropes & Knots (FACILITY)	364	4%	2
12 - Fire Hose (FACILITY)	347	4%	2
Diversity Equity Inclusion (FACILITY)	327	3%	2
11 - Tactical Ventilation (FACILITY)	322	3%	2
(FACILITY) NC OSFM Driver Operator Engine/Pumper NFPA 1002 Sprink/Stand, Maintenance & Testing	288	3%	1
Firefighter/Self-Rescue Rescue Operations (FACILITY)	271	3%	1
08 - Ground Ladders (FACILITY)	234	2%	1
(FACILITY) NC OSFM Driver Operator NFPA 1002 EVD Chapter 1, 2, 3, 4	216	2%	1
19 - Incident Scene Operations (FACILITY)	198	2%	1
Aerial 19 Operating Aerial Apparatus (FACILITY)	195	2%	1
05 - FF Personal Protective Equipment and SCBA (Facility)	171	2%	1
2.12 Pumping a fog and a smooth bore handline from a positive water source (FACILITY)	152	2%	1
Aerial 17 Positioning Aerial Apparatus (FACILITY)	150	2%	1
Pumper 04 Positioning Apparatus (FACILITY)	129	1%	1
2.14 Pumping Operations from a draft (FACILITY)	128	1%	1
2.9 Establishing a water supply (FACILITY)	127	1%	1
Facilities Training Documentation	114	1%	1
04 - Fire Dynamics / Fire Behavior (FACILITY)	98	1%	0
2.10 Booster Tank Changeover (FACILITY)	98	1%	0
Live Fire Evolutions NFPA 1403/1142 (FACILITY)	93	1%	0
(FACILITY) Water Rescue Training for Operations Companies	87	1%	0
(ISO) JRPAT (Facilities)	70	1%	0
16 - Building Materials, Structural Collapse, & Effects of Fire Suppression (FACILITY)	69	1%	0
Pumper 10 Operating Fire Pumps (FACILITY)	67	1%	0
Burn Can Live Fire Evolutions NFPA 1403/1142 (FACILITY)	58	1%	0
2.11 Pumping handlines of two different diameters (FACILITY)	58	1%	0
Evolution V Relay Pump (FACILITY)	56	1%	0
01 - Fire Service & Firefighter Safety (FACILITY)	50	1%	0
14 - Fire Suppression (FACILITY)	48	1%	0
2.16 NFPA Driving Course (FACILITY)	47	0%	0

Pumper 12 Relay Pumping Operations (FACILITY)	47	0%	0
3.18 High-rise pack (FACILITY)	45	0%	0
Evolution L Apartment Lay (FACILITY)	45	0%	0
(FACILITY) NC OSFM Driver Operator Engine/Pumper, NFPA 1002, Basic Pump Ops	40	0%	0
Evolution A Standpipe Operations (FACILITY)	38	0%	0
Pumper 06 Hose Nozzles and Flow Rates (Facility)	33	0%	0
(ISO) Mutual Aid Company Training (FACILITY)	30	0%	0
3.24 Level aerial stabilization (FACILITY)	29	0%	0
15 - Overhaul, Property Conservation, & Scene Preservation (FACILITY)	28	0%	0
Aerial 20 Aerial Apparatus Strategies and Tactics (FACILITY)	28	0%	0
4.2 Deploy ground mounted master stream device (FACILITY)	27	0%	0
NFPA 1001 - 02 - Communications (FACILITY)	27	0%	0
2.8 Pumping Operations from booster tank and 1 fog line (FACILITY)	19	0%	0
Evolution Q Pittsburg Rit Drill (FACILITY)	19	0%	0
Evolution P Forward Mounted Deck Set (FACILITY)	19	0%	0
Evolution R Extending Hand line (FACILITY)	18	0%	0
Evolution H Preconnect (FACILITY)	17	0%	0
Evolution Z Ground Ladder Rescue (FACILITY)	16	0%	0
18 - Foam Fire Fighting, Liquid Fire, & Gas Fires (FACILITY)	15	0%	0
Evolution C Advancing a hose line up a ground ladder (FACILITY)	15	0%	0
3.25 Un-level aerial stabilization (FACILITY)	14	0%	0
3.26 elevated master stream device (FACILITY)	14	0%	0
Evolution D Forward Lay to Aerial (FACILITY)	14	0%	0
3.09 24' extension ladder (FACILITY)	13	0%	0
Evolution E Reverse To Aerial (FACILITY)	10	0%	0
Evolution K Forcible Entry with Attack Lines (FACILITY)	10	0%	0
3.27 Lower aerial device (FACILITY)	7	0%	0
Evolution J Reverse Out Preconnect (FACILITY)	7	0%	0
Evolution N Reverse To A Deck Set 5 In (FACILITY)	6	0%	0
Pumper 11 Static Water Supply Sources (FACILITY)	6	0%	0
2.15 Pumping from a draft part II (FACILITY)	5	0%	0
3.14 Ladder axe carry (FACILITY)	5	0%	0
Aerial 18 Stabilizing the Apparatus (FACILTY)	5	0%	0
Evolution M Reverse To Aerial (FACILITY)	5	0%	0
Evolution F Forward Lay Sprinkler System (FACILITY)	5	0%	0
Evolution I Deuce And A Half Heavy Fire Knockdown (FACILITY)	5	0%	0
Evolution Y Drafting (FACILITY)	5	0%	0
2.13 Pumping Operations with Foam (FACILITY)	3	0%	0
3.10 35' extension ladder (FACILITY)	3	0%	0
Evolution A Standpipes (FACILITY)	3	0%	0
Pumper 15 Apparatus Testing (FACILITY)	3	0%	0

3.13 ladder leg lock (FACILITY)	3	0%	0
3.12 Unconscious victim ladder (FACILITY)	2	0%	0
Evolution C Engine Co (FACILITY)	2	0%	0
3.11 Conscious victim ladder (FACILITY)	2	0%	0
4.1 Deploying a 2 1/2 (FACILITY)	2	0%	0
Pumper 02 Apparatus Inspection and Maintenance (FACILITY)	2	0%	0
Grand Total	9,551	100%	48

Attachment C

Training Topic	(ISO)Driver/Operator Training, NFPA 1002	Percentage of Total Hours	Hours for Each Personnel
Streets & Maps	779	29%	15
Pumper 05 Principles of Water	270	10%	5
Pumper 08 Fireground Hydraulic Calculations	252	9%	5
Drive on Roadway, NFPA 1002, 4.3	198	7%	4
Aerial 19 Operating Aerial Apparatus	184	7%	3
Pumper 02 Apparatus Inspection and Maintenance	170	6%	3
Pumper 10 Operating Fire Pumps	151	6%	3
Pumper 06 Hose Nozzles and Flow Rates	82	3%	2
Driver Operator Engine/Pumper, NFPA 1002, Chapter 5	74	3%	1
4.4 Pumping an aerial	70	3%	1
Pumper 13 Water Shuttle Operations	66	2%	1
Aerial 17 Positioning Aerial Apparatus	64	2%	1
Pumper 07 Theoretical Pressure Calculations	50	2%	1
Fire Service Hydraulics, 40 Hour Course	40	1%	1
Aerial 20 Aerial Apparatus Strategies and Tactics	36	1%	1
Pumper 12 Relay Pumping Operations	31	1%	1
Aerial 18 Stabilizing the Apparatus	30	1%	1
Pumper 09 Fire Pump Theory	29	1%	1
Pumper 04 Positioning Apparatus	28	1%	1
Pumper 15 Apparatus Testing	18	1%	0
Pumper 11 Static Water Supply Sources	15	1%	0
Aerial 16 Introduction to Aerial Fire Apparatus	13	0%	0
Pumper 14 Foam Equipment and Systems	11	0%	0
Pumper 03 Apparatus Safety and Operating Emergency Vehicles	8	0%	0
Driver Operator Rescue/Utility, NFPA 1002, Chapter 4	7	0%	0
NFPA 1002 Obstacle Course	5	0%	0
EVOC 4 Hour Practical Training	4	0%	0
Pumper 01 Types of Apparatus Equipped with a Pump	4	0%	0
Driver Operator Aerial, NFPA 1002, Chapter 6	3	0%	0
Grand Total	2,688	100.00%	51

Attachment C1

Driver/Operator Training	Total Hours	Percentage of Total Hours	Hours for Each Personnel (Average)
Streets & Maps	2,412	19%	12
Pumper 05 Principles of Water	774	6%	4
Pumper 08 Fireground Hydraulic Calculations	717	6%	4
Engine Relief Driver/MFF 2.19 35 hrs. Driving Time	695	6%	3
Drive on Roadway, NFPA 1002, 4.3	642	5%	3
Pumper 02 Apparatus Inspection and Maintenance	587	5%	3
Aerial 19 Operating Aerial Apparatus	579	5%	3
Pumper 10 Operating Fire Pumps	415	3%	2
Driver Operator Engine/Pumper, NFPA 1002, Chapter 5	348	3%	2
Engine Relief Driver/MFF 2.19 15 hrs. Pumping Time	330	3%	2
NC OSFM Driver Operator NFPA 1002 EVD Chapter 1, 2, 3, 4	324	3%	2
Pumper 06 Hose Nozzles and Flow Rates	259	2%	1
Pumper 13 Water Shuttle Operations	243	2%	1
Aerial 17 Positioning Aerial Apparatus	230	2%	1
Engine Relief Driver/MFF 2.19 5 hrs. General Knowledge	214	2%	1
HPFD Pump Test Procedure	181	1%	1
Pumper 07 Theoretical Pressure Calculations	181	1%	1
Evolution V Relay Pump	163	1%	1
4.4 Pumping an aerial	163	1%	1
Engine Relief Driver/MFF 2.19 5 hours Operational readiness	152	1%	1
Aerial 20 Aerial Apparatus Strategies and Tactics	130	1%	1
Aerial 18 Stabilizing the Apparatus	124	1%	1
Pumper 12 Relay Pumping Operations	123	1%	1
Fire Service Hydraulics, 40 Hour Course	120	1%	1
Engine Relief Driver/MFF 2.19 5 hours driving @ FDTC Driving Course	91	1%	0.5
Pumper 09 Fire Pump Theory	88	1%	0.4
Fire Apparatus Operations, 40 Hour Course	80	1%	0.4
2.1 Driving	76	1%	0.4
Pumper 04 Positioning Apparatus	74	1%	0.4
Engine Relief Driver/MFF 2.9	62	0.5%	0.3
Engine Relief Driver/MFF 2.10	61	0.5%	0.3
Aerial Company Relief Driver 2.5	58	0.5%	0.3
Aerial Company Relief Driver 2.4	56	0.4%	0.3
Driver Operator Rescue/Utility, NFPA 1002, Chapter 4	54	0.4%	0.3
2.19A Documented 35 hours driving time	52	0.4%	0.3
Aerial Company Relief Driver 3.11	47	0.4%	0.2

Engine Relief Driver/MFF 2.15	42	0.3%	0.2
Engine Relief Driver/MFF 2.19 (FACILITY) 5 hours driving @ FDTC Driving Course	38	0.3%	0.2
Engine Relief Driver/MFF 2.14	36	0.3%	0.2
Heavy Duty Tractor Drawn Tiller 2.3	36	0.3%	0.2
Pumper 11 Static Water Supply Sources	36	0.3%	0.2
Aerial 16 Introduction to Aerial Fire Apparatus	35	0.3%	0.2
Pumper 14 Foam Equipment and Systems	35	0.3%	0.2
Engine Relief Driver/MFF 2.7	34	0.3%	0.2
Pumper 15 Apparatus Testing	33	0.3%	0.2
Driver Operator Aerial, NFPA 1002, Chapter 6	31	0.2%	0.2
Engine Relief Driver/MFF 1.4	31	0.2%	0.2
Engine Relief Driver/MFF 2.8	29	0.2%	0.1
Pumper 03 Apparatus Safety and Operating Emergency Vehicles	28	0.2%	0.1
Engine Relief Driver/MFF 2.12	26	0.2%	0.1
Engine Relief Driver/MFF 2.13	26	0.2%	0.1
Engine Relief Driver/MFF 2.11	26	0.2%	0.1
Engine Relief Driver/MFF 2.4	26	0.2%	0.1
Engine Relief Driver/MFF 2.6	26	0.2%	0.1
Engine Relief Driver/MFF 3.24	25	0.2%	0.1
NFPA 1002 Obstacle Course	25	0.2%	0.1
Engine Relief Driver/MFF 1.1	24	0.2%	0.1
Engine Relief Driver/MFF 3.11	24	0.2%	0.1
Engine Relief Driver/MFF 2.16	23	0.2%	0.1
NC OSFM Driver Operator Engine/Pumper, NFPA 1002, Hydraulics and Mobile Water Supply	23	0.2%	0.1
2.19C General Knowledge	22	0.2%	0.1
Engine Relief Driver/MFF 1.3	22	0.2%	0.1
Engine Relief Driver/MFF 2.3	22	0.2%	0.1
2.19B Operational readiness	21	0.2%	0.1
Aerial Company Relief Driver 1.6	21	0.2%	0.1
Engine Relief Driver/MFF 3.12	21	0.2%	0.1
Heavy Duty Tractor Drawn Tiller 3.3	21	0.2%	0.1
Engine Relief Driver/MFF 1.2	20	0.2%	0.1
Engine Relief Driver/MFF 3.6	19	0.1%	0.1
Engine Relief Driver/MFF 2.2	19	0.1%	0.1
Engine Relief Driver/MFF 3.22	19	0.1%	0.1
Engine Relief Driver/MFF 2.1	18	0.1%	0.1
1.6 Placement, set-up, and general knowledge	17	0.1%	0.1
Engine Relief Driver/MFF 4.2	17	0.1%	0.1
Engine Relief Driver/MFF 3.25	17	0.1%	0.1
(FACILITY) NC OSFM Driver Operator Engine/Pumper, NFPA 1002, Hydraulics and Mobile Water Supply	16	0.1%	0.1
3.3 Documented Driving Front	16	0.1%	0.1

2.19 Documented 15 hours pumping time	15	0.1%	0.1
Heavy Duty Tractor Drawn Tiller 2.4	15	0.1%	0.1
Engine Relief Driver/MFF 1.5	15	0.1%	0.1
Engine Relief Driver/MFF 1.7	14	0.1%	0.1
Engine Company Relief Driver Written Test	13	0.1%	0.1
Engine Relief Driver/MFF 1.6	13	0.1%	0.1
Engine Relief Driver/MFF 3.17	13	0.1%	0.1
Engine Relief Driver/MFF 3.26	13	0.1%	0.1
Engine Relief Driver/MFF 3.5	12	0.1%	0.1
Engine Relief Driver/MFF 3.7	12	0.1%	0.1
Engine Relief Driver/MFF 3.9	12	0.1%	0.1
EVOC 4 Hour Practical Training	12	0.1%	0.1
Heavy Duty Tractor Drawn Tiller 1.1	12	0.1%	0.1
Engine Relief Driver/MFF 2.5	12	0.1%	0.1
Engine Relief Driver/MFF 3.10	11	0.1%	0.1
Pumper 01 Types of Apparatus Equipped with a Pump	11	0.1%	0.1
3.1 Ladder Functions	11	0.1%	0.1
Engine Relief Driver/MFF 3.8	11	0.1%	0.1
Engine Relief Driver/MFF 3.27	10	0.1%	0.1
2.20 General Knowledge	9	0.1%	0.0
2.4 Obstacle/Road Course	9	0.1%	0.0
3.06 RIT Bag	9	0.1%	0.0
Aerial Company Relief Driver 1.7	9	0.1%	0.0
Heavy Duty Tractor Drawn Tiller 1.5	9	0.1%	0.0
Engine Relief Driver/MFF 3.13	9	0.1%	0.0
Engine Relief Driver/MFF 3.2	9	0.1%	0.0
Engine Relief Driver/MFF 3.4	9	0.1%	0.0
Engine Relief Driver/MFF 4.10	9	0.1%	0.0
Engine Relief Driver/MFF 4.11	9	0.1%	0.0
Pump Test	9	0.1%	0.0
Engine Relief Driver/MFF 3.14	8	0.1%	0.0
Engine Relief Driver/MFF 3.23	8	0.1%	0.0
Engine Relief Driver/MFF 4.9	8	0.1%	0.0
1.1 GO 600.01 & GO 600.03	8	0.1%	0.0
1.5 Operating Telescoping Equipment	8	0.1%	0.0
Engine Relief Driver/MFF 3.16	8	0.1%	0.0
Engine Relief Driver/MFF 3.21	8	0.1%	0.0
1.4 Due Regard	7	0.1%	0.0
2.17 Driving time behind the wheel	7	0.1%	0.0
Engine Company Relief Driver Hydraulics Test	7	0.1%	0.0
Engine Relief Driver/MFF 3.18	7	0.1%	0.0

Engine Relief Driver/MFF 3.3	7	0.1%	0.0
Engine Relief Driver/MFF 4.4	7	0.1%	0.0
1.2 GO 600.04, 600.05, & 600.12	6	0.0%	0.0
4.5 Salvage Cover Roll	6	0.0%	0.0
Aerial Company Relief Driver 3.1	6	0.0%	0.0
Aerial Company Relief Driver 3.10	6	0.0%	0.0
Aerial Company Relief Driver 3.9	6	0.0%	0.0
Engine Relief Driver/MFF 4.5	6	0.0%	0.0
Engine Relief Driver/MFF 4.6	6	0.0%	0.0
Engine Relief Driver/MFF 4.7	6	0.0%	0.0
Engine Relief Driver/MFF 4.8	6	0.0%	0.0
1.3 GO 300.02 & 300.03	6	0.0%	0.0
Aerial Company Relief Driver 1.1	6	0.0%	0.0
Engine Relief Driver/MFF 3.1	6	0.0%	0.0
Engine Relief Driver/MFF 4.1	6	0.0%	0.0
Engine Relief Driver/MFF 4.3	6	0.0%	0.0
2.6 Operational readiness check	5	0.0%	0.0
2.7 Nozzle competency	5	0.0%	0.0
Engine Relief Driver/MFF 3.19	5	0.0%	0.0
3.5 Daily Truck Inspection	5	0.0%	0.0
Engine Relief Driver/MFF 3.20	5	0.0%	0.0
2.19 Documented 35 hours driving time	4	0.0%	0.0
Engine Relief Driver/MFF 3.15	4	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 1.6	4	0.0%	0.0
Engine Relief Driver/MFF 4.14	4	0.0%	0.0
1.7 NC General Statute 20-156	3	0.0%	0.0
2.19D Documented 5 hours driving @ FDTC Driving Course	3	0.0%	0.0
3.4 Obstacle and Road Course	3	0.0%	0.0
4.6 Salvage Cover Shoulder Toss	3	0.0%	0.0
4.7 Salvage Cover Balloon Toss	3	0.0%	0.0
Aerial Company Relief Driver 3.2	3	0.0%	0.0
Aerial Company Relief Driver 3.6	3	0.0%	0.0
Aerial Company Relief Driver 3.7	3	0.0%	0.0
Aerial Company Relief Driver 3.8	3	0.0%	0.0
Engine Relief Driver/MFF 2.17	3	0.0%	0.0
Engine Relief Driver/MFF 4.12	3	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 1.2	3	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 1.3	3	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 1.4	3	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 2.1	3	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 2.2	3	0.0%	0.0

Platform Relief Driver 3.1	3	0.0%	0.0
3.17 return to service items	3	0.0%	0.0
Aerial Company Relief Driver 1.2	3	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 1.7	3	0.0%	0.0
2.2 Measured weight of the apparatus	2	0.0%	0.0
2.3 Routine inspection of fluids and belts	2	0.0%	0.0
2.4 Routine inspection of batteries, electrical systems, etc...	2	0.0%	0.0
2.5 Routine inspection of steering and communications systems.	2	0.0%	0.0
1.5 NC General Statutes 20-125	2	0.0%	0.0
2.19 Documented 5 hours Operational readiness	2	0.0%	0.0
2.3 Rear driving	2	0.0%	0.0
Engine Relief Driver/MFF 4.13	2	0.0%	0.0
Engine Relief Driver/MFF 4.15	2	0.0%	0.0
Engine Relief Driver/MFF 4.18	2	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 3.1	2	0.0%	0.0
1.6 NC General Statute 20-145	2	0.0%	0.0
3.02 Personnel Accountability	2	0.0%	0.0
3.03 PAR radio call	2	0.0%	0.0
4.11 Open a wall	2	0.0%	0.0
4.13 Request for Maintenance	2	0.0%	0.0
4.14 Call for Service	2	0.0%	0.0
Aerial Company Relief Driver 1.3	2	0.0%	0.0
Aerial Company Relief Driver 1.4	2	0.0%	0.0
Aerial Company Relief Driver 1.5	2	0.0%	0.0
Aerial Company Relief Driver 2.2	2	0.0%	0.0
Aerial Company Relief Driver 2.3	2	0.0%	0.0
Aerial Company Relief Driver 3.3	2	0.0%	0.0
Aerial Company Relief Driver 3.4	2	0.0%	0.0
Aerial Company Relief Driver 3.5	2	0.0%	0.0
Engine Relief Driver/MFF 4.16	2	0.0%	0.0
3.01 General Order 603	1	0.0%	0.0
Engine Relief Driver/MFF 2.20	1	0.0%	0.0
Engine Relief Driver/MFF 4.17	1	0.0%	0.0
Engine Relief Driver/MFF 4.19	1	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 3.11	1	0.0%	0.0
3.6 Emergency Procedures	1	0.0%	0.0
4.16 NC OEMS EMT Certification	1	0.0%	0.0
4.3 Placing FDC in service properly	1	0.0%	0.0
Engine Relief Drive/MFF 1.1	1	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 3.10	1	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 3.7	1	0.0%	0.0

Heavy Duty Tractor Drawn Tiller 3.8	1	0.0%	0.0
Heavy Duty Tractor Drawn Tiller 3.9	1	0.0%	0.0
Engine Relief Driver/MFF 2.18	0	0.0%	0.0
Grand Total	**12,602**	**100%**	**63**

Attachment D

Training Topics	(ISO)Hazardous Materials NFPA 472	Percentage of Total Hours	Hours for Each Personnel
General Hazmat Training	642	51%	3
HMRT Technician Training	408	33%	2
Sampling and Monitoring	97	8%	0
23: Operations at Haz Mat Incidents	95	8%	0
Natural Gas Emergencies	10	1%	0
22: Introduction to Hazardous Materials	4	0%	0
Grand Total	1,255	100%	6

Attachment D1

Hazardous Materials	Total Hours	Percentage of Total Hours	Hours for Each Personnel (Average)
General Hazmat Training	634	27%	3
HMRT Technician Training	402	17%	2
NFPA 470 Advanced HAZWOPER Awareness (MOD #1)	280	12%	1
NFPA 470 Advanced HAZWOPER Awareness (MOD #2)	272	12%	1
NFPA 470 Advanced HAZWOPER Awareness (MOD #4)	270	11%	1
NFPA 470 Advanced HAZWOPER Awareness (MOD #3)	268	11%	1
Sampling and Monitoring	97	4%	0
23: Operations at Haz Mat Incidents	95	4%	0
Air Purifying Respirators	27	1%	0
Natural Gas Emergencies	10	0.4%	0
22: Introduction to Hazardous Materials	4	0.2%	0
Grand Total	**2,358**	**100%**	**12**

Attachment E

Training Topic	(ISO)Officer Training NFPA 1021	Percentage of Total Hours	Hours for Each Personnel
Area Familiarization, NFPA 1500/1620 (Pre Entry)	861	32%	13
Admin Policies, Procedures, & General Orders Review	672	25%	10
Emergency Scene Strategies and Tactics	497	18%	7
(ISO) Facility-Officer Career Development, Off-Site Courses, Officer Training	265	10%	4
Company Officer/Chief Officer Leadership Development	208	8%	3
Fire Inspections	91	3%	1
Post Incident Analysis	38	1%	1
NFA Incident Safety Officer	32	1%	0
NIMS ICS 400	32	1%	0
Incident Command System/EOC	22	1%	0
NIMS/ICS Training	7	0%	0
Required Reading	3	0%	0
Grand Total	2,727	100%	41

Attachment E1

Area Familiarization, NFPA 1500/1620 (Pre Entry)	2,097	30%	11
Admin Policies, Procedures, & General Orders Review	1,506	22%	8
Emergency Scene Strategies and Tactics	1,237	18%	6
(FACILITY) Company Officer/Chief Officer Leadership Development	348	5%	2
Company Officer/Acting Company Officer Development	321	5%	2
Fire Inspections	263	4%	1
Career Development, Off-site courses; Officer Training	190	3%	1
(ISO) Facility-Officer Career Development, Off-Site Courses, Officer Training	129	2%	1
Company Officer/Chief Officer Leadership Development	103	1%	1
Company Officer/ Acting Company Officer Development	97	1%	0.5
Day 2- Leadership (FACILITY)	96	1%	0.5
Day 3- NIMS ICS/Scene management (FACILITY)	96	1%	0.5
Day 1- Administration (FACILITY)	91	1%	0.5
Fire Officer I & II Training, NFPA 1021	90	1%	0.5
Instructor INDOC	73	1%	0.4
Post Incident Analysis	67	1%	0.3
Incident Command System/EOC	61	1%	0.3
NFA Incident Safety Officer	48	1%	0.2
NIMS ICS 400	32	0.5%	0.2
NIMS ICS 300	24	0.3%	0.1
27 - NIMS-ICS	17	0.2%	0.1
Required Reading	8	0.1%	0.0
NIMS/ICS Training	7	0.1%	0.0
24 - Analyzing the Incident	1	0.0%	0.0
Fire Officer I & II Company Meeting, NFPA 1021	1	0.0%	0.0
Grand Total	**6,999**	**100.0%**	**35**

Attachment F

Training Topic	(ISO)LMS	Percentage of Total Hours	Hours for Each Personnel
(LMS) Hearing Conservation	23	13%	0.1
(LMS) Hazard Communication: Cleaning and Maintenance Environment	20	12%	0.1
(LMS) Fire Extinguishers: Putting Out the Fire	19	11%	0.1
(LMS) Housekeeping On the Job Site	17	10%	0.1
(LMS) Tailgate Topics - Buckle Up	17	10%	0.1
(LMS) Harassment Prevention for Supervisor	14	8%	0.1
(LMS)Fire Safety	11	6%	0.1
(LMS) Fire Safety	11	6%	0.1
(LMS)Harassment Prevention	10	6%	0.0
(LMS) Ergonomics	7	4%	0.0
(LMS) Hand and Power Tool Safety	4	2%	0.0
(LMS)Hand and Power Tool Safety	4	2%	0.0
(LMS)Office Safety 2.0	4	2%	0.0
(LMS) Bloodborne Pathogens	4	2%	0.0
(LMS) Confined Spaces 2.0	3	2%	0.0
(LMS) Fall Prevention	2	1%	0.0
(LMS)Preventing Slips, Trips, and Falls	2	1%	0.0
(LMS)Aggressive Driving and Road Rage	1	1%	0.0
(LMS)Defensive Driving	1	1%	0.0
(LMS)Fall Prevention	1	1%	0.0
(LMS)Hazards to Outdoor Work	1	1%	0.0
(LMS) Preventing Strains & Sprains	1	0%	0.0
(LMS) Reasonable Suspicion for Drug and Alcohol Testing	1	0%	0.0
Grand Total	173	100%	0.9

Appendix G

Rank	Company Training			Driver/Operator Training		Facilities Training				Hazardous Materials		Officer Training		Grand Total	
ID	Hours	Hours from Facility Training	Status	Hours	Status	Hours	Hours Added to Company Training	Adjusted Hours	Status	Hours	Status	Hours	Status	Hours	Status
BC	**670**	**885**		**241**		**377**		**162**		**127**		**660**		**2,074**	
317	44	62	X (-130.5)	15	**Y (+2.5)**	36	18	18	**Y (+0)**	5	X (-1.5)	124	**Y (+111.5)**	222	X (-18)
380	82	92	X (-100.5)	43	**Y (+31)**	28	10	18	**Y (+0)**	12	**Y (+5.5)**	49	**Y (+37)**	213	X (-27)
402	81	117	X (-75.5)	28	**Y (+15.5)**	54	36	18	**Y (+0)**	17	**Y (+11)**	70	**Y (+58)**	249	**Y (+9)**
418	59	89	X (-103)	28	**Y (+15.5)**	49	31	18	**Y (+0)**	30	**Y (+24)**	50	**Y (+37.5)**	214	X (-26)
420	127	149	X (-43.5)	28	**Y (+16)**	40	22	18	**Y (+0)**	8	**Y (+2)**	50	**Y (+38)**	253	**Y (+12.5)**
426	77	96	X (-96.5)	22	**Y (+9.5)**	37	19	18	**Y (+0)**	10	**Y (+3.5)**	71	**Y (+59)**	216	X (-24.5)
429	62	99	X (-93.5)	27	**Y (+15)**	55	37	18	**Y (+0)**	17	**Y (+11)**	62	**Y (+50)**	223	X (-17.5)
458	61	94	X (-98)	16	**Y (+4)**	51	33	18	**Y (+0)**	19	**Y (+13)**	101	**Y (+89)**	248	**Y (+8)**
480	80	90	X (-102)	36	**Y (+24)**	29	11	18	**Y (+0)**	10	**Y (+4)**	84	**Y (+71.5)**	238	X (-2.5)

Rank	Company Training			Driver/Operator Training		Facilities Training				Hazardous Materials		Officer Training		Grand Total	
ID	Hours	Hours from Facility Training	Status	Hours	Status	Hours	Hours Added to Company Training	Adjusted Hours	Status	Hours	Status	Hours	Status	Hours	Status
FC	**5,639**	**7,024**		**3,318**		**2,301**		**917**		**697**		**2,123**		**14,077**	
289	96	115	X (-77.5)	23	**Y (+10.5)**	37	19	18	**Y (+0)**	8	**Y (+2)**	41	**Y (+28.5)**	204	X (-36.5)
294	111	133	X (-59)	42	**Y (+29.5)**	41	23	18	**Y (+0)**	30	**Y (+23.5)**	32	**Y (+20)**	254	**Y (+14)**
301	126	135	X (-57)	30	**Y (+17.5)**	27	9	18	**Y (+0)**	11	**Y (+5)**	50	**Y (+37.5)**	243	**Y (+3)**
326	94	120	X (-72)	96	**Y (+83.5)**	44	26	18	**Y (+0)**	8	**Y (+2)**	16	**Y (+4)**	258	**Y (+17.5)**
349	133	164	X (-28.5)	23	**Y (+10.5)**	49	31	18	**Y (+0)**	8	**Y (+2)**	33	**Y (+21)**	245	**Y (+5)**
362	164	192	**Y (+0.25)**	43	**Y (+30.5)**	47	29	18	**Y (+0)**	8	**Y (+2)**	26	**Y (+13.5)**	286	**Y (+46.25)**
363	121	165	X (-27)	37	**Y (+25)**	62	44	18	**Y (+0)**	8	**Y (+2)**	28	**Y (+16)**	256	**Y (+16)**
372	67	74	X (-118)	67	**Y (+54.5)**	26	8	18	**Y (+0)**	19	**Y (+12.5)**	46	**Y (+33.5)**	223	X (-17.5)
378	137	148	X (-44)	42	**Y (+30)**	29	11	18	**Y (+0)**	8	**Y (+2)**	33	**Y (+20.5)**	249	**Y (+8.5)**
382	126	191	X (-1)	40	**Y (+28)**	84	66	18	**Y (+0)**	8	**Y (+2)**	26	**Y (+13.5)**	283	**Y (+42.5)**
385	90	94	X (-98.5)	69	**Y (+56.5)**	21	3	18	**Y (+0)**	9	**Y (+3)**	32	**Y (+19.5)**	221	X (-19.5)
391	133	133	X (-59.25)	23	**Y (+10.5)**	17	0	17	X (-1.5)	21	**Y (+15)**	42	**Y (+30)**	235	X (-5.25)
401	149	191	X (-1)	45	**Y (+33)**	60	42	18	**Y (+0)**	8	**Y (+2)**	65	**Y (+52.5)**	327	**Y (+86.5)**
406	85	120	X (-72)	60	**Y (+47.5)**	54	36	18	**Y (+0)**	25	**Y (+18.5)**	28	**Y (+16)**	250	**Y (+10)**
410	114	123	X (-69)	147	**Y (+134.5)**	28	10	18	**Y (+0)**	8	**Y (+2)**	15	**Y (+3)**	311	**Y (+70.5)**
411	92	111	X (-81)	77	**Y (+64.5)**	37	19	18	**Y (+0)**	12	**Y (+5.5)**	58	**Y (+46)**	275	**Y (+35)**
417	153	166	X (-26)	32	**Y (+20)**	32	14	18	**Y (+0)**	12	**Y (+6)**	49	**Y (+37)**	277	**Y (+37)**
425	118	152	X (-40)	45	**Y (+33)**	53	35	18	**Y (+0)**	9	**Y (+3)**	114	**Y (+101.5)**	338	**Y (+97.5)**
430	168	213	**Y (+21)**	65	**Y (+53)**	64	46	18	**Y (+0)**	8	**Y (+2)**	48	**Y (+36)**	352	**Y (+112)**

432	140	155	X (-37)	42	Y (+30)	33	15	18	Y (+0)	8	Y (+2)	38	Y (+26)	261	Y (+21)
433	101	119	X (-73)	59	Y (+46.5)	36	18	18	Y (+0)	17	Y (+11)	30	Y (+17.5)	242	Y (+2)
438	126	144	X (-48.25)	76	Y (+63.5)	36	18	18	Y (+0)	22	Y (+15.5)	40	Y (+27.5)	298	Y (+58.25)
441	40	62	X (-130)	129	Y (+117)	40	22	18	Y (+0)	8	Y (+2)	50	Y (+37.5)	267	Y (+26.5)
445	144	178	X (-14.49)	76	Y (+64)	52	34	18	Y (+0)	18	Y (+11.5)	28	Y (+15.5)	317	Y (+76.51)
452	58	106	X (-85.75)	66	Y (+53.75)	66	48	18	Y (+0)	17	Y (+10.5)	68	Y (+55.5)	274	Y (+34)
459	135	195	Y (+3)	39	Y (+27)	79	61	18	Y (+0)	24	Y (+18)	36	Y (+24)	312	Y (+72)
472	95	114	X (-78)	103	Y (+90.5)	38	20	18	Y (+0)	8	Y (+2)	31	Y (+18.5)	273	Y (+33)
476	77	89	X (-103)	80	Y (+67.5)	30	12	18	Y (+0)	17	Y (+10.5)	35	Y (+23)	238	X (-2)
477	144	158	X (-34.5)	42	Y (+30)	32	14	18	Y (+0)	8	Y (+2)	28	Y (+16)	254	Y (+13.5)
482	111	122	X (-70.25)	137	Y (+125)	29	11	18	Y (+0)	25	Y (+19)	35	Y (+23)	337	Y (+96.75)
483	81	105	X (-87)	50	Y (+37.5)	42	24	18	Y (+0)	11	Y (+5)	54	Y (+42)	238	X (-2.5)
485	115	155	X (-37.5)	26	Y (+14)	58	40	18	Y (+0)	8	Y (+2)	36	Y (+24)	243	Y (+2.5)
486	127	150	X (-42)	49	Y (+37)	42	24	18	Y (+0)	8	Y (+2)	27	Y (+14.5)	252	Y (+11.5)
490	147	170	X (-22.5)	74	Y (+62)	41	23	18	Y (+0)	11	Y (+5)	43	Y (+31)	316	Y (+75.5)
492	63	76	X (-116)	81	Y (+69)	32	14	18	Y (+0)	16	Y (+9.5)	63	Y (+50.5)	253	Y (+13)
493	81	108	X (-84)	94	Y (+82)	45	27	18	Y (+0)	8	Y (+2)	28	Y (+15.5)	256	Y (+15.5)
494	54	72	X (-120)	162	Y (+149.5)	37	19	18	Y (+0)	9	Y (+2.5)	45	Y (+33)	305	Y (+65)
508	168	190	X (-2.5)	40	Y (+27.5)	40	22	18	Y (+0)	8	Y (+2)	20	Y (+7.5)	275	Y (+34.5)
513	142	195	Y (+3)	142	Y (+129.5)	72	54	18	Y (+0)	43	Y (+36.5)	93	Y (+81)	490	Y (+250)
515	118	120	X (-72)	46	Y (+34)	20	2	18	Y (+0)	16	Y (+10)	29	Y (+17)	229	X (-11)
516	171	258	Y (+65.5)	95	Y (+82.5)	105	87	18	Y (+0)	9	Y (+3)	69	Y (+56.5)	448	Y (+207.5)
525	91	136	X (-56)	67	Y (+55)	64	46	18	Y (+0)	8	Y (+2)	45	Y (+32.5)	274	Y (+33.5)
526	86	119	X (-73.5)	65	Y (+53)	51	33	18	Y (+0)	30	Y (+23.5)	32	Y (+19.5)	263	Y (+22.5)
528	87	120	X (-71.75)	79	Y (+67)	52	34	18	Y (+0)	8	Y (+2)	79	Y (+66.5)	304	Y (+63.75)
537	54	76	X (-116.25)	41	Y (+29.25)	40	22	18	Y (+0)	37	Y (+31)	29	Y (+16.5)	201	X (-39.5)
538	109	140	X (-52.5)	35	Y (+23)	49	31	18	Y (+0)	8	Y (+2)	50	Y (+38)	251	Y (+10.5)
539	132	156	X (-36)	49	Y (+37)	42	24	18	Y (+0)	8	Y (+2)	33	Y (+21)	264	Y (+24)
544	76	105	X (-87.5)	75	Y (+62.5)	47	29	18	Y (+0)	9	Y (+3)	47	Y (+34.5)	253	Y (+12.5)
548	63	75	X (-117.5)	56	Y (+44)	30	12	18	Y (+0)	23	Y (+16.5)	18	Y (+6)	189	X (-51)
555	127	178	X (-14)	77	Y (+65)	69	51	18	Y (+0)	16	Y (+10)	54	Y (+41.5)	343	Y (+102.5)
560	112	144	X (-47.75)	71	Y (+58.5)	51	33	18	Y (+0)	9	Y (+3)	41	Y (+29)	283	Y (+42.75)

Rank	Company Training			Driver/Operator Training		Facilities Training				Hazardous Materials		Officer Training		Grand Total	
ID	Hours	Hours from Facility Training	Status	Hours	Status	Hours	Hours Added to Company Training	Adjusted Hours	Status	Hours	Status	Hours	Status	Hours	Status
DO	**5,616**	**7,306**		**3,750**		**2,626**		**936**		**705**		**1,948**		**14,644**	
319	124	150	X (-42)	48	**Y (+35.5)**	44	26	18	**Y (+0)**	13	**Y (+6.5)**	46	**Y (+33.5)**	274	**Y (+33.5)**
348	163	181	X (-11)	37	**Y (+25)**	36	18	18	**Y (+0)**	13	**Y (+7)**	54	**Y (+42)**	303	**Y (+63)**
386	130	135	X (-57.5)	41	**Y (+28.5)**	23	5	18	**Y (+0)**	8	**Y (+2)**	16	**Y (+3.5)**	217	X (-23.5)
403	101	132	X (-60)	65	**Y (+52.5)**	50	32	18	**Y (+0)**	8	**Y (+2)**	28	**Y (+15.5)**	250	**Y (+10)**
408	82	110	X (-82)	51	**Y (+39)**	46	28	18	**Y (+0)**	15	**Y (+9)**	49	**Y (+36.5)**	243	**Y (+2.5)**
412	89	100	X (-91.7)	102	**Y (+90)**	30	12	18	**Y (+0)**	8	**Y (+2)**	22	**Y (+9.5)**	250	**Y (+10)**
413	163	183	X (-9)	42	**Y (+29.5)**	39	21	18	**Y (+0)**	8	**Y (+2)**	18	**Y (+5.5)**	268	**Y (+28)**
416	101	131	X (-61)	57	**Y (+44.75)**	49	31	18	**Y (+0)**	8	**Y (+2)**	20	**Y (+8)**	234	X (-6.25)
431	118	140	X (-52.5)	35	**Y (+23)**	40	22	18	**Y (+0)**	8	**Y (+2)**	27	**Y (+15)**	228	X (-12.5)
434	123	141	X (-51.5)	50	**Y (+37.5)**	36	18	18	**Y (+0)**	8	**Y (+2)**	20	**Y (+7.5)**	236	X (-4.5)
435	63	82	X (-110)	114	**Y (+102)**	38	20	18	**Y (+0)**	11	**Y (+5)**	38	**Y (+25.5)**	263	**Y (+22.5)**
437	106	133	X (-58.75)	49	**Y (+36.5)**	46	28	18	**Y (+0)**	23	**Y (+17)**	29	**Y (+16.5)**	251	**Y (+11.25)**
440	50	55	X (-137)	52	**Y (+39.5)**	24	6	18	**Y (+0)**	16	**Y (+9.5)**	38	**Y (+26)**	178	X (-62)
443	103	138	X (-54.25)	46	**Y (+34)**	53	35	18	**Y (+0)**	8	**Y (+2)**	18	**Y (+6)**	228	X (-12.25)
446	84	109	X (-83)	95	**Y (+83)**	43	25	18	**Y (+0)**	8	**Y (+2)**	38	**Y (+25.75)**	268	**Y (+27.75)**
454	140	147	X (-45.5)	18	**Y (+6)**	25	7	18	**Y (+0)**	14	**Y (+8)**	36	**Y (+23.5)**	232	X (-8)
455	214	243	**Y (+51)**	26	**Y (+14)**	48	30	18	**Y (+0)**	8	**Y (+2)**	13	**Y (+0.5)**	308	**Y (+67.5)**
460	127	199	**Y (+6.5)**	56	**Y (+44)**	90	72	18	**Y (+0)**	8	**Y (+2)**	63	**Y (+50.5)**	343	**Y (+103)**
463	126	142	X (-50.5)	41	**Y (+28.5)**	34	16	18	**Y (+0)**	8	**Y (+2)**	21	**Y (+9)**	229	X (-11)
467	104	119	X (-73)	84	**Y (+71.5)**	34	16	18	**Y (+0)**	9	**Y (+3)**	53	**Y (+41)**	283	**Y (+42.5)**

502	151	183	X (-9)	56	Y (+43.5)	51	33	18	Y (+0)	8	Y (+2)	84	Y (+71.5)	348	Y (+108)
506	106	142	X (-50)	154	Y (+142)	55	37	18	Y (+0)	9	Y (+3)	40	Y (+28)	363	Y (+123)
507	60	103	X (-89)	125	Y (+113)	61	43	18	Y (+0)	9	Y (+3)	58	Y (+45.5)	313	Y (+72.5)
519	95	121	X (-71)	58	Y (+45.5)	45	27	18	Y (+0)	30	Y (+23.5)	27	Y (+14.5)	253	Y (+12.5)
530	97	123	X (-69)	87	Y (+74.5)	44	26	18	Y (+0)	16	Y (+10)	54	Y (+42)	298	Y (+57.5)
534	60	83	X (-109.5)	113	Y (+101)	41	23	18	Y (+0)	8	Y (+2)	33	Y (+20.5)	254	Y (+14)
535	61	97	X (-95.5)	98	Y (+85.5)	54	36	18	Y (+0)	22	Y (+15.5)	23	Y (+11)	257	Y (+16.5)
536	94	108	X (-84.5)	63	Y (+50.5)	32	14	18	Y (+0)	11	Y (+5)	43	Y (+30.5)	242	Y (+1.5)
540	121	153	X (-39)	38	Y (+25.5)	51	33	18	Y (+0)	8	Y (+2)	39	Y (+26.5)	255	Y (+15)
541	129	149	X (-42.75)	35	Y (+22.5)	38	20	18	Y (+0)	18	Y (+11.5)	45	Y (+32.5)	264	Y (+23.75)
545	126	164	X (-28.24)	76	Y (+63.5)	56	38	18	Y (+0)	21	Y (+14.5)	31	Y (+19)	309	Y (+68.76)
547	112	127	X (-65.25)	153	Y (+141)	33	15	18	Y (+0)	18	Y (+11.5)	35	Y (+22.5)	350	Y (+109.75)
550	107	137	X (-55.5)	116	Y (+104)	48	30	18	Y (+0)	11	Y (+5)	54	Y (+42)	336	Y (+95.5)
559	70	128	X (-64.5)	57	Y (+44.5)	76	58	18	Y (+0)	16	Y (+10)	45	Y (+33)	263	Y (+23)
561	128	166	X (-25.75)	87	Y (+74.5)	56	38	18	Y (+0)	19	Y (+12.5)	24	Y (+12)	313	Y (+73.25)
563	85	111	X (-81.5)	65	Y (+53)	44	26	18	Y (+0)	28	Y (+21.5)	121	Y (+108.5)	342	Y (+101.5)
564	90	146	X (-46)	55	Y (+42.5)	74	56	18	Y (+0)	14	Y (+8)	32	Y (+20)	265	Y (+24.5)
565	164	243	Y (+50.5)	35	Y (+22.5)	97	79	18	Y (+0)	14	Y (+8)	42	Y (+29.5)	351	Y (+110.5)
568	141	174	X (-18)	50	Y (+38)	52	34	18	Y (+0)	8	Y (+2)	13	Y (+1)	263	Y (+23)
575	108	142	X (-50)	28	Y (+16)	52	34	18	Y (+0)	8	Y (+2)	35	Y (+23)	231	X (-9)
578	142	172	X (-20.5)	88	Y (+76)	48	30	18	Y (+0)	14	Y (+7.5)	28	Y (+15.5)	319	Y (+78.5)
580	113	160	X (-32)	119	Y (+106.5)	65	47	18	Y (+0)	28	Y (+22)	59	Y (+47)	384	Y (+143.5)
581	143	183	X (-9)	176	Y (+163.5)	59	41	18	Y (+0)	3	X (-3)	44	Y (+32)	424	Y (+183.5)

582	116	174	X (-18.5)	38	Y (+25.5)	76	58	18	Y (+0)	17	Y (+11)	28	Y (+15.5)	274	Y (+33.5)
584	42	76	X (-116.5)	37	Y (+24.5)	52	34	18	Y (+0)	58	Y (+52)	28	Y (+15.5)	216	X (-24.5)
585	118	166	X (-26.5)	104	Y (+91.5)	66	48	18	Y (+0)	8	Y (+2)	52	Y (+39.5)	347	Y (+106.5)
586	48	82	X (-110.5)	179	Y (+166.5)	52	34	18	Y (+0)	11	Y (+4.5)	28	Y (+15.5)	316	Y (+76)
588	131	145	X (-46.7)	55	Y (+42.5)	33	15	18	Y (+0)	8	Y (+2)	27	Y (+15)	253	Y (+12.8)
595	116	174	X (-18.5)	39	Y (+27)	76	58	18	Y (+0)	9	Y (+3)	31	Y (+19)	271	Y (+30.5)
596	75	93	X (-99.5)	51	Y (+38.5)	36	18	18	Y (+0)	8	Y (+2)	53	Y (+41)	222	X (-18)
600	100	216	Y (+24)	183	Y (+171)	134	116	18	Y (+0)	8	Y (+2)	30	Y (+17.5)	455	Y (+214.5)
601	67	104	X (-87.75)	37	Y (+25.25)	55	37	18	Y (+0)	32	Y (+26)	30	Y (+17.5)	221	X (-19)

Rank	Company Training			Driver/Operator Training		Facilities Training				Hazardous Materials		Officer Training		Grand Total	
ID	Hours	Hours from Facility Training	Status	Hours	Status	Hours	Hours Added to Company Training	Adjusted Hours	Status	Hours	Status	Hours	Status	Hours	Status
FF	**5,926**	**8,470**		**4,740**		**3,622**		**1,078**		**768**		**2,143**		**17,198**	
345	132	139	X (-53.5)	42	Y (+29.5)	25	7	18	Y (+0)	13	Y (+7)	52	Y (+40)	263	Y (+23)
404	143	154	X (-38)	42	Y (+30)	29	11	18	Y (+0)	24	Y (+17.5)	45	Y (+32.5)	282	Y (+42)
462	119	123	X (-69)	32	Y (+19.5)	22	4	18	Y (+0)	11	Y (+5)	38	Y (+25.5)	221	X (-19)
475	138	139	X (-53)	21	Y (+8.5)	20	2	18	Y (+0)	14	Y (+8)	35	Y (+23)	227	X (-13.5)
500	102	132	X (-60.5)	128	Y (+115.5)	48	30	18	Y (+0)	8	Y (+2)	15	Y (+3)	300	Y (+60)
503	135	182	X (-10)	58	Y (+45.5)	66	48	18	Y (+0)	8	Y (+2)	31	Y (+19)	297	Y (+56.5)
514	31	110	X (-82.5)	50	Y (+38)	97	79	18	Y (+0)	8	Y (+2)	29	Y (+17)	215	X (-25.5)
517	62	82	X (-110)	87	Y (+74.5)	38	20	18	Y (+0)	11	Y (+5)	38	Y (+25.5)	235	X (-5)
546	108	145	X (-47)	65	Y (+52.5)	56	38	18	Y (+0)	8	Y (+2)	20	Y (+7.5)	255	Y (+15)
569	169	192	Y (+0)	99	Y (+86.5)	41	23	18	Y (+0)	8	Y (+2)	22	Y (+9.5)	338	Y (+98)
571	147	205	Y (+13)	49	Y (+37)	76	58	18	Y (+0)	8	Y (+2)	62	Y (+50)	342	Y (+102)
599	128	170	X (-22.25)	94	Y (+81.5)	60	42	18	Y (+0)	11	Y (+5)	64	Y (+51.5)	356	Y (+115.75)
602	111	134	X (-58)	72	Y (+59.75)	41	23	18	Y (+0)	11	Y (+5)	38	Y (+25.5)	272	Y (+32.25)
611	66	100	X (-92)	68	Y (+56)	53	35	18	Y (+0)	8	Y (+2)	31	Y (+19)	225	X (-15)
612	97	148	X (-44)	56	Y (+43.5)	70	52	18	Y (+0)	29	Y (+22.5)	38	Y (+26)	288	Y (+48)
613	135	172	X (-20)	41	Y (+28.5)	56	38	18	Y (+0)	10	Y (+4)	31	Y (+19)	272	Y (+31.5)
614	119	163	X (-28.75)	84	Y (+71.5)	63	45	18	Y (+0)	31	Y (+25)	55	Y (+43)	351	Y (+110.75)
615	66	111	X (-81.5)	109	Y (+97)	63	45	18	Y (+0)	10	Y (+4)	52	Y (+40)	300	Y (+59.5)
616	85	112	X (-80)	36	Y (+24)	46	28	18	Y (+0)	8	Y (+2)	105	Y (+92.5)	279	Y (+38.5)
617	111	141	X (-50.75)	90	Y (+78)	48	30	18	Y (+0)	8	Y (+2)	13	Y (+0.5)	270	Y (+29.75)
620	103	128	X (-64)	54	Y (+42)	44	26	18	Y (+0)	8	Y (+2)	85	Y (+72.5)	293	Y (+52.5)
624	76	90	X (-102)	76	Y (+64.25)	32	14	18	Y (+0)	18	Y (+11.5)	26	Y (+13.5)	227	X (-12.75)
627	135	160	X (-32)	36	Y (+23.5)	44	26	18	Y (+0)	9	Y (+3)	25	Y (+13)	248	Y (+7.5)
629	111	143	X (-49)	25	Y (+13)	50	32	18	Y (+0)	10	Y (+4)	183	Y (+170.5)	379	Y (+138.5)
631	142	250	Y (+58.3)	143	Y (+130.5)	127	109	18	Y (+0)	7	Y (+1)	56	Y (+44)	474	Y (+233.8)
647	101	176	X (-16.5)	114	Y (+101.5)	93	75	18	Y (+0)	8	Y (+2)	13	Y (+0.5)	328	Y (+87.5)
648	80	102	X (-90.5)	68	Y (+55.5)	40	22	18	Y (+0)	12	Y (+6)	31	Y (+19)	230	X (-10)
653	83	151	X (-41.25)	73	Y (+61)	86	68	18	Y (+0)	24	Y (+17.5)	24	Y (+12)	289	Y (+49.25)
654	124	163	X (-28.74)	104	Y (+92)	57	39	18	Y (+0)	22	Y (+15.5)	34	Y (+22.25)	341	Y (+101.01)
656	139	182	X (-10.5)	166	Y (+153.5)	61	43	18	Y (+0)	11	Y (+5)	34	Y (+21.5)	410	Y (+169.5)
657	93	121	X (-71.25)	46	Y (+33.5)	46	28	18	Y (+0)	29	Y (+23)	51	Y (+38.5)	264	Y (+23.75)
658	94	134	X (-58.25)	103	Y (+90.5)	58	40	18	Y (+0)	25	Y (+18.5)	28	Y (+16)	307	Y (+66.75)
661	72	94	X (-98)	129	Y (+117)	41	23	18	Y (+0)	24	Y (+17.5)	15	Y (+3)	280	Y (+39.5)
663	91	137	X (-55.5)	73	Y (+61)	64	46	18	Y (+0)	8	Y (+2)	69	Y (+56.5)	304	Y (+64)
664	85	108	X (-84.5)	193	Y (+181)	41	23	18	Y (+0)	8	Y (+2)	11	X (-1)	338	Y (+97.5)
667	54	148	X (-44)	227	Y (+215)	113	95	18	Y (+0)	20	Y (+13.5)	30	Y (+17.5)	442	Y (+202)
669	62	100	X (-92)	81	Y (+69)	57	39	18	Y (+0)	9	Y (+2.5)	37	Y (+24.5)	244	Y (+4)
670	79	102	X (-90)	98	Y (+86)	42	24	18	Y (+0)	8	Y (+2)	14	Y (+2)	240	Y (+0)
672	96	185	X(-7)	37	Y (+24.5)	108	90	18	Y (+0)	15	Y (+9)	20	Y (+8)	275	Y (+34.8)
673	104	110	X (-82)	43	Y (+30.5)	24	6	18	Y (+0)	8	Y (+2)	33	Y (+21)	212	X (-28.5)

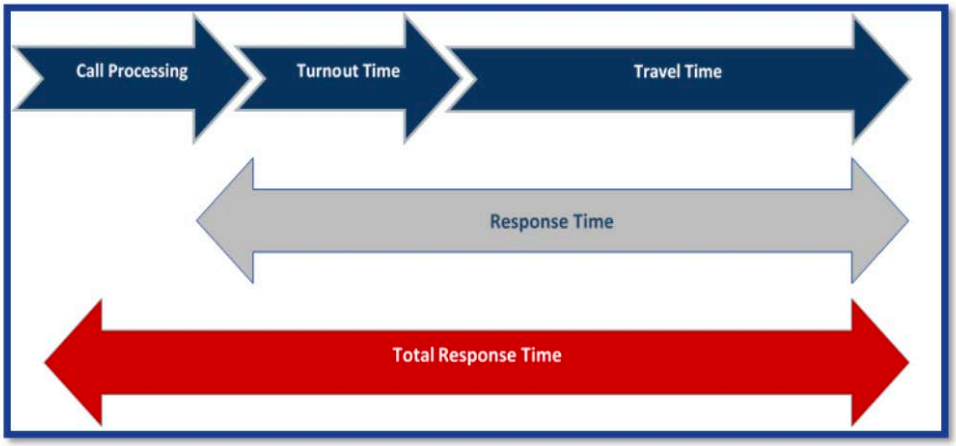
676	95	138	X (-54.5)	47	**Y (+34.5)**	61	43	18	**Y (+0)**	11	**Y (+5)**	22	**Y (+10)**	235	X (-5)
678	155	226	**Y (+34.25)**	93	**Y (+80.5)**	89	71	18	**Y (+0)**	14	**Y (+8)**	46	**Y (+33.5)**	396	**Y (+156.25)**
679	110	128	X (-63.7)	165	**Y (+153)**	37	19	18	**Y (+0)**	8	**Y (+2)**	30	**Y (+18)**	349	**Y (+109.3)**
680	138	254	**Y (+62)**	187	**Y (+174.5)**	135	117	18	**Y (+0)**	24	**Y (+17.5)**	43	**Y (+30.5)**	525	**Y (+284.5)**
681	81	142	X (-50.5)	112	**Y (+99.5)**	79	61	18	**Y (+0)**	8	**Y (+2)**	42	**Y (+30.25)**	321	**Y (+81.25)**
682	99	118	X (-74)	28	**Y (+16)**	38	20	18	**Y (+0)**	9	**Y (+3)**	19	**Y (+6.5)**	192	X (-48.5)
683	100	104	X (-88.5)	18	**Y (+6)**	22	4	18	**Y (+0)**	22	**Y (+16)**	20	**Y (+7.5)**	181	X (-59)
684	72	78	X (-114)	17	**Y (+5)**	24	6	18	**Y (+0)**	8	**Y (+2)**	32	**Y (+19.5)**	153	X (-87.5)
685	103	185	X (-7)	58	**Y (+46)**	101	83	18	**Y (+0)**	22	**Y (+15.5)**	16	**Y (+4)**	299	**Y (+58.5)**
686	115	115	X (-77.5)	54	**Y (+41.5)**	13	0	13	X (-5.5)	8	**Y (+2)**	45	**Y (+32.5)**	233	X (-7)
687	49	58	X (-134.5)	26	**Y (+13.5)**	27	9	18	**Y (+0)**	12	**Y (+6)**	29	**Y (+17)**	142	X (-98)
690	19	57	X (-135.5)	102	**Y (+90)**	56	38	18	**Y (+0)**	8	**Y (+2)**	15	**Y (+3)**	200	X (-40.5)
691	98	98	X (-93.7)	98	**Y (+85.5)**	19	1	18	**Y (+0)**	8	**Y (+2)**	13	**Y (+1)**	235	X (-5)
692	106	116	X (-76.5)	43	**Y (+31)**	28	10	18	**Y (+0)**	29	**Y (+22.5)**	19	**Y (+6.5)**	224	X (-16.5)
698	40	40	X (-152.25)	20	**Y (+7.5)**	3	0	3	X (-15)	0	X (-6)		X (-12)	62	X (-177.75)
699	30	30	X (-162.5)	13	**Y (+1)**	10	0	10	X (-8.5)	3	X (-3)	7	X (-5)	62	X (-178)
702	62	62	X (-130.5)	12	**Y (+0)**	9	0	9	X (-9)	0	X (-6)	8	X (-4)	91	X (-149.5)
703	72	161	X (-31.5)	71	**Y (+59)**	107	89	18	**Y (+0)**	8	**Y (+2)**	22	**Y (+10)**	280	**Y (+39.5)**
705	82	164	X (-28.5)	42	**Y (+29.5)**	100	82	18	**Y (+0)**	12	**Y (+6)**	34	**Y (+21.5)**	269	**Y (+28.5)**
706	60	170	X (-22)	167	**Y (+154.5)**	128	110	18	**Y (+0)**	11	**Y (+5)**	21	**Y (+8.5)**	386	**Y (+146)**
707	54	227	**Y (+34.5)**	118	**Y (+105.5)**	191	173	18	**Y (+0)**	8	**Y (+2)**	24	**Y (+11.5)**	394	**Y (+153.5)**
710	73	171	X (-21.5)	53	**Y (+40.5)**	116	98	18	**Y (+0)**	11	**Y (+5)**	16	**Y (+4)**	268	**Y (+28)**

Rank	Company Training			Driver/Operator Training		Facilities Training				Hazardous Materials		Officer Training		Grand Total	
ID	Hours	Hours from Facility Training	Status	Hours	Status	Hours	Hours Added to Company Training	Adjusted Hours	Status	Hours	Status	Hours	Status	Hours	Status
NA	**409**	**721**		**554**		**626**		**314**		**63**		**126**		**1,777**	
518	27	53	X (-139)	31	**Y (+18.5)**	44	26	18	**Y (+0)**	8	**Y (+2)**	24	**Y (+12)**	134	X (-106.5)
650	84	144	X (-48)	102	**Y (+89.5)**	79	61	18	**Y (+0)**	13	**Y (+6.5)**	48	**Y (+36)**	324	**Y (+84)**
689	69	78	X (-114)	19	**Y (+7)**	28	10	18	**Y (+0)**	16	**Y (+10)**	5	X (-7)	136	X (-104)
697	30	30	X (-162)	3	X (-9)	3	0	3	X (-15.5)	1	X (-5)	9	X (-3)	46	X (-194.5)
701	49	49	X (-143.5)	7	X (-5.5)	5	0	5	X (-13)	0	X (-6)	8	X (-4)	68	X (-172)
708	64	123	X (-69)	36	**Y (+24)**	77	59	18	**Y (+0)**	17	**Y (+11)**	20	**Y (+8)**	214	X (-26)
709	38	99	X (-93)	25	**Y (+12.5)**	79	61	18	**Y (+0)**	8	**Y (+2)**	12	**Y (+0)**	162	X (-78.5)
711	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
712	2	8	X (-184.5)	1	X (-11)	24	6	18	**Y (+0)**	0	X (-6)	0	X (-12)	27	X (-213.5)
713	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
714	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
715	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
716	2	8	X (-184.5)	1	X (-11)	24	6	18	**Y (+0)**	0	X (-6)	0	X (-12)	27	X (-213.5)
717	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
718	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
719	2	14	X (-178.5)	1	X (-11)	30	12	18	**Y (+0)**	0	X (-6)	0	X (-12)	33	X (-207.5)
720	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
721	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
723	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
725	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
726	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
727	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
728	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
729	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)
730	4	4	X (-188)	36	**Y (+24)**	6	0	6	X (-12)	0	X (-6)	0	X (-12)	46	X (-194)

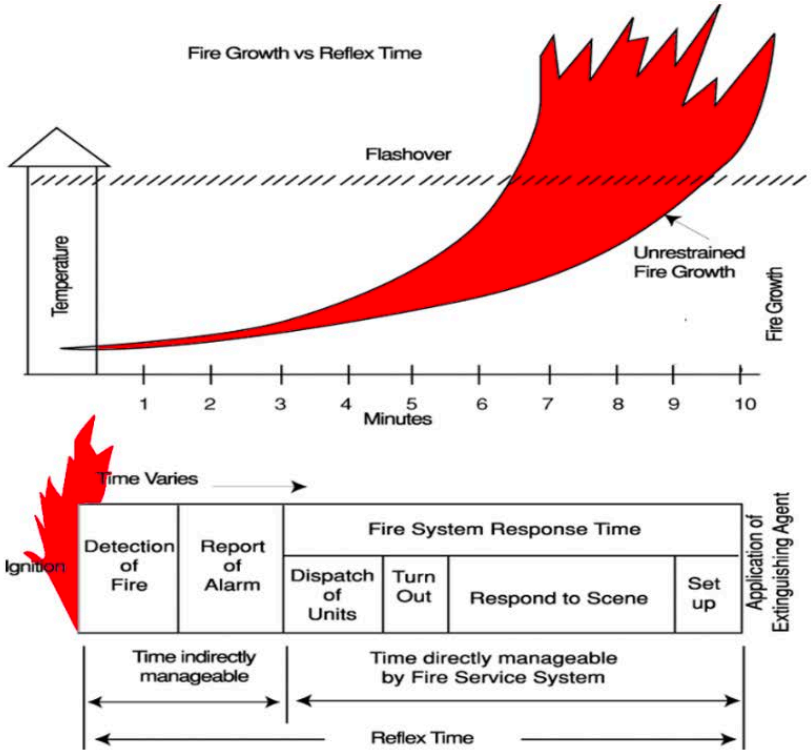
Company Training			Driver/Operator Training	Facilities Training			Hazardous Materials	Officer Training	Grand Total
Grand Total	Hours	Hours from Facility Training	Hours	Hours	Hours Added to Company Training	Adjusted Hours	Hours	Hours	Hours
	18,261	**24,405**	**12,602**	**9,551**	**6,145**	**3,406**	**2,358**	**6,999**	**49,770**

Appendix #4 – Select Fire Service Visual Data Points Applicable to the High Point Review:

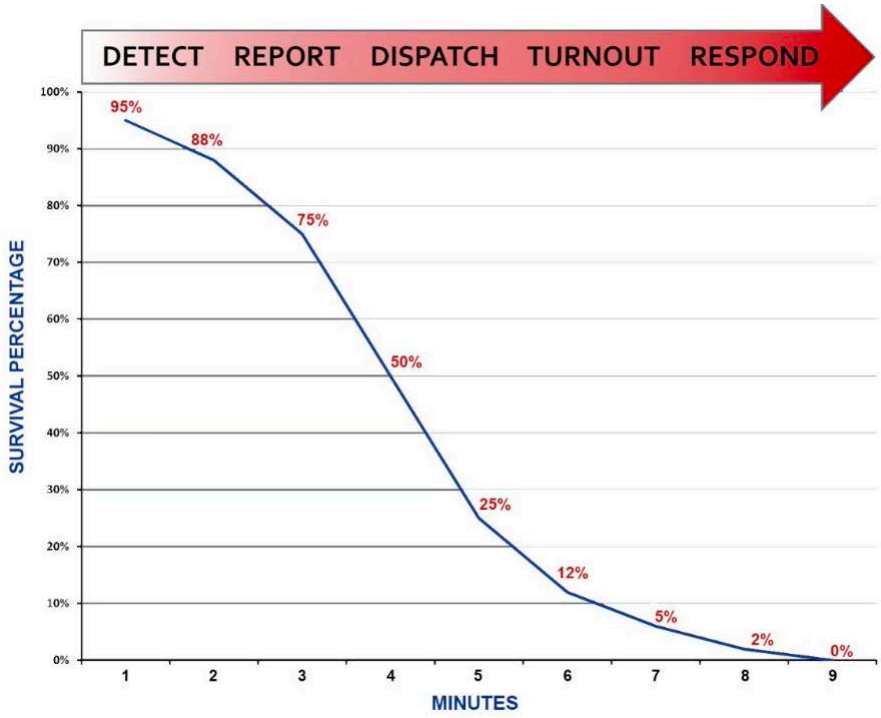
Total Response Time Continuum:



Fire Growth and Reflex Time:



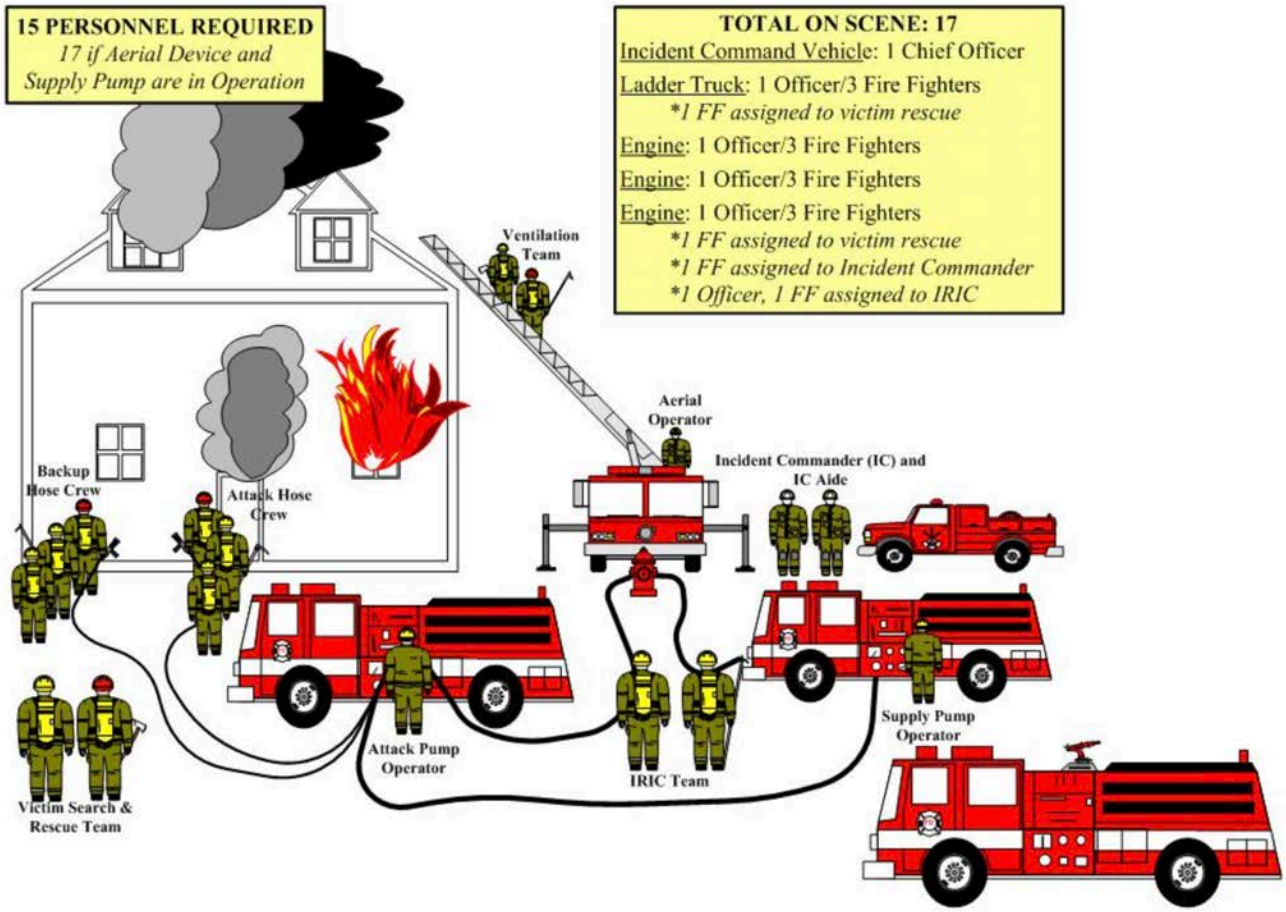
Cardiac Arrest Event Sequence:



NFPA 1710 (Urban Areas) Initial Full Alarm Assignments:

2,000 SF Residential Structure Fire		Open-Air Shopping Center (13,000 SF to 196,000 SF)		1,200 SF Apartment (3-story garden apartment)	
Incident Commander	1	Incident Commander	2	Incident Commander	2
Water Supply Operator	1	Water Supply Operators	2	Water Supply Operators	2
2 Application Hose Lines	4	3 Application Hose Lines	6	3 Application Hose Lines	6
1 Support Member per line	2	1 Support Member per line	3	1 Support Member per line	3
Victim Search and Rescue Team	2	Victim Search and Rescue Team	4	Victim Search and Rescue Team	4
Ground Ladder Deployment	2	Ground Ladder Deployment	4	Ground Ladder Deployment	4
Aerial Device Operator	1	Aerial Device Operator	1	Aerial Device Operator	1
Rapid Intervention Crew	4	Rapid Intervention Crew	4	Rapid Intervention Crew	4
		EMS Care	2	EMS Care Crew	2
Total	**17**	**Total**	**28**	**Total**	**28**

Visual of Firefighter Staffing Necessary at a Structure Fire Per the Industry Consensus Standard for Areas with an Urban Population Density:



Appendix #4 - Future Staffing Considerations:

An adequate number of firefighters to work structure fires is critical to the safety of the public and of the firefighters. Also, the largest portion of the ISO rating is staffing (15%).

NFPA 1710 SUMMARY/HIGHLIGHTS

NFPA 1710
Fireground Staffing Levels for Career Fire Departments

NFPA 1710 provides the minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments.

For the 2016 edition of the standard, subsection 5.2.4 on fire department service deployment was revised to include three new occupancies, along with the appropriate response staffing levels for each. The minimum staffing level for each occupancy is listed below. *(For the full breakdown of staffing requirements by position, refer to the subsections specific to each occupancy in 5.2.4.)*

Single-Family Dwelling — minimum of 16 members (17 if aerial device is used)
The initial full alarm assignment to a structure fire in a typical 2000 ft^2 (186 m^2), two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 16 members (17 if an aerial device is used).

Open-Air Strip Mall — minimum of 27 members (28 if aerial device is used)
The initial full alarm assignment to a structure fire in a typical open-air strip shopping center ranging from 13,000 ft^2 to 196,000 ft^2 (1203 m2 to 18,209 m2) in size must provide for a minimum of 27 members (28 if an aerial device is used).

Garden-Style Apartment — minimum of 27 members (28 if aerial device is used)
The initial full alarm assignment to a structure fire in a typical 1200 ft2 (111 m2) apartment within a three-story, garden-style apartment building must provide for a minimum of 27 members (28 if an aerial device is used).

High-Rise — minimum of 42 members (43 if building equipped with fire pump)
The initial full alarm assignment to a fire in a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access must provide for a minimum of 42 members (43 if the building is equipped with a fire pump).

Other: Fire departments that respond to fires in occupancies that present hazards greater than those found in 5.2.4 shall deploy additional resources as described in 5.2.4.5 on the initial alarm.

NOTE: Even though fire ground staffing levels have changed, NFPA 1710 continues to require that engine companies be staffed with a minimum of 4 on-duty members, as stated in subsection 5.2.3. In addition, paragraph 5.2.2.2.1 requires that the fire department identify minimum company staffing levels as necessary to meet the deployment criteria required in 5.2.4 to ensure that enough members are assigned, on duty, and available to respond with each company safely and effectively.

Material used in this summary is taken from the 2016 edition of NFPA 1710, S*tandard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. This reprinted material is not the complete and official position of the NFPA or its Technical Committees on the referenced subject, which is represented solely by the standard in its entirety. That standard can be accessed online at www.nfpa.org.

Comparative Analysis for National Standards on Deployment and Staffing

NFPA 1710 – Staffing Standard for Primarily Career Fire Departments:

First due travel times – 4 minutes or less 90% of the time.
Full assignment assembly times – 8 minutes or less 90% of the time.

Staffing - each company with at least four firefighters.

Turn-out times = 80 seconds for fire calls, 60 seconds for medical calls.

Travel time = 4 minutes or less for fire calls or medical calls.

Effective response force

- 17 firefighters on a typical residential structure fire
- Arrival within 8 minutes or less

Appendix #5 – Critical Task Analysis Illustrative Example:

NC Municipality Fire Department

Critical Task Analysis Executive Summary

As many North Carolina communities grow and demands for public services grow, changes and modifications are often needed in service delivery systems, including systems that support essential, core public safety services. When dynamics change, so must the processes and systems that enable and support those basic functions. These "growing pains" are a natural progression of the maturity cycle of a unit of local government and are not unique to the Town of NC Municipality Fire Department.

However, The Town of NC Municipality is aware of the changing environment and has proactively stepped forward to implement progressive measures to effectively manage that transition, such as initiating an independent, third-party, strategic review of their current effectiveness and efficiency when responding to typical calls for service. The NC Municipality Fire Department selected North Carolina Fire Chief Consulting (NCFCC) to assist them in this important endeavor. NCFCC focuses on the fire service in North Carolina and serves as the exclusive fire consulting provider for the North Carolina League of Municipalities and the North Carolina Association of County Commissioners.

The design of the Critical Task Analysis (CTA) is vital for any organization desiring to measure their current performance in typical emergency situations such as a residential building fire. The analysis designed for NC Municipality Fire Department consisted of 4 specific scenarios to measure their current performance in delivering basic critical tasks. The scenarios were designed to ensure that the same performance metrics were measured consistently as to allow decision-makers the needed data to determine what NC Municipality Fire Department's current performance is and what it could be with additional personnel. The critical tasks identified were reviewed by NCFD executive staff to ensure that every task was applicable to NC Municipality. The scenarios that were developed were designed to measure the following areas: 1) Residential Building Fires, 2) Commercial Building Fires, 3) Witnessed Cardiac Arrests, 4) Vehicle Extrication. The fire scenarios were held at Northside Fire Department's Training Facility in the adjoining municipality utilizing a three-story Class A Burn Building. The vehicle extrication scenarios were held at a recycling facility in NC Municipality, and the EMS scenarios were held at the NC Municipality Fire Department. The exercises were completed in three sequential days and all on duty operations staff participated.

NC Municipality Fire Department is currently a fully career department that serves the Town of NC Municipality and the surrounding NC Municipality suburban district. The current daily minimum staffing level for the department is 13 firefighters per shift, including the battalion chief. The assigned staffing for each shift is 16 firefighters, including the battalion Chief. The department delivers services out of two community fire stations located in the town limits. Fire Station 1 houses an engine, minimally staffed with 3 personnel, and a ladder company, minimally staffed with 4 personnel, as well as the battalion chief. Fire Station 2 houses an engine, minimally staffed with 3 personnel, and a rescue company minimally staffed with 2 personnel. If additional staffing is available, they are assigned to the rescue company to increase its staffing level to 3 personnel and Engine 1 to increase its staffing to 4 firefighters. The department is surrounded by several combination/volunteer departments that provide auto/mutual aid.

Residential Building Fire

The residential fire scenario was designed to measure the typical tasks that firefighters must perform to ensure the event can be effectively mitigated while operating in a safe manner. The scenarios sought to measure the following tasks:

- Simulated Forcible Entry
- Time from arrival until entry into fire building
- Water Supply- Hydrant flowing into the engine
- 1 ¾" hose line stretched for fire attack
- Ground Ladder Egress to 2nd Floor
- Primary Search of two floors
- Water on the Fire
- Victim Removal (2)

Each shift performed baseline evolutions that measured their current performance of each task at their current staffing level. The tasks were assigned to the company that would normally be assigned the listed tasks. The engine companies were assigned the following items: Water supply, hose line stretch, simulated fire control, and the time to enter the simulated fire building. The ladder and rescue company were assigned the following tasks: Forcible entry, ground ladder egress, primary search, and victim removal. The times from these evolutions were averaged to provide a performance level at the current minimum staffed level for the analysis. Each scenario was then repeated, and additional staffing was provided to the companies participating. The staffing for each scenario is listed below:

Scenario 1 (Current Minimum Staffing)

- Engine 1 (3)
- Engine 2 (3)
- Ladder 1 (4)
- Rescue 1 (2)

Scenario 2 (1 Additional Staffing)

- Engine 1 (4)
- Engine 2 (4)
- Ladder 1 (5)
- Rescue 1 (3)

The results provided a significant amount of information on both the current capabilities of NCFD and what their performance would be with additional staffing. Currently NCFD completes the expected fireground tasks in just over 8:30. From the arrival of an engine company on the scene until that crew enters the structure is 4:47, and on average it takes another 3:26 to apply water on the fire. It is important to note that several critical tasks are not being addressed initially in the current response model of NCFD. A dedicated Rapid Intervention Crew and Staffed Backup Lines are not achieved currently. NCFD does assign Rapid Intervention functions to later arriving personnel, but due to the required number of personnel to accomplish the typical fireground tasks those crews will likely have additional assignments. The ladder company functions that are required for an efficient fireground operation such as forcible entry, secondary egress, and an aggressive primary search for potential victims highlight the need for adequate number firefighters to perform these tasks. Currently the average for the ladder companies within NC Municipality Fire Department can arrive and force entry into a structure and begin a primary search in just over 3 minutes. The current staffing model of NCFD assigns the rescue company these tasks in their first due area and they are not as effective as the fully staffed ladder company, taking almost four minutes to accomplish the same tasks. In all scenarios the on-duty battalion chief would simulate arriving just after the engine company officer provided a size up and would assume all command and safety officer functions relieving the initial incident commander of these tasks. This allowed the company officers to focus solely on their engine company tasks and likely improved their overall performance. While this was beneficial in the completion of the scenarios, it is important to note that in actual events the command function is often performed by the initial company officer longer and takes away from their capacity to perform other tasks.

When performing the same simulated residential fire with additional staffing the average time to complete both engine and ladder company functions

decreased significantly. The most noticeable difference was noted in the time from entry until simulated fire control or water on the fire. The average for a 4-person engine company was over 50% better than that of a 3-person engine crew. The time decreased by 1:45. The decrease in time it takes to apply water has been shown to have the greatest impact on the survivability of victims in studies performed by UL. The ladder company functions of performing a primary search and removing victims also saw significant improvement with the addition of one person per company, with either 5 firefighters on the ladder or 3 on the rescue company. The time it took to locate and remove two simulated victims decreased by greater than 50%, decreasing from over three minutes to just under a minute and a half.

Engine Company Results

				4 Person	3 Person	Time Change	Percent
Average to Establish Water Supply				2:34:30	2:49:00	0:14:30	8.58%
Average to Establish Attack Line				1:46:20	2:01:40	0:15:20	12.60%
Average to Enter Building				2:57:10	4:47:50	1:50:40	38.45%
Average from Entry to Water Application				1:40:50	3:26:30	1:45:40	51.17%
Average from Entry to Victim Removal*				6:12:00	5:37:00	0:35:00	9.41%
Average Scenario Total Time				5:06:10	8:42:00	3:35:50	41.35%

* During *two evolutions engine crews located a simulated victim and removed them, during the remaining evolutions both victims were removed by the ladder/rescue crews.*

Ladder Company Results

	1 Additional per Company	Current Staffing	Time	Percent
Average to Throw Ground Ladder	1:51:10	2:23:40	0:32:30	22.62%
Average to Force Entry and Enter Building	0:47:50	1:27:50	0:40:00	45.54%
Average to Locate Victim	1:14:30	1:40:10	0:25:40	25.62%
Average to Remove Victim	0:33:50	1:17:50	0:44:00	56.53%
Average Primary Search Time	1:14:30	1:33:10	0:18:40	20.04%
Average Scenario Time	3:57:40	6:10:20	2:12:40	35.82%

Commercial Building Fire

The commercial building fire scenarios were designed like the residential building fire tasks with several changes. The engine company tasks included pumping into a Fire Department Connection to supply a standpipe and the connection and use of their high-rise kits. Engine crews were assigned to connect to the standpipe on the second floor of the training facility, locate, and extinguish a simulated fire on the third floor. The tasks that were changed for the ladder/rescue crews included the area that had to be searched was increased to all three floors, and the spotting and placing of the aerial device to a third-floor window. An average of current staffing and increased staffing were performed in the same manner as the residential fire scenario.

The department's current engine company average performance for the commercial scenario again highlights the impact that additional firefighters have on the fireground. The current average to enter the building and begin fire control decreased by nearly 30 seconds when an additional firefighter was added to the engine companies. The time to apply water to the fire also significantly decreased when an additional firefighter was added by nearly a minute. The ladder company tasks saw improvements in every measurement. The time to locate and remove a victim decreased by 40%, or nearly 50 seconds. The total time to perform a search also decreased by almost a minute or 42%. As stated previously several critical tasks were not addressed including dedicated Rapid Intervention Crews, Staffed Backup Line, and the initial incident commander did not have to manage that function due to the battalion chief arrival just after a size up was given.

Engine Company Results

	4 Person	3 Person	Time Change	Percent
Average to Establish/Charge FDC Lines	2:49:40	2:43:00	-0:06:40	-4.09%
Average to Enter Building	2:08:20	2:37:00	0:28:40	18.26%
Average from Entry to Water Application	3:15:10	4:09:20	0:54:10	21.72%
Average scenario total time	5:23:30	6:46:20	1:22:50	20.39%

Ladder Company Results

	1 Additional per Company	Current Staffing	Time	Percent Improvement
Average to Force Entry and Enter Building	0:54:10	1:03:30	0:09:20	14.70%
Average to Locate Victim	1:16:30	2:12:20	0:55:50	42.19%
Average to Remove Victim	1:12:10	2:01:40	0:49:30	40.68%
Average to Place Bucket to 3rd Floor Window	3:21:20	3:41:40	0:20:20	9.17%
Average Primary Search Time	1:16:30	2:12:20	0:55:50	42.19%
Average Scenario Time	3:33:20	4:25:30	0:52:10	19.65%

Vehicle Extrication

In addition to being proficient in fire ground operations progressive fire departments must also be well trained and equipped to mitigate many other challenges such as technical rescue. NC Municipality Fire Department is equipped to respond to motor vehicle crashes that occupants are unable to self-extricate so a scenario was developed to measure how effective their department's current operations are when responding to this kind of event. NCFD was able to provide multiple automobiles that were going to be recycled for use during the event. The scenario developed was one of a frequent type of events involving automobiles. The vehicle was simulated to have been involved in a crash with a single occupant. The vehicle was still upright and there were no other challenges beyond the single vehicle. The benchmarks that were measured are:

- Size Up/Confirm Extrication Need
- Establish Hose Line
- Establish Occupant/Patient Access
- Complete Patient Assessment
- Establish Egress for Occupant via Extrication Tools (Remove Door Completely)
- Package Patient for Removal from Vehicle
- Remove Patient from Vehicle onto Long Backboard

The scenarios measured the effectiveness of the varying potential staffing levels of the department, with evolutions utilizing 5, 6, 7, and 8 firefighters. The current staffing model could potentially allow only five firefighters to arrive on the scene initially if within the primary response area of Station 2. Two evolutions were performed to measure the effectiveness of the department's ability to respond. First a simple door removal to simulate a victim who is unable to egress from the vehicle, there were no other entrapments. Secondly a more difficult extrication scenario was developed that required the removal of two doors and the roof of the vehicle. The time required to complete the single door removal was similar in each evolution, however there was a significant decrease in the extrication time with seven firefighters, from that of five firefighters. The ability to more effectively complete a patient assessment was also noted in each evolution. It took 2:15 for the five-person response to complete the assessment, whereas it was completed 30 seconds faster with seven firefighters. There was a faster extrication time during the evolution with 5 firefighters, but the ability to manage patient care was diminished due to there not being another firefighter available.

The next scenario involved the removal of two doors and the removal of the roof. In this scenario the impact of additional staffing was clearly noted. It took over 17 minutes for the removal of the victim when only five firefighters were working,

compared to 6:23 with eight firefighters. The extrication time also decreased significantly with it only taking 3:00 for eight firefighters to 12:30 with five firefighters.

Door Removal Results

	Door Removal Only			
	6 Personnel	5 Personnel	Change	
			Time	*Percent*
Time to Complete Patient Assessment	2:00:00	2:15:00	0:15:00	11.11%
Time to Complete Extrication	2:03:00	1:25:00	0:38:00	30.89%
Time to Remove Victim	3:50:00	5:15:00	1:25:00	26.98%
Time to Establish Hose Line	1:50:00	2:00:00	0:10:00	8.33%

	Door Removal Only			
	7 Personnel	6 Personnel	Change	
			Time	*Percent*
Time to Complete Patient Assessment	1:45:00	2:00:00	0:15:00	12.50%
Time to Complete Extrication	2:00:00	2:03:00	0:03:00	2.44%
Time to Remove Victim	5:45:00	3:50:00	1:55:00	33.33%
Time to Establish Hose Line	0:51:00	1:50:00	0:59:00	53.64%

Door and Roof Removal Results

	Door & Roof Removal			
	6 Personnel	5 Personnel	Change	
			Time	*Percent*
Time to Complete Patient Assessment	2:00:00	1:40:00	0:20:00	16.67%
Time to Complete Extrication	14:38:00	12:30:00	2:08:00	14.58%
Time to Remove Victim	16:15:00	17:05:00	0:50:00	4.88%
Time to Establish Hose Line	0:32:00	1:00:00	0:28:00	46.67%

	Door & Roof Removal			
	7 Personnel	6 Personnel	Change	
			Time	*Percent*
Time to Complete Patient Assessment	2:02:30	2:00:00	0:02:30	2.04%
Time to Complete Extrication	5:11:00	14:38:00	9:27:00	64.58%
Time to Remove Victim	7:18:00	16:15:00	8:57:00	55.08%
Time to Establish Hose Line	0:52:30	0:32:00	0:20:30	39.05%

	Door & Roof Removal			
	8 Personnel	7 Personnel	Change	
			Time	*Percent*
Time to Complete Patient Assessment	1:25:00	2:02:30	0:37:30	30.61%
Time to Complete Extrication	3:00:00	5:11:00	2:11:00	42.12%
Time to Remove Victim	6:23:00	7:18:00	0:55:00	12.56%
Time to Establish Hose Line	1:37:00	0:52:30	0:44:30	45.88%

				Door & Roof Removal			
				8 Personnel	5 Personnel	Change	
						Time	*Percent*
Time to Complete Patient Assessment				1:25:00	1:40:00	0:15:00	15.00%
Time to Complete Extrication				3:00:00	12:30:00	9:30:00	76.00%
Time to Remove Victim				6:23:00	17:05:00	10:42:00	62.63%
Time to Establish Hose Line				1:37:00	1:00:00	0:37:00	38.14%

Witnessed Cardiac Arrest

The addition of Emergency Medical response to the fire service over the past 40 plus years has significantly impacted communities across the United States leading to increased survivability for individuals who suffer a cardiac event. In NC Municipality the current response model for these kinds of events sends the closest company, the staffing of those companies could be either 2, 3, or 4 personnel. Currently NCFD does not send multiple companies to a cardiac arrest on the initial dispatch.

The scenario designed to measure the current effectiveness of NC Municipality's response to a witnessed cardiac arrest measured the following benchmarks.

- Confirm Patient is Pulseless/Non breathing
- Initiate CPR
- Apply an AED (defibrillator)
- Establish an Airway
- Package Patient for Transport onto Long Backboard
- Simulate Patient Transfer to EMS

Each company simulated responses in their current staffing, 2 firefighters, 3 firefighters, or four firefighters. Additionally, one person was added to the crews that had four firefighters to bring the total to 5 firefighters. Averages were then determined from these responses. The scenarios were held in the NC Municipality Fire Department and time measurement began when the responders entered the room.

The performance measurements indicated significant improvement in scenarios that added personnel to the response. When only two firefighters initially respond it took just over a minute to apply the AED, this time decreased with three firefighters to less than 45 seconds. When four firefighters arrived together the time

decreased again to less than 30 seconds. The survivability of patients suffering a cardiac arrest greatly increases with early CPR and AED use. In every evolution it was noted that the time to establish an airway with an oropharyngeal airway decreased significantly. The time required with two responders was 50 seconds, whereas the task was accomplished in just over 15 seconds with five firefighters. The additional staffing also allowed for greater focus on the tasks being performed improving the quality of CPR delivered that had fewer stops while applying an AED or preparing for packaging of the patient.

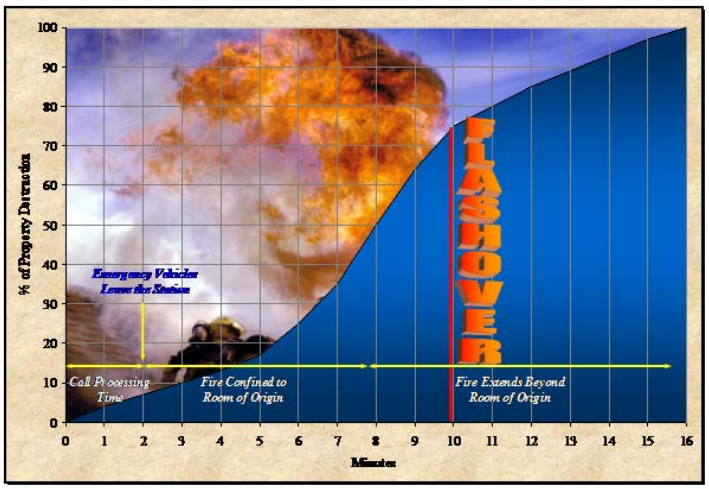
Results

	3 Personnel	2 Personnel	Change	
			Time	*Percent*
Average to Size Up Scene	0:09:00	0:09:00	0:00:00	0.00%
Average to initiate CPR	0:20:00	0:16:00	-0:04:00	-25.00%
Average to AED	0:43:43	1:05:00	0:21:17	32.75%
Average to Establish Airway	0:41:00	0:50:00	0:09:00	18.00%
	4 Personnel	3 Personnel	Change	
			Time	*Percent*
Average to Size Up Scene	0:07:26	0:09:00	0:01:34	17.46%
Average to initiate CPR	0:14:17	0:20:00	0:05:43	28.57%
Average to AED	0:29:51	0:43:43	0:13:51	31.70%
Average to Establish Airway	0:30:51	0:41:00	0:10:09	24.74%
	5 Personnel	4 Personnel	Change	
			Time	*Percent*
Average to Size Up Scene	0:04:30	0:07:26	0:02:56	39.42%
Average to initiate CPR	0:07:30	0:14:17	0:06:47	47.50%
Average to AED	0:21:00	0:29:51	0:08:51	29.67%
Average to Establish Airway	0:16:00	0:30:51	0:14:51	48.15%
	5 Personnel	3 Personnel	Change	

						Time	*Percent*
Average to Size Up Scene				0:04:30	0:09:00	0:04:30	50.00%
Average to initiate CPR				0:07:30	0:20:00	0:12:30	62.50%
Average to AED				0:21:00	0:43:43	0:22:43	51.96%
Average to Establish Airway				0:16:00	0:41:00	0:25:00	60.98%

Conclusions

The performance measured by the scenarios demonstrates that additional personnel on the emergency scene would improve the effectiveness of NC Municipality Fire Department. The current response model indicates that during a normal response to a residential fire it takes on average over 8 minutes for an engine company after arriving on the scene for NC Municipality Firefighters to complete the needed tasks of sizing up the fire, deploying a hose line, securing an effective water source, forcing entry, and entering the structure. This time coupled with the time required for notification of the fire and time to arrive at the fire greatly increased the likelihood that the fire will have progressed from the room of origin to a much greater advanced stage. See image below depicting the average fire progression.



This risk of making entry later in the fire's progression places firefighters at a significant risk. The needed number of firefighters for a total effect firefighting force (TERF) per NFPA 1710 for a low-risk structure fire (17) is not being met with the initial alarm of NC Municipality firefighters. The needed 28 firefighters for a moderate risk building fire would require a significant response from the surrounding mutual departments and could also require greater travel times, again placing firefighters at a greater risk.

The NC Municipality Fire Department has a significant risk to manage and is a busy fire department. Their staff is well trained and equipped, but as the scenario results showed, current staffing levels create delays in the performance of tasks that are critical to the effective management of incidents across all hazard types. In addition, some tasks were unable to be performed at all using the current staffing model. Additional staffing will make the fire department more effective at mitigating emergencies within the response area, provide for the increased safety of the city's firefighters, and improve outcomes related to fire loss and both fire

and medical casualties for the residents, business owners, and visitors in the City of NC Municipality.

Scenario Descriptions:

Residential Fire Scenario

Engine Company

Scenario 1

All Shifts- (Current State)

Each engine company will simulate the current response model of three (3) personnel per apparatus. Each apparatus will stage in the area near the water tower and enter training grounds. Upon arrival each engine will locate and wrap their supply line onto hydrant entering training grounds. Engine Company will then proceed to the staging area on Alpha/Bravo side of the burn building; one personnel will remain at the hydrant to connect the supply line and open the hydrant when notified by the apparatus operator.

The following tasks are to be accomplished:

Engine Company Assignments

- Size Up/Initial Radio Report with 360 views of simulated fire building
- Water Supply Established- Hydrant flowing into first engine
- 1 ¾" Attack Line pulled and advanced to 2nd Floor burn room
- Water on Fire
- Remove Victim

Scenario 2

(4 Personnel per Engine)

Measurement will determine the increase in responding number of personnel per company. Staffing will be four (4) per engine. Each apparatus will stage in the area near the water tower and enter training grounds. Upon arrival each engine will locate and wrap their supply line onto hydrant entering training grounds. Engine Company will then proceed to the staging area on Alpha/Bravo side of the burn building; one personnel will remain at the hydrant to connect the supply line and open the hydrant when notified by the apparatus operator. The following tasks are to be accomplished:

Engine Company Assignments

- Size Up/Initial Radio Report with 360 views of simulated fire building
- Water Supply Established- Hydrant flowing into first engine
- 1 ¾" Attack Line pulled and advanced to 2nd Floor burn room
- Water on Fire
- Remove Victim

Truck Company

(2, 3, or 4 Personnel)

Each Ladder or Rescue company will simulate the current staffing model. Each apparatus will stage in the area near the water tower and enter training grounds. Upon arrival the Ladder or Rescue Company shall spot the apparatus near the staging area on Alpha/Bravo side of the burn building.

The following tasks are to be accomplished:

Ladder Company Assignments

- Forcible Entry/Simulated Forced Entry
- Ground Ladder egress to 2nd Floor Windows on Delta Side
- Primary Search of both floors
- Remove Victim(s)

(1 Additional Personnel per company)

Each Ladder or Rescue company will simulate the current staffing model plus 1 personnel per apparatus. Each apparatus will stage in the area near the water tower and enter training grounds. Upon arrival the Ladder or Rescue Company shall spot the apparatus near the staging area on Alpha/Bravo side of the burn building.

The following tasks are to be accomplished:

Ladder Company Assignments

- Forcible Entry/Simulated Forced Entry
- Ground Ladder egress to 2nd Floor Windows on Delta Side
- Primary Search of both floors
- Remove Victim(s)

Notes for Participants

- All participants must be in full PPE including SCBA. All participants must be utilizing SCBA when in areas considered IDLH.
- When not a participant be prepared to assist in resetting apparatus for the next exercise.
- Rehab area will be established, and personnel are required to go to rehab after emptying two SCBA cylinders in one exercise.

Commercial Fire Scenario
Engine Company

Scenario 1

All Shifts- (Current State)

Each engine company will simulate the current response model of three (3) personnel per apparatus. Each apparatus will stage in the area near the water tower and enter training grounds. Engine Company will then proceed to the staging area on Alpha/Bravo side of the burn building. The following tasks are to be accomplished:

Engine Company Assignments

- Size Up/Initial Radio Report with 360 views of simulated fire building
- 2 ½" Hose Line Connected to FDC on Charlie Side and Charged
- High-rise Kit attached to Standpipe on 2nd Floor
- Water on Fire

Scenario 2

(4 Personnel per Engine)

Measurement will determine the increase in responding number of personnel per company. Staffing will be four (4) per engine. Each apparatus will stage in the area near the water tower and enter training grounds. Engine Company will then proceed to the staging area on Alpha/Bravo side of the burn building. The following tasks are to be accomplished:

Engine Company Assignments

- Size Up/Initial Radio Report with 360 views of simulated fire building
- 2 ½" Hose Line Connected to FDC on Charlie Side and Charged
- High-rise Kit attached to Standpipe on 2nd Floor
- Water on Fire

Truck Company

(2, 3, or 4 Personnel per Company)

Each Ladder or Rescue company will simulate the current staffing model. Each apparatus will stage in the area near the water tower and enter training grounds. Upon arrival the Ladder or Rescue Company shall spot the apparatus near the staging area on Alpha/Bravo side of the burn building.

The following tasks are to be accomplished:

Ladder Company Assignments

- Forcible Entry/Simulated Forced Entry
- Aerial Device to 3rd Floor Window on Delta Side
- Primary Search of three floors
- Victim Removal

(1 Additional Personnel per company)

Each Ladder or Rescue company will simulate the current staffing model plus 1 personnel per apparatus. Each apparatus will stage in the area near the water tower and enter training grounds. Upon arrival the Ladder or Rescue Company shall spot the apparatus near the staging area on Alpha/Bravo side of the burn building.

The following tasks are to be accomplished:

Ladder Company Assignments

- Forcible Entry/Simulated Forced Entry
- Aerial Device to 3rd Floor Window on Delta Side
- Primary Search of three floors
- Victim Removal

Technical Rescue Scenario

Scenario 1 (Simple Door Removal)

Each engine company will operate within their current staffing model. Each Ladder or Rescue company will simulate the current staffing model.

The following tasks are to be accomplished:

- Size Up/Initial Radio Report
- Vehicle stabilization- cribbing/blocks/etc. *(vehicle must be secured)*
- Establish Hose Line- deploy hose line, charge, and staffed.
- FF accesses patient- through other doors/windows *(must establish patient contact and maintain throughout scenario)*
- Patient assessment- what are the injuries *(injury will be provided by controller when access has been established)*
- Extrication of patient- door removal/spread
- Package patient- any needed splinting/C-Collars *(patient must be packaged)*
- Patient Removal- place victim on Long Backboard for transfer to EMS

Scenario 2

(Extended Extrication)

Each engine company will operate within their current staffing model. Each Ladder or Rescue company will simulate the current staffing model.
The following tasks are to be accomplished:

- Size Up/Initial Radio Report
- Vehicle stabilization- cribbing/blocks/etc. *(vehicle must be secured)*
- Establish Hose Line- deploy hose line, charge, and staffed.
- FF accesses patient- through other doors/windows *(must establish patient contact and maintain throughout scenario)*
- Patient assessment- what are the injuries *(Injury will be provided by controller when access has been established)*
- Extrication of patient- door removal/spread and roof removal
- Package patient- any needed splinting/C-Collars *(patient must be packaged)*
- Patient Removal- place victim on Long Backboard for transfer to EMS

Notes for Participants

- All participants must be in full PPE for the scenario. Eye protection must be worn during extrication tool operation. When not a participant be prepared to assist in resetting apparatus for the next exercise.
- Rehab area will be established.

High Risk EMS Scenario

Scenario 1

All Shifts- (Current State)

Each company will simulate the current staffing model. The following tasks are to be accomplished:

- Scene Size Up
- Initiate CPR
- Apply AED/Analyzes Rhythm
- Establish Airway
- Package patient with LBB & CPR Device
- Transfer to EMS

Scenario 2

(1 Additional Personnel per company)

Each company will simulate the current response model of four (4) personnel per apparatus. The following tasks are to be accomplished:

- Scene Size Up
- Initiate CPR
- Apply AED/Analyzes Rhythm
- Establish Airway
- Package patient with LBB & CPR Device
- Transfer to EMS

Notes for Participants

- All participants must be in full PPE for the scenario. When not a participant be prepared to assist in resetting apparatus for the next exercise.

All Completed Spreadsheets

Residential Fire

Residential Fire Engine Company

Residential Fire Ladder Company

Commercial Fire

Commercial Fire Engine Company

Commercial Fire Ladder Company

Technical Rescue

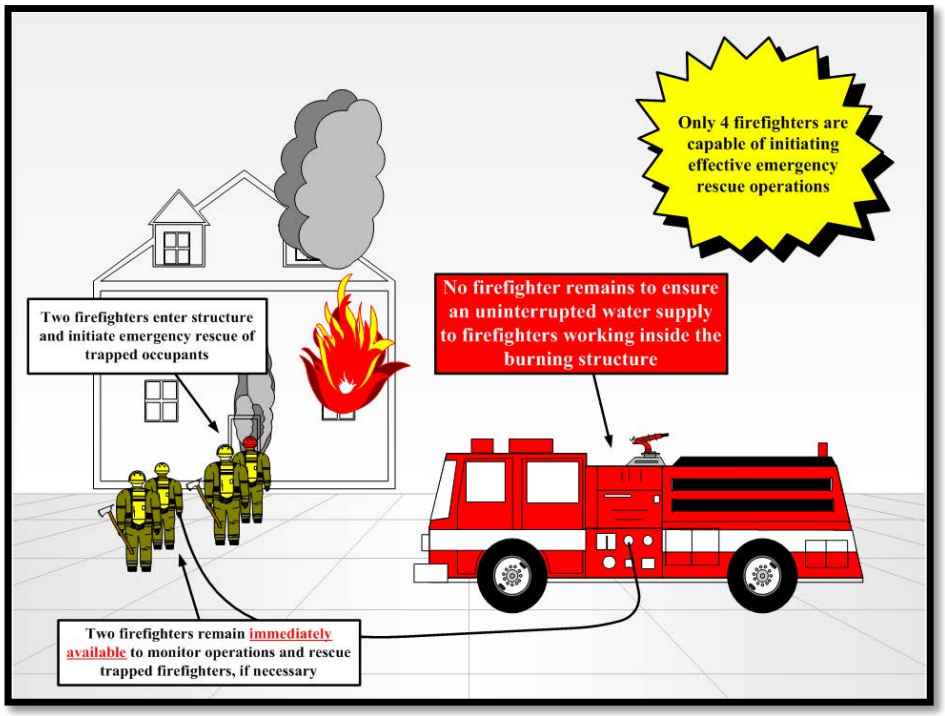
Extrication Multi-Company

High Risk EMS

Full Arrest

Appendix #6 – Two In – Two Out Firefighter Staffing Depiction:

Regarding the number of firefighters, federal law mandates that before firefighters can make an interior attack on a structure fire, there must be a rescue crew established in case something goes wrong with the entry crew. The entry crew is going into an environment that is immediately dangerous to life and health (known as IDLH). Only when there is a known rescue are firefighters permitted by law to enter a structure fire without a rescue crew. This law is typically known as "Two In – Two Out" and applies to all fire service operations.



Appendix #7 – HPFD Staffing Report Excerpts:

City of High Point Fire Department Staffing & Deployment Proposal

1. Executive Summary

The fire service has always been a critical part of ensuring public safety, especially when responding to emergency situations that require rapid, efficient, and effective actions. To achieve this, it's essential that fire departments maintain a well-organized and highly trained team, equipped to handle a wide range of emergencies. However, it's not just about having enough personnel on hand; the NFPA 1710 Standard provides an essential framework for fire department operations, detailing the minimum staffing requirements, response times, and deployment strategies necessary for optimal performance in emergency situations.

The NFPA 1710 Standard is a vital reference for fire departments nationwide, as it outlines the key performance criteria that ensure a timely and coordinated response to fire incidents. It specifies that fire departments should aim to achieve an initial response with adequate personnel, typically arriving on the scene within 5 minutes, with the goal of ensuring safety, reducing loss of life, and protecting property. By adhering to these guidelines, fire departments can effectively mitigate risks, maximize their operational readiness, and ultimately save lives in high-stakes situations.

The importance of NFPA 1710 extends beyond just response times; it's about ensuring that the department is properly equipped and prepared to manage the demands of a diverse set of emergencies. With clear standards for staffing, equipment, and training, the NFPA 1710 Standard provides fire departments with a benchmark for continual improvement. It serves as a reminder that effective fire response isn't just about reacting quickly, it's about having the right team in place, with the right skills and tools, to handle whatever may come their way.

By integrating the principles of NFPA 1710, fire departments can enhance their preparedness, reduce response times, and create a safer environment for both their personnel and the communities they serve.

This proposal aims to address the staffing needs and deployment strategies of the City of High Point Fire Department (HPFD). The proposal is based on a comprehensive review of current staffing models, operational needs, and industry benchmarks. Through this review, we have identified gaps in the current staffing model and propose targeted solutions to ensure the HPFD can continue to meet the safety demands of the community, especially with projected growth and evolving emergency response needs.

4. HPFD Historical Staffing Model

1999-2004

In 2001, the HPFD developed a general order staffing policy (G.O. 2-1) to comply with OSHA regulations (29 CFR 1910.134(g)(4)(i)). During this period, the department operated with 192 firefighters per shift and staffing for two apparatus with 3 personnel each (Quint 4 and Engine 7). Engine 26 was staffed by two City of High Point personnel, with one firefighter from Colfax Fire. This collaboration served the needs of the city but was limited in capacity. (Exhibit A)

Apparatus assigned with 3-personnel

Company	Assigned Staff	Minimum Staff
Quint 4	3	3
Engine 7	3	3

2005 – 2014

From 2005 to 2014, staffing increased to 201 FTE firefighters with the addition of a squad company. However, the staffing model on apparatus transitioned to three personnel per unit for five apparatus. This shift reflected the department's response to increasing demand but did not fully address staffing challenges, particularly in areas of growth and specialized service needs. (Exhibit B)

Company	Assigned Staff	Minimum Staff
Engine 1/Squad 1	3/2	3/2
Engine 2	3	3
Engine 4/Squad 4	3/2	3/2
Engine 8/Squad 8	3/2	3/2
Engine 13	3	3

2015 – 2021

Staffing models during this period added nine (9) FTE positions, bringing the overall staffing level to 210/211* FTE firefighter positions. The added firefighter positions were approved due to the addition of Ladder 7 being placed into service and Squads 1 and Squad 2 were decommissioned to afford staffing for Engine 12. (Exhibit C, C.1, C.2)

Company	Assigned Staff	Minimum Staff
Engine 2	3	3
Engine 4	3	3
Engine 7	3	3
Engine 12	3	3
Engine 13	3	3
Ladder 7	3	3

2022 – Present

Department staff added five (5) FTE positions, bringing the overall staffing level to its current number of 216 FTE firefighter positions. The five new positions greatly enhanced the overall safety of the organization by creating the Battalion 3 position along with the driver's position for Tanker operations.

Company	Assigned Staff	Minimum Staff
Engine 2	3	3
Engine 4	3	3
Engine 7	3	3
Engine 12	3	3
Engine 13	3	3
Ladder 7	3	3

Appendix #8 – Project Staff:

Gregory H. Grayson, Fire Chief (ret), City of Greensboro, NC
Greg Grayson has more than 43 years of progressive experience in the North Carolina fire and rescue service. His experience includes beginning public service as a volunteer firefighter and ascending the career ranks to become the Fire Marshal/Fire Rescue Director for Wake County, North Carolina. In the following seventeen years, he served as the fire chief for three North Carolina urban cities – Albemarle, Asheville, and Greensboro. In these executive leadership capacities, he was responsible for comprehensive fire and rescue operations, prevention programs, training and career development, emergency management functions and specialized regional response teams. In Albemarle, he effectively led positive organizational change and implemented an innovative reserve firefighter program. In Asheville, he commanded significant re-engineering throughout the fire department and led Asheville to become an accredited agency. In Greensboro, he led the department to maintaining both accreditation and ISO "Class1" status and navigated the department through difficult fiscal years and challenging large-scale emergencies. In 2015, his long-term, dedicated public service to the people of North Carolina was recognized by the Governor through the prestigious "Order of the Long Leaf Pine", the state's highest honor that can be awarded to a citizen.

Upon retiring from local government service, Chief Grayson was appointed by the State Fire Marshal in 2015 to proactively serve as the state's first and only public fire service management consultant, providing high level technical assistance to county and municipal managers - enabling them to better strengthen their jurisdiction's fire protection service delivery systems. He also managed statewide fire service advancement initiatives and led the Office of State Fire Marshal's Technical Services program.

Beyond extensive experience, Chief Grayson holds a Master of Public Administration, bachelor, and associate in fire protection. He holds numerous professional credentials including Chief Fire Officer (CFO), MIFireE from the Institution of Fire Protection Engineers and multiple other fire service certifications, including being North Carolina's first Advanced Firefighter. He is one of very few, if not the only, Fire Chief in the United States to also hold the Senior Professional in Human Resources (SPHR) and SHRM-SCP credentials. He is active in the North Carolina Association of Fire Chiefs and the IAFC Metropolitan Fire Chiefs organizations.

Todd Tuttle, Assistant Chief (ret), Greensboro NC
Chief Tuttle is a 33-year fire service veteran who also served as a paramedic. For the last half of his career, he managed the intricate records management systems for the City of Greensboro Fire Department, which is an accredited, ISO Class 1 city. These duties included CAD, mobile data, AVL, Fire House, GIS technologies, Accreditation, performance management and many other related areas. Chief Tuttle is recognized throughout the state and nation as a technical expert on Firehouse records management systems as well as data analysis.

Scott Burnette, Fire Chief (ret), City of Asheville, NC
Chief Burnette recently retired from Asheville Fire Department after more than 30 years of municipal fire protection experience, the last 14 as Fire Chief. Chief Burnette has also served as Fire Chief of the Mills River Fire Department in Henderson County. Chief Burnette led the Asheville Fire Department's initial accreditation effort as accreditation manager and continued to achieve accredited agency status for the department multiple times. He led the department through a tragic line-of-duty death in 2010. Chief Burnette implemented many innovative and progressive programs in his tenure in Asheville and led in the development and construction of Fire Station 13, increasing department staffing and opening a model regional fire training facility.

Chief Burnette has remained a certified and practicing North Carolina Paramedic and continues to serve with Henderson County EMS as a Paramedic responder. Chief Burnette has earned an associate degree in fire protection from Gaston College, was in the first graduating class of the University of North Carolina at Charlotte Fire Protection Engineering bachelor's degree program, graduating with honors, and received a master's degree in fire service leadership. He has held the Chief Fire Officer Designation since 2008.

Barry Hendren, Assistant Chief (ret), City of Asheville, NC
Chief Hendren recently retired from Asheville Fire Department at the Assistant Chief level after more than 33 years of municipal fire protection experience. Chief Hendren was instrumental in developing and leading the department's training programs, accreditation efforts and served in a leadership capacity most of his career in Asheville. Chief Hendren was responsible for all shift operations, strategic planning, fire marshal's office and EMS program in his role.

Chief Hendren earned an associate degree in fire protection from Central Piedmont Community College and earned his Bachelor in Fire Protection Engineering Technology from UNC Charlotte. He has held the Chief Fire Officer Designation since 2008.

Chuck Whitworth, Assistant Chief (ret), City of Greensboro, NC
Chief Whitworth recently retired from the Greensboro Fire Department at the Assistant Chief level after more than 38 years of municipal fire protection experience. Chief Hendren was instrumental in developing and leading the department's training and safety programs, accreditation efforts and served in a leadership capacity most of his career in Greensboro. He led the department's special operations division for many years. Chief Whitworth served in all ranks and all divisions of the fire department. He has earned the Executive Fire Officer (EFO) Designation.

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