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Fire Chief

FIRE DEPARTMENT CITY OF CONCORD

New Hampshire's Main Street™



REPORT TO MAYOR AND THE CITY COUNCIL

FROM: John A. Chisholm, Fire Chief

DATE: January 8, 2024

SUBJECT: Report from the Fire Chief requesting the appropriation of and authorization to expend three-hundred five thousand dollars (\$305,000) to purchase PFAS free structural firefighting gear

Recommendation

The Fire Department requests that the Council accept this report.

Background

Structural firefighting gear protects a firefighter from heat, water vapor burns, cuts and other trauma, and to a very limited extent, direct flame impingement while operating inside a building that is on fire. This type of environment is known as an IDLH (Immediately Dangerous to Life and Health) atmosphere. Once a set of gear has been exposed to an IDLH atmosphere, it must be laundered in order to remove the toxic byproducts released in structure fires or the gear will off-gas these chemicals and cause harm to those exposed to it. For this reason, the Concord Fire Department issues two (2) sets of structural gear to each member. Once a crew returns from a fire, each firefighter changes into his/her backup set of gear, while the primary set is laundered and then immediately returned to service. Each set of structural gear has a service life of ten (10) years, which is a standard established by the National Fire Protection Association (NFPA). The established practice at the Concord Fire Department is that after five (5) years, each member's primary set becomes their backup set, and a newly purchased set becomes their primary set. This allows each set of gear to be used for its full potential service life.

To protect from water vapor burns, structural gear contains a vapor barrier that is impregnated with PFAS (Per- and polyfluoroalkyl substances). PFAS is a group of organofluorine chemical compounds that have been termed "forever chemicals" and have been found to cause cancer. These chemicals absorb into the skin of the firefighter wearing the gear, and the rate of absorption accelerates during exertion in hot environments. This is strongly thought to be responsible for some of the well-documented increased rates of cancer suffered by firefighters.

The presence of PFAS in structural firefighting gear is very concerning. The very gear that protects the firefighter in the IDLH atmosphere, allowing him/her to perform life-saving measures such as

rescue victims or advance a hose line, has been found to pose long-term health risks by exposing the firefighter to chemicals known to cause cancer.

Discussion

Traditionally, all structural firefighting gear available on the market has contained PFAS. The Concord Fire Department has been tracking the development of new materials, and one will be available soon that will allow a fully PFAS free gear ensemble. These materials have passed NFPA standards and are expected to last for the same ten (10) year service life. Fire Administration met with staff from Bergeron Protective Clothing (gear vendor) and Globe Manufacturing (gear manufacturer) recently. Through the strong relationship with these companies, Concord Fire has the opportunity to be on the leading-edge of departments able to purchase and receive the new PFAS free gear. It is thought that once this gear is made widely available, it will have a long lead time due to the strong demand for this safer option.

The requested money (\$305,000) will be used to replace the primary set of structure gear for each member, for a total of ninety-two (92) new sets. Replacing each member's primary set of gear with a PFAS free set would only require him/her to change into a backup set of gear which contains PFAS for a few hours while the primary set is laundered. The Fire Department feels that this solution strikes a good balance between the safety of employees with fiscal and logistical considerations.

The total cost of the gear replacement project would be \$340,000. The Fire Department has withheld spending the \$35,000 from FY24 CIP #573 (*Fire Department Personal Protective Equipment*) anticipating that PFAS free gear may be available soon. This CIP money will be used towards this purchase, reducing the amount required in this request to the \$305,000. This expenditure would be offset by a total savings of \$150,000 planed in CIP #573 between FY25 and FY28, as the Fire Department would not need to purchase new gear during this period. FY29 CIP #573 would be increased to \$425,000 for another bulk replacement. This purchase would change the practice of replacing sets of structural gear in a rolling fashion from replacing roughly eighteen (18) sets per year to replacing all ninety-two (92) sets in one transaction every five (5) years. While both strategies have advantages and disadvantages, the Fire Department strongly feels that any disadvantages are far outweighed by the benefit of immediately providing PFAS free gear to each member.

The Fire Department has heard speculation that grant funding may eventually be made available to Fire Departments to fund, either in part or in whole, replacement of PFAS containing gear with PFAS free gear. The Fire Department believes that executing an immediate purchase, prior to grant funding, remains the best option. This is due to the potential delay that a grant application process would introduce, as well as expected supply chain backup due to mass orders with grant money. The Fire Department would recommend replacing each member's second set of gear with grant funding in a few years, if it becomes available.

The Fire Department believes that accepting and approving this request will also have immediate benefits in the recruitment and retention of employees. This would send a strong message that the City of Concord values the long-term health of employees and is willing to act to protect them from known threats when possible. The increased rate of cancer among firefighters is very concerning to members of this profession, and being able to perform the job in a set of PFAS free gear will potentially attract employees away from other departments.