**Purpose:**

The purpose of this operational guideline is to establish effective contamination control measures based on [WorkSafeBC’s Hierarchy of Controls](https://www.worksafebc.com/en/health-safety/create-manage/managing-risk/controlling-risks?origin=s&returnurl=https%3A%2F%2Fwww.worksafebc.com%2Fen%2Fsearch%23sort%3DRelevancy%26q%3Dhierarchy%2520of%2520controls%26f%3Alanguage-facet%3D%5BEnglish%5D&highlight=hierarchy%20of%20controls). By adhering to this hierarchy, we aim to reduce firefighter exposure to hazardous substances and minimize cancer risk among firefighters.

**Scope:**

This guideline applies to all members of the Fire Department, including firefighters, officers, and administrative staff.

**Policy:**

Hierarchy of Controls: We prioritize the implementation of control measures in the following order:

**Elimination or Substitution**:

Eliminate hazards whenever possible or substitute with less harmful alternatives. Examples: choose fluorine free foams and protective ensembles where possible, fuel reduction efforts to prevent exterior fires transitioning to structure fires

**Engineering Controls**:

Physically modify the workplace to prevent exposure to contaminants. Examples – local exhaust ventilation to capture diesel exhaust, clear separation between contaminated areas and living/administrative areas. Training fuel selection and training prop design to minimize exposures to hazardous substances.

**Administrative Controls**: Use of specific fire attack tactics to reduce exposures, crew rotation, PPE donning and doffing practices, PPE decontamination, PPE retirement/removal from service, skin cleaning, fire apparatus cleaning, fire station cleaning to minimize firefighter exposures to harmful substances.

**Personal Protective Equipment (PPE):** Use appropriate PPE, including respiratory protection, to protect against specific hazards at all times for initial attack, suppression, overhaul and investigation. Purchase of PFAS free gear where possible, use of particulate impervious hoods.

**SOGs and Best practices:**

[X.XX Post Incident/Training Decontamination Process](#_Post_Incident/Training_Decontaminat) **(from BC FCA, should we rename Preliminary Exposure Reduction)**

[X.XX Fire Station Exhaust Extraction Systems](#_Fire_Station_Exhaust) **(from Kootenay Boundary)**

[X.XX PPE Worn in the Fire Hall](#_PPE_Worn_in) **(from Kootenay Boundary)**

[X.XX Respiratory Protection During Fire Investigations](#_Respiratory_Protection_During) **(from Kootenay Boundary)**

[Best Practices for Reducing Firefighter Exposures to Carcinogens](#Best_Practices) **(from Kootenay Boundary with some   
additional risk assessment and tactical considerations)**

**X.XX Tracking of exposures (should an OG be established related to tracking of exposures)**

**RESPONSIBILITIES**

**All Firefighters Shall:**

Follow Exposure and Contamination Control Measures.

Adhere to decontamination procedures during and after emergency responses.

Properly use PPE, including SCBA, protective clothing, and eye protection.

Participate in training sessions on contamination control.

**Officers Shall:**

Ongoing risk assessment for contamination hazards should be conducted during emergency scene and training operations

Provide guidance during incidents to minimize exposure.

Enforce Compliance.

Ensure that all firefighters follow contamination control protocols.

Monitor PPE usage and maintenance.

**Fire Chief’s Office Shall:**

Provide Leadership and Support.

Advocate for contamination control initiatives.

Allocate resources for training, equipment, and decontamination facilities.

Collaborate with other agencies to enhance overall safety.

**Training Officers Shall:**

Develop and Deliver Training Programs related to firefighter exposure and contamination reduction.

Design training modules on contamination control.

Educate firefighters on the Hierarchy of Controls and its practical application.

Conduct regular drills and simulations.

**Conclusion**

By integrating the Hierarchy of Controls into our operational practices, we can safeguard the health and well-being of our firefighters while fulfilling our mission to save lives and protect property.

**References:**

WorkSafe OH&S Reg [5.2](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-05-chemical-and-biological-substances#SectionNumber:5.2) & [5.82](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-05-chemical-and-biological-substances#SectionNumber:5.82), [31.4](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-31-firefighting#SectionNumber:31.4) NFPA 232, 1001, 1500, 1851, 1585

NFPA 1550 , Standard for Emergency Responder Health and Safety, 2024 edition

NFPA 1970,  Standard on Protective Ensembles for Structural and Proximity Firefighting, Work Apparel and Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, and Personal Alert Safety Systems (PASS),  2024 edition

NFPA 1585, Standard for Exposure and Contamination Control, 2024 edition

Gavin P. Horn, Kenneth W. Fent, Steve Kerber & Denise L. Smith, “Hierarchy of contamination control in the fire service: Review of exposure control options to reduce cancer risk,” Journal of Occupational and Environmental Hygiene, 2022 [19:9, 538-557, [DOI: 10.1080/15459624.2022.2100406](https://www.tandfonline.com/doi/full/10.1080/15459624.2022.2100406)].

## Post Incident/Training Decontamination Process

**Purpose:**

To identify requirements and establish procedures for dealing with post incident and post training decontamination of PPE.

**Scope:**

Fire Department members.

**Policy:**

All members shall conduct the appropriate post incident or post training decontamination process. Members shall be annually trained in the post decontamination process.

**Procedures:**

* When PPE has come into contact, or been exposed to contaminants on scene or during training, mitigation, containment and decontamination shall be carried out as required
* The Commander shall determine the level of contamination, mitigation, containment, and decontamination that is required
* The Commander assumes the responsibility of the Incident Safety Officer, until the Incident Safety Officer is appointed in the Command structure
* Any soiled bunker gear can be replaced with spare bunker gear, during, or after the incident if possible. Soiled PPE shall be properly packaged for washing
* All contaminated PPE **shall** be contained at the scene, then transported for decontamination by means that reduces further exposure to members
* Contaminated PPE and/or station wear is not to be transported in the crew compartment of fire apparatus, unless properly contained (plastic bags shall be carried on board each apparatus)
* Supervisors/Officers shall ensure that post incident/training mitigation and containment of contaminated PPE is completed while at the scene prior to mounting fire apparatus
* A decontamination hose line, in the warm zone of an incident, shall be set up to wet down all debris covered or contaminated members and PPE. The Pump/Engine closest to the front door shall be used for this operation. Members exiting the building are to stay on air and not remove any PPE until rinsed thoroughly
* Members providing decontamination on scene shall wear gloves, respiratory protection and/or PPE appropriate to the suspected hazard
* Members providing rehab or changing air cylinders shall wear PPE appropriate to the hazard
* Soiled or contaminated PPE shall be washed as soon as possible
* Spare PPE shall be made available and used as replacement gear until the member’s PPE is washed and dried

**Mitigation of Contaminated PPE**

* + Upon exiting the hot zone, do not remove any PPE including SCBA face piece. Remain **ON AIR**. This is to reduce exposure to airborne particulates
  + If directly returning to the hot zone after an air cylinder change, dry brush debris from helmet, face piece, and SCBA prior to change-out
  + If Members are heading to Rehab or being released, dry or wet mitigation shall occur prior to removal of any PPE
  + Dry mitigation shall begin by brushing debris from helmet, face piece, SCBA, bunker gear, gloves and boots prior to removal. Hands and face shall be washed prior to entering rehab for rest, rehydration and nourishment or being released. The designated apparatus has water, towels, and wipes available for this
  + Wet mitigation shall begin using a fine mist from the decontamination hose line to rinse debris from the helmet, face piece, SCBA, bunker gear, gloves and boots. Members performing mitigation shall wear gloves, eye protection, and suitable PPE for the suspected contaminates. Members may require protection against extreme environmental exposure
  + Upon returning to the Fire Hall, Members should shower to further reduce contaminants or upon returning to home they should shower as soon as possible
  + If members are returning to operations or training without dry or wet mitigation. Wipes shall be used on any exposed skin areas. This shall be completed by each individual. Members assisting with bottle exchanges etc. shall ensure that the correct PPE is worn and that they utilize wipes once the tasks are completed. Consideration to change out protective hoods shall be considered.
  + During cold temperatures, the Commander may choose to have members don disposable coveralls overtop of their contaminated PPE. This shall be completed with a rinse of boots, the removal of gloves and balaclava which shall be placed in a plastic bag and placed in the vehicle, use of wipes and N95 masks are required. This process shall be completed at the end of operations, when personnel are ready to return to the firehall. The wearing of the disposable coveralls and N95 shall remain on until members are back at the Fire Hall, where the mitigation of contaminated PPE shall be completed as above.

**Containment of Contaminated PPE**

* + All containment shall be done wearing medical gloves to reduce exposure
  + When members are to be released, containment of contaminated PPE begins with spraying and bagging of helmet, gloves, and/or boots if required. A chemical detoxifier formula that meets the current NFPA 1851 standard should be applied
  + Contaminated bunker gear shall be handled in the following manner:
    - Protective hoods shall be attached to bunker pants. Empty all pockets and close Velcro flaps
    - Remove bunker gear and place in a plastic bag and tie. If station wear or clothing is felt to be exposed to containments that too is to be removed and placed in a separate plastic bag. Names shall be indicated on each bag
    - The plastic bag shall be placed in a vehicle that reduces further exposure to the containments
    - Members may require privacy and protection against extreme environmental exposure. Members shall don their provided coveralls.
    - Contaminated SCBAs shall be sprayed and bagged prior to placement on fire apparatus.

**Soiled Bunker Gear Washing**

Empty all pockets and close Velcro flaps. Pull liners inside out, leaving attached to shells. Place in a plastic bag, tie and label

**Replacement Bunker Gear**

* + Following mitigation, containment and preliminary decontamination, **ALL** affected members are to obtain replacement bunker gear immediately if available
  + Members shall attempt to limit any out of service time to a minimum in dealing with the replacement bunker gear
* PPE should be cleaned and returned to service within two days of the operation or training event (spare gear is to be returned to storage at this time)

**Contaminated SCBA**

* + On scene, remove SCBA and using a fine mist, completely wet down, removing all excess debris. Place SCBA in plastic bag, seal with caution tape and secure in a location acceptable for transportation back to the fire hall. SCBA Bottles shall also be tagged and stored in a location acceptable for transportation back to the Fire Hall.
  + At the Fire Hall, don medical gloves, eye protection and appropriate N95 respirator. Remove SCBA from plastic bag
  + Remove cylinder from SCBA and inspect all parts for damage and excessive wear and tear. Install thread protector
  + Wash and rinse cylinder with brush, soap and water
  + Using a mild soap and water solution and soft brush, clean and rinse all SCBA straps and pads (**DO NOT SUBMERGE SCBA**)
  + Thoroughly clean face piece as per the Face Piece Cleaning and Maintenance
* If SCBA requires repair complete the appropriate documentation

***Note*** *– An SCBA that has experienced Air Supply Failure during use is not to be cleaned or altered in any way. Notify the Fire Chief’s Office who will initiate the "Incident Investigation". All other defective SCBA shall be thoroughly cleaned before being given or sent for repairs.*

**Cleaning of Firefighting Gloves** *Firefighting gloves are not machine washable.*

* + Gloves are to be fully sprayed to remove excess debris and placed in a plastic bag before leaving the scene
  + Don medical gloves and remove firefighting gloves from plastic bag
  + Inspect gloves for damage, rips, tears, excessive wear or contamination
  + Fill decon sink approximately one quarter way and using a mild soap and water solution, don firefighting gloves and briskly rub together, ensuring cleansing of all surfaces
  + Remove firefighting gloves and submerge in the solution, then thoroughly rinse gloves inside and out with clean water
  + **DO NOT WRING** – Squeeze excess water from gloves and place on drying rack where applicable. *Wringing of gloves will degrade performance in fire conditions*
* Relabel if needed

**Cleaning of Boots - Leather and Rubber**

* Boots are to be fully sprayed to remove excess debris before leaving the scene
* Don medical gloves. Inspect boots for damage – rips, tears, leaks, excessive tread wear, malfunctioning zippers, torn pull loops
* If anatomical tissue or bodily fluids are present, spray with 10:1 bleach solution prior to mounting fire apparatus
* Fill decontamination sink halfway with water and using a mild soap and water solution, briskly rub the exterior, interior and sole of the boot
* Thoroughly rinse entire boot with clean water and hang boots upside down to dry, ensuring water run-off does not create a slip hazard (stuffing newspaper loosely into boots will help them to dry; change paper as needed or use an approved boot dryer)

**Cleaning of Helmet and Helmet Liners**

* Don medical gloves. Remove ear flaps, front pad and rear pad from helmet
* Inspect for damage – cracks or deep scratches in shell; misaligned helmet liner; malfunctioning ratchet; worn flaps; cracked or distorted visor
* Fill decontamination sink one-quarter of the way with water and using a mild soap solution, briskly rub the exterior and interior of the helmet. Rinse thoroughly with clean water
* Submerge ear flaps and pads into water and hand wash using a mild soap solution. Rinse thoroughly with clean water
* Squeeze excess water, wrap in newsprint, changing often until dry

**Contaminated Station Wear / Personal Clothing (Including illicit substance exposure)**

* Obtain either clean clothing or coveralls to change into
* Carefully remove all head and body clothing and place it on the ground in front of you
* Standing, lower your pants and remove shoes from one foot at a time, stepping backwards from the clothing. Place clothing on the ground in front of you
* Carefully remove safety glasses and place on the ground in front of you
* While wearing Nitrile gloves, pinch the bridge of your nose, hold your breath, close your eyes and gently remove N95 mask. Place N95 on the ground in front of you
* Remove Nitrile gloves peeling away from the wrists towards fingertips. Place Nitrile gloves on the ground in front of you
* Step back from contaminated clothing and don coveralls or clean clothing
* The Fire Chief’s Office shall be contacted to report the exposure and request a decontamination mesh bag.
* Place all contaminated clothing into the decontamination mesh bag
* An Exposure Record shall be filled out promptly and sent to the Fire Chief’s Office and shall be part of the records management documentation
* Using the appropriate level of PPE for the suspected contaminant, place contaminated mesh bag in a plastic bag and seal. Label with the member’s name
* Clothing (where applicable) will be washed, dried and returned
* If clothing is heavily contaminated, it may be treated as biohazard waste, bagged, sealed and disposed of

*Wipes shall be considered at any time personnel feel they may have come in contact with contaminates.*

**RESPONSIBILITIES**

All Firefighters shall:

* Properly mitigate, contain, package and decontaminate their PPE and SCBA prior to mounting any fire apparatus
* Notify their Supervisor/Officer when their PPE requires cleaning and/or decontaminating
* Assist with the cleaning of contaminated PPE and SCBA

Supervisors/Officers shall:

* Ensure that firefighters assigned to their apparatus undergo mitigation, containment, and decontamination prior to mounting the apparatus.
* Notify Command if their apparatus and crew will be delayed returning to service due to soiled or contaminated PPE.
* Document members exposures properly and promptly.
* Ensure all member's PPE, SCBA, clothing and firefighting equipment is cleaned, replaced, or decontaminated prior to returning to service.
* Ensure that spare PPE is returned to storage in a timely fashion.

Fire Chief’s Office shall:

* Ensure crews are properly mitigated, contained and decontaminated prior to return to service
* Make arrangements for replacement PPE if required
* Ensure exposed personnel, PPE, clothing, equipment and reports are dealt with promptly and properly
* Ensure any investigation regarding exposure is completed through the JOHS Committee

**References:**

WorkSafe OH&S Reg [5.2](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-05-chemical-and-biological-substances#SectionNumber:5.2) & [5.82](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-05-chemical-and-biological-substances#SectionNumber:5.82), [31.4](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-31-firefighting#SectionNumber:31.4) NFPA 232, 1001, 1500, 1851, 1585

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NFPA 1585, Standard for Exposure and Contamination Control, 2024 edition

**Best Practices for Reducing Firefighter Exposures to Carcinogens**

**A “Best Practice” is a technique that identifies a standard way of doing something that multiple organizations can use and adopt. Many departments across the nation are beginning to implement best practices to reduce exposures to carcinogens.**

**The interventions involve cleaning of gear, transport of contaminated gear and placing first in Driver/Operators on air. It is recognized that doing all of these things can pose logistical challenges. The idea is that we begin to do these things whenever practically possible to help reduce exposures. Reducing the risk involves taking a comprehensive, multi-step approach. It is likely that accumulation of low levels of exposure over time (chronic effects) leads to the higher incidence of cancer in firefighters. Every step you can take to minimize your risk will help. The goal is not only to get everyone home safe, but also enjoy your retirement with your loved ones.**

**Purpose:**

To establish a process for correct use of the Fire Hall Vehicle Exhaust Extraction Systems to prevent unhealthy exhaust emissions from accumulating in fire stations, from vehicles and/or gas-powered equipment. Exhaust emissions accumulating in the fire station can be harmful to department personnel, therefore, special precautions must be taken to prevent these accumulations.

**Scope:**

Fire Department members.

**Policy:**

Fire Station Vehicle Extraction Systems shall be used to prevent harmful exhaust from accumulating in fire stations as per the following procedures:

**Procedures:**

Fire Station Vehicle Extraction Systems shall be attached at all times to apparatus while inside the fire station.

Fire Station Vehicle Extraction Systems are to be used anytime a vehicle is entering or exiting a fire hall. Members shall use caution when attaching the hose when a vehicle is entering a fire hall when making the connection of the extraction hose to the apparatus.

The Extraction Systems have a limited amount of time for which the system engages. Any work on an apparatus that requires the use of the extraction system greater than five (5) minutes shall be completed on the tarmac with the overhead doors closed.

**Gas Powered Equipment**

Unless necessary, gas-powered equipment shall not be operated inside or near the fire station. If it is necessary to operate gas-powered equipment inside or near the fire station acceptable precautions must be taken to prevent exhaust emissions from accumulating inside of the station and causing a health hazard.

**References:**

WorkSafe [OH&S Reg 31.32](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-31-firefighting#SectionNumber:31.32), NFPA 1500, Manufacturer Recommendations

## PPE Worn in the Fire Hall

**Purpose:**

To identify areas in the Fire Station where PPE can be worn.

**Scope:**

Fire Department members.

**Policy:**

PPE is not to be worn or brought into the Fire Station living quarters or offices at any time.

**Procedures:**

* At no time shall any PPE be worn in the Fire Station living quarters or offices. This is to reduce exposure of residue contaminates left on PPE to members.
* Signage shall be posted at entrances to non-PPE areas.
* No training event shall include the potential use of PPE in the living quarters or offices.
* Training events inside the Fire Hall with the use of PPE shall be restricted to truck bays, hose towers and storage areas.
* Members shall change out of any heavily contaminated clothing, uniform, or coveralls before entering Fire Hall living quarters or offices.

**References:**

NFPA 1500

## Respiratory Protection During Fire Investigations

**Purpose:**

Smoke and contaminants present a hazard to members involved in the investigation of fires. Adequate respiratory protection must be provided to ensure the safety of members during such investigation.

**Scope:**

Fire Department members.

**Policy:**

Suitable respiratory protection must be worn by Fire Department service members during all investigations to determine the cause and origins of fires. (Occupational exposure control to hazards including contaminants, oxygen deficient atmospheres, IDLH atmospheres in order to meet Occupational Health and Safety Regulation Parts 6, 8 & 31).

**Procedures:**

Self-Contained Breathing Apparatus (SCBA) must be worn by all members during all fire investigations.  
  
SCBA shall be worn and used by all members when:

* Entering confined or restricted spaces that are oxygen deficient; or, where smoke, chemicals, toxic agents, toxic fumes or unknown type gases or vapors are present,
* At the scene of an emergency incident where members may be exposed to toxic vapors, gases, fumes, mist, or dust caused by fires, explosions, leaks, spills, or other means,
* Where the atmosphere is known to be or suspected to be hazardous.

Where the atmosphere may become hazardous

* Members shall resist the tendency to prematurely remove breathing apparatus during routine fire situations. All Firefighters and Fire Investigators must be aware of respiratory hazards which exist in ordinary as well as extraordinary fire situations. It is generally true that carbon monoxide levels increase during overhaul due to the incomplete combustion of smoldering materials.
* All members shall be given a minimum of 30-minutes rest period after using two bottles of air.
* When working in a breathing apparatus working in pairs is considered a good practice.
* Never remove the facemask or regulator to talk when in a hazardous atmosphere
* All members are directly responsible for their personal safety and shall utilize and maintain Self Contained Breathing Apparatus in accordance with this Operational Guideline.
* If conditions at the investigation scene deteriorate or difficulties arise with equipment use, the investigator(s) must evacuate the fire area until adequate safety with the use of the Self-Contained Breathing Apparatus can be restored.
* Half masks and N95 masks are not acceptable to use for fire investigation.

**References:**

WorkSafe OH&S Reg 31.19-26, NFPA 1001, 1033, 1500, CSA Standard CAN/CSA-Z94.4-93 Selection, Use and Care of Respirators

**Best Practices for Reducing Firefighter Exposures to Carcinogens**

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**The interventions involve cleaning of gear, transport of contaminated gear and placing first in Driver/Operators on air. It is recognized that doing all of these things can pose logistical challenges. The idea is that we begin to do these things whenever practically possible to help reduce exposures. Reducing the risk involves taking a comprehensive, multi-step approach. It is likely that accumulation of low levels of exposure over time (chronic effects) leads to the higher incidence of cancer in firefighters. Every step you can take to minimize your risk will help. The goal is not only to get everyone home safe, but also enjoy your retirement with your loved ones.**

**TACTICAL CONSIDERATIONS**

**Ongoing risk assessment for contamination hazards should be conducted during emergency scene and training operations. Additionally, a site-specific hazard and risk assessment should be performed to identify all primary contaminants and the likelihood and effects of exposure during all phases of an operation.**

**Fire apparatus and other response and support vehicles shall, where possible, be positioned upwind or otherwise outside an area of potential or actual contamination.**

**Staging and rehabilitation operations shall be located in the cold zone.**

**In cases where a member might be in distress, or exhibiting signs of distress, as a result of metabolic heat stress or high thermal exposures, both of the following shall apply:  
1. Emergency doffing procedures shall be followed immediately upon exiting the structure.  
2. No PER shall be performed.**

**Assembling enough firefighters to address the fire/ emergency/training situation is critical to a successful outcome and to allowing crew rotation to reduce exposures to individual firefighters.**

**Consider the use of transitional to reduce firefighters’ exposures, when such an attack is appropriate based on fireground needs. Transitional attacks involve firefighters initially applying water to the fire through an opening before entering the building to completely extinguish the fire.**

**Pump operators/Engineers on air**

**The study conducted by the University of Arizona found that Engineers often had elevated levels of PAH’s in their urine post fire. PAH’s are Polycyclic Aromatic Hydrocarbons, some of which are known to be carcinogenic. It is assumed this is due to the lack of respiratory protection. First in engineers, operating at the pump panel, aerial or securing utilities are often without air packs. As soon as practical, engineers should be on positive pressure air while exposed to smoke.**

# Why not a cartridge Filter?

**Cartridge Filters may not filter out all of the potential toxins encountered at a fire (A U of A study actually found formaldehyde break through with previous cartridges) . More information on cartridge filters limitations can be found here: https://www.osha.gov/dts/shib/respiratory\_protection\_bulletin\_2011.html**

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**Engineers on Air**

**Transportation of contaminated gear**

**We need to embrace a clean cab concept. This means treating the products of combustion the same as we would any other biohazard. Contaminated hose, tools, SCBA’s or any other contaminated equipment should be decontaminated on scene and transported in a manner so as to not contaminate the cab of the truck. If an SCBA’s or other equipment cannot be decontaminated on scene, equipment should be bagged and transported in a compartment.**

**Firefighting hoods**

Recently, the firefighting protective hood has been studied as a potential route for exposure. A study conducted by the IAFF found that small particles are able to penetrate the traditional hood.

A new edition of NFPA standard is due out soon which will list a particulate blocking hood as an option, but not a requirement as more study is needed to prove the effectiveness. The Safety Team will be monitoring the results of our study as well as other current studies to help guide future decisions regarding a hood design.



**Health and Wellness**

While the main focus is on reducing our fireground exposures, there are many modifiable risk factors involving health and wellness that should be employed as well. Multiple studies have shown increased cancer rates associated with lack of exercise, obesity, tobacco use, excessive alcohol use and poor sleep habits

Maintaining a healthy weight, fitness levels, sleep habits, alcohol in moderation and zero tobacco are “best practices” for cancer reduction.

**Resources**

As mentioned, this is an approach to implement change to the culture which can reduce our cumulative exposures. There are challenges and limitations, but this is a necessary change that will have a positive impact your career and retirement.

## Fire Station Exhaust Extraction Systems