

# SAFETY AND HEALTH INVESTMENT PROJECTS FINAL REPORT

Best Practices For Reducing Fire Fighter Risk of Exposures To Carcinogens  
2014ZG00276  
October 2014

Captain Beth Gallup  
bgallup@kentfirerfa.org

Kent Fire Department RFA and Washington State Council of Fire Fighters

March 27, 2017

Captain Beth Gallup



*Funding and support for this project has been provided by the State of Washington, Department of Labor & Industries, Safety & Health Investment Projects.*

Kent Fire Department is solely responsible for the content of and views expressed in this report and related materials unless they have been formally endorsed by the Washington State Department of Labor and Industries.

## PART I

### *Narrative Report*

**Abstract:**

Present a short overview of the nature and scope of the project and major findings (less than half a page).

Cancer rates in the fire service are reaching epidemic levels. Over 60% of the fire fighters scheduled to be placed on the wall at the IAFF Fallen Fire Fighter Memorial in Colorado Springs this year will have their deaths attributed to occupational cancer. The cost of fire fighter cancer related claims to Washington state Labor and Industries in 2007 was \$370,916. In 2014, that number had grown to \$1,436,804. (These numbers do not include self-insured cities.)

It is in the best interest of every member of the fire service to do everything possible to reduce the number of fire fighter line of duty deaths and occupational illnesses due to cancer.

All members of the project technical panel are currently employed by a career fire department and are members of an IAFF affiliate local. After more than two years of dedicated work, the efforts to produce a best practices manual for reducing fire fighter risk of exposures to carcinogens is now available for all fire fighters in Washington state.

These best practices are intended to help reduce exposures to carcinogens. They are simple, cost-effective methods that fire departments can implement now to reduce the risk of their fire fighters contracting cancer. There is an accompanying video which identifies operational areas and additional best practices protocols.

A model consensus policy/guideline was developed and can be adopted by local fire departments throughout the state of Washington to ensure best practices are being used.

**Purpose of Project:**

Describe what the project was intended to accomplish.

The creation and adoption of a "Best Practices" manual, in conjunction with nationally recognized standards, WAC, and local department policies; can help fire fighters apply correct cleaning/decontamination approaches and limit continued exposure to persistent chemical, biological, or particulate hazards, reducing the risks of exposures to carcinogens.

A model consensus policy/guideline that can be adopted by local fire departments throughout the state of Washington will ensure common procedures are being followed by all agencies.

Cancer Awareness campaign materials will be delivered to fire academies throughout the

state of Washington. This will ensure that our newest fire fighters are being given the best information at the earliest point in their career, enabling them to reduce exposures to carcinogens from the very beginning.

#### **Statement and Evidence of the Results:**

Provide a clear statement of the results of the project include major findings and outcomes and provide evidence of how well the results met or fulfilled the intended objectives of the project.

The success of a best practices manual can be measured by how well it is received, including how many requests for copies. To date, we have produced 40,000 copies of the first edition; 7,000 copies of the second edition; and 5,000 copies of a Spanish version of *Healthy In, Healthy Out*. We have distributed more than 75% of the original publication and have had many requests for presentations to accompany the manual:

Members of the SHIP panel have presented *Healthy In, Healthy Out* at the 2015 WSCFF Educational Seminar in Vancouver, WA; the Young Member Conference in Kennewick, WA; to West Pierce Fire and Rescue. In 2016 we gave a presentation to the Firefighter Cancer Support Network – White Paper 2 meeting in Orlando, FL; to the WSCFF Educational Seminar in Spokane, WA; to the Alaska Professional Fire Fighter Convention in Anchorage, AK; to the South King County Fire Training Consortium Chief's training in Kent, WA; and to the Montana Professional Fire Fighters in Helena, MT. In March of 2017 we presented at the Fire Industry Education Resource Organization (F.I.E.R.O) in Raleigh, NC.

We have also presented at numerous recruit academies across the State of Washington.

Captain Beth Gallup was selected by the National Fire Protection (NFPA) Research Foundation to be a member of the "Campaign for Fire Service Contamination Control" a project funded through an AFG Fire Prevention and Safety Grant from the U.S. Department of Homeland Security/Federal Emergency Management Agency. Work is underway now and the project is due to be completed late 2017. The goal of this project is to develop and facilitate the outreach of an educational campaign to control the spread of harmful fire ground contaminants, ultimately in support of improved fire fighter long-term health. *Healthy In, Healthy Out* has been cited by this project as the foundation for taking the message of reducing exposure nation-wide.

#### **Measures to Judge Success:**

If relevant, state what measures or procedures were taken to judge whether/ how well the objectives were met and whether the project or some other qualified outside specialist conducted an evaluation.

Unfortunately, because the latency period - the interval between exposure to a carcinogen and the clinical appearance of the disease – can be up to 20 years, it will be difficult to determine if the performance target is being met. We cannot go back in time and remove the exposures to the existing fire fighters, but we can make every effort to reduce exposures to current, new and future fire fighters so that the rates of cancer in the fire service decrease rather than increase as they have been doing in the last ten years.

**Relevant Processes and Lessons Learned:**

Specify all relevant processes, impact or other evaluation information which would be useful to others seeking to replicate, implement, or build on previous work

AND

Provide information on lessons learned through the implementation of your project. Include both positive and negative lessons. This may be helpful to other organizations interested in implementing a similar project.

Throughout the process of this SHIP grant, we were able to keep within the approved budget, however we found it necessary to move money from one budget category to another. We also asked for several time extensions based on work being done by others.

Lessons learned:

The Washington Fire Chiefs association raised a question about language on page 27 of the manual. We created an insert to the Best Practice manual offering clarifying language. The extension provided time for the team to work on clarifying language, formatting and graphic designing of the page relating to transporting contaminated Personal Protective Equipment in a personal vehicle.

Near the end of the grant, approximately \$19,000.00 remained. SHIP personnel authorized another extension to translate the manual to Spanish. We contacted our Publisher and were able to produce a Spanish version of the manual.

In kind contributions:

Sip Publications, its partners and owners, donated over \$12,000.00 of in-kind contributions towards these publications. Seeking out the right Publisher to work with was critical for the success of our project. We were able to make changes, modifications to time frames, and content within the budget. Our Publisher had contacts in Arizona and was able to find a Spanish translator. This partner in our project was the single biggest factor of the high level of acceptance and achievement of *Healthy In, Healthy Out*.

Mike Rowe was asked in January of 2016 if he was interested in contributing to the *Healthy In, Healthy Out* video. His voice is recognized around the world for his work with Deadliest Catch, Dirty Jobs and Somebody's Gotta Do It. He brings instant credibility to our project, just by participating. He donated his time, but would not place a value on it.

**Product Dissemination:**

Outline of how the products of the project have been shared or made transferrable.

The *Healthy In, Healthy Out* publication was printed on high quality paper and glossy cover. These 40,000 manuals were delivered to the Kent Fire Department in February of 2016. After they were received, the Kent Fire Department delivered 100 boxes of 120 copies each to the Washington State Council of Fire Fighters' office in Olympia, WA. The WSCFF distributed these manuals to their District Representatives. The Kent Fire Department has received requests from all over the United States as well as Canada and Sweden for copies of these manuals. We have shipped out over 100 additional boxes of manuals. There are copies of both the Spanish and English versions at the SHIP offices in Olympia, WA.

Our digital platform was made available at [www.pugetsoundfire.org](http://www.pugetsoundfire.org) as well as [www.wscff.org](http://www.wscff.org). We have had numerous downloads as well as requests for hard copies from the websites.

Our digital video – *Healthy In, Healthy Out* - was uploaded on June of 2016 to both YouTube and Vimeo. To date there have been over 12,000 views on both platforms. Mike Rowe from “Dangerous Jobs”, “Deadliest Catch” and “Somebody’s Gotta Do It” was generous to narrate the video for us at no cost.

**Feedback:**

Provide feedback from participants, trainees, individuals who have used your products/processes, as well as any reports from an independent evaluator on the project.

**Research Validated Best Practice:**

Professor John Kissel from the University of Washington was contacted in 2015 to provide input on the *Healthy In, Healthy Out* project. Professor Kissel is with the University of Washington - Environmental and Occupational Health Sciences Department. Professor Kissel observed live fire training at the fire training facility at Station 14 in Renton, WA. He thought there was potential to evaluate, and was willing to apply for a SHIP grant to study the effectiveness of these best practices. His grant is entitled: "Evaluation of mitigation of firefighter cancer risk through implementation of best practices." and he was awarded that grant in 2016.

Firefighters are being diagnosed with certain types of cancer more often than the general working population.

1. Reports indicate there is significant dermal absorption of carcinogens from firefighting activities.
2. The proposed study with UW will look at methods of reducing those exposures. For example: the use of handwashing on scene to remove carcinogens vs. handy wipes; or the difference between bagging the contaminated Personal Protective Equipment vs. not bagging it up prior to transport back to the station after a fire.

As of today, Professor Kissel and his team are in the process of field data collection. The data being collected is from actual fires and exposure to products of combustion on emergency scenes.

**Field Tested Best Practice:**

Since the rollout of *Healthy In, Healthy Out*, many jurisdictions in the State of Washington have reached out to our fire mechanics of the Kent Fire Department to implement components of the warm water wash station that was developed in Kent, WA. That system is now being incorporated in new fire apparatus engineering including Pierce Manufacturing in Appleton, WI.



**Project's Promotion of Prevention:**

Explain how the results or outcomes of this project promote the prevention of workplace injuries, illnesses, and fatalities?

**Uses:**

How might the products of your project be used within the target industry at the end of your project?

Is there potential for the product of the project to be used in other industries or with different target audiences?

Both the *Healthy In, Healthy Out* manual and the video have been shared widely in hopes of educating fire fighters and fire leadership on methods of reducing exposures to carcinogens.

With some funds remaining at the end of the project; we worked with SHIP personnel to develop a Spanish version of the manual. We printed 5,000 copies and have made this available electronically as well.

**Organization Profile:**

For awarded organizations, to include partners and collaborators, provide a brief description of each organization. Mission, vision, and purpose for each of the organizations who applied (this includes partners and collaborators) for the grant.

Since 1892 the Kent Fire Department – now known as the Puget Sound Regional Fire Authority, has existed to maintain and enhance the quality of life within its boundaries by protecting life, property, and the environment. We are an internationally accredited full-service, all risk fire and rescue department that provides services to the citizens of Covington, Kent, SeaTac, and portions of unincorporated King County. The department covers approximately 60 square miles and protects a population of over 177,000.

The Puget Sound Regional Fire Authority has adopted the following mission, vision and values:

**Our Mission**

- Professionally and compassionately helping people

**Our Vision**

- We will cultivate an environment of excellence, respect, and fun

**Our Core Values**

- Be safe
- Do your best
- Serve with integrity
- Take care of each other

The Washington State Council of Fire Fighters (WSCFF) was founded on September 1, 1939, and represents 130 affiliated local fire fighter unions and more than 6900 affiliated members of the International Association of Fire Fighters (IAFF) within the state. The WSCFF's mission is to provide the best possible working conditions, the safest work environment, and the fairest wages and benefits to fulfill the needs of the men and women in this profession. The council is active on local and national fronts with regard to issues that affect its members.

"It is the Mission of the WSCFF to coordinate the statewide efforts of professional fire fighters by providing creative leadership and dedicated service, resulting in a unified, progressive membership that strives to improve social attitudes and promote legislation to benefit the fire and EMS communities and the citizens we serve, with a foundation anchored in the principles of honesty, integrity and commitment."



## Additional Information

<b>Project Type</b> <input checked="" type="checkbox"/> Best Practice <input type="checkbox"/> Technical Innovation <input type="checkbox"/> Training and Education Development <input type="checkbox"/> Event <input type="checkbox"/> Intervention <input type="checkbox"/> Research <input type="checkbox"/> Return to Work <input type="checkbox"/> Other (Explain):	<b>Industry Classification</b> (check industry(s) this project reached directly ) <input type="checkbox"/> 11 Agriculture, Forestry, Fishing and Hunting <input type="checkbox"/> 21 Mining <input type="checkbox"/> 22 Utilities <input type="checkbox"/> 23 Construction <input type="checkbox"/> 31-33 Manufacturing <input type="checkbox"/> 42 Wholesale Trade <input type="checkbox"/> 44-45 Retail Trade <input type="checkbox"/> 48-49 Transportation and Warehousing <input type="checkbox"/> 51 Information <input type="checkbox"/> 52 Finance and Insurance <input type="checkbox"/> 53 Real Estate and Rental and Leasing <input type="checkbox"/> 54 Professional, Scientific, and Technical Services <input type="checkbox"/> 55 Management of Companies and Enterprises <input type="checkbox"/> 56 Administrative and Support and Waste Management and Remediation Services <input type="checkbox"/> 61 Educational Services <input type="checkbox"/> 62 Health Care and Social Assistance <input type="checkbox"/> 71 Arts, Entertainment, and Recreation <input type="checkbox"/> 72 Accommodation and Food Services <input checked="" type="checkbox"/> 81 Other Services (except Public Administration) <input type="checkbox"/> 92 Public Administration														
<b>Target Audience:</b> Fire Fighters, Fire Officers, and Public Officials who make decisions on Fire Department budgets.															
<b>Languages:</b> English and Spanish versions have been produced.															
<b>Please provide the following information - -</b> <i>(information may not apply to all projects)</i> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 40%;"># classes/events:</td> <td style="text-align: center;">23</td> </tr> <tr> <td># hours trained</td> <td style="text-align: center;">23</td> </tr> <tr> <td># students under 18</td> <td style="text-align: center;">0</td> </tr> <tr> <td># workers</td> <td style="text-align: center;">7,500</td> </tr> <tr> <td># companies represented</td> <td style="text-align: center;">150</td> </tr> <tr> <td># reached (if awareness activities)</td> <td style="text-align: center;">25,000</td> </tr> <tr> <td><b>Total reached</b></td> <td style="text-align: center;"><b>32,500</b></td> </tr> </table>	# classes/events:	23	# hours trained	23	# students under 18	0	# workers	7,500	# companies represented	150	# reached (if awareness activities)	25,000	<b>Total reached</b>	<b>32,500</b>	<b>List, by number above, industries that project products could potentially be applied to.</b> 81. Fire Departments – both career, volunteer and combination departments.
# classes/events:	23														
# hours trained	23														
# students under 18	0														
# workers	7,500														
# companies represented	150														
# reached (if awareness activities)	25,000														
<b>Total reached</b>	<b>32,500</b>														
	<b>Potential impact (in number of persons or companies) after life of project?</b> 50,000+														
<b>Have there been requests for project products from external sources?</b> Yes. <i>If Yes, please indicate sources of requests:</i> Ned Carter – Swedish Association of Local Authorities and Regions; Richard Amnotte, AdeC   Directeur adjoint - Direction du service de la sécurité incendie, Lévis (Québec) Canada; Alex Hamilton – California Professional Firefighters; Chante Lantos-Sweet – Harvard University; Dr. Gavin Horn – University of Illinois Fire Service Institute; Robert Tutterow – Fire Industry Education Resource Organization; Victor Stagnaro – National Fallen Firefighters Foundation; Fred Crothamel – Plymovent; Tom Westcott – Alaska Professional Firefighters; Karen Stone – Women Firefighters Biomonitoring Collaborative Study; Dr. John Kissel – University of Washington; Larry Petrick Jr. – International Association of Fire Fighters; Keith Tyson – Firefighter Cancer Support Network; Adrian Parker – SeaWestern Fire Fighting Equipment; Steve Lakey – Northwest Safety Clean; Mark Matheson - Lethbridge Fire & Emergency Services															



## PART II

### *Financial Information Budget Summary*

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<b>Project Title:</b>	Best Practices For Reducing Fire Fighter Risk of Exposures To Carcinogens		
<b>Project #:</b>	2014ZG00276	<b>Report Date:</b>	December 27, 2016
<b>Contact Person:</b>	Captain Beth Gallup	<b>Contact #:</b>	253-856-4300
<b>Start Date:</b>	November 17, 2014	<b>Completion Date:</b>	December 30, 2016

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<b>1.</b>	<b>Total original budget for the project</b>	<b>\$ <u>102,313.00</u></b>
<b>2.</b>	<b>Total original SHIP Grant Award</b>	<b>\$ <u>102,313.00</u></b>
<b>3.</b>	<b>Total of SHIP Funds Used</b>	<b>\$ <u>101,297.20</u></b>
<b>4.</b>	<b>Budget Modifications (= or - if applicable)</b>	<b>\$ <u>0</u></b>
<b>5.</b>	<b>Total In-kind contributions</b>	<b>\$ <u>12,470.00</u></b>
<b>6.</b>	<b>Total Expenditures (lines 3+4+5)</b>	<b>\$ <u>113,767.20</u></b>

#### Instructions:

- Complete the Supplemental Schedule (Budget) form first (on the next page).
- The final report must include all expenditures from date of completion of interim report through termination date of grant.
- Indicate period covered by report by specifying the inclusive dates.
- Report and itemize all expenditures during specified reporting period per the attached supplemental schedule.
- Forms must be signed by authorized person (see last page).
- Forward one copy of the report to **Anar Imin, SHIP Grant Manager at PO Box 44612, Olympia, WA 98504-4612**

PART II (Continued)  
Financial Information  
Supplemental Schedules (Budget)

<b>Project Title:</b>	Best Practices For Reducing Fire Fighter Risk of Exposures To Carcinogens		
<b>Project #:</b>	2014ZG00276	<b>Report Date:</b>	December 27, 2016
<b>Contact Person:</b>	Captain Beth Gallup	<b>Contact #:</b>	253-856-4300
<b>Total Awarded:</b>	\$102,313.00		

**ITEMIZED BUDGET:** How were SHIP award funds used to achieve the purpose of your project?

	Budgeted for Project	Amount Paid Out	Difference
<b>A. PERSONNEL</b>	\$17,100.00	\$16,505.13	\$594.87
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>B. SUBCONTRACTOR</b>	0	0	0
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>C. TRAVEL</b>	\$13,600.00	\$13,502.21	\$97.79
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>D. SUPPLIES</b>	\$13,800.00	\$13,930.86	-\$130.86
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>E. PUBLICATIONS</b>	\$57,813.00	\$57,359.00	\$454.00
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>F. OTHER</b>	0	0	0
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL DIRECT COSTS</b>	\$102,313.00	\$101,297.20	\$1,015.80
	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL INDIRECT COSTS</b>	0	0	0
	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL SHIP BUDGET</b>	\$102,313.00	\$101,297.20	\$1,015.80

	Budgeted for Project	Amount Paid Out	Difference
<b>G. IN-KIND</b>			
Explanation for Difference and other relevant information:			

I hereby certify that the expenditures listed on this report were made with my approval:

March 27, 2017

Date

*Beth Sallup*

Signature of Project Manager

### PART III

#### ***Attachments:***

Provide resources such as written material, training packages, or video/ audio tapes, curriculum information, etc. produced under the grant.

Also include copies of publications, news releases, curriculum, posters, brochures, etc.

**The above information should also be provided on a CD or DVD for inclusion in the file.**

- DVD: must be in an MP4 format  
Other video files must be provided in uncompressed source files.

*Healthy In, Healthy Out* video

- Publications:  
PDF of publication should be provided. SHIP also needs the original publishing documents (design documents), .eps, and .psd (if any illustrations/graphics are used)

*Healthy In, Healthy Out* manual

*Saludable Entrando, Saludable Saliendo* manual

**REMINDER!!:** All products produced, whether by the grantee or a subcontractor to the grantee, as a result of a SHIP grant are in the public domain and can not be copyrighted, patented, claimed as trade secrets, or otherwise restricted in any way.