

Entire Application

Preparer Information

	Preparer Information
Prefix	Mr.
First Name	Kent
Middle Initial	
Last Name	Maxwell
Organization Name	Colorado Firecamp, Inc.
Address 1	9008 County Road 240
City	Salida
State	Colorado
Zip	81201 -
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* Is there a grant-writing fee associated with the preparation of this request? No

If you answered yes above, what is the fee? \$

* **Are you the person to be contacted on matters involving this application?** Yes

If yes, please specify: Primary Contact

Request Information

* 1. Select one of the choices listed below. You can apply for a maximum of 3 projects within an activity.
(If you modify your selection, you will lose data entered under the original activity.)

Program Name

Fire Prevention and Safety

Request Details

The number of projects and cost for the activity **Fire Prevention and Safety** are listed in the table below.

Activity	Number of Projects	Total Cost
Fire Prevention and Safety	1	\$ 147,262

View Project

Project Information

*1. Project

Firefighter Safety

*If you selected other, above, please specify

*2. Who is the target audience for the planned project?

Firefighters

*3. What is your estimated size of the target audience?

500000

Formal Assessment

* How was this target audience determined?

FORMAL:

“Trends in Wildland Fire Entrapment Fatalities”
U.S. Forest Service
Jim Cook
June, 2004

Briefly describe method used (required if selected other than "None of the above" above)

“A Needs Assessment of the U.S. Fire Service”
U.S. Fire Administration & National Fire Protection Association
December, 2002

“Firefighter Fatality Retrospective Study”
U.S. Fire Administration
April, 2002

“Wildland Fire Fatalities in the United States, 1990 to 1998”
U.S. Forest Service
Richard Mangan

March, 1999

INFORMAL:

“Wisdom in the Lessons Learned Library: Work Ethics and Firefighter Identities in the Fire Orders”
Wildland Fire Safety Summit

J. A. Thackaberry

April, 2005

“Using Fatality Fire Case Studies and a Lessons Learned Approach to Achieve Desired Changes in Firefighter Safety”

Wildland Fire Safety Summit

Michael DeGrosky

November, 1999

*4. Does your proposal include partnerships? (i.e. Fire Departments, community organizations or national/state/local organizations)

Yes

The principal partner will be the Wildland Fire Lessons Learned Center, which is part of the National Advanced Fire & Resource Institute (NAFRI) in Tucson, Arizona.

If you answered Yes to question 4 above, please specify the partner(s):

Other partners include:

U.S. Forest Service, Colorado State Forest Service, Chaffee County Fire Protection District, Salida Fire Department, Buena Vista Fire Department, Leadville/Lake County Fire-Rescue, Novato (California) Fire Protection District

*5. Is it the applicant's intention to continue delivering this program after the grant year?

Yes

*6. Will your organization periodically evaluate the projects impact on the community?

Yes

If you answered Yes to question 6 above, please specify:

Colorado Firecamp will contract with Purdue University to conduct program evaluation and curriculum assessment. Dr. Jennifer Thackaberry and her team's program evaluation and curriculum assessment will consist of the following: Evaluate the “open source” concept for ability to disseminate lessons learned to the target population. Evaluate actual development of digitized materials. Assess uptake and legitimacy of the approach in the broader firefighting community. Assess safety drill curriculum for translation of lessons learned into hands on training. Assess workshop outcomes on participants including immediate assessment of knowledge and attitude, and longer term impact on knowledge, attitudes, and behavioral modification. Consult with principals on follow up curriculum revision.

*7. In the space provided below, please provide a brief synopsis of the proposed project:

A digital archive of wildland fire fatality and near-miss investigation reports will be the foundation of an “open source” website being developed by the Wildland Fire Lessons Learned Center. This will facilitate the exchange of ideas, creation of derived works and enhancement of existing firefighter safety materials.

“Wildfire Safety Drill: Mobilizing Lessons Learned” will be an annual 2-day exercise dedicated to improving firefighter safety at initial attack and transition fires. The Drill will serve as a showcase for the best practices of the annual fireline safety refresher class.

The National Wildfire Coordinating Group course, “Lessons Learned: Fatality Fire Case Studies” will be modified to DVD format with digital print material and updated with 5 additional case studies.

*8. In the space provided below, please explain the experience you have in managing the type of project you are proposing:

Colorado Firecamp has developed the most complete digital archive of investigation documents related to the firefighter fatalities of the 1995 Point Fire, 2003 Cramer Fire, 2003 Cedar Fire and 2004 Tuolumne Fire. Several reports required a tedious process of scanning or re-typing, and resizing of photos for use in Powerpoint presentations.

For the 10th anniversary, we mailed the Point Fire video and case study (adapted from a Bureau of Land Management fire training course) to all 293 fire departments in Colorado. The adapted case study was also posted to other websites and continues to be downloaded from across the country.

We teach NWCG “red card” wildfire training through a formal agreement with the Rocky Mountain Coordinating Group. We also teach an NFPA Fire Instructor I class.

Budget Item

*Item Fatality Investigation Archivist

*Select Object Class Personnel

If you selected other above, please specify

* Number of units 1 (Whole number only)

* Cost per unit \$ 30000 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

This full-time position for one year, calculated at \$15/hour, for 2,000 hours.

Budget Item

*Item Archivist, laptop computer and software

*Select Object Class Equipment

If you selected other above, please specify

* Number of units 1 (Whole number only)

* Cost per unit \$ 2500 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Includes \$1,500 for laptop purchase, and \$1,000 for software purchase to include Microsoft Office Suite and Adobe Creative Suite. We will consider open-source software equivalents, but will place priority on the ability of the software to meet the needs of the archivist.

Budget Item

*Item Archivist and Instructor travel

*Select Object Class Travel

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 4000 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Likely need for 2 trips by archivist to Tucson, AZ and 2 trips by PMS-490 instructor to Indiana.

Budget Item

- *Item Archiving Supplies
- *Select Object Class Supplies

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 500 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Includes paper supplies, file folders, computer disks, etc., related to creation of master disk for each fatality investigation.

Budget Item

- *Item Digital Video Camera
- *Select Object Class Equipment

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 4500 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Canon XL2 mini-DV camera, with accessories such as case and wide-angle lens.

Budget Item

- *Item Video editing desktop computer w/ software
- *Select Object Class Equipment

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 4500 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Includes extra 100 gigabyte hard drive, dual 19 inch monitors. Also includes interface equipment for converting from existing analog video and sound to digital. Suitable "open source" software is unlikely to be available, but will be considered.

Budget Item

- *Item Project Director
- *Select Object Class Personnel

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 22000 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Calculated as a half-time position, of 1000 hours per year, at \$18 per hour.

Budget Item

- *Item Video production technician
- *Select Object Class Personnel

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 10000 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Might be a full-time for a three month period, or , of 500 hours of employment.

Budget Item

- *Item Wildfire Safety Drill, guest speaker travel
- *Select Object Class Travel

If you selected other above, please specify

- * Number of units 6 (Whole number only)
- * Cost per unit \$ 500 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Budget Item

- *Item Employee benefits
- *Select Object Class Fringe Benefits

If you selected other above, please specify

- * Number of units 1 (Whole number only)
- * Cost per unit \$ 12400 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Calculated at 30% for Archivist (full time employee and 12% for project director and video technician.

Budget Item

- *Item Wildfire Safety Drill, participant packet

*Select Object Class Supplies
 If you selected other above, please specify
 * Number of units 500 (Whole number only)
 * Cost per unit \$ 15 (Whole dollar amounts only)
 Description
 The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.
 Includes training supplies, DVD disks

Budget Item

*Item Postage and packaging expense
 *Select Object Class Other
 If you selected other above, please specify Mailing expense
 * Number of units 1 (Whole number only)
 * Cost per unit \$ 2500 (Whole dollar amounts only)
 Description
 The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.
 Includes shipping of materials to evaluation team, distribution of materials to PMS-490 revision workgroup.

Budget Item

*Item Digital Imaging Center
 *Select Object Class Equipment
 If you selected other above, please specify
 * Number of units 1 (Whole number only)
 * Cost per unit \$ 9500 (Whole dollar amounts only)
 Description
 The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.
 Will include automatic duplex sheet feeder, staple finisher, laser color print, and optical character recognition software for scanned documents.

Budget Item

*Item Evaluation by Purdue University
 *Select Object Class Contractual
 If you selected other above, please specify
 * Number of units 1 (Whole number only)
 * Cost per unit \$ 24362 (Whole dollar amounts only)
 Program Evaluation and Curriculum Assessment Budget
 Faculty Salary – 2 months Summer @ 50% \$5,447
 Hourly Grad Students - @ \$12/hout 2,000
 Employee Benefits (34.3%- Faculty 10.1 %-Grads) 2,070
 Total Salary and Benefits \$9,517

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Printing – Survey and other related materials 50
 Postage –Survey Mailing 500
 Telephone Survey and related long distance 100
 Internet Survey Set-up 500
 Laptop 2,000
 Digital Tape Recorder 60
 Digital Storage 100
 Faculty Travel – 2 site visits @ \$650 each 1,300
 Faculty Travel – conference dissemination 750
 Grad Travel – 2 Grads X 1 visit @ \$575/visit 1,150

Total Supplies and Expense 6,510

Total Direct Costs 16,027

Federally Negotiated Indirect Cost Rate @ 52% 8,335

Total Request \$24,362

Budget Item

*Item

PMS-490 Revision Workshop, lodging and meals

*Select Object Class

Travel

If you selected other above, please specify

* Number of units

30 (Whole number only)

* Cost per unit

\$ 220 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

meals and lodging for 30 participants, 4 days @ \$55 per person per day.

Budget Item

*Item

Digital Still Camera

*Select Object Class

Equipment

If you selected other above, please specify

* Number of units

1 (Whole number only)

* Cost per unit

\$ 700 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Budget Item

*Item

PMS-490 Revision materials

*Select Object Class

Supplies

If you selected other above, please specify

* Number of units

30 (Whole number only)

* Cost per unit

\$ 50 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Includes purchase of 30 complete copies of existing PMS-490 curriculum.

Budget Item

*Item PMS-490 Instructor

*Select Object Class Contractual

If you selected other above, please specify

* Number of units 8 (Whole number only)

* Cost per unit \$ 150 (Whole dollar amounts only)

Description

The space to the right can be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). Budget justification should be included in the project narrative.

Instructor for PMS-490 class is paid as contractor \$150 per day. Includes travel days to and from Indiana.

Budget

Budget Object Class

a. Personnel	\$ 62,000
b. Fringe Benefits	\$ 12,400
c. Travel	\$ 13,600
d. Equipment	\$ 21,700
e. Supplies	\$ 9,500
f. Contractual	\$ 25,562
g. Construction	\$ 0
h. Other	\$ 2,500
i. Indirect Charges	\$ 0

Indirect Cost Details

Agency Indirect Cost Agreement with

Indirect Cost Rate %

Agreement Summary

Federal Share \$ 147,262

Total Budget \$ 147,262

Narrative Statement

Project Description

Please provide your narrative statement in the space provided below:

RISK ASESMENT

Jeff Allen. Shane Heath. Josh Oliver. Bill Buttram. Steven Rucker. Eva Schicke.

These names mean something to Colorado Firecamp. These names mean something to the people who visit our website and read the accounts of firefighter deaths. These names mean something to those who read fatality investigation reports and want things to change in the fire service.

These six names represent our target audience of at least 500,000 firefighters who fight wildland fire in the United States.

They are six names from four fatality incidents: the Point Fire of 1995, the Cramer Fire and Cedar Fire of 2003, and the Tuolumne Fire of 2004. Included in this list are two volunteer firefighters, a career fire engineer, a state firefighter and 2 federal firefighters. They happen to fit the demographics of our formal assessment.

In 2000, the U.S. Forest Service compiled the statistical analysis, "Wildland Firefighter Entrapments 1976 to 1999" which concluded:

"Selected variables were highlighted to show a general picture of firefighter entrapments, shelter deployments, and turnover fatalities. Any agency, organization, or person fighting fire can experience a turnover. Turnovers can also occur at any time of year and with any resource on any scale of incident. In other words, anyone fighting a wildland fire can become a victim of an entrapment. There has always been a risk, no matter what you do, whom you work for, or where you are located. Complacency may be the most difficult factor to overcome. Becoming aware of the hazard of entrapment is a key step in reducing the risk." - (Mangan/Munson, 2000)

That complacency apparently runs deep, as shown in "A Needs Assessment of the U.S. Fire Service" conducted by the U.S Fire Administration and National Fire Protection Association in December 2002. Complacency almost screams in this statistic:

"An estimated 41% of fire department personnel involved in wildland firefighting lack formal training in those duties, with substantial needs in all sizes of communities." (USFA/NFPA, 2002)

Two of our six names fit that category. They are part of this statistic:

"In 16 percent of the incidents firefighting resources were minimally qualified for their positions or did not meet qualifications for their position." (Mangan/Munson 2000)

The actual number fire department personnel involved in wildland fire is unknown. The USFA/NFPA survey questions did not gather that information. It seems safe to say that it is something over half a million firefighters. It is known that the federal agencies employ or contract an average of 30,000 firefighters and support personnel each wildfire season.

Another formal risk assessment was conducted by the U.S. Forest Service in 2004. A briefing paper written by USFS training coordinator Jim Cook, entitled "Trends in Wildland Fire Entrapment Fatalities" provides a statistical analysis of 329 firefighter deaths attributable to wildland fire entrapment during a 71 year period, with an average of 4.6 deaths per year.

"An analysis of fire entrapment fatalities in relation to significant doctrinal and organizational changes in wildland fire suppression from 1933 through 2003 is the basis of this paper. Since 1933, U.S. Forest Service firefighter entrapment fatalities decreased from an annual rate of 3.65 per year (1933-1956) to 0.67 per year (1995-2003). During this same period for all wildland firefighting agencies combined, the rate of firefighter entrapment fatalities decreased from 6.39 to 2.0 per year." (Cook, 2004)

Our six names died in three years (1995, 2003 and 2004) accounting for exactly 2.0 deaths per year.

During the time period of 1933-2003, fire entrapments accounted for 35% of all firefighter fatalities on wildland fires. The other 3 major causes of death are "gravity (hazard trees, rolling rocks, and falls), transportation (vehicle and aircraft incidents), and fitness (heart attack and heat stress)." (Cook, 2004)

The "Firefighter Fatality Retrospective Study" published by the U.S. Fire Administration in April, 2002 furthers clarifies the risks:

"Wildland firefighters are far more likely to be killed by traumatic injuries than are non-wildland firefighters. Conversely, they are significantly less likely to die of a heart attack for a variety of reasons including that wildland firefighting agencies typically have extremely high standards of physical fitness. Wildland firefighters also tend to be younger than non-wildland firefighters; nearly 70 percent of part-time wildland firefighters are under the age of 30."

Five of our six names were under the age of 30.

With regard to current and future risk, the "Trends" briefing paper states:

"Wildland firefighters today are spending more hours fighting fires than ever before, and they are tackling fires of historic magnitude. The risk environment associated with wildland fire is being re-defined, and firefighters too have begun to redefine their own culture as a professional endeavor. This exercise of redefinition is not new.

"With the upcoming 10-year anniversary of South Canyon and the impacts from the Thirtymile and Cramer Fires still fresh, the interest in lessons learned in the past will be intense, and scrutiny of the safety and effectiveness of wildland firefighting agencies will continue to increase. Part of this process requires we examine our hard won lessons in a different light." (Cook, 2004)

In April, 2004, a report was released by the Firefighter Life Safety Summit. The report included 16 initiatives to reduce the national rate of 100 firefighter fatalities per year. The report states:

"The National Fallen Firefighters Foundation hosted the Summit as the first step in a major campaign. In cooperation with the United States Fire Administration, the Foundation has established the objectives of reducing the fatality rate by 25% within 5 years and by 50% within 10 years. The purpose of the Summit was to produce an agenda of initiatives that must be addressed to reach those milestones and to gain the commitment of the fire service leadership to support and work toward their accomplishment." (NFFF/USFA, 2004)

One of the 16 initiatives (which have evolved into the "Everyone Goes Home" project) is #9: "Thoroughly investigate all firefighter fatalities, injuries, and near misses." The report further explains:

"The need for more consistent and comprehensive investigations and data collection to analyze the causes of fire fighter fatalities was also identified as an important priority. The same type of investigation should be conducted for serious injuries and near-miss incidents to focus on preventing future occurrences." (NFFF/USFA, 2004)

The usefulness of learning lessons from fatality investigations was the basis of a paper presented at the Eighth International Wildland Fire Safety Summit, in April, 2005. J. A. Thackaberry, Ph.D., Assistant Professor of Communication at Purdue University, wrote a presentation entitled, "Wisdom in the Lessons Learned Library: Work Ethics and Firefighter Identities in the Fire Orders."

"The creation of a lessons learned library provides organizational members with easy access [to] historic texts for deliberation and discussion. But lessons learned libraries do not just contain charts, graphs, and numbers; they also contain texts that carry a moral force, and potentially contradictory ones at that. Therefore, they also carry with them the dangers of information overload as it may be unclear how to navigate one's way through the library. Furthermore, historic texts require interpretation in light of the contexts in which they were written before they can be applied to present day circumstances. As such, the creation of a lessons learned library also carries with it a need for skills in humanistic analysis and interpretation." (Thackaberry, 2005)

We believe the texts of our six names carry a moral force. With some work, we hope to bring forth the moral force of other names. In a collaborative, "open source" effort, we will cut through information overload and

interpret historic texts to apply to present day circumstances. Lessons will be learned.

EVALUATION

Evaluation of our project will be conducted through Purdue University through a Sponsored Program Services proposal, under Purdue SPS number 0HX93. The text of the proposal follows:

Program Evaluation and Curriculum Assessment
Dr. Jennifer Thackaberry and research team
Department of Communication
Purdue University
West Lafayette, IN 47907

Statement of Work

Program evaluation and curriculum assessment will consist of the following: Evaluate the "open source" concept for ability to disseminate lessons learned to the target population. Evaluate actual development of digitized materials. Assess uptake and legitimacy of the approach in the broader firefighting community. Assess safety drill curriculum for translation of lessons learned into hands on training. Assess workshop outcomes on participants including immediate assessment of knowledge and attitude, and longer term impact on knowledge, attitudes, and behavioral modification. Consult with principals on follow up curriculum revision.

Budget Justification

Assessment of curriculum materials and immediate outcomes of workshop participants requires travel to the spring safety drill for one faculty member and two research assistants, a laptop and digital tape recorder for on-site participant observation and interviews, and printing for immediate-outcomes assessment. Measuring long term behavior modification in a mixed mode survey requires printing and postage as well as the development of an on-line internet survey. Data analysis, evaluation of digitized materials, curriculum review, general evaluation of open source concept, and report writing requires half time dedication of a faculty member for two summer months and 200 hours of assistance by graduate student research team, as well as digital media for archiving materials. Assessment of community uptake requires internet searching and long distance telephone interviews with opinion leaders. Dissemination of research to academic community requires faculty travel to professional conference. Assistance with curriculum revision requires travel to fall curriculum review meeting for one faculty member.

IMPLEMENTATION PLAN

Our implementation plan consists of three parts: creation of a web-based archive of entrapment fatality investigation reports, revision of the NWCG "Lessons Learned: Fatality Fire Case Studies" course (PMS-490), and development of a hands-on exercise called "Wildfire Safety Drill: Mobilizing Lessons Learned."

Colorado Firecamp will create a new, half-time position of Project Director to coordinate the project.

Web-Based Archive

The first part of the plan is for Colorado Firecamp to create a digital archive of investigation reports for 50 wildland fire entrapment fatalities in cooperation with the Wildland Fire Lessons Learned Center. The archive will be a key feature of the re-designed www.wildfirelessons.net website of the Lessons Learned Center.

We will hire for a newly created, full-time position of fatality investigation archivist. The archivist and project director will coordinate with the Lessons Learned Center staff and their Student Conservation Association intern to develop the annual work plan. With input from recognized wildfire experts, we will prioritize which reports will be digitized in this year-long performance period. The 50 reports will represent approximately two-thirds of the fatal entrapment incidents during the last 75 years.

Reports for about 15 of these incidents already exist in a usable digital format and can be transferred to the archive with relative ease. These reports are scattered throughout the internet on various agency websites.

Most of these 35 remaining reports are not in an immediately usable format. We have access to at least two sets

of computer disks with PDF files of scanned paper copies of reports. We are hopeful that considerable effort may be saved through scanning and optical character recognition software. However, many of these reports will require complete re-typing in a word processing program.

We have budgeted for a laptop computer and digital imaging center for the archivist's use. With some reports consisting of hundreds of pages and with some incidents having several separate investigation reports, there will be an extensive amount of printing, scanning, and copying.

Our principal deliverable to the Lessons Learned Center will be the 50 fatality investigation reports as electronic files in PDF (portable document, used primarily for downloading and printing) and HTML (hypertext markup, for internet browsing) format. Basically, we would attempt to do for other fires what we have been doing the last year on the Colorado Firecamp website for the Cramer, Point, Cedar and Tuolumne Fires.

The Cramer Fire collection on the Colorado Firecamp website consists of 41 webpages plus a gallery of report photographs, maps and diagrams suitable for use in Powerpoint electronic presentations. The information is arranged such that a casual reader can quickly browse the site and find what interests them.

The intent is not to have an archive merely for sake of having an archive. As Dr. Thackaberry stated in an e-mail review of our proposal:

"When members of the firefighting community consider an archive like this to be an authoritative source, use it, interpret the material in it, and recommend it to others (like on firefighter blogs), this can have a tremendous cultural impact on attitudes."

The digital archive of reports will also serve as an "open source" research and training development effort. This will facilitate the exchange of ideas, creation of derived works and enhancement of existing firefighter safety materials.

We are calling this effort "open source" training development, like the way that term is used for computer software:

"The basic idea behind open source is very simple: When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing." — (<http://www.opensource.org>)

Wildland fire training has people who can make use of the knowledge we are gathering. Kelly Close identified them as "...some committed people working on some innovative ideas. 'Pockets of progressive thinkers,' as they've been sometimes called..." (Close, 2005)

Through websites like www.myfirecommunity.net and www.wildlandfire.com, and annual conferences such as the IAWF Wildland Fire Safety Summit, the capacity exists to bring these people together and share information like never before. Networking and collaboration within the wildfire community occurs at a tremendous pace. It gets things done.

PMS-490 Revision

The second part of our implementation plan is to digitize and update the National Wildfire Coordinating Group course PMS-490, "Lessons Learned: Fatality Fire Case Studies." We intend to make immediate use of the archive for training development.

The existing course consists of 10 fatality fires are presented in 9 case studies. The current "Lessons Learned" includes these incidents: Bass River (New Jersey), Dude (Arizona), Golden Gate Estates (Florida), Lauder (California), Mack Lake (Michigan), Romero (California), Spanish Ranch (California), Rainbow Springs (Arkansas), Loop (California), and Glen Allen (California).

The existing curriculum includes an instructor guide, a 180-page instructor reference, and three VHS video tapes (total length of 2 hours 22 minutes) available from the NIFC cache in Boise, Idaho for a total cost of about \$24.50. Each trainee workbook costs \$1.28.

The print materials include "investigation report sections or other documentation regarding each of the nine case studies" that were "selected to provide the essential information that is necessary to present the course." (PMS-

490 Instructor's Reference introduction)

The print delivery does not give justice to the wealth of the knowledge. The text quality may be best described as fair to poor, as the course developers in 1998 were working with the best available copies of reports. Some incidents were likely excluded from the course because existing report copies were very poor.

Of course, that problem will be remedied through our efforts at converting the reports to digital format. The newly digitized material will be included in the revision of the course materials.

During Fall, 2006, we are proposing to host a 4-day curriculum revision workshop for 30 participants in Salida, Colorado. We will invite the individuals of the original development group to participate. (The late Paul Gleason, developer of the LCES concept, was part of that group.) We intend to add at least 5 new case studies, by enlisting participation from agencies involved.

We have a verbal commitment from the NIOSH fatality investigator from the Cedar and Tuolumne Fires to participate in the workshop. We also intend to invite participation from the National Fallen Firefighters Foundation and National Fire Academy.

The existing course has no accompanying Powerpoint presentations, as that was not a common practice at the time of development. The course materials will be updated to include them. The course materials will also be updated to include "sand table" exercises for scenarios similar to the case study incidents.

Our budget requests reflects the requirement for meals and lodging for the workshop, video production support, distribution of the complete existing curriculum to each participant in early 2006, and distribution of available new and updated materials prior to the workshop. A digital video camera, digital still camera, and digital video production desktop are required for this effort. A significant portion of the project director's time will be devoted to coordinating this effort.

The budget request also provides for the PMS-490 course to be presented twice in 2006 (old curriculum in February and new in November) to area firefighters in West Lafayette, Indiana. This will be coordinated to allow the Purdue University evaluation team an opportunity to evaluate the effectiveness of the revision.

The final course curriculum would be offered back to NWCG without copyright restriction and without charge for inclusion in the NIFC publications cache. The entire course with printed instructor materials would still cost about \$25.00. Any fire department or training division could order the course on one or two DVD disks for less than five dollars.

Wildfire Safety Drill

The third part of our "Wildfire Safety Drill: Mobilizing Lessons Learned" will be an annual 2-day exercise dedicated to improving firefighter safety at initial attack and transition fires. The Wildfire Safety Drill will serve as a showcase for the best practices of the annual fireline safety refresher class.

Our first Drill is scheduled for the weekend of April 28-30, 2006. Our goal is to attract 500 firefighters to the event. This will be a hybrid event: part annual safety refresher, part train-the-trainer, part engine mobilization, part type 3 IMT exercise, part dispatcher training, part taskbook opportunity, part memorial, part entrapment survivor safety talk, part WFF fundraiser, part trade show, and part just fun gathering of hundreds of firefighters.

Our theme is "mobilizing lessons learned." We already have a commitment from Fire Chief Jeff Meston for a presentation by the Novato Fire Protection District about the Cedar Fire tragedy.

The state of South Dakota hosts a similar event hosted by a 45-person type 3 incident management team, with 500 fire engines (250 per day) on a live-fire exercise, complete with helicopter and fixed-wing airdrops. By comparison, we are keeping things simple.

Hands-on training scenarios will be geared toward completion of tasks from position taskbooks, while reinforcing lessons learned from tragedy fires. Incident command scenarios will be based on initial attack, extended attack and transition fires. The more complex scenarios will be developed for one or more Type 3 Incident Management Teams. Each command exercise will have corresponding on-ground scenarios, computer simulations or sand-table exercises for strike team/task force leader, engine/crew boss, firefighter 1 & 2, and

dispatch positions. This allows for maximum involvement of firefighters with all levels of training and experience.

Fire shelter deployment drills will be held near locations of the other exercises on Saturday, under a variety of simulated, adverse conditions. This Drill will also serve as a "train-the-trainer" for annual safety refresher. NIFC Annual Safety Refresher materials, accompanied by other Lessons Learned case studies and complete Drill instructor/facilitator materials will be distributed to participants for use with their local departments and home units. A vendor and safety organization trade show will be held in new exhibit building (10,000 square foot area) of the Chaffee County Fairgrounds in Poncha Springs. Wildfire safety talks will be presented both evenings by firefighters involved with wildfire entrapments. Fire Chief Jeff Meston of the Novato (CA) Fire Protection District has already agreed to send representatives to give a 2-hour, in-depth presentation on the 2003 Cedar Fire fatality incident that claimed the life of Engineer Steven Rucker. We will also include a Memorial service for fallen firefighters to be held on Sunday morning in Riverside Park.

The budget request reflects the travel costs for our guest speakers, material and duplication costs for participant hand-outs, and staff involvement for our project director and video production technician. We intend to create a short DVD of the Wildfire Safety Drill, so we can share ideas with others who might be inspired to host similar events in other parts of the country.

The Purdue University evaluation team would attend the Drill as part of their on-going evaluation. Their feedback would be incorporated in the 2007 Wildfire Safety Drill.

PARTNERSHIPS

The Wildland Fire Lessons Learned Center is part of the National Advanced Fire & Resource Institute (NAFRI) in Tucson, Arizona

"The Lessons Learned Center is an interagency program supported by the National Wildfire Coordinating Group (NWCG) consisting of the federal and state fire agencies. The Center Manager is a National Park Service employee, the Assistant Center Manager is a US Forest Service employee. Other staff members will be represented by the Bureau of Land Management, Bureau of Indian Affairs and US Fish and Wildlife Service. The Center works in cooperation with the Federal Fire and Aviation Safety Team (FFAST), the National Wildfire Coordinating Group (NWCG) Working Teams, and the National Association of State Foresters (NASF)." - (www.wildfirelessons.net)

This grant application was compiled with input and assistance from several of the individual agencies mentioned above. We have every belief that we will receive substantial assistance from agency personnel with the PMS-490 revision.

We have already received an index of the 16 wildfire-related investigations completed by the NIOSH Fire Fighter Fatality Investigation and Prevention Program. A NIOSH investigator will also participate with the PMS-410 revision.

The fire departments in the Upper Arkansas Valley, U.S. Forest Service and Colorado State Forest Service have committed to assist with the Wildfire Safety Drill.

The Novato (California) Fire Protection District will participate with the Wildfire Safety Drill.

COST/BENEFIT ANALYSIS

The implementation plan for any safety initiative aims to alter three things in its target audience: knowledge, attitudes and behavior. Colorado Firecamp does not underestimate the enormous challenge of the effort being proposed in this grant application. In this application, we have indicated a target audience of 500,000 firefighters. We honestly believe this project will benefit the entire American fire service.

Based upon our risk assessment, Colorado Firecamp has focused on a specific discipline (wildland firefighting) and a specific cause of firefighter death (wildland fire entrapment.) But, we believe this "open source" and "lessons learned" process can be as easily applied to other disciplines within the fire service.

We find encouragement in the words of Kelly Close, a company officer with the Poudre Fire Authority in Ft. Collins, Colorado. Kelly is a Fire Behavior Analyst and was a member of the Cramer Fire Accident Investigation

Team.

Kelly wrote a paper for the Eighth International Wildland Fire Safety Summit, in April, 2005, entitled: "Fire Behavior vs. Human Behavior: Why the Lessons from Cramer Matter." He made this impassioned plea:

"We have to stop the cycle. If no one does anything, if we continue on the current course of ignoring the problem, we will repeat Cramer, South Canyon and other tragedies over and over. The lives lost on Cramer, and continued loss of life, in the future, will have been for nothing.

"If, on the other hand, we face the hard issues from Cramer, work to understand the interaction of fire behavior and human behavior, and commit to understanding the dynamics and finding long-term solutions, we can begin taking steps toward preventing many future tragedies. It's not too late. We can still learn much from Cramer, and can alter the course of the future in profound ways. It is absolutely worth the time and effort, and is vital. And it all begins with that all-important first step: the commitment to start." (Close, 2005)

SUSTAINABILITY

Our firefighter safety project is specifically designed to be sustained beyond the one-year grant performance period. We believe the "open source" concept will allow others to participate to this effort in very tangible ways.

Over time, the wildland firefighter fatality archive will be expanded to include other types of incidents, such as injury and near-miss incidents.

The PMS-490 curriculum will be easily updated in the future. As individuals or agencies are motivated to compile a new case study, they will have a tremendous resource in the archive. The indexing system will allow them easy access to both the specific incident and other similar incidents that add to the lessons learned.

Colorado Firecamp will maintain the equipment assets obtained through this grant to support such efforts. We plan to complete at least one new case study each year.

We believe that the Wildfire Safety Drill will become an annual event. Once established, it should be basically self-funding. As participants report the training benefit, fire departments will be willing to pay a modest fee to cover expenses.

NEED FOR FEDERAL ASSISTANCE

Colorado Firecamp exists on a shoestring budget of less than \$15,000 per year. Yet we have attempted to make a contribution to firefighter safety though the limited means available to us. President and course coordinator Kent Maxwell has worked without compensation for the past 3 years. Work such as the preparation of this grant application, a website now exceeding 450 individual pages, our 501(c)(3) application approved by the IRS this summer, and coordination of 17 wildland firefighting classes (taught by combination of 16 different paid and unpaid instructors) have been the product of volunteer labor.

If this grant application is denied, we will still do our best with what we have. The investigation reports on the Colorado Firecamp website will be offered to Wildland Fire Lessons Learned Center. As time permits, we would try to add more. The archive would still be hosted on the www.wildfirelessons.net website, although likely not in the usable digital format we are proposing.

The PMS-410 revision will not happen anytime soon without this grant. In the current federal budget climate, the federal wildland agencies are already facing significant loss of line firefighter positions.

The Wildfire Safety Drill will take place with or without support from this grant. Obviously, the event will be smaller and will have less impact than we want.

The priorities for Colorado Firecamp will not change, with or without this grant. Our time, talent and treasure will be spent doing what we can for the six names that mean something to us.

TRACK RECORD

This project will be larger than anything Colorado Firecamp has ever done before.

Coordinator Kent Maxwell also serves a volunteer captain for the Chaffee County Fire Protection District. In that capacity he wrote two grant applications totaling \$59,700 for wildfire mitigation work through the Community Assistance program of the Bureau of Land Management. He serves as project leader for the mitigation work that is halfway through 5-year cooperative agreement.

However, we have had some smaller efforts worth noting. Through a series of Freedom of Information Act requests, we obtained the Point Fire investigation report from the BLM Idaho State Office. Although the 1995 incident is mentioned in several articles and other documents, the report had not previously been available on the internet.

During early summer, 2005, we adapted the Point Fire case study from a BLM training course. The case study (with 30 minute video tape) was presented for the firefighters of the Chaffee County Fire Protection District during the June IAFC "Stand Down for Safety." Over the next month further revisions were made to the case study and the bulk of the investigation website was posted to the Colorado Firecamp website.

In August, the Point Fire case study video, 6-page instructor guide and 8-page student handout were mailed to all 293 fire departments in Colorado. A PDF copy of the case study was posted on the www.myfirecommunity.net website as well.