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Integrating web-based training into an annual training plan

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September 2009

Certification Statement

I hereby certify this paper constitutes my own product, that where language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed:_____

Abstract

Firefighter training and education is a critical component in developing future fire service leaders. One element, web-based education, is becoming more prevalent and acceptable in delivering current training programs to fire and emergency service agencies. The problem is the Beach Park Fire Department (BPFD) has not identified or documented an annual training plan that includes a web-based component.

The purpose of this research is to identify and document the components of an annual training plan including available web-based training options.

The action research method was used to produce an annual training plan in addition to a department-wide evaluation of a web-based training program for this research. The research questions answered include; (a) what standards should be followed in establishing an annual training plan, (b) what web-based training programs are available for firefighter training, (c) what are the costs associated with on-line training programs, and (d) what is the BPFD memberships input on the current state and future use of web-based training components in the annual training plan.

Procedures included surveys of department personnel, an evaluation of a web-based training program and a review of other

departments' annual training documents. The results indicated that positive practices are in place; however, documentation of an annual training plan is needed. Recommendations include utilizing a web-based training component in conjunction with creating an annual training plan.

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Introduction

Training of personnel is a core element of all emergency service organizations. Routine training on required topics provides the immediate recall skills needed by firefighters and emergency service workers when providing assistance under tense, duress periods of time (Linstrom, 2009). Several standards and organizations require firefighters and emergency service workers to initially train on specific subjects in addition to refresher training on an annual basis (Illinois Department of Labor, 2003; Illinois Society of Fire Service Instructors, 2008; Village Of Northbrook, 2009).

The problem is the Beach Park Fire Department (BPFD) has not identified or documented an annual training plan that includes a web-based training component in their training program. The purpose of this applied research project (APR) is to identify and document the components of an annual training plan including available web-based training options. The action research method was employed to produce an annual training plan in addition to answering (a) what standards should be followed in establishing an annual training plan, (b) what web-based training programs are available for firefighters, (c) what are the costs associated with web-based training programs, and (d) what is the

BPFD memberships input on the current state and future use of web-based training components in the annual training plan.

Background and Significance

The Beach Park Fire Department (BPFD) is located in the far Northeast corner of Illinois, bordering the western shore of Lake Michigan midway between Chicago, IL and Milwaukee, WI. The BPFD protects a population of approximately 15,000 residents in a 10 square mile fire protection district while delivering fire, EMS, inspectional and educational services to the community. The BPFD participates in local automatic aid and regional mutual aid agreements with organizations located throughout Lake County, IL.

Specialized rescue services are provided through an intergovernmental agreement (IGA) that includes dive rescue, hazardous materials mitigation, wild-land firefighting and technical rescue responses through the Lake and McHenry County Specialized Response Teams (LMCSRT) (Lake County Fire Chiefs Association, 2009).

The BPFD is staffed daily on a 24 hour basis by two fire-fighter/paramedics working a 24/48 schedule. Additionally, during the hours of 0600-1800 one fighter/paramedic and two fighter/EMT's are on duty. From 1800 hours to 0600, paid on call personnel fill four to six positions to allow for a shift of six to eight

personnel including the two 24 hour fighter/paramedics to round out the shift. Full department staffing is 45 (POC & FT).

The BPFD like many other volunteer and combination departments has experienced a high turnover rate of personnel (Howard, 2007). During this research period alone, 10 individuals have left the department. This high turnover severely constrains the development of all positions in the organization including the training division. Currently, an annual training plan does not exist to address many of the required training elements documented by the National Fire Protection Agency (NFPA) Standards, the Illinois State Fire Marshals Office of Personnel Standards and Education (OSFM-PSE) requirements and other standards that include Occupational Safety and Health (OSHA), Illinois Department of Labor (IDOL) and the standards for competencies when responding to hazardous materials incidents.

In late 2008, the BPFD was awarded a training grant through a combined agreement with the International Association of Fire Chiefs (IAFC) Volunteer and Combination Officers Section (VCOS) in conjunction with Target Safety, a web-based training platform for public entities. The author wrote and received the grant and initiated the on-line training that included 15 hours for each member over a six-month period. The trial period started on

January 1, 2009 and concluded on June 30, 2009. The web-based training component for this research officially commenced on February 1, 2009 allowing five months for 15 subject areas to be completed and evaluated.

This ARP aligns with the United States Fire Administration (USFA) Executive Leadership (EL) course goal that identifies "the chief fire executive will develop the ability to conceptualize and employ the key processes used by effective executive-level managers" (Federal Emergency Management Agency (FEMA), 2005 p. SM 1-3). Additionally, this ARP compares auspiciously to the EL Unit 3, course objective (1) that identifies a leader will identify and "indicate the concepts and skills that are applicable to their situation" (Federal Emergency Management Agency (FEMA), 2005 p. SM 3-2).

Furthermore, this ARP parallels the USFA goals (2) to "improve local planning and preparedness", and (3) to "improve fire and emergency services' capability for response to and recovery from all hazards" (United States Fire Administration, USFA, 2009).

Additionally, this ARP aligns with the USFA operational objective(s) 2.3 that identifies fire departments will enhance fire and emergency service response to all hazards, and objective 3.2 that advocates "a culture of health, fitness, and

behavior that enhances responder safety and survival (United States Fire Administration, USFA, 2009). This ARP meets these objectives by developing a well-rounded annual training plan that increases responder safety, knowledge and survival.

Literature Review

In most organizations there are several training requirements of entry level and veteran firefighters that include initial training and regular on-going refresher training on specific subject matter. Several standards cover firefighter training recommendations that include Federal, State, local and private industry requirements of emergency service workers.

The Federal government requires that all employers including emergency service agency's post compulsory documents (equal employment law, job safety and health protection, fair labor standards act, child labor laws, minimum wage act, family medical leave act) (United States Department of Labor, 2009).

The Occupational Safety and Health Administration, (OSHA) requires that emergency service workers train on specific subjects that include self contained breathing apparatus (SCBA), bloodborne pathogens (infectious diseases), special hazards in the community and on hazardous materials identification and mitigation (National Volunteer Fire Council, (Nvfc) (nd).

Table 1.

Federal Standards Applicable to the Fire Service

Standard	Code Number	Covers
General Duty Clause	USC 654 (a)(1)	Work place hazards
Fire Brigades	29CFR 1910.156	Train and educate Workers, supply, Maintain and train With tools/equipt
Respiratory Protection	29CFR 1910.132-140	Supply, train, test, Inspection of PPE
Confined Space	29CFR 1910.146	Defines, identifies Outlines requirements of confined spaces
Lock-out-Tag-Out	29CFR 1910.147	Protecting workers Around energized Electrical devices
Infectious Exposures	29CFR 1910.1030	Bloodborne Pathogen Infectious diseases
Trench/Collapse Rescue	29CFR 1910.650-652	Trench/collapse Rescue
Hazardous Materials	29CFR 1910.120	Hazardous materials Operations, medical Exams, PPE, disposal

Also on the Federal level, the Homeland Security Presidential Directive (HSPD)-5 states that all federal agency's and other governmental bodies and their employees be trained in the National Incident Management System (NIMS) to obtain federal preparedness funding (Federal Emergency Management Agency (FEMA), 2009a). The required FEMA courses that support the National Response Framework (NRF) are IS-100 Introduction to the Incident Command System (ICS), IS-200 Basic Incident Command System, IS-700 National Incident Management System and IS-800 National Response Plan. More advanced courses are available on-line and for classroom presentations (Federal Emergency Management Agency (FEMA), 2006; FEMA, 2009b).

On the state level, Illinois is not an OSHA state, but the Illinois Department of Labor (IDOL), like safety organizations in many other states directly reference the Federal OSHA requirements, laws, and postings (Illinois Department Of Labor, 2003). IDOL also recommends quarterly live structural fire evolutions, eight hours of drivers training, eight hours of hazardous materials training, 16 hours of SCBA training that includes face piece fit testing, and annual bloodborne pathogen training (Village of Northbrook, 2009).

The Illinois Office of the State Fire Marshal's (OSFM) Personnel Standards and Education (PSE) division outlines the

minimum requirements for firefighter II (basic, NFPA FF 1) and firefighter III (advanced, NFPA FF 2) training along with a series of advanced firefighter certifications that include technical rescue, confined space/trench, high rise/vertical, water operations, and machinery operations. The OSFM-PSE also offers certifications for officer training, public education, fire inspections and hazardous materials (Office of The State Fire Marshal, 2007).

Other standards and guidelines to follow for firefighter training were identified through the National Fire Protection Agency's (NFPA) standards and the Insurance Services Office (ISO) standards (NFPA, 2007; ISO mitigation online, 2009).

The NFPA maintains several standards that directly apply to firefighter training. The one-thousand series standards encompass basic firefighter requirements; 1001, 1002, 1003, professional qualifications for officers, inspectors, investigators and life safety educators 1021, 1031, 1033, 1035 and advanced requirements for special professional requirements Safety officer; 1521, in addition to Personal Protective Clothing; 1851, 1971, 1977, 1991, 1992, 1999, for several different types that range from structural, wild-land, EMS and hazardous materials. See Appendix A for a list of NFPA standards that directly correlate to training members of the fire service

(Illinois Society of Fire Service Instructors, 2008; National Fire Protection Association, 2007).

Several of the NFPA standards reference other standards for use where applicable. NFPA 1500 the Standard on fire department occupational safety and health programs specifically references other NFPA standards and safety procedures as recommended practices for training, clothing, rescue procedures and other requirements that should be followed by fire departments and emergency service agency's (Courtland County Fire Emergency Management, 2003; Illinois Society of Fire Service Instructors, 2008).

Publications that are available for new recruit level and ongoing refresher training are; IFSTA's Essentials of Firefighting, Delmar's Firefighters Handbook: Essentials of Firefighting and Emergency Response and Jones and Bartlett's Fundamentals of Firefighters Skills (State Of Connecticut, 2009). Advanced-level firefighting books and educational materials are available from several publishers that cover a varying array of topics for self learning or as reference material for course specific curriculum (Emergencystuff.com, 2009).

The ISO training requirements to obtain maximum credit on the Public Protection Classification (PPC) grading scale for

entry-level firefighter training includes 240 hours for new recruits and 20 hours per month of company level fire related training for existing firefighters (Village of Northbrook, 2009; Elizabeth Fire District, 2009).

In addition to the firefighter training hourly requirements, ISO also requires 4-multi company drills annually (3 hours each), 2-night drills (3 hours each), 4-officer development drills (12 hours total or 2 days @ 6 hours each), 4-driver operator drills (3 hours each), and 4-drills with automatic/mutual aid companies (Village of Northbrook, 2009; ISO Mitigation Online, 2009).

Electronic Training Platforms

Other training options available to fire departments include electronic delivery of learning based topics and integration of a web-based, on-line or hybrid component to a training program. Eastham, (2006) describes hybrid education as a blending that combines classroom and technology based teaching methods. Sprenger (2002) describes the hybrid-learning platform as using Internet connected CD-ROMS that store course data and updates information as the student uses them.

Traditional in-class face-to-face instructional methods are becoming more difficult and costlier to deliver as instructor fees and hourly salaries of employees attending courses rise in

addition to making specific training topics available to all members of an organization (Sprenger, 2002). Instruction and learning can occur using a web-based, on-line, electronic or a hybrid approach. Several EMS organizations throughout the country have used hybrid learning delivery systems to lower training costs, adjust topics to varying emergency responders schedules and deliver quality uniform training to members as a solution to traditional learning platforms (Eastham, 2006).

On-line hybrid type courses can be accomplished through a learning management system (LMS) such as WebCT or a Blackboard system used on many college and university campuses. In establishing a hybrid course, it is important to identify barriers and challenges, limitations of instructors, resistance to change from inside the organization, access to sufficient computers and set up time for the coursework. While hybrid delivery systems are effective, they can take considerable time to set up for course delivery and the dropout rates are higher than for classroom-based courses (Eastham, 2006).

Hybrid learning systems consisting of internet-connected CD-ROMS store all course information on CD's allowing video, audio and text delivery without relying on download speed. Delivery of a hybrid learning system does not depend on download speed. Web-based and hybrid learning systems offer consistent material

delivery and the ability to track firefighter learning (Sprenger, 2002).

Web-based learning platforms are delivered solely over the Internet and are easy to update and manage. Many web-based systems for emergency service workers deliver NFPA and OSHA compliant learning components that can be used to satisfy student-learning requirements. One restrictive effect is that download speeds can limit the effective delivery of programs resulting in poor student experiences (Sprenger, 2002). Iluminar Technologies, (2008) identified that web-based training systems do not have the ability to support full motion video where a hybrid system or CD-ROM based LMS would provide the opportunity to utilize and edit video clips.

The Rochester Minnesota Fire Department participated in a web-based e-learning second language program as an opportunity for personnel to learn a second language. Through a 90-day pilot test of the Rosetta Stone Language Lessons program, the initial 80 licenses filled fast and the department eventually offered the program to all fire department members. The program was offered 24/7 and the average time spent by employee per day on the program was 45 minutes. Several different languages were offered for learning that included Spanish, Farsi, Arabic,

Russian, Tagalog (Philipino), Japanese and German (Felsch, 2007).

The Cincinnati, Ohio Fire Department identified the value of alternative training delivery options when they developed a training program that utilized CD's, DVD's and live broadcasts in addition to network based testing systems for courses. Video fed training topics for fire, EMS and specialty training like hazardous materials were used to reduce costs associated with curriculum delivery. Fire personnel receive credit for their courses, were able to take tests and print course completion certificates for the training they completed (Siereveld, 2002).

Training management systems are set up to handle and deliver course work. Learners can log on to a network from their desktop or laptop computers and enroll or participate in specific curriculum or programs. Courses can be set up with prerequisites prior to learning new material or coursework. Training administrators can access the records of students to determine if classes were taken, completed, how long the course(s) took and to identify the student's progress and course history. Training administrators can identify the who, what, when, where and how of the students progress towards completion.

Computer based programs are an effective way to deliver training with a high rate of return on investment as compared to

traditional methods of in-class instructor-led teaching techniques (Piskurich, Beckschi, & Hall, 2000).

Web-based learning programs have been in use in other industries such as the on-line building code training that is provided through the delivery of Vcampus Corporation's web based learning solutions. The International Code Campus provides on-line training of cost-effective building code training. Many organizations have found the advantages include access, time, cost savings and resource availability. Student use is available 24/7 while time spent using the LMS components is reduced as compared to traditional instructor-led training. Additionally, costs are reduced when compared to travel expenses for students or instructors and materials such as handbooks, workbook or manuals that can be provided in an electronic format (Eddy, 2002).

A group of North Carolina telecommunicators and EMS personnel participated in an on-line pilot program for stroke assessment and care. Two separate on-line courses were designed; one for the telecommunicators and one for the EMS personnel to provide timely, accessible and relevant continuing education on stroke management. The results of the on-line training revealed high participation rates, elevated student satisfaction with the curriculum and positive feedback (Lellis et al. 2007).

There are several Web-based suppliers of learning management systems (LMS) for business, the fire service and other entities that include governmental and private organizations. Suppliers of web-based training products include Vcampus, Centrelearn, Target Safety and Action Training Systems.

Vcampus Corporation offers 3500 courses in 64 different classifications that are geared toward business related topics. Vcampus offers a remotely hosted, education and training delivery system with classes that include accounting, business, finance, human resource, leadership, project management and web design courses. No fire based or EMS courses are available. Administrators can enroll, register, manage, track student results, test, grade and certify employees on specific topics. Course costs range from $49.00 to $795.00 for an array of courses (Vcampus Corporation, 2009).

Centrelearn offers a remotely hosted fire, EMS and safety based training and education platform for emergency service providers. Centrelearn offers 45 Advanced Life Support (ALS) EMS courses, 62 Basic Life Support (BLS), 26 fire related and 18 OSHA compliant courses for delivery. Centrelearn offers departments the opportunity to use their existing presentations that can be downloaded and formatted for wider delivery. The company also offers product support, the ability to control

training records and offers live audio or video feeds if needed (Centrelearn, 2008a).

The Centrelearn LMS program can be used in many different formats that include Microsoft Word, Powerpoint, Excel, Windows media player, various text documents, scanned images and PDF's (Centrelearn, 2008b). Centrelearn offers two levels of participation. For $49.00 per user, Centrelearn offers their standard program which allows access to their library of programs, the ability to track, test and survey students, the ability to schedule events and offer discussion boards for use.

The complete program is $59.00 per user and offers additional features that include DVD and/or video tape conversions for web streaming, central record keeping, full grade book features and live web meetings and seminars (Centrelearn, 2008c).

Target Safety is also a web-based delivery LMS that offers fire, EMS, OSHA and human resource based courses. Target Safety serves over 2500 public entities that include fire, EMS, wastewater and general industry organizations (Target Safety, 2009a).

Target safety's prevention link platform offers 188 courses that include 15 NFPA 1500 compliant courses, 46 OSHA related courses, 44 fire, 57 EMS, 21 driver safety, 8 human resource and

25 supervisor specific courses (Target Safety, 2009b). Target Safety also offers an 8-hour hazardous waste operators awareness program in 4 easy to use modules. The course is directly compliant with NFPA standard 472 and the federal standard 29CFR 1910.120(q) (Target Safety, 2009b).

The cost per user varies and is based on the size of the organization using the Prevention Link platform. The standard fee for a small to medium fire department is $75.00 per user. Additionally, departments using this program are allowed to download existing SOP's, programs, documents or tests for integration into the LMS (D. Davidson, personal communications, June 11, 2009).

Action Training Systems Inc (ATS) located in Poulsbo, Washington has been a leader in visual based training systems for emergency responders. ATS, offers over 200 fire and emergency response programs that parallel many of the NFPA standards including FFI, FFII, pumping apparatus driver/operator, fire officer, hazardous materials, awareness, response and containment programs (Action Training Systems, 2009a). ATS computer-based interactive programs are compatible with Microsoft's Windows Vista, XP Professional, Windows XP Media and Windows 2000 (Texas Fire Chiefs Association, 2009).

The ATS training platform is designed around Iluminars learning management system, which can be utilized on a stand-alone computer, in a classroom setting or on a local area network, (LAN) (Fire Chief, 2009).

ATS has a scaled pricing plan that requires an initial license fee of $500.00 for administrative privileges and one seat price. Seat prices progressively decrease based on the number of individual seat licenses purchased. Costs for electronic media are varied and are based on individual programs chosen (S. Cato, personal communications, August 18. 2009).

Table 2

ATS Seat Pricing Schedule

Initial license Cost	$500.00	1 Admin, 1 Seat
1-5 additional seats	$550.00/person	
6-10 additional seats	$525.00/person	
11-30 additional seats	$500.00/person	
31-50 additional seats	$475.00/person	
51-100 additional seats	$450.00/person	
101-150 additional seats	$425.00/person	
151+ additional seats	$350.00/person	

(Action Training Systems, 2009b)

Review of Annual Training Plans

Utilization of an annual training plan lays the foundation for planning and scheduling training topics (Poway Fire Department, 2009). A review of 12 other department's annual training documents was conducted for this ARP. The Clay Fire District South Bend, IN, Hanford, WA, Lansing, MI, Lenexa, KS, Lincoln, NE, Lockheed Martin, Loudon County, VA, Pacific County Fire District 1, Ocean Park, WA, Renton, WA, Rock Springs, WY, Schaumburg, IL and U.S. Naval Command in Japan training plans were reviewed for this research.

Table 3

Department	References	Schedule
Clay Fire District, IN	NFPA (t) OSHA (t)	Monthly/Annual
Hanford, WA	NFPA (t) OSHA (t)	3 year plan
Lansing, MI	NFPA (t) OSHA (t)	Qtrly/Annual
Lenexa, KS	NFPA (t) OSHA (t)	Monthly/Qtrly
Lincoln, NE	NFPA (t) OSHA (t)	Annual
Lockheed Martin	NFPA (s) OSHA (s)	Annual
Loudon County, VA	NFPA (t) OSHA (t)	Monthly/Annual
Pac Cnty Fire Dist 1, WA	NFPA (t) WA OSHA(t)	Monthly/Annual
Renton, WA	NFPA (s)	Annual/Objectives

Rock Springs, WY	NFPA (s)	OSHA (t) CFR (S), ISO (s)	Annual
Schaumburg, IL,	NFPA (s)	OSHA (t)	Monthly/Annual
U.S.Navy/Japan (CNFJ)	NFPA (s)	NAVY (s)	Monthly/Annual

(s)=Standard(s) directly referenced in plan

(t)=Specific mandatory topic(s), standard not referenced in plan

Table 3 identifies that all of the annual training plans reviewed for this ARP signify that these departments with annual plans are either specifically referencing NFPA, ISO, Federal or State OSHA standards in their training plans, or they train on topics that have been categorized as a mandatory training subject.

One quarter of the departments (4) specifically referenced the standards that are applicable to specific training on their annual plan. Additionally, several departments (7) provided other than an annual training plan that can be further broken down to monthly or quarterly requirements.

The literature review provided substantial information on standards that are recommended for firefighter and rescue training. Considerable information was revealed on Federal and State standards, private organization standards (NFPA, ISO) and electronic educational delivery systems (hybrid, web-based, on-line), programs and costs associated with these programs.

Procedures

The procedures used to facilitate the research for this ARP included two surveys. A 10-question survey identified as the 2009 training opportunities survey was completed prior to any research for this ARP. A 10-question follow-up survey identified as the on-line training survey was conducted after a trial period of a web-based learning management system. Finally, a review of other fire department training plans was completed.

Pre-research Period Survey

A 10-question survey identified as the 2009 training opportunities survey was initiated prior to the start of research for this ARP and was developed to gather information on future training initiatives for the BPFD. An e-mail was sent to all (42) BPFD members that were officially rostered as of December 10, 2008 in preparation for the web-based online training grant award and to develop upcoming training topics for the 2009 year. The 10-question survey (Appendix B) was used to gather member interest on, potential web-based classes, specific in-house training topics, areas of improvement from the 2008 training year, to help identify premium days for training and it provided the opportunity for members to grade the departments current EMS and fire training.

Web-based Learning Management System

The author applied for a grant that was funded through a joint effort with the International Association of Fire Chiefs Volunteer and Combination Officers Section (IAFC-VCOS) in conjunction with Target Safety, a private organization that supplies web-based, on-line training programs. If the grant-funded training was not received, alternate plans included (a) contacting web-based training companies to obtain a pilot trial offer for our membership to assess the viability of integrating a fire based on-line training component into our regular training schedule or (b) enrolling members in the online training topics offered by the Illinois Fire Service Institute (Illinois Fire Service Institute, 2009).

Follow-up Survey

A 10-question follow-up survey was conducted after the completion of the grant funded web-based, on-line training. An e-mail was sent to all 40 fire department personnel on the official roster as of July 7th, 2009. The e-mail provided a link to the surveymonkey.com website and directions for completion of the survey. The follow-up survey (Appendix C) was designed to gather specific information on participation, the number of web-based training subjects each member completed, how much time was spent on each topic, and what each respondent's opinion was on

the value of the program. Additionally, the survey sought information on the quality of the tests, number of subjects distributed monthly, type of future trainings requested, and an overall rating of the web-based training topics.

Review of Other Fire Departments Training Plans

A review of other fire departments training plans was conducted to identify specific topics that other departments have implemented in their training and to lay the foundation for an annual plan for the BPFD. An e-mail was sent to 94 individuals identified as Executive Fire Officer (EFO) students that attended one of the four required EFO courses with the author. Twelve individuals responded to the requested e-mail or one that was forwarded to them by an EFO student or graduate of the program asking for a copy of their annual training plan.

Assumptions

The author assumes that all survey questions were answered correctly and honestly to the best of the respondent's abilities. Furthermore, it is assumed that all training plans submitted to the author for review contained accurate topic(s) and subject data that coincided with applicable standards.

Limitations

Due to the 6-month time limitation for completion of the final ARP, the author was limited in how many web-based programs

could be evaluated for this ARP. While a larger sample of annual training plans would be helpful in determining an annual plan for the BPFD, the data reveals that sufficient, valuable and comprehensive information was received to develop an annual training plan.

Results

The results of conducting a pre-research period survey, a post web-based training survey and a review of other departments annual training plans revealed substantial data to be used in developing an annual training plan. Additionally, the literature review for this research provided direction and a knowledge base to fully develop an annual training plan with integration of a web-based component.

Pre-research Period Survey

The pre-research period survey, conducted in December of 2008, and identified as the 2009 training opportunities survey, was utilized to develop information for future training initiatives for the BPFD during the 2009 calendar year. The 10-question survey (Appendix B) revealed substantial data that can be utilized for direction in planning future training initiatives. Questions 1 and 2 were primarily designed for this research period to specifically identify member interest in a

web-based training program and to illicit information on topics that the respondents would be interested in completing.

Question 1 revealed that 23 of 40 (57.50%) BPFD personnel responded to the survey and 19/23 (82.60) identified they would be interested in taking on-line or web-based classes. Question 2 was designed to illicit information on what type of on-line classes our membership would be interested in completing. Table 4 identifies the results.

Table 4

Question 2 results from 2009 training opportunities survey

	Respondents	Percentage
None or not interested	3	13.04%
Hazardous materials awareness	0	0%
Emergency response to terrorism	5	21.73%
Technical Rescue Awareness	5	21.73%
NICOR Gas safety training	12	52.17%
Ethanol awareness	11	47.82%
Would like more choices	14	60.86%

Question 3 was designed to illicit information on class time format for delivery options of a required fire service vehicle operator (FSVO) course. The results reveal that seven (36.8%)

members were more interested in completing two, four-hour classes on consecutive months, whereas 12 (63.2) individuals preferred to complete the eight-hour course in one session.

Question 4 was designed to gather information on the best day of the week for paid-on-call and full-time employees to attend.

Table 5

Best day of the week for an 8-hour FSVO class

Monday	5	23.8%
Tuesday	4	19.0%
Wednesday	4	19.0%
Thursday	3	14.3%
Friday	3	14.3%
Saturday	13	61.9%
Sunday	3	14.3%

Question five-requested information on what areas of training would our members like to see added or improved in 2009. Ten (43.5%) members wanted to see additional rescue training, nine (39.1%) wanted to see additional fire training, eleven (47.8%) wanted EMS training and nine (39.1%) wanted additional specialty training (dive, high-rise, technical rescue

or confined space training). Nine (39.1%) members wanted to see more training with auto aid departments and 11 (47.8%) wanted more training with mutual aid departments.

Question 6 requested information on individuals that would be interested in teaching additional EMS subjects throughout the coming year. Twenty two (95.65%) individuals answered this question and only four (18.2%) were willing to teach a 3-hour class.

Question 7 built on question 6 in identifying what night individuals would be willing to teach a class on; and 13 members responded. Three chose Wednesday nights and 10 individuals indicated they were not interested in teaching.

The membership felt that Wednesdays (9 or 47.4%) and Saturdays (7 or 36.8%) were the most convenient days for the membership to participate in a department wide training.

Question 9 allowed our membership to rate the quality of the fire training offered by the BPFD on a scale of 1 to 10 and question 10 allowed members to rate the quality of the department EMS training on a scale of 1 to 10.

Table 6

Rating of department fire training

Rating	Response	percentage

1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	3	13.6%
6	4	18.2%
7	4	18.2%
8	10	45.5%
9	0	0%
10	1	4.5%

n= 23

Virtually all of the respondents (95.5%) rated the current fire related training from 5 to 8 on the 10-point scale. Only one individual rated the fire related training higher at 10 on the 10-point scale.

Table 7

Rating of department EMS training

Rating	Response	percentage
1	3	13.04%
2	1	4.34
3	5	21.73%

4	1	4.34%
5	5	21.73%
6	2	8.69%
7	3	13.04%
8	2	8.69%
9	1	4.34%
10	0	0.0%

n=23

The department members rated EMS training from a 1 to a nine on the 10-point scale with a varied response and no specific concentration within the rating scale.

Follow-up Survey

The post web-based on-line training survey was designed to obtain information from the BPFD personnel specifically on their interaction and value of the web-based training.

Question 1 identified that 23 department members responded to the survey and 22 (95.7%) respondents participated in the grant funded web-based training.

Question 2 requested information on how many web-based courses, of the 15 that were offered, that the respondents completed.

Table 8

Question 2. How many web-based courses were completed

Courses	Response	Percentage
1-3	0	0%
4-6	2	9.1%
7-9	2	9.1%
10-12	5	22.7%
13-15	13	59.1%

n=21

Question 3 of the survey attempted to identify the average time each respondent spent on completed courses.

Table 9

Time spent on training courses

Time	Response	Percentage
Less than 10 minutes	0	0%
11-20 minutes	2	9.1%
21-30 minutes	8	36.4%
31-40 minutes	10	45.5%
41-50 minutes	2	9.1%
Over 50 minutes	0	0%

Question 4 of the post web-based training survey attempted to identify if the respondent found the material helpful in performing their job functions. Clearly, eight (36.4%) members responded yes, two (9.1%) responded no and twelve (54.5%) members responded to somewhat.

Question 5 was an attempt to gather information on the validity of the tests required for completion of each course. Twenty-one individuals responded to this question and it revealed that 20 (90.9%) members felt that the end of course tests covered the material well. Conversely, five (22.7%) individuals did not feel that the end of course tests were a good representation of the materials presented in the courses.

Question 6 was designed to obtain information on the membership's opinion on how many courses should be offered on a monthly basis. For this research, the actual period of time allotted for the web-based training was 5 months. There was an initial lag of 1 month, as all members were required to log in, provide a username and create a password for access to the program.

Table 10

How many training subjects should be offered each month

Training courses offered	Response	Percentage
1-2	17	77.3%
3-4	5	22.7%
5-6	0	0%
7-8	0	0%
9-10	0	0%

Question 7 revealed that 12 (54.5%) found the Target Safety web-based training easy to access while 14 (63.6%) found it easy to use and 17 (77.3%) found it user friendly.

Question 8 of the survey identified the membership's interest in other web-based courses. Three (13.6%) were interested in safety topics, 17 (77.3%) were interested in tactics and strategy topics, 4 (18.2%) wanted to see more hazardous materials training and 13 (59.1%) were interested in specialty training courses (confined space, trench, water, etc). Additionally, 12 (54.5%) wanted to see officer-training courses, 9 (40.9%) wanted training on department SOP's and 10 (45.5%) wanted to see additional EMS web-based training courses.

Question 9 requested information about the membership's opinion on adding the web-based training to our training program. Nine (42.9%) indicated yes the training would be a welcome addition while 7 (33.3%) indicated the web-based

training would not be a good addition to our training program. Additionally, 4 (19.0%) rated the training excellent, 6 (28.6%) rated the training good, 6 (28.6%) rated it average and 1 (4.8%) rated the web-based training as fair.

Question 10 was an open-ended question requesting any additional information that the respondents would like to add about the web-based training. Eight individuals responded to this question. Information gathered included "it is a great training tool", "great for completing mandatory training subjects", and "classes should be offered as a makeup...for those that may have missed some days". Additionally, 2 individuals responded that the training was "not good", while 1 individual felt it was a good experience while the topic was presented with other applicable training. The final comment indicated that at times there were not enough computers available for shift personnel to complete the necessary courses.

At the conclusion of the grant-funded, web-based training, the author, assigned as the department administrator for the program had the ability to review all course completion records. The resulting information revealed time spent in each course, test completion scores, courses taken, date completed and the employee recommendation of each course.

Table 11

Target Safety end of course statistics

BPFD members enrolled	35 members
Total courses taken/completed	372
Average number of courses per employee	10.62
Average time spent per course	18.91 minutes
Median time spent on all courses	17 minutes
Mode (most occurring value)	13 minutes
Standard deviation, (all courses)	12.53 minutes
Minimum course completion time	0 minutes
Maximum course completion time	76 minutes

At the conclusion of every course, each employee was required to complete a 10-question test verify their actual completion of the course and submit the answers. Additionally, at the completion of the course and test(s) they were provided with a series of short questions to identify their recommendation of the particular course to fellow members. The results of the final course recommendations indicated that of the 372 courses taken, the membership recommended courses 283 times (76.07%), and did not recommending courses 64 times

(17.20%). There were 25 (6.72%) courses that did not have a recommendation response upon completion.

Review of Other Departments Annual Training Plans

A review of other departments training documents took place to determine the value of an annual training plan, the mandatory, perfunctory and tertiary subjects that other departments were training on annually in addition to identifying the standards, JPR's and guidelines used by other fire service organizations.

Clay Fire Department. The Clay Fire Department in South Bend, Indiana supplied documents that coincide with their annual training plan. Included in the package were an annual schedule, a monthly schedule (May), two examples of JPR's and an apparatus test form (Clay Fire Department, 2009).

The annual schedule was well laid out by subject matter and topic. Categories that were identified included ISO/OSHA required training, performance standards, special training programs and EMS skills. Several topics were included in each category of training (e.g.) in the ISO/OSHA category, two of the required 12 topics for annual training included SCBA fit testing and hazardous materials refresher among other required topics (Clay Fire Department, 2009).

Each month a different apparatus was identified and a test (unit 253, May) was designed with information that included tools, location of equipment, operations of the unit, pumping parameters and a comment section along with a signature line for attestation by the instructor giving the test (Clay Fire Department, 2009).

Table 12

Clay Fire Department Annual Training Plan

Topic	Number of Subjects
ISO/OSHA	12
Performance Standards	10
Special Training Programs	2
EMS Skills	12

Hanford Fire Department. The Hanford Fire Department in Hanford, WA supplied an annual training plan that included a well laid out plan for three years. The annual plans for 2007, 2008 and 2009 were supplied for this research. The plan(s) that were submitted did not specifically reference ISO/OSHA, but many of the subjects listed would certainly qualify as covering many of the required subjects such as quarterly SCBA training, pump

operator refresher, EMS communicable disease training, live fire training and hazardous materials/radiological emergency training (Hanford Fire Department, 2007).

Each month of the Hanford annual training plan(s) maintained from 5 to 9 subject areas for training and several months (6) required an on-line component for EMS training (Hanford Fire Department, 2007).

Lansing Fire Department. The Lansing, MI Fire Department annual training schedule was broken down into weekly increments. There were 49 weeks of scheduled training further broken into specialized topics including EMS, fire, professional development, local and metro special ops. The specialized topics were further broken down into specific activities for completion. Table 13 provides an example of the Lansing Fire Department annual training plan for the first 4 weeks of the first quarter of the year (Lansing, Michigan Fire Department, 2009).

Table 13

Lansing Fire Department Annual Training Plan

Quarter 1

Week	Begins	Topic	Activity 1	Activity 2
1	1-5	EMS	EMS Practical	N/A

2	1-12	Fire	Reading Smoke	
3	1-19	Prof Dvlpmnt	Incident-Safety Officer Course	Metro Trng Program
4	1-26	Metro Special OPS	Haz Mat monitor	Haz Mat sampling

Lenexa Kansas Fire Department. The Lenexa, KS Fire Department supplied the first and second quarter training calendars for this research. The schedules were categorized by quarter and month with specific drills and skills divided by topics. The monthly categories included fire, EMS, safety, haz mat, SCBA, officer development and saving your own. The Lenexa plan did not specifically reference any particular standards. However, for the required fire training, the plan did reference the specific chapter(s) in the IFSTA essentials book that was needed for the lesson. Additionally, it was clearly evident that the Lenexa plan maintained subjects within specific topics that would qualify as a required training by standard (haz-mat, SCBA donning drills and incident command). An example for the month of February's training in the quarterly/annual training plan is exhibited in table 14. (Lenexa, Kansas Fire Department, 2009).

Table 14

Lenexa Kansas Training Plan

February

Topic	Assignment/drill
Fire	Building Construction (IFSTA Essentials 4th Ed. Ch.3)
EMS Skill	Peds Airway Management Validation
ALL EMS	Peds Emergencies
Protocol Review	New Born Resuscitation
Safety	Top 3 Fire-ground Injuries

Lincoln, Nebraska Fire Department. The Lincoln, NE Fire and Rescue annual training plan was very comprehensive and was broken down into core training areas. Some of the core training areas included grouping specific companies together for training on specific dates. The 2009 annual plan included EMS training, tactics and strategy, hazardous materials tech, water rescue, fire apparatus operator, command officer and captains training in addition to training on required mandatory subjects. Table 15 identifies many of the core training areas, number of

companies assigned and the delivery method(s) employed (Lincoln, Nebraska Fire Department, 2009).

Table 15

Lincoln, Nebraska Annual Training Plan

Core Areas	Number of companies	Delivery
Company pairings	2-4 companies	Specific Dates
Haz Mat OPS	4 companies	Specific Dates
Back to Basics	1-company	Specific Hr requirements
Compliance Training	Individual	Intranet/Video
EMS Training	Non-Specific	Training Div Rep
ALS EMS Training	Non-Specific	Monthly Topic
BLS/ALS Con ED	Non-Specific	Monthly Topic
Structural Collapse	Team Techs	Specific Dates
Auto/Machinery Tech	Non-Specific	Specific Dates
Technical Rescue Trench	Techs	Specific Dates
Water Rescue	Dept Members	10 Monthly topics
Hazardous Materials	Techs	Specific Dates
Captains Training	Captains	20hrs 4 topics Annually
Chief Officer Training	Chiefs	18hrs 3 topics Annually

Lockheed Martin Fire and Emergency Services. The Deputy Chief from the Lockheed Martin Fire and Emergency Services Division supplied a copy of their annual training plan for this research. The Lockheed Martin, (LM) annual plan was broken down into individual months and categories in addition to outlining the specific number of hours per month and subject for training (Lockheed Martin, 2009).

The categories for training were Airfield Management (23 subjects), Operations (10), Structural (2), Structural Drills (13), Fire Prevention (10), ARFF (2) and Hazardous Materials/OSHA (8). The monthly-required training varied from 20 to 23 hours and the training was regularly distributed between category topics on a monthly basis (Lockheed Martin, 2009).

The LM training plan also covered airfield management in their training plan and listed training on specific types of aircraft. Specific information was listed on NFPA (1500) and OSHA (1910.120 & 1910.146) standards in addition to other standards (NAS, AFI). It was certainly clear that the LM annual plan included many topics for training that other structural fire departments would not regularly complete due to LM exposure to several different aircraft (Lockheed Martin, 2009).

Loudon County, Virginia Fire-Rescue. The Loudon County, VA fire, rescue and emergency management division maintains an

annual training plan that outlines EMS, fire, driver/operator, hazardous materials and specialized rescue training topics. The Loudon County annual training plan specifically references NFPA material (1001, 1002, 1021, 1041, 1403, 472, 55, 58) in conjunction with the monthly topic(s) for training (Loudoun County, Virginia (2009).

Multiple monthly EMS topics are scheduled that include ALS and BLS curriculum. Although specific OSHA/Virginia Occupational Safety and Health (VOSH) standards are not directly referenced, topics that would qualify as mandatory training(s) were on the monthly/annual plan including blood borne pathogens, vehicle operations and hazardous materials training. The Loudoun County plan appeared to be heavily laced with EMS training topics as compared to the other annual training plans reviewed in addition to what seemed like limited fire-related training topics (Loudoun County, Virginia (2009).

Pacific County Fire District 1. The Pacific County Fire District 1 in Ocean Park, WA supplied a 2009 training book that was one of the most comprehensive training documents available for this research. The booklet contained a department organizational chart, frequently used phone numbers list, a listing of regular meetings (officer, safety, commissioner), a sign off for all drills, policies and required trainings in

addition to a monthly/annual training schedule for both volunteers and shift personnel (Pacific County Fire District 1, 2008).

A policy review checklist was included in the workbook that specifies the policies (7) along with a box for the check-off date and an instructor signature for verification of completion. Also included is a check-off for required firefighter standards (Washington Administrative Code, WAC) for asbestos, wildland firefighter, PPE, fit testing, SCBA quarterly requirements and hazardous materials training. Additionally, there are references and check-off boxes for driver training, department SOG's, safety requirements and pump driver/operator logs. Furthermore, there is a quarterly competence assurance statement that is required to be signed by the individual firefighter and their officer indicating completion of required components prior to commencing with any further training for the next upcoming quarter. (Pacific County Fire District 1, 2008).

The booklet was arranged and highlighted by subject so topics like EMS training, mandatory/required subjects and fire related trainings could all be easily identified throughout the booklet. Regular EMS training was scheduled throughout each month on multiple dates (Pacific County Fire District 1, 2008).

Renton, Washington Fire Department. The Renton, WA Fire Department documents reviewed for this ARP included the training objective requirements for 2008 through 2010 and a JPR for one of their required standards (Fire Officer I, NFPA 1021, 4.2.1). The JPR included 2 pages; one was in written form outlining the standard, objective, requisite knowledge, skill and reference materials needed to meet the objectives. The second page of the JPR was the actual sign off sheet with the NPFA standard listed (Standard 4.2.1, NFPA 1021, 2003 edition) along with the task steps for completion (Renton, Washington Fire Department, 2008).

The Renton, WA, (2008) annual plan was categorized by skill level (FFI, FFII, fire officer I, II, pumper, aerial, Haz-Mat awareness/operations, confined space awareness, TRA, base objectives, EMS/Defib and investigator/inspectional) objectives. Under each work category (job classification) there was a series of objectives listed for each certification. There was both an annual requirement and a yearly objective for 2008, 2009 and 2010. Table 16 indicates an example of the Renton, WA plan.

Table 16

Renton, WA Annual Training Objective Requirements

Category	FFII	FOI	FOII	Haz-Mat Awareness
Annual	6.1.2	4.6.2	5.6.1	4.1.2

	6.3.2	4.6.3		4.2.1
	6.4.1			4.2.2
	6.4.2			4.2.3
	6.5.5			4.4.1a
2008	6.2.2	4.1	5.2.1	
	6.5.3	4.2.1	5.2.2	
		4.2.4	5.5.2	
2009	6.2.1	4.2.2	5.4.1	
	6.3.4	4.2.5	5.4.3	
	6.5.4	4.3.3	5.5.1	
		4.4.2		

Table 16 is for illustrative purposes only, not all required objectives are included for each position or each year for specific work categories. It was certainly clear what objectives are required on an annual basis in addition to what job performance objectives would be required for completion in each of the coming years (Renton, Washington Fire Department, 2008).

Rock Springs, Wyoming Fire Department. The Rock Springs, Wy Fire Department annual training plan was broken down into

categories (fire, EMS, rescue, hazmat and other recommended training topics) with check boxes and signature lines/completion dates for each required topic. The annual plan specifically referenced NFPA, ISO, Federal CFR and Wyoming EMT standards or requirements (Rock Spring, Wyoming Fire Department, 2007).

An interesting part of the Rock Springs training plan is that they require six (3 hours each) multi-company structural fire drills per station on an annual basis in addition to two multi-company structural night drills, and a variety of required EMS skills (Rock Spring, Wyoming Fire Department, 2007). The Rock Springs annual training document could easily be used by a company officer to plan or layout specific trainings by month or throughout the year.

Schaumburg, Illinois Fire Department. The Schaumburg, IL documents reviewed for this research included the 2009 proposed training schedule and the 2009 essential job functions testing sheet. The Schaumburg annual training schedule was organized by quarters with specific monthly training(s). Each months training was categorized by EMS, mandatory training, required training, routine training, MABAS (Mutual Aid Box Alarm System) training and monthly duties & training. The Schaumburg plan did reference some standards (NFPA 1410) and specified completion of essential job functions (EJF). Although not specifically referenced,

additional training subjects included required training on right to know (haz/com), lock-out-tag-out, highway safety, driving modules and blood borne pathogens (Schaumburg, Illinois Fire Department, 2008).

The Schaumburg, (2008) plan maintained multiple EMS trainings each month that included one paramedic training, one EMT-B training and one EMT-B practical. Table 17 provides an example of one month of Schaumburg's annual plan.

Table 17

Schaumburg Fire Dept January Training Schedule

EMS		
	Paramedic	Peds and elderly trauma
	EMT-B	Head injuries
	Practical	C-Collar use & airway management skills
Mandatory Training		
	Interior FF Training	
	SCBA Module A-1	Nomenclature and function
	Driving Module A-1	Rollover prevention
	Technical Rescue	Initial company operations
Required Training		
	Hose change and lead out drill	
Routine Training		

Company drills

On-line training

Quick drills

2009 Near miss calendar

MABAS Training

MABAS Dive training

MABAS HMMRT training

MABAS TRT training

Monthly duties and training

Aerial maintenance

Monthly inventories

SCBA inspections

Extinguisher maintenance

Station safety reports

The Schaumburg Fire Dept also requires firefighters to complete a series of job function tests. A document sheet that covered 11 essential job functions is required to be completed and signed by the firefighter and a proctor administering the test(s). Subjects included in the essential job functions were SCBA donning, advanced SCBA search, hose drag, ladder carry,

ladder climb, hydrant connection/operation and an equipment lift (Schaumburg, Illinois Fire Department, 2008).

United States Command Naval Forces Japan. The Command Naval Forces Japan, (CNFJ) regional master training plan was the final training plan reviewed for this research. The CNFJ training plan was extremely comprehensive with information on specific topics, the required amount of time for each training, how often each subject was trained on (annually, special, monthly, semi-annual) and maintained a referenced standard (NFPA or military) for every drill or training on their annual plan (Command Naval Forces Japan, 2008).

The ten-page CNFJ annual training plan had categories that covered ARFF (31 hrs annually), structural firefighting (28 hrs annually), special operations (19 hrs annually), rescue training (30 hrs annually), local requirements (13 hrs annually), apparatus driver/operator (16 hrs annually), and fire prevention (11 hrs annually) topics. Similar to the Lockheed Martin training plan, the CNFJ plan also had extensive training topics on aircraft identification, rescue and firefighting due to their specialized operations (Command Naval Forces Japan, 2008).

Research Questions Answered

Question 1, What standards should be followed in establishing an annual training plan?

It is clearly evident from the literature review and the annual training plans that were reviewed as part of this research that emergency service agency's should be training their personnel with specific standards as a guideline. The results of this research indicate that department personnel performing specific job functions should be trained using the NFPA standards, ISO requirements and other safety related (OSHA, IDOL, VOSH) standards as a guideline.

The eminent leader in fire service recommendations is the NFPA set of standards. The NFPA standards cover specific qualifications (e.g., FF; 1001, apparatus operator; 1002, airport FF; 1003, officer 1021, inspector; 1031, instructor; 1041, wildland FF; 1051, safety officer; 1521) and specific topics that firefighters and officers need to be competent in, (e.g., hazmat; 472, 473, live fire training evolutions; 1403, respiratory protection; 1404), in addition to purchasing, use, care and maintenance of personal protective equipment and clothing (e.g., FF ensembles; 1851, FF proximity gear; 1971, wildland FF; 1977, hazmat ensembles; 1991, hazmat liquid splash ensembles; 1992, clothing for EMS operations; 1999).

The results also indicate that Federal State and private organizations like ISO provide guidelines that should also be followed. Federal (CFR), State (OSFM-PSE), OSHA (IDOL), and ISO

requirements provide specific direction for training requirements of firefighters and emergency service workers.

Finally, there are a multitude of options available for additional learning alternatives that include curriculum specific publications, videos, CD-ROM, web-based and on-line programs.

Question 2, What web-based training programs are available for firefighters?

This research unveiled 4 computer-based training programs of which 3 were designed specifically for fire and emergency service workers. The 3 fire/EMS related training programs included Centrelearn, Target Safety and Action Training Systems. Through a grant funded by the IAFC-VCOS and Target Safety, the BPFD was fortunate enough to participate in a six-month trial of a web-based LMS.

Question 3, What are the costs associated with web-based training programs?

The costs associated with web-based on-line programs vary considerably based on the type of curriculum or coursework specified. Vcampus Corporation offered 3500 business related courses that ranged from $49.00 to $795.00 based on the type of course taken (Vcampus Corporation, 2009).

Centrelearn, a fire, EMS and safety based LMS offered an array of fire, ALS, BLS and safety related courses that ranged from $49.00 to $59.00 per user (Centerlearn, 2008c).

Target Safety, a web-based on-line LMS also offered over 180 fire, EMS, OSHA and human resource courses that are geared towards public entities. The costs associated with the program vary by the number of users per department. A small to medium organization would incur a $75.00 fee per user. Additionally, there is a one time (1895.00) set up fee that provides a specific web address, web-page banner and administrative functions for the specific department (Target Safety, 2008b).

Action Training Systems, (ATS) of Poulsbo, WA has over 200 fire and EMS programs that are primarily based on many of the NFPA standards. The user seat pricing is based on a sliding scale that begins at $500.00 for one administrator and one seat and decreases based on the number of additional users (computers) that are utilized in a specific organization. (See table 2 (p.24) for seat pricing schedule).

Question 4, What is the BPFD memberships input on the current state and future use of web-based training components in the annual training plan.

A large majority of BPFD personnel (19/23, 82.6%) that responded to the first survey indicated that they were

interested in on-line training opportunities (pre-research period survey, 2009 training opportunities survey, questions one and two) including topics like emergency response to terrorism, technical rescue awareness, NICOR Gas safety training and ethanol awareness training.

The follow-up survey (web-based, on-line training survey question 4) also revealed that a large majority of the BPFD membership (20/22 or 90.90%) described the material contained in the web-based grant-funded training to be either helpful (8/22, 36.36%), or somewhat (12/22, 54.54%) helpful in performing their job functions.

Question 7 of the follow-up web-based, on-line training survey revealed that several members (12/22, 54.54%) found the target safety program easy to access, while more (14/22, 63.63%) found it easy to use and the majority of respondents (17/22, 77.27%) found the program user friendly. None of the respondents found the program difficult to access or difficult to use.

Question 9 of the follow-up survey also revealed that the majority of respondents (9/21, 42.85%) indicated the web-based on-line program would be a good addition to our training program. Furthermore, 4 (4/21, 19.04%) individuals rated the training as excellent, 6 (6/21, 28.57%) rated it good, 6 (6/21,

28.57%) rated it average and only 1 (1/21, 4.76%) member rated the online training program as fair.

The results of this research have indicated that the BPFD needs to establish an annual training plan that includes specific topics, subjects and guidelines for effectively documenting annual training requirements. Additionally, the results indicated the usefulness and membership approval of integrating a web-based, on-line training component into the annual training plan. See Appendix D for the annual training plan produced from this research.

Discussion

The literature review and research for this ARP provided substantial information on the need for developing an annual training plan. Information obtained through this research included identifying the standards that should be followed for fire service training aspects and the options available to emergency service agencies that are looking for web-based, online and computer based training options (Centrelearn, 2008b; Target Safety, 2009b; Action Training Systems, 2009a).

Several standards can be used as guidelines in setting up training requirements and curriculum when establishing an annual training program. The Federal Government requires posting of specific work documents (United States Department of Labor,

2009) in addition to fire service training requirements by individual states (Village of Northbrook, IL, 2009). Other federal requirements in place include HSPD-5 that requires governmental agencies applying for Federal grants to be NIMS compliant (Federal Emergency Management Agency (FEMA), 2009a).

Most states have their own intricacies regarding laws that include creating specific departments and agencies within their governmental bodies. Illinois, in this case is not an OSHA state, but many of the Federal OSHA requirements are specifically referenced by the Illinois Department of Labor, (IDOL) (Illinois Department of Labor, 2003).

The Illinois Office of the State Fire Marshal has set forth the minimum standards for firefighters, driver operators and specialty certifications such as technical rescue and hazardous materials (Office of The State Fire Marshal, 2007).

The National Fire Protection Association has been identified as the premier group of standards for referencing fire service applications within an organization. The NFPA standards should be utilized as a guideline and measuring block for direction and to establish new initiatives in an organization (Courtland County Fire Emergency Management, 2003; Illinois Society of Fire Service Instructors, 2008).

The Insurance Services Organization, ISO also offers guidelines for departments to follow in their daily and annual operations. From a training standpoint, it is recommended that firefighters receive 20 hours of training per month in addition to the basic minimum of 240 hours for new recruits (Elizabeth Fire District, 2009; Village of Northbrook, Il, 2009).

There are several web-based, on-line and computer based training options available to fire and emergency service organizations to help obtain the recommended training hours. Some departments have experimented with web-based and on-line programs such as the Rosetta Stone Language Lessons Program utilized by the Rochester, MN Fire Department (Felsch, 2007). The Cincinnati, OH Fire Department has also found inherent value in using a curriculum that used CD's, DvD's and live broadcasts streamed to their fire stations and training rooms (Siereveld, 2002). Piskurich, Beckschi, and Hall (2000) found that computer based programs are an effective delivery method that also provides a high return on investment.

This research also indicates that the BPFD membership approves of using web-based training in conjunction with the regularly scheduled training. The majority of the BPFD survey respondents indicated the web-based on-line program would be a good addition to our training program while rating the web-based

trial period training either excellent (4), good (6), average (6), or fair (1). Additionally, the follow-up survey (web-based, on-line training survey, question 4) revealed that over 90 percent of the BPFD respondents described the material contained in the web-based grant-funded training to be either helpful or somewhat helpful in performing their job functions. Furthermore, the membership found easy access to the web-based on-line training program in addition to finding the program user friendly.

The web-based, on-line and computer based programs researched for this ARP provided substantial information on the content, courses available and costs associated with their programs.

Centrelearn, a remotely hosted fire, EMS and safety based training platform offered over 100 courses at an affordable fee of $49.00 per user for the basic package and $59.00 for the upgraded package. Some of the features of their program included full video streaming and integration of video and audio clips into existing presentations (Centrelearn, 2008a; Centrelearn, 2008b; Centrelearn, 2008c).

The IAFC-VCOS grant funded training with Target Safety's Prevention Link platform provided the BPFD with 15 hours of safety related training for each member over a six-month period.

Target Safety offers over 180 courses that includes fire, EMS, driver safety, supervisor and human resource related courses (Target Safety, 2009b). The cost associated with the Target Safety program is $1895.00 for initial setup (this was waived for grant awardees) and a per user fee of $75.00 annually (D. Davidson, personal communications, June 11, 2009).

Action Training Systems on the other hand provides a computer based training format that parallels many of the NFPA standards. ATS includes over 200 courses and curriculum for firefighting, driver/operator, fire officer and special training like hazardous materials mitigation (Texas Fire Chiefs Association, 2009). The ATS programs are primarily computer CD's or DVD's that are operated on a departments own computer(s). The requirements include purchasing an initial license at $500.00, which provides administrative controls and one seat (computer) price. Additional seats are purchased on a decreasing schedule and most course CD's/DvD's average between $200.00 and $280.00 each (Action Training Systems, 2009a; 2009b; S. Cato Personal communications, August 18, 2009).

A review of 12 other fire departments annual training documents was completed for this research also. The review indicated that most if not all have been referencing specific NFPA, OSHA, ISO or Federal regulations or standards in their

plans. Some departments provided annual schedules, quarterly schedules and monthly schedules in addition to JPR's and other training specific documents for this research. The Hanford, WA department supplied a three-year plan (Hanford Fire Department, 2007).

While some departments categorized their training plans by standards (ISO, OSHA, NFPA), others categorized their annual plans in other formats (EMS, fire, Haz-mat, required training, etc). The Renton, WA Fire Department (2008) referenced their annual plan through the use of specific NFPA standards and JPR's that needed to be completed at clear-cut intervals based on an individuals job function.

Some private industry organizations supplied their annual training plans. Lockheed Martin, Hanford, WA and CNFJ plans were also reviewed. The Lockheed Martin plan was keenly laid out with specific training topics by month, required hours per month and required hours per subject (Lockheed Martin, 2009). The CNFJ document was an exceptional plan with every training topic specifically referencing either an NFPA or military standard. Each CNJF topic also specified the required number of hours for each subject (Command Naval Forces Japan, 2008).

The Pacific County Fire District 1 in Ocean Park, WA annual training plan was extremely comprehensive and was combined in a

booklet form in an annual format. The booklet contained an organizational chart, frequently used phone numbers list, a listing of regular meetings (officer, safety, commissioner), a sign off for all drills, policies and required trainings in addition to a monthly/annual training schedule for both volunteers and shift personnel (Pacific County Fire District 1, 2008).

Several departments had multiple EMS topics on their annual training plans each month. The Lansing, MI, Lenexa, KS, Lincoln, NE, Loudoun, County, Va and the Schaumburg, IL Fire Departments all had multiple EMS training topics available for their membership each month.

The Hanford, WA and Lincoln, NE Fire Departments also offered online, intranet or computer based EMS training components to their membership throughout the year. Hanford offered an on-line EMS module on a regular monthly basis while Lincoln, NE offered intranet EMS training (Hanford Fire Department, 2007; Lincoln, Nebraska Fire Department, 2009).

Through the literature review, internal surveys and subsequent evaluation of different training plans, there is evidence that an annual training plan would provide value and direction for training members of the BPFD. With a routinely high employee turnover rate in the BPFD that hovers around 20

percent per year or more (Howard, 2007), an annual training plan would definitely assist future leaders in the organization by providing a good foundation of the necessary standards and proven practices that other successful fire departments have implemented. Additionally, this research indicates the use of web-based, on-line and computer based training is becoming more prevalent, cost efficient and acceptable in the delivery of fire and EMS training programs.

Recommendations

A few recommendations come from this research project. The primary recommendation is to utilize an annual training plan to properly layout the BPFD training on an annual basis. An annual training plan will solidify the concepts of assuring that all required training subjects are scheduled on a routine and regular basis. The annual plan should help alleviate potential issues like missing specific required training subjects.

The second recommendation that comes from this research is the application and integration of a web-based training component into the annual training plan. A web-based training program would assist greatly in classifying and completing mandatory subjects of training (OSHA, human resource, i.e. sexual harassment, workplace violence, etc,) and provide another avenue for additional learning that is highly compatible with

many of the employees. The IAFC-VCOS/Target Safety grant-funded, web-based training, presented an opportunity to utilize a new delivery method for topics and training subjects for the BPFD membership.

The final recommendation is to integrate a regular EMS, EMT-B level training on a bi-monthly basis. This training would be in addition to the regularly scheduled monthly EMS training put on by the North Lake County Emergency Medical System (NLCEMS).

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Appendix A

Recommended Standards Referenced in NFPA 1500

NFPA 10 Standard on Portable Fire Extinguishers

NFPA 101 Life Safety Code

NFPA 472 Standard for Professional Competence of Responders to Hazardous Materials Incidents

NFPA 473 Standard for Competencies for EMS Personnel Responding to Hazardous Materials Incidents

NFPA 600 Standard on Industrial Fire Brigades

NFPA 1001 Standard for Fire Fighter Professional Qualifications

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications

NFPA 1003 Standard for Airport Fire Fighter Professional Qualifications

NFPA 1006 Standard for Rescue Technician Professional Qualifications

NFPA 1021 Standard for Fire Officer Professional Qualifications

NFPA 1051 Standard for Wildland Fire Fighter Professional Qualifications

NFPA 1071 Standard for Emergency Vehicle Technician Professional Qualifications

NFPA 1221 Standard for the Installation, Maintenance, and use of Emergency Communications Systems

NFPA 1250 Recommended Practice in Emergency Service Organization Risk Management

NFPA 1403 Standard on Live Fire Training Evolutions

NFPA 1404 Standard for Fire Service Respiratory Protection Training

NFPA 1451 Standard for Fire Service Vehicle Operations Training Program

NFPA 1521 Standard for Fire Department Safety Officer

NFPA 1561 Standard on Emergency Services Incident Management Systems

NFPA 1581 Standard on Fire Department Infection Control Program

NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments

NFPA 1583 Standard on Health Related Fitness Programs for Fire Fighters

NFPA 1670 Standard on Operations and Training for Technical Search and Rescue Incidents

NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operation to the Public by Career Fire Departments

NFPA 1851 Standard on Selection, Care, and Maintenance of Structural fire Fighting Protective Ensembles

NFPA 1852 Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA)

NFPA 1901 Standard for Automotive Fire Apparatus

NFPA 1906 Standard for Wildland Fire Apparatus

NFPA 1911 Standard for Service Tests of Fire Pump Systems on Fire Apparatus

NFPA 1912 Standard for Fire Apparatus Refurbishing

NFPA 1914 Standard for Testing Fire Department Aerial Devices

NFPA 1915 Standard for Fire Apparatus Preventive Maintenance Program

NFPA 1925 Standard on Marine Fire-Fighting Vessels

NFPA 1931 Standard for Manufacturer’s Design of Fire Department Ground Ladders

NFPA 1932 Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders

NFPA 1936 Standard on Powered Rescue Tools

NFPA 1951 Standard on Protective Ensemble for USAR Operations

NFPA 1961 Standard on Fire Hose

NFPA 1962 Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose

NFPA 1964 Standard for Spray Nozzles

NFPA 1971 Standard on Protective Ensembles for Structural Firefighting and Proximity Fire Fighting

NFPA 1975 Standard on Station/Work Uniforms for Fire and Emergency Services

NFPA 1977 Standard on Protective Clothing and Equipment for Wildland Fire Fighting

NFPA 1981 Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services

NFPA 1982 Standard on Personal Alert Safety Systems (PASS)

NFPA 1983 Standard on Life Safety Rope and Equipment for Emergency Services

NFPA 1989 Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection

NFPA 1991 Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies

NFPA 1992 Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies

NFPA 1994 Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents

NFPA 1999 Standard on Protective Clothing for Emergency Medical Operations

Appendix B

1. Would you be interested in taking on-line certification classes?

	Response Percent	Response Count
Yes	**82.6%**	**19**
No	17.4%	4
Other (please specify)		0
answered question		**23**
skipped question		**0**

2. Which on-line classes would you be interested in taking? Check all that apply.

	Response Percent	Response Count
None, not interested	13.0%	3
Hazardous Materials Awareness	0.0%	0
Emergency Response To Terrorism	21.7%	5
Technical Rescue Awareness	21.7%	5
NICOR's Gas Safety Training	52.2%	12
Ethanol Awareness	47.8%	11
Would like more choices	**60.9%**	**14**
Other (please specify)		0
answered question		**23**
skipped question		**0**

3. The BPFD will be requiring FSVO (fire service vehicle operator) certification of all members in 2009, what classroom format would you prefer to attend an 8 hour class.

	Response Percent	Response Count
2 hour increments during a night training each month for 4 months	0.0%	0
2-4 hour classes one each month for 2 months	36.8%	7
1 eight hour day one month	**63.2%**	**12**
Other (please specify)		4
answered question		**19**
skipped question		**4**

4. What day of the week would you prefer to take the 8 hour 1 day class if it was offerred?

	Response Percent	Response Count
Monday	23.8%	5
Tuesday	19.0%	4
Wednesday	19.0%	4
Thursday	14.3%	3
Friday	14.3%	3
Saturday	**61.9%**	**13**
Sunday	14.3%	3
answered question		**21**
skipped question		**2**

5. What areas of training would you like to see added or improved in 2009?

	Response Percent	Response Count
Rescue Training	43.5%	10
Fire Training	39.1%	9
Ems Training	**47.8%**	**11**
Specialty Training (Dive, High Rise, Trench, Confined Space)	39.1%	9
Training with Auto Aid Depts	39.1%	9
Training with Mutual Aid Depts	**47.8%**	**11**
Other (please specify)		2
answered question		**23**
skipped question		**0**

6. The department is contemplating adding EMS training that would provide additional opportunities for instructors and NLCEMS approved continuing education hours in 2009. Would you be interested in teaching a 3 hour class during a specific night training?

	Response Percent	Response Count
yes	18.2%	4
no	**77.3%**	**17**
If Yes, add your name in the box below	4.5%	1
Other (please specify)		5
answered question		**22**
skipped question		**1**

7. If your answer to the above question is yes, what night would you be interested in teaching?

	Response Percent	Response Count
Monday	0.0%	0
Tuesday	0.0%	0
Wednesday	23.1%	3
Thursday	0.0%	0
Friday	0.0%	0
Saturday	0.0%	0
Not interested	**76.9%**	**10**
Other (please specify)		3
answered question		**13**
skipped question		**10**

8. What night do you feel is most convenient for members to participate in a department wide training?

	Response Percent	Response Count
Monday	10.5%	2
Tuesday	0.0%	0
Wednesday	**47.4%**	**9**
Thursday	5.3%	1
Friday	0.0%	0
Saturday Days	36.8%	7
Other (please specify)		2
answered question		**19**
skipped question		**4**

9. On a scale of 1 through 10, 10 being the best how would you rate the quality of Fire Training offered by the BPFD?

	Response Percent	Response Count
1	0.0%	0
2	0.0%	0
3	0.0%	0
4	0.0%	0
5	13.6%	3
6	18.2%	4
7	18.2%	4
8	**45.5%**	**10**
9	0.0%	0
10	4.5%	1
answered question		**22**
skipped question		**1**

10. On a scale of 1 through 10, 10 being the highest, how would you rate the EMS training offered by the department?

	Response Percent	Response Count
1	13.0%	3
2	4.3%	1
3	**21.7%**	**5**
4	4.3%	1
5	**21.7%**	**5**
6	8.7%	2
7	13.0%	3
8	8.7%	2
9	4.3%	1
10	0.0%	0
	answered question	**23**
	skipped question	**0**

Appendix C

1. Did you participate in the Target Safety On-line fire training program that was supplied in-house from January through June of 2009

	Response Percent	Response Count
Yes	95.7%	22
No	4.3%	1
answered question		23
skipped question		0

2. If you did participate in the on-line fire training program, how many subjects (individual trainings) did you complete

	Response Percent	Response Count
1-3	0.0%	0
4-6	9.1%	2
7-9	9.1%	2
10-12	22.7%	5
13-15	59.1%	13
answered question		22
skipped question		1

3. Approximately how much time did you spend on each training topic?

	Response Percent	Response Count
less than 10 mimutes	0.0%	0
11-20 minutes	9.1%	2
21-30 minutes	36.4%	8
31-40 minutes	**45.5%**	**10**
41-50 minutes	9.1%	2
Over 50 minutes	0.0%	0
	answered question	**22**
	skipped question	**1**

4. Did you feel that the training offerred valuable material that would help you perform your job functions?

	Response Percent	Response Count
Yes	36.4%	8
No	9.1%	2
Somewhat	**54.5%**	**12**
Not at all	0.0%	0
Did not participate in the on-line training program	0.0%	0
	answered question	**22**
	skipped question	**1**

5. The tests at the end of each subject Check all that apply.

	Response Percent	Response Count
Covered the material well (was a good representation of the material)	**90.9%**	**20**
Was not a good representation of the material presented	22.7%	5
Were too easy	0.0%	0
Were too hard	0.0%	0
answered question		22
skipped question		1

6. In your opinion, approximately how many training subjects should be offered each month?

	Response Percent	Response Count
1-2	**77.3%**	**17**
3-4	22.7%	5
5-6	0.0%	0
7-8	0.0%	0
9-10	0.0%	0
answered question		22
skipped question		1

7. Did you find the Target Safety on line training program? Please check all that apply.

	Response Percent	Response Count
easy to access	54.5%	12
easy to use	63.6%	14
user friendly	**77.3%**	**17**
difficult to access	0.0%	0
difficult to use	0.0%	0
answered question		22
skipped question		1

8. If additional subjects were available, which ones would you like to see offered? Please check all that apply.

	Response Percent	Response Count
Safety topics	13.6%	3
Tactic and strategy topics	**77.3%**	**17**
Hazardous materials training	18.2%	4
Specialty training (Confined space, trench, water safety, etc)	59.1%	13
Officer training	54.5%	12
Department SOP training	40.9%	9
EMS training	45.5%	10
answered question		22
skipped question		1

9. Do you feel that the target safety on-line training program would be a good addition to our training program? and how would you rate the overall quality of the training courses?

	Response Percent	Response Count
Yes	42.9%	9
No	33.3%	7
Excellent	19.0%	4
Good	28.6%	6
Average	28.6%	6
Fair	4.8%	1
answered question		21
skipped question		2

10. Do you have any additional information, questions or statements that you would like to make regarding the on-line target safety training? Please enter information in the box below

	Response Count
	8
answered question	8
skipped question	15

10. Do you have any additional information, questions or statements that you would like to make regarding the on-line target safety training? Please enter information in the box below

answered question	**8**
skipped question	**15**

		Response Count	
	Hide replies	8	
1.	I have done target safety in the past and I do believe that it is a great training tool	Tue, Aug 4, 2009 5:11 PM	Find...
2.	Great for completing the mandatory training subjects in place of instructor led training.	Thu, Jul 23, 2009 12:24 PM	Find...
3.	I would like to see that everyone needs a certain amount of training hours each month and it should be inforced. These classes should be offered as a make-up or extra information for people who may have missed some days or just want the extra training.	Mon, Jul 13, 2009 9:57 PM	Find...
4.	not good	Sun, Jul 12, 2009 9:50 PM	Find...
5.	The online training was a good way to get the manditory topics done. It is also a good metod to cover some of the dryer topics.	Fri, Jul 10, 2009 12:35 PM	Find...
6.	None	Fri, Jul 10, 2009 7:33 AM	Find...
7.	I feel this was a good experience for myself and most of the personnel on shift when training was represented with day to day events which enables us to do our jobs better. A problem I did find was not being able to use a computer because of other members using them.	Wed, Jul 8, 2009 1:56 PM	Find...
8.	Would like to see a list of available subjects for training...P. Howard		

Appendix D

Category	Annual Training Plan												Minimum	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Req Hrs	STNDRD
Fire Training														
SCBA	2	1	2		2	1	2		2	2	1	1	**16**	IDOL
Quarterly Drill			3		3			3			3		**12**	ISO
Night Drill				3			3			3			**6**	ISO
Weekly Drill Day Crews	7	7	7	7	7	7	7	7	7	7	7	7	7	drills/month
Weekly Drill Night Crews	7	7	7	7	7	7	7	7	7	7	7	7		
Pre-Plans				3							3		Every Plan	**ISO**/NFPA
Fire Related Topic(s)	20	20	20	20	20	20	20	20	20	20	20	20	20/Month	ISO
Auto-Aid Training	4 drills per year												**12**	ISO
Mutual-aid Training	4 drills per year												**12**	ISO
EMS Training														
Monthly NLCEMS Training	3	3	3	3	3	3		3	3	3	3	3	**30**	NLCEMS
EMS Monthly Drill	1	1	1	1	1	1	1	1	1	1	1			
Blood Borne Pathogens	1												**1**	IDOL
EMT-B EMT-P Practical		1		1		1		1		1		1		
Haz-Mat Training														
Haz-Mat Awareness/OPS	1		1		2		2		1		1		**8**	**IDOL**/NFPA/OSFM
Meters/Dosimeters			1											
Haz-Mat Practical							2							
Chemical Emergencies	1										1			

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Minimum Req Hrs	STNDRD
Drivers Training													**8**	IDOL/**ISO**
Driver Training/Safety		1		2										
Drivers Training Practical						2			2					
FAE Review			2			3			3					
FAE Testing											2			
FSVO					8				8				8/New FF	
Required Training													Per Subject	
Lock Out Tag Out	1												1	IDOL
Workplace Violence		1											1	IDOL
Sexual Harassment Training	1												1	IDOL
Tech Rescue Awareness		2			2				2			2	**8**	OSFM
Water Rescue OPS					2	2								
Ice Rescue											2			
ICS/NIMS	2							3	3					
Accountability		1											1	
Clothing Care/Maintenance		1						1					Twice/Yr	
Officer Training	3				3			3				3	12	ISO

				Fire Training Topics											
														Minimum	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Hrs	Standard
Aircraft Drill							X							**3**	
Apparatus Familiarization		X			X							X		3	
Building Construction				X										1	
Communications							X							1	
Drivers Training			X		X		X			X				**12**	IDOL/**ISO**
EMS Practicals			X		X		X		X		X		X	6	
EMS-NLCEMS monthly		X	X	X	X	X		X	X	X	X	X		**30**	**NLCEMS**
Evidence Preservation													X	1	
Extrication Drills					X						X			6	
Extrication Tools				X						X				2	
FAE/Pump OPS				X			X			X		X		4	
Fire Behavior							X							1	
Fire Prevention													X	1	
Flammable Liquids								X						1	
Forcible Entry			X						X					2	
Haz Mat		X		X		X		X		X		X		8	
Hose Evolutions				X	X	X		X			X			5	
Hose Testing				X	X									2	
Inspections													X	1	
Ladders					X		X			X				3	
Landing Zones FFL									X					3	
Master Stream Devices						X					X			2	
NFPA 1410 Drills					X			X			X			3	
NIMS/ICS			X									X		2	**NFPA**/OSFM
Officer Training		X				X			X				X	**12**	ISO
PPE Maintenance			X						X					2	NFPA
Pre-plans					X						X			1	NFPA/**ISO**
Quarterly Competency Drills		X			X			X			X			4	IDOL/ISO
Required Training		X	X			X	X		X	X		X	X		
Rescue				X					X					2	
RIT					X					X				2	
Ropes and Knots		X			X			X			X			4	
Safety			X										X	**2**	NFPA/IDOL
Salvage/Overhaul									X					1	
Saving our own									X					1	
SCBA		X	X	X		X	X	X		X	X	X	X	**16**	**IDOL**/NFPA
Search and Rescue						X					X			2	
SOP's		X	X											2	
Tactic/Strategy						X			X					2	
Tools/equipment			X							X		X		3	
Ventilation							X						X	2	
Water Rescue						X						X		2	
Wildland					X			X						2	
Total Fire Related/month														**20**	ISO