

Running head: BUILDING A TRAINING FACILITY

Leading Community Risk Reduction

Training Facility

Developing a Fire Academy

Training and Testing for Professional Fire Fighters

Patrick J. Lemming

Warren County Career Center

Springboro, Ohio

An applied research project submitted to the National Fire Academy

As part of the Executive Fire Officer Program

March 2007

Abstract

The problem was that Warren County Career Center Fire Academy has no training facility to prepare potential fire fighting professionals. Therefore, the purpose of this applied research project was to determine if the Warren County Career Center Fire Academy should build a training facility to meet the needs of the students who are attending the certification program. Descriptive research methods were used to answer research questions that helped define a resolution. The procedures employed were a literature review, personal and telephone interviews, and a survey sent to similar secondary education facilities. The most important result of this research was the fire academy does need access to a structured training center. It was recommended that a regional training facility be made available at The Warren County Career Center.

**Table of Contents**

Abstract.....	2
Table of Contents.....	3
Introduction.....	4
Background and Significance.....	5
Literature Review.....	7
Procedures.....	12
Definitions.....	15
Limitations.....	15
Results.....	16
Discussion.....	19
Recommendations.....	23
References.....	25
Appendix A: Sample Feedback Form.....	28
Appendix B: Sample Feedback Form.....	31

## Introduction

The fire service relies on the development of a variety of psychomotor skills for their personnel in order for them to be safe and successful in their professions. The development and eventual mastery of these skills is dependent upon practice and repetition. It has long been accepted that initial training should consist of a formal fire academy that is held at a specific location and is designed for the purpose of training new professionals.

Because of the importance of this training, Warren County Career Center Fire Academy must consider if a facility is necessary to accommodate its needs. Research is needed to gather information, which will aid in Warren County Career Center's decision. This leads to a series of questions pertaining to the criteria needed to find or develop such a program. Here in lies the problem; the requirements for certification as a fire fighter in the State of Ohio require specific psychomotor skills that can only be accomplished with a facility that is designed for those skills.

The problem is that Warren County Career Center Fire Academy has no training facility to prepare potential fire fighting professionals. This training facility can be used to better prepare fire professionals in the area.

Therefore, the purpose of this applied research project is to determine if the Warren County Career Center Fire Academy should build a training facility to meet the needs of the students who are attending the certification program.

Descriptive research methods will be used to answer research questions that helped define a resolution. The descriptive method should determine and report on the present status of training facilities and how they must incorporate

compliance issues with outside agencies.

The following research questions will be analyzed: What are the facility requirements for completion of a fire fighter certification program? This question should aid in answering questions about the psychomotor skills required to accomplish a present certification program. Is there an interest from regional fire companies to participate in the development of a training center? Data gathered from this question should report on the cooperation of the local fire departments and how they will support having a centrally located training facility. What environmental concerns are involved in developing this facility? This information will be used to educate the governing body as to the environmental impact of a training facility.

#### Background and Significance

Warren County has had a 19.4 percent population increase and is the second fastest growing county in Ohio with a population that is expected to double in the next ten years. (State Auditors Office, 2006) This growth in population has created an increased need for fire fighters that will exceed 270 full-time positions. To better serve the citizens, the Warren County Career Center has developed a secondary education program that will prepare a workforce for the future. Through this program, recruits for the Fire Academy are sent to the Washington Township and Scarlet Oaks Training Facilities. Any hands-on training within the Fire Academy requires considerable creativity and planning. In fact, there has been minimal live fire training due to the lack of facilities. The growth of the population has resulted in a serious need for a facility to prepare new recruits.

A plot of land for a training facility was proposed to the administration. The advantages of the property are as follows: 1. It is far enough from educational structures that it will not impact any other learning environment. 2. It would be conducive to the fire program because it sits adjacent to a treatment facility where static and positive pressure water can be used for training. 3. The Career Center already owns the property; thereby saving thousands of dollars that would otherwise be spent on the purchase of property.

The Warren County Career Center issued a stop build order on all facilities to evaluate the direction of the campus facilities overall. The Superintendent stated that the fire training facility should not be considered at this time and land would not be allocated until the evaluation process would be complete. With these stipulations intact, this applied research paper will be used in the descriptive method rather than as an action plan.

Incidents of structure fires in the United States continues to decline with increased fire prevention, better building construction, and new technology. By using these traits, the facilities can be designed to teach new prevention officers and inspectors how to make our communities safer. This research project was developed to satisfy the Executive Fire Officers Program Advanced Research Project requirement and is associated with the Leading Community Risk Reduction (2006) course at the National Fire Academy. This research project is relevant to the module, Unit 4 Intervention Strategies p. SM 4-34. This page identifies areas of education and enforcement that are directly related to building a training facility. This project is important to the author, as the responsibility of safety is an integral part of the organization's mission.

Fire academies must find ways to simulate "on the job training" so firefighters become proficient in this dangerous occupation. Developing psychomotor skills is one of the most important activities for firefighter training today. Basic skills, such as staying low while searching buildings and knowing exactly when and how to perform ventilation, as well as new skills, such as confined space tactics and hazardous materials duties, must be studied, practiced, and refined (Salka, 1999). Over the years, the Fire Academy has had to take its students to other training facilities as this was the only way to expose them to small room fires and to teach recruits how to search, ventilate and extinguish in a realistic training situation. A training drill of this type is a way for firefighters to practice life saving techniques so they will be proficient during an actual structure fire. If the Warren County Career Center had its own facility, the Center would be able create more opportunities for recruits and increase their potential to become better firefighters.

#### Literature Review

The purpose of this literature review is to provide a foundation for this research paper. Information obtained from this review will not only provide that foundation, but also provide answers to the research questions outlined in the introduction. The three research questions that must be addressed are as follows: What are the facility requirements for completion of a fire fighter certification? Is there an interest from regional fire companies to participate in the development of a training center? What environmental concerns were involved in developing this facility?

## Fire Fighter Certification Requirements

In most recruit academies, the director chooses a manual that closely follows or complies with the NFPA Standard 1001, "Standard for Fire Fighter Qualifications". In NFPA 1001, the basic competencies to become a highly qualified, professional fire fighter are outlined. The key concept for any certification program is that competencies must be demonstrated, not simulated or discussed. This means each member of the fire service, wishing to be recognized as a professional, must individually or, as part of a team, demonstrate competence in all areas of the standard. This includes ongoing assessment of one's skills in order to maintain proficiency as a fire fighter (NFPA, 2000).

The development and construction of a training center is a very time consuming and costly undertaking, but the need to have a dedicated facility cannot be understated. While attempting to master those skills necessary to become and remain a viable member of a fire company, there is no substitute for hands on experience. Grill (1996) believes people learn best from experience. Learning practical applications such as fire stream application or salvage techniques, in theory, from a training manual falls short of actually performing the techniques and applying them to a real time scenario. One must observe the effectiveness of a particular action in order to develop the skills necessary to assess what works and what does not work.

Preparation is very important to the success of emergency operations. Training is an important part of being prepared (Bingham, 1997). Training must be practical and relate to the real world. Nobody is going to fall asleep during a drill on finding lost firefighters (Bingham, 1997). The National Fire Protection

Association (NFPA) states you need to determine the need for a training facility and if the need exists, you should develop a purpose statement. An example of a NFPA statement follows. "Ever-changing technologies in fire suppression and fire prevention require that today's fire fighters be knowledgeable and well trained. A proper environment for obtaining this knowledge and training is equally important. This facility provides the physical requirements of a fire training center and enhances the community's well-being through better fire protection and fire prevention"(NFPA, 1997).

#### Regional Interest

Consolidation efforts have traditionally focused on the operations arm, but the concept is gaining popularity in the training arena as well as the operations arm of the fire service. The consolidation of fire service training efforts, even if the agencies are not actively pursuing a totally consolidated organization, may be a model for the future (Larson 1996). Additionally Larson states, "Interactive training efforts among several departments also streamline administration and mean a considerable cost savings to a recruit academy, whether your agency is conducting the training sending recruits or both"(Larson 1996, p. 65).

The benefits are wide-ranging. Exposure to the resources of neighboring agencies benefits all agencies agency by bringing in new insight, fresh ideas, and alternative methods. Recruits who learn mutual aid interaction from the start will benefit from it throughout their careers, especially now that more departments are working together on a regular basis. Interactive training efforts among several departments also streamlines administration and means

considerable cost savings to a recruit academy, whether an agency is conducting the training, sending recruits or both (Larson, 1996).

With consolidated training efforts, each department has access to resources, facilities and hardware, which do not have to be duplicated. This can be any number of things: burn buildings, training tower, driving pad, etc. Audio-visual equipment and aids also can be shared, and instructors with specialized knowledge and skills can be utilized by all agencies (Kellam, 1992).

Along with recruit training, officer-training programs with multiple agency involvement could also be beneficial to the fire service. Each new officer is invested with the faith and trust of the fire chief, which decides the candidate to promote. Unfortunately, the chief may at some point question an officer's ability because of poor or mediocre performance. These situations happen because chiefs fail to take the next step in the promotional process: mandating training for newly promoted company officers (Hawkins, 2000).

### Environmental Concerns

The National Fire Protection Agency (NFPA) Standard 1402 recommends federal, state and local environmental agencies should be consulted to address problems of wastewater (treatment and disposal) and pollution (air, water, and noise) when procuring the necessary permits and licenses (NFPA, 1997) during the creation of a training facility. The NFPA also recommends that an environmental impact statement should be developed (1997).

The United States Environmental Protection Agency (EPA) points out that Section 404 of the Clean Water Act of the United States Government establishes a regulatory program (EPA, 2000a). The information from the EPA designates

the United States Army Corps of Engineers (USACE) as the government agency that administers day-to-day jurisdictional determinations. The USACE regulatory program has its legislative origins in the Rivers and Harbors Acts of 1899 (USACE, 2001a). In 1972, amendments to the Federal Water Pollution Control Act added what is commonly called Section 404 authority to the program. Further research revealed that the EPA shares authority with USACE in the administration of Section 404 of the Clean Water Act (USACE, 2001b). As detailed in this literature research, USACE administers day-to-day permit decisions and jurisdictional determinations, develops policy and guidance and enforces Section 404 provisions. The EPA develops environmental criteria used in evaluating permit applications and determines the scope of geographic jurisdiction, approves and oversees State assumption, identifies activities that are exempt, reviews and comments on individual permit applications, has authority to veto USACE permit decisions, can elevate specific cases, and enforces Section 404 provisions (EPA, 2001a). According to this research, the permit process involves lengthy waiting periods, and these waiting periods will have a definite impact on the development of this property.

According to the EPA, the site is a descriptive reference to abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination (EPA, 2001b). An Engineering firm should determine the necessity to apply to the USACE for a jurisdictional ruling as referenced in Section 404 of the Clean Water Act should conduct an environmental study.

The wastewater and runoff water from firefighting operations posed a question of legal issues. The velocity of the runoff water from the proposed areas must be at an acceptable level for Warren County's approval (Warren County Ordinances, 2001). Contaminants contained in typical firefighting operations during training shall not violate any EPA and County Ordinances. The Advisory Committee in the September 2006 meeting made the decision to use a class "A" fire simulator in the training burn building and to use a retention pond to collect the runoff. Furthermore, it was recommended that terraces could be constructed to slow large amounts of water run off from the surface of the concrete parking lot and roadway areas.

#### Literature Review Summary

The literature review provided insight into the need for a training facility for new recruit classes. Cooperative efforts are shown to benefit a wide range of organizations as well as individuals. The literature review supports the development of a multi-disciplinary training center. NFPA 1402, *Guide to Building Fire Service Training Centers*, is an instrumental tool when developing a training center. Each chapter serves as a roadmap for navigating the various complex issues such as environmental issues.

#### Procedure

The desired outcome of this research project was to investigate the possible need for a training facility for the Warren County Career Center Fire Academy. A literature review was conducted to examine available materials necessary to understand what it would take to build a Fire Training Facility.

The researcher conducted telephone interviews using a feedback form (Appendix A) to gather information from Warren County Fire Chiefs. Personal telephone communication was used because contact by telephone results in a greater number of responses than using traditional mail or e-mail communication. This research was conducted for an understanding of what types of training facilities would be expected, what the criteria would be used for those requests, and how often the facility would be used. This information is critical to show the need to the Warren County Career Center that they should offer a centrally located fire training facility. The resulting data were also designed to evaluate what type and the number of each organization possessing an interest in participating in a cooperative effort

Research continued with a feedback form sent through the mail to the 19 secondary fire academies that were registered with the Ohio Department of Education (Appendix B). This was a preliminary investigation to determine the proliferation of secondary education programs that have training facilities, the frequency they are used, and the demand for these types of facilities. The form surveyed the level of certification the graduating students would have upon completion from facilities already in place. The next two questions asked about the training facility, including inquiries about the size of the land and what facilities are on the land. The form also attempted to determine how often the program is used, if there was a demand in order to establish it, and what was there a need for the program. The final question investigated the issue of what resources would be needed to accomplish the task of building a training facility.

Research for this project included consultation with the NFPA 1402, *Guide to Building Fire Service Training Center, 1997 Edition*. This standard details the development process in a step-by-step fashion and cites early in the document the importance of organizing an advisory group that interfaces with governing bodies (NFPA, 1997). NFPA 1402 also cites the need for environmental considerations and associated legal concerns.

Research continued with gathering literature from the Learning Resource Center of the National Fire Academy, and the Internet. Articles from fire service magazines, previous Executive Fire Officer Applied Research Projects, and text from nationally recognized standards for building a training facility were used to obtain information pertaining to this applied research project.

Armed with the information received from the literature, feedback forms were created and telephone interviews and meetings with the Superintendent were conducted to determine the feasibility of build a training facility, the development of a proposal began. With the Superintendent's support, and the guidance of the Facilities Improvement Committee, a proposal could be developed to assist in establishing a top quality fire fighting training facility for the Warren County Career Center Fire Academy.

The desired outcome of this research project was to determine the need for a training facility for the Warren County Career Center Fire Academy. The evaluative method was used to address the research questions outlined in the introduction. This information will be used in determining the feasibility of pursuing the concept of constructing a training facility at the Warren County Career Center. The research was historical in that the data from the literature

review was used to understand the need for a training facility and how other agencies developed their own facilities. The evaluative research method was used on the information obtained from the feedback form that was sent out to Warren County Fire Chiefs along with nineteen state secondary education programs.

#### Definition of Terms

Training Facility - Fixed facility meeting the requirements of NFPA.

Fire Department- Any agency, public or private, whose primary responsibility is fire protection and prevention.

Secondary Education Program – A Fire Academy that has High School students in their Junior and Senior Years

Waste Water – Any run-off water that may have contaminants that could be harmful to the environment.

#### Limitations

The primary limitation of this ARP was in attempting to contact regional Fire Chiefs. The feedback forms were used as a preliminary investigation tool to assist in understanding what training facilities are desired and the criteria for such a facility. Even by using a formational feedback form and personal telephone contact, 10 of 12 Chiefs responded, giving this discipline an 83.3% response rate. With 19 surveys sent out to secondary education programs, only 9 returned the forms, resulting in a low return rate. Follow-up letters were sent to all participants encouraging them to return the survey without any increase in returns. Follow-up telephone calls were conducted with an increase in data gathered to 15 out of 19.

## Results

During the research process, the research questions provided the direction for this applied research project. Understanding what criteria are needed for the Warren County Career Center to build a training facility is the purpose of this applied research project, and each question is essential to the outcome of the plan.

The first question addressed was: What are the facility requirements needed for completion of a fire fighter certification program? Based on the results gathered from the literature, available response forms, and telephone conversations, there were a number of factors to consider in this process. The first concern was to determine what training facility should encompass. It was found that to accomplish a NFPA 1001 certification for professional fire fighting, a candidate must accomplish tasks that take place in a training facility that meets the NFPA 1402 standard. NFPA 1402 "Building Fire Service Training Centers," outlines components and considerations that should be addressed when constructing a training facility. The NFPA lists four groups to be considered with multiple sub-groups associated with each group. The following list of components should be considered:

1. Administrative and Support Facility
2. Indoor Instructional Facilities
3. Outside Facilities
4. Site/Exterior Facilities

Because a training facility is a specialized facility, there are a number of specific features that should be considered (NFPA, 2002). This information was

compared to fourteen programs, developed by outside agencies, which are operating a secondary certification program similar to the Warren County Career Center Fire Academy (Appendix A). These outside agencies currently offer two different levels of certification: nine are Professional Fire Fighter and five are Part-Time Fire Fighter.

The second concern was if those programs used outside training facilities or had one on the premises where they held class. The results were overwhelming that all fifteen programs questioned did have some type of training facility at their location. These facilities ranged from two to twelve acres in size. The size of the facility was directly correlated to the types of buildings on the property. Those facilities that had more buildings to train with had more acreage. Of the programs that had a facility, only nine of them stated that they had referenced the NFPA 1402 standard. Additionally, two of them stated that they had not used the standard and three of them were not sure.

The next question asked: Is there an interest from regional fire companies to participate in the development of a training center? Consolidated fire service, even among agencies not otherwise consolidating, may become the model for the "21<sup>st</sup>" century (Larson, 1996). With each consolidated fire service, each department will have access to resources, facilities and hardware, which will not have to be duplicated. This can be any number of things: burn buildings, training tower, driving pad, etc. This consolidation would also enable the sharing of audio-visual equipment and aids, and instructors with specialized knowledge and skills, which can be utilized by all agencies (Kellam, 1992).

Survey results revealed key additional data. Thirteen of the fourteen Warren County Fire Chiefs responded to the questionnaire (Appendix B), and when asked if they used our facility for certification programs, eleven out of thirteen said that they did use our program. There were two that stated they used another agency because of their dependability and location. When asked if they thought we needed a training facility at the Career Center, they unanimously agreed that there is a need for such a facility. Additionally, they agreed that the facility should be built to meet the NFPA 1402 standard. There were varying answers to the duration of use that each department would use the facility, but all agreed that if they had a burn facility, they would use it for their annual required live burn training. Most expressed an interest in this because of the difficulty of obtaining a structure to burn on an annual basis. Also, acquiring a structure for live burn training requires a great deal of preparation prior to burning.

Exposure to the resources of neighboring agencies benefits your own by bringing in new insights, fresh ideas and alternative methods. Recruits who learn mutual aid interaction from the start will benefit from it throughout their careers, especially now that more departments are working together on a regular basis. Interactive training efforts among several departments also streamline administration and can mean considerable cost savings to a recruit academy, whether your agency is conducting the training, sending recruits or both (Larson, 1996). It appears that Fire Chiefs in this area would support some type of regional training facility.

The final question asked: What environmental concerns would be involved in developing this facility? The environmental concerns associated with

this property have been satisfied as each one developed in the course of evaluating the property. Further testing and delineation will determine the activity of the environment and dictate the location of the offices and classrooms on this portion of the property. The location of the property adjacent to a pond that funnels water into a reservoir will require constant vigilance concerning contamination and pollution. The county ordinances that address run off into waterways will be adhered to by using the retention pond to slow the water velocity as it drains into the waterways.

### Discussion

Research completed for this project shows that a large number of fire departments want to participate in regional training programs. Fire departments can no longer survive with the "only me" attitude. As Larson (1996) stated, consolidated fire service, even among agencies not otherwise consolidating, may become the model for the "21<sup>st</sup>" century. A large number of emergency service providers, such as fire, police and EMS, have already joined forces to train in central locations. In doing this, they have been able to share the construction and maintenance costs, thereby developing a more sophisticated facilities.

Upon reviewing the requirements listed under NFPA 1402, a comprehensive assessment of current and future needs must be made in order to derive the maximum benefits from the resources available. This assessment should consider the following:

1. Current and future training needs
2. Facilities currently available
3. Organizations or departments using the facility
4. Viable alternatives to new construction

The resources available can constitute a major constraint to facility development and construction. Questions concerning the availability of resources should be answered during the planning of a facility (NFPA 1997). Fire departments must also anticipate the changes in firefighting techniques and plan their facility for changes.

Insurance Services Office (I.S.O.) also plays a part in the need for a training facility. Firefighter training is one area that is looked at when they come into a community for a review. Credit for the training facilities is based on actual use of the facilities for company drills, multiple company drills and night drills (Granito & Hickey, 1999). One way to help justify the need for this type of facility is to show how it would help to decrease insurance premiums. Item 581 is broken down to review the training programs offered by the fire department. This item is essentially divided into the two evaluation areas:

1. Training facilities and the use of these facilities,
2. Specific training programs that need to be conducted annually (Granito & Hickey, 1999)

The I.S.O. in its Public Protection Classification Survey reviews the training facilities and their use. Furthermore, it states that Fire Department personnel should have access to training facilities that include:

1. A drill tower,
2. A fire training building including a smoke room,
3. A combustible liquid pit,
4. A library with training manuals, and

5. Audio/Visual equipment supplemented with pump and hydrant cutaways.

The results from the Career Center's current inventory reveals access to confined space props, "Save Our Own" structures, and a few classrooms. With this information in mind, the item ranked number one in the survey was a training tower with burn rooms, and this item is missing throughout the region. Dedicated classrooms are also missing, as most of the ones listed are community rooms not available for exclusive classroom use.

The question comes to mind, if a facility is built, will fire departments send their personnel to a facility outside their response area? Once again, Larson (1996) explains the benefits are wide-ranging. Exposure to the resources of neighboring agencies benefits an agency by bringing in new insight, fresh ideas and alternative methods. Recruits who learn mutual aid interaction from the start will benefit from it throughout their careers, especially now that more departments are working together on a regular basis. Interactive training efforts among several departments also streamline administration and mean considerable cost savings to a recruit academy, whether the agency is conducting the training, sending recruits or both. In the area, some departments train together on a regular basis; this not only shares instructors but also fire ground activities run more smoothly when personnel have trained together. These joint efforts also dissipate the stigma that one department is better than another.

Several factors made building a training facility very attractive: the size of the property, the distance from residential areas, excellent access, and the fact

that the Career Center already owns the property. NFPA 1402 is a useful guideline to follow when developing a training facility. For example, Chapter 4-2, titled *Site Considerations*, contains valuable advice concerning property considerations. Following NFPA 1402 should lead to an engineering study that will determine if the property could be used for a training facility. The USACE Section 404 permit process is time consuming and must start early in the development of the property, or the project will suffer costly delays.

The Federal Register, Volume 60, Number 228, November 28, 1995, page 58605-58614, contains the details of usage of existing property for the creation of new potential hazardous waste. The development of a retention pond that will maintain this waste will continue to be developed for this property. The Clean Water Act (Section 404) was enacted with the intent to regulate activities where the potential exists for destroying or contaminating otherwise clean waterways. Following the regulations of United States Army Corps of Engineers, and the Environmental Protection Agency, are tedious but necessary.

The runoff water is an issue when considering the county ordinances and the changing nature of the landscape. Any downstream problems that occur have the potential to be traced to the development of this property and could renew efforts to take legal action. If the fire simulator is not used, this could severely compromise the efforts to conform to the Clean Water Act and to meet the regulations from USACE and EPA. The future tenability of this training facility will depend upon the willingness of the participants to honor the spirit of these environmental regulations. Any activity that has the potential to add contaminants to the waterway could be disastrous. For example, the temptation

to perform service work on the apparatus must be avoided. Additionally, a ban against using flammable materials other than the simulator to enhance live fire fighting must be initiated and strictly enforced.

### Recommendations

A regional training facility should be made available to the Warren County Career Center recruits along with firefighters from throughout the region. Based on the results of this ARP, the author recommends that the Warren County Career Center further explore the idea of a recruit training facility that can be used as a multi-jurisdictional regional training center. This facility should include a burn building, a tower, a smoke room, a combustible liquid pit, a library with training manuals and classrooms with audio/visual equipment.

Section 4-5 of NFPA 1402 is devoted to environment considerations when building a training facility. This section of NFPA 1402 continues with a discourse on contamination and wastewater disposal in relation to fire training activities undertaken during the construction of a fire training facility. The format of the document is arranged so that the planning and frontline considerations are presented first. The components of the actual construction phases are then presented in a user-friendly fashion. This guide is invaluable to any entity who is about to undertake construction of a fire training facility. The planning and background work necessary for a project of this nature is well defined and clearly presented in NFPA 1402. It is recommended that any entity about to undertake an endeavor of this nature consult with NFPA 1402 in the initial stages. This will provide the necessary background information that will make the entire project flow much better.

A further recommendation would be to invite local, county, and state officials from any of the public services areas to participate in the planning stages. These individuals will bring expertise into the process and can lend advice as to master plans of the different facilities in the region. Timelines for the project should be established for the project to provide further guidance and direction for the entire process.

In addition, work should be done to initiate the grant application process and search for other financial support. This should include opening communications with local energy companies, and any other organizations that may wish to provide support.

References

- Berger, James L. (2000). A Training Facility for St. Joseph Township Fire Department. Executive Fire Officers Research Paper, Emmitsburg, MD: National Fire Academy
- Bingham, R. (1997, August). Preparation and Training Key to Emergency Operations. *Fire Engineering*, 97-102.
- The Clean Water Act of 1977, 40 U.S.C.A. Part 230 § 230.41 et seq. (1977):  
Received Dec. 7<sup>th</sup>, 2006 from the World Wide Web:  
<http://www.usace.army.mil/inet/functions/cw/cecwo/reg/40cfr230.htm>
- The Emergency Services Training Center (2001). Retrieves September 14, 2006 from the World Wide Web <http://www.delcoest.org/history.html>
- Environmental Protection Agency (2004b), *Brownfield Program*, Washington DC: author. Received November 28, 2006 from the World Wide Web:  
<http://www.epa.gov/earth1r6/6sf/bfpages/sfbfhome.htm>
- Gackenheimer, D. (2000, May). If you build it, local agencies will contribute. *Fire Chief*, 32.
- Granito, J & Hickey, H. (1999, August). The ISO Inc. Public Protection Classification Process. *Firehouse*, 104-114
- Grill, M (1996, February). Does your fire department have a learning disability? *Fire Chief*. 44.
- Hawkins, R. (2000, June). *Firefighter One and Firefighter Two Practical Examination Proctor*, (pp 5) New York, NY: Autor
- Kellam, J. (1992, April). Regional Training: Cooperation to Produce a Better Product for Less. *The Voice*, 35-36

- Knight, Raymond (2001). The Development of Unused Land Into a Training Facility Site for Garland Fire Department. Executive Fire Officers Research Paper, Emmitsburg, MD: National Fire Academy
- Larson, R. (1996, February). A 21<sup>st</sup> –century training model at work. *Fire Chief*, 62-74
- LeBoeuf, Roger M. (1998, June 2) Basic Steps to Plan and Conduct a New Fire Training Burn Building. Online IAFC On Scene Received Dec 7<sup>th</sup>, 2006 from the World Wide Web:  
[www.iafconline.org/onscene/060198/burnbldg.cfm](http://www.iafconline.org/onscene/060198/burnbldg.cfm)
- Mitchard, Don (1991, January) Municipal & private sector emergency organizations create training center. Fire Chief. 42-45
- National Fire Protection Association (2000, November). Standard for Fire Fighter Professional Qualifications, Standard 1001. Quincy, Mass.: Author.
- Rondinelli, Stephen C. (1990). Consolidated Fire Training Facility and Architectural Design Program. Executive Fire Officers Research Paper, Emmitsburg, MD: National Fire Academy
- National Fire Academy executive leadership, student manual*. (2005).  
Emmitsburg, MD: United States Fire Administration.
- National Fire Protection Association (2007). Guide to build Fire Service Training Centers. (NFPA 1402). Quincy, MA: Author
- Ohio State Auditors Office, *Annual Report*, Columbus, OH: author. Received February 28, 2007 from the World Wide Web:

<http://www.auditor.state.oh.us/Public/AuditSearch/results.aspx?ReleaseDate=02/27/2007>

Parker, Steve (1999). Proposal to Create a Fire Training Facility for the Woodlands, Texas. Executive Fire Officers Research Paper, Emmitsburg, MD: National Fire Academy

Salazar, J. (2006). Instructors Guide to Accompany Firefighters Handbook Essentials of Fire fighting and Emergency Response. Delmar Thompson Learning, Albany, New York

Salka, J. (1999). Firefighter's Handbook Essentials of Firefighting and Emergency Response. Albany, NY: Delmar Publishers, xvii

Shank, William R. (2001). Determining the Feasibility of Constructing a Regional Training Center in the Four Corners Region. Executive Fire Officers Research Paper, Emmitsburg, MD: National Fire Academy

United States Corps of Engineers, *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks*, (November 28, 1995). Fed. Reg. Volume 60, Number 228, Page 58605-58614.

United States Corps of Engineers, *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, 40 U.S.C. Part 230 Section 404-(b) (1). Retrieved January 26, 2007 from the World Wide Web:

<http://www.usace.army.mil/inet/functions/cw/cecwo/reg/40cfr230.htm>

**Appendix A:**  
**Sample Feedback Form for Secondary Education**  
**Fire Service Program**

## SECONDARY EDUCATION COORDINATOR

This feedback instrument was prepared as a part of a study to determine the need for the Warren County Career Center Fire Academy to build a training facility as part of an Executive Fire Officers Program Applied Research Project by the author. The purpose of this tool is to determine if other secondary education programs have such a facility.

**Thank you for assisting me by completing this short questionnaire.**

**Name of organization:** \_\_\_\_\_

1. Does your organization offered a certification program?

Yes: \_\_\_\_\_  Full-time  Part-Time

No: \_\_\_\_\_ If no why? \_\_\_\_\_

\_\_\_\_\_

2. Do you have your own training facility?

Yes: \_\_\_\_\_ No: \_\_\_\_\_ Please continue to #6

3. How many acres does your facility cover? \_\_\_\_\_

4. What type of buildings do you have?

Burn Building

Tower

Station

Other \_\_\_\_\_

5. Did you refer to NFPA 1402 to build your facility? \_\_\_\_\_

6. Would you be interested a copy of this research project? \_\_\_\_\_

\_\_\_\_\_

**Results for Appendix A**

**Secondary Education Fire Service Program**

**Out of the 19 queried 15 responded with results as follow:**

1. Does your organization offered a certification program?  
Yes: 14 \_\_\_\_\_ 9 Full-time      5 Part-Time  
No: 1 \_\_\_\_\_ If no why? Instructor was not hired in time for this year. \_\_\_\_\_
  
  2. Do you have your own training facility?  
Yes: 15 \_\_\_\_\_ No: 0 \_\_\_\_\_ Please continue to #6
  
  3. How many acres does your facility cover? 2-12 \_\_\_\_\_
  
  4. What type of buildings do you have?  
10    Burn Building  
14    Tower  
9      Station  
Other Haz-Mat Training, Auto Extrication Area, Car and Dumpster Fire Area, \_\_\_\_\_
  
  5. Did you refer to NFPA 1402 to build your facility? 9 yes \_\_\_\_\_
  
  6. Would you be interested a copy of this research project? \_\_\_\_\_
-

**Appendix B:**  
**Sample Feedback Form for Warren County Fire Chiefs**

**WARREN COUNTY FIRE CHIEF**

This feedback instrument was prepared as a part of a study to determine the need for the Warren County Career Center to build a training facility as part of an Executive Fire Officers Program Applied Research Project by the author. The purpose of this tool is to determine if there is a need for a training facility to be built for the certification programs.

**Thank you for assisting me by completing this short questionnaire.**

**Name of government organization:** \_\_\_\_\_

1. Does your government organization use the Warren County Career Center to train your fire fighters?

Yes: \_\_\_\_\_

No: \_\_\_\_\_ If no why? \_\_\_\_\_

2. Do you feel there is a need for a centrally located training facility for Warren County?

Yes: \_\_\_\_\_

No: \_\_\_\_\_ If no why? \_\_\_\_\_

3. Do you feel that the Warren County Career Center Fire Academy should build a training facility to meet the current NFPA 1402 standard?

Yes: \_\_\_\_\_

No: \_\_\_\_\_ If no why? \_\_\_\_\_

4. How often do you think your organization would use the training facility if it were built at the Warren County Career Center? \_\_\_\_\_

**Results for Appendix B**

**Fire Chiefs in Warren County who have a vested interest in the results of a certification program in their county.**

**Out of the 14 queried 14 responded with results as follow:**

1. Does your government organization use the Warren County Career Center to train your fire fighters?

Yes: 11

No: 2 If no why? \_\_\_\_\_

2. Do you feel there is a need for a centrally located training facility for Warren County?

Yes: 13

No: 0 If no why? \_\_\_\_\_

3. Do you feel that the Warren County Career Center Fire Academy should build a training facility to meet the current NFPA 1402 standard?

Yes: 13

No: 0 If no why? \_\_\_\_\_

4. How often do you think your organization would use the training facility if it were built at the Warren County Career Center? \_\_\_\_\_

0-2 per year 7 Departments

3-4 per year 4 Departments

5-9 per year 2 Departments

Certification Statement

I hereby certify that this paper constitutes my own product, that where the 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: \_\_\_\_\_