IDENTIFYING A SWIFTWATER RESCUE PROGRAM FOR THE EAU CLAIRE FIRE DEPARTMENT

STRATEGIC MANAGEMENT OF CHANGE

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ABSTRACT

The problem was the current response to an increased number of swiftwater rescue situations that had left the Eau Claire Fire Department unprepared to handle such situations safely. The purpose of this research project was to develop criteria for implementation of a swiftwater rescue program that is practical for the needs of the Eau Claire Fire Department.

This study used the descriptive research methodology supported by a survey of other fire departments that provide swiftwater rescue programs. The following research questions were addressed:

1. What types of swiftwater rescue programs do other communities provide?

2. What successful applications (strategies) can be adopted by the Eau Claire Fire Department to develop and implement swiftwater rescue protection?

As a result of this research, one will be able to realize the need for a swiftwater rescue program designed for the Eau Claire Fire Department. A literature review of swiftwater programs and strategies was identified. A survey of 63 fire departments on waterways was distributed, this survey asked specific questions concerning their swiftwater rescue program. Twenty-five of these surveys were distributed among Wisconsin fire departments to analyze existing programs within the state.

The results of the research identified that swiftwater rescue programs are in their infancy relating to development and implementation. Limited existing programs were identified through the literature review. Survey data concluded that 50% of the surveys returned had swiftwater rescue programs.

This research paper offers several recommendations for implementation of a swiftwater rescue program for the Eau Claire Fire Department. Included in these recommendations are; commitment by management to develop a swiftwater rescue program with a time table for implementation, department-wide training for swiftwater rescue, purchasing of personal equipment necessary for swiftwater rescue, development of financial implementation strategies, development of a preplanning system for

swiftwater, enhancement of safety education programs to the community, and spreading of swiftwater rescue awareness to surrounding departments.

TABLE OF CONTENTS

INTRODUCTION

Fire departments nationwide have always responded to rescue situations involving flooding or rapid water emergencies. In recent years, the number of swiftwater rescue incidents has increased dramatically. River and flood rescues have become recognized as a formal responsibility of the fire department and other public safety organizations (Collins, April, 1994). Moving water and floods kill more Americans annually than any other natural catastrophe, including airline crashes or domestic terrorism (Segerston, 1996). Segerston also identifies that an average of 200 Americans drown each year in flash flooding. Seasonal flooding accounts for many more.

In 1995, three firefighters died while attempting swiftwater rescues, and on the average three agency rescuers drown each year attempting such rescues (Segerston, 1996). One of those deaths occurred in a nearby community, Black River Falls, Wisconsin. After attending the visitation and funeral, it is an event one never cares to revisit.

This increase in the fire department responses and the lack of knowledge associated with swiftwater rescue situations has left the Eau Claire Fire Department unprepared to handle the incidents safely.

The purpose of this research was to identify a swiftwater rescue program for the Eau Claire Fire Department. A descriptive research methodology supported by a survey of other fire departments that provide swiftwater rescue programs was used to answer the following questions:

* What types of swiftwater rescue programs do other communities provide?

* What successful applications (strategies) can be adopted by the Eau Claire Fire Department to develop and implement swiftwater rescue protection?

BACKGROUND AND SIGNIFICANCE

The city of Eau Claire, population 61,872, is located in West Central Wisconsin. The municipal career fire department protects approximately 31.90 square miles. Included in the mutual-aid agreements that Eau Claire holds, are 10 additional area fire departments, serving an estimated 1100 square miles, and additional 69,000 citizens. Within the city limits of Eau Claire there are about 15 linear miles of rivers and many smaller streams and creeks. Total river mileage including mutual-aid response area exceeds an additional 45 linear miles of potential hazard exposure. Annually, the Eau Claire Fire Department responds on an average of 4100 emergency responses, 10 of which involve river-related emergencies.

In the past, when Eau Claire firefighters have responded to river emergencies they have found themselves performing rescues with limited knowledge of the river and the hazards associated with swiftwater situations. Swiftwater is simply "water moving downhill" as defined by Ray (Ray, 1997, p.9). All swiftwater has three common characteristics: it is powerful, it is relentless, and it is predictable to the experienced eye (Ray, 1997). Firefighters loose their lives yearly while attempting swiftwater rescues. Failing to properly plan for swiftwater rescues results in tragedy, and occasionally, rescuers' lack of awareness of new rescue techniques or equipment results in failed rescue attempts (Edwards, 1993).

The results of this study identify the need for implementation of a swiftwater rescue program for the Eau Claire Fire Department. The responsibility of the Eau Claire Fire Department in providing adequate programs to reduce or eliminate the possibility of firefighter injury or death increases as the department becomes more diversed in emergency response.

This research paper was developed to satisfy the Executive Fire Officer Program applied research requirement associated with the *Strategic Management of Change* course at the National Fire Academy. This research relates to module 3 of the course by addressing the management of change. Managing a proactive approach to firefighter safety is the utmost goal in swiftwater emergency response.

LITERATURE REVIEW

The literature review will examine different types of swiftwater rescue programs already in existence by other fire department organizations. An overview of successful program strategies, such as training, financial, response, equipment, preplanning, and public education will also be researched.

SWIFTWATER RESCUE PROGRAMS IN EXISTENCE

The Los Angeles City Fire Department (LAFD) for many years provided swiftwater emergency response with little or no training, not recognizing the dangers it took a tragic event in 1980 that triggered the need for a formal swiftwater rescue program, complete with training. The life of a would-be rescuer was lost due to the rapid water he faced. Then years later, a 15 year-old boy was caught in rapid water. This rescue attempt was caught on live television. For the first time, the public of Los Angeles saw a human face associated with that tragedy, and realized how public agencies were incapable of properly handling such incidents (Spivak, 1998).

Under the direction of the Los Angeles city council and the fire department, the swiftwater rescue concerns were addressed. A new river rescue program would require the fire department to accomplish the following (Spivak, 1998): The first priority was to establish a swiftwater rescue team that would be placed strategically throughout the city on high hazard days (rainfall of 1/2" inch within a 12 hour period or 2" of rain during a 24 hour period). Secondly, training the local first responders in performing low risk rescues that could aid victims in swift moving water. Finally, the program created a need to educate the public to stay away from swift water situations.

For the LAFD to complete the first goal it needed to create a team of specialized firefighters who could perform swiftwater rescues. High risk rescuers needed to be trained. These responders would be required to enter the water, by foot, boat, helicopter, and/or any combination to deliver service. A specialized rescue team with 48 members was created. All members received the high risk training. To

complete the first goal, deployment of this team on high hazard days was addressed. Guidelines were set-up which usually were based on unpredicted rainfall projections or known controlled water releases from the flood basins (Seidel, May, 1994).

The second goal of the LAFD's swiftwater rescue program involved training the first responders to perform low risk rescues. Recognizing the importance of immediate action in saving a life, the LAFD trained police officers, sheriffs department personnel, and the remaining fire department personnel in low risk, land-based rescue techniques (Spivak, 1998).

The third goal to be addressed was to educate the public. A safety education program was established for children and adults. Children of all ages were taught the dangers associated with rivers and flood channels. Through the development of two safety videos, the community was informed of the potential hazards associated with swiftwater (Seidel, March, 1994).

In turn, the surrounding Los Angeles County Fire Department realized the need for a swiftwater rescue program. It became clear to the administration of the LA County Fire Department that something was needed to close the gap on firefighter safety during swiftwater rescue incidents (Collins, April, 1994). A committee was established in 1983 to address swiftwater rescue operations.

The LA County swiftwater rescue committee was charged with many purposes. These included:

1. Develop and implement pre-deployment strategies for potential storms. 2. Establish minimum safety equipment standards for responding personnel. 3. Define minimum training levels for the certification of rescue teams.

4. Establish Standard Operating Procedures (SOP) for swiftwater rescue incidents.

5. Evaluate and define equipment between other agencies swiftwater response teams.

6. Interface with other agencies in the region concerning swiftwater practices. 7. Plan and coordinate the availability of the swiftwater rescue team with other cities within the county of Los Angeles (Masten, 1992).

The most significant observation of the LA County water rescue committee was the lack of formal water rescue training courses for the fire service. There was no generally accepted national standard for the fire service swiftwater rescue training, and there were few courses readily available to the average firefighter (Collins, April, 1994). The committee also found a lack of fire service related SOP's and equipment requirements for swiftwater rescue programs. The Occupational Safety and Health Administration (OSHA) had no standards set, nor did the National Fire Protection Association (NFPA) or other agencies which normally provide such guidance (Collins, April, 1994).

Many of the committee recommendations have since been addressed or implemented. Purchasing of equipment, training the firefighters, developing SOP's, and preplanning of hazard areas began to evolve. The swiftwater rescue program for the County of Los Angeles has continually improved to meet the needs of the community.

STRATEGIES TO ADDRESS THE NEED

During the analysis, development and implementation of a swiftwater rescue program, the fire department must create strategies to address the following areas; training, financial needs, response plans, equipment procurement, preplanning, and public education. Within the following pages each of these areas will be discussed.

Training:

Unlike fire service training programs, swiftwater rescue training is relatively new and has very few regulations governing it. According to Collins (1993), the NFPA has a committee working on the topic and the National Association of Search and Rescue, Fairfax Va., has a water component.

In searching for training and information concerning swiftwater a department would find resources scarce. The training sources mostly include private companies that specialize in swiftwater rescue techniques. Training should be customized to address the hazards associated in one's community and the

local available response delivery system. In most areas with swiftwater hazards, basic training should be given to all responding personnel, since it is difficult to predict just who will be faced with a swiftwater situation (Collins, 1993).

Upon completion of training for fire department personnel, those members with advanced skill levels can be used to conduct in-house training to surrounding area firefighters and employees of the community. Specific training for command staff and chief officers should include an understanding of the hazards and dynamics of moving water, what equipment, and what tactics can be used, and how to use a waterway rescue preplan (Collins, 1993).

The LAFD utilizes a four tiered approach to increase the safety of personnel involved in a river rescue. The first tier involves safety education. By teaching children of all ages to understand the dangers associated with rivers and flood control channels, firefighters will not be placed in a rescue situation. The second tier, an awareness course, focuses on public employees who could find themselves at the scene of a river-rescue incident. Training rescue personnel who handle river and flood-control incidents, make up the third tier. An eight-hour, first responder program is taught to all fire and police department members. The fourth and final level of training is for personnel selected to be on the swift-water rescue response team. The personnel complete the Swift-Water Rescue Technician I and Technician II courses developed by a private rescue corporation located in the city (Seidel, March, 1994).

During the initial stages of LA County Fire Department swiftwater rescue program, there appeared to be some doubts among some of the field personnel about whether such extensive measures were needed for incidents that do not occur very frequently. Collins found that the information and training provided was found to be the key to turning skepticism to enthusiasm for the swiftwater rescue program (Collins, May, 1994).

It is apparent that training of swiftwater rescue training is needed by all personnel that may become involved in an incident of this nature. Table I (Seidel, May, 1995), identifies different training levels and the rescue option associated with each training level.

Table I

Training Level	Options
First Responder	Land based: Talk, floatation, reach, and throw
Swiftwater rescue technicians	Talk, floatation, reach, throw, row, go & tow
Specially trained SWR technicians	All of the above, plus watercraft and helicopter

Table I. Training levels and Rescue Options..

Financial:

The major types of local funding sources for fire departments include taxes, benefit assessments, bonds, fees, contracting out, cost-sharing arrangements, and sales of services or equipment (USFA, 1993). There are two funding sources that appear to be most common for municipalities. A major funding source are taxes including property, sales, income, special, and property transfer tax. The second most common source are fees, which are a special service attempt to recover a cost from the user of the service.

The San Antonio Fire Department, Texas, is a department that charges for service using fees. For receiving emergency assistance from the city involving swiftwater emergencies, the people involved receive invoices for $400 from the department (USFA, 1993).

As all fire departments realize, the funding for most special rescue programs is a challenge. The LAFD pays for personnel costs associated with deployment, unless the deployment is covered by federal, state, or emergency funding (Spivak, 1998). The LAFD operates its swiftwater rescue program on a

minimal budget. City monies cover deployment, training, and the purchasing of equipment (Spivak, 1998). Spivak also adds that the LAFD has joined with the Yamaha Corporation, to utilize six personal watercrafts for training and rescues (Spivak, 1998).

The LA County Fire Department has broken down it financial support for the swiftwater rescue program into two phases (Masten, 1992). During phase one, funding was allocated to complete the following parts of the program. Initially they purchased safety equipment for rescue personnel ($450 per person). The second step was to secure the basic training of the Swift-Water Rescue Technicians ($16,550 total). Next the department secured the standard logistical support equipment necessary to safely deploy a swiftwater rescue team and complete initial research and development of the rescue net ($11,000). Finally, they secured instructor training for the Swift-Water Rescue Technician I certification. This allowed them to build a cadre of instructors, thereby supporting a comprehensive long-range training program (Masten, 1992).

Phase two secured funding to support annual, ongoing improvement in swiftwater rescue and response. First, a comprehensive and integrated training program was submitted. Second, development of a strategic plan that reflects the direction and efforts over the next couple of years. Finally, a plan of projections for related purchases and allocations to accomplish the training, equipment, research and development need for the strategic plan was developed (Masten, 1992). Overall, the budgetary support for the first year was $130,000, and an additional $70,000 in mitigation grant funds had been applied for to support swiftwater rescue needs (Masten, 1992).

Response:

For emergencies to be mitigated efficiently, a good size-up of the situation is essential. All the knowledge in the world about swiftwater rescue is useless unless one can determine the strategy and tactics to deploy in that specific emergency. Besides knowledge, strategy and tactics, all emergencies require the use of a command system. In any emergency, command is given to the organization having jurisdiction over the rescue, whether this organization has the knowledge, strategies and tactics necessary for that specific incident. This is why the Incident Command System (ICS) uses a unified approach to mitigate any emergency. A typical swiftwater response may include first responder companies, helicopter, paramedics, swiftwater rescue response teams, and command personnel (Seidel, May, 1994). ICS will ensure organization, communication, and coordination of those involved. Table II identifies the ICS flowchart (Seidel, May, 1994).

Table II

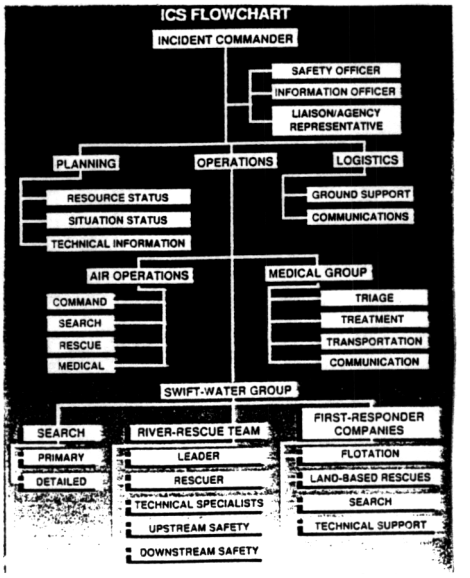

Table II. Identification of the ICS flowchart.

Different organizations respond to emergencies by determining what is effective for their organization. The LAFD pre-deploys swiftwater rescue teams based on the departments per-deployment guidelines. The teams are comprised of two, four, or six personnel. Each two-member team consists of a leader and a rescuer. The four person team adds to this with a technical specialist and a downstream safety. Building on this foundation, the six person team adds an additional technical specialist and an upstream safety (Seidel, May, 1994). LAFD's first arriving company on-scene must evaluate the scene and determine if there is actually a victim or victims. Table III identifies an option guide for the company officer to follow (Seidel, July, 1995).

Table III

SWIFTWATER RESCUE OPTION GUIDE

ARRIVAL OF FIRST COMPANY COMMANDING OFFICER

Gathers appropriate data	Directs company to set up for low-risk rescue option:
Orders additional resources	• flotation
	• reach options
Deploys resources	• throw options
Communicates information to all companies assigned	

Determines victim's mental status and sets rescue parameters

Conscious Victim	Unconscious Victim
Sufficient time for rescue: greater than three minutes	Insufficient time for rescue: less than three minutes
• Low-risk options	• Low-risk options
• Higher-risk options	• Provide flotation
• Personal watercraft	• Notify downstream companies
• Helicopter	• Set up rescue curtain
	• Use personal watercraft
	• Use helicopter
	• Contact rescue

Table III. Swiftwater Rescue Option Guide.

When determining the actual rescue method, the LAFD divides its rescues into two categories: Land-based (talk, floatation, throw, reach) and in-water rescues (row, go, tow, helicopter). To determine which rescue method to use, one must consider the victims status (conscious or unconscious), geographical considerations, and rescuer considerations must be analyzed through information gathered (Seidel, July, 1995).

The Chesterfield Fire Department, Virginia, implemented a three tiered response system: Tier I is a response in which the incident can be controlled by initial response personnel (engine company). Tier II requires initial response personnel and support personnel (truck company). Tier III is the most demanding response requiring initial response personnel, support personnel, and technical rescue personnel and equipment (Warden, 1994).

Equipment:

Firefighters that respond to swiftwater rescue emergencies must remember that personal turnout gear is not designed for water situations. Personnel working in close proximity of moving water should be provided with the minimum protection. This should include a U.S. Coast guard-Approved type III or type V Personal Floatation Device (PFD). Attached to the PFD's should be a knife and a whistle (Collins, 1993). Collins also suggests that the personal equipment should suit the exposure to danger. This may include footwear, head protection, and occasionally wet or dry suits (Collins, 1993). Minimal Rescue equipment includes throw bags, rescue rope and hardware, lights, and tools for reaching assists (Collins, 1993).

The LAFD divides equipment into two categories: Personal or Team rescue. Personal equipment would include wet or dry suits, booties, gloves, PFD, helmet, knife, whistle, strobe light, flashlight or headlight, swim fins, and a gear bag (Seidel, May, 1994). Team rescue equipment includes a rescue board, inflatable boat, throw bags, rescue rope, line gun, technical rescue hardware and harnesses, a hose inflator, fluorescent light sticks, floatation rings, extra PFD's, extra helmets, first-aid kits,

lifeguard rescue tubes, and other rescue items (Seidel, May, 1994).

Equipment must be maintained and organized. Hands-on training with the equipment will ensure effectiveness of its use. Collins stated, "The cost incurred by firefighter deaths or lawsuits from families of victims souls many times the cost of properly equipping entire fire departments" (Collins, 1993, p.33).

Preplanning:

In any rescue discipline, preplanning is used to design methods to deal with specific situations, enhance particular capabilities of the rescue team, create a safer scene environment, develop plans and procedures, and remove as many problems as possible before the real incident (Edwards, 1993).

Even though preplanning is extremely important, it can also be extremely difficult in special rescue situations. Preplanning for natural rivers and streams can often be complicated by heavy vegetation, rocks, rip raf, and other obstacles found in most rivers. Access to the rivers may also be difficult because of the terrain, impassable roadways and hazards causing danger to the rescuer. Since the victim can enter the water at any location, this makes preplanning unpredictable. The key to preplanning is that it needs to be flexible and to take influencing factors into account (Collins, April, 1994). Once the victim is found, extensive logistical support and a large commitment of labor is required. Tasks on-scene would include lighting, equipment pools, equipment transportation, and downstream back-up rescue points would be needed (Collins, April, 1994).

LA County Fire Department working with other agencies and fire departments has developed a pre-plan program that involves a method of Computer-Aided Dispatch (CAD) matrices to dispatch units downstream to perform rescues (Collins, 1993). A delay of units or the improper dispatch to emergency locations, could allow the victim to pass and fire department units would always be playing catch-up.

Public Education:

The LAFD's third phase of its swiftwater rescue program identified the need to educate the public. This is done through the efforts of educating elementary-aged school children about the dangers of swiftwater. Using classroom talks and safety videos, the message is being delivered.

LA county fire department is also developing a swiftwater education program targeting elementary, middle school, and high school students (Masten, 1992). Besides educating the children, warning systems round out the LA county public awareness. The Emergency Broadcast System (EBS) provides LA county with an aggressive means to warn the citizens in the event of sudden thunderstorm activity. The EBS identifies potential disaster areas where swiftwater could be a threat and warns the public accordingly.

PROCEDURES

Definition of Terms

* **Mutual Aid -**

  The providing or receiving of additional resources on a routine or major emergency basis.

* **Rip Raf -**

  Debris that is in or near the water. Usually manmade concrete and/or cement with steel reinforcement sticking out of it. Causing cutting and ripping of items which come in contact with it.

* **Standard Operating Guidelines (SOG) -**

  Predetermined actions that are available for the responder, but do not always have to be used. SOG's act as guides to the situation or event.

* **Standard Operating Procedures (SOP) -**

  A predetermined plan or written policy for nearly every type of emergency that a department may respond to.

* **Swiftwater -**

  Water moving downhill. The amount of water, how fast it moves, and what is in its bed or along its banks determines its variables (Ray, 1997).

Research Methodology

The desired outcome of this research was to develop criteria for implementation of a swiftwater rescue program for the Eau Claire Fire Department by comparing and analyzing programs from other departments across the nation. The research was descriptive in that a literary review was conducted to gather information about swiftwater programs. Strategies for program development applicable to the Eau Claire Fire Department in providing swiftwater protection were reviewed. A survey was conducted to help answer the research questions. Each Fire Chief received a packet containing a cover letter explaining the purpose of the survey, the survey itself (Appendix A), and a self-addressed stamped return envelope. The survey was distributed to those cities with estimated populations of over 20,000 citizens and were situated on waterways. The states chosen to complete the survey began with the letter C and W for reasons mentioned later. Sixty-three fire departments nationally were selected. The 63 surveys included the State of Wisconsin in which 25 surveys were distributed. The surveys were mailed on February 20, 1998, with a return date of April 5, 1998. The results of the survey appear in Appendix B of this report. Appendix C identifies specifically the results from those Wisconsin fire departments responding to the survey.

Research Limitations

The results from the survey conducted do not represent the entire United States fire service. Due to financial and time constraints the survey could not be distributed to all states. The states with the letters C and W were surveyed because of the cross section of fire agencies and the past experience departments within these states had within their boundaries. Similarities of geographic and demographic nature demanded a cross section of Wisconsin departments with swiftwater rescue programs being studied.

Of the 63 surveys sent, 52 surveys were returned for data collection. It is assumed, by the researcher, that the information on the returned surveys was given honestly by knowledgeable representatives of those organizations.

RESULTS

The literature review examined several swiftwater rescue programs that have been in operation for several years. As each of the programs where explained, each swiftwater rescue program evolved around the communities need.

Within the questionnaire (Appendix A), fire departments were asked specific questions detailing their swiftwater rescue program. Appendix B, identifies the accumulated results gathered from the respondents.

Answers to Research Questions

Research Question 1. - What types of swiftwater rescue programs do other communities provide?

Twenty-six fire departments responded to indicate they had a swiftwater rescue program. The remaining 26 fire departments responded that they had no swiftwater rescue program. Those departments which did not have a swiftwater rescue program had the opportunity to explain why no program had been implemented. The 36 results varied and included the following;

No Community Need = 17 responses

Financial Reasons = 8 responses

Other Agency Coverage= 5 responses

Political = 4 responses

Too Demanding = 2 responses

Research Question 2. - What successful applications (strategies) can be adopted by the Eau Claire fire department to develop and implement swiftwater rescue protection?

The literature review addressed several strategies that have been used by other swiftwater programs. These strategies include: training, financial, response, equipment, preplanning, and public education.

The questionnaire was used to identify strategies that could be used in the development of a swiftwater rescue program. Training was addressed by requesting the level of training required, how the training was received, and how often the training and recertification training was conducted. Twenty-four of the twenty-six responding fire departments indicated they trained to the first responder level. Seventeen of these twenty-four swiftwater programs conducted in-house training, while seven programs utilized training from outside agencies. Twenty-two of the twenty-six responding swiftwater programs indicated they had trained personnel to the technician level. Seven of the technician level departments conducted in-house certification, while 15 received training from outside agencies. Training results varied and included the following;

Annual = 11

Semi-annual = 6

Quarterly = 4

Monthly = 3

Seasonally = 2

The response strategy was addressed through questions relating to SOP's/SOG's, ICS, and Emergency Medical Service(EMS) response. There were 22 swiftwater rescue programs with established SOG's/SOP's. All 26 departments utilized the ICS for their incident organization. Swiftwater rescue programs that dispatched EMS to the incident indicated varied results and included the following;

Advanced Life Support (ALS) = 17

Intermediate Life Support = 4

Basic Life Support (BLS) = 5

Equipment strategies were addressed involving watercraft types and the use of helicopters. Those swiftwater rescue teams that indicated watercraft usage responded with 34 different types of watercrafts. Fourteen programs utilized boats, three used canoes/kayaks, five used inflatables, five used rafts, six used personal watercraft, and one program used a Hovercraft. Of the departments that used helicopters, 3 owned their own helicopter, while eight received outside coverage from mutual-aid resources including hospitals. Fifteen programs do not use helicopters.

Financial strategies were addressed within the survey by asking if a specific budget for their swiftwater rescue program was allocated. Eleven programs indicated they had a separate budget, and 15 indicated there was no separate budget for their program.

Preplan strategies were addressed by asking how many programs utilize preplan information. Twenty programs indicated they use preplans , while six programs had no preplan method.

Public Education strategies were being utilized by eight programs. Eighteen swiftwater programs had no safety education program associated with their community.

DISCUSSION

The Eau Claire Fire Department has approached firefighter safety with great concern. Years ago, workplace injury was looked upon as part of doing business. Today, the Eau Claire Fire Department has realized that all aspects of firefighter safety are key components toward efficient and effective operation. Legal, moral, and ethical obligations demand that the department be committed to a safer workplace.

The Eau Claire Fire Department presently has no swiftwater rescue program. With the exposures identified and the research verifying the need, the Eau Claire Fire Department will begin to provide organized swiftwater protection to the community, while protecting the firefighters who perform the rescues.

Through evaluating the survey, it became apparent that swiftwater rescue is relatively new as an organized function in todays fire service. Of the 26 fire departments that stated they had no swiftwater rescue program, 48% of those departments had limited community need. This result could be assumed that the water through their community poses no swiftwater threat, or the department does not recognize the exposures associated with swiftwater. It was surprising to discover that 40% of the other respondent's reasons for no program was financial, too demanding, or political reasoning for there implementation of a swiftwater rescue team.

A surprising response from departments was the lack of separate budgets for their swiftwater rescue programs. Of those fire departments that had a swiftwater rescue program (26), only 42% had separate budgets. This would possibly indicate that no specific planning for future operations is being considered.

Another area of the survey that was surprising was the number of departments with no swiftwater rescue safety education programs. 69% of the fire departments had no safety education program. It is the fire departments responsibility to identify the exposure in our community, and educate our community about those hazards. By properly educating the community, firefighters are placed in dangerous situations less often.

Helicopter usage was not involved in 58% of those departments with swiftwater rescue programs. Four respondents identified they could use hospital helicopters for rescues. Upon investigation of this possibility within Eau Claire, the local hospitals helicopter service indicated they would have no interest in such operations, and their insurance companies would probably not allow such use.

It was satisfying to see that training of personnel was probably the strongest focus of most programs. The survey and the literature review both identified the different levels of training associated with swiftwater rescue, the importance of this training, and a perspective on continuing education for the programs. The survey also identified that SOP's/SOG's, ICS, and preplanning had high program utilization. This indicates that the fire service has become increasingly organized to diverse emergency responses.

The survey was distributed to 25 Wisconsin cities, with 22 fire departments returning the results. Nine of these responding departments had swiftwater rescue programs, while 13 had no program. The departments indicating they had no program, indicated a lack of community need. The results from the nine fire departments that indicated they had a program, mirrored the national surveys results except in the area of swiftwater safety education programs. Eight of the nine departments had no swiftwater safety program, which was a response lower than the other respondents.

As the Eau Claire fire Department explores the literature review studies, the programs and strategies, and the survey information from responding departments the implementation of a swiftwater rescue program appears obtainable and practical. The program designed for the Eau Claire Fire Department must meet the specific communities needs. As with any program, commitment to the successful development, and operation of a swiftwater rescue program must be not only department wide but city wide. Management to line personnel must be involved in delivering an effective program.

RECOMMENDATIONS

Recommendation #1

The Eau Claire Fire Department must instill a commitment toward a swiftwater rescue program. The department must establish policy and have an timeline for the creation of this program. The program should develop with the start of a land-based rescue for all fire department personnel. The progression to advanced swiftwater rescue techniques can then be encompassed as the program develops.

Recommendation #2

The Eau Claire Fire Department must train all personnel in swiftwater rescue. There is no substitute for hands-on training and training from outside professionals that are knowledgeable about swiftwater rescue. The different levels of training can be enhanced as the program develops. During the initial stages the department must train all firefighters to the first responder level. Following this, additional training can be offered to those that have interest in the advanced levels of swiftwater technician.

Recommendation #3

Financial strategies must be developed through budgetary planning to fund the swiftwater rescue program. These may include proposed grant writing to community groups, the establishment of user fees for swiftwater rescue, and cooperation with nationally recognized corporations, such as Yamaha corporation, for equipment and water vehicle procurements.

Recommendation #4

It will be necessary to research and outline specific equipment that will be needed to provide protection to the swiftwater rescue responder. Personal and specific rescue equipment purchases must also be identified to perform land-based rescue techniques.

Recommendation #5

After studing specific Eau Claire geographics, a water preplanning program must be developed. This will allow engine companies throughout the city and mutual-aid department responders, to identify and address specific areas of concern. Annually as conditions change, this information can be reviewed, organized, and distributed among all the departments in the area for updated response plans.

Recommendation #6

Regional meetings with area fire departments will help share thoughts and ideas associated with swiftwater rescue. Throughout the region swiftwater exposures are common. Resource lists of personnel and equipment need to become available to respond to these exposures and reduce the possible duplication of resources.

Recommendation #7

The Eau Claire Fire Prevention program must incorporate a swiftwater safety program. The development of the swiftwater safety program will increase the awareness of the situations that can occur when swiftwater is present.

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APPENDIX A

FIRE AND RESCUE DEPARTMENT
Ronald W. Brown, Chief

Emergency Calls	 911
Administration	715/839-5012
Inspections/Investigation	715/839-4825
After Hours	715/839-5013

CITY OF EAU CLAIRE — 216 SO. DEWEY ST. EAU CLAIRE, WISCONSIN 54701-3702

February 20, 1998

Dear Fire Chief:

The attached survey is part of my National Fire Academy Executive Fire Officer Program research project conducted as Captain of Special Rescue with the Eau Claire Fire Department. This research project is an effort to develop criteria for implementation of a Swift Water Rescue program for the Eau Claire Fire Department by comparing and analyzing other programs from departments across the nation.

YOUR PARTICIPATION IS COMPLETELY VOLUNTARY AND YOUR ANSWERS WILL REMAIN COMPLETELY CONFIDENTIAL!

The use of your department's name is voluntary and need not be included, if you so desire. The use of the enclosed stamped self-addressed envelope to return the questionnaire will insure that your response is returned directly to me.

It is important that you answer each question as it pertains to the operation in your organization. Any inquiries about this project can be directed to Lyle N. Koerner Jr. at 715-839-5012 between the hours of 8 a.m and 5 p.m (CST).

Your response is very important! Thank you for your help!

Respectfully yours,

Lyle N. Koerner Jr., Captain
Eau Claire Fire Department

Attachments

EXECUTIVE FIRE OFFICER QUESTIONNAIRE

1 Indicate the type of Fire Department you are associated with:
(Circle the best answer)

A. Paid/Career
B. Combination
C. Volunteer

How many uniformed personnel are in your department?

A. 10-50
B. 50-100
C. 100-300
D. Over 300

3. Does your department have a Swift Water Rescue (a department response to rapid water emergencies with trained personnel) program?

A. Yes
B. No

4. If the answer to question #3 is No, is it because of:
(check all that apply, End of Survey)

A. Financial Reasons__
B. Limited Community Need__
C. Other Agency Coverage__
D. Too Demanding On Your Service
E. Other (explain)_____

5. If the answer to #3 is Yes, does the departments program:

A. Have established SOP's/SOG's?

i. Yes
ii. No

B. Have a separate Budget for this program?

i. Yes
ii. No

EFOP Questionnaire, page 2

C Utilize a form of Incident Command for operations?

i. Yes
ii. No

D. Utilize swift water pre-plan information?

Yes
No

6. What level of training is required for your department personnel?

A. First Responder Level:

i. In House
ii. Certified type agency
iii. Other (explain)_____

B. Swift Water Technician Level:

i. In House
ii. Certified type agency
iii. Other (explain) _____

7. How often is training conducted on your department for swift water rescue?

A. Annual
B. Semi-Annual
C. Quarterly
D. Monthly
E. Other (explain)_

8 What type of watercraft does your department utilize for swift water situations? (check all that apply)

A. Boat__
B. Canoes/Kayak__
C. Inflatables__
D. Rafts__
E. Other (explain)_

EFOP Questionnaire, page 3

9 If your program utilizes a helicopter, is it

A. Department owned
B. Mutual Aid
C. Military
D Other (explain)_ ___
E. Does not use helicopters

10. When dispatched to a swift water rescue situation, what level of EMS does your department respond?

A. Advanced Life Support
B. Intermediate Level Life Support
C. Basic Life Support
D. Other (explain)_____

11 Does your department have a safety education program associated with water situations in your community?

A. Yes
B. No

12. If your department has a swift water rescue program, please list a member of your organization for possible follow up questions (optional).

Name: _____

Address:_____

City & State:_____Zip_

Telephone #: _____

13. Your Department Name: _____
(Optional)

14. Citizen population your department protects?_ _____

APPENDIX B

EXECUTIVE FIRE OFFICER QUESTIONNAIRE

(Results- 63 surveys mailed, 52 surveys returned or 83% return)

Indicate the type of Fire Department you are associated with:
(Circle the best answer)

A.	Paid/Career	**47 or 90%**
B.	Combination	**5 or 10%**
C.	Volunteer	**0 or 0%**

2. How many uniformed personnel are in your department?

A.	10-50	**17 or 33%**
B.	50-100	**16 or 29%**
C.	100-300	**10 or 19%**
D.	Over 300	**10 or 19%**

3 Does your department have a Swift Water Rescue (a department response to rapid water emergencies with trained personnel) program?

A.	Yes	**26 or 50%**
B.	No	**26 or 50%**

4. If the answer to question #3 is No, is it because of:
(check all that apply, End of Survey)

		36 responses
A.	Financial Reasons__	**8 or 22%**
B.	Limited Community Need__	**17 or 47%**
C.	Other Agency Coverage__	**5 or 14%**
D.	Too Demanding On Your Service_	**2 or 6%**
E.	Other (explain)_____	**4 or 11%**

5. If the answer to #3 is Yes, does the departments program:

A. Have established SOP's/SOG's?

i.	Yes	**22 or 85%**
ii.	No	**4 or 15%**

B. Have a separate Budget for this program?

	Yes	**11 or 42%**
ii.	No	**15 or 58%**

EFOP Questionnaire, page 2

(Results- 63 surveys mailed, 52 surveys returned, 83% return)

C. Utilize a form of Incident Command for operations?

	Yes	**26 or 100%**
ii.	No	**0 or 0%**

D Utilize swift water pre-plan information?

i.	Yes	**20 or 77%**
ii.	No	**6 or 23%**

6. What level of training is required for your department personnel?

A. First Responder Level: 24 indicated level

i.	In House	**17 or 71%**
ii.	Certified type agency	**6 or 25%**
iii.	Other (explain)_____	**1 or 4%**

B Swift Water Technician Level: 22 indicated level

i.	In House	**7 or 32%**
ii.	Certified type agency	**15 or 68%**
iii	Other (explain) _____	**0 or 0%**

7 How often is training conducted on your department for swift water rescue?

A.	Annual	**11 or 40%**
B.	Semi-Annual	**6 or 24%**
C.	Quarterly	**4 or 16%**
D.	Monthly	**3 or 12%**
E.	Other (explain)	**2 or 8%**

8. What type of watercraft does your department utilize for swift water situations? (check all that apply)

34 responses

A.	Boat__	**14 or 41%**
B.	Canoes/Kayak_	**3 or 8%**
C.	Inflatables__	**5 or 15%**
D.	Rafts__	**5 or 15%**
E.	Other (explain)	**7 or 21%**

EFOP Questionnaire, page 3

(Results-63 survey mailed, 52 surveys returned, 83% return)

9. If your program utilizes a helicopter, is it:

A.	Department owned	**3 or 12%**
B.	Mutual Aid	**4 or 15%**
C.	Military	**0 or 0%**
D.	Other (explain)_____	**4 or 15%** (Hospital)
E.	Does not use helicopters	**15 or 58%**

10. When dispatched to a swift water rescue situation, what level of EMS does your department respond?

A.	Advanced Life Support	**17 or 63%**
B.	Intermediate Level Life Support	**4 or 15%**
C.	Basic Life Support	**5 or 19%**
D.	Other (explain)_____	**1 or 3%**

Does your department have a safety education program associated with water situations in your community?

A.	Yes	**8 or 31%**
B.	No	**18 or 69%**

12. If your department has a swift water rescue program, please list a member of your organization for possible follow up questions (optional).

Name:

Address:

City & State: Zip.

Telephone #:

13 Your Department Name:
(Optional)

14. Citizen population your department protects?

APPENDIX C

EXECUTIVE FIRE OFFICER QUESTIONNAIRE

(Wisconsin individual results; included in the national result totals- 25 mailed, 22 surveys returned or 88% return)

1 Indicate the type of Fire Department you are associated with:
(Circle the best answer)

A.	Paid/Career	**19 or 86%**
B.	Combination	**3 or 14%**
C.	Volunteer	**0 or 0%**

2. How many uniformed personnel are in your department?

A.	10-50	**12 or 54%**
B.	50-100	**7 or 32%**
C.	100-300	**3 or 14%**
D.	Over 300	**0 or 0%**

3. Does your department have a Swift Water Rescue (a department response to rapid water emergencies with trained personnel) program?

A.	Yes	**9 or 41 %**
B.	No	**13 or 59%**

4. If the answer to question #3 is No, is it because of:
(check all that apply, End of Survey)

		20 responses
A.	Financial Reasons__	**4 or 20%**
B.	Limited Community Need__	**11 or 55%**
C.	Other Agency Coverage__	**2 or 10%**
D.	Too Demanding On Your Service	**2 or 10%**
E.	Other (explain)_____	**1 or 5%**

5. If the answer to #3 is Yes, does the departments program:

A. Have established SOP's/SOG's?

Yes	**8 or 89%**
No	**1 or 11%**

B. Have a separate Budget for this program?

i.	Yes	**3 or 33%**
ii.	No	**6 or 67%**

EFOP Questionnaire, page 2

(Wisconsin individual results; included in the national result totals- 25 mailed, 22 surveys returned or 88% return)

C. Utilize a form of Incident Command for operations?

i.	Yes	**9 or 100%**
ii	No	**0 or 0%**

D. Utilize swift water pre-plan information?

i.	Yes	**6 or 67%**
ii.	No	**3 or 33%**

6 What level of training is required for your department personnel?

A. First Responder Level: 8 responses

i.	In House	**5 or 63%**
ii.	Certified type agency	**3 or 37%**
iii.	Other (explain)_____	**0 or 0%**

B Swift Water Technician Level: 7 responses

i.	In House	**4 or 57%**
ii.	Certified type agency	**3 or 43%**
iii.	Other (explain) _____	**0 or 0%**

7. How often is training conducted on your department for swift water rescue?

A.	Annual	**3 or 33%**
B.	Semi-Annual	**4 or 57%**
C.	Quarterly	**1 or 10%**
D.	Monthly	**1 or 10%**
E.	Other (explain)_	**0 or 0%**

8 What type of watercraft does your department utilize for swift water situations? (check all that apply)

14 responses

A.	Boat__	**8 or 57%**
B.	Canoes/Kayak_	**0 or 0%**
C.	Inflatables__	**3 or 21%**
D.	Rafts__	**2 or 14%**
E.	Other (explain)_	**1 or 7%** (Hovercraft)

EFOP Questionnaire, page 3

(Wisconsin individual results; included in the national result totals - 25 mailed, 22 surveys returned or 88% return)

9. If your program utilizes a helicopter, is it

A.	Department owned	**0 or 0%**
B.	Mutual Aid	**0 or 0%**
C.	Military	**0 or 0%**
D.	Other (explain) ___	**3 or 33%** (Hospitals)
E.	Does not use helicopters	**6 or 67%**

10. When dispatched to a swift water rescue situation, what level of EMS does your department respond?

A.	Advanced Life Support	**6 or 67%**
B.	Intermediate Level Life Support	**2 or 22%**
C.	Basic Life Support	**1 or 11%**
D.	Other (explain)_____	**0 or 0%**

1 Does your department have a safety education program associated with water situations in your community?

A.	Yes	**1 or 11%**
B.	No	**8 or 89%**

12 If your department has a swift water rescue program, please list a member of your organization for possible follow up questions (optional).

Name:

Address:

City & State:_____Zip_____

Telephone #:

13 Your Department Name:_____
(Optional)

14 Citizen population your department protects?_____